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**50**  
YEARS IN INDIA

# POST GRADUATE DIPLOMA IN ENVIRONMENTAL LAW AND POLICY

COURSE MATERIAL

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**POST GRADUATE DIPLOMA  
IN ENVIRONMENTAL LAW  
AND POLICY**

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June, 2020

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Justice Madan B. Lokur  
Former Judge  
Supreme Court of India



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5<sup>th</sup> July, 2020

## Foreword

We are presently facing the greatest threat to the environment than at any time before. On land, the threat to forests, wildlife and rivers is real with trees being cut down by millions, wildlife species getting extinct virtually on a daily basis and rivers drying up or getting extinct virtually on a daily basis and rivers drying up or getting so polluted that marine life is finding it difficult to survive. In the seas and oceans, plastic, chemicals and other trash have adversely impacted fish, sea birds, mammals and even bleached coral reefs. All these, of course, have an impact on the quality of human life but we are more directly concerned with the air we breathe which is so polluted that a very large number of us are having ailments such as asthma, bronchitis and emphysema, among other ailments.

In this background, the Postgraduate Diploma courses offered by WWF-India and National Law University, Delhi are most welcome. The range of topics is vast, as one can imagine, and includes not only issues of law but policy, management and ecotourism. The approach is holistic as indeed it should be but more importantly, it is not just theory that will be taught but practical problems and concerns will be discussed and addresses. We cannot repair the damage to the environment by merely talking about it, we have to go to the trouble spots and take affirmative action. The environmental law and other related programmes will motivate you to assist in preserving and protecting Nature for the benefit of all of us.

On my part, I urge you to take up the challenges facing us and find appropriate solutions so that every living organism survives the onslaught unleashed by humanity.



(Justice Madan B. Lokur)

## Preface

It is our privilege, on behalf of the WWF India and National Law University, Delhi, to introduce The Post Graduate Diploma in Environmental Law and Policy (PGDELP) Course Material. The Course Material is a reference book, providing comprehensive and definitive coverage of the dynamic subject - Environmental law and policy. The course material is organised into six courses, Introduction and overview to Environmental law, International Environmental Laws, National Environmental laws & Policies and Environmental Protection Mechanisms. Each course probes into key elements of law, its essential concepts and includes research on various thematic areas written by national and international environment experts. The Course Material is extensive and will guide course students/ participants to develop foundational, historical and technical knowhow about the subject.

The Post Graduate Diploma in Environmental Law and Policy (PGDELP) Course Material, is a challenging and ambitious undertaking as it covers around fifty units providing an in-depth contemporary and historic coverage on specific topics of environmental law.

Based on the research articles and book readings in the Course Material, we are confident that the Course Material will serve as a valuable resource of reference for Post Graduate Diploma students, scholars, lawyers, professionals, policy makers and other interested readers who may refer to the content.

*All the best with the Course and happy reading.*

*WWF - India and National Law University, Delhi PGD Courses Team.*

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**COURSE 1:  
INTRODUCTION TO ENVIRONMENT  
AND LAW**

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# ENVIRONMENT, NATURE AND ECOSYSTEM

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### 1.1 Introduction

Environment includes all elements, factors and conditions that can have an impact on the growth and development of a certain organism. Environment includes both biotic and abiotic factors that influence an organism. Abiotic factors include light, temperature, water, atmospheric gases etc. while biotic factors include all surrounding living species. The environment often changes after some time and therefore many organisms have the ability to adapt to these changes. The word “environment” is most commonly used to describe the *natural* environment and means the sum of all living and non-living things that surround an organism, or group of organisms. The concept of the natural environment can be distinguished by components:

- ◆ Complete ecological units that function as natural systems without massive human intervention, including all vegetation, animals, microorganisms, soil, rocks, atmosphere and natural phenomena that occur within their boundaries.
- ◆ Universal natural resources and physical phenomena that lack clear-cut boundaries, such as air, water and climate, as well as energy, radiation, electric charge and magnetism, not originating from human activity.

The natural environment is contrasted with the built environment, which comprises the areas and components that are strongly influenced by humans.

What is the difference between Environment, Nature and Ecosystem?

**Environment** - The environment is the totality of all the external conditions affecting the life, development and survival of an organism<sup>1</sup>? It consists of the naturally produced

<sup>1</sup> United Nations, European Commission, International Monetary Fund, Organisation for Economic Co-operation and Development, World Bank, 2005, Handbook of National Accounting: Integrated Environmental and Economic Accounting 2003, Studies in Methods, Series F, No.61, Rev.1, Glossary, United Nations, New York, para. 7.31

physical surroundings on which humanity is entirely dependent in all its activities. The various uses to which these surroundings are put for economic ends are called environmental functions. The natural environment, commonly referred to simply as “the environment”, encompasses all living and non-living things occurring naturally on Earth or some region thereof.

**Nature** - Nature, in the broadest sense, is equivalent to the natural world, physical world, or material world. “Nature” refers to the phenomena of the physical world, and also to life in general. It ranges in scale from the subatomic to the cosmic. The word is derived from the Latin word *natura*, or “essential qualities, innate disposition”, and in ancient times, literally meant “birth”.

Within the various uses of the word today, “nature” often refers to geology and wildlife. Nature may refer to the general realm of various types of living plants and animals, and in some cases to the processes associated with inanimate objects

- the way that particular types of things exist and change of their own accord, such as the weather and geology of the Earth, and the matter and energy of which all these things are composed. It is often taken to mean the “natural environment” or wilderness - wild animals, rocks, forest, beaches, and in general those things that have not been substantially altered by human intervention, or which persist despite human intervention. For example, manufactured objects and human interaction generally are not considered part of nature, unless qualified as, for example, “human nature” or “the whole of nature”. This more traditional concept of natural things which can still be found today implies a distinction between the natural and the artificial, with the artificial being understood as that which has been brought into being by a human consciousness or a human mind.

**Ecosystem** - Everything in the natural world is connected. An ecosystem is a community of living and non-living things that work together. Ecosystems have no particular size. An ecosystem can be as large as a desert or a lake or as small as a tree or a puddle. If you have a terrarium, that is an artificial ecosystem. The water, water temperature, plants, animals, air, light and soil all work together. If there is not enough light or water or if the soil does not have the right nutrients, the plants will die. If the plants die, animals that depend on them will die. If the animals that depend on the plants die, any animals that depends on those animals will die. Ecosystems in nature work the same way. All the parts work together to make a balanced system!

A healthy ecosystem has lots of species diversity and is less likely to be seriously damaged by human interaction, natural disasters and climate changes. Every species has a nichè in its ecosystem that helps keep the system healthy. We are learning about new species every day, and we are just figuring out the roles they play in the natural world. By studying and maintaining biodiversity, we help keep our planet healthy.

Of the several processes that all human societies in all ages have had in common, none has been more fundamental than their continual interaction with their natural environment. In fact, more than any other aspect of human endeavour, the diverse modes of human societal interaction with the larger ecological setting provide the basis for a genuinely global history of humanity. But, unlike so many of the other themes and patterns from which world history can be constructed, environmental history transcends the human experience. Due to the profound technological and scientific transformations that have occurred over the past millennium, it has come to effect - often fatally in recent centuries - every species of living creature on earth<sup>2</sup>.

The environment is a whole, albeit a complicated one, with many interfacing components. The wise management of the environment depends upon an understanding of its components: its rocks, minerals and waters, its soils and their present and potential vegetation, its animal life and potential for livestock husbandry, and its climate. Positive and realistic planning is needed to balance human needs against the potential the environment has for supporting these needs<sup>3</sup>. Environmental studies deal with every issue that affects a living organism. It is essentially a multidisciplinary approach that brings about an appreciation of our natural world and human impact on its integrity. It is an applied science, as it seeks practical answers to the increasingly important question of how to make civilisation sustainable on the Earth's finite resources.

If we study the natural history of the areas in which we live, we would see that our surroundings were originally a natural landscape, such as a forest, a river, a mountain, a desert or a combination of these elements. Most of us live in landscapes that have been profoundly modified by human beings. Our dependence on nature is so great that we cannot continue to live without protecting the Earth's environmental resources. Most traditional societies have learned that respecting nature is vital in protecting their own livelihoods. This had led to many cultural practices that have helped traditional societies protect and preserve their natural resources. Respect for nature and all living creatures is not new to India; all our traditions are based on these values. Emperor Ashoka's edict proclaimed that all forms of life are important for our well-being, and this was as far back as the 4th century BC.

The word *nature* is used in a good many senses and it includes ideas that vary widely according to the educational background of those using it and the amount of scientific training they have had, especially in biology. The concept of nature generally held by the non-specialist, the politician or the technocrat is undoubtedly only distantly related to that held by the ecologist. For that reason, it is sometimes more convenient to use the terms *biosphere* and *ecosphere*, since these indicate the two regions of our planet which contain everything ordinarily understood as 'nature'<sup>4</sup>.

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<sup>2</sup> Michael Adams, *Series Editor's Preface*, pg. vii, in: Ramchandra Guha, *Environmentalism - A Global History*. Oxford University Press (2000).

<sup>3</sup> Datuk Amar Stephen K. T. Yong, *Opening Address*, pg. 8, in: Sunderlal Bahuguna, Vandana Shiva and M. N. Buch, *Environment Crisis & Sustainable Development*. Natraj Publishers (1992).

<sup>4</sup> François Ramade, *Ecology of Natural Resources*, Pg. 1. Wiley (1981).

The *biosphere* can be simply defined as that part of the Earth in which life is permanently possible and which contains all living organisms. It consists of the terrestrial oceans and the surfaces of the continents, together with the adjacent atmosphere (that is, the troposphere), with the exception of the polar ice caps and the higher mountain slopes above the snow line. These latter regions, described as pyrophosphoric, are included along with the biosphere itself in a larger system, the *ecosphere*, which also embraces the upper layers of the lithosphere and the whole of the atmosphere above the troposphere.

The aim of *ecology* is to investigate the relation of living organisms to each other and to their surroundings and it thus provides, more than anything else, an essential basis for any rational approach to the study of the biosphere. Since the ecosphere is the origin of all natural resources except solar energy, it is easy to appreciate the importance of ecological science to the understanding of problems caused by the consumption of such resources in our present technological civilisation.

The natural resources of the ecosphere are being wastefully consumed at an increasing rate under the combined effect of population pressure and the dramatic increase in industrial production. The current rate of use takes absolutely no account of the real size of available reserves of minerals or fossil fuels, nor does it concern itself with the rate of renewal of plant or animal resources. The needs of future generations are similarly ignored. In addition to that, malnutrition is spreading in the Third World and, in a future that is closer than some people think, the industrialised and overpopulated countries of Europe and other continents will no longer be protected from shortages of animal protein.

Like all other living beings, humans require matter and energy. They are animals and are therefore heterotrophic organisms<sup>5</sup>. As such, their metabolic requirements are met by the air they breathe and by the water and organically derived food they ingest. Like other living species, they depend on the cosmic system from which they have descended: essentially the sun together with the ecosphere, the superficial part of our planet where the environmental conditions exist that make life possible.

As explained before, ecosystem is a natural unit consisting of all plants, animals and micro-organisms (biotic factors) in an area functioning together with all of the non-living physical (abiotic) factors of the environment.

Central to the ecosystem concept is the idea that living organisms are continually engaged in a highly interrelated set of relationships with every other element constituting the environment in which they exist. Eugene Odum, one of the founders of the science of ecology, stated: "Any unit that includes all of the organisms (i.e.: the "community") in a given area interacting with the physical environment so that a flow of energy leads to clearly defined trophic structure, biotic diversity, and material cycles (i.e.: exchange of materials between living and non-living parts) within the system is an ecosystem." The

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<sup>5</sup> **Heterotroph:** A living organism that needs an external supply of organic substances to synthesise its own organic requirements. All animals, fungi and certain bacteria are heterotrophic.

human ecosystem concept is then grounded in the deconstruction of the human/nature dichotomy, and the emergent premise that all species are ecologically integrated with each other, as well as with the abiotic constituents of their biotope.

A greater number or variety of species or biological diversity of an ecosystem may contribute to greater resilience of an ecosystem, because there are more species present at a location to respond to change and thus “absorb” or reduce its effects. This reduces the effect before the ecosystem’s structure is fundamentally changed to a different state. This is not universally the case and there is no proven relationship between the species diversity of an ecosystem and its ability to provide goods and services on a sustainable level.

Humid tropical forests produce very few goods and direct services and are extremely vulnerable to change, while many temperate forests readily grow back to their previous state of development within a lifetime after felling or a forest fire. Some grasslands have been sustainably exploited for thousands of years (Mongolia, European peat and moorland communities). The term ecosystem can also pertain to human-made environments, such as human ecosystems and human-influenced ecosystems, and can describe any situation where there is relationship between living organisms and their environment. Fewer areas on the surface of the earth today exist free from human contact, although some genuine wilderness areas continue to exist without any forms of human intervention.

Let us examine a few more important terms that constitute a part of the natural environment.

### **A) Natural Resources**

A resource can be defined simply as any form of energy or matter necessary to satisfy the physiological needs of humanity or to sustain all the various activities leading to production. The flow patterns of such resources through human civilisation are very complex and so can be studied from several different angles. Between the stage at which the resource is extracted and that of its use by a consumer, it undergoes many transformations, and these often have an impact on the overall functioning of the ecosystems in which the processes occur.

A classic distinction is frequently made between non-renewable and renewable resources. Potential sources of energy such as hydrocarbons and fissile materials clearly come into the first category. But for other types of resources the distinction is often difficult to make. Even minerals could be allocated to the second category since they can theoretically be recycled from both domestic and industrial waste and this would circumvent the problem of their exhaustion. Non-renewable resources are those dependent on a finite stock and not reproducible - like fossil fuels, or raw materials whose usage involves dispersal (e.g. phosphate fertilizers).

Renewable resources are those that are reproducible: in other words, obtained from the biomass of living organisms. Water and all resources of a biological origin are usually

classified as renewable. Even when polluted, water is not chemically modified in any way by being used and so can be recycled after purification. Plant and animal resources, on the other hand, although potentially renewable, are very often so overexploited that the possibility of regeneration in many parts of the world has been greatly reduced and sometimes completely compromised by the destruction of the ecosystem on which they depend. Solar energy is a special case, and although it has a fixed rate of flow (the intensity of solar radiation) it can be classified roughly as a renewable resource inasmuch as solar 'reserves' are inexhaustible on a human scale.

A resource can be most simply defined as a form of energy and/or matter which is essential for the functioning of organisms, populations and ecosystems. In the particular case of humans, a resource is any form of energy or matter essential for the fulfilment of physiological, socio-economic and cultural needs, both at the individual level and that of the community.

When the functioning of natural ecosystems or of technological civilisations is analysed, it is found that their usage of natural resources involves a permanent transformation of matter (in living organisms, through their metabolic activity; in human societies, through industrial processes). This transformation is the result of a continuous flow and consumption of energy (originating from the sun as regards the biosphere or from fossil fuels as regards technological civilisation).

Such considerations lead us to another definition of the term 'resource'. As already mentioned, a resource may consist of one of the various forms of primary energy present in the ecosphere. In addition, however, it may be defined as anything needed by a living organism such that an increase in its availability leads to an increase in energy flow through the organism, and thus a greater rate of energy conversion. In this definition, the term 'living organism' may be interpreted at any level of complexity; from the individual, through a given population, to a complete ecosystem.

On the basis of origin, resources may be divided into:

- ◆ Biotic - Biotic resources are obtained from the biosphere, such as forests and their products, animals, birds and their products, fish and other marine organisms. Mineral fuels such as coal and petroleum are also included in this category because they formed from decayed organic matter.
- ◆ Abiotic - Abiotic resources include non-living things. Examples include land, water, air and ores such as gold, iron, copper, silver etc.

Considering their stage of development, natural resources may be referred to in the following ways:

- ◆ Potential Resources - Potential resources are those that exist in a region and may be used in the future. For example, petroleum may exist in many parts of India, having sedimentary rocks but until the time it is actually drilled out and put into use, it remains a potential resource.

- ◆ Actual Resources - Actual resources are those that have been surveyed, their quantity and quality determined and are being used in present times. The development of an actual resource, such as wood processing depends upon the technology available and the cost involved. That part of the actual resource that can be developed profitably with available technology is called a reserve.

With respect to renewability, natural resources can be categorised as follows:

- ◆ Renewable resources are ones that can be replenished or reproduced easily. Some of them, like sunlight, air, wind, etc., are continuously available and their quantity is not affected by human consumption. Many renewable resources can be depleted by human use, but may also be replenished, thus maintaining a flow. Some of these, like agricultural crops, take a short time for renewal; others, like water, take a comparatively longer time, while still others, like forests, take even longer.

Non-renewable resources are formed over very long geological periods. Minerals and fossil fuels are included in this category. Since their rate of formation is extremely slow, they cannot be replenished once they get depleted. Of these, the metallic minerals can be re-used by recycling them. But coal and petroleum cannot be recycled.

#### **What is Natural Resource Management?**

Natural resource management is a discipline in the management of natural resources such as land, water, soil, plants and animals with a particular focus on how management affects the quality of life for both present and future generations. Natural resource management is interrelated with the concept of sustainable development a principle that forms a basis for land management and environmental governance throughout the world.

Natural resource management specifically focuses on a scientific and technical understanding of resources and ecology and the life-supporting capacity of those resources.

#### **B) Protection of Environment**

In recent years, the depletion of natural resources and attempts to move to sustainable development have been a major focus of development agencies. This is of particular concern in rainforest regions, which hold most of the Earth's natural biodiversity - irreplaceable genetic natural capital. Conservation of natural resources is the major focus of natural capitalism, environmentalism, the ecology movement, and green politics.

The conservation of natural resources is the fundamental problem. Conservation biology is the scientific study of the nature and status of Earth's biodiversity with the aim of protecting species, their habitats and ecosystems from excessive rates of extinction. It is an interdisciplinary subject drawing on sciences, economics and the practice of natural resource management.

Habitat conservation is a land management practice that seeks to conserve, protect and restore, habitat areas for wild plants and animals, especially conservation reliant species,

and prevent their extinction, fragmentation or reduction in range. It is a priority of many groups that cannot be easily characterised in terms of any one ideology.

### C) Wilderness

Wilderness is generally defined as areas that have not been significantly modified by human activity. It can be defined as ‘the most intact, undisturbed wild natural areas left on our planet - those last truly wild places that humans do not control and have not developed with roads, pipelines or other industrial infrastructure’<sup>6</sup>. Wilderness areas can be found in preserves, estates, farms, conservation preserves, ranches, National Forests, National Parks and even in urban areas along rivers, gulches or otherwise undeveloped areas.

Wilderness areas and protected parks are considered important for the survival of certain species, ecological studies, conservation, solitude and recreation. Some nature writers believe wilderness areas are vital for the human spirit and creativity, and some Ecologists consider wilderness areas to be an integral part of the planet’s self-sustaining natural ecosystem (the biosphere). They may also preserve historic genetic traits and that they provide habitat for wild flora and fauna that may be difficult to recreate in zoos, arboretums or laboratories.

### D) Life

Although there is no universal agreement on the definition of life, scientists generally accept that the biological manifestation of life is characterised by organisation, metabolism, growth, adaptation, response to stimuli and reproduction. Life may also be said to be simply the characteristic state of organisms.

Properties common to terrestrial organisms (plants, animals, fungi, protists, archaea and bacteria) are that they are cellular, carbon-and-water-based with complex organisation, having a metabolism, a capacity to grow, respond to stimuli, and reproduce. An entity with these properties is generally considered life. However, not every definition of life considers all of these properties to be essential.

The biosphere is the part of Earth’s outer shell - including land, surface rocks, water, air and the atmosphere - within which life occurs, and which biotic processes in turn alter or transform. From the broadest geo-physiological point of view, the biosphere is the global ecological system integrating all living beings and their relationships, including their interaction with the elements of the lithosphere (rocks), hydrosphere (water), and atmosphere (air). Currently the entire Earth contains over 75 billion tons (150 trillion pounds or about  $6.8 \times 10^{13}$  kilograms) of biomass (life), which lives within various environments within the biosphere.

Over nine-tenths of the total biomass on Earth is plant life, on which animal life depends very heavily for its existence. More than 2 million species of plant and animal life have been identified to date, and estimates of the actual number of existing species range

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<sup>6</sup> Definition provided by The Wild Club.

from several million to well over 50 million. The number of individual species of life is constantly in some degree of flux, with new species appearing and others ceasing to exist on a continual basis. The total number of species is presently in rapid decline.

### E) Biomes

Biomes are terminologically similar to the concept of ecosystems, and are climatically and geographically defined areas of ecologically similar climatic conditions on the Earth, such as communities of plants, animals, and soil organisms, often referred to as ecosystems. Biomes are defined on the basis of factors such as plant structures (such as trees, shrubs and grasses), leaf types (such as broadleaf and needleleaf), plant spacing (forest, woodland, savanna), and climate. Unlike ecozones, biomes are not defined by genetic, taxonomic, or historical similarities. Biomes are often identified with particular patterns of ecological succession and climax vegetation.

## 1.2 The World Environment

Given below is the timeline of the state of world environment at given points in history.

### i) Ancient Age

- ◆ Air pollution was common in large towns long before the industrial revolution. The pollution came from dust, wood smoke, tanneries, animal manure and other things.



*Figure 1: Mohenjodaro sewer system*

- ◆ Water pollution was less severe in some civilisations. Israeli and Hindu cities tended to have less water pollution due to strict religious codes about cleanliness. On the other hand, ancient Rome was notorious for sewage-filled streets.

- ◆ Timbering stripped the forests of Babylon, Greece, Phoenicia (Lebanon) and Italy with the rise of civilisation. The wood energy crisis led Greeks to use passive solar energy by orienting their cities and houses toward the sun. Romans made some use of solar energy but imported wood for timber and fuel from as far away as the Black Sea. Both Greeks and Romans kept sacred groves of trees from being timbered.
- ◆ Soil conservation was not widely practiced in the Mediterranean, but cultures in China, India and Peru understood the long term impact of soil erosion and tried to prevent it.
- ◆ Lead poisoning was common among upper class Romans who used lead- sweetened wine and grape pulp sweetened with “sugar of lead” as a condiment.

## ii) Middle Ages and Renaissance

- ◆ Plague devastates Europe but leads to the beginnings of a public health system.



*Figure 2 : Detail from a Peter S. Bregel painting shows a rich man standing near an outhouse which empties directly into the river*

- ◆ Water pollution tends to be less of a problem for dispersed populations than it would later become.
- ◆ Timbering in the forests of England, France, Germany leaves large tracts totally denuded by around 1550 in England and the 1600s in Europe, forcing a switch to coal.
- ◆ Soil conservation was not widely practiced in the Mediterranean, but cultures in China, India and Peru understood the long term impact of soil erosion and used terracing, crop rotation and natural fertilizer to prevent it.

- ◆ Occupational diseases are investigated by Bernardo Razzimazi and begin to be recognised as public health problems.

### iii) Progressive Era

- ◆ Reform was the common concern. Reform of working conditions, slum housing, food adulteration, sanitation, drinking water, polluting industries and more.
- ◆ Teddy Roosevelt and his forester Gifford Pinchot characterised the era with ideas about conserving large tracts of land and putting other forests to “wise use”.
- ◆ John Muir opposes the “wise use” idea and fights for outright preservation of unspoiled wilderness.
- ◆ Social activists and reformers like Ellen Swallow Richards, Jane Addams, Florence Kelly and Alice Hamilton innovate and find limited success. New organisations like the women’s clubs and the Sierra Club help champion natural preservation, conservation and municipal reform.



*Figure 3: A young Teddy Roosevelt*

### iv) The Era of Enlightenment

- ◆ Reason begins to be better appreciated as an antidote to superstition. Ben Franklin’s fight against water pollution, James Lind’s fight against scurvy, and the movement to clean up waterways, slums and prisons - all begin with an enlightenment philosophy that values individual citizens and believes progress is possible. There were, as Rumford said, “other kinds of glory than that of victory in battle”.



*Figure 4: Ben Franklin in his printing office*

- ◆ Thomas Malthus predicts that eventually, food and resources will run out as populations explode. New technologies create new pollution - Town gas from coal drips tar into the rivers. Vulcanised rubber plants discharge noxious chemicals directly into the streams. Coal smoke chokes the air in big cities. Chemical factories operate without thought to people downwind.

#### v) Industrial Revolution



*Figure 5: Woman looking through microscope is amazed at bacteria in water in a 19th century British cartoon*

- ◆ Living conditions in urban areas horrify reform minded commissions in London in the 1840s and America in the 1850s and 60s. Progress is slow but the common interest in pure drinking water and sanitation is spurred by epidemics of typhoid and cholera.

- ◆ Smog episodes begin killing residents of large cities like London.
- ◆ Conservation of wilderness areas begins with the felling of an enormous tree, called the “Mother of the Forest” in 1851. The outrage over the act leads to calls for a national park system.

#### vi) Roaring Twenties and the Depression

- ◆ National Coast Anti-Pollution League is formed by municipal officials from Atlantic City to Maine who are concerned about oil and sewage pollution detracting from tourism. Led by Gifford Pinchot, Teddy Roosevelt’s forester, the league succeeds with an international oil dumping treaty passed by Congress in 1924.
- ◆ “Nothing but a murderer” is the way Harvard M.D. Alice Hamilton privately describes Charles Kettering of General Motors, the inventive genius behind leaded gasoline. Hamilton’s fight to point out alternatives does not succeed and leaded gasoline becomes the standard fuel for most of the world.



*Figure 6: Alice Hamilton (Library of Congress)*

- ◆ The Radium Girls are dying of radiation induced cancer and court delays seem outrageous to crusading journalist Walter Lippmann who works with Alice Hamilton to bring their case to the public. A settlement at least gives them medical care and compensation for their families.
- ◆ Civilian Conservation Corps is founded by FDR during the depression.
- ◆ Chemurgy movement is a Midwestern populist and scientific phenomena. Demands include replacement of petroleum with farm alcohol and other industrial uses for agricultural crops. Movement suffers when leaders die and new leaders with secret ties to the oil industry take over.

#### vii) World War II and the 50’s

- ◆ A full marriage designed to outlast the war. This was the relationship between American auto, chemical and oil companies and Germany’s I.G. Farben exposed by Sen. Harry Truman in 1942. American development of synthetic rubber was

blocked and leaded gasoline technology was handed over to the Nazis during the pre-war honeymoon (Stephenson, 1976). The lesson of history? Only the government can secure the long-term public interest. Private industry cannot.

- ◆ Midwestern corn, not oil industry synthetics, helped roll allies to victory over the Nazis. Synthetic rubber and chemicals from *renewable resources* proved vital to winning WW II. (Bernton, 1982)
- ◆ Sand County Almanac by forester Aldo Leopold, published in 1948 just after his death, expresses the expanding sense of human responsibility, not only for each other but also for the earth.



*Figure 7: London Fog of 1956 was so thick that walking bus escorts were needed at 10 a.m.*

- ◆ Deadly smog episodes in Donora Penn. (1948), London (1952, 1956), New York (1953), and Los Angeles (1954) create the perception that an air pollution crisis is underway. In 1955 the first international air pollution conference is held.
- ◆ Increasing CO<sub>2</sub> build-up is one surprising conclusion of Scripps Oceanographic Institute scientists working on International Geophysical Year projects 1957.

#### viii) The Sixties (1960-70)

- ◆ Rachel Carson's book *Silent Spring* strikes a deep chord in the rapidly growing concern about the environment when published in 1962.
- ◆ General Motors and Standard Oil (Exxon) sell off the Ethyl Corp., the child of their partnership in leaded gasoline, in 1962. Senate hearings in 1965 reveal decades of falsified lead industry research.
- ◆ A burning river ends the decade as a dramatic symbol of an environment on the brink. On June 22, 1969, oil and chemicals in the Cuyahoga River in Cleveland, Ohio catch fire. Flames top five stories.

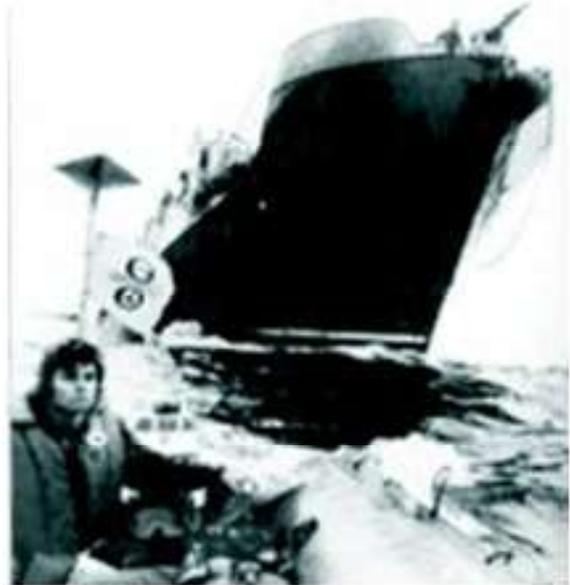


*Figure 8: Rachel Carson (Yale University library)*

- ◆ UNESCO conference on Man and His Environment takes place in San Francisco in 1969, sparking hope for international co-operation on environmental issues.
- ◆ The tragedy of the commons strikes a nerve. The Garrett Harden essay argues that just as unrestricted grazing could turn a common pasture into a wasteland, unregulated industry could do the same to the planet.

#### ix) The Seventies (1970-1980)

- ◆ A decade of awakening and clean-up begins with the birth of the Environmental Protection Agency and ends with the Appropriate Community Technology demonstration on the Washington mall.
- ◆ Air pollution is cut back dramatically through use of catalytic converters on new cars that use only unleaded gasoline. But the predicted “pollution free car” proves to be chimerical.
- ◆ Water pollution is greatly decreased through a massive sewage treatment expansion programme. Rivers which were once sewers now begin a gradual return from the grave. Still, the “national pollution discharge elimination system” does not actually eliminate discharges.



*Figure 9: Greenpeace captures the world's attention with its dramatic tactics in protecting whales (Photo by Rex Weyler, Greenpeace, 1977)*

- ◆ Toxic chemicals become more troubling. Corporations like Allied (manufacturer of Kepone) seem to have deliberately endangered employees and the public for minor increments of profit. Love Canal and other incidents lead to new regulations in the 1980s.
- ◆ Nuclear power safety is increasingly suspect after the Three Mile Island accident.
- ◆ Every crisis in oil supply leads to reversals of some restrictions on refinery and oil pollution.

#### X) 1980-1990

- ◆ Disasters show the tenuous and fragile side of industrial technology. Among them are the Bhopal mass poisoning in India; the Chernobyl nuclear reactor disaster in Ukraine; and the Challenger shuttle and Exxon Valdez oil spills in the U.S.
- ◆ Ozone depletion from fluorocarbons is finally taken seriously, even by conservatives like Ronald Reagan and Margaret Thatcher of Britain, who join others in signing the Montreal Protocol in 1987.



*Figure 10: Let Down - Bhopal gas victim hold posters during a demonstration in New Delhi against Union*

- ◆ More good news: Legislation for cleaning up toxic waste passes Congress. But by the year 2002, the Superfund will be broke.
- ◆ Environmental reform gathers momentum, but environmentalists mourn the loss of the Rainbow Warrior, a Greenpeace ship bombed by French secret service agents in New Zealand in 1985.
- ◆ Warnings about global climate change become more convincing as evidence mounts.

xi) 1990-2000



*Figure 11: Windmills in California*

- ◆ Persian Gulf War creates environmental disaster with thousands of burning oil wells.
- ◆ Ken Saro Wiwa, journalist and environmental activist, is executed in 1995 for his outspoken opposition to oil industry practices in Nigeria. The dictatorial government of Nigeria, and its partner Shell Oil, is held responsible by the international community.
- ◆ Political standoff between conservative and liberal factions in Congress ended more or less in a draw, with strong national opinion polls favouring environment over economic development. A Gallup poll finds 76% of Americans call themselves “environmentalists”.
- ◆ China’s Three Gorges Dam continues on schedule, despite international protests.
- ◆ MTBE may fight air pollution, but water pollution turns out to be the major side effect of the fuel additive. It’s another example of the law of unintended consequences.

#### xii) The New Millennium

- ◆ US leadership changes from president Bill Clinton, a devoted conservationist, to George Bush in 2001, who eases environmental regulation on behalf of industry, to Barack Obama in 2009, who restores environmental and conservation missions for US regulatory agencies.
- ◆ Global climate change becomes a pressing priority, as scientists issue increasingly serious warnings about their observations of the changing climate; but the scientific process stumbles over relatively minor mistakes made under increasing media scrutiny. Attempts at international agreements fail at Copenhagen in 2009, but world leaders continue attempting to bridge gaps in policy approaches.



*Figure 12: Scientist works with experimental fermenter at the National Renewable Energy Lab in Golden, Colo*

- ◆ Coal mining especially in the US Appalachian region continues to spark controversy over serious environmental impacts. A disaster at the Tennessee Valley Authority shows how serious the waste products of coal combustion can be. Coal mine disasters continue to haunt the US and China.
- ◆ Toxic Waste dumping in developing nations continues to be an urgent problem.

### 1.3 Environmental Crisis

An ecological crisis occurs when the environment of a species or a population changes in a way that destabilises its continued survival. Although humans currently comprise only a minuscule proportion of the total living biomass on Earth, the human effect on nature is disproportionately large. Because of the extent of human influence, the boundaries between what humans regard as nature and “made environments” is not clear cut except at the extremes. Even at the extremes, the amount of natural environment that is free of discernible human influence is presently diminishing at an increasingly rapid pace.

Given the fact that human impacts on environment are severe, there have arisen numerous anthropogenic effects on the environment. There are many possible causes of such crises:

- ◆ It may be that the environment quality degrades compared to the species’ needs, after a change of abiotic ecological factor (for example, an increase of temperature, less significant rainfalls).
- ◆ It may be that the environment becomes unfavourable for the survival of a species (or a population) due to an increased pressure of predation.
- ◆ It may be that the situation becomes unfavourable to the quality of life of the species (or the population) due to raise in the number of individuals (overpopulation).

Given below is a list of environmental issues that have arisen due to human activities.

- ◆ Anoxic waters – Anoxic event, Hypoxia, Ocean deoxygenation, Dead zone
- ◆ Climate change – Global warming, Global dimming, Fossil fuels, Sea level rise, Greenhouse gas, Ocean acidification, Shutdown of thermohaline circulation
- ◆ Conservation – Species extinction, Pollinator decline, Coral bleaching, Holocene extinction, Invasive species, Poaching, Endangered species
- ◆ Dams – Environmental impacts of dams
- ◆ Energy – Energy conservation, Renewable energy, Efficient energy use, Renewable energy commercialisation
- ◆ Environmental degradation – Eutrophication, Habitat destruction, Invasive species
- ◆ Environmental health – Air quality, Asthma, Electromagnetic fields, Electromagnetic radiation and health, Indoor air quality, Lead poisoning, Sick Building Syndrome
- ◆ Genetic engineering – Genetic pollution, Genetically modified food controversies
- ◆ Intensive farming – Overgrazing, Irrigation, Monoculture, Environmental effects of meat production, Slash and burn, Pesticide drift, Plasticulture

- ◆ Land degradation – Land pollution, Desertification
- ◆ Soil – Soil conservation, Soil erosion, Soil contamination, Soil salination
- ◆ Land use – Urban sprawl, Habitat fragmentation, Habitat destruction
- ◆ Nanotechnology – Nanotoxicology, Nanopollution
- ◆ Nuclear issues – Nuclear fallout, Nuclear meltdown, Nuclear power, Radioactive waste
- ◆ Overpopulation – Burial, Water crisis, Overpopulation in companion animals, Tragedy of the commons
- ◆ Ozone depletion – CFC
- ◆ Pollution – Light pollution, Noise pollution, Visual pollution, Non-point source pollution, Point source pollution
- ◆ Water pollution – Acid rain, Eutrophication, Marine pollution, Ocean dumping, Oil spills, Thermal pollution, Urban runoff, Water crisis, Marine debris, Ocean acidification, Ship pollution, Wastewater, Fish kill, Algal bloom, Mercury in fish
- ◆ Air pollution – Smog, Tropospheric ozone, Indoor air quality, Volatile organic compound, Particulate matter, Sulphur oxide
- ◆ Resource depletion – Exploitation of natural resources, Over drafting
- ◆ Consumerism – Consumer capitalism, Planned obsolescence, Overconsumption
- ◆ Fishing – Blast fishing, Bottom trawling, Cyanide fishing, Ghost nets, Illegal, unreported and unregulated fishing, Overfishing, Shark finning, Whaling
- ◆ Logging – Clearcutting, Deforestation, Illegal logging
- ◆ Mining – Acid mine drainage, Mountaintop removal mining, Slurry impoundments
- ◆ Toxins – Chlorofluorocarbons, DDT, Endocrine disruptors, Dioxin, Toxic heavy metals, Herbicides, Pesticides, Toxic waste, PCB, Bioaccumulation, Biomagnification
- ◆ Waste – E-waste, Litter, Waste disposal incidents, Marine debris, Medical waste, Landfill, Leachate, Recycling, Incineration, Great Pacific Garbage Patch

## 1.4 The Indian Environment : A Historical Perspective

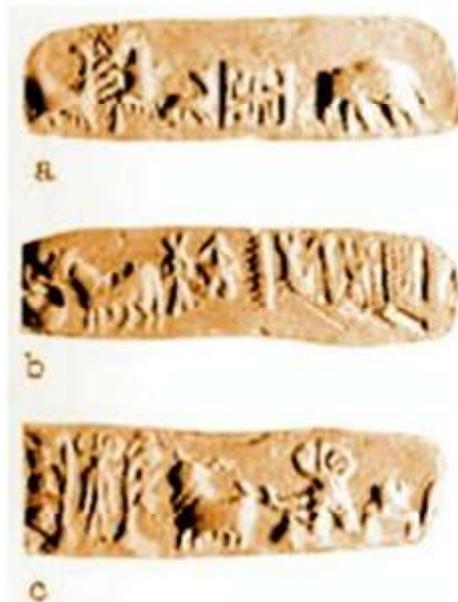
Natural history in India has a long heritage with a recorded history going back to the Vedas. Natural history research in early times included the broad fields of palaeontology, zoology and botany. These studies would today be considered under field of ecology but in former times, such research was undertaken mainly by amateurs, often physicians, civil servants and army officers. Natural history in India has a long heritage with a recorded history going back to the Vedas. Natural history research in early times included the broad fields of palaeontology, zoology and botany. These studies would today be considered under field of ecology but in former times, such research was undertaken mainly by amateurs, often physicians, civil servants and army officers.



*Figure 13: 9000 year old rock painting from Bhimbetka showing a hunt*

Although the growth of modern natural history in India can be attributed to British colonialism and the growth of natural history in Britain, there is considerable evidence to suggest that India with its diverse landscapes, fauna and flora along with other tropical colonies helped in creating an increased interest in natural history in Britain and elsewhere in the world. Natural history in India was also enriched by older traditions of conservation, folklore, nature study and the arts. Let us examine the timeline of environmental conservation in India over the years.

#### A) Indus Valley Civilisation



*Figure 14: Clay tablets from Lothal showing various animals*

Over a thousand sites of the Indus Valley civilisation across North West India before 1700 B.C. have been studied to date. A large number of animal bones have been found at these sites; one-fifth of these comprising bones of wild fauna, such as the jackal, hare, chital, rhinoceros and elephant. Most seeds found in the dwellings of some Western Indian sites are of wild plants now extinct to the region.

The fauna and flora of those times are richly represented in the clay pottery and tablets excavated from these sites. Clay tablets document many species of now locally extinct wildlife including Rhinoceros and Elephant. A tiger seal has been found in Harrappa dating back to 3000 B.C.

The Swamp Deer or Barasingha was found in Mehrgarh in Baluchistan till 300 B.C. and probably became locally extinct due to over-hunting and loss of riverine habitat to cultivation. A species of wild cattle, *Bos primegenius nomadicus* or the zebu vanished early on from its range in the Indus basin and western India, possibly due to inter-breeding with domestic cattle and resultant fragmentation of wild populations due to loss of habitat.

The first recorded domestication of the elephant was in Harappan times and the animal ultimately went on to serve as a siege engine, mount in war, status symbol, work animal, and an elevated platform for hunting.

## **B) Vedic Times**

The Vedas represent some of the oldest historical records available (1500-500 BC) and they list the names of nearly 250 kinds of birds besides many other notes on various other fauna and flora. In the Vedic texts, Aryavarta, the land of the Aryans, was considered to be co-terminous with the range of the Blackbuck. Sometimes, these referred to the lands North of the Vindhyas; at others times, it included lands to the South. A notable piece of information mentioned in the Vedas is the knowledge of brood parasitism in the Indian Koel, a habit known well ahead of Aristotle (384-322 BC). This is possibly because both the Indian Koel and its host the House Crow were common and easy to observe.

The medical treatises of Charaka and Sushruta mention wildlife from the point of view of the meats the forests yielded and their associated attributes. The stratification of Hindu society into the caste system saw the warrior caste or kshatriya setting itself apart on hereditary lines; one assertion of which was the right to eat certain animals. The treatises espoused rules as to when, and who could or could not eat flesh of particular animals; for example, the flesh of the lion and tiger were to be consumed solely by regents and that too on rare occasions.

The elephant was another well studied wild animal and the capture, training and maintenance of elephants was documented in the 2000 year old text Gajashastra written in the Pâli script. The Tamil literature of the Sangam period, depicts a classification of land into 5 eco-types; ranging from the littoral to wet paddy fields.

### C) The Maurya Period

The protection of animals became serious business by the time of the Maurya dynasty in the fourth and third centuries B.C. The first empire to provide a unified political entity in India, the attitude of the Mauryas towards forests, its denizens and fauna in general is of interest.

The Mauryas firstly looked at forests as a resource. For them, the most important forest product was the elephant. Military might in those times depended not only upon horses and men but also battle-elephants; these played a role in the defeat of Seleucus, Alexander's governor of the Punjab. The Mauryas sought to preserve supplies of elephants since it was more cost and time-effective to catch, tame and train wild elephants than raise them. Kautilya's Arthashastra contains not only maxims on ancient statecraft, but also unambiguously specifies the responsibilities of officials such as the Protector of the Elephant Forests:

*On the border of the forest, he should establish a forest for elephants guarded by foresters. The Superintendent should with the help of guards...protect the elephants whether along on the mountain, along a river, along lakes or in marshy tracts...They should kill anyone slaying an elephant.*

#### ◆ Arthashastra

The Mauryas also designated separate forests to protect supplies of timber, as well as lions and tigers, for skins. Elsewhere the *Protector of Animals* also worked to eliminate thieves, tigers and other predators to render the woods safe for grazing cattle.

The Mauryas valued certain forest tracts in strategic or economic terms and instituted curbs and control measures over them. They regarded all forest tribes with distrust and controlled them with bribery and political subjugation. They employed some of them, the food-gatherers or *aranyaca* to guard borders and trap animals. The sometimes tense and conflict-ridden relationship nevertheless enabled the Mauryas to guard their vast empire.

The Mauryan emperor Ashoka (304-232 BC), embraced Buddhism in the latter part of his reign and brought about significant changes in his style of governance. He provided protection to fauna and even relinquished the royal hunt. He was perhaps the first ruler to advocate conservation measures for wildlife and even had rules inscribed in stone edicts. The edicts proclaim that many followed the king's example in giving up the slaughter of animals; one of them proudly states:

*Our king killed very few animals.*

#### ◆ Edict on Fifth Pillar

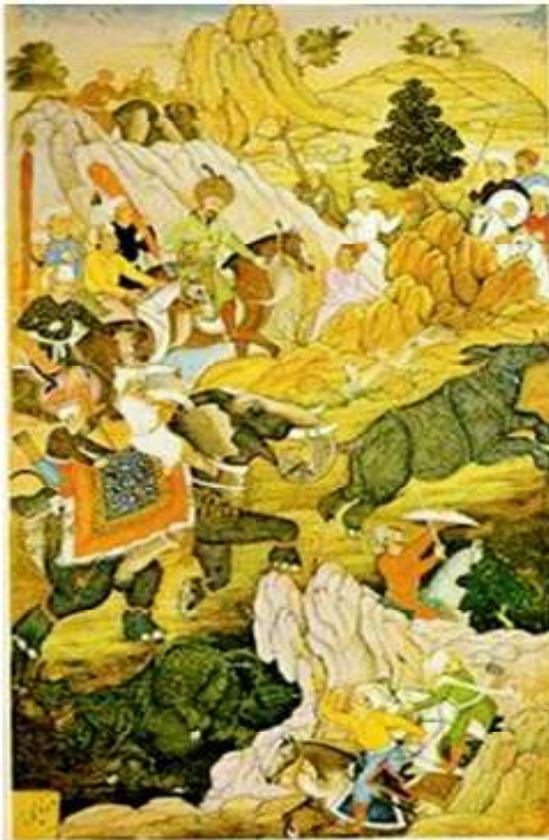
However, the edicts of Ashoka and the contents of Arthashastra reflect more the desire of rulers than actual events; the mention of a 100 'panas' fine for poaching

deer in royal hunting preserves shows that rule-breakers did exist. The legal restrictions conflicted with the freedoms exercised by the common people in hunting, felling, fishing and setting fires in forests.

#### D) Chalukya Period

Arguably, the best treatise on hunting in Sanskrit was the *Manasollasa* composed in the times of the Chalukyas, the twelfth century rulers of the Deccan. Another work from this period was *Mriga Pakshi Shastra*, a treatise on mammals and birds written in the 13th Century by a Jain poet, Hamsadeva. The accuracy of the content has however been critiqued by many including Salim Ali.

#### E) Mughal Period



*Figure 15: Babur hunting rhino near Peshawar*



*Figure 16: Blackbuck hunting with cheetahs from the Akbarnama*

The Mughal emperors not only led a leisurely life but also pursued gardening and art. They decorated their gardens with their private zoos and hired artists to paint many subjects including plants and animals. Hunting and falconry were also extensively practised. They also employed scribes and were among the first to document their observations of nature in India. The foremost of the observers were Jehangir (1569-1627) and Babur (1483-1530).

### ◆ Babur

Environmentalist Thomas C. Jerdon, quoted the notes of Babur in his 1874 book, *Mammals of India* while studying the distribution of species in different eras. An example of records of distribution that were maintained in medieval times can so be found in Babur's notes where distribution of the Rhinoceros in as far west as the Indus, has been noted. In *Mammals of India*, while referring to this note, it is quoted that:

*The Lesser Rhinoceros is found at present in the Bengal Sunderbuns, and a very few individuals are stated to occur in the forest tract along the Mahanuddy river, and extending northwards towards Midnapore; and also, on the northern edge of the Rajmahal hills near the Ganges. It occurs also more abundantly in Burmah, and thence through the Malayan peninsula to Java and Borneo. Several have been killed quite recently within a few miles of Calcutta. One of these species formerly existed on the banks of the Indus, where it was hunted by the Emperor Baber. Individuals of this species are not unfrequently taken about the country as a show.*

### ◆ Jehangir

Jehangir also kept detailed records to hunts. From the age of twelve (1580) to 48 years he had 28,532 animals had been hunted with 17,167 by himself. These included 86 Tigers (and lions), 9 Bears, leopards, foxes, otters (*ubdilao*) and hyaenas, 889 - Blue bulls (Nilgai) and 35 *Mhaka*. Salim Ali suggests that the *Mhaka* must refer to Swamp deer.

Ustad Mansur, a 17th century court artist of Jehangir, was the first man to accurately paint the Siberian Crane. The Dodo was brought to Jehangir's court via Portuguese controlled Goa and an unsigned painting of it in the Hermitage Museum is attributed to Mansur.

The flora and fauna of India have been studied and recorded from early times in folk traditions and later by researchers following more formal scientific approaches. Game laws are reported from the third century BC<sup>7</sup>. A little under 5% of this total area is formally classified under protected areas.

India is home to several well-known large mammals including the Asian Elephant, Bengal Tiger, Asiatic Lion, Leopard and Indian Rhinoceros. Some of these animals are engrained in culture, often being associated with deities. These large mammals are important for wildlife tourism in India and several national parks and wildlife sanctuaries cater to these



**Figure 17: Painting of a Dodo attributed to Ustad Mansur**

<sup>7</sup> P.R. Krausman & A.J.T. Johnsingh, *Conservation and Wildlife Education in India*, in: *Wildlife Society Bulletin*, 18:342-347. (1990).

needs. The popularity of these charismatic animals have helped greatly in conservation efforts in India. The tiger has been particularly important and Project Tiger started in 1972 was a major effort to conserve the tiger and its habitats. Project Elephant, though less known, started in 1992 and works for elephant protection.

Most of India's rhinos today survive in the Kaziranga National Park. Other well-known large Indian mammals include ungulates such as the Water Buffalo, Nilgai, Gaur and several species of deer and antelope. Some members of the dog family such as the Indian Wolf, Bengal Fox, Golden Jackal and the Dhole or Wild Dogs are also widely distributed. It is also home to the Striped Hyaena. Many smaller animals such as the Macaques, Langurs and Mongoose species are especially well known due to their ability to live close to or inside urban areas.

Let us examine the state of Biodiversity, Flora and Fauna in India:

Flora and Forests of India - The forests of India were some of the richest resources in the British colonies. The value of forests was realised very early and forest management was introduced early on the sub-continent. The links between water, climate and forest cover were noted particularly early and warnings on deforestation were sounded as early as 1840 by surgeons in the East India Company like Edward Balfour. This was to lead to forest conservation measures although the later policies of forest management were aimed at the production of commercial products such as teak timber.

The post of a conservationist was created and this term was related to the patches of forests that they managed, called conservancies, and was not related to biodiversity conservation. Even today, vast tracts of Indian forests are covered with teak plantations, low in biodiversity and seasonally ravaged by forest fires. The first foresters in India were highly influenced by forest management in Germany and many forest officers in India were trained in the German school of thought brought into India by Dietrich Brandis (1824-1907) - the father of tropical forestry<sup>8</sup>.

Numerous officers including James Sykes Gamble (1847-1925), Alexander Gibson and Hugh Francis Cleghorn in the Indian Forest service added information on the flora of India. Several amateurs also worked alongside from other civil services and they were assisted by professional botanists such as Joseph Dalton Hooker (1817-1911), John Gerard Koenig (1728-1785), Robert Wight (1796-1872), Nathaniel Wallich (1786-1854) and William Roxburgh (1751-1815), the Father of Indian Botany. Another area of interest was the introduction of plants of economic importance to India. Many of these introductions were tried in botanical gardens at Sibpur, Poona, Madras and Saharanpur.

The Chinese monopoly on tea was ended when tea was introduced in Darjeeling and Sri Lanka through the work of Robert Fortune (1812-1880). The botanical garden at Sibpur in Calcutta was started in 1787 by Col. Robert Kyd (1746-1793). Sir George King (1840-1904) who was in charge of the garden from 1871 was instrumental in the creation of a herbarium

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<sup>8</sup> Gregory Allen Barton, *Empire Forestry and the Origins of Environmentalism*. Cambridge University Press (2002).

at the garden and founded the Botanical Survey of India<sup>9</sup> in 1890. Later botanical workers include the paleobotanist Birbal Sahni (1891-1949).

Some of the other prominent names associated with botany and forests of India include William Carey (1761-1834), Sir Henry Collett (1836-1901), Ethelbert Blatter (1877-1934), T. F. Bourdillon, Sir Harry Champion and his brother F. W. Champion (1893-1970), A. A. Dunbar-Brander (Conservator of Forests in the Central Provinces), Sir Walter Elliot (1803-1887), Henry Thomas Colebrooke (1765-1837), Charles McCann (1899-1980), Hugh Falconer (1808-1865), Philip Furley Fyson (1877-1947), Lt. Col. Heber Drury, William Griffith (1810-1845), Sir David Prain (1857-1944), J. F. Duthie, P. D. Stracey, Richard Strachey (1817-1908), Thomas Thomson (1817-1878), J. E. Winterbottom, W. Moorcroft and J.F. Royle (1799-1858).

Naturalists associated with the Bombay Natural History Society like W. S. Millard (1864-1952) helped popularise the study of trees with books such as *Some Beautiful Indian Trees* (co-authored with Ethelbert Blatter). Similar attempts were made by civil servants like Alexander Kyd Nairne in his *Flowering plants of Western India* (1894).

**Fauna of India** - India has some of the world's most biodiverse regions. The political boundaries of India encompass a wide range of ecozones - desert, high mountains, highlands, tropical and temperate forests, swamplands, plains, grasslands, areas surrounding rivers, as well as island archipelago. It hosts three biodiversity hotspots: the Western Ghats, the Eastern Himalayas, and the hilly ranges that straddle the India-Myanmar border. These hotspots have numerous endemic species.



*Figure 18: Tiger*



*Figure 19: Asian Elephant*

<sup>9</sup> Perlin, John, 1999, *From Space to Earth: The Story of Solar Electricity*, Ann Arbor, Mich., AATEC Publications.



Figure 20: Asiatic Lion



Figure 21: Indian Rhinoceros

India, for the most part, lies within the Indomalaya ecozone, with the upper reaches of the Himalayas forming part of the Palearctic ecozone; the contours of 2000 to 2500 m are considered to be the altitudinal boundary between the Indo-Malayan and Palearctic zones. India displays significant biodiversity. One of eighteen megadiverse countries, it is home to 7.6% of all mammalian, 12.6% of all avian, 6.2% of all reptilian, 4.4% of all amphibian, 11.7% of all fish, and 6.0% of all flowering plant species<sup>10</sup>.

The region is also heavily influenced by summer monsoons that cause major seasonal changes in vegetation and habitat. India forms a large part of the Indomalayan biogeographical zone and many of the floral and faunal forms show Malayan affinities with only a few taxa being unique to the Indian region. The unique forms includes the snake family Uropeltidae found only in the Western Ghats and Sri Lanka. Fossil taxa from the Cretaceous show links to the Seychelles and Madagascar chain of islands.

The Cretaceous fauna include reptiles, amphibians and fishes and an extant species demonstrating this phylogeographical link is the Purple Frog. The separation of India and Madagascar is traditionally estimated to have taken place about 88 million years ago. However, there are suggestions that the links to Madagascar and Africa were present even at the time when the Indian subcontinent met Eurasia. India has been suggested as a ship for the movement of several African taxa into Asia. These taxa include five frog families (including the Myobatrachidae), three caecilian families, a lacertid lizard and freshwater snails of the family Potamiopsidae<sup>11</sup>.

A fossil tooth of what is believed to be of a lemur-like primate from the Bugti Hills of central Pakistan however has led to suggestions that the lemurs may have originated in Asia. These fossils are however from the Oligocene (30 million years ago) and have led to controversy. Lemur fossils from India in the past led to theories of a lost continent called Lemuria. This theory however was dismissed when continental drift and plate tectonics became well established.

<sup>10</sup> Dr S.K.Puri, *Biodiversity Profile of India*.

<sup>11</sup> J.C. Briggs, *The Bio-geographic And Tectonic History of India* in: *Journal of Biogeography*, 30:381- 388. (2003).

Biodiversity in India - There is insufficient information about the invertebrate and lower forms of India with significant work having been done only in a few groups of insects notably the butterflies, odonates, hymenoptera, the larger coleoptera and heteroptera. Few concerted attempts to document the biodiversity have been made since the publication of the Fauna of British India series.

There are about 2546 species of fishes (about 11% of the world species) found in Indian waters. About 197 species of amphibians (4.4% of the world total) and more than 408 reptile species (6% of the world total) are found in India. Among these groups the highest levels of endemism are found in the amphibians. There are about 1250 species of birds from India with some variations depending on taxonomic treatments accounting for about 12% of the world species. There are about 410 species of mammals known from India which is about 8.86% of the world species.

The exploitation of land and forest resources by humans along with hunting and trapping for food and sport has led to the extinction of many species in India in recent times. Probably the first species to vanish during the time of the Indus Valley civilisation was the species of wild cattle, *Bos primegenius nomadicus* or the wild zebu, which vanished from its range in the Indus valley and western India, possibly due to inter-breeding with domestic cattle and resultant fragmentation of wild populations due to loss of habitat.

Notable mammals which became or are presumed extinct within the country itself include the Indian / Asiatic Cheetah, Javan Rhinoceros and Sumatran Rhinoceros<sup>12</sup>. While some of these large mammal species are confirmed extinct, there have been many smaller animal and plant species whose status is harder to determine. Many species have not been seen since their description. *Hubbardia heptaneuron*, a species of grass that grew in the spray zone of the Jog Falls prior to the construction of the Linganamakki reservoir, was thought to be extinct but a few were rediscovered near Kolhapur.

Some species of birds have gone extinct in recent times, including the Pink-headed Duck (*Rhodonessa caryophyllacea*) and the Himalayan Quail (*Ophrysia superciliosa*). A species of warbler, *Acrocephalus orinus*, known earlier from a single specimen collected by Allan Octavian Hume from near Rampur in Himachal Pradesh was rediscovered after 139 years in Thailand. Similarly, the Jerdon's Courser (*Rhinoptilus bitorquatus*), named after the zoologist Thomas C. Jerdon who discovered it in 1848, was rediscovered in 1986 by Bharat Bhushan, an ornithologist at the Bombay Natural History Society after being thought to be extinct.

An estimate of the numbers of species by group in India is given below. This is based on Alfred, 1998<sup>13</sup>.

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<sup>12</sup> Vivek Menon (2003). *A field guide to Indian mammals*. Dorling Kindersley, Delhi.

<sup>13</sup> Alfred, J.R.B. (1998) Faunal Diversity in India: An Overview: In Faunal Diversity in India, i-viii, 1-495. (Editors. Alfred, JRB, et al., 1998). ENVIS Centre, Zoological Survey of India, Calcutta.

Taxonomic Group	World Species	Indian Species	% in India
<b>PROTISTA</b>			
Protozoa	31250	2577	8.24
Total (Protista)	31250	2577	8.24
<b>ANIMALIA</b>			
Mesozoa	71	10	14.08
Porifera	4562	486	10.65
Cnidaria	9916	842	8.49
Ctenophora	100	12	12
Platyhelminthes	17500	1622	9.27
Nemertinea	600	-	-
Rotifera	2500	330	13.2
Gastrotricha	3000	100	3.33
Kinorhyncha	100	10	10
Nematoda	30000	2850	9.5
Nematomorpha	250	-	-
Acanthocephala	800	229	28.62
Sipuncula	145	35	24.14
Mollusca	66535	5070	7.62
Echiura	127	43	33.86
Annelida	12700	840	6.61
Onychophora	100	1	1
Arthropoda	987949	68389	6.9
Crustacea	35534	2934	8.26
Insecta	-	-	6.83
Arachnida	73440	-	7.9
Pycnogonida	600	-	2.67
Paupoda	360	-	-
Chilopoda	3000	100	3.33
Diplopoda	7500	162	2.16
Symphyla	120	4	3.33

Merostomata	4	2	50
Phoronida	11	3	27.27
Bryozoa (Ectoprocta)	4000	200	5
Endoprocta	60	10	16.66
Brachiopoda	300	3	1
Pogonophora	80	-	-
Praipulida	8	-	-
Pentastomida	70	-	-
Chaetognatha	111	30	27.02
Tardigrada	514	30	5.83
Echinodermata	6223	765	12.29
Hemichordata	120	12	10
Chordata	48451	4952	10.22
Protochordata (Cephalochordata+Urochordata)	2106	119	5.65
Pisces	21723	2546	11.72
Amphibia	5150	209	4.06
Reptilia	5817	456	7.84
Aves	9026	1232	13.66
Mammalia	4629	390	8.42
Total (Animalia)	1196903	868741	7.25
Grand Total (Protosticta + Animalia)	1228153	871318	7.09

# ORIGIN OF ENVIRONMENTAL LAW

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### 2.1 Introduction

Today the need is to evolve a new jurisprudence of striking balance between growth, development and the ecosystem. Scholars have stressed that there is need for overall development of human beings with due respect to nature, “The final principle is respect for the nature. Growth that does not respect the natural world, its complexity and its sensitivity, limits itself. Resources are exhausted, ecosystems collapse, species disappear and our own physical and mental health and even our survival are threatened”<sup>1</sup>. The concept of environment is very wide, it includes land, water air, flora, fauna, natural resources and human habitation. There, are number of Acts direct and indirect relating to various aspect of environment. There are various protective Laws for human beings relating to air, water, land, noise, nuclear, thermal pollution and also for other living specifiers of wild, marine life, flora and fauna. The focus of environmental law in India should be known moved from protection to management of the environment and from reactive to proactive legal mechanisms.

Many Constitutions in the world acknowledges the fundamental right to environmental protection and many international treaties also acknowledge the right to live in a healthy environment.

The constitution of India provides that every person has right to life as enshrined in Article 21, on the other hand it also imposes duty on the Citizens to protect the environment (see Articles 51A(g)( ii), 39(b),(c),19(e)). Similarly, the government departments also have duties towards protection of environment, Article 48A directs the government to protect and improve the environment and to safeguard the forest and

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<sup>1</sup> Harrison Paul, The Third World.

wildlife of the country, Article 31A and 31C gives eminent powers to the government to acquire forest, lands, estates and other natural resources however the acquisition must be done equitably for common good (Article 39(b) and (c) of directive principles).

The IX schedule of the constitution gives powers to the Center, over the State and judiciary to declare numerous land related Laws as unreviewable in any court. The VII schedules (list I, entries 52-58) places some environmental issues in center's power alone, Atomic energy, oil fields and resources, mines, interstate rivers and valleys and fishing in territorial waters are subjects related to environmental protection in union list and fall within subject of union list (list I, entries 6, 53, 54, 56 and 57). Public health and sanitation, agriculture land and fisheries within State territories and water fall under State subjects (list II entries 6, 14, 18, 21 and entry 17) however certain subjects like forest, wildlife and population control falls under list III, entries 17A, 17B, the concurrent list where both Center and State can legislate. Nomadic tribes, social and economic planning, monopolies, factories and electricity, having close connection with environmental protection also falls within concurrent list (list III, entries 15, 20, 21, 29, 36, 37, and 38.)

## 2.2 Evolution of Environmental Laws

Every word in English has a history - and Environmental law is no exception. In this section you will learn a good deal more about the historical perspectives of environmental law; in addition, you will make excursions into its origin and development. Environmental law is a body of law, which is a system of complex and interlocking statutes, law, treaties, conventions, regulations and policies which seek to protect the environment which may be affected, impacted or endangered by human activities. Some environmental laws regulate the quantity and nature of impacts of human activities: for example, setting allowable levels of pollution or requiring permits for potentially harmful activities. Other environmental laws are preventive in nature and seek to assess the possible impacts before the human activities can occur.

While many countries worldwide have since accumulated impressive sets of environmental laws, their implementation has often been woeful. In recent years, environmental law has become been a critical means of promoting sustainable (or "sustainability"). Policy concepts such as the precautionary, public participation, environmental justice, and the polluter have informed many environmental law reforms in this respect. There has been considerable experimentation in the search for more effective methods of environmental control beyond traditional "command-and-control" style regulation. Taxes, emission, voluntary standards such as ISO 14000 and negotiated agreements are some of these innovations.

The IUCN Academy of Environmental Law is a network of some 60 law schools worldwide that specialise in the research and teaching of environmental law.

In his book "Should trees have legal standing" Stone (1974:11) argues that nature should count jurally - to have a legally recognised worth and dignity in its own right, and not

merely to serve as a means to benefit “us”. He claims that for a thing to be a holder of legal rights an authoritative body must review the actions and processes of those who threaten it and three additional criteria should be satisfied. The thing can institute legal actions at its behest; second, that in determining the granting of legal relief, the court must take injury to it into account; and; third, that relief must run to the benefit of it. The problem with this argument is that for nature to have legal standing it must have a lawyer; and would therefore be dependent on the cultural values, wisdom and competence of the lawyer(s) chosen to represent it and those of the court of law with jurisdiction. Clayton (2000) claims that justice becomes more relevant in circumstances in which a desired response is scarce and in which there are citizens who ascribe moral significance and values to the environment. She goes on to state that since many resources are not renewable within reasonable timeframes, this makes people more aware of the ways in which those resources are distributed. Stone (1974:16) claims that in the past natural objects have had no standing in their own right; their unique damages do not count in determining outcome; and they are not the beneficiaries of awards, but are objects for man to conquer and master and use.

Environment plays a pivotal role in human life as well as in the development of society. With growing technological advancement and industrialisation, the purity of the environment has been threatened to an appalling extent. The need to protect and improve the environment is so compelling for the peaceful survival of mankind and other life forms on planet Earth that right to environment has emerged as a human right.

Over the last two decades, the Indian judiciary has fostered an extensive and innovative approach to environmental rights in the country. Complex matters of environmental management have been resolved and consequently a series of innovative procedural remedies have evolved to accompany this new substantive right. The new environmental right is therefore championed as a legal gateway to speedy and inexpensive legal remedy.

The notional expansion of right to life was recognised even in the absence of a specific reference to direct violations of the fundamental right. Placed in a nutshell, the human right culture has percolated down to Indian human right regime within a short period of time. An interdisciplinary approach to environmental protection may be another reason for the operation of the right to healthy environment. This has been undertaken through international environmental treaties and conventions, national legislative measures and in judicial responses.

On undertaking a comprehensive study of environmental law, it can be found that the Indian scenario is replete with examples of preserving the environment from degradation.

## 2.3 Environmental Crisis

An environmental crisis occurs when the environment of a species or a population changes in a way that destabilises its continued survival. There are many possible causes of such crises:

- ◆ It may be that the environment quality degrades compared to the species' needs, after a change of abiotic ecological factor (for example, an increase of temperature, less significant rainfalls).
- ◆ It may be that the environment becomes unfavourable for the survival of a species (or a population) due to an increased pressure of predation.
- ◆ Lastly, it may be that the situation becomes unfavourable to the quality of life of the species (or the population) due to raise in the number of individuals (overpopulation).

The evolutionary theory of punctuated equilibrium sees infrequent ecological crises as a potential driver of rapid evolution. Accompanying the development of the environmental crisis has been an explosive growth of the world's human population. At the beginning of the 20th century there were 1.6 billion people, by mid-century there were 2.5 billion, in 1987 the world's population passed five billion and by 2000 it will reach six billion. The increase in the past 40 years has equalled the total increase over the four million years from the first appearance of humankind until 1950. According to United Nations projections, the next 40 years (to 2030) will bring a further increase to 10 billion. Of the additional 5 billion, the UN estimates that 4.75 billion - 95% - will be in the world's poorest countries.

Unsurprisingly, many Western ecologists blame the environmental crisis on this rapid growth in world population, which by placing increasing demands on scarce resources is degrading the global ecosystem. Professor Paul Ehrlich, author of the *Population Bomb*, is a leading advocate of this "too many people" thesis. In his 1972 book *Population, Resources, Environment – Issues in Human Ecology* Ehrlich argued that:

The explosive growth of the human population is the most significant terrestrial event of the past million millennia. Three and one-half billion people now inhabit the Earth, and every year this number increases by 70 million. Armed with weapons as diverse as thermonuclear bombs and DDT this mass of humanity now threatens to destroy most of the life on the planet ... No geological event in a billion years - not the emergence of mighty mountain ranges, nor the submergence of entire subcontinents, nor the occurrence of periodical glacial ages - has posed a threat to terrestrial life comparable to that of human overpopulation.

Similar arguments have also been used to explain a wide range of other social problems. Back in 1979, Ehrlich joined with other representatives of US academia and big business including Paul Getty, C.W. Cook (Chairman of General Foods Corporation), Burt Goodman (Vice-Chairman of Heinz & Co), Henry Luce (Vice-President of Time Inc), and Zbigniew Brzezinski (President Carter's National Security Adviser) to place a full-page advertisement in major newspapers and magazines, declaring that: "Exponential population growth is basic to most of our social problems ... inflation, unemployment, food and energy shortages, resource scarcities, pollution and social disorder."

Carbon emissions have greatly increased over the past 200 years, as humanity discovered coal and factories and motor vehicles. Human population has also increased from one

billion to almost six billion, and all these people want to live with refrigerators, televisions and motor vehicles with air conditioning. This puts tremendous pressure on governments all over the world to provide more and more electricity. Most electricity is produced by burning coal and other fossil fuels. The other cause is the destruction of the forests, which can no longer keep up with the amount of carbon in the atmosphere.

The greenhouse effect is when the gases like water vapour, carbon dioxide, methane, ozone and other gases build up in the atmosphere and absorb that heat that used to be reflected out into space.

## 2.4 The Indian Environment: A Historical Perspective

The focus on environmental protection is not new and has been an integral part of the Indian culture. The need for conservation and sustainable use of natural resources has been expressed in ancient India and is also reflected in the constitution and are backed by a number of laws - acts, rules and notifications, i.e., legislative and policy framework and is also in the international commitments of the country. Let us see below the various pre-independence environmental legislation that existed in India on water pollution, air pollution wildlife protection and forest conservation indicating the nature and levels of governmental awareness towards environmental issues.

Water Pollution	<p>The Shore Nuisance (Bombay and Kolkata) Act, 1853 - It efforts to remove any nuisance below the high watermark.</p> <p>The Oriental Gas Company Act, 1857 - to control water pollution specially from discharge of oriental gas company.</p> <p>Indian Penal Code of 1860.</p> <p>The Indian Easement Act, 1882 allows private rights to use a resource that is, groundwater, by viewing it as an attachment to the land. It also states that all surface water belongs to the State and is a State property.</p> <p>The Indian Fisheries Act, 1897- killing of fish by poisoning water or by explosives was banned under the Act.</p> <p>The Indian Ports Act, 1908 - prohibits discharge of oil in port areas.</p> <p>The Indian Forest Act, 1927 - prohibits poisoning of water within forest.</p> <p>The factories Act, 1948.</p> <p>The River Boards Act of 1956 - enables the States to enrol the Central government in setting up an Advisory River Board to resolve issues in inter-state co-operation.</p>
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*Contd...*

Air Pollution	Bengal Smoke Nuisance Act 1905 - to prevent air pollution in Kolkata and to protect marble structure of Victoria Memorial. Bombay Smoke Nuisance Act, 1912 - to prevent air pollution in Bombay.
Wildlife Conservation	The Madras Wild Elephant Act, 1873 - was first wildlife Act to protect wild Elephants. The Elephant Preservation Act, 1879 - Act to protect wild Elephants. The Wild Bird Protection Act, 1887- prohibit trade in wild birds in notified closed season for breeding. The Wild Birds and Animal Protection Act, 1912- Regulated hunting of listed species and closed season but it ignored the need for control in wildlife trade. The Hailey National Park Act, 1937- to protect the unique ecosystem of Western Himalayas in Corbett National park then Hailey National Park.
Forest Conservation	Indian Forest Act, 1865 Indian Forest Act, 1878 Forest Policy of India, 1884 Indian Forest Act, 1927- It was enacted to 'consolidate the law related to forest, the transit of forest produce, and the duty levied on timber and other forest produce'.

Analysis of Environmental governance in pre-independent India clearly shows that there was genuine concern for improving air and water quality. However, all forest related Acts and policies increasingly monopolies common property resource into State controlled resource.

Environment, as rightly said by Patricia, H Mische, knows no political boundaries, and accepts only bio-regional or eco boundaries. The problem of environment has become issue of concern both at national and International level. The problems related to environment received Government's attention for the first time in **India's Fourth Plan (1969-74)**. This document has laid down:

"Planning for harmonious development recognises the unity of nature and man. Such planning is possible only on the basis of a comprehensive appraisal of environmental issues. There are instances in which timely, specialised advice on environmental aspects could have helped in project design and in averting subsequent adverse effect on the environment leading to loss of invested resources. It is necessary, therefore, to introduce the environmental aspect into our planning and development". At International level, the United Nations, conference on the human environment, held in Stockholm in the

year 1972 was a landmark event for the protection of environment. This Stockholm conference suggested that developing countries must direct their efforts towards balancing their population growth. The 42nd amendment to the constitution of India, in 1976 introduced significant provisions in constitution relating to the environment protection and has been already discussed earlier in this Chapter. Following the Stockholm Conference, to identify and investigate the problems of preserving or improving the human environment in the country as well as to propose a solution for environmental problems the National Committee, on Environmental Planning and Co-ordination (NCEPC) was set up in 1972, under union department of science and technology. This High-level advisory body was charged, among others, with reviewing policies and programmes which have a significant bearing on quality of environment and advise Government on environmental management and to improve the human environment in the context of population growth and economic development. It was to advise and suggest on existing legislation and regulation and administrative machinery and also for promoting and strengthening environmental research, education and awareness. The NCEPC in its existence of eight years (1972-80) provided a major thrust in environmental planning, approval of projects in selected sectors, human settlement planning, surveys of wetlands and spread of environmental awareness and research. The Indian wildlife (protection Act,) was passed in 1972 under Article 252 of the constitution on the requests from States. The water prevention and control of pollution Act, 1974 and the rules 1975 laid down the foundation of new era in Indian environmental law. The central pollution control board was set up to oversee implementation of the provisions of the Act. The separate statutory bodies like forest department to oversee compliance of law related to State level to oversee compliance of law on water pollution were set up. Sec 24 of the Act prohibits disposal of polluting matter to a stream or well or on land. However, it allows discharge of sewage or trade effluent after treatment. After the Stockholm Conference, constitutional sanction was given to environment protection through the 42nd Amendment in 1976, as incorporated into the Directive Principles of State Policy and Fundamental Rights and Duties.

In 1980, the first National Committee, The Tiwari Committee was formed to consider the issues relating to environmental legislation. It enlisted about 200 add Laws, pertaining to environmental protection. The main recommendations are:

- ◆ Comprehensive reviews and reformation of some of the prevalent Central and State Acts such as the Insecticides Act, 1968; the Water (Prevention and Control of Pollution) Act, 1974; and the India Forest Act, 1972.
- ◆ New legislation for areas of action not covered by the present laws (such as those concerning toxic substances). The introduction of “Environment Protection” in the Concurrent List of the seventh Schedule. The committee, *inter alia*, recommended to establish of a separate Department of Environment.

Let us examine the provisions related to environmental protection in various five year plans in India:

### **Sixth Plan (1980-1985)**

- ◆ Accepting the recommendations of Tiwari committee, Department of Environment was set up on November 1, 1980 by the Government and the department was assigned the following functions:
  - 1) To act as a nodal agency for environmental protection and eco-development in the country.
  - 2) To carry out environmental appraisal of development projects through other ministries/agencies as well as directly.
  - 3) To have administrative responsibility for:
    - i) Pollution monitoring and regulation.
    - ii) Conservation of critical ecosystems designated as Biosphere Reserves.
    - iii) Conservation of marine ecosystem.
- ◆ Major activities in the areas of water and air pollution control, Environment Impact Assessment (EIA), natural living resource conservation, ecological studies by the Botanical Survey of India (BSI) and Zoological Survey of India (ZSI), environmental information, education, training and awareness.
- ◆ A ten year review in respect of appendices on flora for CITES prepared.
- ◆ An integrated study of the Ganga basin completed and integrated River Basin Studies for the Brahmaputra, Indus and Narmada proposed to be taken up.
- ◆ The Wildlife Institute set up in 1982-83 for building up of scientific knowledge on wildlife research.

### **Seventh Plan (1985-1990)**

- ◆ Significant progress under the Ganga Action Plan, forestry and wildlife, wasteland development, and island development sectors.
- ◆ Programme on waste recycling and prevention of coastal pollution initiated.
- ◆ EIA of major river valleys and hydroelectric, mining, industrial and thermal power projects carried out through Environmental Appraisal Committee.
- ◆ National Forest Policy formulated in 1988 with the principal aim of ensuring environmental stability and maintenance of the ecological balance.
- ◆ Implementation of the 10 point National Wildlife Plan initiated.
- ◆ Considerable increase in the total area brought under afforestation programme and the National Development Board set up in 1985.

### **Eighth Plan (1992-1997)**

- ◆ Activities for abatement of pollution undertaken, which included management and operation of national air and water quality network, controlling pollution at sources,

river basin studies, hazardous waste management; development of criteria for eco-labelling of consumer products, remedial measures for vehicular pollution; training of personnel engaged in controlling pollution and organising nationwide awareness programme for prevention and control of pollution, promoting adoption of Clean Technologies in small scale industries.

- ◆ Incentives to adopt efficiency enhancing and waste minimisation practices like, enhancement of cess rates on water consumption, duty concessions on import of certain pollution control equipment, accelerated depreciation on pollution abatement equipment.
- ◆ Various carrying capacity studies (Doon Valley, National Capital Region), on improving methodology and techniques of EIA carried out.
- ◆ BSI and ZSI surveys conducted.
- ◆ Scheme on Biodiversity Conservation was initiated in 1991-92.
- ◆ Programme such as Man and Biosphere Programme, The environmental Research Programme, research climate change was undertaken.
- ◆ More than 5000 clubs launched for providing environmental education amongst children.
- ◆ National River Conservation Plan approved in 1995.
- ◆ Several steps for afforestation and eco-development undertaken.

#### **Ninth Plan (1997-2002)**

- ◆ Programme under the above Plan included attempts to phase out lead in motor spirit, improvement in quality of high speed diesel.
- ◆ Focused on integration of environmental concerns with decision making.
- ◆ Area specific programmes also stressed upon like National River Conservation Programme that started National Lake Conservation Programme. Taj Trapezium, schemes to protect Himalayan ecosystem and biodiversity, programmes for sustainable development of islands; Islands Development Authority (IDA) was constituted in 1998.
- ◆ Initiatives towards strengthening, environmental statistics and mapping, management of biosphere reserves, biodiversity conservation, environmental education and training.
- ◆ Schemes similar to 8th Plan for afforestation, wetland development also envisaged by the Plan.

#### **Tenth Plan (2002-2007)**

- ◆ Reconciliation of population and economic growth with environmental conservation perceived as an urgent necessity.
- ◆ Action plans to be initiated for reducing pollution levels.

- ◆ Management of hazardous wastes through collection, processing and disposal to be given priority.
- ◆ Emphasis on environmental educational education amongst masses through the involvement of NGOs, Youth educational institutes.

### Eleventh plan (2007-2012)

The Monitorable Socio-Economic Targets of the 11th Plan for Environment in India are:

- ◆ Increase forest and tree cover by 5 percentage points.
- ◆ Attain WHO standards of air quality in all major cities by 2011-12.
- ◆ Treat all urban waste water by 2011-12 to clean river waters.
- ◆ Increase energy efficiency by 20 percentage points by 2016-17.

### Twelfth Plan (2012-2017)

In December 2012, the Planning Commission published the near final draft **12th Five Year Plan - Faster, More Inclusive and Sustainable Growth**. The 12th Plan says that '[it] must be guided by a vision of India moving forward in a way that would ensure a broad-based improvement in living standards of all sections of the people through a growth process which is faster than in the past, more inclusive and also more environmentally sustainable'. Simultaneous achievement of these elements is seen as crucial for the success of the Plan. Thus the 12th Plan calls for more attention to be given to problem of sustainability. It states that 'No development process can afford to neglect the environmental consequences of economic activity, or allow unsustainable depletion and deterioration of natural resources' and several chapters are devoted to the issues of water, land use, environment, forestry and wildlife.

There is wide ranging discussion of how India should deal with the effects of climate change whilst an international agreement to tackle this issue remains to be reached. The National Action Plan for climate change has evolved with eight component missions and implementation of these missions is seen as an integral part of the 12th Plan. The Plan is a substantial document in three volumes. The first volume is an overarching document, while, the second and third volumes look in more detail at the economic and social sectors respectively. Unit Four on Sustainable Development summarises the findings of the Expert Group on Low Carbon Strategies. One of the interesting things in the Plan is the renewed interest in wind power. Unit Five on Water sets out the daunting challenges faced by Indian society and economy.

Water tables are falling and this comes at a time of rapid industrialising economy and urbanising society. Climate change, of course, poses new challenges with its effects on the hydrological cycle. It asserts that there is a need for a paradigm shift in the management of water resources in India. Unit Five on Environment, Forestry and Wildlife posits a new set of targets to be monitored covering, *inter alia*, environment and climate change, forests and livelihoods and ecosystem and biodiversity.

Finally, science and technology is recognised as playing a critical role in the delivery of the 12th Plan. There is an ambition to increase investment in R&D from 1% to 2% of GDP. Chapter Eight sets out the plans for the six major science Ministries and all see a substantial increase in funding. Specific focus areas for the 12th Plan are: a) Enrichment of Knowledge Base - the aim is to position some of its R&D institutions in the top 50 in the world; b) Human Resource Development and University Interaction - a radical transformation of the science education system to improve the quality of S&T education and research at university level; c) Aligning S&T to Development Needs - to develop solutions to issues that are important for the country's development goals, particularly in areas of energy, water, sanitation, farm production, health care, waste disposal, computing and communications and e-infrastructure.

If the ambition of investing 2% of GDP on R&D is achieved and the quality of its research base is improved, then India, by virtue of its size is likely to be one of the most important scientific nations in the world. What is certain is that India faces a host of challenges where capacity and capability in S&T and an innovation system that translates knowledge into solutions is going to be crucial.

Government of India has done many efforts for environment protection and the list of environmental Acts, Rules and Notifications in India from 1980 to till are briefly discussed below:

#### **i) Water pollution**

Water (Prevention and Control of Pollution) Act, 1974, amended 1988 - The Act prohibits the discharge of pollutants into water bodies beyond a given standard, and lays down penalties for non-compliance.

Water (Prevention and Control of Pollution) Cess Act, 1977, amended 1992, 2003- The Act provides for a levy and collection of a cess on water consumed by industries and local authorities and aims at augmenting the resources of the Central and State boards for prevention and control of water pollution.

The Water (Prevention and Control of Pollution) Cess Rules 1978 - Defines standards and indications for the kind of and location of meters that every consumer of water is required to install.

#### **ii) Air pollution**

Air (Prevention and Control of Pollution) Act, 1981- Prohibits the use of polluting fuels and substances and regulates appliances that give rise to air pollution. It entrusts the power of enforcing this Act to the CPCB, for establishing or operating any industrial plant in the pollution control area the consent from State boards is required. The board has to test the air in air pollution control areas, inspect pollution control equipment, and manufacturing processes.

The Air (Prevention and Control of Pollution) Rules, 1982, amended - Defined the procedures for conducting meetings of the boards; the powers of the presiding officers,

about the decision-making, the quorum and manner in which the records of the meeting were to be set. They also prescribe the manner and the purpose for which assistance can be taken from specialists and the fee to be paid to them.

### **iii) Environment protection**

Environment Protection Act (EPA), 1986 is enacted under Article 253 of the constitution in pursuant need for the general legislation for environment protection and to fill in uncovered gaps in areas of major environmental hazards. Under this Act, the Central government is empowered to take necessary measures for protecting and improving the quality of the environment, it can set standards for emissions and discharges; regulation of the location of industries; management of hazardous wastes, and for protection of public health and welfare.

Environment Protection Rules 1986 - It

- ◆ lays down procedures for setting standards of emission or discharge of environmental pollutants.
- ◆ prescribes the parameters for the Central Government under which it can issue orders of prohibition and restrictions on the location and operation of industries in different areas.

Environment (Siting for Industrial Projects) Rules, 1999 - It provides for Prohibition for setting up of certain industries; for establishment of New Units with certain conditions; puts Restrictions on the units in Taj Trapezium; lays conditions for establishment of New Units around Archaeological Monuments.

### **iv) Noise pollution**

Noise pollution (Regulation and Control) Rules, 2000 formed under EPA amended, 2002 and 2006 - It provides for such terms and conditions as are necessary to reduce noise pollution. It permits the use of loud speakers or public address systems during night hours (between 10:00 p.m. to 12:00 midnight) or on during any occasion of cultural or religious festival.

### **v) Ozone layer depletion**

Ozone Depleting Substances (Regulation and Control) Rules, 2000 - The Rules have been laid down for the regulation of production and consumption of ozone depleting substances.

### **vi) Coastal regulation zone**

CRZ Notification, issued by Central government by virtue of its power under EPA it declares limits of and prohibitions in coastal regulation zones; there are 30 notifications from 1997-2009. The notifications puts regulations on various activities, including construction, are regulated. It provides for some protection to the backwaters and estuaries.

### **vii) Environment impact assessment**

Notification, 1994, amended 2006 - Lays down the some projects or activities that require prior environmental clearance from the concerned regulatory authority and also stages

in the of prior Environment Clearance (EC) for new projects; constitution of State Level Environment Impact Assessment Authority (SEIAA).

#### **viii) Animal welfare**

Prevention of Cruelty to Animals Act, 1960 and Rules (18), 1965-2006 - The Act was passed to prevent the infliction of unnecessary pain or suffering on animals and for that purpose to amend the law relating to the prevention of cruelty to animals. For the promotion of animal welfare generally and for the purpose of protecting animals from being subjected to unnecessary pain or suffering, in particular, Animal Board of India was established by the Central government.

#### **ix) Bio diversity conservation**

Biological Diversity Act, 2002 - provides for the conservation of biological diversity, sustainable use of its components, and fair and equitable sharing of the benefits arising out of the use of biological resources and knowledge associated with it; Rules, 2004.

#### **x) Forest conservation**

Forest Conservation Act, 1980, amended 1988, Rules, 1981, amended 1988, 1992, 2003 - Provides for the protection of and the conservation of the forests.

#### **xi) Wildlife protection**

The Indian Wildlife (Protection) Act, 1972, amended 1993, The Wildlife (protection) Amendment Act, 2002 and set of 9 Rules, 1973-2003 - The Act provides for the protection of birds and animals and for all matters connected to it, whether it is their habitat or the waterhole or the forests that sustains them.

#### **xii) Hazardous substances management - 12 Rules till 2007**

- ◆ The Batteries (Management and Handling) Rules, 2001- It is applicable to every manufacturer, importer, re-conditioner, assembler, dealer, auctioneer, consumer, and bulk consumer who are involved in the manufacture, processing, sale, purchase, and use of batteries or components so that it can be regulated and to ensure the environmentally safe disposal of used batteries;
- ◆ The Municipal Solid Waste Management and Handling Rules, 2000 - It makes every municipal authority responsible for the collection, segregation, storage, transportation, processing and disposal of municipal solid wastes;
- ◆ The Recycled Plastics Manufacture and Usage Rules, 1999 Amended Rules, 2003 - It puts restriction on manufacture, sale, distribution, and use of plastic carry bags and containers less than 8' 12" (20" 30 cms) in size and having minimum thickness of 20 micron;
- ◆ The Rules for the Manufacture, Use, Import, Export and Storage of Hazardous micro-organisms Genetically engineered organisms or cells, 1989, amended 2006, 2007- It was introduced with a view to protect the environment, nature, and

health, in connection with the application of gene technology and microorganisms;

- ◆ The Manufacture, Storage and import of Hazardous Chemical Rules, 1989, amended 2000 - It sets up an authority to inspect, once a year, the industrial activities connected with hazardous chemicals and isolated storage facilities;
- ◆ The Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008, 2009 - The insertion of the word transboundary movement is a euphemism for hazardous waste trade by terming it as recyclable metal scrap trade or commerce in end-of-life products. Part B of the Rules provides elaborate "List of hazardous wastes applicable for import and export not requiring prior informed consent". The list includes metal and metal bearing wastes under which iron and steel scrap, thorium scrap, chromium scrap, rare earth scrap, zinc scrap; scrap assemblies from electric power generation and several others;
- ◆ Biomedical Waste Management and Handling Rules, 1998 amended 2003 - The health care institutions are legally abided to streamline the process of proper handling of hospital waste such as segregation, disposal, collection and treatment.

### **xiii) National environment**

The National Environment Tribunal Act, 1995 - It has been created to award compensation for damages to persons, property and the environment that arose from any activity involving hazardous substances.

The National Environment Appellate Authority Act, 1997 has been created to hear appeals with respect to restrictions of areas in which classes of industries etc. are carried out or prescribed subject to certain safeguards under the Environment Protection Act.

### **xiv) Public liability insurance**

The Public Liability Insurance Act, 1991, amended 1992 - provides for public liability insurance with the purpose to provide immediate relief to the persons affected (injured or in case of death) by accident while handling any hazardous substance. The Act was amended in 1992, and the Central government was authorised to establish the Environmental Relief Fund, for making relief payments and The Public Liability Insurance Rules, 1992, amended 1993.

### **Below are National Policies related to Environment**

There are number of Policies framed by government of India on various environmental issues like National Forest Policy, 1988 - The main aim is to maintain one third of country's geographical area under forest and tree cover. In the hills and in mountainous regions, the aim is to maintain two-third of the area under such cover in order to prevent erosion and land degradation and to ensure the stability of the fragile ecosystem. The principal aim of Forest Policy must be to ensure environmental stability and maintenance of ecological balance including atmospheric equilibrium which are vital for sustenance of all life forms, human, animal and plant.

National conservation strategy and policy statement on Environment and Development policy, 1992 - The aim is to ensure that the demand on the environment from which we derive our sustenance, does not exceed its carrying capacity for the present as well as future generations; lays down the guidelines to weave environmental considerations into the fabric of our national life and for reorienting policies and action in unison with the environmental perspective.

- ◆ National Policy on Abatement of Pollution, 1992
- ◆ National Slum Policy, 1999
- ◆ National Agricultural Policy, 2000
- ◆ National Population Policy, 2000
- ◆ National Health Policy, 2002
- ◆ National Water Policy, 2002
- ◆ Science and Technology Policy, 2002
- ◆ National Policy for Resettlement and Rehabilitation for Project Affected Families, 2003
- ◆ National Policy on Tribals and Forest, 2004
- ◆ National Environment Policy, 2006

All of these policies basically recognised the need for sustainable development in their specific contexts and have formulated necessary strategies to give effect to such recognition. However by the National Environment Policy, 2006, Government seeks to extend the coverage, and fill in gaps that still exist, in light of present knowledge and accumulated experience.

### **International agreements on environmental issues**

India has obligations under numerous international treaties and agreements that relate to environmental issues and is signatory to a number of multilateral environment agreements (MEA) and conventions. An overview of some of the major MEAs and India's obligations under these is presented below (International Environmental Law, Shyam Divan).

- ◆ The Antarctic Treaty (Washington, 1959) 402 UNTS 71. Entered into force 23 June 1961. India ratified with qualifications, 19 August 1983.
- ◆ Convention on Wetlands of International Importance, Especially as Waterfowl Habitat (Ramsar, 1971). 11 I.L.M. 963 (1972). Entered into force 21 December 1975. India, 1 October 1981.
- ◆ Convention Concerning the Protection of the World Cultural and Natural Heritage (Paris, 1972). 11 I.L.M. 1358 (1972). Entered into force 17 December 1975. India signed, 16 November 1972.

- ◆ Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), (Washington, 1973) 12 I.L.M. 1055 (1973). Entered into force 1 July 1975. India signed, 9 July 1974; ratified 20 July 1976.
- ◆ Protocol of 1978 Relating to the International Convention for the Prevention of Pollution from Ships, 1973 (MARPOL) (London, 1978). Entered into force 2 October 1983. India ratified with qualifications, 24 September 1986.
- ◆ Convention on the Conservation of Migratory Species of Wild Animals (Bonn, 1979) 19 I.L.M. 15 (1980). Entered into force 1 November 1983. India signed, 23 June 1979; ratified 4 May 1982.
- ◆ Convention on the Conservation of Antarctic Marine Living Resources (Canberra, 1980). 19 I.L.M. 841 (1980). Entered into force 7 April 1982. India ratified, 17 June 1985.
- ◆ United Nations Convention on the Law of the Sea (Montego Bay, 1982). 21 I.L.M. 1261 (1982). Entered into force 16 November 1994. India signed, 10 December 1982.
- ◆ Convention for the Protection of the Ozone Layer (Vienna, 1985). 26 I.L.M. 1529 (1987). Entered into force 22 September 1988. India ratified, 18 March 1991.
- ◆ Protocol on Substances That Deplete the Ozone Layer (Montreal, 1987). 26 I.L.M. 1550 (1987). Entered into force 1 January 1989. India acceded, 19 June 1992.
- ◆ Amendments to the Montreal Protocol on Substances That Deplete the Ozone Layer (London, 1990). 30 I.L.M. 541 (1991). Entered into force 10 August 1992. India acceded, 19 June 1992.
- ◆ Convention on the Control of Trans boundary Movements of Hazardous Wastes and Their Disposal (Basel, 1989). 28 I.L.M. 657 (1989). Entered into force 5 May 1992. India signed, 5 March 1990; ratified 24 June 1992.
- ◆ United Nations Framework Convention on Climate Change (Rio de Janeiro, 1992). 31 I.L.M. 849 (1992). Entered into force 21 March 1994. India signed, 10 June 1992; ratified 1 November 1993. The primary goals of the UNFCCC were to stabilise greenhouse gas emissions at levels that would prevent dangerous anthropogenic interference with the global climate.
- ◆ Convention on Biological Diversity (CBD) (Rio de Janeiro, 1992) . 31 I.L.M. 818 (1992). Entered into force 29 December 1993. India signed, 5 June 1992; ratified 18 February 1994. The CBD has three main thrust areas - conservation of biodiversity, sustainable use of biological resources and equitable sharing of benefits arising from their sustainable use.
- ◆ Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa (Paris, 1994). 33 I.L.M 1332 (1994). Entered into force, 26 December 1995; India signed, 14 October 1994; ratified 17 December 1996.
- ◆ International Tropical Timber Agreement (Geneva, 1994). 33 I.L.M. 1016 (1994). Entered into force 1 January 1997. India signed, 17 September 1996. India ratified 17 October 1996.

- ◆ Protocol on Environmental Protection to the Antarctica Treaty (Madrid, 1991). Entered into force 15 January 1998.

In the Constitution of India it is clearly stated that it is the duty of the State to 'protect and improve the environment and to safeguard the forests and wildlife of the country'. It imposes a duty on every citizen 'to protect and improve the natural environment including forests, lakes, rivers, and wildlife'. Reference to the environment has also been made in the Directive Principles of State Policy as well as the Fundamental Rights. The Department of Environment was established in India in 1980 to ensure a healthy environment for the country. This later became the Ministry of Environment and Forests in 1985.

The constitutional provisions are backed by a number of laws - Acts, rules and notifications. The EPA (Environment Protection Act), 1986 came into force soon after the Bhopal Gas Tragedy and is considered an umbrella legislation as it fills many gaps in the existing laws. Thereafter a large number of laws came into existence as the problems began arising, for example, Handling and Management of Hazardous Waste Rules in 1989.

- 1986 - The Environment (Protection) Act** authorises the Central government to protect and improve environmental quality, control and reduce pollution from all sources, and prohibit or restrict the setting and /or operation of any industrial facility on environmental grounds.
- 1986 - The Environment (Protection) Rules** lay down procedures for setting standards of emission or discharge of environmental pollutants.
- 1989 - The objective of Hazardous Waste (Management and Handling) Rules** is to control the generation, collection, treatment, import, storage, and handling of hazardous waste.
- 1989 - The Manufacture, Storage, and Import of Hazardous Rules** define the terms used in this context, and sets up an authority to inspect, once a year, the industrial activity connected with hazardous chemicals and isolated storage facilities.
- 1989 - The Manufacture, Use, Import, Export and Storage of hazardous Micro-organisms/Genetically Engineered Organisms or Cells Rules** were introduced with a view to protect the environment, nature, and health, in connection with the application of gene technology and micro-organisms.
- 1991 - The Public Liability Insurance Act and Rules and Amendment, 1992** was drawn up to provide for public liability insurance for the purpose of providing immediate relief to the persons affected by accident while handling any hazardous substance.
- 1995 - The National Environmental Tribunal Act** has been created to award compensation for damages to persons, property, and the environment arising from any activity involving hazardous substances.
- 1997 - The National Environment Appellate Authority Act** has been created to hear appeals with respect to restrictions of areas in which classes of industries etc. are carried out or prescribed subject to certain safeguards under the EPA.

- 1998 - The Biomedical Waste (Management and Handling) Rules** is a legal binding on the health care institutions to streamline the process of proper handling of hospital waste such as segregation, disposal, collection and treatment.
- 1999 - The Environment (Siting for Industrial Projects) Rules, 1999** lay down detailed provisions relating to areas to be avoided for sitting of industries, precautionary measures to be taken for site selecting as also the aspects of environmental protection which should have been incorporated during the implementation of the industrial development projects.
- 2000 - The Municipal Solid Wastes (Management and Handling) Rules, 2000** apply to every municipal authority responsible for the collection, segregation, storage, transportation, processing and disposal of municipal solid wastes.
- 2000 - The Ozone Depleting Substances (Regulation and Control) Rules** have been laid down for the regulation of production and consumption of ozone depleting substances.
- 2001- The Batteries (Management and Handling) Rules, 2001** rules shall apply to every manufacturer, importer, re-conditioner, assembler, dealer, auctioneer, consumer, and bulk consumer involved in the manufacture, processing, sale, purchase, and use of batteries or components so as to regulate and ensure the environmentally safe disposal of used batteries.
- 2002 - The Noise Pollution (Regulation and Control) (Amendment) Rules** lay down such terms and conditions as are necessary to reduce noise pollution, permit use of loud speakers or public address systems during night hours (between 10:00 p.m. to 12:00 midnight) on or during any cultural or religious festive occasion.
- 2002 - The Biological Diversity Act** is an Act to provide for the conservation of biological diversity, sustainable use of its components, and fair and equitable sharing of the benefits arising out of the use of biological resources and knowledge associated with it.

### Forest and wildlife

- 1927 - The Indian Forest Act and Amendment, 1984**, is one of the many surviving colonial statutes. It was enacted to 'consolidate the law related to forest, the transit of forest produce, and the duty leviable on timber and other forest produce'.
- 1972 - The Wildlife Protection Act, Rules 1973 and Amendment 1991** provides for the protection of birds and animals and for all matters that are connected to it whether it be their habitat or the waterhole or the forests that sustain them.
- 1980 - The Forest (Conservation) Act and Rules, 1981**, provides for the protection of and the conservation of the forests.

### Water

- 1882 - The Easement Act** allows private rights to use a resource that is, groundwater, by viewing it as an attachment to the land. It also states that all surface water belongs to the State and is a State property.

- 1897 - The Indian Fisheries Act** establishes two sets of penal offences whereby the government can sue any person who uses dynamite or other explosive substance in any way (whether coastal or inland) with intent to catch or destroy any fish or poisonous fish in order to kill.
- 1956 - The River Boards Act** enables the States to enrol the Central government in setting up an Advisory River Board to resolve issues in inter-state co-operation.
- 1970 - The Merchant Shipping Act** aims to deal with waste arising from ships along the coastal areas within a specified radius.
- 1974 - The Water (Prevention and Control of Pollution) Act** establishes an institutional structure for preventing and abating water pollution. It establishes standards for water quality and effluent. Polluting industries must seek permission to discharge waste into effluent bodies. The CPCB (Central Pollution Control Board) was constituted under this Act.
- 1977 - The Water (Prevention and Control of Pollution) Cess Act** provides for the levy and collection of cess or fees on water consuming industries and local authorities.
- 1978 - The Water (Prevention and Control of Pollution) Cess Rules** contains the standard definitions and indicate the kind of and location of meters that every consumer of water is required to affix.
- 1991 - The Coastal Regulation Zone Notification** puts regulations on various activities, including construction, are regulated. It gives some protection to the backwaters and estuaries.

## Air

- 1948 - The Factories Act and Amendment in 1987** was the first to express concern for the working environment of the workers. The amendment of 1987 has sharpened its environmental focus and expanded its application to hazardous processes.
- 1981 - The Air (Prevention and Control of Pollution) Act** provides for the control and abatement of air pollution. It entrusts the power of enforcing this Act to the CPCB .
- 1982 - The Air (Prevention and Control of Pollution) Rules** defines the procedures of the meetings of the Boards and the powers entrusted to them.
- 1982 - The Atomic Energy Act** deals with the radioactive waste.
- 1987 - The Air (Prevention and Control of Pollution) Amendment Act** empowers the Central and State pollution control boards to meet with grave emergencies of air pollution.
- 1988 - The Motor Vehicles Act** states that all hazardous waste is to be properly packaged, labelled and transported.

# CONCEPT OF LAW AND POLICY

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### 3.1 Introduction

'Environment' is a very comprehensive term. It includes within its ambit a wide variety of phenomenon. It is a dynamic term that may be used to describe a limited area on one hand, and the entire planet on the other. The term Environment may be perceived in different connotations. There numerous definitions of the term as provided by different National and International legal instruments.

Generally speaking, Environment includes the external conditions, resources, stimuli etc. with which an organism interacts. The Preamble of the United Nations Declaration on Human Environment, adopted in Stockholm in June 1972 states, "Man is both creature and moulder of his environment, which gives him physical substance and affords him the opportunity for intellectual, moral, social and spiritual growth."

The environment is clearly at risk from a variety of sources of harm, mostly of human origin. In order to tackle this problem it is important that we develop strategies for modifying human behaviour towards environmentally benign practices and away from environmentally damaging ones. In very broad terms, techniques for modifying human behaviour can be thought of as falling into two types: incentives and disincentives. Law is important as it creates a framework within which incentives and disincentives can operate.

Law is all pervasive. Other methods for influencing human behaviour are to a certain extent, voluntary or optional. Education, ethics, peer and family pressure: these all

apply in various degrees. Law, on the other hand, cannot easily be avoided. It is axiomatic to the “rule of law” that law in a society applies equally to everyone at all times.

## 3.2 Concept of Law

Law has been described as ‘generally...a way of regulating human behaviour’<sup>1</sup>. Yet such simple formulations leave many issues unresolved. Hence, there is a need to closely consider the concept of “law”.

### ◆ Law as Commands

One school of thought is that the only thing that count as ‘laws’ are commands of a sovereign, backed up by sanctions in the event of disobedience. A sovereign, for Austin, is an individual or body that is clearly identifiable, habitually obeyed by society, and is not habitually obedient to any other superior. One problem with the command concept of law is that it does not fit very readily with laws that merely empower or permit one to do something. It fails adequately to separate legal coercion from non-legal coercion.

### ◆ Law as Rules

Problems with ‘command’ theories of law led to the development of “rule” theories of law. Hart (1961), the most eminent rule theorists, divided legal rules into primary rules and secondary rules. Primary rules have substantive content (e.g. it is an offence to pollute a watercourse). Secondary rules are rules about primary rules. It is the possession of both primary and secondary rules which according to Hart, demarcates a legal system from other institutions for social control. This implies, incidentally, that less formal systems of social conventions and rules as much as those possessed by certain indigenous peoples may not achieve the status of ‘legal system’.

The rule model of law faces certain problems. First, what should courts do if the law does not contain a rule governing a particular case or if the rule seems vague?

Hart’s answer is that laws, whilst generally comprehensive and clear, there may be situations where the judges must exercise discretion. This would imply that we must accept that judges actually make law where the legislature has been unclear or left a gap. The discretion explanation itself however is subject to criticism. Second, it is not certain that any clear rules exist. Some rules are made not by the legislature but by the judges. In the case of judge-made rules (precedents) the scope of any given rule is often unclear.

### ◆ Laws as Principles

Not everyone agrees that law consists of a body of clear rules surrounded by a woolly mantle of judicial discretion. Dworkin (1977), for one, famously argued that law also contains principles and does not contain discretion. He distinguished rules and principles

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<sup>1</sup> Mc Eldowney and Mc Eldowney 1996, Volume 3.

as follows. He said that rules apply in an “all or nothing” fashion (e.g. river pollution is forbidden) whereas principles have the quality of ‘weight’; that is to say, a principle is never absolute and is always subject to being balanced with and against other principles. An example of a principle might be ‘a polluter shall pay for environment damage caused’.

Unlike Hart, Dworkin denied that judges have discretion when faces with unclear or seemingly unjust cases. Instead he asserted that, in such hard access, judges should reach a solution based on the principles of their particular legal system.

Principles which can be found in most legal systems include- proportionality, nondiscrimination, natural justice, and equitable principles, the idea that law contains legal principles is not unproblematic. One issue is whilst Dworkin characterises principles as having ‘weight’, he never explains how this ‘weight’ is to be ascertained. It is not clear that Dworkin’s characterisation of rules as absolute is correct; it may be that where rules appear to conflict they can also be ‘weighted’ against one another. If that is the case then the distinction between the two types of law collapses and the need for principles disappears. A third problem is that of identification. Protocols exist for identifying legal rules, the same does not appear to be true of legal principles.

#### ◆ Law as Ethics or Morality

The argument that there is some degree of necessary connection between law and morality (or ethics) is generally known as natural law theory. More specifically, natural law is the idea that law must have a certain reasonable moral content in order to be called law at all. Part of importance of natural law thinking is that it can be used to undermine unethical legislation and defeat attempts to justify morally repugnant acts (e.g. genocide) by appeal to the claims of ‘only following the law’.

Human rights law which is driven by natural law theories is of increasing Toubes Muniz 1997; Alexander and Kress 1997 Aquinas 1991; Finnis 1980 importance in environmental protection. The recent development of the field of ‘environmental ethics’ raises the question of a role for natural law in promoting or protecting basic ethical values in nature.

Natural law theory is subject to certain criticisms. Most obvious is the difficulty of ascertaining or reaching agreement on, those ethical principles and values that should inform or limit law’s content.

#### ◆ Law as Social Norm and Customs

The western concept of law is not shared universally. In particular, many indigenous peoples exist within less formalised systems of law in which the boundary between social norms and ‘legal’ rules is blurred or non-existent. Laws based on local custom- ‘customary law’ - continue to be of considerable practical importance in many developing countries, especially in Africa. Individuals often rely on customary rights to protect their environment, and their own homes, from the threat of development. Many important concepts existing

within one legal culture may be absent, or present only in altered form, in others. Sometimes law cannot replace the social functions of tradition and custom. Attitudes and behaviours formed from thousands of years of custom and tradition can be almost impossible for law alone to alter. The practice in China and Hong Kong of eating wild animals, often exotic and/or endangered species has been little affected by laws rendering such practices illegal. Furthermore, the use of wild animal parts in medicinal preparations in these countries is not considered to be morally wrong.

#### ◆ Laws as Written Documents

It is assumed in the modern western society that laws must exist in a written form. This stems, historically, from the need for dissemination of laws. It also acts as a safeguard against corruption or mischievous interpretation. The requirement is met in modern times, by the publication of statutes, or, in civil law countries, 'codification' of the whole environmental law. In recent times access to environmental legislation - at international, regional and domestic levels - has been significantly improved by creation of numerous Internet sites which facilitate Boyle and Anderson 1996, Stavenhagen 1990 access.

The desirability of setting laws in written form led to an increase in written reports of courts' judgment. In addition to the traditional medium of the printed page, decided cases are increasingly disseminated via electronic media such as CD ROMs and the Internet.

### 3.3 Concept of Policy

Policy can be defined as a "course of action or principle adopted or proposed by a government, party, business or individual". Thus, environmental policy focuses on problems arising from human impact on the environment, which retroacts onto human society by having a (negative) impact on human values such as good health or the 'clean and green' environment.

Environmental policy generally addresses environmental issues that include, but are not limited to air, water, land pollution etc, waste management, conservation of wildlife and endangered species as well as natural resources, biodiversity protection, ecosystems management and so on. Relatively recently, environmental policy has also attended to the communication of environmental issues.

Environmental policy instruments are tools used by governments to implement their environmental policies. Governments may use a number of different types of instruments. Recently, policy makers have started to actively explore new tools for environmental protection, notably market-based instruments (e.g. environmental taxes and tradable permits) and voluntary agreements. Such instruments are typically regarded as being more flexible and efficient than traditional ('command and control') regulation. Although the idea of using such tools is not new, the political demand for and use of 'New Environmental Policy Instruments' (NEPIs) has grown considerably in recent years. However, relatively little is known about the politics surrounding their adoption and implementation.

Voluntary measures, such as bilateral agreements negotiated between the government and private firms and commitments made by firms independent of government pressure, are other instruments used in environmental policy. Another instrument is the implementation of greener public purchasing programmes.

Often, several instruments are combined in an instrument mix formulated to address a certain environmental problem. Since environmental issues often have many different aspects, several policy instruments may be needed to adequately address each one. Furthermore, instrument mixes may allow companies and firms greater flexibility in finding ways to comply with government policy while reducing the uncertainty in the cost of doing so. However, instrument mixes must be carefully formulated so that the individual measures within them do not undermine each other or create a rigid and cost-ineffective compliance framework. Also, overlapping instruments lead to unnecessary administrative costs, making implementation of environmental policies more costly than necessary.

**National Environment Policy in India:** At the national level, the Ministry of Environment and Forests had prepared a draft Environment Policy (NEP). The NEP 2006 has since been approved by the Union Cabinet in May 2006. The National Environment Policy builds on the existing policies (e.g. National Forest Policy, 1988; National Conservation Strategy and Policy Statement on Environment and Development, 1992; and the Policy Statement on Abatement of Pollution, 1992; National Agriculture Policy, 2000; National Population Policy, 2000; National Water Policy, 2002 etc). It is intended to be a guide to action: in regulatory reform; programmes and projects for environmental conservation; review and enactment of legislations by Central, State and Local Government.

The dominant theme of this policy is that while conservation of environmental resources is necessary to secure livelihoods and well-being of all, the most secure basis for conservation is to ensure that people dependent on particular resources obtain better livelihoods from the fact of conservation, than from degradation of the resource. The policy also seeks to stimulate partnerships of different stakeholders, i.e. public agencies, local communities, academic and scientific institutions, the investment community, and international development partners, in harnessing their respective resources and strengths for environmental management.

#### ◆ Law Distinguished from Policy

An important distinction in the concept of law is the one between law and policies. Government circulars, strategies or advice documents cannot substitute for the hard-edged character of legislation which is necessary so that 'individuals are in a position of legislation to know their rights in order to rely upon them where appropriate'. Two factors distinguish law from policy. First, policy is generally advisory in nature, recommending objectives or setting targets, rather than prescribing particular actions. Second, policy may derive from any number of institutional processes whereas law must pass strict secondary rules of recognition before it has legal quality. The 'relegation' of some instrument to the field of policy rather than law does not exclude it from legal

importance. Failure to take relevant policies into account or, conversely, consideration of irrelevant policies may invalidate decisions of public bodies.

Not surprisingly, disputes not infrequently arise concerning the relevance, hence permissibility, of environmental policies taken into account by public authorities. Sometimes environmental policies must be taken into account. For instance, in UK development control law, governing advice about development controls, issued in the form of Planning Policy Guidance (PPG) notes, must be taken into consideration in the determination of applications for planning permission.

### 3.4 Environmental Law and Policy

Environmental Law is a body of law, which is a system of complex and interlocking statutes, common law, treaties, conventions, regulations and policies which seek to protect the natural environment which may be affected, impacted or endangered by human activities. Some environmental laws regulate the quantity and nature of impacts of human activities: for example, setting allowable levels of pollution or requiring permits for potentially harmful activities. Other environmental laws are preventive in nature and seek to assess the possible impacts before the human activities can occur.

Given the broad scope of environmental law, no fully definitive list of environmental laws is possible. Still, for convenience, the topic may be divided into two major subjects: pollution control and remediation and resource conservation, individual exhaustion. The limitations and expenses that such laws may impose on commerce, and the often unquantifiable (non-monetised) benefit of environmental protection, have generated and continue to generate significant controversy.

Environmental law as a distinct system arose in the 1960s in the major industrial economies. It is fast becoming an important and specialised branch of law. Many of its doctrines are gradually becoming clear. The questions addressed to by environmental law are substantive in nature, whereas, the remedies of these issues are mainly procedural. In recent years, environmental law has become seen as a critical means of promoting sustainable development. Policy concepts such as the precautionary principle, public participation, environmental justice, and the polluter pays principle have informed many environmental law reforms in this respect. There has been considerable experimentation in the search for more effective methods of environmental control beyond traditional “command-and control” style regulation. Eco-taxes, tradable emission allowances, voluntary standards such as ISO 14000 and negotiated agreements are some of these innovations.

### 3.5 The Legal and Regulatory Framework for Environmental Protection in India

Over the years, together with a spreading of environmental consciousness, there has been a change in the traditionally-held perception that there is a trade-off between

environmental quality and economic growth as people have come to believe that the two are necessarily complementary. The current focus on environment is not new. Environmental considerations have been an integral part of the Indian culture. The need for conservation and sustainable use of natural resources has been expressed in Indian scriptures, more than three thousand years old and is reflected in the constitutional, legislative and policy framework as also in the international commitments of the country.

Even before India's independence in 1947, several environmental legislation existed but the real impetus for bringing about a well-developed framework came only after the UN Conference on the Human Environment (Stockholm, 1972). Under the influence of this declaration, the National Council for Environmental Policy and Planning within the Department of Science and Technology was set up in 1972. This Council later evolved into a full-fledged Ministry of Environment and Forests (MoEF) in 1985 which today is the apex administrative body in the country for regulating and ensuring environmental protection. After the Stockholm Conference, in 1976, constitutional sanction was given to environmental concerns through the 42nd Amendment, which incorporated them into the Directive Principles of State Policy and Fundamental Rights and Duties.

Since the 1970s an extensive network of environmental legislation has grown in the country. The MoEF and the pollution control boards (CPCB i.e. Central Pollution Control Board and SPCBs i.e. State Pollution Control Boards) together form the regulatory and administrative core of the sector. A policy framework has also been developed to complement the legislative provisions. The Policy Statement for Abatement of Pollution and the National Conservation Strategy and Policy Statement on Environment and Development were brought out by the MoEF in 1992, to develop and promote initiatives for the protection and improvement of the environment. The EAP (Environmental Legal and regulatory framework Action Programme) was formulated in 1993 with the objective of improving environmental services and integrating environmental considerations into development programmes.

## **Legislation for environmental protection in India**

### **a) Water**

Water quality standards especially those for drinking water are set by the Indian Council of Medical Research. These bear close resemblance to WHO standards. The discharge of industrial effluents is regulated by the Indian Standard Codes and recently, water quality standards for coastal water marine outfalls have also been specified. In addition to the general standards, certain specific standards have been developed for effluent discharges from industries such as, iron and steel, aluminium, pulp and paper, oil refineries, petrochemicals and thermal power plants. Legislation to control water pollution are listed below.

### **Water (Prevention and Control of Pollution) Act, 1974**

This Act represented India's first attempts to comprehensively deal with environmental issues. The Act prohibits the discharge of pollutants into water bodies beyond a given

standard, and lays down penalties for non-compliance. The Act was amended in 1988 to conform closely to the provisions of the EPA, 1986. It set up the CPCB (Central Pollution Control Board) which lays down standards for the prevention and control of water pollution. At the State level, the SPCBs (State Pollution Control Board) function under the direction of the CPCB and the State government.

### **Water (Prevention and Control of Pollution) Cess Act, 1977**

This Act provides for a levy and collection of a cess on water consumed by industries and local authorities. It aims at augmenting the resources of the Central and State boards for prevention and control of water pollution. Following this Act, The Water (Prevention and Control of Pollution) Cess Rules were formulated in 1978 for defining standards and indications for the kind of and location of meters that every consumer of water is required to install.

### **b) Air**

#### **Air (Prevention and Control of Pollution) Act, 1981**

To counter the problems associated with air pollution, ambient air quality standards were established, under the 1981 Act. The Act provides means for the control and abatement of air pollution. The Act seeks to combat air pollution by prohibiting the use of polluting fuels and substances, as well as by regulating appliances that give rise to air pollution. Under the Act establishing or operating of any industrial plant in the pollution control area requires consent from State boards. The boards are also expected to test the air in air pollution control areas, inspect pollution control equipment, and manufacturing processes.

National Ambient Air Quality Standards (NAAQS) for major pollutants were notified by the CPCB in April 1994. These are deemed to be levels of air quality necessary with an adequate margin of safety, to protect public health, vegetation and property (CPCB 1995 cited in Gupta, 1999). The NAAQS prescribe specific standards for industrial, residential, rural and other sensitive areas. Industry-specific emission standards have also been developed for iron and steel plants, cement plants, fertilizer plants, oil refineries and the aluminium industry. The ambient quality standards prescribed in India are similar to those prevailing in many developed and developing countries. To empower the Central and State pollution boards to meet grave emergencies, the Air (Prevention and Control of Pollution) Amendment Act, 1987, was enacted. The boards were authorised to take immediate measures to tackle such emergencies and recover the expenses incurred from the offenders. The power to cancel consent for non-fulfilment of the conditions prescribed has also been emphasized in the Air Act Amendment.

The Air (Prevention and Control of Pollution) Rules formulated in 1982, defined the procedures for conducting meetings of the boards, the powers of the presiding officers, decision-making, the quorum; manner in which the records of the meeting were to be set etc. They also prescribed the manner and the purpose of seeking assistance from specialists and the fee to be paid to them. Complementing the above Acts is the Atomic

Energy Act of 1982, which was introduced to deal with radioactive waste. In 1988, the Motor Vehicles Act, was enacted to regulate vehicular traffic, besides ensuring proper packaging, labelling and transportation of the hazardous wastes. Various aspects of vehicular pollution have also been notified under the EPA of 1986. Mass emission standards were notified in 1990, which were made more stringent in 1996. In 2000 these standards were revised yet again and for the first time separate obligations for vehicle owners, manufacturers and enforcing agencies were stipulated. In addition, fairly stringent Euro I and II emission norms were notified by the Supreme Court on April 29, 1999 for the city of Delhi. The notification made it mandatory for car manufacturers to conform to the Euro I and Euro II norms by May 1999 and April 2000, respectively, for new non-commercial vehicle sold in Delhi.

### **c) Forests and wildlife**

The WPA (Wildlife Protection Act), 1972, provides for protection to listed species of flora and fauna and establishes a network of ecologically-important protected areas. The WPA empowers the Central and State governments to declare any area a wildlife sanctuary, national park or closed area. There is a blanket ban on carrying out any industrial activity inside these protected areas. It provides for authorities to administer and implement the Act; regulate the hunting of wild animals; protect specified plants, sanctuaries, national parks and closed areas; restrict trade or commerce in wild animals or animal articles; and miscellaneous matters. The Act prohibits hunting of animals except with permission of authorised officer when an animal has become dangerous to human life or property or so disabled or diseased as to be beyond recovery (WWF-India, 1999). The near-total prohibition on hunting was made more effective by the Amendment Act of 1991.

### **The Forest (Conservation) Act, 1980**

This Act was adopted to protect and conserve forests. The Act restricts the powers of the State in respect of de-reservation of forests and use of forestland for non-forest purposes (the term 'non-forest purpose' includes clearing any forestland for cultivation of cash crops, plantation crops, horticulture or any purpose other than re-forestation).

### **d) General**

#### **Environment (Protection) Act, 1986 (EPA)**

This Act is an umbrella legislation designed to provide a framework for the co-ordination of Central and State authorities established under the Water (Prevention and Control) Act, 1974 and Air (Prevention and Control) Act, 1981. Under this Act, the Central government is empowered to take measures necessary to protect and improve the quality of the environment by setting standards for emissions and discharges; regulating the location of industries; management of hazardous wastes, and protection of public health and welfare.

From time to time the Central government issues notifications under the EPA for the protection of ecologically-sensitive areas or issues guidelines for matters under the EPA.

Some notifications issued under this Act are:

- ◆ Doon Valley Notification (1989), which prohibits the setting up of an industry in which the daily consumption of coal/fuel is more than 24 MT (million tonnes) per day in the Doon Valley.
- ◆ Coastal Regulation Zone Notification (1991), which regulates activities along coastal stretches. As per this notification, dumping ash or any other waste in the CRZ is prohibited. The thermal power plants (only foreshore facilities for transport of raw materials, facilities for intake of cooling water and outfall for discharge of treated waste water/cooling water) require clearance from the MoEF.
- ◆ Dhanu Taluka Notification (1991), under which the district of Dhanu Taluka has been declared an ecologically fragile region and setting up power plants in its vicinity is prohibited.
- ◆ Revdanda Creek Notification (1989), which prohibits setting up industries in the belt around the Revdanda Creek as per the rules laid down in the notification.
- ◆ The Environmental Impact Assessment of Development Projects Notification, (1994 and as amended in 1997). As per this notification:
  - All projects listed under Schedule I require environmental clearance from the MoEF.
  - Projects under the delicensed category of the New Industrial Policy also require clearance from the MoEF.
  - All developmental projects whether or not under the Schedule I, if located in fragile regions must obtain MoEF clearance.
- ◆ Industrial projects with investments above Rs. 500 million must obtain MoEF clearance and are further required to obtain a LOI (Letter of Intent) from the Ministry of Industry, and an NOC (No Objection Certificate) from the SPCB and the State Forest Department if the location involves forestland. Once the NOC is obtained, the LOI is converted into an industrial licence by the State authority.
- ◆ The notification also stipulated procedural requirements for the establishment and operation of new power plants. As per this notification, two-stage clearance for site-specific projects such as pithead thermal power plants and valley projects is required. Site clearance is given in the first stage and final environmental clearance in the second. A public hearing has been made mandatory for projects covered by this notification. This is an important step in providing transparency and a greater role to local communities.
- ◆ Ash Content Notification (1997), required the use of beneficiated coal with ash content not exceeding 34% with effect from June 2001, (the date later was extended to June 2002). This applies to all thermal plants located beyond one thousand kilometers from the pithead and any thermal plant located in an urban area or, sensitive area irrespective of the distance from the pithead except any pithead power plant.

- ◆ Taj Trapezium Notification (1998), provided that no power plant could be set up within the geographical limit of the Taj Trapezium assigned by the Taj Trapezium Zone pollution (Prevention and Control) Authority.
- ◆ Disposal of Fly Ash Notification (1999) the main objective of which is to conserve the topsoil, protect the environment and prevent the dumping and disposal of fly ash discharged from lignite-based power plants. The salient feature of this notification is that no person within a radius of 50 km from a coal- or lignite- based power plant shall manufacture clay bricks or tiles without mixing at least 25% of ash with soil on a weight-to-weight basis. For the thermal power plants the utilisation of the flash would be as follows:
  - Every coal- or lignite-based power plant shall make available ash for at least ten years from the date of publication of the above notification without any payment or any other consideration, for the purpose of manufacturing ash based products such as cement, concrete blocks, bricks, panels or any other material or for construction of roads, embankments, dams, dykes or for any other construction activity.
  - Every coal- or lignite-based thermal power plant commissioned subject to environmental clearance conditions stipulating the submission of an action plan for full utilisation of fly ash shall, within a period of nine years from the publication of this notification, phase out the dumping and disposal of fly ash on land in accordance with the plan.

Genetically Engineered Organisms or Cell were introduced in 1989 with the view to protect the environment, nature and health in connection with gene technology and micro-organisms, under the Environmental Protection Act, 1986. The government in 1991, further decided to institute a national level scheme for environmentally-friendly products called the 'ECOMARK'. The scheme attempts to provide incentives to manufacturers and importers to reduce adverse environmental impacts, reward genuine initiatives by companies, and improve the quality of the environment and sustainability of available resources. Besides the above attempts, notifications pertaining to Recycled Plastics Manufacture and Usage Rules, 1999 were also incorporated under the Environment (Protection) Act of 1986.

### **The Environment (Protection) Rules, 1986**

These rules lay down the procedures for setting standards of emission or discharge of environmental pollutants. The Rules prescribe the parameters for the Central Government, under which it can issue orders of prohibition and restrictions on the location and operation of industries in different areas. The Rules lay down the procedure for taking samples, serving notice, submitting samples for analysis and laboratory reports. The functions of the laboratories are also described under the Rules along with the qualifications of the concerned analysts.

### **The National Environment Appellate Authority Act, 1997**

This Act provided for the establishment of a National Environment Appellate Authority to hear appeals with respect to restriction of areas in which any industry operation or

process or class of industries, operations or processes could not carry out or would be allowed to carry out subject to certain safeguards under the Environment (Protection) Act, 1986. In addition to these, various Acts specific to the coal sector have been enacted. The first attempts in this direction can be traced back to the Mines Act, 1952, which promoted health and safety standards in coal mines. Later the Coal Mines (Conservation and Development) Act (1974) came up for conservation of coal during mining operations. For conservation and development of oil and natural gas resources a similar legislation was enacted in 1959.

#### e) Hazardous wastes

There are several legislation that directly or indirectly deal with hazardous waste. The relevant legislation are the Factories Act, 1948, the Public Liability Insurance Act, 1991, the National Environment Tribunal Act, 1995 and some notifications under the Environmental Protection Act of 1986. A brief description of each of these is given below.

Under the EPA 1986, the MoEF has issued several notifications to tackle the problem of hazardous waste management. These include:

- ◆ Hazardous Wastes (Management and Handling) Rules, 1989, which brought out a guide for manufacture, storage and import of hazardous chemicals and for management of hazardous wastes.
- ◆ Biomedical Waste (Management and Handling) Rules, 1998, were formulated along parallel lines, for proper disposal, segregation, transport etc. of infectious wastes.
- ◆ Municipal Wastes (Management and Handling) Rules, 2000, whose aim was to enable municipalities to dispose municipal solid waste in a scientific manner.
- ◆ Hazardous Wastes (Management and Handling) Amendment Rules, 2000, a recent notification issued with the view to providing guidelines for the import and export of hazardous waste in the country.

#### Factories Act, 1948 and its Amendment in 1987

The Factories Act, 1948 was a post-independence statute that explicitly showed concern for the environment. The primary aim of the 1948 Act has been to ensure the welfare of workers not only in their working conditions in the factories but also their employment benefits. While ensuring the safety and health of the workers, the Act contributes to environmental protection. The Act contains a comprehensive list of 29 categories of industries involving hazardous processes, which are defined as a process or activity where unless special care is taken, raw materials used therein or the intermediate or the finished products, by-products, wastes or effluents would:

- ◆ Cause material impairment to health of the persons engaged
- ◆ Result in the pollution of the general environment

**Public Liability Insurance Act (PLIA), 1991**

The Act covers accidents involving hazardous substances and insurance coverage for these. Where death or injury results from an accident, this Act makes the owner liable to provide relief as is specified in the Schedule of the Act. The PLIA was amended in 1992, and the Central Government was authorised to establish the Environmental Relief Fund, for making relief payments.

**National Environment Tribunal Act, 1995**

The Act provided strict liability for damages arising out of any accident occurring while handling any hazardous substance and for the establishment of a National Environment Tribunal for effective and expeditious disposal of cases arising from such accident, with a view to give relief and compensation for damages to persons, property and the environment and for the matters connected therewith or incidental thereto.

**f) International agreements on environmental issues**

India is signatory to a number of multilateral environment agreements (MEA) and conventions. An overview of some of the major MEAs and India's obligations under these is presented below. These are discussed at length in the respective units.

**Convention on International Trade in Endangered Species of wild fauna and flora (CITES), 1973.**

The aim of CITES is to control or prevent international commercial trade in endangered species or products derived from them. CITES does not seek to directly protect endangered species or curtail development practices that destroy their habitats. Rather, it seeks to reduce the economic incentive to poach endangered species and destroy their habitat by closing off the international market. India became a party to the CITES in 1976. International trade in all wild flora and fauna in general and species covered under CITES is regulated jointly through the provisions of The Wildlife (Protection) Act 1972, the Import/Export policy of Government of India and the Customs Act 1962 (Bajaj, 1996).

**Montreal Protocol on Substances that deplete the Ozone Layer (to the Vienna Convention for the Protection of the Ozone Layer), 1987.**

The Montreal Protocol to the Vienna Convention on Substances that deplete the Ozone Layer, came into force in 1989. The protocol set targets for reducing the consumption and production of a range of ozone depleting substances (ODS). In a major innovation the Protocol recognised that all nations should not be treated equally. The agreement acknowledges that certain countries have contributed to ozone depletion more than others. It also recognises that a nation's obligation to reduce current emissions should reflect its technological and financial ability to do so. Because of this, the agreement sets more stringent standards and accelerated phase-out timetables to countries that have contributed most to ozone depletion (Divan and Rosencranz, 2001). India acceded to the Montreal Protocol along with its London Amendment in September 1992. The MoEF

has established an Ozone Cell and a steering committee on the Montreal Protocol to facilitate implementation of the India Country Programme, for phasing out ODS production by 2010.

To meet India's commitments under the Montreal Protocol, the Government of India has also taken certain policy decisions.

- ◆ Goods required to implement ODS phase-out projects funded by the Multilateral Fund are fully exempt from duties. This benefit has been also extended to new investments with non-ODS technologies.
- ◆ Commercial banks are prohibited from financing or refinancing investments with ODS technologies.

The Gazette of India on 19 July 2000 notified rules for regulation of ODS phase-out called the Ozone Depleting Substances (Regulation and Control) Rules, 2000. They were notified under the Environment (Protection) Act, 1986. These rules were drafted by the MoEF following consultations with industries and related government departments.

### **Basel Convention on Transboundary Movement of Hazardous Wastes, 1989**

Basel Convention, which entered into force in 1992, has three key objectives:

- ◆ To reduce transboundary movements of hazardous wastes;
- ◆ To minimise the creation of such wastes; and
- ◆ To prohibit their shipment to countries lacking the capacity to dispose hazardous wastes in an environmentally sound manner.

India ratified the Basel Convention in 1992, shortly after it came into force. The Indian Hazardous Wastes Management Rules Act 1989, encompasses some of the Basel provisions related to the notification of import and export of hazardous waste, illegal traffic and liability.

### **UN Framework Convention on Climate Change (UNFCCC), 1992**

The primary goals of the UNFCCC were to stabilise greenhouse gas emissions at levels that would prevent dangerous anthropogenic interference with the global climate. The convention embraced the principle of common but differentiated responsibilities which has guided the adoption of a regulatory structure.

India signed the agreement in June 1992, which was ratified in November 1993. As per the convention the reduction/limitation requirements apply only to developed countries. The only reporting obligation for developing countries relates to the construction of a GHG inventory. India has initiated the preparation of its First National Communication (base year 1994) that includes an inventory of GHG sources and sinks, potential vulnerability to climate change, adaptation measures and other steps being taken in the country to address climate change.

### **Convention on Biological Diversity, 1992**

The Convention on Biological Diversity (CBD) is a legally binding, framework treaty that has been ratified until now by 180 countries. The CBD has three main thrust areas: conservation of biodiversity, sustainable use of biological resources and equitable sharing of benefits arising from their sustainable use. The Convention on Biological Diversity came into force in 1993. Many biodiversity issues are addressed in the convention, including habitat preservation, intellectual property rights, biosafety and indigenous peoples' rights.

### **UN Convention on Desertification, 1994**

Delegates to the 1992 UN Conference on Environment and Development (UNCED) recommended establishment of an intergovernmental negotiating committee for the elaboration of an international convention to combat desertification in countries experiencing serious drought and/or desertification.

The UN General Assembly established such a committee in 1992 that later helped formulation of Convention on Desertification in 1994. The convention is distinctive as it endorses and employs a bottom-up approach to international environmental co-operation. Under the terms of the convention, activities related to the control and alleviation of desertification and its effects are to be closely linked to the needs and participation of local land users and non-governmental organisations. Seven countries in the South Asian region are signatories to the Convention, which aims at tackling desertification through national, regional and sub-regional action programmes. The Regional Action Programme has six Thematic Programme Networks (TPN's) for the Asian region, each headed by a country task manager. India hosts the network on agroforestry and soil conservation.

## **3.6 Conclusion**

Every subject has to evolve, including law. Law is important as it creates a framework within which our entire society operates. It is essential to understand how environment and law emerged and coexisted. Environmental interests will often criticise environmental regulation as inadequately protective of the environment. Furthermore, strong environmental laws do not guarantee strong enforcement. Nonetheless; the cost benefit analysis for society at large, between having laws that protect citizens from toxic or dangerous living and work conditions (such as those that existed in the early industrial 1900's) clearly comes down on the side of regulation.

The necessity of directly regulating a particular activity due to the activity's environmental consequences is often a subject of debate. These debates may be scientific. For example, scientific uncertainty fuels the debate over greenhouse gas regulation and is a major factor in the debate over whether to ban pesticides or not.

# ENVIRONMENT AND GOVERNANCE

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### 4.1 Introduction

Environmental governance is a concept in political ecology and environmental policy that advocates sustainability as the supreme consideration for managing all human activities - political, social and economic. Governance includes government, business and civil society, and emphasizes whole system management. To capture this diverse range of elements, environmental governance often employs alternative systems of governance, for example watershed-based management.

The basic assumption in environmental governance is that natural resources and the environment are global public goods, belonging to the category of goods that are not diminished when they are shared. This means that everyone benefits from them, for example, a breathable atmosphere, stable climate and stable biodiversity.

Public goods are non-rivalrous - a natural resource enjoyed by one person can still be enjoyed by others - and non-excludable - it is impossible to prevent someone consuming the good (breathing). Nevertheless, public goods are recognised as beneficial and therefore have value. The notion of a global public good thus emerges, with a slight distinction: it covers necessities that must not be destroyed by one person or State.

The non-rivalrous character of such goods calls for a management approach that restricts public and private actors from damaging them. One approach is to attribute an economic value to the resource. Water is possibly the best example of this type of good.

As of 2013, the concept and intent that led to emergence of environmental governance is far from meeting its imperatives. Despite a great awareness of environmental questions

from developed and developing countries, there is environmental degradation and the appearance of new environmental problems. This situation is caused by the parlous state of global environmental governance, wherein current global environmental governance is unable to address environmental issues due to many factors. These include fragmented governance within the United Nations, lack of involvement from financial institutions, proliferation of environmental agreements often in conflict with trade measures; all these various problems disturb the proper functioning of global environmental governance. Moreover, divisions among northern countries and the persistent gap between developed and developing countries also have to be taken into account to comprehend the institutional failures of the current global environmental governance. Let us, in this unit, examine what is the concept and intent of Environmental Governance. We shall attempt to analyse the lacuna in implementation of the concept and the setbacks that one faces in the practice of the topic.

## 4.2 Emergence of Environmental Governance

Governance and sustainable development share similar history. Both the concepts emerged in the late 1980's, with shared characteristics and overlapping potential. By the mid 1990's they were common terms in popular and professional discourse, along with renewed interest in the role of institutions in societal change. However neither of these terms is yet mature or clearly defined. Perhaps more importantly, the overlaps between their wider meanings remain understudied. As a result these terms remain contested, and will continue to be for some time, because their meanings and implications bring different promises and threats to different stakeholders.

Environmental Governance emerged as a subject of Political Ecology. Political Ecology may be defined as the study of the day-to-day conflicts, alliances, and negotiations that ultimately result in some sort of definitive behaviour; how politics affects or structures resource use. It is the study of the relationships between political, economic and social factors with environmental issues and changes. Political ecology differs from apolitical ecological studies by politicising environmental issues and phenomena. When speaking of political ecology and conservation, one ultimately finds that there is a divergence of ideas, issues and troubles, especially when looking at conservation through biodiversity and the creation of conservation units. However, the following solutions can, nevertheless, be provide. For instance:

- ◆ inform policymakers and organisations of the complexities surrounding environment and development, thereby contributing to better environmental governance.
- ◆ understand the decisions that communities make about the natural environment in the context of their political environment, economic pressure, and societal regulations.
- ◆ look at how unequal relations in and among societies affect the natural environment, especially in context of government policy.

There are various definitions ascribed to Environmental Governance. But, as a concept it can be understood as a whole range of rules, practices and institutions related to the management of the environment in its different forms like conservation, protection, exploitation of natural resources, etc. It includes all the processes and institutions, both formal and informal, that encompass the standards, values, behaviour and organising mechanisms used by citizens, organisations and social movements as well as the different interest groups as a basis for linking up their interests, defending their differences and exercising their rights and obligations in terms of accessing and using natural resources.

At the international level, global environmental governance is “the sum of organisations, policy instruments, financing mechanisms, rules, procedures and norms that regulate the processes of global environmental protection<sup>1</sup>”. Key principles of environmental governance include:

- ◆ Embedding the environment in all levels of decision-making and action
- ◆ Conceptualising cities and communities, economic and political life as a subset of the environment
- ◆ Emphasizing the connection of people to the ecosystems in which they live
- ◆ Promoting the transition from open-loop/cradle-to-grave systems (like garbage disposal with no recycling) to closed-loop/cradle-to-cradle systems (like permaculture<sup>2</sup> and zero waste<sup>3</sup> strategies).

According to United Nations Environment Programme (UNEP), Environmental Governance can be defined or characterised as, “Multi-level interactions (i.e., local, national, international/global) among, but not limited to, three main actors, i.e., State, market, and civil society, which interact with one another, whether in formal and informal ways; in formulating and implementing policies in response to environment-related demands and inputs from the society; bound by rules, procedures, processes and widely-accepted behaviour; possessing characteristics of good governance; for the purpose of attaining environmentally-sustainable development”.

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<sup>1</sup> Najam, A., Papa, M. and Taiyab, N. Global Environmental Governance. A Reform Agenda; IISD; 2006.

<sup>2</sup> Permaculture - It is a branch of ecological design, ecological engineering and environmental design that sustainable architecture and self-maintained agriculture systems modelled from natural ecosystems.

<sup>3</sup> Zero Waste - Zero waste is a philosophy that encourages the redesign of resource life cycles so that all products are reused. No trash is sent to landfills and incinerators. The process recommended is one similar to the way that resources are reused in nature. Zero Waste is a goal that is ethical, economical, efficient and visionary, to guide people in changing their lifestyles and practices to emulate sustainable natural cycles, where all discarded materials are designed to become resources for others to use. Zero Waste means designing and managing products and processes to systematically avoid and eliminate the volume and toxicity of waste and materials, conserve and recover all resources, and not burn or bury them. Implementing Zero Waste will eliminate all discharges to land, water or air that are a threat to planetary, human, animal or plant health.

Zero waste can represent an economical alternative to waste systems, where new resources are continually required to replenish wasted raw materials. It can also represent an environmental alternative to waste since waste represents a significant amount of pollution in the world.

### Actors in Environmental Governance

Actors are interested parties in any concept. In Environmental Governance, Governments, inter-governmental and non-governmental organisations, major groups, the private sector and civil society, individually or collectively, have a role in environmental governance. At the international level, multilateral environmental agreements have been increasingly playing an important role. Regional organisations and bodies provide forums for policy development and implementation in regions. The scientific community has a specific role in providing a basis for scientifically sound and informed decision making.

The global environment is an integrated, yet evolving, system characterised by connections. Such drivers of environmental change as population pressure and pollution know no boundaries; rather waste is emitted into the global commons of the oceans and the atmosphere. That forests cut down in the Amazon may reduce carbon sequestration, and hence speed up global climate change, is only one example of the environmental chain of causation. Forests also perform a variety of ecosystem services, such as improving air quality, enriching soil, providing renewable resources, regulating hydrology, and contributing to biodiversity.

Attempting to govern these complex ecosystems is a dizzying array of organisations and international treaties. These include governmental and non-governmental actors at levels ranging from local to national to international. Perhaps most important is the United Nations Environment Programme (UNEP), which acts to centrally co-ordinate organisations and information. With a full-time staff of only 300, however, UNEP faces a difficult task.

Major international conventions, held every decade or so, guide the process of global governance, while a series of multilateral environmental agreements (MEAs) provide the basis of international environmental regulation. Environmental treaties are implemented with the help of small organisations called secretariats. The chart below shows only a few of the most important organisations, conferences and treaties:

	Conferences & Reports	Treaties/Conventions	Organisations
1970s & earlier	UN Conference on the Human Environment Vancouver Declaration on Human Settlements	Antarctic Treaty Ramsar Convention on Wetlands Convention Concerning the Protection of the World Cultural and Natural Heritage Convention on International Trade in Endangered Species of Wild Fauna and Flora Convention on Long-Range Transboundary Air Pollution	Intergovernmental Oceanographic Commission United Nations Environment Programme United Nations Human Settlements Programme GEMS/ Water Programme

*Contd...*

1980s	The Brundtland Report	UN Convention on the Law of the Sea Convention on the Protection of the Ozone Layer Montreal Protocol on the Ozone Layer Convention on Transboundary Movements of Hazardous Wastes and their Disposal	World Commission on Environment and Development Inter-governmental Panel on Climate Change
1990s	UN Conference on Environment and Development Agenda 21 International Conference on Population and Development Earth Summit +5	United Nations Framework Convention on Climate Change Convention on Biological Diversity Kyoto Protocol to the United Nations Framework on Climate Change	Global Environment Facility Commission on Sustainable Development Committee on Trade and Environment
2000s	World Summit on Sustainable Development International Treaty on Plant Genetic Resources	Cartagena Biosafety Protocol Doha Declaration	Pew Oceans Commission

*Sustainable development* is also a new concept in environmental governance, which was introduced in the Brundtland Report of 1987 and further developed in the 1992 Earth Summit in Rio de Janeiro. Sustainable development asserts that we should hand our children and grandchildren an earth with environmental systems as healthy as or healthier than those we inherited. Partly a response to theories of *limits to growth*, that we are in a condition of overshoot in which we are using environmental resources faster than they can be renewed, sustainable development also strives to balance economic and environmental needs.

Two important international treaties are the Montreal Protocol on Substances that Deplete the Ozone Layer and the Kyoto Protocol to the United Nations Framework on Climate Change. The first is the most successful example ever of international environmental cooperation; it led to a substantial decrease in the emission of chlorofluorocarbons that harm the ozone layer. This is largely because the treaty was self-enforcing, providing a mixture of incentives and punishments. The ready availability of substitutes for chlorofluorocarbons also helped the treaty.

The Kyoto Protocol, by contrast, has barely gotten off the ground; its ratification was delayed until 2004, and the treaty still suffers from the critical absence of the United States (which has just announced a pact with Australia, China and other partners to

update technology that fights global warming). The Kyoto Protocol limits the emission of carbon, believed to be a prime cause of global warming, while encouraging countries to create sinks to remove carbon from the atmosphere. Critics claim that the treaty was flawed from the start, relying on rigid targets and exempting developing countries (including heavy polluters such as India and China) from responsibility. The high cost of a transition away from our current energy infrastructure makes the Kyoto Protocol particularly difficult to fulfil.

Market-based instruments, such as *tradable permits*, are a key strategy employed by the Kyoto Protocol, and many other current environmental governance plans. Such schemes allow different economic segments to play to their strengths, and balance the need to conserve resources and reduce waste with the need for economic development. Another basic strategy for integrating the environment into global economic management is to force goods to be priced at their full life-cycle assessment, including the cost to the environment from resource extraction to production to use to final disposal.

Population control as a tool of environmental governance is another hotly debated issue. Some environmentalists hold that human population is the main driver of environmental degradation, and that employing tougher measures to limit population is the only way to ensure a sustainable future. Population pressure, for instance, leads to greater use of water, depleting aquifers and contributing to the spread of desertification. A contrary argument holds that human population is only one of several factors which must be weighed equally, including per capita consumption, technology and conservation techniques.

### 4.3 Policy Integration in Environmental Governance

An important 'interrelations' issue is the co-ordination of government policies and the corresponding and complementary positions and initiatives of other governance actors. The evolution of the modern State has been towards an increasing degree of sectoral specialisation to deal with differentiated problems. Specialisation has helped develop valuable responses to particular problems, but it has also led to neglect of broader considerations and to partial solutions that are inadequate or damaging from a broader sustainability point of view. Cost-increasing end-of-pipe solutions transferring a pollution problem at the site into a waste problem elsewhere are a good illustration. Sustainability requires policy integration, along with improved interaction between government and non-government institutions and the creation of a longer-term view in government.

Policy integration is not the consolidation of policies to create a single integrated policy dealing with everything. There remains a need for specialised policies.

Effective integration for practical decision making centers on acceptance of common overall objectives, co-ordinated elaboration and selection of policy options, and co-operative implementation designed for reasonable consistency and, where possible, positive feedbacks. Attempts at environmental policy integration have been examined by reputed institutions under various studies like in the COMPSUS study and the OECD

study 'Governance for sustainable development' for selected countries. The COMPSUS study found that much more progress has been achieved with vertical environmental policy integration - which is policy integration *within* the governmental sector - than with horizontal environmental policy integration - which is integration *across* policy sectors. The rather negative conclusion of the COMPSUS study is that 'the process of intra-ministerial integration has been more formal than substantive. .... Even where the intra-ministerial integrative ideal has been more thoroughly pursued - as in many of the developed countries - the quality of departmental engagement with environmental concerns or the broader sustainability development agenda is typically weak'. This clearly dampens any great optimism. Policy integration is a long and difficult process in which political will is important. Full policy integration may not be achievable but significant gains can be made. Lafferty offers several suggestions for vertical and horizontal policy integration within the environmental realm. For vertical integration he recommends specification of major environmental impacts of policies and activities, establishment of a system of dialogue and consultation, sectoral strategies for change, action plans, budgets and monitoring programmes. For horizontal integration, he proposes use of long-term sustainability strategies for sectoral domains, specific governing bodies entrusted with overall co-ordination and supervision of the integration process, communication programmes, and national action plans with targets and ongoing programmes for assessment, feedback and revision and conflict resolution procedures.

#### *Common objectives, criteria, trade-off rules and indicators*

Experience with environmental and other policy integration efforts indicates that in large organisations, including national governments, only limited gains are possible through structural measures (creation of inter-ministerial committees, establishment of new cross-sectoral agencies and the like). Some further improvements can be won through structural changes tied to mandatory reporting and monitoring requirements that impose a sustainability-oriented framework for justification and make institutional behaviour more transparent. Certainly multi-stakeholder decision making, co-management, advisory round tables and other mechanisms engaging multiple governance institutions can contribute to effective integration.

But most of these are useful only for particular cases or a few priority concerns. For more general application, a suite of additional, process-related tools are needed. Four such tools are shared long-term objectives, common criteria for planning and approval of significant undertakings, specified rules for making trade-offs and compromises, and widely accepted indicators of needs for action and progress towards sustainability. Versions of all of these have been developed and applied by particular governance institutions for limited purposes. Sometimes they have even been designed and adopted by coalitions of governance bodies with broad sustainability ends in mind. Nevertheless there remains considerable potential for more general and comprehensive application in governance systems.

#### *Shared sustainability objectives*

Debates about the meaning and implications of sustainable development have now progressed far enough to reveal the essential core requirements for sustainability. This

opens the door to reasonably clear specification of related objectives for particular regions, nations and localities. Sustainability-centered objective setting processes, involving multiple governance institutions, have already been used, with some good results, in many jurisdictions. Perhaps the most common and practically influential examples have been those of cities and urban regions that have developed new or revised land-use plans through processes including collective development and review of future scenarios and public debate on planning goals and alternatives. But larger scale versions are certainly possible.

#### *Sustainability-based criteria for planning and approval of significant undertakings*

It is now common for governments at the national, provincial/State, and even municipal levels, to impose environmental assessment or planning approval requirements on proponents of major public and private sector undertakings. Environmental assessment, in particular, is widely applied, often at the strategic level of policies, plans and programmes, as well as at the level of physical projects. In many jurisdictions, the assessments cover a comprehensive agenda with 'environment' defined to include social, economic and cultural as well as biophysical aspects and their interrelations. And in a growing number of cases, the test of approval is an obligation to show that the purposes are sound and that the proposed undertaking is the most desirable of the potentially reasonable options and will make a positive overall contribution to sustainability. Similar approval requirements, with explicit sustainability criteria, are also now applied in a variety of other venues including non-government product certification programmes, in investment rankings of ethical corporations, and in progressive building standards. While practice in this area is still primitive, the imposition of such 'higher test' criteria in approval processes may be expected to expand pressures for the development of generic sustainability-based evaluation criteria, better processes for specifying these locally and more frequent and advanced of associated modelling and other analytical techniques in integrated assessment and related areas.

#### *Specified rules for making trade-offs and compromises*

Prospects for progress would be much enhanced by the implications, availability of explicit rules and processes for decisions about trade-offs and compromises. Examples of such rules include:

- i) compensations and substitutions involving direct and indirect compensation for negative effects (where these cannot be fully mitigated): e.g., later rehabilitation of aggregate mining operations on somewhat degraded agricultural lands (substitution in time), and construction of a human made wetland to replace a relatively natural one (substitution in place).
- ii) net gain and loss calculations involving aggregation of net gain and no net loss calculations: e.g., weighing major damages to the interests of tribal people displaced by a new dam against more material security for larger numbers of poor farmers downstream (differences in place); and weighing efficiency gains from industrial process improvements balanced against associated job losses (substitution in kind, across principles).

### *Widely accepted indicators of needs for action and progress towards sustainability*

A great deal of effort has already gone into the identification and elaboration of sustainability indicators. Perhaps this is partly because for many institutions, work on indicators seemed less threatening than actual interventions for change. But indicator development remains valuable as a way of clarifying what is important (thereby also contributing to objective setting), and well-chosen and focused indicators can be powerful devices of education, empowerment and agitation. Taken as a set, these tools could provide a well-integrated, reasonably clear and yet flexible and locally adjustable foundation for sustainability-focused decision-making. For all four tools, the core applications may be in more or less formal institutional decision-making. But the underlying idea is to establish habitual expectations and entrenched practices that would spread to choices and activities outside the realm of formal deliberation and approval.

### *Information and incentives for practical implementation*

By itself, a foundation for sustainability-based decision making is insufficient. Governance for sustainability also needs means of spurring and guiding appropriate action. Policy instruments of many kinds are available - tax reforms regulations, procurement rules, liability laws, education programmes, product labelling, tenure arrangements, power-sharing processes, etc. - and many combinations are possible. Because market-based or influenced decision making will necessarily continue to play a major role in governance at all levels, a key challenge will be to make prices more accurate indicators of embodied costs - social and ecological as well as economic. But simple means are rarely available. Identifying, evaluating and monetising externalised costs is often frustrated by limited knowledge, competing methodologies and moral dilemmas. And resistance to imposition of cost internalising measures is common even in simple cases involving the well-accepted 'polluter pays' principle. Here again it seems that carefully integrated, monitored and adjusted application of multiple tools will be necessary.

### *Programmes for system innovation*

Many sustainability benefits may be obtained immediately through the use of currently available technologies. In the longer run, however, sustainability requires transitions involving system innovation. Policymaking on sustainability has, for the most part, relied on performance standards or the prescription of certain solutions. The solutions adopted helped to secure *partial* sustainability benefits. Governance for sustainability requires policymaking frameworks that actively seek to identify, nurture and co-ordinate action for more sustainable technological niches. And since technological innovations promise only some of the needed improvements, governance initiatives must ensure that they are accompanied by co-evolving societal processes characterised by continuous changes in formal and informal institutions. For this, governance for sustainability has to be more anticipatory, oriented towards the long-term, using visions of sustainability, and concerned with learning, innovation and adaptation.

Substantial improvement of the current trajectories of development requires 'system innovation', a fundamental change in the systems of goods provision, by using different

resources, knowledge and practices. System innovation in the socio-technical realm constitutes change beyond the level of the technical components. It is associated with new linkages, new knowledge, different rules and roles, a new 'logic of appropriateness', and often new organisations. Two examples of system innovation offering environmental benefits are the hydrogen economy (with the hydrogen generated in clean ways, for instance through the use of renewable electricity sources) and integrated mobility (or chain mobility). In the vision of integrated mobility, users use different transport modes (collective ones and individual ones such as a car and bicycle) based on information from mobility agencies that offer travel plans and facilities to make reservations. Chain mobility involves a wide range of changes, in infrastructure (in the form of park and ride stations and special bus lanes), in technology (such as light rail in conurbations) and also an array of social and organisational changes: the collective ownership and use of cars (car-sharing and riding), the creation of mobility agencies offering and selling inter-modal transport services, the integration of collective transport schemes, and the introduction of transport management system for employees by companies.

Such new systems are unlikely to emerge through the normal operation of markets. System innovation is inexorably linked with institutional change. It cannot be caused by a single variable or event and requires transition management with elements of planning. It requires replacement of old outcome-based planning with reflexive and adaptive planning.

## 4.4 Transition Management

Change towards sustainability in a world of complex and dynamic human-ecological systems, is an unending process of transformation. Today, many companies and governments seem to be involved in this journey. Whereas many companies have moved to adopt the model of socially responsible corporate behaviour of the World Business Council for Sustainable Development, government policy in most jurisdictions addresses problems of sustainability in a somewhat inconsistent manner and often fails to build upon socially responsible corporate strategies (Bleischwitz, 2004). In many cases it supports non-sustainable behaviour and gives only lukewarm support to system innovation. In both government and corporate sectors, visions of sustainability are rarely used as a compass for policy, and sustainability-centered policy integration remains an ideal to which policy makers are committed in words rather than in action. It is often said that the world has become more complex, defying steering attempts because of a knowledge problem and governance problem. Transitions are co-evolution processes: the result of the interplay of many unlike, particular processes (Kemp and Rotmans, 2001). Transitions involving system innovation cannot be managed in a controlling sense but they can be aimed and guided in an iterative, forward-looking, adaptive manner, using markets, institutions and hierarchy (the three basic forms of coordination). However in managing transitions, four basic rules require special attention.

### *i) Careful not to get locked into sub-optimal solutions*

This calls for anticipation of outcomes and the use of markets for co-ordination and context control instead of planning. A second way of circumventing lock-in is by

exploring different configurations through portfolio-management - a common strategy in finance is to hedge risks by exploring a wide variety of options, both incremental and radical.

ii) *Embed transition policy into existing decision-making frameworks and legitimise transition management*

Transition management should be politically accepted and be a joint concern for different policy makers and society at large. Long-term goals chosen by society should guide policy, including responses to short-term concerns.

iii) *Take the long view of a dynamic mechanism of change*

Make sure that the process does not come to a halt when positive results do not immediately materialise due to setbacks. One way of keeping the process on track is to view and institute learning as a policy objective.

iv) *Engage in multi-level co-ordination*

Co-ordinate top-down policies with bottom-up initiatives (engage in vertical co-ordination besides horizontal co-ordination). Local experiments should inform national policies and there should be strategic experimentation for system innovation; two things that did not happen in the past. There should be more and better co-ordination between top-level policies and local policies and also among various horizontal policies. National policies should be co-ordinated with international policies, because go-it-alone policies can be economically harmful unless there are clear first-mover advantages.

As seen above, even many of the most desirable sustainability-oriented initiatives will involve trade-offs, bringing the danger of inequitable distribution of gains and losses. Such inequities are particularly worrisome where the losses may be borne by those who are already disadvantaged (a sadly common feature of past development assistance projects). Preparing for just transitions (Burrows, 2001) that avoid adding to disadvantages, and provide satisfactory compensation when all else fails, is crucial.

Transition management has short-term goals and long-term goals, with the latter being based on societal goals and visions of sustainability. The short-term goals are informed by the long-term goals and comprise learning goals. Sustainability visions are explored using small steps. Transition management breaks with the old plan-and-implement model aimed at achieving particular outcomes. It is based on a different, more process-oriented philosophy. This helps to deal with complexity and uncertainty in a constructive way.

Transition management is a form of process management performed against a set of goals set by society whose problem-solving capabilities are mobilised and translated into a transition programme, which is legitimised through the political process. Transition management does not aim to realise a particular path at all costs. It engages in the exploration of promising paths, in an adaptive manner with exit strategies. It does not consist of a strategy of forced development, going against the grain, but uses bottom-up

initiatives and business ideas of alternative systems, offering sustainability benefits besides user benefits. Key elements of transition management are:

- i) development of sustainability visions and setting of transition goals
- ii) use of transition agendas
- iii) establishment, organisation and development of a transition-arena (for innovative actors) besides the normal policy arena
- iv) portfolio management
- v) use of transition-experiments and programmes for system innovation
- vi) creating and maintaining public support
- vii) monitoring and evaluation of the transition process
- viii) use of learning goals for policy and reliance on circles of learning and adaptation.

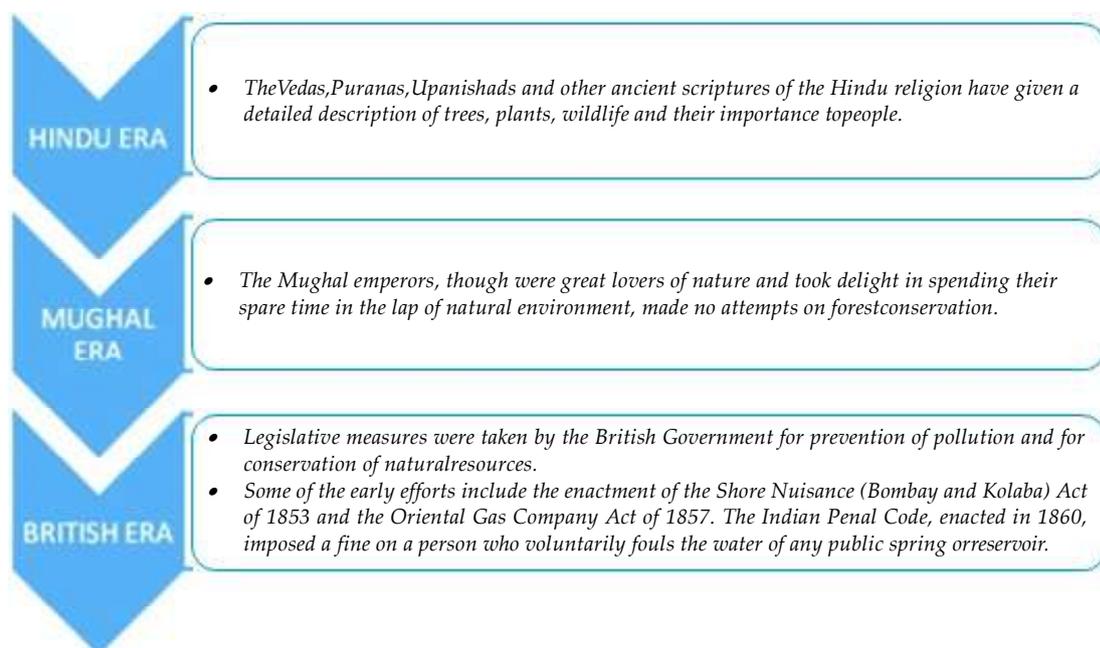
Although in this unit we have not attempted to explain the full import of environment and governance in full, we fit with all the considerations of sustainability described that incorporates key components of governance for sustainability, namely policy integration, common objectives and criteria, internalisation of external costs, and programmes for system innovation. It puts government policies in a different, longer-term perspective and tries to better align specific policies. Having introduced different visions and routes through adaptive policies of how decisions are made in an iterative way and support is temporary. In being adaptive and anticipatory, it is believed transition management could help in dealing with the tension between creative change and conservation, between innovative experiments and maintaining the integrity and stability of functions. Transition management is best understood as an attempt at *goal-oriented modulation* or directed incrementalism (Grunwald, 2000), offering a model for policy integration.

## 4.5 Environmental Governance in India

Environmental resources are increasingly coming under the pressure from various facets of development. Institutional as well as non-institutional mechanisms for ensuring that the long term sustenance of environmental resources does not get hampered therefore assume greater importance. In this context, improving the governance process of development is considered as a means of improving performance on the above. This can primarily emanate from the setting up of new institutions, from, the strengthening of existing institutions, from providing a policy framework and from undertaking the initiatives that lead to the conservation of environment and its resources. This paper discusses the concepts of governance and good governance in relation to environmental management first; it then provides an overview of select environmental governance measures undertaken by government departments in a catalogued manner. It discusses the initiatives under the broad categories of: commitments to global treaties, transparency and accountability, sensitive ecosystems, conservation projects, water resource management, research, education and training capacity building. It thereby provides an abstract state of environmental governance, which needs to be developed much deeper by incorporating further details and making refinements.

The concept of Environmental Governance is not new to India. The world may know Environmental Governance as a modern concept, but it has, in different forms, existed in India and can be easily traced by analysis of Indian culture and history. An appraisal of the historical background to environmental protection in India would indicate that forests and wildlife were considered as vital ingredients of the global system. Here, the entire scheme of environmental preservation was essentially duty-based. In this sense, the ancient Indian society accepted the protection of the environment as its duty to do so.

Pollution in India is a major fact of life. But, as the country marches forward economically, the Indian Government is turning its attention to the environmental problems it faces and knows it must address. One important area of activity has been a focus on strengthening environmental governance. Most recently, the government proposed the creation of a National Environment Assessment and Monitoring Authority (NEAMA) - an independent technical agency that would appraise projects, provide environmental clearances, conduct compliance monitoring, and initiate enforcement action. The authority will be set up by a notification under Section 3.3 of the Environment Protection Act, 1986 with appropriate changes to the Environment Impact Assessment notification, 2006 and the Coastal Regulatory Zone, 2011. This would mean that the authority could start functioning within three months of the Cabinet giving its approval. Given Prime Minister Manmohan Singh's recent announcement about setting up an independent regulator soon, Cabinet approval appears to be a done deal.



The new system will separate the functions of the appraising and monitoring from that of approval. While NEAMA will eventually take charge of both appraisal and monitoring, the ministry will continue to be the approval granting authority. The plan to set up an independent regulator to ensure continuous appraisal of environmental impact of projects and monitoring of implementation of conditions takes on added urgency in light of the apex court's interim order on mining in Bellary district of Karnataka.

The Environment Ministry has proposed a two-phase plan for the NEAMA, with the authority being initially set up by an executive order under the Environment Protection Act, 1986.

Simultaneously, the Environment Ministry has suggested initiating the legislative process to give the authority explicit statutory status. This is phase two of the plan. This would require amending the Environment Protection Act to empower the NEAMA to take on all functions including appraisal. The ministry has suggested a maximum of a two-year period to complete the legislative process.

In the first phase of approximately two years, NEAMA will focus on monitoring to ensure that projects are indeed complying with the conditions that had been prescribed while granting environmental and coastal zone clearance. During this time, NEAMA will not be appraising projects for clearance. It will, however, provide scientific and technical expertise, such as undertake or oversee research on the carrying capacity. Besides improving compliance and enforcement of clearance conditions, it will standardise database and integrate it with decision making process and strengthen coastal zone management.

Meaningful public participation is one of the eight key principles for effective governance covered by the factsheet and report. We also discuss these other principles for strengthening environmental compliance and governance:

- ◆ Multiple enforcement tools
- ◆ Self-monitoring and self-reporting
- ◆ Clarity in Federal and State roles
- ◆ Citizen suits
- ◆ Highly qualified agency professionals
- ◆ Agency accountability
- ◆ Incentive and outreach programmes

## 4.6 Conclusion

The international system, in which nation-states are the key players, is going through a period of transformation. The phenomena of democratisation, economic globalisation, environmental degradation, and regional integration are creating a global transformation that is shaping the future of the nation-state, as well as the future of the international system. Global transformation means that the traditional international regimes that were built by the power of States and interstate relations have become ineffective institutions, especially in regard to global environmental issues. In dealing with global environmental issues, global solutions “require local approaches when global environmental crisis results from both the aggregation of local resource decisions and from the impact of the global political economy on local communities.” This raises the question of whether transnational environmental regimes that are designed to foster interstate co-operation and transnational networks, such as the MRC and ICPR, are

desirable or effective forms of governance for global environmental issues that are simultaneously linked to the local context.

Within these transnational regimes, there are three layers of governing institutions: local institutions composed of individuals and industries, national institutions in each member State composed of ministerial and municipal governments, and transnational institutions made up of national delegations at the transnational level and other non-State actors such as donors and non-governmental environmental organisations. These layers are institutionally interconnected in the governance process. Within each layer, issues, interests and actors shape political processes. The presence of these issues, interests and actors in each layer, as well as the strength of networks among them, creates a dynamic political process. I will define this whole process as the “governance process”. Though governance by governments of States has traditionally been the study of international affairs, governance nowadays is a phenomenon of managing and networking issues, interests and actors to produce transparent actions in process and to achieve the stated goals of regimes. This paper, in an attempt to develop a model that explains how democracy can function in transnational environmental governance, examines issues, interests and actors in MRC and ICPR regimes.

Human population, as of 29 September 2013 is estimated to be 7.114 billion<sup>4</sup>. It is expected to level off at around 9 billion by 2050. Urbanisation is one of the main reasons for the slowing of population growth. Some 50% of the earth’s population now live in cities; people living in dense urban areas tend to have fewer children, leading population to fall. Education, particularly of women, is also an effective means of lowering population growth. Affluent people also tend to have fewer children; such countries as Germany and Japan, for instance, are no longer replacing their current populations. Developing countries, contrarily, are responsible for most of the world’s population growth.

The role of developing countries, sometimes called the Global South, remains fiercely contested. Advocates for developing countries argue that the wealthier countries contribute most to international environmental degradation, and so should be most responsible for cleaning it up. *Environmental justice*, particularly toward developing countries, has been heatedly discussed, although its role in international decision-making remains limited. This is partly because wealthy countries contribute the most money to international institutions, and so claim the most influence in decision-making.

The status of the environment is closely tied to international economic growth. Many economists believe that globalisation is helping the environment through dissemination of better technology and more efficient economies of scale. The concept of an *environmental Kuznets curve* is that once people attain affluence they will then concentrate on achieving a clean environment. Some environmental economists, however, argue that economic growth correlates strongly with environmental degradation, and argue for a *steady state economy* that eschews growth in favour of qualitative development.

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<sup>4</sup> Estimates by United States Census Bureau (USCB).

Maintaining *biodiversity* is another key goal of environmental governance. The removal of one species, the argument goes, may have unexpected effects; the more changes made to the environment, the greater the chance of a cascade of *unintended consequences*. Some ecosystems have shown a surprising resilience, however, as with the recovery of Yellowstone after the 1998 fires. Since we cannot fully understand the complex interactions of our ecosystems, environmentalists now argue for the *precautionary principle*, that potentially harmful activities must pass a reasonable doubt test regarding their environmental effect. In 2000 this principle was integrated into the **Cartagena Biosafety Protocol**. Because of the increasing globalisation of environmental threats, some have called for the creation of a World Environmental Organisation (WEO) more powerful than UNEP.

Governance for sustainability presents an enormous but unavoidable challenge. Its globally recognised that continued unsustainability is not a viable option. For progress towards sustainability, we all need to establish governance structures and practices that can foster, guide and co-ordinate 'positive work' by a host of actors on vast complex of issues, through webs of interconnection and across multiple levels and scales, with sensitivity contexts in which they operate and respect for uncertainties. Such a conception has considerable advantages. It encompasses multiple and diverse strengths, motives and capabilities, not just of conventional government agencies and business interests, but of a full set of public, private and civil society players, collective and individual, plus their myriad interrelations. The challenge is to achieve sufficient integration of understanding, direction and action to achieve the desired transition. In the establishment of effective governance for sustainability, we must incorporate and also reach beyond the powers of commerce and command - a task best accomplished through understanding, guidance and process.

However in governance for sustainability, a host of quite different players must be involved. They are unlikely to work together easily, which is why there should be a commitment to transitions and why government, as a democratic authoritative power is important (even when government is part of the problem). There is no single best form of governance for sustainability. The details must vary by necessity, respecting the specifics of context from case to case. Nevertheless, the deliberations on governance for sustainability so far, do point to a basic foundational outline and strategy, and there is reason to believe that we can clarify and specify much more without compromising respect for particular circumstances. The quest for sustainability may be the quest for an elusive 'Holy Grail' of integrated understanding and action that is not fully possible, and will never be found in a single pure form. But a good deal can be done. Progress is possible.

# SUSTAINABLE DEVELOPMENT AND ENVIRONMENT GOVERNANCE

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## 5.1 Introduction

*“Sustainability refers to the ability of a society, ecosystem, or any such ongoing system to continue functioning into the indefinite future without being forced into decline through exhaustion of key resources.”*

— Robert Gilman, President of Context Institute

Sustainable development broadly refers to a mode of human development in which resource use aims to meet human needs while ensuring the sustainability of natural systems and the environment so that these needs can be met not only in the present, but also for generations to come. The term ‘sustainable development’ was used by the Brundtland Commission<sup>1</sup>, which coined what has become the most often-quoted definition of sustainable development: “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

Considering that the concept of sustainable development is now featured and enmeshed in the aspirations of countless programmes, places, and institutions, it is imperative that one has an understanding of the concept, its origin, relevance to today’s world, implications to society and so on. In this unit we shall examine and elaborate on the central elements of sustainable development and governance, considering their interrelations as they have emerged from the core themes in sustainable development discourses in recent times. We discuss four key elements of governance for sustainability,

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<sup>1</sup> World Commission on Environment and Development (WCED).

which are integrated into the concept of transition management. The result is a conceptual framework for policy-making and action-taking aimed at progress towards sustainability.

The concept of sustainable development arose from two main sources: increasingly worrisome evidence of ecological degradation and other biophysical damage, both despite and because of the greater wherewithal provided by economic growth, and the largely disappointing record of post-WW II ‘development’ efforts, particularly the persistence, and in some places worsening, of poverty and desperation in a period of huge overall global increases in material wealth. The United Nations and associated agencies worried about these matters separately for some decades before appointing the World Commission on Environment and Development (WCED) to address them jointly. The Commission’s conclusion was that the ecological and social failures had common causes and demanded a common response. Its final report, *Our Common Future* (WCED, 1987), initiated a flood of interest in, debate about and experimentation with sustainable development, which was renewed after the publication and subsequent adoption of *Agenda 21*, the *Rio Declaration on Environment and Development*, and the *Statement of Principles for the Sustainable Management of Forests* by more than 178 governments at the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro, Brazil, in June 1992. Over the last two decades since publication of *Our Common Future*, the idea of sustainable development has been widely, if ambiguously, embraced by a great variety of institutions around the world. There has been much dispute about the meaning and implications of the concept and much criticism of the actual behaviour of bodies that have claimed devotion to it. Gradually, however, some basics have become clear.

## 5.2 Emergence of Sustainable Development

The growing awareness of these challenges to traditional development thinking has led to the increasingly wide acceptance of a new concept - that of sustainable development. Development which protects the environment, development which advances social justice - phrases such as these have surrounded the introduction of what has been claimed to be a new paradigm. The new formulation has been eagerly adopted both by critics of standard development practice and by leaders of existing development institutions. But what does sustainable development really mean?

Sustainable development ties together concern for the carrying capacity of natural systems with the social challenges faced by humanity. As early as the 1970s, “sustainability” was employed to describe an economy “in equilibrium with basic ecological support systems<sup>2</sup>”. The concept of sustainable development has in the past most often been broken out into three constituent parts:

- 1) Environmental Sustainability
- 2) Economic Sustainability
- 3) Socio-political Sustainability

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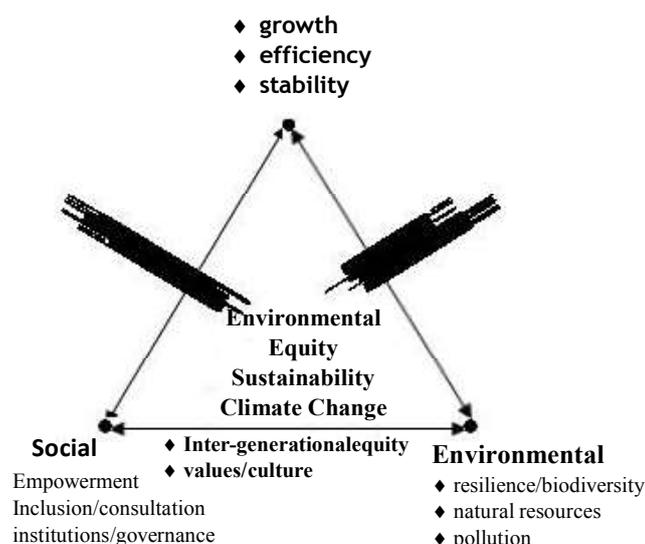
<sup>2</sup> Stivers, R. 1976. *The Sustainable Society: Ethics and Economic Growth*. Philadelphia: Westminster Press.

More recently, it has been suggested that a more consistent analytical breakdown is to distinguish four domains of economic, ecological, political and cultural sustainability.

#### 4) Cultural Sustainability

In the last half of the twentieth century, four key themes emerged from the collective concerns and aspirations of people world over. They include, *peace, freedom, development* and *environment*. Of this it is only in the past 40 years that the environment (local to global) became a key focus of many national and international law and institutions. In pursuing environmental issues, in the 1970s and 1980s, world commissions of notables were created to study various international concerns including pollution, poverty, natural resources, urbanisation and so on. Characteristic of these commissions was the effort to link together the aspirations of humankind- demonstrating how the pursuit of one great value required the others. Sustainable development, with its dual emphasis on the most recent concerns - development and environment - is typical of such efforts.

Many of the ideas that are now embedded in the concept of sustainable development, discussed later have been around for a long time- from as long ago as the work of Malthus on population growth in the late 1700s. But in more recent times, the concept emerged during debate in the early 1970s following of a range of key publications that drew attention to man's over-exploitation of the environment, focusing on economic development and the growing concern about development objectives and environmental degradation, and examining the inextricable links between environment and development. It all began with the General Assembly of the United Nations in 1982 initiated the World Commission on Environment and Development (WCED) publishing its report, *Our Common Future*<sup>3</sup>, in 1987. The roots to this commission traces back to the 1972 Stockholm



<sup>3</sup> The Commission was chaired by then - Prime Minister of Norway Gro Harlem Brundtland, thus earning the name *Brundtland Commission*.

Conference on the Human Environment - where the conflicts between environment and development were first acknowledged - and in the 1980 World Conservation Strategy (WCS) of the International Union for the Conservation of Nature (IUCN), which had argued for conservation as a means to assist development, more specifically for the sustainable development and utilisation of species, ecosystems, and resources. Based on these suggestions, the Brundtland Commission began its work of uniting environment and development. The report summarised the argument as:

‘The environment does not exist as a sphere separate from human actions, ambitions, and needs, and attempts to defend it in isolation from human concerns have given the very word *environment* a connotation of naivety in some political circles. The word *development* has also been narrowed by some into a very limited focus, along the lines of what poor nations should do to become richer, and thus again is automatically dismissed by many in the international arena as being a concern of specialists, of those involved in questions of *development assistance*. But the *environment* is where we live; and *development* is what we all do in attempting to improve our lot within that abode. The two are inseparable.’

The report was followed by the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro in 1992 (referred as ‘Earth Summit’) which concluded by issuing declaration of principles: a detailed Agenda 21 of desired actions, international agreements on climate change and biodiversity and a statement of principles on forests. Ten years later, in 2002, at the World Summit on Sustainable Development in Johannesburg, South Africa, the commitment to sustainable development was reaffirmed by all its participants. In the interim, sustainable development as a concept, as a goal, and as a movement spread rapidly and is now central to the mission of countless international organisations, national institutions, corporate enterprises, sustainable cities and locales.

### Origin of the concept of Sustainable development

Whilst earlier literature discussed a wide range of issues around the emerging concept of sustainable development, the following statement from the World Conservation Strategy (IUCN/WWF/UNEP, 1980) appears to be the first actual attempt to define sustainable development, which said:

‘For development to be sustainable, it must take account of social and ecological factors, as well as economic ones; of the living and non-living resource base; and of the long-term as well as the short-term advantages and disadvantages of alternative action’.

However this particular strategy was criticised for being concerned mainly with ecological sustainability rather than sustainable development, compelling for exploring an alternate definition to sustainable development. As a result, the most universally quoted definition for sustainable development was produced in 1987 by the World Commission on

Environment and Development (WCED), otherwise known as the Brundtland Commission which defined:

*Sustainable development is the development that meets the needs of the present generations without compromising the ability of future generations to meet their own needs.*

The use of this definition has led many to see sustainable development as having a major focus on intergenerational equity. On development, the report states that human needs are basic and essential; that economic growth - but also equity to share resources with the poor - is required to sustain them; and that equity is encouraged by effective citizen participation. On the environment, the text is also clear:

*The concept of sustainable development does imply limits - not absolute limits but limitations imposed by the present state of technology and social organisation on environmental resources and by the ability of the biosphere to absorb the effects of human activities.*

Sustainable development focuses on improving the quality of life for all of the Earth's citizens without increasing the use of natural resources beyond the capacity of the environment to supply them indefinitely. It requires an understanding that inaction has consequences and that we must find innovative ways to change institutional structures and influence individual behaviour. It is about taking action, changing policy and practice at all levels, from the individual to the international. The use of this definition has led many to see sustainable development as having a major focus on intergenerational equity. Although the brief definition does not explicitly mention the environment or development, the subsequent paragraphs, while rarely quoted, are clear. On development, the report states that human needs are basic and essential; that economic growth- but also equity to share resources with the poor- is required to sustain them; and that equity is encouraged by effective citizen participation. On the environment, the text is also clear:

*'This malleability allows programmes of environment or development; places from local to global; and institutions of government, civil society, business, and industry to each project their interests, hopes, and aspirations onto the banner of sustainable development.'*

However, the concept of sustainable development is not a new idea. Many cultures over the course of human history have recognised the need for harmony between the environment, society and economy. What is new is an articulation of these ideas in the context of a global industrial and information society.

Around the world we see signs of severe stress on our interlocked global economic, environmental and social systems. As the United Nations Environmental Programme's *GEO-2000* report points out, the "time for a rational, well-planned transition to a sustainable system is running out fast." And yet we continue to adopt a business-as-usual approach to decision-making, which increases the chance that our global systems will

crack and begin to crumble. Already we are faced with full-scale emergencies through freshwater shortages, tropical forest destruction, species extinction, urban air pollution and climate change.

How do we quickly reverse these trends? In 1987 the World Commission on Environment and Development recommended seven critical actions needed to ensure a good quality of life for people around the world:

- ◆ Revive growth
- ◆ Change the quality of growth
- ◆ Meet essential needs and aspirations for jobs, food, energy, water and sanitation
- ◆ Ensure a sustainable level of population
- ◆ Conserve and enhance the resource base
- ◆ Reorient technology and manage risk
- ◆ Include and combine environment and economics considerations in decision-making

These recommendations are as valid today as they were when first written. They are a call to change our actions and to do things differently. In particular, they underscore a need to:

**a) Produce Differently**

Increasing efficiency and reusing materials will play important roles in achieving sustainable development. Eco-efficient companies and industries must deliver competitively priced goods and services that improve peoples' quality of life, while reducing ecological impacts and resource-use intensity to a level within the Earth's carrying capacity. Globally, the goal is to quadruple resource productivity so that wealth is doubled, and resource use is halved (this concept is known as Factor Four). However, because OECD countries are responsible for material flows five times as high as developing countries, and world population continues to rise, it will be necessary for OECD countries to reduce their per capita material use by a factor of ten.

Implementing Factor Four and Factor Ten strategies will require us to think about the cradle-to-grave impact of all goods and services to make wise choices. It will also require a reorientation of industrial economies - reducing the scale of polluting activities and creating new opportunities for entrepreneurs.

The new generation of small, medium and micro-enterprises that operate within a sustainable development framework will expand our understanding of appropriate technologies and their contribution to creating sustainable livelihoods. In developing countries, achieving sustainable development will require overall national income growth of around 5 to 6% a year. For this to occur, however, without further degrading the environment and society, growth must be qualitatively different than in the past. Capital-intensive production systems may be unattainable and undesirable in many situations. Creating 12 million old-style industrial jobs in India, for example, would require an

investment of four to six times that of its GNP. Alternative types of systems must be found that provide for high levels of productivity and meaningful work.

### **b) Consume Differently**

World consumption has expanded at an unprecedented rate in the 20th century, with private and public consumption expenditures reaching \$24 trillion in 1998, twice the level of 1975 and six times that of 1950. Consumption in and of itself is not bad - all living things must consume to maintain their biological existence. The real issue is the levels, patterns and effects of consumption.

For many in the developed world present consumption levels and patterns are unsustainable. The environmental and social impacts of consumption are being felt at both local and global levels. Locally, we see increases in pollution and a growing sense of alienation within our communities. Globally, climate change and the depletion of the ozone layer are but two stark reminders of the impact of our consumption levels.

One useful tool for measuring the extent of our consumption is the ecological footprint. It shows how much productive land and water we need to produce all the resources we consume and to absorb all the waste we make. Already, humanity's ecological footprint may be over 30% larger than the ecological space the world has to offer.

The ranking of ecological footprints shows which countries are ecologically most sustainable and which are running an ecological deficit. The average American has an ecological footprint 1.7 times larger than a person in Sweden, 3.8 times that of someone in Hungary or Costa Rica, and more than 9 times that of an individual in India. It is important, however, to realise that these averages hide inequalities within countries. More than 100 million people in rich nations suffer from poverty. And a culture of material consumption is gaining ground among the emerging middle classes of such countries as India, Malaysia and Brazil.

Policies must be developed that promote consumption patterns which reduce our ecological footprint while meeting the needs of all people to enjoy a good quality of life. These policies must also raise the consumption of the world's more than a billion poor who are unable to meet their basic food, shelter and clothing needs.

Meanwhile, we need to shift how we make decisions - as consumers - from thinking about means to thinking about ends. For example, governments and businesses may collaborate to meet people's transportation needs by investing in improved public transit rather than building new roads. Even better, they may work together with communities to pass new zoning laws that allow people to live, work, and shop within the same neighbourhood. This would minimise people's needs for transportation while improving the accessibility of what they really want- goods and services.

### **c) Organise Ourselves Differently**

How we organise ourselves and establish rules to govern our actions will play a major role in determining whether we move toward more sustainable paths.

Good governance will require reforming decision-making processes to increase opportunities for public participation, including a wide variety of activities ranging from consultation hearings as part of an environmental impact assessment, to co-management of natural resources. In its deepest form, public participation seeks to involve civil society in all steps of planning, implementation and evaluation of policies and actions. Public participation can:

- ◆ Help to establish good pathways for sustainable development
- ◆ Enhance understanding and relationships
- ◆ Increase eagerness to participate, leading to better implementation of decisions
- ◆ Enrich the community and build social capital

Reducing corruption, the misuse of power for private benefit or advantage, is also necessary to achieve sustainable development. It has proven to be highly destructive since corruption leads to the disregard of public interest and warps competitive markets. It leads governments to intervene where they need not, and it undermines their ability to enact and implement policies in areas in which intervention is clearly needed - whether environmental regulation, health and safety regulation, social safety nets, macroeconomic stabilisation, or contract enforcement.

We govern our economies through a complex array of regulations, laws and market incentives. Unfortunately, tax structures, payments to producers, price supports and the like function as perverse subsidies that have detrimental effects on both the economy and the environment. They are also often distributionally regressive, benefiting mostly the wealthy - often political interest groups - while draining the public budget. As recent studies from the Earth Council and the International Institute for Sustainable Development have noted, the world is spending nearly \$1.5 trillion annually to subsidise its own destruction. That is twice as much as global military spending a year, and almost twice as large as the annual growth in the world's economy. Removing even a portion of these perverse subsidies would provide a large stimulus for sustainable development.

In 1992 leaders at the Earth Summit built upon the framework of Brundtland Report to create agreements and conventions on critical issues such as climate change, desertification and deforestation. They also drafted a broad action strategy - Agenda 21 - as the workplan for environment and development issues for the coming decades. Throughout the rest of the 1990s, regional and sectoral sustainability plans have been developed. A wide variety of groups - ranging from businesses to municipal governments to international organisations such as the World Bank - have adopted the concept and given it their own particular interpretations. These initiatives have increased our understanding of what sustainable development means within many different contexts. Unfortunately, as the Earth Summit +5 review process demonstrated in 1997, progress on implementing sustainable development plans has been slow.

## 5.3 Characteristics of Sustainable Development

Sustainable development is a fluid concept that will continue to evolve over time but common characteristics underlie the many streams of thought. Sustainable development emphasizes the need for:

### a) Equity and Fairness

Sustainable development is concerned with meeting the needs of the poor and marginalised portions of our population. The concepts of equity and fairness are prominent in definitions of sustainable development. Sustainable development acknowledges that if we ignore our effects on others in an interdependent world, we do so at our own peril.

Since a dangerous disparity in access to resources has been established through our economic and public-policy systems, those systems must change. Fairness implies that each nation should have the opportunity to develop itself according to its own cultural and social values without denying other nations the same right to development. One of the greatest challenges in decision-making is how to protect the rights of the voiceless. Future generations have no ability to speak on their own behalf or to protect their interests in decision-making processes. If development is to be sustainable, it must consider their interests.

### b) Long-term View

In Western society during the past generation, most official long-term planning has been at most three to five years. Many international stock and currency traders now think of a few weeks as long term. Traditional Native American governance, however, focused on planning for “the seventh generation today”. Goals and activities are designed with consideration for their impact on seven generations into the future, leading to a planning horizon of roughly 150 years.

A planning horizon somewhere in the middle may be both necessary and realistic. Some experts have suggested that as long as each generation looks after the next - roughly 50 years - each succeeding generation will be taken care of. Of course, if an effect in the yet further future is foreseen, then it too can be taken into account. No generation can be expected to guarantee results it cannot foresee; but equally, none should be allowed to ignore those it can. People from around the world are looking ahead and building scenarios about what the future may be like. The scenarios they envision range from a world of resource scarcity and violence to one of increased sharing and technological innovation. Which scenario is most likely to occur? No one is certain.

In an interdependent world, complex interactions are leading to a startlingly high rate of innovation and change. In times of rapid change, the precautionary principle can provide some guidance. It states that when an activity raises threats of harm to the environment or human health, precautionary measures should be taken even if some cause-and-effect relationships are not fully established scientifically.

### c) Systems Thinking

For some two centuries we have known that the Earth is a closed system with finite resources. As planetary explorers completed the task of mapping the lands and waters, people slowly grew to understand that there are no “new” resources. We have only one Earth. All of our activities are but a small part of this larger system. Viewing our human systems as operating within the larger ecosystem is crucial for achieving a sustainable relationship with the environment, and assuring our own species’ continued survival on the planet.

Each natural resource used by human beings - food, water, wood, iron, phosphorous, oil and hundreds of others - is limited by both its sources and its sinks. Resources should not be removed faster than they can be renewed nor disposed of more quickly than they can be absorbed. Although environmentalists used to be concerned primarily about running out of sources, today more people are concerned about running out of sinks. Global warming, the ozone hole, and conflicts over the international shipment of hazardous waste are all problems that have arisen from our attempts to dispose of resources faster than the environment can absorb them. Systems thinking require us to understand that while there is only one Earth, it is composed of a multitude of subsystems all interacting with each other. A variety of models have been developed to explain the Earth’s subsystems. When measuring our progress toward sustainable development, these models provide useful frameworks for choosing indicators. The differences between the models show the specific perspectives which groups bring to sustainable development and embody their differing values.

These subsystems are connected together by intricate feedback loops. The science of complexity suggests that in some systems a very small occurrence can produce unpredictable and sometimes drastic results by triggering a series of increasingly significant events. We have seen that emissions in the North have thinned the protective ozone layer over Antarctica, increasing rates of skin cancer in the South. Financial crises in Asia have threatened the economies of other countries around the world. And ethnic violence in Central Africa has led to refugee migrations that are overwhelming the support systems of nearby regions, triggering further crises and migrations. In addition, sustainable development strategies usually highlight the interplay between the local and global, the developing and the developed, and the need for co-operation within and between sectors.

However it is important to realise, sustainable development is not a detailed plan of action, a formula that we can all blindly follow. There is no one solution. Solutions will differ between places and times and depend on the mix of values and resources. Approaching decision-making from a sustainable development perspective requires undertaking a careful assessment of the strengths of your household, community, company or organisation to determine priority actions.

## 5.4 Sustainable Development and Governance

Better governance is a prerequisite for, and probably also a product of, steps towards sustainability. Much is expected from ‘good governance’. According to the European Commission, good governance consists of openness and participation, accountability,

effective coherence, efficiency (proportionality) and greater sensitivity to the immediate context that is promised by subsidiarity. For sustainability, other requirements include means of internalising external costs and ensuring integration of policy considerations, evaluation of options and dealing with trade-offs. It is worth noting that in the Commission's definition of good governance the emphasis is on the role of institutions as entities that are largely viewed as being 'up there' and, at least currently, insufficiently within the reach of ordinary citizens. As such, this view of governance seems concerned primarily with minimising bureaucratisation and hierarchy. The intent of the White Paper on European Governance (CEC 2001) is to make *formal* institutions - which are increasing in size and number - more accessible, accountable, and relevant to the general populace and to retain a higher degree of relevancy, credibility, and legitimacy in the average person's mind. The White Paper's necessary but exclusive focus on formal institutions overlooks the important role played by other, less formal, institutions in European governance, particularly in policy formation and implementation. To fully appreciate the role of institutions, they should not be viewed as synonymous with bureaucracy (Parto, 2005a, 2005b). Because a major portion of sustainable development is ultimately about radical changes in the systems of production and consumption, governance for sustainability is, by implication, about working through formal *and* informal institutions to bring about societal change. Effecting change in informal governance institutions, such as habits and routines, requires identifying the levels at which the change is desired, the territorial scale at and through which the desired change is to be implemented, and the systems which are likely to be affected due to the desired change. The challenge will be to find ways of establishing governance regimes that have reasonable coherence of vision and commitment, enjoy trust and are accountable, and have sufficient capacity for co-ordination, direction and re-direction.

Governance for sustainability has certain key features and components. In the following we identify four of these currently recognised components of sustainable development and elaborate on some of their main features.

*a) Current paths of development are not sustainable*

Current resource-intensive development patterns are ecologically and ultimately, economically unsustainable. There are also problems of inadequate worker and consumer protection, poverty and exclusion. While modern economic advances have brought a host of value improvements, including important environmental quality gains, few of the gains have been automatic and the overall results still include persistent development failures and deepening ecological decline.

*b) Sustainability is about protection and creation*

Sustainability is often seen as being about protection of amenities (including cultural diversity), but it is equally about continued advancement or *creation*: a better and more just world. Both the protection of amenities and creation of new and better services for more people require innovation in institutions of governance and socio-technical systems. Innovation can help to ease the adverse effects of some trade-offs posed by existing

technology. But innovation is not without problems: it also brings risks, which should be anticipated and dealt with, something that recently being looked into by various researchers.

*c) Requirements of sustainability are multiple and interconnected*

The main dimensions consist of maintaining the integrity of biophysical systems, better services for people and freedom from hunger, nuisance and deprivation. To these one may add choice, opportunity and access to decision making - aspects of equity, within and across generations. The economist 'capital model' of sustainable development as discussed by various economists including Pearce, Atkinson, and others. Sustainability is about intermediate *and* long-term integration: the pursuit of all the requirements for sustainability at once, seeking mutually supportive benefits (Gibson, 2001).

*d) Pursuit of sustainability hinges on integration*

Because of the interconnections among its factors and purposes, sustainable development is essentially about the effective integration of social, economic, and ecological considerations at all scales from local to global, over the long haul (Schnurr and Holtz, 1998). Compromises and sacrifices become unavoidable. Given the distance between current conventional practice and potentially sustainable behaviour, it is reasonable to expect most near term initiatives to be highly imperfect. But the objective is to recognise the intertwined importance of social, economic and ecological imperatives and to find ways of contributing to all of them. The aim is not fair treatment of each part, but choices that strengthen the whole in a lasting way. In early literature, sustainable development was often depicted as expansion of the area where circles of social, economic and ecological quality overlapped. These depictions were useful in stressing the links among desirable social, economic and ecological qualities and in indicating that much of our current activity lay outside the realm of potential sustainability. However, even where the roles of social and ecological as well as economic factors were respected, the tendency to consider them separately proved hard to overcome.

Similar problems beset the 'pillars' based approaches adopted in much of the sustainability literature and in many implementation efforts (Mebratu, 1998). Most often, three pillars - social, economic and ecological - are identified, though culture and politics are sometimes recognised as additional distinct categories (e.g., CIDA, 1997). Important work has also been done in exploring the concepts of social, ecological and economic capital for sustainability, with particular interest in the existence and limits of potential substitutions (Berkes and Folke 1993; Daly, 1996; Dixon and Hamilton, 1996; Costanza et al., 1997). In practical applications however, the pillar-focused approaches have suffered from insufficient attention to overlaps and interdependencies and a tendency to facilitate continued separation of social, economic and ecological analyses. Alternative depictions stressing interconnections and consideration of institutional aspects (as in the PRISM model, see the preface to this special issue and Spangenberg (2002)) offer a useful way forward.

e) *Core requirements and general rules must be accompanied by context specific elaborations*

What is most needed, appropriate and workable always depends heavily on the context. The detailed elaboration of sustainability requirements, and the determination of appropriate procedures for accepting or rejecting options and trade-offs must respect the place and time of application, and involve those who will live with the results. The blessing is that approaches designed to recognise local specificity can mobilise and foster local knowledge, building greater understanding of, and commitment to, sustainability objectives. One could say that sustainability is about locally suited options that are globally sustainable. But it is also about local awareness and behaviour that shares the larger agenda. A conflict is likely to occur between localism and globalism, characterised by different mindsets and different logics for action, as noted by Rosenau (2003). The tensions are difficult to reconcile as the controversy over globalisation shows.

f) *Diversity is necessary*

The importance of context means not only that there are different good answers for different situations, but also that there are many different ways of designing and strengthening the various foundations and practices of governance to respect the principles of sustainability. While this can be administratively inconvenient, diversity offers positive benefits for sustainable development. Diversity is a source of learning and the fuel of evolution. It is important to safeguard diversity in all dimensions, including socio-cultural, economic and technological. Diversity is a source of learning and a resource base for adaptation and reorganisation (Lister and Kay 2000; Kay and Schneider 1994; Rammel and van den Bergh, 2003). Diversity in product offerings is also needed for meeting heterogeneous preferences and local circumstances.

g) *Surprise is inevitable*

Precaution is one of the core requirements for sustainability because there will be surprises. Sustainable development is pursued in a world of multi-dimensional, intersecting and dynamic complex systems. We cannot expect to describe them fully, much less predict future effects. We may lack even suggestive evidence about many emerging problems, whose influences will ripple unpredictably through complex socio-ecological systems. Sustainability calls for prudence and adaptability, preferring safe-fail over fail-safe technologies, seeking broadly comprehensible options rather than those that are dependent on specialised expertise, ensuring the availability and practicality of backup alternatives, and establishing mechanisms for effective monitoring and response (Gibson, 2001, p.19).

h) *Transparency and public engagement: key characteristics of decision making for sustainability*

The importance of context, the benefits of diversity and the inevitability of surprise all suggest that transparency and active public engagement are necessary qualities of governance for sustainability. Openness and participation are favoured by the emphasis

of sustainability on lively citizenship, which is seen not just as a means of building understanding and commitment, but also as an end in itself - an aspect of the necessary and richer alternatives to lives centered on material consumption.

*i) Explicit rules and processes are needed for decisions about trade-offs and compromises*

The objective of sustainability-centered decision-making is to seek positive, mutually supporting gains in all areas. But as this work begins, there will be many cases where no practical option offers benefits of all the required kinds. Inevitably there will have to be trade-offs between goals and there will be winners and losers. Trade-offs have to be faced and dealt with. As a general rule we might agree, for example, to avoid sacrificing a long-term objective to win a fleeting benefit, or to ensure that the end result of any set of compromises still leaves us with net overall positive contributions to the core sustainability requirements (Gibson, 2001). Compensation of losers is another possible strategy, but it should not be applied in all circumstances. Polluters should pay for damage, and not be paid to not damage. Certainly, open and explicit attention to the reasoning behind trade-off and compromise decisions is desirable. While we can work to create systems offering a suite of benefits, waiting for win-win-win solutions to emerge is not a useful strategy.

*j) The end is open*

The final characteristic with implications for governance is that sustainable development is an open-ended process. It is not usefully conceived as a particular specified or specifiable target. Pursuit of sustainability is a long-term, indeed never-ending process. The notion of sustainable 'landing places' that is sometimes used by the European Commission is therefore misleading. It suggests that the problem of sustainable development can be 'solved' whereas in reality only specific issues can be resolved and managed. There always will be 'problems' and needs for change (Rammel and van den Bergh, 2003; Sartorius, 2003).

*k) Governance for sustainable development: moving from theory to practice*

Implementing a commitment to sustainable development entails a substantial transition not just to a broader understanding and a more ambitious set of objectives, but also to more coherently interrelated institutional structures and processes of planning, administration, markets, tradition and choice at every scale (Gibson, 2001; Parto and Doloreux, 2003). Clearly, this is not a transition that can be accomplished quickly or easily. The challenge is to show how such a transition can be accomplished and to develop a core set of tools that would make governance for sustainability manageable.

### **Governance in relation to Sustainable Development**

Like sustainable development, governance is a concept that was first widely explored and embraced in the late 1980's. Also, like sustainable development it was attractive because it encompassed a broad set of factors that were increasingly important and insufficiently recognised in conventional thinking and because it encouraged a more

integrated understanding of how these factors were, or should be, linked. Governance scholars viewed the political system as a complex of formal and informal arrangements that were ill-defined and unstable. This was in direct contrast to the conventional view of governments as formal, clearly identifiable and static entities. Whereas government conjured up an image of formal structures ruling over people, the notion of governance highlighted the increasingly important role of formal and informal arrangements in the political economy.

Governance, understood as a mode of social co-ordination, is different from *governing*; which is an act, a purposeful effort to steer, guide, control and manage (sectors or facets of) society (Kooiman, 1993, p.2). Governance is how one gets to act, through what types of interactions (deliberation, negotiation, self-regulation or authoritative choice) and the extent to which actors adhere to collective decisions. It involves the level and scope of political allocation, the dominant orientation of State and other institutions and their interactions. Governance structures organise negotiation processes, determine objectives, influence motivations, set standards, perform allocation functions, monitor compliance, impose penalties, initiate and/or reduce conflict, and resolve disputes among actors (Eden and Hampson 1997, p.362). The effective exercise of power is through a network of interconnected actors, in which all actors hold power, through knowledge resources, money and rights granted to them. The notion of governance fits in with complex systems approaches to understanding the workings of the political economy through the inter-relationships among identifiable parts (e.g., social, economic and ecological), rather than just the parts themselves. A complex systems approach to governance also implies explicit appreciation of complexity and uncertainty, likelihood of surprise and need for flexibility and adaptive capacity. That said, governance has been defined and used in many ways in different contexts. Often the concept is given normative as well as descriptive weight. Sometimes, for example in the OECD's and World Bank's usage, it is adopted to serve the neo-liberal agenda of reducing the role of governments in favour of market mechanisms and corporate interests (OECD, 1995; World Bank, 1992). Often it is presented as a means of serving democratic pluralism - defined as the structured ways and means in which the divergent preferences of inter-dependent actors are translated into policy choices to allocate values, so that the plurality of interests is transformed into co-ordinated action and the compliance of actors is achieved (Eising and Kohler-Koch, 2000, p.5). This overlooks the authoritative role of government as seen by its citizens, something that is still very prominent in countries such as Germany and France in Europe and most Asian countries.

Arguably, since the early 1980's, authoritative control of social relations has been increasingly exercised through quasi- and non-government entities rather than just formal governments and government institutions. In several ways, citizens have become more powerful with respect to how governing is exercised (through rights of information and co-determination) and with respect to how business activity is conducted (consumer boycotts). The shift from *government* to *governance* spells a change in decision making and numerous opportunities for the pursuit of sustainability. We recognise, however, that despite an ideological shift over the past two decades toward liberalisation,

government has remained, and is likely to continue to remain, a powerful actor with a major role in discourses on governance for sustainability. This should not be understood as an argument against citizen involvement or stakeholder engagement, both of which are important for at least four reasons: it enhances the legitimacy of policy, helps to reduce the risk of conflict, offers an additional source of ideas and information; and through their involvement, people and organisations learn about environmental problems (Coenen, 2002). The most significant challenge is to ensure that multi-player governance regimes embody capacity for sustainability-oriented co-ordination, direction and re-direction. It is clearly reasonable and appropriate to recognise that business organisations, civil society groups and citizens, as well as formal governments have roles to play and are already important actors. Finding ways to ensure that all these players act coherently, effectively and with some efficiency in the pursuit of sustainability demands much higher ambitions and underlines the crucial role of informal institutions. A variety of tools are available including development of explicit common objectives, targets and indicators; use of multi-stakeholder deliberation and decision mechanisms; and creative application of tax and regulatory instruments to foster cost internalisation and other adjustments to business and consumer behaviour in the market place. But all of these rely, more or less heavily, on a continuing central (and formal) role for governments in co-ordinating and often initiating action, and in legitimising and entrenching the decisions.

## 5.5 Perspectives on Sustainable Development in India

Effective management of resources requires participation by all stakeholders. At the local level, strengthening democratic institutions generally leads to better and more sustained management of natural resources. To enhance effectiveness of people's participation in local governance, committees comprising both elected and executive members of local bodies and representatives of community groups, must be formed. Appropriate capacity building would enable them to undertake local development activities according to community priorities, monitor project implementation and manage community assets. Where the conditions for such community empowerment have already been created, as in India through the 73rd and 74th amendments of its Constitution, effective implementation of the provisions should be ensured.

All members of society are the stakeholders of sustainable development. Women make up half of this group. Affirmative action to ensure representation and power to women in local governance, and appropriate capacity building, are necessary to make them effective and equal partners in the development process. Social groups which have been traditionally discriminated against must be represented in local governance and empowered to ensure that they become effective and mainstream partners in development. Children are a valuable asset of every society. It is the responsibility not only of the parents but of the community that children realise their potential fully, growing up in a healthy, enriching and fulfilling environment. Ensuring the provision of such an environment is a major challenge of governance at the local level.

The occupational, cultural and economic heterogeneity of population is on the whole a major asset in making development sustainable; but there are times of crisis when the

same heterogeneity can become the basis of conflict and social insecurity. It is imperative to evolve participatory mechanisms of governance involving citizen groups and local authorities which will provide effective means of conflict resolution.

### ***Sustainable Development at National***

Sustainable development is achieved through optimising gains from several variables, rather than maximising those from a single one. This requires government departments, by convention sectorally organised, to work together, or in some cases as a single multi-disciplinary authority. For this joint planning, transparency and co-ordination in implementation are required.

The richness of skills available in society must be harnessed through partnerships involving institutions in civil society, such as NGOs, CBOs, corporate (including private) bodies, academic and research institutions, trade unions, etc, which must be made an integral part of planning and implementation for sustainable development.

There is on the one hand a surfeit of laws, many of them outmoded and irrelevant. On the other hand, effective enforcement is lacking in respect of laws relevant to contemporary concerns and conducive to governance. This calls for a thorough review of laws, elimination of those which are outmoded, and simplification of the procedures for implementing those which are relevant. Internal reviews as well as learnings from international experience should be the basis of identifying and filling gaps in existing laws. It must, however, be recognised that laws in themselves do not provide solutions, unless there are mechanisms to effectively enforce them. There are many traditional systems and practices whose value and validity needs to be recognised and brought into the mainstream of governmental development thinking and policy. Appropriate mechanisms for integrating them need to be created. Many policies were framed either before sustainable development became a major concern or in a sectoral perspective. These need to be reviewed from the point of view of sustainable development. All future policies must be guided by considerations of sustainable development. Areas lacking policies should be identified and adequate policies compatible with the imperatives of sustainable development framed, taking into account successful examples, of policies and initiatives in similar areas.

## **5.6 Conclusion**

At the turn of the century, while most countries made significant advances in GDP and in Human Development Index, various studies suggest that these were achieved at the cost of environment and social structures. In fact many traditional societies have been devastated by development of forests, water systems, and intensive fisheries. Urban areas in developing countries commonly suffer from extreme pollution and inadequate transportation, water and sewer infrastructure. Environmental damage, if unchecked, may undermine the achievements of development and even lead to collapse of essential ecosystems. These problems appeared to be endemic to development as it had taken place over half a century. Some of the harsher critics of such forms of development paradigm, such as Richard Norgaard, see them as indicative of fundamental error:

*Modernism, and its more recent manifestation as development, have betrayed progress ... while a few have attained material abundance, resource depletion and environmental degradation now endanger many and threaten the hopes of all to come ... Modernism betrayed progress by leading us into, preventing us from seeing, and keeping us from addressing interwoven environmental, organisational and cultural problems.*

With this it was realised that reform or a radical rethinking of the concept of development was imminent and that changes were required in both goals and methods. This realisation in a way led to the development of ‘Sustainable Development’.

In social sciences ideas that affect millions of people and guide the policies of nations that is just and accessible to all, not just the elite. It is only then can they permeate institutions from the local to the global level, and become a part of the human landscape, part of the fabric within which we define our lives. Such is the concept of development. Prior to the second half of the twentieth century, the idea of development as we know it today barely existed. The structures of imperial and colonial power which dominated the world in the nineteenth and early twentieth centuries made little provision for economic and social advance. Within the richer countries of Europe and North America, economic growth which was central to the generally accepted goals of ‘progress’ and ‘modernisation’ had but very little concern for issues of equity and social justice. All this changed.

By the end of the Second World War, perceptions and policy had changed drastically. Economic and social improvement for the majority had become a major preoccupation of governments and with the crumbling of colonial power relations this goal was extended to the developing nations of the world. Economists, other social scientists, and policymakers adopted a framework of thought which was much more ambitious in its scope than previous formulations of political economy. The clear goal of economic development policy was to raise living standards throughout the world, providing steadily more goods and services to an expanding population. As development policy evolved, different approaches were emphasized at different times. Education, nutrition, health, sanitation and employment for the poor were the central components of this approach - reflecting an acknowledgement that the benefits of development did not necessarily “trickle down” to those who needed them most.

Sustainable development has been defined in many ways, but the most frequently quoted definition is from *Our Common Future*, also known as the Brundtland Report:

*“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts:*

- ◆ *the concept of **needs**, in particular the essential needs of the world’s poor, to which overriding priority should be given; and*
- ◆ *the idea of **limitations** imposed by the state of technology and social organisation on the environment’s ability to meet present and future needs.”*

Sustainable development is necessary because the need for development is as great as ever, but the model of the past cannot be used as a pattern for the future. Millions of people worldwide live below the poverty line, have no access to health care, and have inadequate shelter. With the rapid increase of the global population, the disparity between rich and poor is becoming greater.

# UNDERSTANDING CLIMATE CHANGE AND ITS PROCESSES – CDP, CDMs AND CARBON OFFSETTING

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### 6.1 Introduction

The weather and climate are often very closely interlinked with our daily life and human being and all living organisms are constantly dependent on the efficiency of natural processes and weather patterns. For several thousand years human activities have to a large extent depended heavily on the earth's climate and its network of diverse ecological systems. These complex ecosystems often have undergone changes over hundreds of years primarily as a consequence of changing climatic conditions which also has resulted in new and diverse regions, landscapes and wilderness regions which have evolved or reduced over a period of time. The complex network of biota that inhabit the earth have therefore gone through a process of constant evolution.

The solar system has played a major part in the evolutionary development of the earth and its diversity. The energy generated from the solar radiation that hits the earth is responsible for maintaining the stability of the earth overall temperature. In a sense this also helps regulate the climate of the earth. One can see an analogy here with the human body which also has a body temperature which is regulated because of physiological functions that keep the body temperature in a stable condition.

The climate on the earth's surface and above not only helps distribute heat across land mass and oceans but also helps in a cyclic pattern of weather changes leading to precipitation through rainfall or snow, periods of winter and summer through the year.

Precipitation levels of a region and regional climate in the form of water can play a crucial role in developmental economy of a region many of which are largely dependent on the weather.

It might be interesting to note here that the earth has actually been undergoing climate change for more than 100 million years. Strange as it may seem, the temperatures in ancient times were known to be much higher than what they are today and estimates suggest that these were as high as 6-8°C than what we are experiencing today. However there have also been periods in the earth's evolutionary history when temperatures were lower by about 5°C than today. This constant rise and fall in the earth's average surface temperature has led to climatic variations and evolution of its inhabitants. A case in point is the Jurassic period when Dinosaurs ruled the earth. It is also believed that these creatures disappeared almost suddenly as a consequence of various changes in the earth's climate. Much of the rise in global temperatures in earlier times have been attributed to rise in carbon dioxide concentrations in the atmosphere as a consequence of volcanic eruptions which spewed large quantities of ash along with gases covering vast atmospheric spaces. The Krakatoa volcanic eruption in 1883, considered to be one of the largest volcanic eruptions in history led to a cooling of the temperatures as a major part of the atmosphere was covered with gases causing incoming solar radiation to be blocked thereby reducing global temperatures.

These changes that earth has gone through have also led to changes in the evolutionary traits of various ecosystems and life forms and subsequent adaptive traits of organisms. It will be useful here to refer to the famous naturalist Charles Darwin and his theory of Natural Selection in terms of development of unique evolutionary traits amongst organisms.

Similarly, there have been several phases in the earth's history when period of cooling or glacial periods have been witnessed leading to reduced temperatures across many subcontinents. These have often been cited as Ice ages or mini Ice age. Geological records of mountains, sedimentary rocks, ice cores from glaciers and snow covered mountains and tree rings have provided clear scientific evidences of the earth's temperature existent in the earlier times. These evidences have also provided some clues about the lower levels of concentrations of gases like carbon dioxide, methane etc.

Climate change therefore has been a phenomenon relatively common as noticed by various scientists and palaeontologists who have studied the earth's past history. What is of interest to note that in the past two hundred years or so, the earth's climate has undergone dramatic change as a result of human interference and anthropogenic activities. Since the 1850s and the industrial revolution in the 1930's changes in earth's atmosphere have been rather far too rapid as compared to some of the changes that were witnessed in earlier times.

The rising level of human interference with the earth's climate system through constant increase from greenhouse gases is leading to imbalances in the earth's atmosphere causing a serious of local and regional impacts. These impacts have manifested in various ways

including change in precipitation patterns, droughts, flash floods, increase in sea level, melting of glaciers, polar ice cap, changes in vegetation patterns, changes in crop productivity etc. In the subsequent section we will focus on some of the key impacts that are being felt in the India subcontinent to get an understanding of how these impacts can lead to altering the sensitive balance of our ecological diversity, agricultural and coastal economy, water resources amongst others.

The root cause of rise in average global surface temperatures is the rise on greenhouse gases primarily due to human activities. In the next section we will focus on understanding the greenhouse effect and how this has led to increase in concentrations of some of the gases in our atmosphere.

Before we move on to the details of climate change, ozone depletion and greenhouse emissions, let us have a look at a few important terms :

### Some Important Terms

**Baseline:** This refers to actual or historical emission of a given industry or average emission of project activities undertaken in the previous five years under existing social, economic, technological and environmental circumstances.

**Biocapacity:** The ability of an ecosystem to produce useful biological materials and to absorb wastes generated by humans.

**Certified Emission Reduction:** Certified emission reduction or CER is a unit equivalent to one metric tonne of carbon dioxide equivalent calculated using global warming potentials as defined by the Kyoto Protocol.

**Carbon Credits:** Carbon credits is a generic term for any tradable certificate or permit representing the right to emit one tonne of carbon dioxide or the mass of another greenhouse gas with carbon dioxide equivalent that is equal to one tonne of carbon dioxide.

**Clean Development Mechanism:** An innovative market based mechanism aimed at achieving emission reduction targets of developed countries through environmentally sustainable or clean technology projects in developing countries which earn carbon credits.

**Designated Operational Entity:** A DOE shall perform all validation or verification and certification of proposed CDM project activities as taken up by host parties.

**Designated National Authority:** A national agency or authority which will essentially be a nodal body to approve all proposed CDM projects that are undertaken by the parties to the CDM including host countries and developed country parties.

**Footprint:** Sum of all activities or emissions induced by human activities in a given timeframe and which has an impact on natural resource or human life.

**GHG Emissions:** Gases generated by human and anthropogenic activities and are trapped in the atmosphere in the thermal infrared range within the earth's atmosphere.

*Contd...*

**Offset:** An agent, element, or unit of activity that balances, counteracts or compensates any activity resulting out of a human perturbation or event.

**Project Design Document:** An approved document created by the rules of CDM process which form the sole basis for developing a CDM project proposal under specific criteria, guidelines and methodologies.

## 6.2 Climate Change

The growing evidence from various parts of the world indicates that natural ecosystems are increasingly being subjected to various kinds of pressures of anthropogenic activities. Climate change is now being seen as one of the biggest threats to the sustenance of these systems. The severity of regional climate change impact has had a significant influence on our biological systems. Recent changes in the earth's surface temperature is impacting the natural resource base of terrestrial, freshwater, marine, agro ecosystems. Some of the observed impacts of our ecosystems to climate change are detailed below:

- ◆ shifting and timing of biological cycle of various species (flora and fauna)
- ◆ timing of growth of various plant species related to changes in weather conditions
- ◆ changes in vegetation composition/forest types of a region
- ◆ changes in agricultural productivity of major food crops
- ◆ spread of vector borne diseases
- ◆ changes in migration patterns of bird species
- ◆ sea level rise
- ◆ melting of glaciers in mountain regions
- ◆ melting of polar icecaps
- ◆ droughts and water related stress

Awareness about the climate, its development and changes differ in different communities. It has presumably, always been high among the more intelligent members of primitive societies living in vulnerable regions. To establish a history of the changes in climate is not easy because of the difficulties in obtaining truly representative measurements. Climate change has been universally recognised as a global problem. While, historically, the preponderance of greenhouse gas emissions has been in developed countries, emissions will increase rapidly with expected and needed economic growth in developing countries. The principal reason for lack of progress is that in developing countries, climate change is not an important focus of economic or development policy and only recently has it been considered among national environmental policy objectives. Climate change remains too marginal compared to the pressing issues of food security, poverty, natural resource management, energy needs and access, or urban land use to capture the attention of leading actors. Various parties to the United Nations Framework Convention on Climate Change (UNFCCC) 1992, as well as independent scientific analysis, have reiterated that strong and inclusive global co-operation that integrates sustainable development and

climate change policy objectives will be needed to address these global environmental issues.

Current international climate change policies have been uniquely driven by global environmental policy concerns, and very little attention has been given to local development and the environmental impacts of specific policies. However, from the local perspective, ancillary benefits of climate change policies, such as increased energy efficiency and the health impacts of local air pollution, may be significant and may therefore be very important in promoting local action.

The earth's climate is determined in large part by the presence in the atmosphere of naturally occurring greenhouse gases, including in particular water-vapour, carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), CFCs, nitrous oxide (N<sub>2</sub>O) and tropospheric ozone (O<sub>3</sub>). These are transparent to incoming shortwave solar radiation but absorb and trap longwave radiation emitted by the earth's surface. Their presence exerts a warming influence on the earth. Scientific evidence suggests that continued increases in atmospheric concentrations of selected greenhouse gases due to human activities will lead to an enhanced 'greenhouse effect' and global climate change.

#### a) Convention on Climate Change

In 1992, The United Nations organised one of the biggest Global environmental Conference also called the Earth Summit in Rio de Janeiro to take stock of the growing consumptions lifestyles, increasing pressure on natural resources and loss of biodiversity, rising energy use etc. The two week summit was unprecedented for a UN conference, in terms of both its size and the scope of its concerns. Twenty years after the first global environment conference, the UN sought to bring together nations, civil society and academic community to rethink economic development and find ways to halt the destruction of our natural resources and preventing degradation. One of the main outcomes of the Earth summit was the creation of a global treaty to tackle climate change and find ways and means to mitigate the problems related to these issue. The United Nations Framework Convention on Climate Change (UNFCCC) which came into being as a consequence of the deliberations at the summit in 1992 is now seen as one of the major treaties which is helping the world community to tackle climate change.

Because of UNCED's political prominence, many international environmental debates were merged into the process, such as those of the conventions on climate change and biodiversity, which were not negotiated at UNCED or in the Prepcom (Preparatory Committee for an Arms Trade Treaty) meeting but were signed in Rio following separate negotiations. Formal international discussion of a convention on climate change began in 1988 with the establishment of the Inter-governmental Panel on Climate Change (IPCC), an advisory body of scientists and officials that assessed comprehensively climate science, impacts and response strategies. IPCC served as a forum for "prenegotiation", because many of its participants expected it to be followed by formal negotiations under the same authority. Instead, the UN General Assembly passed a resolution on December 1990 that established the Inter-governmental Negotiating Committee (INC).

The negotiation of a treaty to address climate change and its effects was formally set in motion by the UN General Assembly determined that 'climate change is a common concern of mankind' and urged governments and inter-governmental and non-governmental organisations to collaborate in concerted effort to prepare, as a matter of urgency, a framework convention on climate change. The 1992 Convention on Climate Change went beyond the scope of the 1985 Vienna Convention, which took nearly three times as long to negotiate among a smaller group of States. The word 'Framework' in the title is something of a misnomer, since the 1992 Convention established:

- 1) Commitments to stabilise greenhouse gas concentration in the atmosphere at a safe level, over the long term, and to limit emissions of a greenhouse gases by developed countries in accordance with soft targets and timetables.
- 2) A financial mechanism and a commitment by certain developed country parties to provide financial mechanism and a commitment by certain incremental costs and adaptation measures;
- 3) Two subsidiary bodies to the conference of the parties;
- 4) A number of important guiding 'Principles'; and
- 5) Potentially innovative implementation and dispute settlement mechanisms.

The Convention was the first international environmental agreements to be negotiated by virtually the whole of the international community, with 143 States participating in the final session of the INC/FCCC. The relation between the Climate Change Convention and vital national, economic, social and environmental interests was evident from the different interest groups of States which emerged during the negotiation.

*i) Preamble, definition, objective and principles*

The Convention's Preamble reflects a wide range of interests. It includes matters jettisoned from the 'Principles', and expressly recognises, *inter-alia*, 'the principle of sovereignty', that the largest share of historical and current global emissions has originated in developed countries. The Preamble also refers to the concepts of 'per capita emissions' and 'energy efficiency', matters which did not receive sufficient support to be included in the operational part of the Convention.

The ultimate objective of the Climate Change Convention is to stabilise greenhouse gas concentration in the atmosphere 'at a level that would prevent dangerous anthropogenic interference with the climate system'. However, the Convention implicitly recognises that some climate change is inevitable, since the objective is to be achieved within a timeframe sufficient to allow 'ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner'. Parties should adopt measures and policies which are 'precautionary', 'cost-effective' and 'comprehensive', and which take into account different 'socio-economic contexts'. Finally, throughout the 'Principles', section and elsewhere in the Convention, reference is made to the need to ensure 'sustainable economic growth' in order to address the problems of climate change.

*ii) Commitments*◆ **General**

The general commitments include the development of national inventories of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, and the formulation and implementation of national and, where appropriate, regional programmes containing measures to mitigate climate change by addressing emissions and removals of these gases and by facilitation of adequate adaptation to climate change.

◆ **Specific**

At the heart of the Convention are the specific commitments relating to sources and sinks of greenhouse gases binding in all developed country parties and the EC under Article 4(2). The extent of these commitments is unclear as a result of the convoluted, language agreed to by way of compromise between developed and developing countries. The parties agreed 'to begin a process to enable [the conference of the parties] to take appropriate action for the period beyond 2000, including the strengthening of the commitments of the Parties through the adoption of a protocol or another legal instrument'. This process led to the adoption of a protocol to the Convention at the third conference of the parties in Kyoto in 1997. The Kyoto Protocol set quantified targets and a timetable for the reduction of greenhouse gas emissions by developed country parties.

The convention provides for 'joint implementation' by parties of their policies and measures which would lay the foundation for the efforts of those States which sought to ensure that emission reductions should be carried out in the most 'cost effective' way possible. The Convention additionally requires that 'a certain degree of flexibility', should be allowed to developed country parties 'undergoing the transition to a market economy'.

*iii) Institutional Arrangements*

The Climate Change Convention establishes a conference of the parties, a secretariat, two subsidiary bodies and a financial mechanism. It met for the first time in 1995 and has subsequently met annually. It has several functions, including:

- i) To examine periodically the obligations of the parties;
- ii) To facilitate the co-ordination of measures;
- iii) To promote and guide comparable methodologies for preparing inventories of greenhouse gas emissions;
- iv) To assess the implementation of the Convention by all parties and the overall effect of measures; and
- v) To adopt regular reports on the implementation of the Convention.

A multidisciplinary Subsidiary Body for Scientific and Technological Advice was established to provide information on scientific and technological matters to the conference of the parties. A Subsidiary Body for Implementation was established to assist the conference of the parties in the assessment and review of the implementation of the Convention. Although some States wanted to limit participation, both subsidiary bodies are open to participation by all parties.

The convention defines a financial mechanism for the provision of financial resources on a grant or concessional basis, including for the transfer of technology. The mechanism is required to have an equitable and balanced representation of all parties within a transparent system of governance.

#### *iv) Implementation and dispute settlement*

Apart from the role of the conference of the parties and the Subsidiary Body of Implementation, the Convention provides for the possibility of establishing a 'multilateral consultative process' for the resolution of implementation questions, which will be available to parties on their request. This whittles down two more ambitious original proposals. Additionally, a dispute settlement Article provides for possible compulsory recourse to arbitration or the International Court of Justice with the consent of relevant parties to a dispute, as well as the possibilities for the compulsory establishment of a conciliation commission with the power to make a recommendatory award, at the request of one of the parties to a dispute twelve months after notification of the dispute. The Convention provides for amendment, the adoption and amendment of Annexes, and the adoption of Protocols, no reservations are permitted. Prior to its entry into force, Article 21 of the Convention established interim arrangements concerning the designation of an interim secretariat, co-operation with the IPCC and other scientific bodies.

### **b) The 1997 Kyoto Protocol**

#### *i) Introduction*

The major objectives of the UNFCCC is to:

- ◆ Gather and share information on greenhouse gas emissions, national policies and best practices
- ◆ Launch national strategies and action plans for addressing greenhouse gas emissions and adapting to impacts across the world
- ◆ Provide financial and technological support to developing countries to tackle the problem
- ◆ Co-operate in preparing for adaptation to the impacts of climate change

As part of the treaty and its obligations, a series of articles were drawn up to take specific actions relating to the issue. As part its duties the convention divided countries into three main groups with differing commitments. These were Annex-I countries, Annex-II countries (OECD only) and non-Annex-I countries (developing countries).

Under the Global treaty of the UNFCCC, several major decisions started to be decided upon for the world community to tackle the serious issue of climate change. In order to reduce the rising emissions of greenhouse gases, the convention decided to formulate a protocol to ensure that the obligations of the UNFCCC was met. A landmark protocol was signed by countries at Kyoto in Japan in 1997.

The 1997 protocol by and large originated out of the UN convention's objectives, principles and institutions, but significantly strengthened the Convention by committing Annex-I Parties to individual legally binding targets, to limit or reduce their greenhouse gas emissions. However one of the important clauses of the protocol included the fact that only signatories to the Convention that were parties to the protocol, would be bound by the Protocol's commitments once it came into force.

*ii) The overall goal so the Kyoto Protocol is defined below*

While individual emission reduction targets are set for each Annex-I party (developed country), the cumulative emission reduction should amount to a total cut of 5.2% from 1990 levels of GHG during the first protocol period (2008-12).

The major greenhouse gases whose emissions were considered as a major reason for combating climate change included:

- ◆ Carbon dioxide(CO<sub>2</sub>)
- ◆ Methane(CH<sub>4</sub>)
- ◆ Nitrous Oxide(N<sub>2</sub>O)
- ◆ Hydrofluorocarbons(HFCs)
- ◆ Perfluorocarbons(PFCs)
- ◆ Sulphur hexafluoride(SF<sub>6</sub>)

The protocol formally came into effect in 2005 after Russia ratified the Protocol giving it the much needed boost to tackle the problem. Here it is interesting to note that the United States of America is still not a signatory to the Kyoto Protocol although it is a member country of the UNFCCC. One of the major reasons for the United States of America's refusal to sign the Protocol was based on the fact that as an economic power house, reducing a certain percentage of greenhouse gases would amount to derailing the economic development and aspirations of the people of the country. As a consequence the USA is still not party to many initiatives of the Kyoto protocol including the CDM.

The Kyoto Protocol to the Framework Convention on Climate Change was adopted by the third conference of the parties in December 1997. Negotiations for Protocol to the Convention commenced in 1995 after the first conference of the parties, meeting in Berlin, determined that the commitments provided for in Article 4(2)(a) and (b) of the Convention were 'not adequate' and decided to launch a process to strengthen the commitments of Annex-I parties through the adoption of a protocol or another legal instrument. The process was not intended to introduce any new commitments for non-

Annex-I parties, but merely to reaffirm existing commitments in Article 4.1 and continue to advance the implementations of these commitments. Negotiations were to be conducted as matter of urgency with a view to adopting the results at the third conference of the parties in 1997. At the second conference of the parties at Geneva in 1996, a Ministerial Declaration was adopted by which Ministers urged their respective representatives to accelerate negotiations on a legally binding protocol or another legal instrument. Given the economic and developmental implications, it is not surprising that the Kyoto Protocol negotiations were among the most difficult and complex ever conducted for a multilateral environmental agreement. Deep divisions between the parties emerged in relation to a range of key issues, such as emissions reduction targets, sinks, emissions trading, joint implementation and the treatment of developing countries. In early 2001, the future of the Protocol was thrown into doubt with the announcement by President George W. Bush that the United States (responsible for a quarter of 1990 global greenhouse gas emissions) would not ratify the Protocol. Nevertheless, at the resumed session of the sixth conference of the parties, held in Bonn in July 2001, the remaining States parties reached agreement on mechanisms for implementing commitments under the Protocol. The Bonn Agreements were not drafted as a legal text, but, at a political level, reflected an important breakthrough on many of the critical negotiating issues, and a clear signal that the world community was prepared to go ahead with the Kyoto Protocol, even without United States support. The parties were able to incorporate almost all of the deals made in Bonn into the legal text of the 'Marrakesh Accords', a series of decisions concerning the implementation of the Kyoto Protocol which pave the way for its entry into force.

### *iii) Policies and Measures*

Article 2 of the Protocol contains a list of policies and measures which parties may implement in order to achieve their quantified limitation and emission reduction targets. During negotiations for the Protocol, the European Union pushed for the adoption of mandatory and co-ordinated 'policies and measures' but this was resisted by the United States, Canada, Australia and some other Annex-I parties who sought more flexible approach, with policies and measures to be determined principally by each individual party. This latter approach was largely adopted in Article 2, which provides that each Annex-I party, in achieving its emissions limitation and reduction commitments under Article 3, shall implement policies and measures 'in accordance with its national circumstances'. A list of indicative measures follows, which includes enhancement of energy efficiency, the protection and enhancement of sinks, the promotion of sustainable forms of agriculture, increased research on and use of new renewable forms of energy, measures to limit or reduce emissions in the transport sector and the limitation or reduction of methane emissions.

### *iv) Entry into Force and Amendments*

In order to enter into force, the Protocol requires the ratification, acceptance, approval or accession of at least fifty-five parties to the Convention, which must include Annex-I

parties which accounted for at least 55% of the total carbon dioxide emissions of Annex-I parties in 1990. The refusal of the world's largest greenhouse emitter, the United States, to ratify the Protocol made the participation by other Annex-I parties with significant emission, such as Japan, the European Community and Russia, essential for the Protocol to come into force.

Amendments to the Protocol can be adopted by a three-fourths majority vote of the parties present and voting at the meeting at which it is proposed for adoption, followed by its ratification or acceptance by at least three-fourths of the parties to the Protocol.

Negotiations on a successor to the Kyoto Protocol dominated the 2007 United Nations Climate Change Conference. A meeting of environment ministers and experts held in June called on the conference to agree a road-map, timetable and 'concrete steps for the negotiations' with a view to reaching an agreement by 2009.

### c) Climate Change and Sustainable Development

By wastefully exploiting natural resources, and by the thoughtless application of technology, the industrial and agrarian societies have attained a potential for inflicting damage on a scale that has seriously endangered the survival of man on this planet. Data records clearly indicate that the increase in past trends is currently maintained in practically all areas that are of environmental global warming, tropospheric ozone, air, soil and water pollution, including chemical and radioactive wastes, as well as allergies, viral and carcinogenic diseases. There are a large number of protective measures available, but their effectiveness in reducing the climate impacts varies widely. Climate and environment are some of the most critical factors on which a sustainable future depends. They must therefore be protected.

The term "sustainable development" has its origins in the International Union for the Conservation of Nature's (IUCN's) 1980 World Conservation Strategy report (IUCN, WWF and UNEP, 1980), but it was with the World Commission on Environmental and Development report, entitled *Our Common Future* (1987) that the term gained broad currency. The commission defined sustainable development as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs.'

The most conspicuous services that the natural environment provides are food and inputs to production, including energy, metals and timber. The natural environment also provides more fundamental services, without which human life on earth would not be possible. These are known as Global Life-Support services, since they provide the basic necessities to allow human life such as food, shelter and the maintenance of suitable climatic and atmospheric conditions.

In the Indian context, let us now explore and study some important ecosystems which are likely face serious impacts from climate change.

### i) Climate change and freshwater resources

It is a well-known fact that availability of water is one of the most important aspects of sustenance of all living organisms on earth. The impacts of climate change on freshwater ecosystems arises from a direct relation with rise in surface temperatures.

One of the most important and visible indicators of climate change is the recession of glaciers in many parts of the World. On a time scale recent glaciations occurred around 20,000 years ago as part of the earth's paleoclimatic history. Although the recession of glaciers has been suggested by some scientists as a natural phenomenon, in the latter half of 20th century, an increase in the rate of retreat has been observed in most glaciers around the world including the Himalayas.

The Himalayan region has the largest concentration of glaciers outside the polar caps. With glacier coverage of 33,000 km<sup>2</sup>, the region is aptly called the "Water Tower of Asia" as it provides around 86,000,000 cubic meters of water annually. These Himalayan glaciers feed seven of Asia's great rivers: the Ganga, Indus, Brahmaputra, Salween, Mekong, Yangtze and Huang Ho and ensure a year round water supply to about one billion people.

The changes in climate variability have led to a rapid retreat of mountain glacier systems which are considered the lifeline of river basins and ecosystems. Scientific studies have shown that 67% of glaciers are retreating at a startling rate in the Himalayas as a result of various factors including climate change. The retreat of the Gangotri Glacier in the Himalayas and potential impact from climate change has been a subject of much discussion by Indian scientists in recent times.

Past work by glaciologists and climatologists have found that the accelerated rate of glacial melt in the some of the important glaciers in the Himalayas will have consequences for the freshwater ecosystems of the Ganga basin, with long term impacts for biodiversity, people and livelihoods as well as regional food security. This will not only mean repercussions on the region's agricultural productivity and industrial activity, but also on the Terai ecosystems.

#### a) *Impacts on water and agriculture*

The fertile Ganga region in the Indian subcontinent is bestowed with several important rivers which form part of a larger Ganga basin which has both national and transboundary relevance. The presence of these highly complex river systems indicates the importance of glaciated mountains, which account for most of the glacial melt water. Both glacial melt water and monsoonal precipitation provide a significant component of water resources for different parts of the country. While snow and glacier melt are the major factors in the western and central Himalayan region, rainfall patterns in the eastern part of India are responsible for the changing water regime.

Recent studies by scientists have tried to determine the impact of deglaciation on the water resources of the Himalayan region through development of a hydrological model

which can depict how local water discharges can respond to future climate scenarios. Consequently, these studies have come out with conceptual models which show increased water availability in some river basins and decreased water supplies in other regions in the coming decades. The glacial fed rivers of the Himalayas are an important resource for the Ganga basin with many rivers contributing to the irrigation potential of some of India's most densely populated States like Uttar Pradesh, Bihar, Delhi, Haryana etc.

*b) Impacts on power*

Most of the rivers which originate in Himalayan mountains have their upper catchments in snow and glaciated areas and traverse through dense valleys and deep gorges. These perennial rivers are an important source for hydel power generation and also supply water to some of the largest irrigation networks of the world. Any changes in river discharge patterns can have profound impacts on the hydropower potential of this region. There are ambitious plans to exploit more hydel power through several micro and mini hydel projects including run-of-the-river power plants which are seen as environmentally friendly. Current estimates suggest that 194 hydropower plans are proposed in Uttarakhand with a planned power generation capacity of about 18,700 MW. This is in contrast to the existing operational capacity of 2,050 MW of power. Changes in the water regime as a consequence of climate change may lead to concerns about energy security due to investment in hydropower development across the State.

**ii) Climate change and coastal ecosystems**

The oceans and seas are an integral part of the earth's climate system and are responsible for maintaining the natural circulation patterns. According to the Inter-Governmental Panel on Climate Change (IPCC) climate change impacts on the ocean and marine ecosystems are likely to play a significant role in shaping the changes of the sea surface temperature, sea level, sea ice cover, salinity, ocean circulation and climate related oscillations. Some of the main features of observed and projected changes in the characteristics of ocean systems include:

- ◆ An increase of the global ocean heat content since the 1950s.
- ◆ Global average sea level rise of between 0.1-0.2 m due to thermal expansion of water and the loss of mass from glaciers and ice caps. This is expected to increase to 0.6m or more till 2100. ( IPCC 2007b)
- ◆ A decrease in the extent of sea ice in the Northern hemisphere of more than 10% including a decrease of 40% in recent decades of sea ice thickness.
- ◆ An increase in the frequency, persistence and intensity of extreme weather events based on the El Nino Southern Oscillation (ENSO) cycle since the mid-1970's.

In the past few years changes in rainfall, currents and sea level associated with global warming, are already affecting the world's coastal ecosystems and fisheries. The recent IPCC report has also provided ample evidence of the implication of climate change on our biodiversity and the increasing vulnerability of some of our critical ecosystems and

consequences for livelihoods of people. Erratic weather and monsoon patterns, along the Indian coastline along with frequent extreme climatic events like cyclones are major threats to the ecosystem including in some cases low-lying islands some of which are already facing partial submergence resulting in shoreline changes.

Coastal ecosystems are particularly sensitive to physical and biochemical changes with reference to:

- ◆ Increased level of flooding, loss of wetlands and mangroves and saline water intrusion into freshwater habitats.
- ◆ Severity and increase of cyclonic events leading to coastal erosion, loss of ecological diversity along shorelines.

Marine ecosystems are also likely to be affected by changes in sea water temperature, oceanic circulation patterns which may lead to changes in composition of marine biota, changes in migratory patterns, changes in ecosystem function. The increased amounts of CO<sub>2</sub> absorbed by oceans are also likely to have significant impacts on the acidity of ocean waters which in turn can have serious consequences for certain marine animals like mollusks, corals etc.

The Fourth Assessment Report of the IPCC ( IPCC 2007b) has suggested that climate change is likely to have significant impacts on the coastal regions of India. Some of these include:

- ◆ Increased frequency of hotter days and multiple-day heat wave in the past century with increase in deaths due to heat stress in recent years.
- ◆ Sea-level rise has led to intrusion of saline water into the groundwater in coastal aquifers and thus adversely affecting local freshwater resources. e.g. for two small and flat coral islands at the coast of India, the thickness of freshwater lens was computed to decrease from 25 m to 10 m and from 36 m to 28 m respectively, for a sea level rise of only 0.1 m.
- ◆ Warmer climate, precipitation decline and droughts in most delta regions of India have resulted in drying up of wetlands and severe degradation of ecosystems.
- ◆ Ganges-Brahmaputra delta: More than 1 million people are likely to be directly affected by 2050 from risk through coastal erosion and land loss, primarily as a result of the decreased sediment delivery by the rivers, but also through the accentuated rates of sea-level rise.

In coastal regions like the Sundarbans delta in West Bengal, the recent drastic changes in weather conditions and monsoon patterns, along with frequent extreme climatic events like cyclones are major threats to the ecosystem of the region. Climate change induced by anthropogenic activities is thought to be behind the observed rise in sea level, lengthier summers, and a dramatic increase in rainfall over the past 15-20 years. The already marginal economy of human populations dependent on single crop agriculture, fishing and harvesting of forest resources is also adversely affected by changes such as sea level

rise, increase in salination, changing patterns of rainfall, and increase in moisture content in the atmosphere leading to increasing incidences of vector-borne diseases. This has increased their vulnerability and possibly their dependence on the forest resources.

Similarly fluctuations in the sea surface temperature along the coasts of Bay of Bengal and Arabian Seas have also resulted in changes and decline in the availability of fish species some of which are of good commercial value. Impact of climate change on regional fisheries can be ranked in terms of likelihood (for either warming or cooling) of impacts. Most of this knowledge comes from empirical studies over the recent 50 years, when weather and environmental records became fundamental to explaining individual species' behaviour and population responses to changes in local conditions.

It is also a well-known fact that many large civilisations grew along the banks of rivers and coasts. More than half of the world's population presently resides in the coastal zone of Asia. Demographic changes, urbanisation, industrial development, trade and transport demands, and lifestyle changes have largely been responsible for the increasing pressure on coastal regions. Tropical Asia would probably experience the highest impact of present day climate variability and therefore is more prone to global climate change.

In the Asia Pacific region many low-lying coastal cities are at risk and at the forefront of impacts. These include developing cities like Shanghai, Tianjin, Guangzhou, Jakarta, Tokyo, Manila, Bangkok, Karachi, Mumbai and Dhaka all of which have witnessed significant environmental stresses in recent years. A recent study (McGranahan, Balk and Anderson, 2007) indicates that one tenth of the global population live in coastal areas that lie within just ten meters above sea level. The study also brings home the fact that nearly two-thirds of urban settlements with more than 5 million inhabitants are at least partially in the 0-10 meter zone while on an average, 14% of people in the least developed countries live in the zone (compared to 10% in OECD countries).

### **iii) Domestic responses to climate change**

The problem of climate change is now considered one of the most serious environmental threat to mankind. As a global problem responding to the challenges of climate change is the collective responsibility of every individual, government and nation around the world. As we have studied earlier the primary cause of this problem is the rise in greenhouse gases due to rapid industrialisation and economic development. A reduction in atmospheric concentration of these gases can only be achieved through by halting or reducing our demand of fossil fuels, reducing deforestation, reduced energy consumption and optimising our use of resources through life style changes. This is easier said than done as economic growth of a region invariably involves intensive use of energy and resources. Reducing the energy requirements of industries or for human needs can adversely affect the economic development plans of many regions. However despite the difficulties faced there are many solutions and measures which have been projected to reduce the growth and emission of fossil fuels in the atmosphere. Collectively these solutions are termed as mitigation which is used to describe any process or approach leading to reduce emissions of fossil fuels, lower energy use in industries, transport, reduced deforestation etc. If

suitable mitigation actions are taken up on a global scale then there is every possibility that the magnitude and scale at which climate change is likely to occur can be significantly reduced.

At the same time it is also a known fact that climate change is a reality and is being witnessed across the world through various types of impacts. Because of the continuous emissions of fossil fuels into the atmosphere over the past two hundred years, the earth's natural resource base will continue to be affected for several years from now even if mitigatory efforts are taken up to reduce fossil fuels use. As a result of this, humans and biological systems will need to adapt to changing weather and climatic patterns through various measures and solutions. The term adaptation is therefore used to describe the adjustment in natural and human systems in response to changes in the climate or its impacts. Such adaptive responses can often lead to building resilience against the adverse impacts of climate change in biological systems and human societies and to develop coping capacities and strategies against the possibilities of future climate change.

#### **iv) Mitigation**

One of the options that have been mooted to reduce the growth of fossil fuels as a mitigation action is to increase the energy efficiency of various industries thereby reducing the flow of greenhouse gases into the atmosphere. One of the major contributors to emissions is CO<sub>2</sub> as we have already learnt in earlier lessons. Nearly 50% of emissions in the atmosphere is through inefficient use or coal fired power plants. Encouraging cleaner technologies for reduced emissions of CO<sub>2</sub> along with increase efficiency of power plants is one of the measures being implemented by several industries and countries. Cutting down on production of coal to a more cleaner and alternative form of energy is also a measure being implemented.

When we talk of alternative sources of energy one can easily remember some of the measures that are being taken up in different parts of the world. One of the options that countries are adopting is to develop renewable energy technologies which are considered as clean technologies and do not pollute the atmosphere unlike the fossil fuels that we have learnt earlier. Renewable energy technologies are of various types and depend on the landscape, financial ability, technology of industries to adopt such measures. The use of Renewable energy can to a great extent help in controlling the GHG emissions at a global scale. Developing renewable energy technologies which contribute to sustainable development at an affordable cost is perhaps the need of the hour.

Renewable energy technologies as the name suggests can be used from sources for an infinite period unlike fossil fuels which are limited in resource. Some of the commonly known renewable energy technologies include solar power, biomass based power, hydro power, wind power, tidal power, geothermal power. All these technologies generate energy from resources which are ample and abundant in the natural systems of the earth. Recently, there has also been initiatives to generate power using biomass and organic wastes. These are commonly known as waste to energy projects which often look at utilising organic wastes, land fill wastes to generate energy and power for local needs.

Of these solar, wind and hydro power are perhaps one of the most commonly tried out technologies across the world and in India. A large number of industries and institutions are currently engaged in power generation using these technologies apart from innovation and research. For e.g. hydropower utilises rivers and freshwater resources as potential sources of generating power from watershed, catchments and mountain streams and rivers.

The National action plan on Climate change promoted by the Government of India has given a new direction to increasing the use of solar energy as India is a country with ample sunshine and this vast resource needs to be tapped for generation of power.

Other areas where mitigation efforts are being promoted include energy efficient technologies in industries, developing energy efficient buildings through energy conservation, developing technologies for transport sector ( e.g. , efficient hybrid vehicles) or use of mass rapid transports systems.

#### v) Adaptation

The impacts of climate change being felt across many of our natural ecosystems has necessitated the importance of understanding the coping capacities and the adaptive practices that are being carried out. Recent studies by academia, civil society and individuals, have focused on developing coping capacities of the vulnerable communities particularly in landscapes and regions where local community impacts have been severe. Existing adaptation practices may not be sufficient to deal with climate change and will require integrated planning measures aimed at long term adaptation management. Some of the key sectors where adaptation to climate change needs to be taken up include agriculture, forests, fisheries etc. Some of the commonly observed adaptation practices include changing traditional practices and knowledge systems, resource conserving technologies, growing new and hybrid varieties of climate resistant food crops and other plants.

Direct interactions with local communities who face the brunt of climate impact have also helped in categorising community knowledge based on environmental impacts like soil erosion, loss of landmass, water stresses, damage of coastal embankments, siltation, unsustainable livelihood practices, population pressure, storms and cyclones, flash floods due to melting glaciers etc.

Simultaneously, many local communities have also developed their own indigenous adaptation response and coping mechanisms. These interventions of the community in developing adaptation responses has been primarily a localised effort with communities implementing short term actions as a reactive response to the threat of climate change impacts. Some of these responses included:

- ◆ Shifting of farming time in anticipation of shifting of monsoon season
- ◆ Diversification into different weather resistant crops

- ◆ Construction and renovation of ponds and canals for rain water harvesting and use in winter cultivation
- ◆ Developing skills and capacity for local communities particularly in areas like education, health disaster management operations.

Future efforts in building the resilience of the local community and the ecosystems should take into account a visionary and integrated approach. Ecosystems dependent communities and local economies need to be adapted for climate change impacts and supporting mitigation advocacy. As part of this process different stakeholders at multiple levels need to come together to address the issue of climate change and environment security.

In an ecosystem based approach some key stakeholder groups could include:

- ◆ Poor and vulnerable
- ◆ Ecosystem dependent communities (Agriculture, fisherfolk communities etc.)
- ◆ Decision making bodies at local, State and national levels
- ◆ Urban consumers
- ◆ Business and Industry
- ◆ Regulatory groups
- ◆ Scientists and Academic bodies

### *Policy interventions*

In the past few decades, continuous impact on the environmental landscape particularly in vulnerable regions in the form of land use practices (water diversions, deforestation, local agriculture practices, industrialisation etc.) have caused large scale impacts on the ecological balance of the region. Climate change is expected to further accelerate the adverse impacts on these regions. There is a need to develop and implement local adaptation strategies in order to cope with the changing climate around us. These include alternate livelihood options, research and use of new and better cropping patterns, use of technology through development of early warning systems etc. Various stakeholders ranging from local communities, to academic institutions, civil society organisations and Government bodies and policy makers need to work in an integrated manner to make their regions “climate ready”.

Such impacts may drive the poor and the landless to move to urban areas for better employment opportunities imposing further stress on existing urban planning and development. The issue of global warming is now being seen as one of the biggest threats to environmental sustenance of humanity and planet earth. The past thirty years has seen a significant rise in several environmental catastrophes and disasters. The rapid growth and economic development of many countries has seen a dramatic rise in greenhouse gas emissions from pre industrial levels leading to changes in the earth’s average surface temperature. This in turn has led to variability in global and regional climatic patterns causing imbalances in the ecosystem cycle. The United Nations after a

series of meetings identified climate change as one of the most important environmental issues plaguing the earth and therefore called for a concerted effort by governments, institutions, civil society and nations of the world to consider the situation and to take timely action to develop solutions for mitigating the problem.

#### d) Understanding CDM

The protocol has established three innovative mechanisms to help cut costs of developed countries in meeting their emission targets:

- ◆ Joint Implementation (JI)
- ◆ Clean Development Mechanism (CDM)
- ◆ Emissions Trading

For the purpose of this chapter we will restrict our understanding to the Clean Development Mechanism (CDM) and the underlying projects and procedures that can be carried out under the CDM. The CDM offers an alternative way to rich and developed nations to meet their emission reduction targets under the Kyoto Protocol. These countries are allowed to fund clean technology and environmentally sustainable projects in developing countries and the emissions savings accruing from these projects can be counted towards reducing their national domestic emission levels.

Let us say an industry developing a rural electrification project using solar panels in a developing country like India is seeking to implement a project using solar energy as a clean source of fuel by deciding to invest in specific technologies which do not pollute the environment it is expected to reduce emissions below acceptable standards. The industry would then have been seen as saving emissions which can be converted to a monetary mechanism to be sold to or earned by developed nations. This monetary mechanism is called carbon credits. Similarly a developed nation like say the Netherlands is then eligible to make a monetary payment to the project proponent in India to buy those carbon credits and account for it as its own emission reduction.

In other words this may also be termed as Annex-I parties implementing a project in non-Annex-I parties that reduce emissions and using the resultant reduction units to meet their own targets. In scientific terms these resulting emission reduction that occurs is termed as Certified Emission Reduction (CERs) or tradeable unit of the CDM process. Each certified emission reduction is a unit equivalent of one tonne of carbon dioxide equivalent saved as a consequence of a clean technology project being implemented. The mechanism is seen by many as a trailblazer. It is also one of the first global, environmental investment and credit scheme of its kind, providing a standardised emissions offset instrument, called CERs.

**So to simplify, One CER = one tonne of CO<sub>2</sub> equivalent**

As per the objective of the Convention this emission reduction process also leads to stimulating sustainable development objectives.

### The objectives of CDM include:

To assist non-Annex-I Parties to:

- ◆ meet their sustainable development goals and priorities, by hosting projects that contribute to these goals, and
- ◆ contribute to the UNFCCC's overall objective of stabilising global concentrations of greenhouse gas emissions at a level that would prevent dangerous anthropogenic interference with the climate system; and
- ◆ to assist Annex-I Parties to meet their Kyoto targets at a lower cost, by allowing the use of CERs generated by emission reducing CDM projects in non-Annex-I countries to be used to meet in part these obligations.

Having learnt the basic idea of what a Carbon credit is let us know try to understand some of the important sectors which can qualify as a CDM project. Under the Kyoto protocol 15 sectors have been identified as having a potential for developing a clean technology project or initiative. Some of these sectors are detailed below:

- ◆ Energy (Energy intensive industries, manufacturing, transport, construction, oil and natural gas etc.)
- ◆ Industrial Processes (mineral products, metal and chemical industry, production and consumption of HFCs, SF<sub>6</sub>)
- ◆ Solvent and other product use
- ◆ Agriculture (Enteric fermentation, manure management, rice cultivation, burning of agricultural residues)
- ◆ Waste (Solid waste disposal, wastewater handling, waste incineration).

These sectors form the bulk of all the CDM related projects that are being implemented across the world. It is also important to realise here that the CDM projects have one major criteria in that all projects must necessarily be implemented in a developing country.

In the last few years the number of CDM projects have grown tremendously particularly in developing countries like China and India where several project developers have taken on various initiatives to implement environmentally friendly project leading to reduced emissions.

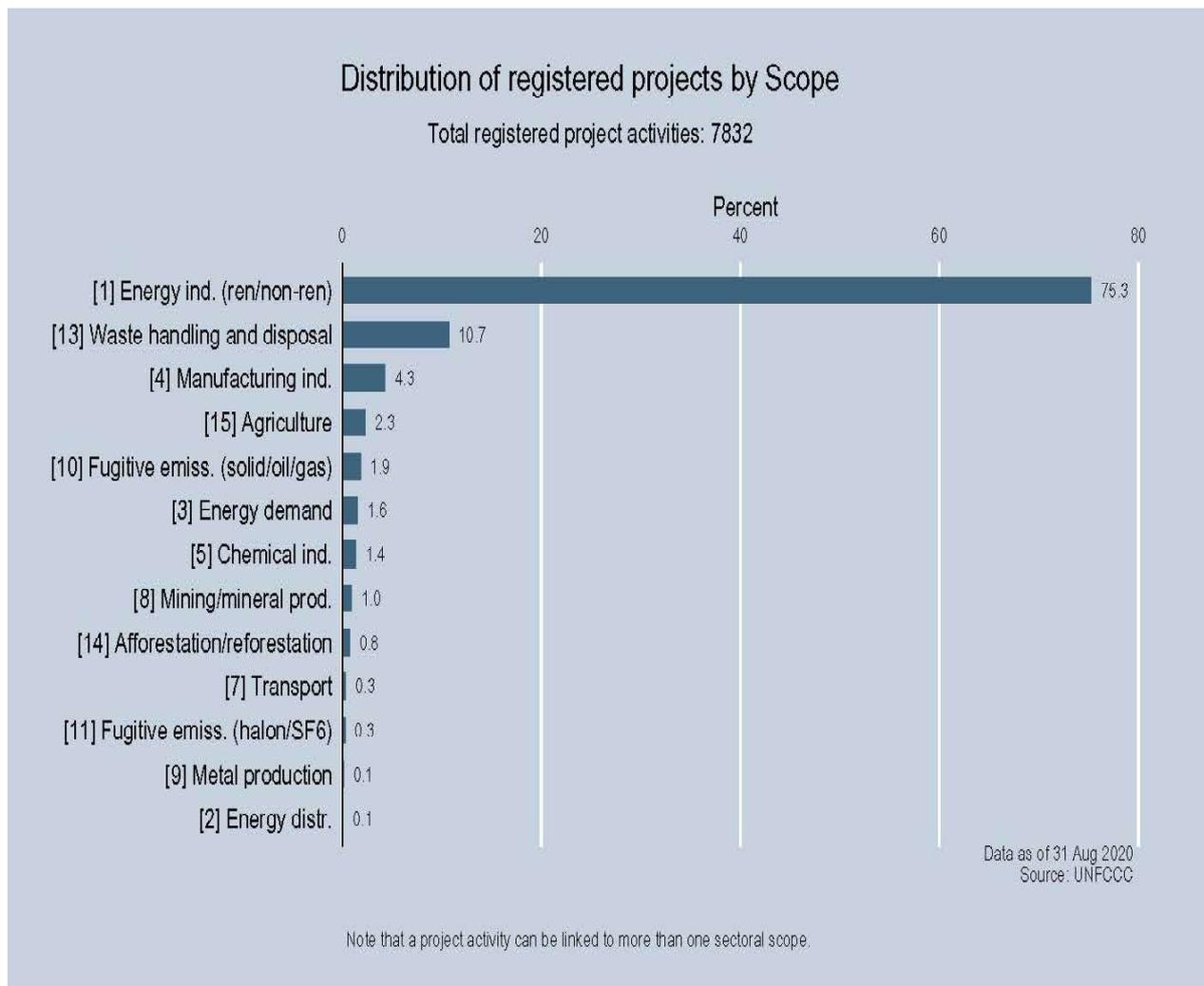
Let us now see what proportion of CDM projects have been allocated in each region.

Region	Number of Projects
NAI-Africa	41
NAI-Asia and the Pacific	1597
NAI-Other	13
NAI-Latin America and the Caribbean	-

Source: UNFCCC ([www.unfccc.int](http://www.unfccc.int))

As of 23 March 2010 nearly 75% of the projects were allocated to the Asia Pacific region, while Latin American and Caribbean countries accounted for about 22% of the projects.

Interestingly, of the CDM projects under the sectors mentioned above, a vast majority are being implemented in only a few sectors due to favourable investment policies being provided in those sectors.



Source: UNFCCC ( [www.unfccc.int](http://www.unfccc.int) )

In terms of number of projects that have been registered sector wise, about 61% of all projects have focused on energy industries comprising both the renewable and non-renewable sectors. The sector of waste management and disposal is increasingly becoming important judging from the percentage of projects (18%) that have been registered.

Similarly a vast majority of the CDM related projects are seen to be concentrated only a few countries, currently, China ( 776 ) and India ( 497 ) are known to have the maximum number of projects as compared to other developing nations out of the total of about 2100 projects registered to date as of 23 March 2010.

Some of the criteria for participation in CDM are:

- ◆ Voluntary participation approved by each Party involved;
- ◆ Real, measurable, and long-term benefits related to the mitigation of climate change; and
- ◆ Reductions in emissions that are additional to any that would occur in the absence of the certified project activity.

### **Projects that are eligible**

The Party hosting the project should have met the participation requirements:

- ◆ Stakeholder consultation
- ◆ The environmental impacts of the project have been considered
- ◆ Emission reductions are additional
- ◆ Baseline and monitoring methodologies comply with requirements.

The process of implementing CDM projects on a global scale is elaborate and is run institutionally through an Executive Board which has a Secretariat in Bonn in Germany.

The Executive Board (EB) has well defined organisational structure which allows for detailed assessments, implementation and monitoring of CDM projects. Several committees within the ambit of the EB have been given the responsibility of ensuring that the CDM process is implemented smoothly. These bodies which are sub units of the EB act in tandem with the UNFCCC processes and from time to time provide suggestions and advice to strengthen the role of the CDM as a global and innovative mechanism.

Here it is important to bring in for the benefit of the reader the key functions of the EB as this is the only organisational and functional wing concerned with directly implementing the CDM process.

The functions of the Executive Board include:

- ◆ Making recommendations to the UNFCCC relating to the CDM rules;
- ◆ Approving new methodologies to baseline, monitoring and project boundaries of proposed projects;
- ◆ Providing guidance and clarifications on the CDM rules created by the UNFCCC;
- ◆ Registering project activities and approving the formal issue of CERs.

Since the scale at which the CDM is carried out is very vast, several CDM related project activities are involved in smooth function of this mechanism.

We will now discuss some of these operational mechanism of the CDM which not only helps in streamlining project related activities but also enables strengthening of a market based mechanism for projects to engage in.

**a) Letter of Approval**

To be eligible to participate in a CDM project, a letter of approval must be issued by the Designated National Authority (DNA) and must confirm that it has ratified the Kyoto Protocol, that it approves the participation of the project proponents in the project activity, and in the case of the host Party letter of approval, that the project will contribute to sustainable development in that country.

**b) Baseline and Additionality Methodology**

A baseline for a CDM project activity is a hypothetical reference case, representing the volume of greenhouse gases that would have been emitted if the project were not implemented:

- ◆ Whether a CDM project activity is additional;
- ◆ The volume of additional greenhouse gas emission reductions achieved by a project activity.

**c) Designated National Authority (DNA)**

Since the major criteria of the CDM process is to engage developing and developed nations in an effective way several mechanisms have been created of smooth functioning of the system. One of the requirements for developing nations or host country is to set up a nodal agency which will co-ordinate and monitor all clean technology and innovative projects that are proposed for CDM including approving a project which is beneficial to that country. This nodal agency is termed as the Designated National Authority (DNA) and differs from country to country. In India the Ministry of Environment and Forests of the Government of India is the DNA which assess, monitors and review each project proposal that is submitted for implementing a CDM project. As per the guidelines laid down under the Kyoto Protocol for CDM related project activities projects developed by public or private entities authorised by the relevant host Party and developed countries involved in the project activity are eligible for CDM projects.

**d) Project Design Document (PDD)**

One of the most important criteria in the operational mechanism of a CDM project is the development of a Project Design Document (PDD). The Guidelines for completing a CDM-PDD including a glossary of terms (Approval, authorisation, project participants etc.) have been developed by the Executive Board on the basis of the CDM modalities, rules and procedures. All project participants are required to submit detailed technical, methodological and administrative information related to their proposed CDM project activity using the Project design document. The specified formats for preparing the necessary documents are made available by the UNFCCC and are modified from time to time. It is one of the three documents required for a CDM project to be registered along with the Letter of approval from the DNA and a validation report from the DOE.

The PDD is normally reviewed by the DOE during the validation process to ensure that a project meets the requirements for validation. The PDD is also used as the basis of consultation with stakeholders, which is conducted by making the PDD and related documentation.

Please note that no CDM project can be implemented without successful development of the PDD and its approval by designated agencies such as the DOE.

While we have discussed the importance of the PDD, it is also important to understand as to what the contents of PDD should be. As specified under the CDM guidelines the following areas are normally required to be included when a PDD is developed.

- ◆ Description of the project and project boundary
- ◆ Baseline methodology
- ◆ Duration and crediting period
- ◆ Description of how the project is seen as additional
- ◆ Description of the likely environmental impacts of the project
- ◆ Sources of public funding
- ◆ Stakeholder comments
- ◆ Monitoring plan
- ◆ Calculations and formulae on the methodology used for emission reduction of GHGs.

#### **e) Global Stakeholder Process**

The Global Stakeholder Process is conducted by displaying the PDD on the UNFCCC or designated operational entity's website for a period of 30 days, during which time Parties, stakeholders and UNFCCC accredited observers may make comments. These comments are also made publicly available.

#### **f) Designated Operational Entity (DOE)**

A project which has been approved by a respective DNA of the host country is required to be formally approved in terms of its quality and criteria for inclusion as a CDM project by the CDM Executive Board. There are several important criteria and guidelines which have been provided for by the CDM EB to enable prospective project developers to create and implement a new project. This includes using approved project methodologies which show real reduction in greenhouse gas emissions based on technologies and processes which are seen as clean and have virtually no environmental impacts caused. However, it is important to have shown projects validated independently by third party verifier to ensure reliability, transparency, accuracy of the project. To fulfil this requirement the CDM organisational structure provides for various organisations to come forward to formally validate a project. These organisations are chosen on the basis of their profile, track records, manpower and technological capacity to undertake such validations. These organisations or agencies are termed as Designated Operational Entity (DOE). A list of

these approved DOEs are available with the UNFCCC. Projects are validated by a DOE in accordance with the CDM project eligibility and participation requirements, including the use of an approved baseline and monitoring methodology.

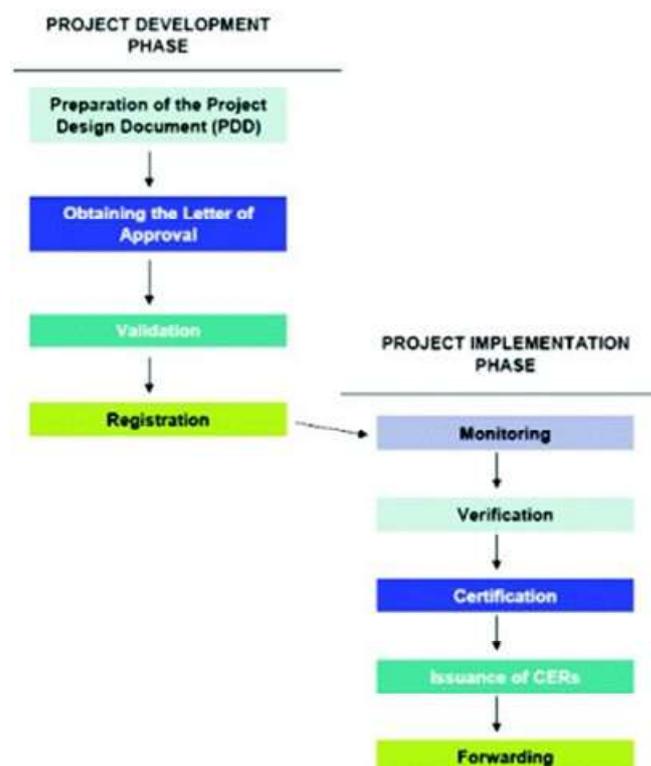
The DOE apart from the role of validating a project proposal (CDM-PDD) within a host country also has other roles. Once a project is formally approved by the UNFCCC, there is a process of continuous periodic independent review, evaluation and monitoring of each project in the host country, in order to ensure that these projects are actually leading to reduction in GHG emissions.

The projects are therefore verified and certified by a DOE as resulting in real, additional, measurable and verifiable reductions in greenhouse gas emissions. Certification is the written assurance by the DOE that, during a specified time period, a project activity achieved the reductions in anthropogenic emissions by sources of greenhouse gases as verified.

As per the definitions of the UNFCCC the key functions of a DOE are:

- ◆ It validates and subsequently requests registration of a proposed CDM project activity which will be considered valid after 8 weeks if no request for review was made.
- ◆ It verifies emission reduction of a registered CDM project activity, certifies as appropriate and requests the Board to issue Certified Emission Reductions accordingly. The issuance will be considered final 15 days after the request is made unless a request of review is made.

#### g) Registration of a Project



Let us now go to the next step of the CDM process where the project is formally registered at the UNFCCC. Once a project has been approved by the country specific DNA and then is validated by the DOE as mentioned above, a request is made by the DOE to the UNFCCC to formally register the project as an approved CDM project. This process of registration by the UNFCCC enables a project developer to commence his project in the host country towards earning carbon credits over a period of time. The project is registered by the CDM EB after review by a Registration and Issuance team to ensure compliance with the international rules. Registration is the prerequisite for the verification, certification and issuance of CERs related to that project activity.

It is important to understand here that the entire process of getting a project registered from the time of conceptualisation to final registration at the UNFCCC takes about one year. The complex and stringent criteria laid down by the UNFCCC makes it sometimes a time consuming process to complete the registration process. The chart in the previous page explains the whole process in detail process.

#### **h) Issuance of CERs or Carbon Credits**

Once a CDM project is registered and operational each year it is subject to a periodic independent review to ensure that that real, measurable reductions are achieved in GHG emissions. After the completion of the review process and validation by an approved agency as determined by the CDM Executive Board, the process of issuing carbon credits or CERs to the host party is taken up under the CDM. Issuance refers to the creation of certified emission reductions (CERs) equivalent to the number of greenhouse gas emission reductions which have been generated, verified and certified in respect of a CDM project activity. CERs are issued by the CDM administrator on behalf of the Executive Board. These are then made available to the host party who can either accumulate them or sell or trade them to prospective buyers in developed countries to earn money. The process of selling or trading in carbon credits also takes place through carbon commodity exchange services currently operational in many parts of the world.

Here, it is important to bring to the reader's notice that the entire 100% of proceeds earned as carbon credits is normally made available to the host party. A small percentage of 2% of the total proceeds from certified project activities is used to cover administrative expenses as well as to assist developing country parties that are particularly vulnerable to the adverse effects of climate change to meet the costs of adaptation. This is termed as Adaptation share of proceeds. Certain developing countries like small island nations, or least developed countries are exempt from paying this small share.

#### **i) Role of Governments and Civil Society in CDM**

Ever since the CDM process became a global market mechanism to involve several countries in emission reduction practices there have been active involvement by country governments and civil society organisations to see that these processes are carried out in a free and transparent manner. Apart from this because of the complex nature of implementing a CDM project, several governments have tried to bring about capacity

building efforts to train local man power to understand the procedures and modalities of CDM and its effective governance.

Several countries have also set up minimum requirements for CDM projects, which include meeting national sustainable development goals or country targets for environmental protection. On the other hand several activities which are not considered environmentally friendly are often discouraged by some governments for the purpose of implementing a CDM project. Other areas where government agencies are trying to promote CDM related activities include:

- ◆ Setting up an infrastructure for promoting extension services and support.
- ◆ Provision of information about CDM opportunities through use of Information Technology and websites.
- ◆ Creating market opportunities for business and Industry groups to engage in CDM activities through proactive policies e.g. sustainability policies, environmental and investment regulations.
- ◆ Building capacity of people, organisations and industry for better understanding of CDM market processes through collaborative partnerships with civil society, investment credit agencies, academic institutions, carbon consulting agencies etc.

Various CDM cells at local Government level have also been created to help facilitate growth of CDM projects at State, city or local community level. Apart from this several governments which have traditionally provided bilateral financial aid (GTZ, DFID, British Government, USAID, Norwegian Government etc. ) to many countries have also set up facilitating units to promote the growth of CDM in their own countries as buyers of carbon credits from developed countries.

#### **j) Civil Society Role**

The civil society organisations and NGOs have also played a major role in helping to understand the mechanism of carbon trading through various efforts. Apart from the CDM being a typical business mechanism for industries and business sectors to engage in, one of the key criteria for implementing the CDM is the social and environmental benefit clause attached. Several voluntary groups across the world have been drawing attention to clearly non-additional or harmful projects that have been implemented by the CDM process. Besides this engaging in the CDM policy framework by NGOs has also resulted in many innovative changes being brought about in CDM project delivery.

Some of the other areas where voluntary organisations have been helping with CDM process include:

- ◆ Providing information and guiding local stakeholders to influence CDM projects
- ◆ Advising potential buyers not to purchase CERs from harmful or non-additional projects.

Institutions like CDM watch ([www.cdmwatch.org](http://www.cdmwatch.org)) have been constantly raising concerns about CDM and its governance. Some areas of concern which have been highlighted by this voluntary organisation include poor environmental integrity of the CDM, lack of sustainable development benefits, only few sectors and regions represented in CDM, lack of transparency in overall decision making process etc. **Source :** (CDMwatch.org) One of the largest voluntary networks which has been actively focusing on CDM and its functioning has been the global Climate Action Network or CAN. The CAN has published several position papers, and been involved at regional and international forums including various government meetings to provide inputs into CDM related activities. It has also been involved in grassroots lobbying, regional consultations through Regional CAN institutions. India institutions like TERI, Winrock India, Development Alternatives etc have been very active in raising policy concerns and capacity building measures for CDM activities.

#### **k) Carbon Disclosure Project (CDP)**

The Carbon Disclosure Project (CDP) was launched in 2000 to collect and distribute high quality information that motivates investors, corporations and governments to take action to prevent dangerous climate change.

The mission of the CDP is briefly described below:

To harness the collective power of corporations, investors and political leaders to accelerate unified action on climate change.

To date nearly 2,500 organisations in some 60 countries around the world measure and disclose their greenhouse gas emissions and climate change strategies through CDP, in order that they can set reduction targets and make performance improvements. This data is made available for use by a wide audience including institutional investors, corporations, policymakers and their advisors, public sector organisations, government bodies, academics and the public.

The process of measuring, inventorising GHG emissions is now being seen as an important activity amongst Business and Industry. In the light of the Inter-governmental panel on Climate change and its Fourth Assessment Report in 2007, it is increasingly imperative that actions by policy makers, companies and other need to take up on a priority basis in order to limit the continued rise of greenhouse gases. The risk associated with rising emissions particularly from the Business and Industry operations need to be analysed for threats and opportunities.

One of the important business risks from climate change have been identified as:

- ◆ Erratic patterns and variability of local and regional and climatic conditions
- ◆ Impacts on changing profile of ecosystems on markets, business processes and resources, corporate preparedness
- ◆ Increasing regulatory risks, public awareness.

Given the various risks that are likely to impact the changing nature of global business practices companies have also begun to monitor their business operations through various environmental friendly practices. These include in recent times publishing sustainability reports according to globally accepted standards and guidelines e.g. the global reporting initiative.

It is important here to understand the organisational preparedness of a company towards potential climate related risks including risks originating from a regulatory perspective. Organisational policies and importance given to environmental mandates will increasingly become important in order to ensure that long term sustainable goals are achieved. Seen from a global perspective these measures and initiatives are important for addressing key challenges related to climate change.

The Carbon Disclosure Project is one of the best known initiatives which focuses on how global companies are facing upto the challenge of climate change and how company disclosures as part of their environment commitments and sustainability practices are helping to understand business practices better. The sharing of initiatives amongst stakeholders is provided through the forum of CDP.

In 2009 the global CDP process circulated information and questionnaires to nearly 3700 companies around the world. In India the CDP began to analyse data from 2007 by circulating questionnaires to several top India companies for information related to GHG emissions. Initially in 2007, the top 100 Indian companies by way of market capitalisation as per the data of the Bombay Stock Exchange were considered. By 2009 the top 200 Indian companies were approached for information related to GHG emissions, potential risks and opportunities related to climate change and key risk management strategies adopted by these companies.

In 2009, 44 Indian companies from 13 sectors responded to the CDP process and provided information related to GHG emissions. Key sectors which have responded to queries include the Household and personal products, automobiles and components, software and services sectors. Interestingly the software sector has taken several measure to map out their GHG emission trends and response measures for mitigation. In contrast many of the energy intensive sectors where traditionally emission levels have been high have shown less inclination to report substantively on their GHG emission trends. (CDP India Report, 2009)

It is also important to note here that increasingly higher level management officials are increasingly beginning to realise the importance of managing climate change issues particularly in response to business operations. Almost 74% of companies queried mentioned that top management was involved in responding to climate change related issues as compared to only 39% when CDP first started analysing data in India in 2007.

It is important to note here that Indian companies are responding positively to measuring and reporting their GHG emissions. Various companies have started to comply with the national and international standards and guidelines to deal with risk and opportunities associated with climate change.

## 6.3 Climate Change and Carbon Offsetting

As already seen, the major objectives of the UNFCCC is to:

- ◆ Gather and share information on greenhouse gas emissions, national policies and best practices;
- ◆ Launch national strategies and action plans for addressing greenhouse gas emissions and adapting to impacts across the world;
- ◆ Provide financial and technological support to developing countries to tackle the problem;
- ◆ Co-operate in preparing for adaptation to the impacts of climate change.

As part of the treaty and its obligations, a series of articles were drawn up to take specific actions relating to the issue. As part of its duties the convention divided countries into three main groups with differing commitments. These were Annex-I countries, Annex-II countries (OECD only) and non-Annex-I countries (developing countries).

Under the Global treaty of the UNFCCC, several major decisions started to be decided upon for the world community to tackle the serious issue of climate change. In order to reduce the rising emissions of greenhouse gases, the convention decided to formulate a protocol to ensure that the obligations of the UNFCCC were met. A landmark protocol was signed by countries at Kyoto in Japan in 1997.

The 1997 protocol by and large originated out of the UN convention's objectives, principles and institutions, but significantly strengthened the Convention by committing Annex-I parties to individual legally binding targets, to limit or reduce their greenhouse gas emissions. However one of the important clauses of the protocol included the fact that only signatories to the Convention that were parties to the protocol, would be bound by the Protocol's commitments once it came into force.

The overall goal so the Kyoto Protocol is defined below:

**While individual emission reduction targets are set for each Annex-I party (Developed country), the cumulative emission reduction should amount to a total cut of 5.2% from 1990 levels of GHG during the first protocol period (2008-12).**

The major greenhouse gases whose emissions were considered as a major reason for combating climate change included:

- ◆ Carbon dioxide(CO<sub>2</sub>)
- ◆ Methane(CH<sub>4</sub>)
- ◆ Nitrous Oxide(N<sub>2</sub>O)
- ◆ Hydrofluorocarbons(HFCs)
- ◆ Perfluorocarbons(PFCs)
- ◆ Sulphur hexafluoride(SF<sub>6</sub>)

The protocol formally came into effect in 2005 after Russia ratified the Protocol giving it the much needed boost to tackle the problem. Here it is interesting to note that the United States of America is still not a signatory to the Kyoto Protocol although it is a member country of the UNFCCC. One of the major reasons for the United States of America's refusal to sign the Protocol was based on the fact that as an economic power house, reducing a certain percentage of greenhouse gases would amount to derailing the economic development and aspirations of the people of the country. As a consequence the USA is still not party to many initiatives of the Kyoto Protocol including the CDM.

**The concept of carbon credits** - The Kyoto Protocol has established three innovative mechanisms to help cut costs of developed countries in meeting their emission targets:

- ◆ Joint Implementation (JI)
- ◆ Clean Development Mechanism (CDM)
- ◆ Emissions Trading

All the three mechanisms provide a method for countries to participate in the generation and trading of carbon credits. Although there are several other voluntary mechanisms also known across the world, for the purpose of this unit we will restrict our understanding to the carbon credit mechanism as envisaged by the Kyoto Protocol and related offsetting mechanisms.

Within the Kyoto Protocol process, the CDM offers an alternative way to rich and developed nations to meet their emission reduction targets. These countries are allowed to fund clean technology and environmentally sustainable projects in developing countries and the emissions savings accruing from these projects can be counted towards reducing their national domestic emission levels.

Carbon credits are obtained by project developers, it is used as a trading mechanism to buy or sell additional credits from the Carbon Commodity Markets globally. The practice is somewhat similar to the Global Financial Stock Markets where thousands of shares of companies are traded on an exchange every day. In the case of carbon credits although the volume of carbon trading units is relatively small as compared to other markets, there is a significant rise in the volume of carbon credits being bought and sold at carbon credit exchanges.

Carbon trading is also used as a mechanism by several investors and companies and individuals to minimise their overall greenhouse gas emission levels or what is commonly termed as GHG footprint or simply carbon footprint. This is done through the process of carbon offsetting.

**Overview of Carbon and Ecological Footprint** - With rising greenhouse gas emissions across the world due to rapid economic development in industrialised countries, there has been an renewed surge towards Environment protection and promoting of sustainable development projects. The Business and Industry has been extremely active in promoting solutions for environmentally friendly economy through the adoption of various measures.

Despite this, many industries which are carbon intensive continue to consume large amounts of energy and resources for their business processes leading to emissions of large amount of greenhouse gases into the atmosphere. It is also being realised that in a globalised economy and a fast developing growth models, planet earth is likely to face increasing pressure on sustaining its resources as a result of increased use of its natural resources.

In other words calculating resource use by mankind of earth's assets particularly its natural resources is termed as ecological and carbon footprint. The concept of footprint has been used to calculate the amount of resource that individuals, companies or even nations have been using as a means to understand their consumption patterns and simultaneously find ways and means to reduce the impact of their resource use on earth.

The Ecological Footprint, as defined by the Ecological Footprint Standards, calculates how much biologically productive area is required to produce the resources for the human population and to absorb its waste. Consistency across applications will encourage even more widespread adoption of the Ecological Footprint, increasing its effectiveness as a catalyst for a sustainable future. In other words, Footprint Measurements is essentially for tracking the per-person resource demand (Ecological Footprint) and resource supply (Biocapacity) at various levels. Biocapacity varies each year with ecosystem management, agricultural practices (such as fertilizer use and irrigation), ecosystem degradation and weather.

Based on the various standards relating to ecological and carbon footprint mechanisms an International Ecological footprint standard was established. These standards are a means to understand the impact of our consumption patterns on the resources of the earth by way of a footprint index. Several institutions and agencies have started to use these standards to evaluate their individual footprint. These standards were adopted in 2006 in order to ensure that Footprint studies were both credible and consistent with the various parameters related to resources like energy, water, settlements, food and fibre, timber and paper and seafood. The footprint standards at a national level requires the involvement of various departments including statistical offices, policy advisors, academia and businesses. The methods and information flow underlying the Footprint, which has in its database about 240 odd National Footprint account developed by various institutions. Currently, data pertaining to 126 countries are regularly published by United Nations source datasets.

At a national level the Footprint accounts measure the ecological resource use and resource capacity of nations over time. Based on approximately 5,400 data points per country per year, these statistics and databases calculate the Footprints of more than 200 countries, territories and regions from 1961 to the present. These accounts provide the core data that is needed for all Ecological Footprint analysis worldwide.

Carbon foot prints can be said to be a sub set of Ecological footprints with reference to the role and impact of GHG emissions of an individual, industry or sector.

**Footprint for business and governments** - With growing urbanisation, economic development and changing lifestyles the concept of footprint is increasingly becoming important at various levels of society. Integrating economic, social and environmental dimensions into our lives calls for a deeper understanding of some of the issues that might be necessary for a sustainable future.

In the earlier section we got some idea about what a footprint is all about. The idea of measuring humanity's footprint is extremely important to ensure that successive generations of humanity can go hand in hand to lead a future in consonance with nature. The entire theory of footprint economics originated from theories pertaining to sustainable development way back in the 1980's. This was at a time when several kinds of environmental pressures and natural resource degradation occurred and impacted across the world. The emergence of key international treaties in 1992 forms the basis for collective action to lead with some of the most important environmental challenges facing mankind today.

Footprint standards have been developed which help in calculating and measuring the average footprint of a population - an individual, city, business, region, nation or even all of humanity. By doing this, we will be in apposition to assess the pressure on resources on the planet, in order to take long term action in managing our ecological assets more wisely. It is also important to realise here that there is only one earth and with its limited resources, it is important to take personal and collective action. In 1990 the University of British Columbia, created what is called the Ecological Footprint and its various principles for use by scientists, businesses, governments, agencies, individuals and institutions working to monitor ecological resource use and advance sustainable development. Simultaneously countries around the world have also started to measure and monitor and take action on their overall country's footprint including specific areas like measuring and monitoring GHG footprints, water footprints etc.

By doing so countries, government, regions and local institutions are able to determine:

- ◆ The value of their country's natural resource base and assets
- ◆ Identify the risks associated with environmental deficits
- ◆ Monitor and manage their assets
- ◆ Develop appropriate regulatory frameworks based on the understanding of the local environment and including critical issues like climate change into planning process
- ◆ Measure progress and implementation against long term goals.

In terms of Business and industry, the footprint concept is increasingly becoming important in order to help companies improve their market vision and mandate, setting strategic plans, manage performance and improve public perception.

Besides the above, using footprint as an indicator in Business and Industry is also of great help to establish benchmarks of various social, environmental and economic parameters and processes, set quantitative targets and evaluate alternatives for future activities.

The Footprint is compatible at most levels of company operations and their engagement, and provides both aggregated and detailed results.

The Living Planet Index which has been developed by the global conservation organisation WWF describes the changing state of global biodiversity and the pressure on the biosphere arising from human consumption of natural resources.

It is primarily built around two indicators:

- ◆ The Living Planet Index which reflects the health of the planet's ecosystems;
- ◆ The ecological footprint which shows the extent of human demand on these ecosystems.

The Earth's biocapacity is the amount of biologically productive area - cropland, pasture, forest and fisheries - that is available to meet humanity's needs.

According to assessments by the Living Planet Index, since the late 1980s, mankind has already been consuming much more than the capacity of the earth's natural resource to replenish and thereby the Ecological Footprint has exceeded the Earth's biocapacity by about 25%.

Using extensive economic, environmental data from government sources, scientific institutions and agencies and research bodies these Indexes are tracked over several decades to reveal past trends.

Using extensive data from past trends also helps in developing scenarios and models on how the future society might be in an unsustainable world. Such indexes therefore provide valuable evidence for individuals, managers, governments to plan for the future. Scenarios show how the choices we make might lead to a sustainable society living in harmony with robust ecosystems, or to the collapse of these same ecosystems, resulting in a permanent loss of biodiversity and erosion of the planet's ability to support people.

Let us try to understand in the next section how these footprints can be minimised through a mechanism known as offsets.

#### **a) Carbon offset as a solution**

For the purpose of this chapter we will confine our lesson to understanding how carbon offsets can be a solution to the growing environmental problems being faced the world over. We are all aware of the global problem of climate change. We have also seen some of the causes and impact of climate change in different parts of the world and measures that are currently being taken to tackle this global environmental challenge.

#### **b) What is an offset?**

An offset is a greenhouse gas emissions reduction or removal that is used to counterbalance or compensate for ('offset') emissions from other activities. Offsets can be purchased by countries, companies or individuals. The key criterion for an offset is that its greenhouse

gas reduction would not have happened anyway i.e. is “additional” to business-as-usual activity.

**c) When to offset?**

Offsetting should always be considered as a third step in a strategy to reduce emissions. The first two steps are to reduce emissions yourself, either through reduced consumption or improved efficiency.

While there might be similarities between the overall carbon credit mechanism under the UNFCCC and the idea of carbon offsets, the key difference in an offset project governed by the UNFCCC is that it is bound by stringent conditions and criteria laid down by the UNFCCC.

**d) Who can offset?**

The process of offsetting can be diverse and range from individuals to companies to governments or even standalone public events/conferences. Ultimately, one should understand here that the entire process of offsetting is aimed at trying to provide for a compensatory benefit to one’s activities, in this case emissions of GHGs. In an ideal situation one would seek to limit or reduce the overall net climate impact of their operations and activities to zero. This is usually a three-part process: measuring GHG emissions, reducing GHG emissions, and then offsetting remaining GHG emissions to become carbon neutral.

For individuals a carbon offset may be considered as a way of reducing their net GHG emission patterns based on certain life style and consumption patterns. This could mean a series of activities ranging from means of travel mode (air, bus, car etc.), energy use at home (lighting, use of air conditioners, other appliances) excessive use of paper based products or use of non-degradable materials, waste disposal patterns etc. All these activities generate a GHG emission pattern which can be initially used to calculate the overall ecological or carbon footprint of the individual. Having done this the overall net emissions then can be compensated by purchasing offsets or investing in sustainable development projects worldwide.

There are several methods available for individuals to calculate net emission levels which eventually can be utilised for carbon offset projects. In today’s modern world one of the most important areas where individuals are trying to offset is air travel. The rapid growth of the aviation industry has led to increased use of air travel as a convenient mode of transport. However aviation as an industry contributes nearly 6% of the GHG emissions. Many individuals and companies whose employees often use air travel as a transport mode therefore utilise the opportunity of purchasing carbon offsets to compensate the GHG emission as a result of their travel.

In the Business and Industry sector, measuring and reducing GHG emissions are activities that a business undertakes with respect to its own operations. In order to show a reduced net emission of a company’s business process, need to purchase reductions, as carbon offsets, from another source.

To cite an example if a company or a business incurs an overall net emission of 5000 tonnes of CO<sub>2</sub> for a given time period, then it would need to take certain actions to reduce these emissions through various measures. Direct measures would involve improving business process and efficiency to reduce GHG emission originating from their activities. Other efforts could mean improved technologies or changes in company operations. However, if this company is unable to reduce these emissions would have been inevitable, then indirect measures like carbon offsetting can be adopted. The company would therefore need to purchase 5000 tonnes of offsets to become carbon neutral. Each year, the process of measuring, reducing and offsetting is repeated.

In other words, by doing this one can claim to have achieved carbon neutrality. Carbon neutral can also be expressed as a goal to be achieved within a set time-frame, which can allow a business more time to achieve its own direct reductions prior to the date set for becoming carbon neutral.

#### e) Which offsets to purchase?

There are several ways and means by which an individual, business, or any other entity, or event can offset their carbon emissions that they may have incurred. Most GHG emission reduction opportunities can be included under this category of carbon offset projects. Although these projects could be of various kinds this section will list out some of the important projects which are often considered as carbon offset projects.

These include :

- ◆ Sustainable Energy use (energy efficient lighting systems, cooling processes)
- ◆ Sustainable Transportation options (hybrid technologies, electric cars etc.)
- ◆ Renewable energy sources (wind, solar, biomass based power projects)
- ◆ Operational efficiency in business and industry
- ◆ Material inputs and supply chain management
- ◆ Upstream GHG reductions from suppliers (Green procurement policies)
- ◆ Customer end use (waste management and energy use)

All the above project initiatives are currently being undertaken across the world through various governmental, institutional and industry based initiatives. These are seen as clean technology projects and energy efficiency improvement projects and bring out significant net reduction in GHG emissions as compared to current high fossil fuel based GHG economy. It is also important to understand here that commercial feasibility of these projects would depend greatly on the extent of support and technology diffusion in various parts of the world.

Significantly with the advent of a globalised economy more and more institutions have started to realise the importance of a transition to a sustainable environment and then develop sustainable development initiatives in various forms. Carbon offsets projects such as those described above provide a direction and viable option to many who

irrespective of their efforts to conserve the environment still end up incurring net GHG emissions for their operations.

#### **f) Clean development mechanism**

The Clean Development Mechanism (CDM) has provided a window of opportunity to many project developers to trade in carbon credits at national and global levels. Carbon credits which are known as Certified Emission Reductions (CERs) under this mechanism is also being used as an opportunity for several institutions and business to offset their GHG emissions. Therefore CERs also offer an important avenue for companies and individuals to invests in carbon offset projects.

Carbon credits are traded across carbon exchanges worldwide and although the entire carbon credit business has been developed only a few years back, there is considerable interest in this business of trading based on the extent of volumes of CERs which are traded in the market. The CDM offset or credits is an example of a compliance market mechanism unlike the voluntary offset market which is discussed below.

The presence of a large volume of Carbon credits provides opportunities for several individuals and institutions to invest in carbon offsetting projects by buying carbon credits through the CDM mechanism or through trading mechanisms like Carbon exchanges. Carbon commodity exchanges which offer this facility include The Multi Commodity Exchange (MCX), Asia Carbon Exchange, Chicago Climate Exchange etc.

#### **g) Voluntary Carbon Standards**

The Climate Group, the International Emissions Trading Association and the World Economic Forum started the Voluntary Carbon Standards (VCS) in late 2005. World Business Council on Sustainable Development joined the VCS in 2007.

The key elements of the VCS are:

- ◆ Rigorous global standard for voluntary GHG emission reductions
- ◆ A trusted and tradeable voluntary offset credit (VCU)
- ◆ Experiment and stimulate innovation in GHG technologies and validation, verification and registration processes
- ◆ Investors, buyers, sellers get assurance that VCUs being traded are real, additional and permanent
- ◆ Enhance business, consumer and government confidence in voluntary offsets.

Unlike the credit and offsets which are generated from the CDM process, the VCS is a voluntary mechanism where buyers can opt for offsets from an open market. Many companies which are interested in offsetting their carbon emissions use the VCS offset units to make themselves carbon neutral. Although this offset mechanism do not have a legally binding framework, it is a very popular mechanism which enable a wide range of buyers to purchase these offsets to compensate for their carbon emissions.

### i) Gold Standard (GS) offsets

The Gold Standard quality benchmark emerged and has evolved in parallel with the emergence and maturation of carbon offset markets. It was the brain child of a group of NGOs present at the 7th Session of the UNFCCC Conference of the Parties (COP) in Marrakech in October-November 2001, when rules of procedure for the Clean Development Mechanism (CDM) were being decided. At this point of time it was also felt that an independent carbon offset standard needed to be established which will not only be an instrument for financial flows but also have high environmental integrity leading to real sustainable development projects and real GHG emission reduction. The Gold standard which has matured since the time it was established is now seen as a method for creating premium quality carbon credits particularly for those project players which seek to have a high sustainable development criteria.

The reasons why investors, and buyers are opting for these offset standards include:

- ◆ It provides a quality assurance label for projects and credits
- ◆ GS projects ensures a contribution to sustainable development and climate protection.

It is important to mention here that Gold Standard offsets projects are restricted to renewable energy and energy efficiency projects alone. There are several benefits of purchasing Gold Standard carbon credits. These include:

- ◆ Controlling risk
- ◆ Enhancing reputation
- ◆ Premium prices
- ◆ Market visibility
- ◆ Low-added cost
- ◆ Contribute to sustainable development
- ◆ Stakeholder acceptance
- ◆ Exceeds the current regulatory standards

Some examples of Gold Standard projects across the world are:

Palm oil project in Thailand, Solar cookers projects in India, Biomass project in India and South Africa, wind farms projects in Apiti, the FIFA World Cup event in Germany in 2006 etc.

### ii) Risks

While the entire process of carbon markets is of both a compliance and voluntary nature, the business of carbon offsetting is practiced worldwide by a many Institutions and Business and Industry. Along with the benefits in purchasing offsets from the trading markets there are also risks associated with investing in offsets for the specific purpose of limiting GHG emissions.

Let us now discuss the risks associated with carbon offset projects:

- ◆ Except for the UNFCCC based carbon credit mechanism which has legally binding agreements the rest of the offset markets do not have an accepted standard.
- ◆ As mentioned earlier offsets standards are many in number and several standards provide for low value, low quality offsets which may not have high climate protection benefits and thereby leading to reputational risk for individuals, investors or companies.
- ◆ Certain carbon offsets may be expensive and may not be easy to purchase from the trading markets.
- ◆ Purchasing offsets as a moral issue. Although the very idea of carbon offsetting is about compensating GHG emissions through purchase of appropriate credits, it is also seen by many players as an easy way of complying with high GHG emission levels. e.g. A company which regularly emits 25,000 tonnes of CO<sub>2</sub> each year may very well compensate or offset their high emission levels by simply purchasing carbon credits from one of the several standards available in the market. In such a situation there is no real reduction of GHG emission actually taking place, but through an offset mechanism the company is able to show its carbon neutrality. Such a trade-off which are not really in the true spirit of the offset mechanism may hamper the overall climate protection initiatives.

## 6.4 Ozone Depletion

The Ozone Layer comprises of the O<sub>3</sub> molecules (Ozone) that are found in the earth. Ninety per cent of atmosphere O<sub>3</sub> is found in the stratosphere with maximum concentration occurring at altitudes of 25 kms over the equator and 15 kms over the poles. The Ozone Layer is thought to provide a shield against harmful exposure to ultraviolet radiation from the sun and controls the temperature structure of the stratosphere. O<sub>3</sub> also acts as a greenhouse gas at lower altitude, is a respiratory irritant, and can adversely affect plant growth. Since the 1990's there have been losses in the ozone layer above the Arctic. Since then, significant thinning has also been discovered in the northern hemisphere and ozone depletion has become progressively greater over the course of the 1990's. Serious levels of UVB radiation have been observed over Antarctica, Australia and Mountainous regions of Europe, and damage to phytoplankton has been discovered in Antarctica.

The depletion of the Ozone Layer is caused by the anthropic emission of certain inert gases, particularly chlorofluorocarbons (CFCs) and halons. When these gases reach the Ozone Layer; they are exposed to ultraviolet rays and break down, releasing free chlorine (from CFCs) and bromine (from halons) which break up the Ozone molecules and deplete the Ozone Layer increased levels of ultraviolet rays are thought to cause harm to human health and the environment, including organisms in the marine environment. CFCs are used extensively as refrigerants, air conditioner, coolants, and aerosol spray can ingredients and in the manufacture of Styrofoam.

The protection of the Ozone Layer from these destructive elements is the subject of a complex legal regime comprising the 1985 Vienna Convention for the Protection of the Ozone Layer (the 1985 Vienna Convention) and the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer (the 1987 Montreal Protocol). Since 1990, there have been various adjustments to the production and consumption of controlled substances. Since the 1960s monitoring functions have been carried out by States individually and jointly, as well as under the World Meteorological Organisation (WMO) Global Ozone Observing System. In 2002, evidence began to emerge to suggest that the global regime was limiting the rate of increase in the degradation of the Ozone Layer over the Antarctica might begin to decrease in magnitude, following a decrease in the levels of the Ozone depleting gases in the stratosphere and of the Ozone depleting chemicals in the troposphere<sup>1</sup>.

### **Ozone thinning, Ozone holes and the UVR problem**

A key question in the global change research is how far human influence on the atmospheric Ozone will actually increase the deleterious effect of UVR reaching the earth's surface. Concern over the thinning of the stratospheric Ozone goes back to the International Geophysical Year of 1957, when an international network of 'Dobson Stations' was set up to monitor atmospheric ozone using a technique pioneered by a scientist of the same name.

The strength of this threat, coupled perhaps with a feeling that this was one aspect of adverse global change about which, 'something could be done' led to the production and use of 'substances that deplete the Ozone Layer' was signed by the governments of most nations at a meeting in Montreal in 1987, aiming at a 50% reduction in production of CFCs by the year 2000. Tighter structures were agreed for the developed nations than for the developing nations. Most people would see the signing of the Montreal convention as a great victory for those concerned with global issue, as indeed it was. Nonetheless, the interplay of politics and economics in this type of international agreements are rarely as simple as they may seem, the environmental danger represented by CFCs had been evident to the chemical industry for some research and development directed to finding alternative propellant and other substances for CFCs were naturally interested in seeing CFCs put under restriction. The Montreal Protocol took care of those interests.

### **1985 Vienna Convention**

The Vienna Convention was negotiated over 5 years under the auspices of UNEP. It was the first treaty to address a Global atmospheric issue and is open to participation by all States. It has attracted widespread support from all industrialised nations and a very large number of developing countries. It established a framework for the adoption of measures 'to protect human wealth and the environment against adverse effects resulting or likely to result from human activities which modify or are likely to modify the Ozone Layer'<sup>2</sup>. The Vienna Convention does not set targets or timetables for action but requires

<sup>1</sup> UNEP Press Release, 16 September 2002.

<sup>2</sup> Art. 2(1); the 'Ozone Layer' is defined as 'the layer of atmospheric ozone above the planetary boundary layer' : Art. 1(1)

four categories of 'appropriate measure' to be taken by parties in accordance with means at their disposal and their capabilities and on the basis of relevant scientific and technical considerations. These obligations are: co-operation or systematic observations, research and information exchange; the adoption of appropriate legislative or administrative measures and co-operation on policies to control, limit, reduce or prevent activities that are likely to have adverse effects resulting from modifications to the Ozone Layer; and co-operation in the formulation of measures, procedures and standards to implement the Convention as well as with competent international bodies. Parties are free to adopt additional domestic measures, in accordance with international law, and maintain in force compatible measures already taken. The Convention also requires co-operation in the legal, scientific and technical, socio-economic and legal information relevant to the Convention subject to rules of confidentiality, and the development and transfer of technology and knowledge taking into account the particular needs of developing countries.

The parties transmit information to the conference of the parties on their implementation measures. That body is entrusted with the implementation of the Convention, assisted by a Secretariat whose services are provided by UNEP. The conference of the parties has other functions including the adoption of protocols.

### **1987 Montreal Protocol and the Adjustments and Amendments**

#### ◆ *Introduction*

The first and to date the only Protocol to the Vienna Convention is the 1987 Montreal Protocol. It is a landmark international environmental agreement, providing a precedent for new regulatory techniques and institutional arrangements and the adoption and implementation of innovative financial mechanisms. With hindsight, the Montreal Protocol appears to be relatively straightforward instruments and the fact that its approach has subsequently been relied upon extensively in other international environmental negotiations belies the controversy and complexity surrounding it at the time of its negotiations. Montreal Protocol sets forth specific legal obligations including limitations and reductions on the calculated levels of consumption and production of certain controlled Ozone depleting substances. Its negotiations and conclusion, shortly after the 1985 Vienna Convention were prompted by new scientific evidence indicating that emissions of certain substances were significantly depleting and modifying the Ozone Layer and would have potential climatic effects. Like the Vienna Convention, the Montreal Protocol and its amendment have attracted widespread support. The 1990, 1992 and 1997 Amendments and Adjustments introduced important changes to the Montreal Protocol.

#### ◆ *Control measures: Consumption and production*

Article 2 of the 1987 Montreal Protocol adopted limitation and reduction requirements on the consumption and production of all Annex A substances. By Article 6, (as amended by the 92 and 99 Amendments) the parties are assessed with the assistance of panels of

experts pertaining to all the Article 2 control measures on the basis of available scientific, environmental, technical and economic information. Montreal Protocol also provides for transfer of production and the rules regarding facilities under construction.

By Article 2(8) of the 1987 Montreal Protocol, parties which are member States of regional economic integration organisation may 'jointly fulfil' their obligations provided that their total combined level of consumption does not exceed levels set by the Protocol, and that certain procedural obligations are fulfilled (the parties to any such agreements must inform the Secretariat and all member States of the regional organisation, and the organisation itself).

◆ *Control measures: Trade in controlled substances*

Article 4 of the Montreal Protocol established innovative trade provisions to achieve its environmental objectives. Although initially somewhat controversial, they are now widely recognised for their effectiveness in creating incentives for States to become party to the Protocol. These measures address the trade in controlled substances by parties with States which are not parties to the Protocol; the trade in products containing controlled substances.

Montreal Protocol also requires parties to discourage exports of technology for producing and using controlled substances, and to refrain from providing new subsidies, aid, credits, guarantees or insurance for the export to non-party States of production, equipment's, plants or technology which would facilitate the production of controlled substance, certain exceptions to this exists.

◆ *Developing countries*

The 1987 Montreal Protocol included provisions to take account of the special needs of developing countries, including large users of CFCs such as India and China, who were unwilling to become parties to the Protocol. Article 5(1) of the Protocol allowed developing country parties whose calculated level of consumption was less than 0.3 kilograms per capita a grace period of ten years beyond dates set for phase-out in Article 2(1) to (4) of the Protocol. In addition, but without specifying how it was to be achieved, the parties agreed to facilitate access to 'environmentally safe alternative substance' and to provide developing countries with substitute products<sup>3</sup>.

Since the last industrial revolution, emissions resulting from anthropogenic activities have led to a substantial increase in the atmospheric concentration of greenhouse gases. The resultant warming of the earth's atmosphere, has consequently led to a rise of about 0.8°C in the average global surface temperature.

As a result of these changes, widespread ecological and socio-economic impacts of climate change could threaten the future growth and economic activities of several countries in the Asia Pacific region. Some indicators and triggers of global warming include increased

<sup>3</sup> 1987 Montreal Protocol, Art. 5(2) and (3).

extreme weather events (including more flooding, drought, frequent heatwaves, cyclones, depressions), increased agricultural losses, sea ice melt, retreating glaciers, sea level rise, coral bleaching, and decline in biodiversity. Communities in both developed and developing countries are already suffering from these impacts, and tropical countries are likely to be more vulnerable than developed countries.

Scenarios compiled by the Intergovernmental Panel on Climate Change (IPCC 2007b) suggest that unless humans dramatically reduce greenhouse gas emissions, we will see a doubling of pre-industrial carbon dioxide concentrations resulting in an increase of the earth's temperature from between 1.1 to 6.4°C (depending on estimates for low and high scenarios), with recent modelling suggesting upwards of 11°C by the end of the century (Stainforth et al. 2005).

As part of its mission to promote nature conservation and environmental protection WWF India has been working in some of India's most critical ecosystems and landscapes where the local environments are under threat from a variety of factors. Recognising the fact that climate change is now a serious threat to the survival of several million people across some of India's diverse landscapes, the organisation has taken up several initiatives. These focus mainly on Impacts and Adaptation, mitigation and policy interventions.

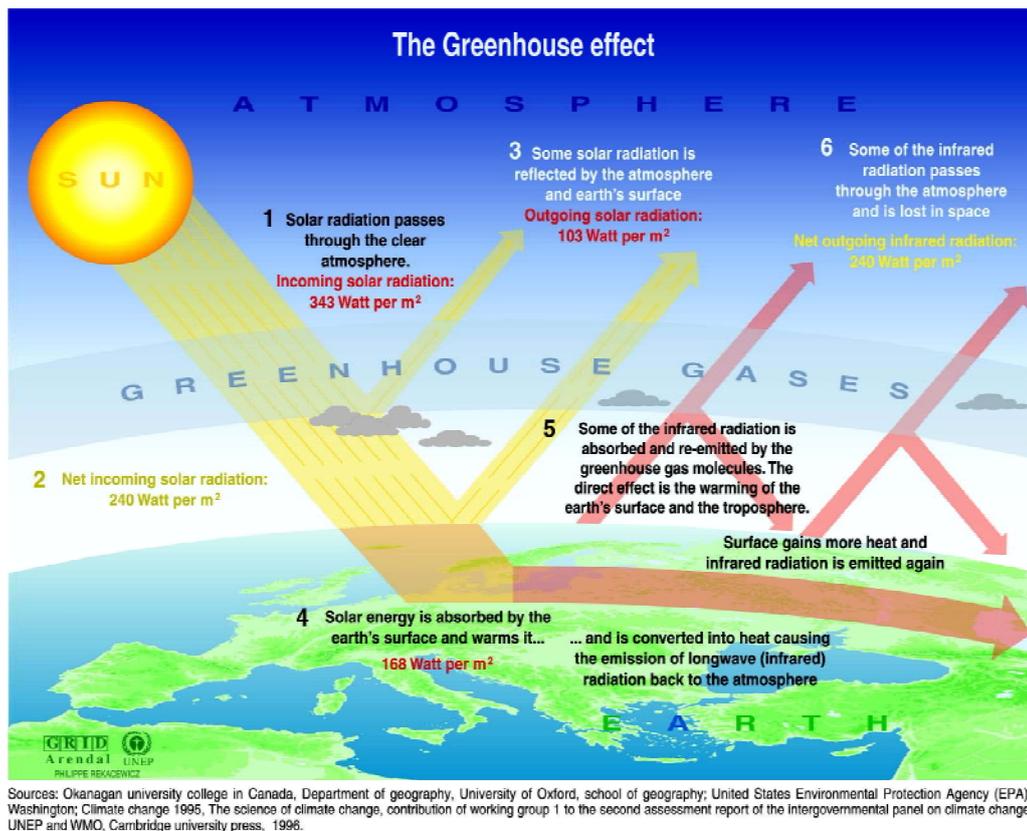
India is an agriculture based developing economy, surrounded by a long coast line and a mountainous Himalayan range in the north; given this the country is vulnerable to any major changes in the overall climate. There is an urgent need for developing strategic interventions to address the adaptation needs of local communities and ecosystems based on impact studies. The regional climate variability and the various uncertainties involved in projecting future climate scenarios make local adaptation attributes a very complex issue and often region specific.

## 6.5 Greenhouse Gas Emission

The greenhouse effect as the name suggests originates from the process of creating a greenhouse. A greenhouse is a structure where plants can be grown under certain controlled conditions. The structure which is essentially glass house allows sunlight to enter in the structure and enables energy to get trapped inside which heats up both the plants, soil and ground within the premises of the greenhouse. Such controlled conditions allows growth of various types of plants in a range of temperature, humidity and sun light. These are also protected from extreme cold and sunlight.

Using this analogy, the earth and the atmosphere around its surface can be compared to a greenhouse. Let us explore how this functions. Under natural process the earth's atmosphere comprises of about 78% nitrogen and 21.5% oxygen with the rest comprising mainly of trace gases. Gases which occur as a result of the earth's natural cycle include carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), water vapour, ozone (O<sub>3</sub>) etc. Under normal climatic process, these gases absorb some of the thermal radiation leaving the earth's surface. The resultant effect from these gases forms what is called a

greenhouse effect through the presence of a thick blanket or layer around the earth's orbit. This layer prevents harmful ultraviolet rays from entering the earth's surface and regulates the average surface temperature so the earth within a stable range. Such a stable temperature is necessary for effective growth of the planet's ecosystem and its myriad life forms. It is important to note here that the presence of greenhouse gases as mentioned above are important to maintain a viable temperature range of the earth's surface. We can then see the earth as one large natural laboratory which functions under certain controlled temperature ranges.



*Ref: Philippe Rekacewicz, UNEP/GRID-Arendal)*

This system of a natural Greenhouse effect has been existent on the earth for several thousand years. In recent times with the advent of the industrial age, human activities have increased tremendously in the quest for industrial development and economic growth. This has led to the increase in emissions of these greenhouse gases into the atmosphere causing changes in the global average surface temperature and thinning of the protective blanket or layer that was referred to in the earlier paragraph. As a consequence of these changes the earth's surface temperature has started to rise in the last one hundred years or ever since industrialisation began.

Earth's climate system has been regulated through a natural greenhouse effect. As a consequence of this the overall climate system and its balance is largely regulated through the greenhouse effect. Natural climate change processes have occurred in the past as compared to human induced climate change that we are facing today. Any change whether

as a result of natural climate variability or due to human activities can cause significant changes in the earth's atmosphere leading to an imbalance and resultant effect and impacts in regional climate. It is important to understand here the difference between natural variability and those that are driven by human induced interference.

Several atmospheric events as well as events on the earth's land mass have often been responsible for localised changes in regional climate variability and to a great extent these have been caused by natural events like solar flares, entry of large meteorites from space, volcanic eruptions etc. While these may have resulted in overall warming or cooling of the earth, it is the human induced activity that is causing a tremendous amount of concern today, as these change are likely to seriously influence the earth's climate system in the coming years.

Ever since the Industrial revolution, many countries of the world embarked on a path of rapid economic development. The economic growth in these countries particularly to bring out about all round well-being of citizens has had a deleterious effect as this has allowed the burning of large amounts of fossil fuels mainly through industrial development, power generation, increased use of transport etc. Coupled with increased consumption patterns of citizens, this has led to a dramatic increase in greenhouse gas levels in the past few decades. One of the primary drivers of development is no doubt the energy sector. It is believed that rapid economic growth to fulfil developmental needs of every country can only be met through increased use of energy. Industries like the transport sector, and power sector need large amounts of energy to generate power which results in large amounts of GHG emissions into the atmosphere.

Here is list of some of the major Greenhouse gases that have been emitted into the atmosphere over the years. Here it is important to know that of the six Greenhouse gases, carbon dioxide, methane, nitrous oxide, are the key and important gases which have significant contribute to high emissions into the atmosphere **Carbon dioxide (CO<sub>2</sub>)** : CO<sub>2</sub> is regard as the most important GHG which is emitted from many sectors. One of the cheapest forms of generating energy through the use of fossil fuels has been the use of coal. Coal as a fuel source has been used widely across the world to generate power through coal fired power plants. While this has resulted in much needed energy and power to millions of citizens across the world one of the major issues which has plagued the earth is the high levels of CO<sub>2</sub> which are emitted from these power plants. The constant rise in CO<sub>2</sub> emissions from this sector has to a large extent been responsible for the variability in the earth's climate system.

Besides the power sector there are several energy intensive industries like steel, cement, fertilizer, pulp and paper, petrochemicals etc whose operations consume lot of energy leading to increased emissions of CO<sub>2</sub> in to the atmosphere.

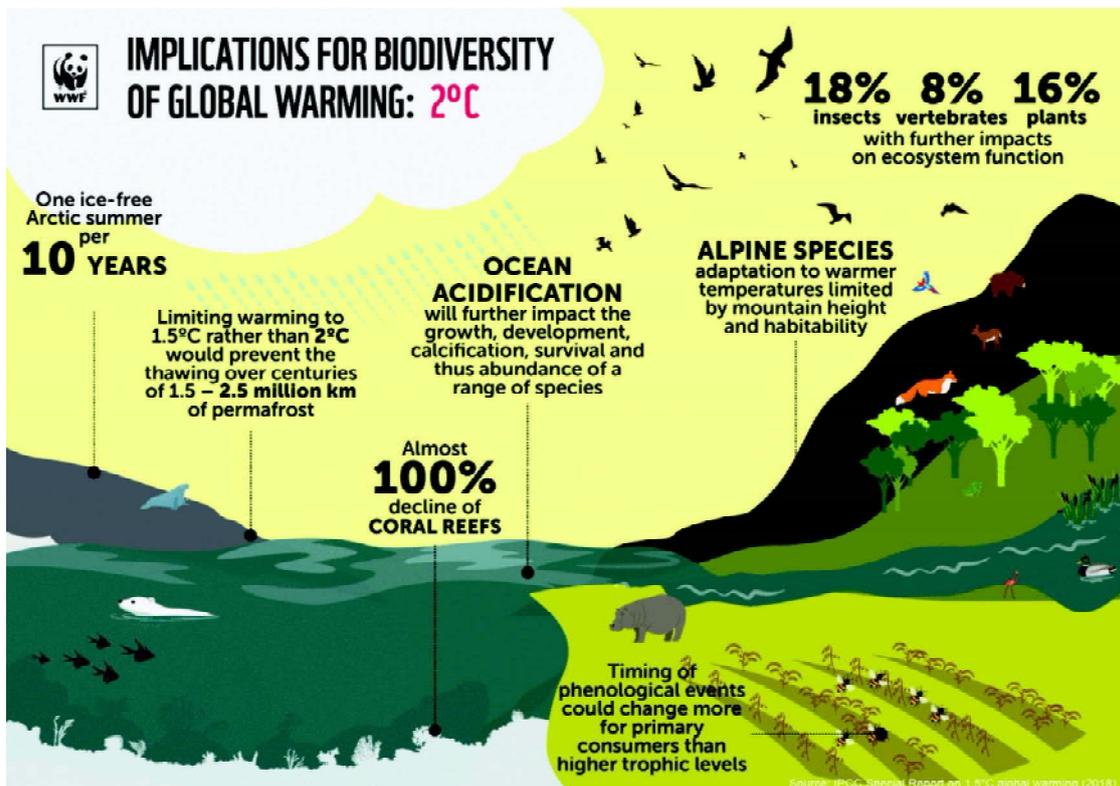
Another factor which has contributed increasingly to rise of carbon dioxide into the atmosphere is deforestation through intensive logging of forests. This sector alone accounts for nearly 18-20% of the overall CO<sub>2</sub> emissions into the atmosphere. Forests which are considered as a major source of carbon or sinks are being cut in many part of the world

to pave the way for developmental needs of many countries thereby resulting increase emissions.

**Methane (CH<sub>4</sub>):** As a Greenhouse gas methane is considered to be twenty times more potent than carbon dioxide. There are several sources from where methane gas is emitted prominent among them being ruminating animals through enteric fermentation, biomass burning or burning of wood and other organic waste, agricultural cultivation particularly rice, peat lands, wetlands/reservoir based dams etc. In recent times because of increased urbanisation and dumping of large amounts of decaying organic wastes in landfill and municipal garbage dumps, significant amounts of methane is emitted.

**Nitrous Oxide(N<sub>2</sub>O) :** Nitrous oxide as a Greenhouse gas largely has originated from the use of fertilizer in synthetic agricultural farms. It may be noted here that the release of nitrous oxide often depends on the type of farm and agricultural practices being carried out along with the chemical contents of the fertilizer that are being used. Besides the natural cyclic process like nitrification also are known to contribute to nitrous oxide emissions into the atmosphere. Due to increased demand for food and fibre and fuel wood there is a lot of pressure on land and resultant land use change is also known to be responsible for higher levels of N<sub>2</sub>O in the atmosphere.

**Other gases:** Besides these three important gases, there are other gases like chlorofluorocarbons (CFC) and hydrochloric carbons (HFC) which also contribute to overall GHG emission. Major industries continue to use these gases in their day to day operations and causing a rise in concentration.



The overall cumulative impacts of CO<sub>2</sub> emissions in terms of concentrations in the atmosphere has increased from a pre industrial level of 280 ppm (parts per million) to about approximately 390 ppm as of 2009. According to the Inter-Governmental Panel on Climate change, a global body of more than two thousand scientists, the current levels of carbon dioxide emissions and the projected emissions in the next two to three decades is likely to have far reaching consequences for human society. The implications of these higher emission of gases will be felt through direct and indirect impacts on nature and human systems. Various scientific studies carried out across the world have clearly indicated the major changes occurring in the physical biological and human systems. The growing impacts of climate change are being felt uniformly across most part of the world and not necessarily confined to a specific region or landscape. What is important to note here that countries with less capacity to adapt to these impacts are likely to face the brunt of the severity and losses therein.

The various research studies have indicate that there is growing evidence of the impacts of climate change is felt on sectors like water resources, coastal zones, agriculture, mountain ecosystems.

## 6.6 Conclusion

From an Indian contest these sectors are extremely important as they directly impinge upon the country's economic growth and developmental needs. In the coming courses we will focus on some of the issues and sectors in India where climate change impacts are likely to have implications for people, livelihoods and ecosystems.

India is one of the major developing nations who have taken a very pro-active stance in the process of international negotiations on climate change. India has also ratified the Kyoto Protocol in 2002 and is actively participating in market based mechanism like Clean Development Mechanism (CDM) established under the Kyoto Protocol.

The Clean development mechanism is a process which offers both developing and developed nations a facility to not only create financial flows but also ensure that sustainable development and clean technology projects are initiated in developing countries. The various stakeholders like the project developers, the financial institutions, and the Government ministries (Ministry of Environment and Forests, Ministry of Non-conventional Energy Sources etc.) have been major players in putting together a system in place for effective participation.

Being a major developing nation India has mobilised support to bring adaptation as an important issue in addressing climate change. The country has been able to put forward the important issues in the developing countries perspective while hosting the Eighth Conference of Parties (COP 8) of the UNFCCC at New Delhi during October 2002. Subsequently, over the past few years India has been an active player in global climate change negotiations its concerns as well as those of impacted and vulnerable countries including providing support for groups like the least developed countries and the small Island developing States. Though the country has opposed any legally binding commitment

to emission reduction, it has taken various policy level measures and on ground activities which will lead to the reduction of greenhouse gas emissions.

India is a vast country with a population of over a billion people. Poverty and livelihood issues are still a major concern. Lack of knowledge and financial capacity is affecting the country's capability towards scientifically addressing the issues like climate change and its impacts. Inefficient utilisation of natural resources is also causing severe stress to the biodiversity, further increasing the vulnerability of the various flora and fauna.

Presently, India is on a steep growth curve (average GDP is increasing at a rate 7-8%), and ranks sixth in the world in terms of energy requirement. Though the per capita energy consumption in the country is far below the world average, the overall energy consumption is significant. The power sector meets a major share of energy requirements of the country's expanding economic growth. The power generation in the country is coal intensive and is resulting in significant amounts of CO<sub>2</sub> emissions, threatening the socio-economic and ecological health of the country. There is an urgent need to effectively address the country's development priorities and energy requirements as a whole, to achieve a sustainable development and future.

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**COURSE 2:  
INTERNATIONAL ENVIRONMENTAL LAW  
AND POLICY-I**

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# EMERGENCE AND APPLICATION OF INTERNATIONAL ENVIRONMENTAL LAW

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### 7.1 Introduction

Environmental change and resource scarcity have emerged as existential threats in recent decades. As many environmental problems such as climate change, loss of biodiversity and desertification are global in nature and require co-operation across State borders, international lawyers have attempted to proffer solutions, largely since the early 1970s. The birth and evolution of the specialised field of international environmental law (IEL) is conventionally narrated as progressing through a series of conferences, beginning with the 1972 Stockholm Conference on the Human Environment through to the 1992 Rio Earth Summit and the 2002 Johannesburg Conference, leading up to the most recent Rio+20 Conference on Sustainable Development in June 2012. The embryonic field of IEL has gradually constituted itself through these conferences and many others, as States, non-state actors, scholars, experts and other interested parties gradually build up a body of treaties, legal principles and concepts to guide international action on environmental issues.

One such concept is that of sustainable development, which has been canonical for IEL since the 1992 Rio Summit when the international community expressed a strong consensus in its favour. Sustainable development calls for development that “meets the needs of the present without compromising the ability of future generations to meet their own needs.” It places development policy-making within the context of the absorptive capacity

of natural ecosystems and recognises the limits of such systems. It places emphasis on not only inter-generational equity but also intra-generational equity by basing itself on three interdependent pillars: economic, social and environmental sustainability.

The recent Rio+20 Conference provided an opportunity to look back and assess IEL's progress and determine to what extent the world has made the paradigm shift from conventional to sustainable development. Global consciousness and concern for environmental issues has grown in recent decades, as has the recognition that economic, social and environmental sustainability are linked. However, many of the problems that IEL aimed to address, such as climate change, biodiversity loss, and desertification, have worsened. Why has IEL failed? Is international law a useful avenue for solving environmental problems? And if so, how? We shall attempt to trace the history of IEL and try to answer these basic questions.

International co-operation in the form of treaties, agreements and resolutions created by intergovernmental organisations as well as national laws and regulations are being used to protect the environment. Since ultimate responsibility for the protection of the environment remains at the national and local level, municipal laws and regulations related to the environment are increasingly being sought after. Treaties govern many aspects of international environmental law. This unit lists many of the most common multilateral treaties that have led to the emergence and application of IEL.

As discussed in the previous units, there is another genre of international environmental agreements called soft law. The Parry and Grant Encyclopaedic Dictionary of International Law<sup>1</sup> defines soft law as "A term used to refer to non-binding instruments or documents which have the appearance of law. While not legally binding, soft law can be politically influential in setting down objectives and aspirations." Documents constituting soft law can often be located on the websites of individual organisations. Examples of key soft law documents in international environmental law include Agenda 21: Programme of Action for Sustainable Development, the Rio Declaration on Environment and Development, and the Forest Principles.

## 7.2 The United Nations Conference on Human Environment, Stockholm, 1972

### Fact Sheet

Conference	United Nations Conference on Human Environment (UNCHE), <b>Stockholm</b> , June 5-16, 1972
Informal name	The Stockholm Conference
Host Government	Sweden
Number of Governments participating	113 governments and 19 inter-governmental agencies. Soviet Union and its East European allies refused to participate because

*Contd...*

<sup>1</sup> Parry and Grant Encyclopaedic Dictionary of International Law, P35, 2009.

	the conference did not invite the German Democratic Republic, thus avoiding implicit diplomatic recognition
Conference Secretary-General	Maurice F. Strong
Organisers	United Nations
NGO presence	Unprecedented NGO participation was recorded for the first time in history with NGOs even involved in the preparation and activities of a UN conference. More than 400 groups were accredited to the meeting.
Resulting document	<ul style="list-style-type: none"> <li>a) Stockholm Declaration - 26 principles suggesting environmental obligations and duties of States.</li> <li>b) Action Plan - There was also a Plan of Action with 109 recommendations.</li> <li>c) UNEP establishment - A proposal that the United Nations establish a new environmental agency to guide the world effort, which led to the creation of the United Nations Environment Programme (UNEP).</li> </ul>
Follow-up mechanisms	World Charter of Nature, World Conservation Strategy, World Commission on Environmental Development, Earth Summit.
Previous conference	First of its kind

Ever since problems of acid rain and their effects were considered at the global level in Europe, the way for a global conference on environment was made clear. It was in 1972 that the United Nations Conference on Human Environment was held in Stockholm, where for the first time it was recognised that certain global environmental concerns needed global solutions.

Growth of modern international environmental law as a separate area of public international law began in the 1970s with the Stockholm Conference on the Environment in 1972. Since then interest has steadily increased and it is one of the fastest growing areas of international law. Current issues of international concern covered by IEL include ozone layer depletion and global warming, desertification, destruction of tropical rain forests, marine plastics pollution from ships, international trade in endangered species (i.e. ivory trade), shipment of hazardous wastes to developing countries, deforestation of Brazil and the Philippines, protection of wetlands, oil spills, transboundary nuclear air pollution (i.e. Chernobyl), dumping of hazardous wastes, groundwater depletion, international trade in pesticides and acid rain. Environmental law is also cutting across other areas of international law, such as commercial/business law, trade and human rights.

Political support for environmental protection was at an all-time high in the early 70s, as States were keen to discuss nearly all issues related to 'the environment' such as - cross border pollution caused by acid rain, marine pollution and pollution watercourses etc.

However, the developing countries from the G-77 wanted problems of poverty and social justice to be central themes. There were also other cross-sectoral problems like the terms of international trade, development aid and access to technology. A palpable need was also felt to understand the relationship between economic development and environmental protection.

The Stockholm Conference attended by more 114 States produced three major documents:

- a) a Declaration on the Human Environment;
- b) an Action Plan for the Human Environment;
- c) and a Resolution on Institutional and Financial Arrangements.

The Stockholm Conference attempted to highlight problems of environment and proclaim some general principles. It is said that in the 1970s, not many developing countries attended the meeting either for lack of resources or more so for lack of awareness of environmental the issues. This situation is fast changing in this millennium. However, it needs to be emphasized that because of such environmental revolution mobilised by the 1972 conference, a changing attitude towards environmental protection and conservation of resources was highlighted. Environmental conservation was, for the first time taken seriously as it should be, and State of environment was essentially viewed as inimical to the priorities of development, to which the newly independent States attached importance. This was also the time when the plea of the same countries at the United Nations for a new international economic order did not gain much support from the developed world.

The United Nations Conference on Human Environment should nevertheless be seen as an important landmark in the evolution of environmental connection and environmental law, which laid down 27 principles, although some of them do not directly address environmental issues. The Conference proclaimed that man is the only being that has control over the earth's resources. It highlighted that the human race has made rapid strides by science and technological prowess to transform his environment in many ways. It also lamented that while economic development is extremely important, protection of the human environment must not take a back seat.

The Declaration also proclaimed that environmental protection in the developing countries was caused on account of underdevelopment and poverty. It called upon the 'industrialised countries' to help developing countries to meet the incremental costs incurred by them in tackling environmental problems. The Principles were adopted as guidance for common conviction of States to protect the earth's environment. It proclaimed that man required an "environment of quality" to pursue his fundamental rights to freedom, equality and adequate conditions of life.

It noted that man bore a "solemn responsibility" to protect and improve the environment for present and future generations (Principle 1). Principle 2 provides for inter-generational equity wherein 'the natural resources of the earth' are to be protected. It also provided that States have a responsibility to ensure that activities within their jurisdiction or

control do not cause damage to the environment of other States or of areas beyond limits of national jurisdiction, even while it recognised a sovereign right of States to exploit their own resources pursuant to their own environmental policies (Principle 21). In this connection, it enjoined States to “develop further” the international law on liability and compensation for pollution and other environmental damage to areas beyond their jurisdiction caused by activities within their jurisdiction or control. Other principles dealt with conservation of resources, pollution, developmental issues and some non-legal topics.

The Stockholm Declaration was not followed by any globally common strategy of international development or encouragement of development of environmentally friendly technologies for production of resources. In the absence of any such common strategies, the living conditions and economic lot of people in the developing world had to pursue through the means of technology and resources available to them. This resulted in uneven, uneconomical and environmentally not so friendly development in the developing countries. In this regard, one is reminded of what the Prime Minister of India Smt. Indira Gandhi said at that Conference. She had stated “... Poverty was the greatest stumbling block to environmental protection”; meaning thereby that unless poverty is tackled head-on the problem of environmental protection cannot be solved.

One of the important fallouts of the Stockholm Conference was the establishment of the United Nations Environmental Programme, headed by the Executive Director to act as a focal point for environmental action and co-ordination within the UN System. With the establishment of the UNEP and the focused work of various international agencies including the World Bank, the growing problems of environment in different sectors, particularly in the developing world began to attract the attention of policy makers, environmental lobbies and States. Initially, the focus was on weather and climate modification and seabed exploitation, rivers and river basins, enclosed and semi-enclosed seas, transfrontier pollution and ground waters.

- ◆ In the first decade, UNEP could not make much progress in helping States develop proper environmental law for lack of sufficient resources and constraints faced by developing countries to accelerate their economic development in an environmentally friendly way. The UNEP thereafter developed a more focused programme on development of environmental law through its Montevideo Programme on Development of Environmental Law, 1992 on conclusion of international agreements, development of international principles, guidelines and standards and provision of international assistance for national legislation and administration. In the last several years, a large number of international treaties were concluded under its auspices. Guidelines on different aspects of environment have been produced. Several governments, upon request, were provided assistance in the drafting of their national environmental legislation and training in implementation of environmental law. In general, where treaties are at a global scale, standards set are general, and where treaties addressed regional or bilateral issues standards tend to be more specific and innovative.

One of the seminal issues that emerged from the conference is the recognition of poverty alleviation for protecting the environment. The Indian Prime Minister Mrs. Indira Gandhi in her seminal speech in the conference brought forward the connection between ecological management and poverty alleviation. It is to be noted that she was the only other speaker in the conference other than the hosting country prime minister.

During this period, mention must also be made of several international conferences on world population (1974), world food (1974), habitat conference (1976), international women's year conference (1975), desertification conference (1977) and water conference (1977), conference on long-term sustainable development (1982), conference on new and renewable sources of energy (1981), which provided additional fillip in the earlier years to make necessary institutional advances in specific sectors of environment. The adoption in the General Assembly of the 1974 UN Declaration on the Establishment of a New Economic Order, followed by the adoption of a Charter of Economic Rights and Duties of States was also an important event in the modern growth of international environmental law. This Declaration gave currency to the right to development, which in turn created the need to reconcile and synthesise the right of development with the duty to protect environment. This gave birth to the concept of sustainable development, which became the theme of the Rio Conference.

From a legal perspective, the Conference evolved important environmental principles for international environmental regulation and control that highlighted the historical significance and an insight into the relationship between the rich, and the poor countries. Principle 21 of the declaration affirmed the responsibility of States to ensure that the activities within jurisdiction or control did not cause damage to another State or beyond another jurisdiction, for e.g. in areas such as the high seas or outer space. Principle 1 linked environmental protection to human rights norms, stating that man has 'the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being, and he bears solemn responsibility to protect and improve the environment for present and future generations.'

Moreover, the first environmental mega-conference successfully identified the terms of what is now a continuing global environmental debate. In so doing, it laid down the foundations of the international system of environmental law and defined the parameters of the global debate on the environment and development. For instance, the core principle that a nation State's sovereignty over the use of its own environmental resources should not impact negatively on other States was negotiated at Stockholm, as were many other principles.

The period from Stockholm till the United Nations Conference on Environment and Development (UNCED), 1992 held in Rio de Janeiro witnessed a steady growth of international activities and also environmental treaties and international institutions. It is also important to note that one of the natural fallouts of the Stockholm conference was the need for an international environmental organisation.

### 7.3 The Brundtland Commission

Much before the Rio conference of 1992, important efforts were made at the international level towards drawing up an action plan for world conservation and sustainable development. The General Assembly in 1982 adopted the World Charter for Nature which, although a non-binding instrument, was viewed as “an important symbolic expression of an intent among nations to achieve a more harmonious and sustainable relationship between humanity and the rest of the bio-sphere- between mankind and earth”. In 1980 the efforts of International Union for Conservation of Nature (IUCN), UNEP and World Wide Fund for Nature (WWF), UNESCO and FAO prepared a World Conservation Strategy. This Strategy, which is credited with having coined the term ‘sustainable development’ in a major way influenced international legal developments and also emphasized key objectives.

While time and space does not allow us to have a more focused discussion on the Strategy, it is important to know and understand that it recommended: a commitment to principles of sustainable society; a comprehensive system for environmental law its implementation and enforcement; legal and administrative controls for such implementation and development of national and international standards and use of sound, benign environmentally friendly technologies; compensation for damage caused by hazardous substances; liability redress and adoption of international environmental agreements to strengthen the need for environmental protection and sustainable development.

Based on the World Charter of Nature as well as the World Conservation Strategy, a new commission called the World Commission on Environmental Development was established in 1983. This Commission headed by the former Norwegian Prime Minister Gro Harlem Brundtland re-examined issues regarding environment and development as well as proposed new policies and actions towards achievement of sustainable development. The Commission identified a number of priorities areas for legal and institutional change; governance wherein international organisations and regional bodies were called upon to integrate environment into their developmental goals. Besides, reinforcement was sought for environmental protection, strengthening of the UNEP as the principal source of environmental data assessment and reporting. It was also recognised that international law should keep pace with the expanding scale of impacts on the ecological basis of development. The Commission called for international financial institutions such as The World Bank, (International Monetary Fund) IMF and other regional development banks to provide assistance for pollution control. The Commission also established the Commission on Sustainable Development (CSD) which is now a regular body.

Our Common Future, also known as the Brundtland Report, from the World Commission on Environmental Development (WCED) was published in 1987. Its targets were multilateralism and interdependence of nations in the search for a sustainable development path. The report sought to recapture the spirit of the Stockholm Conference, which had introduced environmental concerns to the formal political development sphere. Our Common Future placed environmental issues firmly on the political agenda; it aimed to discuss the environment and development as one single issue.

The document was the culmination of a “900-day” international-exercise which catalogued, analysed and synthesised: written submissions and expert testimony from “senior government representatives, scientists and experts, research institutes, industrialists, representatives of non-governmental organisations, and the general public” held at public hearings throughout the world. The Brundtland Commission’s mandate was to:

- 1) “re-examine the critical issues of environment and development and to formulate innovative, concrete, and realistic action proposals to deal with them;
- 2) strengthen international co-operation on environment and development and to assess and propose new forms of co-operation that can break out of existing patterns and influence policies and events in the direction of needed change; and
- 3) raise the level of understanding and commitment to action on the part of individuals, voluntary organisations, businesses, institutes and governments” (1987: 347). “The Commission focused its attention in the areas of population, food security, the loss of species and genetic resources, energy, industry and human settlements - realising that all of these are connected and cannot be treated in isolation one from another.”

The Brundtland Commission Report recognised that human resource development in the form of poverty reduction, gender equity, and wealth redistribution was crucial to formulating strategies for environmental conservation, and it also recognised that environmental-limits to economic growth in industrialised and industrialising societies existed. As such, the Report offered “analysis, the broad remedies, and the recommendations for a sustainable course of development” within such societies. However, the Report was unable to identify the modes of production that are responsible for degradation of the environment, and in the absence of analysing the principles governing market-led economic growth, the Report postulated that such growth could be reformed and expanded. This lack of analysis resulted in an obfuscated-introduction of the term sustainable development.

An oft-quoted definition of sustainable development is defined in the report as: “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

## 7.4 The United Nations Conference on Environment and Development, 1992

### Fact Sheet

Conference	United Nations Conference on Environment and Development (UNCED), Rio de Janeiro, 3-14 June 1992
Informal name	Rio Conference or The Earth Summit 92
Host Government	Brazil
Number of Governments participating	172, 108 at level of heads of State or Government

Conference Secretary-General	Maurice F. Strong, Canada
Organisers	UNCED secretariat
Principal themes	Environment and sustainable development
NGO presence	Some 2,400 representatives of non-governmental organisations (NGOs); 17,000 people attended the parallel NGO Forum
Resulting document	a) Agenda 21, b) the Rio Declaration on Environment and Development, c) the Statement of Forest Principles, d) the United Nations Framework Convention on Climate Change and e) the United Nations Convention on Biological Diversity
Follow-up mechanisms	Commission on Sustainable Development; Inter-agency Committee on Sustainable Development; High-level Advisory Board on Sustainable Development
Previous conference	UN Conference on the Human Environment, Stockholm (1972)

In 1992 the United Nations Conference on Environmental Development (UNCED) was held in Rio De Janeiro, Brazil. The Conference attended by 172 States and thousands of non-governmental organisations adopted 3 non-binding instruments:

- a) the Rio Declaration on Environment and Development (the Rio Declaration);
- b) Agenda 21
- c) Forest Principles, which was a Non legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of all types of Forests (the UNCED Forestry Principles).

Three binding treaties were also opened for signature -

- a) Convention on Biological Diversity,
- b) UN Framework Convention on Climate Change,
- c) UN Convention to Combat Desertification.

The two texts of Rio Declaration on Environment and Development and the Action Programme known as Agenda 21 were also adopted which are general in scope but have proved to be of important source for the future development of environmental law.

The UNCED was also an occasion to revisit some of the fundamental concerns of environmental protection and economic development. As opposed to the Stockholm Conference, which was based on an 'ecological approach', UNCED was basically 'anthropocentric' in nature.

The Declaration reaffirmed the principle adopted at the Stockholm Conference and sought to build a "new equitable partnership through the creation of new levels of co-operation among States, key sectors of societies and people". While recognising the integral and

interdependent nature of the Earth as our home, the Declaration also aspired to work towards “international agreements which respect the interests of all and protect the integrity of the global environmental and developmental system.”

The Rio Declaration on Environment and Development consisted of 27 principles, some of which have since played a prominent part in the development of environmental law notably the principle of sustainable development (Principle 4), precautionary principle (Principle 15), the “polluter pays principle” (Principle 16) and the environmental impact assessment (Principle 17). The Declaration is anthropocentric unlike the Stockholm Declaration and the World Charter for Nature. Principle 1 proclaimed that human beings are at the center of concerns for sustainable development and that they are entitled to a healthy and productive life informally in nature. The Declaration also referred to transboundary effects of activities in Principle 2 similar to Principle 21 of the Stockholm Conference. Principle 3 emphasizes the aspect of inter-generational equity when it states “the right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations.”

Principle 10 concerns public participation and Principle 13 once again reiterated the need for States to develop the law of liability. Principles 18 and 19 refer to obligations of States to notify others in case of emergencies and with respect to projects, which may affect their environment.

The Rio Conference was the second major milestone in the development of international environmental law after the Stockholm Conference. The significant difference between the two is that at Rio, almost all the States of the world as well as non-governmental agencies, along with all UN and other international organisations participated in its work. Further, environment was viewed as a common concern of mankind as a whole even if the North-South divide still had its impact on the deliberations. It was important to understand that even the developing countries saw protection of environment as a necessary part of their development as opposed to their earlier fear that such protection would actually hinder their developmental goals.

The other Principles contained in Rio Declaration could be categorised into three groups. One group related to developmental concerns of developing countries: eradication of poverty (Principle 3), special priority for development of developing countries (Principle 6) and capacity building (Principle 9). These principles were addressed in the form of legal guidelines. A second group of principles addressed the world economic order: common but differentiated responsibilities, including special responsibility of developed countries to protect the global environment (Principle 7); reduction and elimination of unsustainable patterns of production and consumption and promotion of democratic policies (Principle 8); encouragement for a supportive and economic system, that condemned discriminatory trade policy measures or disguised restrictions on international trade as well as unilateral actions (Principle 12); and prevention of re-location and transfer to other States of activities and substances that cause severe environmental degradation or are harmful to human health (Principle 14). These principles are addressed more in the nature of economic policies or guidelines.

In addition to the above two categories, a third category of principles focused on the need of public participation. Principle 10 of the Rio Declaration recognised for individuals 'a right to information, participation and remedies in environmental matters.' Principles 20 to 22 stressed the importance of the participation of categories such as women, youth and indigenous peoples. These principles were formulated more as guidelines than legal norms.

Agenda 21 consists of 40 Chapters with 115 specific topics. It is an action programme covering socio-economic dimensions, conservation and resource management, strengthening the role of non-governmental organisations and other social groups such as trade unions, women and youth and measures of implementation. Its chapters deal with different sectors such as atmosphere, biological diversity, the oceans and fresh water resources. The chapter on 'international legal instruments' insists on particular aspects of treaty making process through universal participation. States have been called upon to improve the efficacy of international environmental law by integration of environment and development policies in international treaties. Further, Agenda 21 emphasized the need for environmental standard-setting and establishment of procedures and mechanism to promote and review the implementation of treaties, in particular, the establishment of efficient and practical reporting systems.

Agenda 21 also pays particular attention to national legislation. It recognises the importance of laws and regulations suited to country specific conditions and to enable States to implement their obligations resulting from international treaties.

Following the Rio Conference, the environment has come to be recognised as an important element of all human activities. For example, the 1994 Marrakech Charter that created the World Trade Organisation as well as all the treaties that created regional free trade zones, make a mention of 'environment' as a specific field for co-operation. Another major global instrument the United Nations Convention on the Law of the Sea devotes special attention to marine environment. During the post Rio phase marine pollution started receiving greater attention. Similarly, in 1991, States Parties to the Antarctic Treaty System adopted the Madrid Protocol concerning Environmental Aspects of Antarctica. Likewise, the 1994 UN Convention on Combating Desertification is yet another result of growing concern for environment and development.

Despite an evolving international law of environment setting out in many cases concrete obligations and duties for States, a lot of legal ground still needed to be covered in different sectors of environment. This is particularly so in establishing suitable international and national standards and deciding applicable and pragmatic procedures for implementation and enforcement of such standards. In 1993 UNEP's Governing Council mandated a position paper to identify the future course of action following the Rio Conference. Among other things the position paper found that: international environmental law had developed certain characteristics particularly important for achieving sustainable development; International environment law reflected an integrated approach by taking into account social and economic development goals; International environmental law also recognised the disparities in relative development levels of States, allowing for

differentiated implementation schedules, financial resources and technology transfers as ways to assist developing countries in meeting their international obligations; and international environmental law also reflected a growing role for non-State actors and recognises the need for all stakeholders to participate in environment and development decisions. More generally, in moving towards sustainable development, international environmental law inspired the development of new and innovative concepts, principles and ideas and facilitating enabling mechanisms and procedures in areas such as implementation, compliance, dispute avoidance and dispute settlement. International environmental law is therefore playing an increasingly important role in promoting the integration of environment and development by providing an effective legal and regulatory framework for implementing Agenda 21.

In addition, environmental concerns have begun to impact upon other major sectors of international relations and law. Thus, the relationship between trade and environment on the one hand, environment and human rights on the other, have become a source of their own development of law involving both principles of content and procedure. With more and more conflicts taking place around the world, the need for protecting environment in times of armed conflict and hence the relationship between environment and international humanitarian law had also gained some significance.

Apart from the above, a more effective implementation, compliance and enforcement of international agreements and conventions are recognised as a matter of priority. Dispute resolution and avoidance through formulation of appropriate guidelines, early warning systems and offer of assistance and training by competent international organisations is another area of contemporary focus for the development of environmental law.

Binding treaties of Earth Summit -

**A) CBD** - The Convention on Biological Diversity (CBD), known informally as the Biodiversity Convention, is an international legally binding treaty. The Convention has three main goals:

- 1) conservation of biological diversity
- 2) sustainable use of its components; and
- 3) fair and equitable sharing of benefits arising from genetic resources.

In other words, its objective is to develop national strategies for the conservation and sustainable use of biological diversity. It is often seen as the key document regarding sustainable development.

The Convention was opened for signature at the Earth Summit in Rio de Janeiro on 5 June 1992 and entered into force on 29 December 1993.

2010 was the International Year of Biodiversity. The Secretariat of the Convention on Biological Diversity is the focal point for the International Year of Biodiversity. At the 2010 10th Conference of Parties (COP) to the Convention on Biological Diversity in October

in Nagoya, Japan, the Nagoya Protocol was adopted. On 22 December 2010, the UN declared the period from 2011 to 2020 as the UN-Decade on Biodiversity. They, hence, followed a recommendation of the CBD signatories during COP 10 at Nagoya in October 2010.

The convention recognised for the first time in international law that the conservation of biological diversity is “a common concern of humankind” and is an integral part of the development process. The agreement covers all ecosystems, species and genetic resources. It links traditional conservation efforts to the economic goal of using biological resources sustainably. It sets principles for the fair and equitable sharing of the benefits arising from the use of genetic resources, notably those destined for commercial use. It also covers the rapidly expanding field of biotechnology through its Cartagena Protocol on Biosafety, addressing technology development and transfer, benefit-sharing and biosafety issues. Importantly, the Convention is legally binding; countries that join it (‘Parties’) are obliged to implement its provisions.

The convention reminds decision-makers that natural resources are not infinite and sets out a philosophy of sustainable use. While past conservation efforts were aimed at protecting particular species and habitats, the Convention recognises that ecosystems, species and genes must be used for the benefit of humans. However, this should be done in a way and at a rate that does not lead to the long-term decline of biological diversity.

The convention also offers decision-makers guidance based on the precautionary principle that where there is a threat of significant reduction or loss of biological diversity, lack of full scientific certainty should not be used as a reason for postponing measures to avoid or minimise such a threat. The Convention acknowledges that substantial investments are required to conserve biological diversity. It argues, however, that conservation will bring us significant environmental, economic and social benefits in return.

Some of the many issues dealt with under the convention include:

- ◆ Measures and incentives for the conservation and sustainable use of biological diversity.
- ◆ Regulated access to genetic resources and traditional knowledge, including Prior Informed Consent of the Party providing resources.
- ◆ Sharing, in a fair and equitable way, the results of research and development and the benefits arising from the commercial and other utilisation of genetic resources with the Contracting Party providing such resources (governments and/or local communities that provided the traditional knowledge or biodiversity resources utilised).
- ◆ Access to and transfer of technology, including biotechnology, to the governments and/or local communities that provided traditional knowledge and/or biodiversity resources.
- ◆ Technical and scientific co-operation.

- ◆ Co-ordination of a global directory of taxonomic expertise (Global Taxonomy Initiative).
- ◆ Impact assessment.
- ◆ Education and public awareness.
- ◆ Provision of financial resources.
- ◆ National reporting on efforts to implement treaty commitments.

#### International bodies established by the CBD

- **Conference of the Parties:** The convention's governing body is the COP consisting of all governments (and regional economic integration organisations) that have ratified the treaty. This ultimate authority reviews progress under the Convention, identifies new priorities, and sets work plans for members. The COP can also make amendments to the Convention, create expert advisory bodies, review progress reports by member nations, and collaborate with other international organisations and agreements. The Conference of the Parties uses expertise and support from several other bodies that are established by the Convention. In addition to committees or mechanisms established on an ad hoc basis, two main organs are:
  - a) **Secretariat:** The CBD Secretariat. Based in Montreal, it operates under the United Nations Environment Programme. Its main functions are to organise meetings, draft documents, assist member governments in the implementation of the programme of work, co-ordinate with other international organisations, and collect and disseminate information.
  - b) **Subsidiary Body for Scientific, Technical and Technological Advice (SBSTTA):** The Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA). The SBSTTA is a committee composed of experts from member governments competent in relevant fields. It plays a key role in making recommendations to the COP on scientific and technical issues.

**Country implementations:** Implementation in various countries is through National Biodiversity Strategies and Action Plans (NBSAP). NBSAPs are the principal instruments for implementing the Convention at the national level (Article 6). The Convention requires countries to prepare a national biodiversity strategy (or equivalent instrument) and to ensure that this strategy is mainstreamed into the planning and activities of all those sectors whose activities can have an impact (positive and negative) on biodiversity. To date [2012-02-01], 173 Parties have developed NBSAPs in line with Article 6.

#### Protocols under CBD

- **The Cartagena Protocol on Biosafety** of the Convention, also known as the Biosafety Protocol, was adopted in January 2000. The Biosafety Protocol seeks to protect biological diversity from the potential risks posed by living modified organisms resulting from modern biotechnology. The Biosafety Protocol makes clear that

products from new technologies must be based on the precautionary principle and allow developing nations to balance public health against economic benefits. It will, for example, let countries ban imports of a genetically modified organism if they feel there is not enough scientific evidence the product is safe and requires exporters to label shipments containing genetically modified commodities such as corn or cotton.

- **Global Strategy for Plant Conservation** was adopted on April 2002, based on the recommendations of the Gran Canaria Declaration Calling for a Global Plant Conservation Strategy, and adopted a 16-point plan aiming to slow the rate of plant extinctions around the world by 2010.
- **Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilisation to the Convention on Biological Diversity** is a supplementary agreement to the Convention on Biological Diversity. It provides a transparent legal framework for the effective implementation of one of the three objectives of the CBD: the fair and equitable sharing of benefits arising out of the utilisation of genetic resources. The Protocol was adopted on 29 October 2010 in Nagoya, Aichi Province, Japan, and will enter into force 90 days after the fiftieth instrument of ratification. Its objective is the fair and equitable sharing of benefits arising from the utilisation of genetic resources, thereby contributing to the conservation and sustainable use of biodiversity. It is intended to create greater legal certainty and transparency for both providers and users of genetic resources by:
  - ◆ Establishing more predictable conditions for access to genetic resources.
  - ◆ Helping to ensure benefit-sharing when genetic resources leave the contracting party providing the genetic resources.
  - ◆ By helping to ensure benefit-sharing, the Nagoya Protocol creates incentives to conserve and sustainably use genetic resources, and therefore enhances the contribution of biodiversity to development and human well-being.

The Nagoya Protocol applies to genetic resources that are covered by the CBD, and to the benefits arising from their utilisation. The Nagoya Protocol also covers traditional knowledge (TK) associated with genetic resources that are covered by the CBD and the benefits arising from its utilisation. Nagoya Protocol sets out core obligations for its contracting Parties to take measures in relation to access to genetic resources, benefit-sharing and compliance.

1) **Access obligations** - these domestic-level access measures are to:

- ◆ Create legal certainty, clarity and transparency
- ◆ Provide fair and non-arbitrary rules and procedures
- ◆ Establish clear rules and procedures for prior informed consent and mutually agreed terms

- ◆ Provide for issuance of a permit or equivalent when access is granted
  - ◆ Create conditions to promote and encourage research contributing to biodiversity conservation and sustainable use
  - ◆ Pay due regard to cases of present or imminent emergencies that threaten human, animal or plant health
  - ◆ Consider the importance of genetic resources for food and agriculture for food security
- 2) **Benefit-sharing obligations** - These domestic-level benefit-sharing measures are to provide for the fair and equitable sharing of benefits arising from the utilisation of genetic resources with the contracting party providing genetic resources. Utilisation includes research and development on the genetic or biochemical composition of genetic resources, as well as subsequent applications and commercialisation. Sharing is subject to mutually agreed terms. Benefits may be monetary or non-monetary such as royalties and the sharing of research results.
- 3) **Compliance obligations** - These specific obligations to support compliance with the domestic legislation or regulatory requirements of the Contracting Party providing genetic resources, and contractual obligations reflected in mutually agreed terms, are a significant innovation of the Nagoya Protocol. Contracting Parties are to:
- ◆ Take measures providing that genetic resources utilised within their jurisdiction have been accessed in accordance with prior informed consent, and that mutually agreed terms have been established, as required by another Contracting Party
  - ◆ Co-operate in cases of alleged violation of another Contracting Party's requirements
  - ◆ Encourage contractual provisions on dispute.
- B) **UNFCCC** - The United Nations Framework Convention on Climate Change (UNFCCC or FCCC) is an important international environmental treaty negotiated at the UNCED. The objective of the treaty is to “stabilise greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.” The treaty itself set no binding limits on greenhouse gas emissions for individual countries and contains no enforcement mechanisms. In that sense, the treaty is considered legally non-binding. Instead, the treaty provides a framework for negotiating specific international treaties (called “protocols”) that may set binding limits on greenhouse gases.

The UNFCCC was opened for signature on 9 May 1992, after an Intergovernmental Negotiating Committee produced the text of the Framework Convention as a report following its meeting in New York from 30 April to 9 May 1992. It entered into force on 21 March 1994. As of May 2011, UNFCCC has 195 Parties.

The Parties to the convention have met annually from 1995 in Conferences of the Parties (COP) to assess progress in dealing with climate change. In 1997, the Kyoto Protocol was

concluded and established legally binding obligations for developed countries to reduce their greenhouse gas emissions. The 2010 Cancun agreements state that future global warming should be limited to below 2.0°C (3.6°F) relative to the pre-industrial level. The 20th COP will take place in Peru in 2014.

The Framework Convention specifies the aim of developed (Annex-I) Parties stabilising their greenhouse gas emissions (carbon dioxide and other anthropogenic greenhouse gases not regulated under the Montreal Protocol) at 1990 levels, by the year 2000. After the signing of the UNFCCC treaty, Parties to the UNFCCC have met at conferences (“Conferences of the Parties” - COPs) to discuss how to achieve the treaty’s aims. At the 1st Conference of the Parties (COP-1), Parties decided that the aim of Annex-I Parties stabilising their emissions at 1990 levels by the year 2000 was “not adequate”, and further discussions at later conferences lead to the Kyoto Protocol. The Kyoto Protocol sets emissions targets for developed countries which are binding under international law.

The 2010 Cancún agreements (COP 16) include voluntary pledges made by 76 developed and developing countries to control their emissions of greenhouse gases. At the 2012 Doha climate change talks (COP 18), Parties to the UNFCCC agreed to a timetable for a global agreement which will include all countries. The timetable states that a global agreement should be adopted by 2015, and implemented by 2020.

**C) UNCCD - The United Nations Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, particularly in Africa (UNCCD)** is a Convention to combat desertification and mitigate the effects of drought through national action programmes that incorporate long-term strategies supported by international co-operation and partnership arrangements.

The Convention, the only convention stemming from a direct recommendation of the Rio Conference’s Agenda 21, was adopted in Paris, France on 17 June 1994 and entered into force in December 1996. It is the first and only internationally legally binding framework set up to address the problem of desertification. The Convention is based on the principles of participation, partnership and decentralisation - the backbone of Good Governance and Sustainable Development. It has 194 State Parties, making it truly global in reach. In 2013, Canada became the first country to announce its intention to withdraw from the convention. To help publicise the Convention, 2006 was declared “International Year of Deserts and Desertification” but debates have ensued regarding how effective the International Year was in practice.

**The UN General Assembly Special Session on Sustainable Development (Earth Summit II), New York, 1997**

Soon after Rio, the UN General Assembly requested a formal review of the implementation of Agenda 21. The UN General Assembly Special Session on Sustainable Development (UNGASS) was held in New York five years after Rio. Although its formal task was to review Agenda 21, UNGASS (or ‘Earth Summit II’, as it came to be known)

*Contd...*

was inevitably portrayed as a litmus test of government's support for, and record of, implementing sustainable development. The Meeting produced two main outcomes: a six-paragraph 'statement of commitment' and a 'Programme of Action for the Further Implementation of Agenda 21'. The organisers had hoped to keep the Conference agenda narrow and focused, but as soon as the meeting opened the agenda began to broaden, as different groupings pushed their own concerns. In the end, the Meeting struggled even to agree upon a statement on common concerns such as forests, climate change, trade and globalisation. The UNGASS did, however, agree upon a new programme of work for the UNCSO, by setting up local Agenda 21s processes, and paved the way for the ten-year review of Rio+10 in 2002.

## 7.5 The World Summit for Sustainable Development: Johannesburg, 2002 (Rio+10)

### Fact Sheet

Conference	The World Summit for Sustainable Development: Johannesburg, 26 August to 4 September 2002.
Informal name	Rio+10, Earth Summit 2002
Host Government	South Africa
Resulting document	a) Johannesburg Declaration, that laid down the Johannesburg Plan of Implementation as an action plan.
	b) Agreement of 27 August aiming to restore the world's depleted fisheries by 2015, along with other agreements.
	c) Instead of new agreements between governments, which is known as Type I <sup>2</sup> Partnerships (a more classic outcome of international treaties) this summit resulted in around almost 300 "partnership initiatives" known as Type II agreements.
	d) These Type II agreements <sup>3</sup> were to be the key means to

<sup>2</sup> Type I Agreements - These preliminary agreements are created when the parties agree on all the points that require negotiation (including whether to be bound) but they also agree to memorialise their agreement in a more formal document. Such an agreement can be fully binding; it is preliminary only in the sense that the parties plan to more formally set it down in writing. Despite the anticipation of further formalities, a party to this type of preliminary agreement may demand performance of the transaction, even without the more elaborate signed formalisation of their agreement.

<sup>3</sup> Type II Agreements - These type of preliminary agreements are binding on parties only to a certain degree. These agreements result when the parties agree on certain major terms, but leave other terms open for further negotiation. Here the parties make a mutual commitment to negotiate together in good faith in an effort to reach a final agreement. In contrast to a Type I preliminary agreement, a Type II agreement does not actually commit the parties to the ultimate contract itself but rather only to the obligation to negotiate the open issues in good faith in an attempt to reach a final contract within the agreed framework. As a result, a party to a Type II preliminary agreement has no right to demand performance of the transaction. Indeed, if a final contract is not agreed upon, the parties generally may abandon the transaction as long as they have made a good-faith effort to close the deal.

	achieve the Millennium Development Goals. These are kept in a database of UN Partnerships for Sustainable Development.
Follow-up mechanisms	Millennium Development Goals follow up initiatives
Previous conference	Earth Summit 1992

The World Summit for Sustainable Development (WSSD) was the main follow-up to the 1992 Earth Summit. It was expected to be as high profile and significant as Rio, and to provide the opportunity for concrete steps to be taken towards implementing the principles agreed at earlier conferences. The preparations for the WSSD had begun in May 2001, with the first of a series of four global preparatory conferences and a number of regional and national consultation exercises to set the agenda and propose solutions. It was expected to be the first major environment and development conference to have a formally structured official input from a wide range of ‘major groups’ of stakeholders identified at Rio e.g. youth, farmers, businesses, women. It also provided an opportunity for world leaders to recover some of the lost ground in 1997, by ratifying global agreements such as the Kyoto Protocol and the Conventions on Biodiversity and Desertification.

Various problems had cropped up in the implementation of the Rio Declaration and the action programme Agenda 21. To review these problems and issues connected, the United Nations decided to hold the WSSD at Johannesburg, South Africa from 26 August to 4 September 2002. In the context of the World Summit for Sustainable Development (WSSD), several themes came into focus: globalisation and sustainable development; eradication of poverty and achieving sustainable livelihoods; changing unsustainable patterns of consumption and production; promoting health through sustainable development; accessing energy and improving energy efficiency; sustainable management of ecosystems and bio-diversity; managing the world’s fresh water resources, near coastal zones, problems of small island States, conservation and management of ocean resources; securing adequate finance and technology transfer; implementing sustainable development initiatives for Africa; and strengthening the system of international governance for sustainable development.

Given that previous international meetings on sustainable development seem to have had little effect on the world’s majority, the Johannesburg Summit was considered by some to appear quite ambitious to say the least and many were sceptical as to whether anything of importance would even come of this summit.

A broader agenda than the Rio Summit in 1992, the summit in Johannesburg also included a huge number of delegates representing nations, business interests and non-profit environmental and development/citizen/social justice groups. Various key issues were addressed, including:

- ◆ Poverty
- ◆ Water quality and availability
- ◆ Cleaner energy

- ◆ Health
- ◆ Good governance
- ◆ Technology
- ◆ Production and Consumption
- ◆ Oceans and Fisheries
- ◆ Tourism

These are just a sample and were all discussed in varying degrees. Other related issues such as globalisation, women's rights were also discussed.

Some understandably criticised the summit as over-ambitious to try and talk about so many issues. Yet, true or not, it shows that there is at least an apparent growing recognition that sustainable development (admittedly a somewhat overused word) means a myriad of inter-related issues, not something solely in the realms of environmentalism, but also deep into economics (which governs how resources are used), and a variety of socio-political issues.

### **Millennium Development Goals (MDGs)**

MDGs are eight international Development Goals that were established following the Millennium Summit of UN in 2000, following the adoption of the United Nations Millennium Declaration. All 189 United Nations member States of that time and at least 23 international organisations committed to help achieve the Millennium Development Goals by 2015. The goals follow:

- 1) To eradicate extreme poverty and hunger
- 2) To achieve universal primary education
- 3) To promote gender equality and empowering women
- 4) To reduce child mortality rates
- 5) To improve maternal health
- 6) To combat HIV/AIDS, malaria and other diseases
- 7) To ensure environmental sustainability
- 8) To develop a global partnership for development

Each goal has specific targets and dates for achieving those targets. To accelerate progress, the G8 Finance Ministers agreed in June 2005 to provide enough funds to the World Bank, IMF and the African Development Bank to cancel \$40 to \$55 billion in debt owed by members of the Heavily Indebted Poor Countries (HIPC) to allow them to redirect resources to programmes for improving health and education and for alleviating poverty.

Criticisms accompanied the MDGs, focusing on lack of analysis and justification behind the chosen objectives, the difficulty or lack of measurements for some goals and uneven progress, among others. Although developed countries' aid for achieving the MDGs rose during the challenge period, more than half went for debt relief, with much of what

remained going towards natural disaster relief and military aid which do not further development.

As of 2013 progress towards the goals was uneven. Some countries achieved many goals, while others were not on track to realise any. A UN conference in September 2010 reviewed progress and concluded with the adoption of a global plan to achieve the eight goals by their target date. New commitments targeted women's and children's health and new initiatives in the worldwide battle against poverty, hunger and disease.

## 7.6 Conclusion

To sum up many of these mega conferences brought on the agenda of the international community the core issues of environment. It is difficult to state precisely what have been the contributions of these conferences. Some of their important contributions have been: setting global agendas; facilitating 'joined-up' thinking; endorsing commonly shared principles; exercising leadership by defining new objectives; building institutional capacities; and making global governance more legitimate in the eyes of governments, business and civil society by promoting social inclusiveness.

The Millennium Development Goals and the Environment endorse some of the above goals and agenda. They speak of the need to: integrate the principles of sustainable development into country policies and programmes; reverse loss of environmental resources; reduce by half the proportion of people without sustainable access to safe drinking water; achieve significant improvement in lives of at least 100 million slum dwellers, by 2020.

The Secretary General's 2007 Report on the Millennium Development Goals pertaining to environment deals largely on the threat of climate change. While it may be the most important global problem facing the world today, there are a number of other concerns such as loss of biological diversity, loss of freshwater, desertification, marine pollution etc. that require urgent attention too.

However, it also needs to be understood that States require resources to implement their obligations or commitments agreed at these conferences. This is not to deny the signal contribution of the Rio principles of common but differentiated responsibilities, common concern of humanity from the Law of the Sea Convention and others.

In light of the above discussions on development and application of IEL, it is important to think and reflect on the following questions. How does IEL illustrate the distribution of power within the global political economy? Do environmental problems require both global and local discourses? Is IEL a useful avenue for solving environmental problems? And if so, how? It is important to self analyse these questions because, less developed and developing regions of the world have long been either sceptical or ambivalent about IEL and its usefulness, perceiving IEL as an attempt to ameliorate Western development mistakes at the expense of non-Western development.

Since independence, postcolonial States have sought development in the Western sense, believing it to be the only path out of mass poverty and humiliating financial dependency. At the same time, Western States gradually realised that their understanding of development was causing grave global environmental harm and was unsustainable. Thus, the two dominant strains of argument in IEL have been affluent Western environmentalists calling for global environmental protection, and advocates from poorer regions prioritising poverty eradication and insisting that rich regions should take responsibility for the environmental problems they caused.

In this unit, we shall conclude by summarising a few modern day outcomes and shortcomings of IEL scheme in this fast globalising world -

**i) Common but differentiated responsibilities**

IEL concepts such as sustainable development and the principle of common but differentiated responsibilities for the global environment attempt to address both concerns by insisting that, firstly, environmental and developmental concerns are inextricably intertwined; second, States that cause the most environmental harm should bear the primary responsibility for solutions; and third, richer States should take the lead and bear a greater burden because of their greater economic and technological capacity.

While these concepts clearly articulate what is needed, more developed States have either not formulated, or not adhered to, a concomitant hierarchy of norms and actions. Thus IEL has failed to eradicate the sense of injustice that poorer regions feel and, on a diversity of issues from species conservation to climate change, IEL is characterised by a deepening divide between the poor and the rich.

**ii) Disproportionate suffering**

Many less developed and developing nations feel that it is deeply unfair that their nation, which has not contributed a lot to escalate the present global environmental problems, should have to concern themselves with disproportionate burden on environmental protection at a time when they are struggling with accessing the basics of survival such as drinkable water, food and shelter. However, in recent years, international law advocates for the poor have increasingly re-engaged with environmental issues because, just as the rich receive a disproportionate benefit from exploiting nature, the poor bear a disproportionate burden of scarcity, pollution and environmental crises such as climate change. Globally, dominant development patterns coupled with population growth have led to increased resource consumption and pollution and waste, causing both resource scarcity and ecological crises.

The overriding sustainable development challenge in developing nations is poverty eradication, and such States have looked to economic growth for the solution. In the past decade, most Asian and at least six African countries were among the world's ten fastest growing economies. As the last remaining pockets of many natural resources exist in poorer parts of the world, and as poorer regions are more vulnerable to ecological

crises, IEL is an increasingly strategic body from which vulnerable peoples, and the movements, scholars, and States that represent them, can contest, negotiate, and resist international economic and development paradigms. Today, grassroots social movements are increasingly harnessing environmental issues as an opportune means of challenging fundamental assumptions that underpin capitalism and development.

### **iii) Continued cycle of domination**

Just as in the past when developing nation's rich and diverse natural resources attracted colonial powers, today primary products continue to dominate as such nation's export sectors. The value added locally remains minimal compared to the financial gains accruing outside the continents. Some resources such as oil and diamonds have also contributed to conflict. For instance, while Africa is well-endowed with fossil fuels, hydropower, uranium, biomass and other renewable energy resources, many Africans do not have access to reliable and affordable energy. Asia shares a similar fate in the energy sector. Hunger and malnutrition remain pervasive and the spectre of famine continues to haunt millions on a continent with ample agricultural endowments. This is the result of various factors including the global increase of food prices, developed countries' agricultural subsidies benefiting their own rich producers, and many years of structural adjustment programmes encouraging developing governments to repay ballooning debts by diverting resources from food production to cash crop exports.

Globally, increasing climate variability, rising costs of fossil fuels, and concerns for future energy and food supplies, has spurred foreign investors and speculators to buy fertile lands. And while foreign acquisition of fertile lands in Asian and African nations is increasing, transparency about the acquisitions is decreasing. Control over land is crucial for smallholder farmers but they remain highly vulnerable to dispossession and exploitation. This applies particularly to women, who constitute a majority of the agricultural workforce in such regions, producing about 80% of the region's food, yet owning less than 1% of the land on which they work. They, along with children, are the first to suffer the effects of economic downturn, drought, famine and violent conflict.

Africa and Asia's economic growth pattern does not always bode well for either poverty reduction or environmental protection. The latter has grave consequences for the region's poor who depend directly on the livelihood support of functioning ecosystems. Environmental degradation causes poverty, hunger, gender inequality, and health problems. The poor also have less capacity to adapt and cope with the increasing onset of ecological crises. Notwithstanding its low greenhouse gas emissions, such countries will be most affected by climate change mainly due to low adaptive capacity in the face of increasing extreme events such as floods and droughts. Persistent loss of biodiversity is also a major problem, caused by expanding agriculture, deforestation, climate change and desertification. Drought and desertification affect 65% of the population and highly variable rainfall results in uneven distribution of water resources. Thus, for a combination of economic, social and environmental reasons, people of such nations have strong incentives to participate in and shape international co-operation on environmental issues.

Moving on to the question of whether international law can overcome past failures and address the urgent needs of those on the frontline of environmental crises? The primary barrier to sustainable development is a dominant development paradigm dependent on an infinite increase in economic growth, consumption, and production. While of Western origin, this paradigm now has almost universal influence. Western understandings of development come from value systems with deep cultural and historical roots and are difficult to change. Transformation requires, first, a better understanding of the problem and, second, viable alternatives.

#### **iv) International law as the problem**

On the first point, while international lawyers have focused on disciplinary solutions to environmental challenges, less attention is devoted to uncovering the role of international law in creating unsustainable patterns of behaviour. Environmental issues have been relegated to the specialised field of IEL. However, harmful assumptions about the environment lie at the heart of international law concepts such as sovereignty, development, property and human rights.

For instance, sovereignty assumes certain types of control and productive use of land - a requirement that has had significant consequences for the range of decisions in which postcolonial States engage. International law and its institutions have also played an important part in universalising and normalising an idea of development and political economy wedded to the infinite exploitation of natural resources. Conceptions of property in international law, such as the public-private distinction and the notion of the commons, reflect a particular understanding of nature where selective aspects are commodified. The anthropocentricity of international law, most easily identifiable in the powerful discourse of human rights, also plays a part in limiting disciplinary responses to ecological crises. Unpacking some of these assumptions may help us think our way out of destructive development patterns.

#### **v) Local solutions**

On the second point, the hegemonic nature of the dominant paradigm makes it difficult to imagine alternatives. For inspiration, communities often turn to scientific innovation as well as cultural and historic knowledge, creating hybrid and innovative local sustainable solutions. Indigenous knowledge as yet unobliterated by globalisation has helped many communities survive food, nutrition, healthcare and climatic challenges with little or no support from the outside world. IEL has focused on top-down normative guidelines for States but perhaps it should instead be more receptive to the potential that local sustainable practices have for tackling global problems. The first 40 years of IEL were predominantly shaped by the Western experience of environmentalism. Alongside the re-emergence of the economic and political power of Asia, Africa and Latin America, there are opportunities for alternative cultures, understandings, and voices to emerge to help creatively articulate what sustainable development is, and provide choices other than the one-sided development trajectories of the past.

# FUNDAMENTAL PRINCIPLES AND APPLICATION OF INTERNATIONAL ENVIRONMENTAL LAW

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### 8.1 Introduction

Environmental Law is a body of law, which is a system of complex and interlocking statutes, common law, treaties, conventions, regulations and policies which seek to protect the natural environment which may be affected, impacted or endangered by human activities. Some environmental laws regulate the quantity and nature of impacts of human activities: for example, setting allowable levels of pollution or requiring permits for potentially harmful activities. Other environmental laws are preventive in nature and seek to assess the possible impacts before the human activities can occur.

Environmental law as a distinct system arose in the 1960s in the major industrial economies. It is fast becoming an important and specialised branch of law. Many of its doctrines are gradually becoming clear. The questions addressed by environmental law are substantive in nature, whereas, the remedies of these issues are mainly procedural. In recent years, environmental law has become seen as a critical means of promoting sustainable development. Policy concepts such as the precautionary principle, public participation, environmental justice, and the polluter pays principle have informed many environmental law reforms in this respect. There has been considerable experimentation in the search for more effective methods of environmental control beyond traditional “command-and-control” style regulation. Eco-taxes, tradable emission allowances, voluntary standards such as ISO 14000 and negotiated agreements are some of these innovations.

A study of the fundamental principles of international law would essentially involve looking at the sources of international law which provide the basis of obligation between States. It must be borne in mind that international law has its roots in the practice of States of creating binding rules among themselves. These rules once drawn and a State becomes a Party to a treaty or is bound by customs, the legal effect is the same as being bound under domestic law. According to the Vienna Convention on the Law of Treaties, a Party to a treaty cannot cite domestic inadequacies/constraints as a justification of not complying with international obligations. There was a time when certain fringe areas of international law such as international space law, international human rights law, international telecommunications law and environmental laws were not regarded as a part of traditional international law. But today, with more than three thousand multilateral environmental treaties and agreements it cannot be said that 'environment' is a field, which remains outside the purview of international law.

IEL has its roots in domestic law, as was observed by Judge Hersch Lauterpacht one of the greatest scholars in the field of international law who stated that "...international laws are nothing but an offshoot of national laws..." (Lauterpacht, H., *Private Law Sources and Analogies of International Law* (New York: Longmans Green and Co. Ltd., 1958).

## 8.2 General Principles of International Environmental Law

A distinction needs to be drawn between the fundamental principles of international law and the principles of IEL. The latter largely evolved as a fallout of the Stockholm and Rio Conferences which in some measure codified the principles governing State behaviour. These principles would include: the principle of sovereignty, duty of co-operation, prevention, precautionary approach, polluter pays principle, inter-generational equity, general principles of diverse legal systems, principle of notification and mutual assistance, principle of non-discrimination, principle of public participation, good governance and capacity building.

### a) Principle of Sovereignty

The principle of sovereignty is one of the oldest known principles of international law. It is seen that international law recognises the right of the people and nations to permanent sovereignty over their natural resources and wealth, it must be exercised in the interests of national development and of the well-being of the people of the State concerned (GA Resolution 1803 XVII (1962) and Resolution 3021 (1972)). Sovereignty is not a hollow concept. With it comes the demand of developing countries to a right to development as they were deprived or looted of the resources by colonisation. However, this right of permanent sovereignty which is also recognised by a number of other international conventions is qualified in that it should not violate the rights of other States and cause transboundary harm beyond their national jurisdiction as provided in Principles 21 and 2 of the Stockholm and Rio Declarations respectively.

Similarly, a general obligation is provided in Article 192 of the UN Convention on the Law of the Sea 1982 wherein "States have the obligation to protect and preserve the marine

environment.” Further, Article 193 while reiterating the rights of permanent sovereignty of States over their natural resources also provides that such right must be exercised “...pursuant to the environmental policies and in accordance with their duty to protect and preserve the marine environment.”

While undertaking an obligation to protect and preserve their environment, UNCLOS provides that States are under a duty to use “the best practicable means at their disposal and in accordance with their capabilities.” This clearly takes into consideration the needs and aspirations of a number of developing countries whose priority is often socio-economic development and are faced with limited resources to invest them on achieving higher and higher international environmental standards often set and urged by the developed States.

Principle of sovereignty assumes importance in the study of environment as the whole universe is integrated. So are rivers, seas, migratory species, fish and global problems such as climate change, ozone depletion and acid rain.

#### **b) Principle of Co-operation**

The general principle of co-operation among States is an important principle in respect of prevention of harm to the environment. International law according to Wolfgang Friedman is based on the vertical and horizontal co-operation of rich and poor States. It is only through a law of co-operation can States exist as equal entities because not all have the capacity to sustain their population and resources. The principle of co-operation was emphasized by the Charter of Economic Rights and Duties of States, the UN Convention on the Law of the Sea and numerous other international and regional conventions. The resolutions of the UN General Assembly and other regional bodies always emphasize the need for co-operation to meet common concerns of mankind.

The greater reliance on the principle of co-operation is significant in that it marks a departure from the classical approach based on principles of coexistence amongst States and emphasizes a more positive or even integrated interaction among them to achieve common ends, while charging them with positive obligations of commission.

Co-operation could involve standard setting and institution-building as well as action undertaken in a spirit of reasonable consideration of each other’s interests towards achievement of common goals. Accordingly, there are several treaties, which incorporate principles of equitable sharing and adopt an integrated approach to the development of shared resources, particularly in the context of a river basin.

The duty to notify which is inherent in the principle of co-operation the potentially affected neighbouring States and to engage in consultations with such States is a specific obligation in the case of a planned activity which has a risk of causing significant transboundary harm. This is borne out by the work of the International Law Commission on the Prevention of Harm from Transboundary Resources and Article 9 of the 1997 Convention on the Law of the Non-navigational Uses of International Watercourses. The

potentially affected neighbouring States could include States beyond the immediate borders of the State. Information to be shared could be drawn from readily available sources and the need for undertaking any special study could be related to payments by the requesting State.

The duty to co-operate and engage in consultations and if necessary in the negotiation with the potentially affected State has to be understood as a duty to co-operate in good faith in international law. Solutions to be achieved through such consultations should aim at mutually beneficiary or satisfactory outcomes. The Arbitral Tribunal Award (1957) in the *Lake Lannoux* case observed that, where different interests of riparian States are involved, “according to the rules of good faith, the upstream State is under the obligation to take into consideration the various interests involved, to seek to give them every satisfaction compatible with the pursuit of its own interests and to show that in this regard it is genuinely concerned to reconcile the interests of the other riparian State with its own. Similarly, the Permanent International Court of Justice in the Case concerning the Jurisdiction of the International Commission of the River Oder (PCIJ, Ser. A 1929) noted that in the case of a right of a passage in respect of a river, the community interest in a navigational river should become the basis for the common legal right....”

It is also well established that the obligation to negotiate, where it arises, does not include an obligation to reach an agreement. However, as the International Court of Justice in the *North Sea Continental Shelf Cases* (ICJ Reports 1969) pointed out that negotiation is to be in conformity with the obligation to negotiate, should be meaningful, be a genuine endeavour at bargaining, and not a mere affirmation of one’s claims without ever contemplating to meet the adversaries claim. Similarly, the Court also held in the *Fisheries Jurisdiction Case* (UK v. Iceland, ICJ Reports 1974) that parties should conduct their negotiation on the basis that each must in good faith pay reasonable regard to the legal rights of the other.

### c) Duty of Prevention

The concept of prevention is a common obligation found in most national environmental legislations. The duty of prevention involves minimising the environmental damage as a chief objective. It must be remembered that the principle of prevention is not a ‘*post facto*’ situation wherein liability is involved, as it involves an obligation by a State to prevent damage to the environment within its own jurisdiction and beyond.

The notion of the obligation of prevention has its genesis not in environmental considerations but from the obligation to respect the territorial integrity and political independence of States. As was seen in the *Island of Palmas case* (Hague Court Reporter, 2nd (Scott), 84, 93 (Permanent Court of Arbitration, 1928), the Tribunal held “States had the duty to protect within their territory the rights of other States, in particular their right to integrity and inviolability in peace and war”. Likewise, a general proscription is evident in Article 2, paragraph 7 of the Charter of the United Nations which declares that “Nothing contained in the present Charter shall authorise the United Nations to intervene in matters which are essentially within the domestic jurisdiction of any State or shall require members to submit such matters to settlement under the present Charter.”

With respect to environmental issues, the most authoritative formulation of this principle can be found in Principle 21 of the Stockholm Declaration that provides “States have, in accordance with the Charter of United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their environmental policies.”

There are two schools on the issue of environmental protection. One, the ‘preventive’ school believes that while it is necessary to set standards of liability, it is more important to prevent the danger from occurring, especially when dealing with hazardous and ultra-hazardous substances. The other is the ‘mitigative’ school, which finds it more effective to have a curative remedy by means of liability and compensation. This school presumes that States shall undertake activities irrespective of their hazard potential.

The principle of prevention, finds place in a number of multilateral environmental agreements especially the agreements drawn up under the UNEP Regional Seas Programmes that provide for due diligence obligations, to prevent, reduce and control pollution.

The International Law Commission (ILC) has done pioneering work on the duty of prevention in international law wherein the Special Rapporteur on the topic of international liability has produced an entire first report on the Prevention of Transboundary Damage from Hazardous Substances and later three reports on ‘international liability for allocation of loss suffered by victims of pollution hazards’. This entire work was adopted as Draft Articles by the Sixth Committee of the General Assembly.

#### **d) Precautionary Approach**

The principle of precaution states that where there are threats of serious or irreversible harm, a lack of full scientific certainty about the causes and effects of environmental harm shall not be used as a reason for postponing measures to prevent environmental degradation. It presupposes that scientific certainty may take too long a time to arrive at a definite understanding of the harmful effects of a hazardous substance. In such cases there should not be any delay in halting the occurrence of harm, which could lead to an irreversible state or damage. Examples could include extinction of species or massive pollution of the oceans which cannot be restored to its previous self.

At a normative level, the Rio Declaration, which identified a number of more specific procedures and principles to promote the goal of sustainable development, refers to principle of precautionary approach. Principle 15 which reads:

“In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.”

While dealing with hazardous substances, the precautionary principle can play an important role in influencing preventive measures that can save the environment from degradation rather than undertaking mitigative measures after the damage has occurred.

However, as opposed to undertaking preventive measures before the harm is caused, the precautionary approach comes into play only when there is uncertain scientific evidence as regards the effects of an activity. Thus while preventive measures have well-defined substantive obligations, a precautionary approach will largely depend upon a number of procedural obligations that would be necessary to implement an agreement or treaty.

At least three international regimes can be identified where the precautionary rule is incorporated. First, the 1996 Protocol to the London Convention of 1972, which has adopted the precautionary approach and rejected the now obsolete and retrograde understanding of the 'assimilative capacity' of the oceans. The 1996 Protocol, which entered into force in 2006, contributes to shifting the burden of proof from the victim to the polluter, where the latter has to come clean and show that the dumped substance is not hazardous. Second, the 1995 Agreement to the United Nations Convention on the Law of the Sea on Straddling Fish Stock and Highly Migratory Fish Stock adopts an ecological approach regulating the allowable catch of straddling (anadromous and catadromous species) and highly migratory fishes. This Convention is based on a precautionary approach that guarantees optimal or sustainable catch in order to protect and conserve the highly endangered fish stocks, which despite co-operation at the international and regional level, are seen to be fast depleting.

And lastly, the precautionary rule has been applied in the international regime on harvesting of whales. The International Whaling Commission established in 1946 led to the International Convention for Regulation of Whaling, which has played a significant role in the conservation of the world's largest mammals. The Revised Management Procedure adopted by the Whaling Convention ensures that the optimal catch includes whales, which are not endangered, and only those required for scientific experimental purposes. Besides, the Whaling Commission through efforts of non-whaling nations and environmental lobbies succeeded in imposing a self-imposed moratorium on whaling of certain species. The moratorium based on a precautionary approach stands except for internecine violations from States such as Iceland and Norway.

#### **e) Polluter Pays Principle**

The principle has its roots in Organisation for Economic Co-operation and Development (OECD) and European Community law. In essence, it is a principle of economic policy wherein the person responsible for causing pollution should ultimately be held responsible for bearing the cost of pollution abatement or remedying the harm caused. The principle is a measure devised by the OECD countries as an effective and efficient way of allocating costs of pollution prevention and control measures by the public authorities in order to encourage rational management of environmental resources.

At the international level, Principle 16 of the Rio Declaration provides that, "national authorities should endeavour to promote the internalisation of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and environment."

Principle 16 dealt with costs of pollution and environmental costs, i.e. other cost of pollution abatement, control and reduction measures. Such other costs may involve cost of remedial measures (clean-up operations for example in an oil spill); cost of compensatory measures (compensation to victims of damage); cost of ecological damage (compensation for reduction or damage to the environment in general); and cost of pollution charges (tradable emission charges like those being provided under the Kyoto Protocol on the UN Framework Convention on Climate Change).

Developed countries in their relations *inter se* apply the polluter pay principle as a principle for economic guidance and not a legal principle. There have also been a number of views expressed during the Rio Conference that the principle should be applied only at the domestic level and should not in any way govern responsibilities between states at the international level. This principle finds place in a number of conventions where essentially issues of liability and fixing of responsibility are involved.

However, many writers question such an understanding as in international law, issues relating to liability and responsibility are not easily translated into the polluter pay principle. It is also felt that, when one considers PPP, it is also important to understand that the principle has to be viewed in a larger context of equity considerations between the developed and the developing world and not amongst a few developed European States.

The principle despite its initial success had its testing time when the Chernobyl nuclear incident took place in 1989 and also the Rhine chloride pollution incident across the whole of Europe in 1976, when a number of States agreed to the apportionment of environmental liability. Another tricky situation which countries can find themselves in is when the polluter pays principle becomes more of a trade related bargaining technique and less of an environmental principle. This can happen when issues such as granting of subsidies, decisions on unfair competitive advantage, come up before trade related dispute settlement bodies such as the GATT or the WTO.

#### f) Inter-generational Equity

The principle of equity i.e. inter-generational or intra-generational equity, often plays an important role in environmental decision-making. Although equity *per se* is not an accepted general principle of international law, it is seen that a number of environmental treaties such as the United Nations Framework Convention on Climate Change, the Convention on Biological Diversity and the Montreal Protocol on Substances Depleting the Ozone Layer, provide for the principle of equity in ascertaining either the appropriate contribution of emissions or the fair and equitable sharing of benefits arising out of the use of genetic resources. It is also seen that equity is a concept that is often linked to intra-generational and inter-generational rights.

Under common law system, the principle of equity in the absence of a *stricto sensu* situation of rights and obligations could provide succour to the cause of protection of the environment. Similar situations are envisaged at the international level not for the

enjoyment of the rights by the present generation only but also for future generations. The underlying presumption of the principle of inter-generational equity is that human beings living in the natural environment of the planet earth with all other species and living beings hold the earth in trust for future generations. Further, this principle assumes that humans enjoy two essential relationships with their surroundings. First, is the relationship amongst human species; and second, is the relationship between natural resources. The theory calls for equality among human generations, wherein each generation has a duty to keep the Earth in a robust state, to ensure planetary health for the enjoyment of future generations.

Principle 2 of the Rio Declaration, reads, “the right to development must be fulfilled so as to equitably meet the developmental and environmental needs of the present and future generations.” This principle in essence, provides two sets of obligations. First, States have a basic obligation to conserve for the future by means of holding the existing natural resources in trust. Second is the obligation for prevention or abatement of pollution, which would render the natural resources, either depleted or in an extremely degraded State not fit for use or that which would involve a huge financial burden for clean-up operations.

The principle of inter-generational equity is reflected in a number of international conventions which include the United Nations Charter, the International Covenants on Civil and Political Rights, the Convention on the Prevention and Punishment of the Crime of Genocide, the Declaration on the Elimination of Discrimination against Women and the Declaration on the Rights of the Child and the United Nations Framework Convention on Climate Change.

The principle is linked to the established principle/right to development, which has been recognised, by a number of international instruments. To clear some conceptual inconsistencies the Experts Group of the World Commission on Sustainable Development recommended: (a) that present generations should use their resources in such a way that the right to sustainable development of future generations is protected; (b) that long term protection of the environment is guarantee; (c) that interests of future generations are adequately taken into account while framing policies on development; (d) to avoid disproportionate environmental harm caused by activities of the present generations; and (e) to ensure a non-discriminatory allocation of current environmental benefits.

While the above-mentioned steps are easy to collate, problems should arise in devising an implementation strategy to put into effect the principle of inter-generational equity. According to one view, right of future generations can be used to enhance the legal standing of members of the present generation to bring claims on behalf of the former by relying on substantive provision of environmental treaties where they can be doubts on the implementation of rights creating an obligation enforceable by individuals.

Planetary rights and obligations in each generation are inter-linked in such a way that “generations to which the obligations are held are future generations, while the

generations with which rights are linked are past generations. Thus, the rights of the future generations are linked to the obligations of present generation.” (E.B. Weiss, “Our Rights and Obligations to the Future Generation for the Environment”, *American Journal of International Law*, vol. 84, 1990, pages 198-207).

As opposed to the moral dimension of equity provided by Prof. Weiss, a legal principle is said to have evolved in the view of some authorities. One of the primary documents, a precursor of UNCED was the Report ‘Our Common Future’ by the Brundtland Commission. The Commission is credited with coining the term of sustainable development as “development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs.” The definition very clearly shows that sustainable development is largely concerned with the responsibility for future generations.

Moreover, Principle 3 of the Rio Declaration qualifies the right of development, as a means of equitably meeting the developmental and environmental needs of future generations. In this regard, the preambular of the United Nations Convention on Climate Change provides for “the protection of the global climate as a common concern of mankind”. Further, the Convention adds, that all Parties... be guided on the “basis of equity in their actions to achieve the objectives of the Convention.”

### **Some Core Issues Relating to International Environmental Law**

Consider for a moment why any law is enacted - domestically or internationally. Some would maintain that it is a moral statement about behaviour that a society cannot tolerate. Some would argue that certain conduct is outlawed to deter that conduct, which is why we also attach a penalty. Some would argue, especially in light of the inefficiencies in enforcement, that laws socialise society’s members to behave in a certain way by defining a code.

What is the purpose of international environmental law - is it a moral statement, a deterrence, or a socialising tool? If it is a moral statement, which many of the framework conventions seem to be, is it merely aspirational? Do we honestly believe that all nations will achieve all the ideals expressed in all the agreements? Or do we, as a global community, simply like to think of ourselves as the kind of people who believe in these things? If it is intended as deterrence, why are there not more international forums for dispute resolution, more international bodies empowered to enforce agreements, more substantive requirements, and more ‘hard law’ self-executing agreements? If there were, would any nation sign them? If it is intended as a socialisation technique, is it working? Are nations more environmentally aware?

If ultimately all international environmental law is unenforceable, what good is it? Does it accomplish anything to find a country out of compliance with a treaty? What about publicity? What if the economic benefits of a project such as the Narmada Valley Project, are believed by government officials to outweigh the negative effects of the publicity?

The practice of relying on domestic implementing legislation to enforce international environmental agreements leave State parties in the position of having different obligations under the same treaty, depending on how their legislative, executive and judicial bodies interpret and implement the treaty. Is this fair? What about the costs and administrative burdens that are associated with creating and enforcing legislation? Does this put richer countries in a better position to comply with treaties?

What is the purpose of the informational roles of international institutions? Will more knowledge about the global environment and our impacts on it lead to better compliance? Or will so many new issues lead to non-compliance due to uncertainty? If it appears to the average citizen that virtually everything she does has a negative environmental impact, will she not cease to try to change any behaviour?

### India's International Obligations

India has obligations under numerous international treaties and agreements that relate to environmental issues. As a contracting party, India must have ratified a treaty, that is, by adopting it as national law before it came into force, or by acceding to it after it has come into force. For a treaty to enter into force, the requisite number of countries must ratify the treaty, which then has the force of international law.

Specific obligations under any treaty vary, depending on the treaty itself. The nature and degree of compliance and implementation depend on a number of factors, among them: (1) the capabilities and staff of an international institution charged with coordinating national compliance efforts, if there is one; (2) the willingness of other state parties to enforce or comply with the treaty; (3) the political agenda of the government and popular support; (4) trade and diplomatic pressures brought to bear by other countries; and (5) sometimes, judicial or NGO involvement through court cases and publicity.

### India's Treaty Obligations

- 1) The Antarctic Treaty (Washington, 1959) 402 UNTS 71. Entered into force 23 June 1961. India ratified with qualifications, 19 August 1983.
- 2) Convention on Wetlands of International Importance, Especially as Waterfowl Habitat (Ramsar, 1971). 11 I.L.M. 963 (1972). Entered into force 21 December 1975. India acceded, October 1, 1981.
- 3) Convention Concerning the Protection of the World Cultural and Natural Heritage (Paris, 1972). 11 I.L.M. 1358 (1972). Entered into force 17 December 1975. India signed, 16 November 1972.
- 4) Convention on International Trade in Endangered Species of Wild Fauna and Flora (Washington, 1973) 12 I.L.M. 1055 (1973). Entered into force 1 July 1975. India signed, 9 July 1974; ratified 20 July 1976.
- 5) Protocol of 1978 Relating to the International Convention for the Prevention of Pollution from Ships, 1973 (MARPOL) (London, 1978). Entered into force 2 October 1983. India ratified with qualifications, 24 September 1986.

- 6) Convention on the Conservation of Migratory Species of Wild Animals (Bonn, 1979) 19 I.L.M. 15 (1980). Entered into force 1 November 1983. India signed, 23 June 1979; ratified 4 May 1982.
- 7) Convention on the Conservation of Antarctic Marine Living Resources (Canberra, 1980). 19 I.L.M. 841 (1980). Entered into force 7 April 1982. India ratified, 17 June 1985.
- 8) United Nations Convention on the Law of the Sea (Montego Bay, 1982). 21 I.L.M. 1261 (1982). Entered into force 16 November 1994. India signed, 10 December 1982.
- 9) Convention for the Protection of the Ozone Layer (Vienna, 1985). 26 I.L.M. 1529 (1987). Entered into force 22 September 1988. India ratified, 18 March 1991.
- 10) Protocol on Substances That Deplete the Ozone Layer (Montreal, 1987). 26 I.L.M. 1550 (1987). Entered into force 1 January 1989. India acceded, 19 June 1992.
- 11) Amendments to the Montreal Protocol on Substances That Deplete the Ozone Layer (London, 1990). 30 I.L.M. 541 (1991). Entered into force 10 August 1992. India acceded, 19 June 1992.
- 12) Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (Basel, 1989). 28 I.L.M. 657 (1989). Entered into force 5 May 1992. India signed, 5 March 1990; ratified 24 June 1992.
- 13) United Nations Framework Convention on Climate Change (Rio de Janeiro, 1992). 31 I.L.M. 849 (1992). Entered into force 21 March 1994. India signed, 10 June 1992; ratified 1 November 1993.
- 14) Convention on Biological Diversity (Rio de Janeiro, 1992). 31 I.L.M. 818 (1992). Entered into force 29 December 1993. India signed, 5 June 1992; ratified 18 February 1994.
- 15) Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa (Paris, 1994). 33 I.L.M. 1332 (1994). Entered into force, 26 December 1995; India signed, 14 October 1994; ratified 17 December 1996.
- 16) International Tropical Timber Agreement (Geneva, 1994). 33 I.L.M. 1016 (1994). Entered into force 1 January 1997. India signed, 17 September 1996. India ratified 17 October 1996.
- 17) Protocol on Environmental Protection to the Antarctica Treaty (Madrid, 1991). Entered into force 15 January 1998.

### 8.3 General Principles of Diverse Legal Systems

Apart from the general principles of international law seen before and the evolving principles of international environmental law, there are a number of general principles of diverse legal systems which proscribe transboundary harm or had provided value similar to the principle of *sic utero tuo*. These principles have their roots in private and public law, “which contemplation of the legal experiences of civilised nations leads one to regards obvious maxims of jurisprudence of a general and fundamental character.” Such

principles include the principle that no one can be a judge in his own cause, that a breach of a legal duty entails the obligation of restitution, that a person cannot invoke his own wrong as a reason for release from a legal obligation, that the law will not countenance that abuse of a right, that legal obligations must be fulfilled and rights must be exercised in good faith.

Besides, general principles are derived from the judicial decisions of municipal courts. Article 38 of the Statute of the ICJ recognises judicial decisions as a subsidiary means for the determination of the rules of law, which cannot exclude 'decisions of municipal courts' as a valid source of international law.

While it is agreed that many positivists will question this reasoning saying State consent is needed for international law, it cannot be denied that at the domestic level municipal courts are the main instruments for the judicial determination of international law.

It has often been said that English common law has had a very limited influence in shaping international environmental law. However, there is no denying that Law of Tort has contributed enormously to the understanding of the more accepted principles of general principles of law. To put it more specifically, the torts of nuisance, negligence and trespass and the Rylands rule on strict liability, have in some ways laid the jurisprudential basis for understanding the whole concept of 'environmental damage', which to date remains a controversial and misunderstood aspect on international environmental law.

The Law of Tort, as is well known in English common law, essentially protected the interests in lands. Among all torts, the tortious liability arising out of 'nuisance' comes closest to environmental protection. In contrast, courts have fought shy to award damage for acts involving 'negligence', as the standards of the test of proof of special care and also claim to personal injury are of a high order. Trespass, on the other hand, could have an environmental element involved to it, as it amounts to an unjustifiable interference or even negligent entry onto the land.

However, for the purposes of our study, the *Ryland rule* of strict liability laid down in the case of *Ryland v. Fletcher* (*All England Reports*, vol.7, no. (1), (1861-73), at p. 638) interference is of special significance. To recall the words of Justice Blackburn "We think that the true rule of law is, that the person who for his own purposes brings on his lands and collects and keeps there anything likely to do mischief if it escapes, must keep it at his peril, and if he does not do so, is *prima facie* answerable for all the damage which is the natural consequence of its escape".

While these words have proved prophetic, the impact of the Ryland rule on the law of torts in commonwealth countries and other legal systems has been exceptional. Not only has the *Ryland rules* been applied by Indian and other commonwealth country courts, but it has been cited by a number of decisions of international courts and tribunals, too.

The *Ryland rule* was applied in two celebrated cases namely *Read v. Lyons Co. Ltd.* and the *Cambridge Water Company v. Eastern Leather plc.* 1994. In the former case, the Court of Appeal held that for liability to flow - there must be a dangerous thing likely to cause mischief; such a thing must be brought on to land; it must escape; and must cause damage to the non-natural user of the land. In the Cambridge case, although the High Court had dismissed the plaintiff that the Eastern Leather Co. had been polluting the ground water meant for public consumption, the Court of Appeal reversed the decision. It held that the Leather Co. "...interfered in the natural right of the Cambridge Water Co. to extract naturally occurring groundwater and such interference amounted to an actionable claim of nuisance."

In India to the *Ryland* ratio has been applied by the Supreme Court of India and other High Courts in cases relating to strict liability for hazardous activities.

The *Ryland* rule is extremely important for the study at hand as an analogy can be drawn to management of hazardous wastes. If a State cannot manage the radioactive waste generated from the use of nuclear substances, for whatever purposes they are they used, then that State should not be dabbling in an ultra-hazardous activity! It also gives you useful insight in the study of liability, which remains an extremely complex subject under international law.

#### a) The Principle of Non-discrimination

Reference to this principle has already been made in the context of reviewing the 1997 UN Convention on Non-Navigational Uses of International Watercourses. This was a principle that acquired currency in the context of Europe and recognised by the OECD countries. The principle is designed primarily to deal with environmental problems occurring among neighbouring States. It aims at providing equal treatment for aliens on par with nationals in respect of legal rights and remedies and right of access to judicial and administrative forums they enjoy in their own State. Article 32 of the 1997 Convention on the Law of the Non-navigational Uses of International Watercourses and Article 15 of the Articles on Prevention of Transboundary Harm finalised by the ILC in 2001 provided for this principle. The Commission has recognised that it is a principle of progressive development of the law.

A problem with the application of the principle of non-discrimination is that there often existed drastic differences between the substantive remedies available in each of the neighbouring States. Differences exist for example among the national environmental laws. In some jurisdictions, extra-territorial effects of administrative decisions are not justiciable. In some other cases, national law confers jurisdiction on the Courts of the place where the damage occurred. It is, therefore, necessary that in order for the principle of non-discrimination to be universally accepted certain amount of uniformity in national legislations under which the cause of action would arise as well as those governing jurisdiction is necessary. This could only occur with time and with greater and greater economic, social and political integration among the people of the region.

## b) The Principle of Public Participation

The principle of non-discrimination is in some loose sense tied to the principle of public participation, which is also a principle stressed in the context of evolving international environmental law. Such participation of the public is essential both in the context of prior authorisation of a hazardous activity and more particularly in the context of preparation and examination of an environment impact assessment. It becomes even more important in providing necessary and possible remedies in case of harm affecting a wide group of people or mass tort claims like in the case of Bhopal Gas tragedy. In situations of transboundary harm, both at the preventive stage where suitable regime for management of the risk involved is designed and in the case of actual harm the need to involve public both within and outside the boundaries of the State in which the risk bearing activity is to be situated is now recommended. Where foreign public is to be allowed participation their views could be organised and presented through the channels of the government of the State of their nationality or even co-ordinated by the State itself before they are presented to the other State. At this stage, if the States themselves were directly involved in designing a suitable legal framework the principle of public participation involving foreign nations would not be that relevant.

Public participation is also regarded as essential for good governance. Principle 10 of the Rio Declaration recommends this. Article 13 of the draft articles of the ILC on Prevention provided for this, again as a measure of progressive development of international law. A number of other recent international instruments dealing with environmental issues have required States to provide the public with information and to provide an opportunity to participate in the decision-making processes.

Public includes individuals, interest groups (NGOs) and independent experts. General public, however, is unorganised. Information supplied to the public should facilitate communication of the proposed policy, plan or programme under consideration. It must, however, be understood that requirements of confidentiality and State security may affect the extent of public participation. It is also understood, public is rarely involved or involved at a minimum level in any effort to determine the scope of a policy, plan or programme.

Public participation in national decision-making through organised or unorganised means including parliamentary representation on vital issues regarding development would enhance legitimacy of and compliance with decisions taken. It is also suggested given the development of human rights law, public participation could also be viewed as a growing right under national as well as international law.

## c) Capacity-building

Compliance with international environmental obligations in general and with obligations concerning the prevention of transboundary harm in particular, involves the capacity of a State to develop appropriate standards and to bring more environmentally friendly technologies into the production process as well as the necessary financial, material and

human resources to manage the process of development, production and monitoring of activities. There is also a need to ensure that risk-bearing activities are conducted in accordance with applicable standards, rules and regulations and that the jurisdiction of courts may be invoked in respect of violations to seek necessary judicial and other remedies.

Many developing countries are just beginning to appreciate the ills of pollution and unsustainable developmental activities. It has, therefore, been rightly pointed out that compliance with international environmental obligations requires resources, including technology and technical expertise not readily available in developing countries. In this regard, the WCED Report recommends a 'spirit of global partnership to enable developing countries and countries undergoing economic transition to discharge the duties involved in their own self-interest and in the common interest of all nations.' The issue of supplying additional financial resources and technical know-how has been provided for in a number of international treaties such as UN Convention on the Law of the Sea, the United Nations Framework Convention on Climate Change, Convention on Biological Diversity, UN Convention on Combating Desertification as well as the Vienna Convention/Montreal Protocol on Control of Ozone Depleting Substances.

Transfer of technology and scientific know-how to developing countries, will also give rise to a number of problems governed by law relating to patents and copyrights. Hence, it is admitted that such know-how should be transferred within established legal frameworks and at a fair, reasonable and equitable price. Along with developed countries, international financial institutions within and outside the United Nations have an important role to play in capacity building of developing countries. It may also be noted that in spite of transfer of technologies and the development of proper legal framework for allocation of goods and cost involved, some issues of legitimacy, fairness and justice still remain unfulfilled.

Other areas of capacity-building which can supplement transfer of technology and financial resources include: remedying weaknesses and inefficiencies in legislation, lack of political influence of environmental authorities, lack of public awareness, lack of well-established target groups, deficiency in managerial skills and information bases and underdeveloped educational system which does not cater to the need of highlighting environmental awareness and education. Further steps in this regard could include decentralisation of authority between the Centre and federated units; environmental awareness at local authority levels; establishment of Data Centers, consultative bodies, monitoring agencies to improve enforcement and compliance; issuance of licenses, permits and EIA requirements; halting activities which violate environmental regulations; and establishing centres for ensuring preparedness in cases of environmental emergencies. Another area where special attention needs to be provided is training of environmental personnel; providing skills and knowledge on environmental economics and environmental law; and imparting techniques for EIA and environmental auditing and conflict resolution.

Apart from capacity-building measures mentioned above, it is also important that environmental law must be implemented not only by the administrative machinery of a

State, but be upheld by the judicial bodies and specialised tribunals when a violation occurs.

## 8.4 Linkage of International Environmental Law with other Disciplines of Law

One of the main characteristics of environmental law is the necessity for an interdisciplinary approach. Nowadays interdisciplinary studies are increasingly necessary in most sciences, where progress can be made only after acquisition and review of essential data coming from other specialties or other field. This is especially true in environmental matters, because of the complexity of the subject. Legislation and the creation of institutions, which are fundamental tasks of law, require knowledge of data which can be furnished only by sciences representing several disciplines, including life and earth sciences, as well as social sciences<sup>1</sup>.

Thus, a chain of biologists, chemists, medical doctors, ecologists, economists, sociologists and lawyers is needed to elaborate and implement environmental norms. The tasks will be to ascertain and further develop the knowledge of environment itself, of its deterioration and of its impact as well as of the possible remedies. The result of scientific investigation must then be integrated into the economic, social and cultural context of a given situation. The final decision is made in the political arena, but without knowing as many possible of the elements of the problem no useful decision can be taken. The best illustration of this process is the discovery by scientists of the depletion of the stratospheric ozone layer. They were the only ones who could state and assess the problem, but the solution, the building up of a regime for protecting the stratospheric ozone molecules needed the co-operation of economists, representatives of the world public opinion and of industry, political decision-makers and, last but not the least, legal experts.

The interdisciplinary character, involving various scientific branches as well as scientific uncertainty, imposes frequent adaptations upon environmental law. Changes are always a problem for law, one of the objectives of which is to ensure stability in human relations. New legal methods and techniques have to be applied in order to keep pace with the general evolution of environmental sciences.

### Actors

Traditional international law only recognised States as actors in international legal relations. Called subjects of international law, States have the exclusive right to conclude treaties, to send and receive diplomatic representatives, to give their nationality to individuals according to rules which they determine, to protect their nationality abroad, to adhere to international organisations and to assume international responsibility.

After World War II, a debate began over whether individuals and non-state groups could also become subjects of international law. The proliferation of international conventions

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<sup>1</sup> Introduction to International Environmental Law by Professor Alexander Kiss, Course 1, 'Programme of training for the Application of Environmental Law, UNITAR.

protecting human rights triggered such debates. According to the present state of international law, individuals are entitled to have rights which can be internationally enforced mostly in the framework of specific treaties guaranteeing their fundamental rights and freedoms and creating specific enforcement mechanisms.

While traditional rules are formally applied in international legal relations, the need to protect the environment posed a challenge to international law, and this has fundamentally changed the system. Most of the major environmental rules were triggered by public awareness which then pressured governments to adopt appropriate measures. For example, the public role has been recognised by a growing number of international institutions which accept the presence of representatives of certain non-governmental organisations at designated meetings as observers who can report back to their constituency and who can be authorised to take the floor. Particularly important in this regard is Article 19 of the 1994 Convention to Combat Desertification in those countries experiencing serious drought and desertification.

Environmental decisions in the domestic field, as well as at the international level, are not always welcomed by industrialists, farmers, foresters, transporters - and the investors who fund their activities. The beginning of the ecological era was characterised by the strong resistance of groups representing certain economic interests. This was a starting point for a wave of 'green' products and advertisements praising the environmental qualities of given products, eventually leading to environmental labelling.

At the end, one can speak, at least in a certain measure, of co-operation between these three groups of society. Of course, given the very nature of the biosphere and of its protection and the web of relationships between populations of the different countries, such co-operation also appears in the international field. The preparation of the treaty system for the protection of the stratospheric ozone layer was the best example in this regard; the whole initiative was strongly backed by public opinion represented by non-governmental organisations. The preparation of the Rio Conference amplified such developments: there was a constant pressure of non-governmental organisations on the negotiators and parallel to the governmental conference a 'forum' of NGOs was held with the representatives of 1400 associations sometimes helping, sometimes criticising but taking a growing part in the international protection of the environment.

## 8.5 Application of International Environmental Law

Having considered IEL as a part of international law, it is but natural that the sources of IEL would be same as sources of international law. Article 38 of the Statute of the International Court of Justice (ICJ) provides international conventions/treaties, international customs as primary, and general principles recognised by civilised nations, judicial decisions and teaching of publicists as secondary or subsidiary sources of international law. It may be noted that the list of sources is not exhaustive as there are other sources of international law such as the resolutions of international organisations and other texts, which although not treaties play a significant role in the formation and application of international environmental law.

## International Treaties

Treaties are as the name suggests “formal sources of international law”. The Vienna Convention on the Law of Treaties defines treaties as “an international agreement concluded between States in written form and governed by international law, whether embodied in a single instrument or in two or more related instruments and whatever its particular designation.” They are generally negotiated texts in which States have participated, are in written form and governed by international law. Treaties may also be called conventions, agreements or memorandum of understanding (MoU), but the legal effect of all the three remains the same. Types of treaties include - law making treaties and general treaties. The former create international law because of the large participation of States in their adoption and adherence and their importance in international society. An example of this could be the UN Convention on the Law of the Sea 1982. This Convention is said to have progressively codified the customary law on the subject. It provides for a legal order governing nearly all activities of waters beyond national boundaries i.e. seas and oceans such as maritime zones, uses and delimitation, deep seabed mining, dispute settlement, protection of the marine environment, navigation, passage etc. Other examples could include Article 35(3) of Protocol I to the 1949 Geneva Conventions Relative to Protecting Victims of International Armed Conflicts that prohibits all States in such conflicts from employing means or methods of warfare that may be expected to cause widespread, long term and severe damage to the natural environment. These conventions are largely reflective of general international or customary Law. Similar is the case of UNEP’s Regional Seas Programmes that provide common standards, mechanisms and compliance procedures to keep the seas clean.

As opposed to such law-making treaties, you also have ‘treaty contracts’ i.e. contracts/ agreements creating obligation either bilaterally or for a particular purpose.

Bilateral contracts are agreed upon between two States. For example, India has signed and continues to have bilateral agreements in the field of climate change initiatives and CDM projects. Or for that matter India routinely signs agreements to protect natural resources and environment with neighbouring and other countries. These agreements have a fixed objective and are often reviewed after a period of five years.

There are also regional agreements, which bind States from a region; examples being the European Community laws on environment protection. The advantage with regional conventions is that they are reflective of a region’s peculiar needs and suit the common requirements of a region.

Treaties are supposed to be adhered in ‘good faith’ as enunciated by *pacta sunt servanda*, which is a fundamental principle of international law.

## Customs

Customs are actions of States, which over a period come to be accepted as creating binding legal obligations. Example of customs can be prohibition of the use of force in

international relations as provided in Article 2 paragraph 4 of the UN Charter. However, to constitute a custom or a customary obligation two elements must be fulfilled. One, there must be a general consistent State practice; and two; there must be *opinio juris* or an *animus* or 'mental element' wherein States undertake obligation not because of a usage but because of a legal obligation. Not only must the acts concerned amount to a certain practice, but they must also be such or be carried out in such a way as to be evidence of a belief that this practice is rendered obligatory by the existence of a rule of law requiring it. The need for such a belief, i.e. the existence of a subjective element, is implicit in the very notion of the *opinio juris* (*North Sea Continental Shelf Cases* ICJ Reports 1969, at p. 73).

It is also seen that customary rules often create obligations binding upon all States, except those States who have persistently objected. This is often called the persistent objector principle. Example could be United States which has persistently objected to the international regime of the seabed. Today, although the deep seabed beyond national jurisdiction is called the 'common heritage of mankind' US still objects to that regime.

As opposed to this need of consistent State practice and *opinio juris* there can also occur an emergence of instant international customary law though the adoption of United Nations General Assembly resolution (Bin Cheng., *United Nations Resolutions on Outer Space: "Instant" International Customary Law*, *Indian Journal of International Law*, vol.5, 1965, pp.132-152). Instances of such instant customary law are said to have evolved with respect to the adoption of the Declaration on the Peaceful Use of Outer Space and Other Celestial Bodies by the General Assembly in 1963 and the UN Declaration Concerning Cooperation and Friendly Relations among States adopted by the General Assembly in 1970.

### General Principles of Law

Customary proscriptions to protect the marine environment are found in the general principles of law recognised by civilised nations. Article 38 of the Statute of the International Court of Justice (ICJ) regards this source as a primary source of international law. It is seen, however, seen that 'general principles' as a source of international law have been subjected to controversies, wherein writers have questioned the functional role of general principles in international law.

It must, however, be emphasized that notwithstanding these doctrinal inconsistencies general principles of law have assumed a special significance in international environmental law. Besides, dumping involves pollution in a transboundary context, and as general principles of law have a basis in domestic laws, they are better suited to address environmental problems at the domestic, regional and international levels.

Though the study of "the international law of environment" is a recent offshoot of the main body politic of international law proper, rudimentary elements are to be found in the general principles of international law. Pollution, which is a fallout of misuse of the use of the freedom of the seas, has been characterised as a disregard of a State's legitimate

rights, bordering on abuse of rights. Based on the principle of “no harm”, customary international law offers a few illustrations, which have upheld the environmental integrity of general principles of law. Article 38 of the Statute of the ICJ, after treaties and international customs, provides for general principle of law recognised by civilised nations as a third primary and authoritative source of international law. But such a claim is not without doctrinal controversies, as many commentators have questioned the comparison between general principles of law and customs as sources of international law.

One can, however, not deny that unlike treaties and international customs, which reflect State practice and *opinio juris*, general principles do not need to show such evidence as a proof of binding legal obligation. Another reasoning attributed to the weakness of general principles is that it is an offshoot of municipal law largely governing two or more States on the basis of reciprocity, rather than being covered under international conventions and international custom.

General principles of international law play a facilitative role in strengthening relations among States on the basis of good faith, the principle of respect for other’s right or *sic utere jure tuo ut alienum non laedas*, the prohibition of abuse of rights, principle of good neighbourliness and universal guardian or custodianship.

### Good Faith

The principle of good faith or *pacta sunt servanda* is one of the fundamental principles of customary or treaty obligations. States are under an obligation not to do anything that shall destroy the trust on the basis of which the treaty was agreed upon in the first place. It also goes to that international obligations are serious business and a State can ignore its duty to abide by an obligation at its own peril. The ICJ held in the Nuclear Test Cases (1974) that:

*“One of the basic principles governing the creation and performance of legal obligations, whatever their source, is the principle of good faith. Trust and confidence are inherent in international co-operation, in particular in an age when co-operation in many fields is becoming increasingly essential. Just as the very rule of pacta sunt servanda in the law of treaties is based on good faith, so also is the binding character of an international obligation assumed by a unilateral declaration. Thus interested States may take cognizance of unilateral declarations and place confidence in them, and are entitled to require that the obligation thus created be respected.”*

Likewise, the principle of good faith came under judicial scrutiny in the more recent case of *Gabcikovo-Nagymoros Project* (ICJ Reports 1996) where while highlighting the importance of the principle in international environmental law, the ICJ held that:

*“What is required in the present case by the rule pacta sunt servanda, as reflected in Article 26 of the Vienna Convention of 1969 on the Law of Treaties.... ‘Every treaty in force is binding upon the Parties to it and must*

*be performed by them in good faith’...The principle of good faith obliges Parties to apply it in a reasonable way and in such manner that its purpose can be realised.”*

### **Sic utero jure tuo ut alienam non laedas**

The principle of *sic utere jure tuo ut alienam non laedas* (hereinafter *sic utere tuo*) is a recognised as a fundamental principle of international law governing transboundary harm. In Latin, the maxim means, “Use your own property in such a way as not to injure that of other.” The maxim has special relevance in IEL because of regulatory control it has imposed on States to desist from establishing hazardous or polluting factories/units on the border. In the case of the *Trail Smelter Arbitration* (United States and Canada 3 UNRIAA (1938/1941), 1907, at p. 1965) where Canada complained of escape of noxious sulphur gases into its territory, from the United States, the Arbitral Tribunal stated that “No State has a right to use or permit the use of its territory in such a manner as to cause injury by fumes or to the territory of another or the properties or persons therein, when the case is of serious consequence and the injury is established by clear and convincing evidence.”

The case assumes special significance for a public international law approach to the issue of transboundary harm and the ensuing injury/liability. One of the earliest cases to bring to force the issue of transboundary harm, it highlighted the characterisation of a legal injury caused by a noxious activity. More importantly, it laid down principles of equity.

### **Good Neighbourliness**

This principle has been recognised as one of the important general principles governing friendly relations among States. The idea of two or more States showing reciprocity by means of peaceful behaviour and mutual inter-dependence is at the core of this principle. In this way the principle is similar to *sic utere tuo*, which calls for ensuring that effects of harmful activities are not transferred to your neighbour. Good neighbourliness apart from preventing the causing of harm also obliges a State to protect its own territory out of self-interest.

Article 74 of the Charter of the United Nations provides that “States... conduct themselves according to ... the general principles of good neighbourliness, due account should be taken of the interests and well-being of rest of the world in social, economic and commercial matters.”

The principle of good neighbourliness is applied for the equitable utilisation of watercourses between river basin States. Article 4 of the Helsinki rules provides that:

“Each Basin State is entitled, within its territory, to a reasonable and equitable share in such uses.” In *Lac Lanoux* arbitration, (International Law Reports, 1957, p.119) between France and Spain the Tribunal applied the principle of good neighbourliness for resolving its disputes. The case involved

a proposal by France to construct a dam on the River Carol with a view to increase the capacity of the Lake Lanoux for hydroelectric power generation. Spain objected claiming that the construction of the dam would jeopardise its interest in irrigation.

The principle essentially has an interpretative value and has been recognised by scholars as having a fundamental role in international law. On a larger plane especially with respect to global commons or open spaces, *inter se* States can argue for an “ecological good neighbourliness policy” to create *erga omnes obligations*.

Though a right to a clean and healthy environment is guaranteed under all municipal legislation, it was the Declaration of 1972 that Stockholm Conference that stated “Man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of quality which permits life of dignity and well-being... .” Thereafter the Rio Declaration, which was adopted at the United Nations Conference on Environment and Development (UNCED), again reiterated, “Human beings are at the center of concerns for sustainable development. They are entitled to a *healthy and productive life in harmony with nature*.”

Since 1992, the development of international environmental law has undergone a dramatic normative and paradigmatic shift from anthropo-centrism to environmentalism proper. Every instrument-adopted post-Rio has as emphasis on preservation of the environment, for the sake of environment alone. While such ethical arguments mean little to the larger needs of the developing world, it is true that an inter-temporal value and jurisprudential basis is being offered for protection of the environment for present and future generations.

### Resolutions of International Originations

A resolution adopted by an international organisation can also be treated as a source of law. Resolution of organisations can create obligations on their member States. However, there can be instances where such resolutions are of binding or non-binding character. For example, resolutions of the Security Council are binding on all members of the United Nations in accordance with Article 25 of the United Nations Charter. These are in the nature of hard binding obligations. However, there can also be resolutions, which create soft law and are in the nature of non-binding resolutions. General Assembly resolutions according to some scholars are non-binding resolutions which are largely normative, or in the form of a programme for action or declarations. These normative recommendations largely trigger activity of international originations both at regional and international level. For example, the resolutions of OECD regulate various activities such as management of natural resources coastal zone, waste control of chemicals transboundary pollutions etc.

They are declaratory principles that have contributed a special place in the development of international environmental law. They are different from normative recommendations in that they do not envisage precise action to be undertaken. They proclaim general

guidelines which States should follow and may thus exercise a considerable influence on the development of legal rules. Their role can be best explained by the function of law in society.

### **Declaratory Principles**

Declaratory principles reflect the influence of economic, social, cultural and political factors effecting the functioning of an organisation. They are indicative of the change in the perceptions of the particular value in international society. Examples could be the United Nations General Assembly adopted the Universal Declaration on Human Right 1948 and the World Charter of Nature 1992.

The field of environmental law during the 1972 Stockholm Declaration was a culmination of international efforts to regulate human environment. The Declaration adopted 26 principles which laid down a political understanding that international efforts were needed to regulate various aspects of environment such as protecting life and dignity of individuals, protecting environment for future generations and the protection of the oceans. Likewise, the Rio de Janeiro declaration provided three important texts for protection of the environment - the UN Framework Convention on Climate Change and the Convention on Biological Diversity. The third text not adopted as a convention was a declaration whose title reflects the difficulties of reaching agreement. It was called “Non-legally binding authoritative statement of principles for a Global Consensus on the Management, conservation and Sustained Development of all types of Forests.”

### **Action Programmes**

Every international conference adopts a programmatic action plan to implement the political declaration in the form of concrete proposals. At the Stockholm Conference, a concrete “action plan for human environment” was adopted, whereas the Rio Conference adopted the ‘Agenda 21’ as two programmes involving long term goal for protection and provision of human environment. As opposed to treaties, an action plan involves general set of recommendations addressing governance issues and the agenda of some international organisations.

Action programmes may also involve creation of new bodies to oversee environmental governance. The Commission on sustainable (CSD) was created as a follow up to UNCED to review and examine the progress of implementation of Agenda 21 at the nation, regional and international levels. This is an example of an institution created by a non-binding general assemble resolutions reviewing compliance of State to non-binding a REO declarations.

Further, CSD has also developed periodic reporting procedures for monitoring compliance of State with international legal obligations. It may be noted that such reporting exercise is largely provided under treaties and not under international organisations.

## Codes of Conduct

Codes of conduct or guidelines have also been developed in international environment law for enforcement of compliance in a more persuasive way. These Codes of Conduct can be adopted either by State or by international origination when there is no existing international treaty on this subject. For example, Bonn Guidelines on Access to Genetic Resources and Benefit Sharing and the UNEP Guidelines on EIA, Montreal Guidelines on Land-based Marine Pollution, are all efforts to create a normative framework for enforcing some form of adherence. An increasing number of concepts, principles and norms appear repeatedly in national, regional and global instruments, usually following an initial formulation in a non-binding instrument. Principles such as public participation, prevention, precaution and polluter pays are examples of principles that have been incorporated into treaties after adding greater specificity.

## Framework Agreement

Since 1970 a new technique of law making in the environmental field has developed which includes a framework agreement followed by additional binding protocols. For example, the 1985 Vienna Convention regulating Depletion of the Ozone Layer was followed by the Montreal Protocol on Ozone Depleting Substances 1997. The framework agreement contains a set of general principles and obligations and the additional protocol would contain hard binding obligations. The frame work agreement because of its general nature can be easily negotiated and thereby attracts wider adherence. The Protocol as seen in the case of the Montreal Protocol on Ozone Depleting Substances provided for more technical and target oriented binding obligation. Similar is the case of the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol to the UNFCCC, 1997.

## Mechanism of Co-operation

**Compliance** - Apart from the question of available remedies in case of failure of performance of duties of due diligence, of equal importance is a matter enhancing the culture of compliance and encouraging more voluntary enforcement obligations. On the basis of a number of studies conducted on issues concerning compliance and enforcement of international environmental agreements, the effectiveness of such compliance depends upon a number of factors. These include: the definition of obligations; administrative capacity of a country; endowment of financial and other infrastructural facilities to institute and monitor compliance procedures; economic factors, including per capita gross national product; production techniques; engagement in international trade; sharing of authority among different political units of the country, including delegation and decentralisation of authority and power; role of non-governmental organisations; and the leadership exercised by individuals. However, the more important variables identified are administrative capacity, leadership, non-governmental organisations, knowledge and information.

Suggested strategies for strengthening compliance have been differentiated depending upon the position of the country. In this regard, two dimensions have been considered to be particularly important, namely, intention to comply and the ability to comply. On the basis of matrix there could be six categories: (i) intends to comply and can comply; has not thought through the obligations of compliance, but could comply; does not intend to comply, but could comply; intends to comply but cannot comply; has not thought through the obligations of compliance and could not comply; does not intend to comply and could not comply.

Accordingly, three strategies of compliance have been articulated in respect to international environmental agreements: the sunshine approach incentives to comply, or sanctions. The first two approaches, it has been suggested, are dominant; sanctions are used only as a “last resort”. This is in contrast to the trade field, where sunshine approach coupled with sanctions, prevails.

In the view of another commentator, while efficient reporting mechanisms and procedures under a multilateral convention to promote better knowledge of each State’s practices is without doubt useful, compliance is likely to be more forthcoming from the developing countries “if they are assisted in pursuing alternative technologies and in building up their implementation capacity and the capacity to internalise the new behaviour in their local cultures.” In addition, “implementing international conventions often requires States to build institutions, adopt domestic regulations and develop and implement national environmental plans for sound environmental conditions. Political will to meet these requirements is necessary but not sufficient; Governments must have the necessary means to carry out their obligations.”

The sunshine approach consists of a series of measures that are intended to bring the behaviour of Parties and targeted actors into the open. These include regular national reporting, peer scrutiny of reports, establishment of special secretariats, regional and international bodies, access to information by non-governmental organisations, participation of non-governmental organisations in compliance monitoring of behaviour through national and regional forums, workshops, corporate or private-sector networks or consultants working on site.

### **Implementation of International Environmental Law**

International obligations undertaken under international treaties or other sources have to be implemented at the national level. It must be borne in mind that the international community does not have executive powers or police functions at its disposal. For this very reason, it becomes important to understand how IEL places responsibilities on States to undertake enforcement measures to comply with international obligations. The situation often becomes complex as a large number of MEAs and the proliferation of mechanisms under them are exclusively designed to apply IEL at the national levels. It shall be the endeavour of this section to look at some of the mechanisms to guarantee adherence to treaties.

One of the best ways to ensure treaty adherence is by negotiating treaties that take care of the needs of a majority of States. An example of this is the special reference to provision of sound environmental technologies and adequate financial resources to enable them to meet the incremental costs incurred in undertaking international obligations. Just as in domestic law an indigent person cannot avail of judicial remedies, so also poorer and less developed States cannot undertake obligations because of lack of capacities. Many environmental treaties underscore this need and have inbuilt provisions of capacity building. These include the 1989 Basel Convention on the Transboundary Movement of Hazardous Wastes and their Disposal, the 1997 Montreal Protocol on Ozone Depleting Substances, 1992 the Convention on Biological Diversity and the 1992 United Nations Framework Convention on Climate Change.

Novel means of attracting wider adherence have also been seen by way of a two pronged framework convention-protocol approach. States are first called upon to become parties to a convention that provides for a set of general obligations. Later, the Protocol is adopted which provides for binding obligations. A good example is the UNFCCC-Kyoto Protocol. The Convention provides a framework for adopting measures towards reduction of GHG's, based on the principle of common but differentiated responsibilities and a precautionary action, wherein adverse effects of climate change are addressed as a common concern of mankind. Without permitting reservations, the UNFCCC calls upon States to protect the climate for present and future generations. The UNFCCC also provides for two Annexes-I and II, which contain the names of Country Parties responsible for undertaking GHG reduction measures.

Whereas, the Kyoto Protocol has its chief objective that '...the Parties agree to individually or jointly, ensure that the aggregate anthropogenic (human-based) carbon dioxide equivalent emissions or GHG emissions by Annex-I Parties do not accede their assigned amount, calculated pursuant to their quantified emission limitation and reduction commitments inscribed in Annex-I and in accordance with the provisions of this Article, with a view to reducing their overall emissions of such gases by at least 5% below 1990 levels in the commitment period 2008 to 2012.' It also provides for two Annexes A and B that provide a list of the GHGs and countries and their quantified limitation reduction commitments.

In order to achieve these reductions Annex-I (industrialised or developed countries), have been provided with 'flexibility mechanisms' through which they can meet their Kyoto targets. These include the clean development mechanisms (CDM), joint implementation and emission trading.

MEAs also include provisions relating to mechanisms that provide monitoring, implementation reviews, compliance verification and compliance mechanisms. These measures are often non-coercive and non-contentious, largely put in place with a view to improve the effectiveness of MEAs. The mechanisms also provide ample opportunity for States to discuss the problems or lack of capacities doing away with a conflict resolution. Some of these mechanisms may include obligations to undertake reporting obligations, verification/measures on non-compliance, fact-finding/ or other remedial measures.

## Reporting

MEAs in normal course provide for a reporting or national communication to the Secretariat of the treaty on an annual basis. The periodic report submitted by the Party allows for a discussion by other Parties at a Conference or Meeting of Parties who may suggest ways and means to help the Party. For example, the Commission on Sustainable Development examines progress in implementation of Agenda 21 on the basis of periodic reports submitted by Parties. The rigor of reporting obligations it may be stated differs from treaty to treaty largely depending on the objective. The Convention on the International Trade in Endangered Species (CITES) calls upon Parties to report on the “national measures to halt trade in endangered species.” Likewise, the Montreal Convention on Substances Depleting the Ozone Layer requests for measures undertaken to reduce (chlorofluorocarbon) CFC emissions. The contents of these reports are again dependent on the guidelines adopted Parties at their institutional meetings such as the Conference Parties.

The reports submitted by Parties would also be reflective of the actual situation in the country and may often not match the data collated by independent non-governmental organisations or members of the civil society. Therefore it is important to remember that reporting in many instances may prove to be an embarrassment to the State when its failures to comply with international obligations are exposed. There can be a further tricky situation when certain treaties provide for independent review by technical bodies of a State report. Examples could include: the UNESCO Convention on World Cultural Heritage 1972 and the Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat, 1971.

As stated earlier the proliferation of reporting obligations directly affects the capacity of developing and less developed who often complain of being overburdened. This may also desist other States who are not Parties to a treaty from joining. It is precisely for these reasons that the Climate Change and Biodiversity Conventions and ‘compliance committees’ of other treaties make provisions for providing technological and financial resources for undertaking reporting obligations.

## Verification/Non-compliance Procedures

Verification to many sounds like a very intrusive term conjuring up ideas for checking nuclear stockpiled or other weapons. Such an idea is not entirely misplaced as verification is a central part of the Chemical Weapons Convention which has an Organisation for the Prohibition of Chemical Weapons (OPCW) to monitor States’ production/stockpile of chemical weapons.

Similar to the CWC, stringent monitoring standards are prescribed under the Ramsar Convention, the London Convention 1972 that regulates disposal of wastes at sea and also many regional treaties/conventions. The Ramsar Convention on Wetlands has a unique monitoring procedure for addressing the problems that may arise in maintaining the ecological character of the designated wetland site of international importance. After

seeking the consent of the State concerned the monitoring team comprising one representative from the Secretariat and two international experts may visit the site. Discussions may also be held with local experts and government representatives and later a report is sent to the government with recommended actions.

Similarly, a more stringent monitoring procedure is envisaged under the Berne Convention on the Conservation on European Wildlife and Natural Habitats, 1979. A complaint of non-compliance can be triggered by a local individual, an NGO or a State Party to the Convention. Upon receiving the complaint, the Secretariat would refer the same to the relevant Party for details and clarifications. After providing a reasonable time for reply the Secretariat shall decide whether to place the case before the Standing Committee for opening a 'case-file' and making recommendations.

Apart from giving monitoring powers to the secretariat servicing the treaty, international law provides many instances where Parties to a convention themselves are provided some amount of monitoring powers. A case in point is the UN Convention on the Law of the Sea 1982. For example, coastal States exercise prescriptive and enforcement jurisdiction over vessel-source pollution that may affect their internal waters and territorial seas. Under the (International Convention on Protection of Marine Pollution) MARPOL 73/78 States exercise port State jurisdiction and can check/certify the seaworthiness of vessels entering their waters. Under Article 218 of UNCLOS 1982, a coastal State can investigate and institute proceedings if it can be proved that the ship discharged oil/other pollutants.

Other conventions such the treaties under the Antarctic regime, especially the 1980 Convention on Conservation of Antarctic Marine Living Resources (CCAMLR) which is not yet in force envisage, monitoring the common resources by designated observers. It is seen that the 1995 Agreement for the Implementation of the UN Convention to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks delegate to regional fishing agreements the monitoring mandate.

Non-compliance procedures in many MEAs provide assistance to defaulting States to fulfil their international obligations. They do not amount to dispute settlement. One of the most effective and novel procedure is provided by the 1997 Montreal Convention on Substances Depleting the Ozone Layer. For example, if a State cannot meet its commitments under or experiences difficulty in doing so, it cannot report its problems to the Implementation Committee of the Protocol with necessary data. The Implementation Committee after studying the case refers it to the Meeting of Parties which shall make recommendations to assist the Party by means of an indicative list of measures. Such measures in respect of non-compliance may include: collection and reporting data, technology transfer, financing, information transfer and training. Later, if non-compliance continues despite providing assistance, sanctioning measures such as warnings and suspension of the specific rights and privileges of the Protocol can also be recommended.

Similar and very elaborate non-compliance procedures are present in the UN Convention on Climate Change, London Convention 1972 and the NAFTA Environmental Side Agreement 1993.

The purpose of these measures is not to take proportional countermeasures or self-help which customary international law does provide, but to enable the defaulting State to come up to the level of fulfilling its commitments under various MEAs.

### Inspection Panels

Inspection or fact-finding as the name suggests are again monitoring mechanisms intended to assess the technical soundness of a project. This is especially true in case of dams which although required for a variety of human needs need to meet core environmental/ technological standards. The World Bank established in 1993 the Inspection Panel because of growing concerns about the accountability of it and other international development agencies in supporting hydro-electric projects. For example, in case of the Sardar Sarovar Dam in Gujarat, due to growing opposition from NGOs about the dam and the people it would displace the World Bank visited the site in India in 1985 and 1993.

The Inspection Panel is an independent investigatory body receiving and investigating complaints issuing from those in the territory of a borrower country whose rights have been adversely affected by the Bank's failure to comply with its own policies and procedures in the design, appraisal and implementation of a Bank's financed project. In this regard, the panel may investigate complaints upon authorisation by the Bank's Board of Executive Directors and also assess to what extent the bank has complied with its standards.

### Summary

The fundamental principles of IEL have expanded from the traditional ones of State sovereignty and prevention. The reasons for this are clearly the growth of industrialisation and liberalisation. States that used coal and hydel energy are now going for nuclear energy. With growth came the need to regulate transboundary harm with is an essential principle of State responsibility. It is also seen that the principles of common but differentiated responsibility is an integral part of environmental conventions on climate change, ozone depletion biodiversity and desertification. This principle is an attestation to the historical responsibility of developed States to take the lead in environmental protection combined with an obligation to provide benign technologies and financial resources to developing and lesser developed States.

Application of environmental law involves a crucial part of law making of MEAs. The sources of international law play a very important role in the effectuation of IEL obligations. It is also seen that a network of international organisations under law making especially stringent regional standards are involved. This multiplicity of laws has given the need to devise newer methods of enforcement such as reporting, verification, monitoring. While some of these are resisted, their utility lies in creating a web of compliance cum assistance to needy States.

From the stage of negotiation of a treaty and its implementation, the emphasis is largely on how to improve the effectiveness of treaty compliance. What use can a treaty or customary practice be if a State fails to understand its relevance and is unable to apply despite its adoption? One area where this dichotomy is clearly evident is protocols on liability. For example, despite the adoption of the Protocol of Liability to the Basel Convention on Transboundary Movement of Hazardous Wastes and Substances, a large number of States engaging in this hazardous activity have refused or shown hesitance in ratifying the Protocol. It is in such instances that application of MEAs becomes very important. Compliance mechanisms consisting of reporting, monitoring and verification obligations help States to overcome their inertia and undertake meaningful measures to fulfil their treaty commitments.

## 8.6 Conclusion

International law includes both the customary rules and usages to which States have given express or tacit assent and the provisions of ratified treaties and conventions. International law is directly and strongly influenced, although not made, by the writings of jurists and publicists, by instructions to diplomatic agents, by important conventions even when they are not ratified, and by arbitral awards. The decisions of the International Court of Justice (ICJ) and of certain national courts, such as prize courts, are considered by some theorists to be a part of international law. In many modern States, international law is by custom or statute regarded as part of national or municipal law.

Since there is no sovereign super national body to enforce international law, some older theorists have denied that it is true law. Nevertheless, international law is recognised as law in practice, and the sanctions for failing to comply, although often less direct, are similar to those of municipal law; they include the force of public opinion, self-help, intervention by third-party States, the sanctions of international organisations such as the United Nations, and, in the last resort, war.

At the beginning of the 'ecological era', and in particular during the 1970s, there was a general trend towards the development of environmental regulations, which were considered as the remedy to pollution and to the depletion of the world's wild flora and fauna. During the 1980s, disillusion concerning the effectiveness of legal rules for the protection of the environment increased, but this did not halt or even slow down the legislative efforts. In the 1990s, with the triumph of the market economy system, many advanced the view that law is not the adequate tool for protecting the environment, whether at an international or a domestic level, because of its ineffectiveness.

Two regional instruments inspired by genuinely ecological perspectives can be seen as precursors to our present environmental concepts. The first, the 1933 London Convention Relative to the Preservation of Fauna and Flora in their Natural State, applicable to Africa then largely colonised. It provided for the creation of national parks and strict protection for some species of wild animals. The second instrument is the 1940 Washington Convention on Nature Protection and Wildlife Preservation in Western Hemisphere; which envisages the establishment of reserves and the protection of wild animals and plants especially migratory birds.

# INTRODUCTION TO TRADE AND ENVIRONMENT

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## 9.1 Introduction

The natural surroundings in which human beings live is also the source of their material requirements. The environment includes land, water and air. Tradable today are not only goods but also services. In 1980s and 1990s, concerns about global threats, such as ozone-layer depletion and global warming brought the environmental issues to the fore. Environmental policies, particularly in the Organisation of Economic Co-operation and Development (OECD) countries, had become more comprehensive and stringent in the 1990s. When we think of trade and the environment, it is usually the impact of trade liberalisation on environmental quality and the interactions between economic growth and the environment. However, the linkage between trade and the environment, as it were, had been globally recognised before the end of 1940s.

The concept of free trade allows the markets to allocate resources to their most efficient uses, while the concept of environmental protection seeks to manage and maintain the earth's resources efficiently. Conflicts arise where the same resources are subject to both trade efforts to allocate and environmental efforts to manage and maintain. This conflict must be reconciled, as both trade and environment are too important to let conflicts persist. Yet many environmentalists still believe that the economic system, including trade, is the enemy and many trade and development experts still believe that the environment is not a fundamental part of the economy. It is necessary to reconcile this conflict by adopting legal measures so as to achieve and ensure sustainable environmental development and long-term economic prosperity.

The economic, legal and institutional links between international trade flows and the environment have captured growing attention over the last two decades, especially in the aftermath of the Uruguay Round of trade negotiations.

Most essentially, the link between trade and environment derives from environmental resources (such as air, water, subsoil minerals, energy, forestry and fisheries) providing basic inputs into economic activity, while they also act as a recipient of wastes from such activities. For instance, the quality of environmental resources undergoes changes due to economic activity, as in the case of generation of air pollution or water pollution. Outward-looking trade policies could have significant environmental implications.

Trade expansion or liberalisation has three effects, namely, the scale effect, the structural effect and the product effect. Trade enlarges the scale of economic activity, a factor for environmental change. Hence, the scale effect of trade results from enhanced economic activity, including higher levels of production, resource extraction and transportation. The impact on the environment is typically negative due to the greater pollution generated. In particular, the scale effect is accompanied by an increase in total production and income, and the latter can have a positive impact on the environment through the increased demand for better environmental quality (acting directly through market, as well as through enhanced demand for environmental regulations from the voting population). The composition of exports varies across countries depending upon its natural resource endowments and the stage of technological development or industrialisation, which also has implications for geographical location of pollution. Then, there is the effect of environment policy on trade, comprising the “competitiveness” issue at the micro level and a broader “growth and development” issue at the macro level, both of which arise from environment related process or product standards.

The structural effect of trade is the trade-induced change in the industrial composition and consumption, and depends on the pollution intensity of national output. The effect on the environment is positive if expanding export sectors are less polluting on average than contracting import-competing sectors; and negative if the opposite holds.

The product effect of trade is positive when trade liberalisation expands the market for goods produced in an environmentally sound manner and/or environmental services like resource saving technology. Negative product effect results when goods directly harmful to the ecosystem are exchanged internationally. The net environmental effect of trade liberalisation is the sum of the scale, structural and product as well as the income effects, and can be either positive or negative depending on the magnitudes of the component effects.

On the legal front, environment and trade are governed by distinct regimes of international law. At times, the provisions of environmental regulation, in particular those embedded in the various multilateral environmental agreements (such as the Montreal Protocol on Ozone Depleting Substances, the Kyoto Protocol, the Convention on Trade in Endangered Species and the Basel Convention on the Transboundary Movements of Hazardous wastes) would interact and may even be in disagreement with the rules and principles of the

multilateral trading system established by the World Trade Organisation (WTO) as well as regional agreements. Therefore, in this regard, it is also necessary to study and review the provisions of already adopted trade agreements relevant to environmental concerns, international environmental agreements and Indian and other country laws dealing with friction with those trade provisions. The review of the existing trade agreements and environmental agreements helps in developing an understanding towards environment and trade-related issues which in turn reduces or eliminates friction between the two.

A strong interaction in the area of trade and environment promotes a high level of environmental protection and, at the same time, ensures an open, equitable, multilateral trade system. There are three main aspects to the relationship:

- ◆ The environmental impact of trade and trade policies;
- ◆ The potential effects of environmental measures on trade flows;
- ◆ The use of trade measures to achieve environmental policy aims.

**Multilateral Environmental Agreements (MEAs) and Trade** - Multilateral environmental agreements (MEAs) have evolved over the years as a co-operative means of protecting and conserving environmental resources or controlling for pollution that are transboundary or global in nature. Trade measures have been incorporated in MEAs where uncontrolled trade can potentially lead to environmental damage, for instance, loss of biological diversity for species threatened with extinction as in the Convention on International Trade in Endangered Species, or as a means of enforcing the agreement and prevent free-riding by banning trade with non-parties as in the Montreal Protocol.

The trade measures in MEAs include a wide range of measures including monitoring of through export-import permits and consents; identification label requirements; and export-import bans in specific products and States. While some of the trade measures are outlined within the agreements as specific obligations, other trade measures may be neither specific nor mandatory.

Some MEAs like the Convention of the Conservation of Antarctic Marine Living Resources, the Convention on Biological Diversity, and the United Nations Framework Convention on Climatic Changes do not contain any trade-related measures. Other treaties contain obligations for trade measures like export or import certifications (for example, the International Plant Protection Convention). A few agreements like the International Tropical Timber Agreement and the International Convention for the Conservation of Atlantic Tuna have provision for developing trade measures.

## 9.2 Interplay between Trade and Environmental Issues

Initial concerns about the effect that increased trade would have on the environment emerged at the beginning of the 1970s, the same time the environmental movement in the industrialised States began gaining strength.

At the time, the Organisation for Co-operation and Development (OECD), a multilateral organisation composed of members from the industrialised nations, served as the lead

organisation considering the issues. OECD members specific concerns focused on the issue of “competitiveness”, or how the new wave of environmental laws requiring corporations to invest in pollution reduction equipment, might harm their competitive standing in the trade arena.

OECD’s answer to the problem was to issue a set of guidelines, *OECD Guiding Principles Concerning the International Economic Aspects of Environmental Policies (1972)*, with the hope that all member States could co-operate and thus alleviate any potential competition problems. Without a doubt, the principle receiving the most attention was the Polluter Pays Principle (PPP), which suggested that the effects of competition could be muted if all member States agreed not to subsidise (reimburse) industries, but instead required them to absorb (pay for) the costs of the soon to be required pollution reduction equipment, with the cost eventually being transferred to the consumer and reflecting a more accurate price of production.

Trade and environment issues started gaining mainstream attention in the beginning of the 1990s, in the wake of the General Agreement on Tariffs and Trade (GATT) Tuna/Dolphin decision (discussed later). In this particular case, the WTO ruled the US policy of banning imports of tuna from States that used purse seine fishing techniques to catch tuna, and subsequently kill dolphins, violated the terms of GATT. This decision was highly criticised by the environmental community as well as the world at large.

The topic stayed in front of the public throughout the 1990s because in 1998, the WTO again ruled against a US ban on shrimp imports caught without Turtle Excluder Devices (TEDs), equipment developed to help save endangered sea turtles.

These two cases show how process, the issue of how goods are produced, can stir up trade and environmental problems. However, trade and environment issues encompass a much broader and complicated set of issues than merely the issue of process. The competition issues that started in the 1970s still stand high on the environment agenda. Consider the debates surrounding the ratification of the North American Free Trade Agreement (NAFTA), where labour and environmentalists voiced concerns about companies moving their manufacturing operations from the United States to Mexico, the new pollution haven, because of the Mexican government’s comparatively minimal environment and labour standards.

The current rules of the game in the international trading arena are also problematic with respect to many international environmental treaties. The Montreal Protocol and Convention on International Trade in Endangered Species, for example, incorporate trade sanctions into their texts as punitive measures for non-complying States. The goal of trade sanction clauses is to provide incentives for States who are Party to these treaties to live up to their treaty obligations.

Environmentalists express concern that years of work negotiating environmental treaties could be disrupted if WTO rules of trade are used to nullify those environmental enforcement measures under the assumptions that they violate free trade principle.

### 9.3 The General Agreement on Tariffs and Trade (GATT), 1947

The General Agreement on Tariffs and Trade (GATT) was first signed in 1947. The GATT was the first global effort to regulate trade between countries. It was negotiated between 23 countries, both developed and developing. In order to understand its relation and relevance to the environment, we need to look at its preamble which sets forth its objectives. The agreement that was multilateral in nature was designed to provide an international forum that encouraged free trade between member States by regulating and reducing tariffs on traded goods and by providing a common mechanism for resolving trade disputes.

According to its preamble, the purpose of the GATT is the “substantial reduction of tariffs and other trade barriers and the elimination of preferences, on a reciprocal and mutually advantageous basis.” GATT was established on a provisional basis after the Second World War in the wake of other new multilateral institutions dedicated to international economic co-operation. This initiative of monetary management for commercial and financial relations among the world’s major industrial nations was known as the Bretton Woods System.

The Bretton Woods system, conceived through the Bretton Woods Conference of 1944, led to the establishment of two institutions, namely the International Bank for Reconstruction and Development (IBRD) and the International Monetary Fund (IMF). The IMF and the IBRD became operational in 1946 after a sufficient number of countries had ratified the agreement. The IBRD is now one of five institutions in the World Bank Group.

Recognising the need for a comparable international institution for trade, the Bretton Woods system later proposed that the International Trade Organisation (ITO) complement the IMF and World Bank.

However, ITO failed in 1950 as the U.S. Congress objected to the ITO concept on the ground that it would cede too much sovereignty to an international body. After the failure of ITO, the only document that was left was the parallel negotiations of ITO that had taken the shape of a provisional agreement and was named as the General Agreement on Tariffs and Trade (GATT). Hence, the negotiating countries adopted GATT as a substitute to ITO with the main objective of introducing early tariff cuts.

The GATT was a treaty, not an organisation. It was signed on October 30, 1947 by 23 countries. The tariff concessions came into effect by 30 June 1948 through a “Protocol of Provisional Application”. GATT was aimed at the reduction of barriers to international trade. This was achieved through the reduction of tariff barriers, quantitative restrictions and subsidies on trade through a series of agreements.

Although, in its 47 years, the basic legal text of the GATT remained much as it was in 1948, there were additions in the form of plurilateral voluntary membership, agreements and continual efforts to reduce tariffs. Much of this was achieved through a series of “trade rounds”.

◆ GATT Rounds

- 1) **First Round** - Held in 1947 in Geneva, leading to 45,000 tariff concessions were made affecting over \$10 billion in trade which comprised 20% of the total global market at the time.
- 2) **Second Round** - Held in 1949 in Annecy, France. The main focus of the talks was more tariff reductions, around 5000 in total.
- 3) **Third Round** - Held in Torquay, England, in 1951. 8,700 tariff concessions were made totalling the remaining amount of tariffs to three-fourths of the tariffs which were in effect in 1948.
- 4) **Fourth Round** - Held in Geneva in 1955 and lasted until May 1956. \$2.5 billion in tariffs were either eliminated or reduced.
- 5) **Fifth Round also known as the Dillon Round** - Held in Geneva from 1960 to 1962. The talks were named after U.S. Treasury Secretary and former Under Secretary of State, Douglas Dillon, who first proposed the talks. Along with reducing over \$4.9 billion in tariffs, it also yielded discussion relating to the creation of the European Economic Community (EEC).
- 6) **Sixth Round or the Kennedy Round** - Held in Geneva from 1964 until 1967 and was named after the late U.S. President Kennedy in his memory. Concessions were made on \$40 billion worth of tariffs.
- 7) **Seventh Round or the Tokyo Round** - Held in Tokyo, Japan, from 1973 to 1979. It led to the reduction of tariffs and established new regulations aimed at controlling the proliferation of non-tariff barriers and voluntary export restrictions. Concessions were made on \$190 billion worth.
- 8) **Eighth Round or the Uruguay Round** - Uruguay Round began in September 1986 and lasted up till April 1993. The Round was the most ambitious round up to that date and was commenced with a view to expand the competence of the GATT to important new areas such as services, capital, intellectual property, textiles and agriculture.

On April 15, 1994, an agreement was signed by ministers from most of the 123 participating governments at a meeting in Marrakesh, Morocco. This agreement, popularly known as the Marrakesh Agreement, was a part of the negotiations of the Uruguay Round. The agreement led to the establishment of the World Trade Organisation (WTO).

In the Uruguay Round, the GATT was transformed into WTO. The Marrakesh Agreement establishing the WTO was entered into force on January 1, 1995. This transformation of GATT to WTO is widely regarded as the most profound institutional reform of the world trading system since the GATT's establishment.

### Uruguay Round: Final Decisions

The WTO's agreements are often called the Final Act of the 1986-1994 Uruguay Round of trade negotiations. "The Final Act Embodying the Results of the Uruguay Round of

Multilateral Trade Negotiations”, signed by ministers in Marrakesh on 15 April 1994 is 550 pages long and contains legal texts which spell out the results of the negotiations since the Round was launched in Punta del Este, Uruguay, in September 1986. In addition to the texts of the agreements, the Final Act also contains texts of Ministerial Decisions and Declarations which further clarify certain provisions of some of the agreements.

The Final Act covers all the negotiating areas cited in the Punta del Este Declaration with two important exceptions. The first is the results of the “market access negotiations” in which individual countries have made binding commitments to reduce or eliminate specific tariffs and non-tariff barriers to merchandise trade. These concessions are recorded in national schedules that form an integral part of the Final Act. The second is the “initial commitments” on liberalisation of trade in services. These commitments on liberalisation are also recorded in national schedules. The summary of the agreements is as follows:

◆ **Agreement Establishing the World Trade Organisation**

The agreement establishing the World Trade Organisation (WTO) calls for a single institutional framework encompassing the GATT, as modified by the Uruguay Round, all agreements and arrangements concluded under its auspices and the complete results of the Uruguay Round. Its structure is headed by a Ministerial Conference meeting at least once every two years. A General Council oversees the operation of the agreement and ministerial decisions on a regular basis. This General Council acts as a Dispute Settlement Body and a Trade Policy Review Mechanism, which concern themselves with the full range of trade issues covered by the WTO, and has also established subsidiary bodies such as a Goods Council, a Services Council and a TRIPs Council. The WTO framework ensures a “single undertaking approach” to the results of the Uruguay Round - thus, membership in the WTO entails accepting all the results of the Round without exception.

◆ **General Agreement on Tariffs and Trade, 1994**

Texts on the interpretation of the following GATT articles are included in the Final Act: *Article II – Schedules of Concessions*. Agreement to record in national schedules “other duties or charges” levied in addition to the recorded tariff and to bind them at the levels prevailing at the date established in the Uruguay Round Protocol.

*Understanding on the Interpretation of Article XVII – State-trading Enterprises*. Agreement increasing surveillance of their activities through stronger notification and review procedures.

◆ **Understanding on the Interpretation of Articles XII and XVIII:B**

*Balance-of-payments provisions*. Agreement that Contracting Parties imposing restrictions for balance-of-payments purposes should do so in the least trade-disruptive manner and should favour price-based measures, like import surcharges and import deposits, rather than quantitative restrictions. Agreement also on procedures for consultations by the GATT Balance-of-Payments Committee as well as for notification of BOP measures.

*Understanding on the Interpretation of Article XXIV – Customs Unions and Free-Trade Areas.* Agreement clarifying and reinforcing the criteria and procedures for the review of new or enlarged customs unions or free-trade areas and for the evaluation of their effects on third parties. The agreement also clarifies the procedure to be followed for achieving any necessary compensatory adjustment in the event of Contracting Parties forming a customs union seeking to increase a bound tariff. The obligations of Contracting Parties in regard to measures taken by regional or local governments or authorities within their territories are also clarified.

*Understanding on the Interpretation of Article XXV – Waivers.* Agreement of new procedures for the granting of waivers from GATT disciplines, to specify termination dates for any waivers to be granted in the future, and to fix expiry dates for existing waivers. The main provisions concerning the granting of waivers are, however, contained in the Agreement on the WTO.

*Understanding on the Interpretation of Article XXVIII – Modification of GATT Schedules.* Agreement on new procedures for the negotiation of compensation when tariff bindings are modified or withdrawn, including the creation of a new negotiating right for the country for which the product in question accounts for the highest proportion of its exports. This is intended to increase the ability of smaller and developing countries to participate in negotiations.

*Understanding on the Interpretation of Article XXXV – Non-application of the General Agreement.* Agreement to allow a Contracting Party or a newly acceding country to invoke GATT's non-application provisions vis-à-vis the other Party after having entered into tariff negotiations with each other. The WTO Agreement foresees that any invocation of the non-application provisions under that Agreement must extend to all the multilateral agreements.

#### ◆ **Uruguay Round Protocol GATT, 1994**

The results of the market access negotiations in which participants have made commitments to eliminate or reduce tariff rates and non-tariff measures applicable to trade in goods are recorded in national schedules of concessions annexed to the Uruguay Round Protocol that forms an integral part of the Final Act.

The Protocol has five appendices: Appendix I Section A: Agricultural Products – Tariff concessions on a Most-Favoured Nation basis; Appendix I Section B: Agricultural Products – Tariff Quotas; Appendix II: Tariff Concessions on a Most-Favoured Nation Basis on Other Products; Appendix III: Preferential Tariff – Part II of Schedules (if applicable); Appendix IV: Concessions on Non-Tariff Measures – Part III of Schedules; Appendix V: Agriculture Products: Commitments Limiting Subsidisation – Part IV of Schedules, Section I: Domestic Support: Total AMS Commitments, Section II: Export Subsidies: Budgetary Outlay and Quantity, Reduction Commitments Section III: Commitments Limiting the Scope of Export Subsidies.

The schedule annexed to the Protocol relating to a Member shall become a Schedule to the GATT 1994 relating to that Member on the day on which the Agreement Establishing the WTO enters into force for that Member.

For non-agricultural products, the tariff reduction agreed upon by each Member shall be implemented in five equal rate reductions, except as may be otherwise specified in a Member's Schedule. The first such reduction shall be made effective on the date of entry into force of the Agreement Establishing the WTO. Each successive reduction shall be made effective on 1 January of each of the following years, and the final rate shall become effective no later than the date four years after the date of entry into force of the Agreement Establishing the WTO. However, participants may implement reduction in fewer stages or at earlier dates than those indicated in the Protocol, if they so wish.

For agricultural products, as defined in Article 2 of the Agreement on Agriculture, the staging of reductions shall be implemented as specified in the relevant parts of the schedules. Details are given in the section of this paper concerning the Agricultural Agreement.

A related Decision on Measures in Favour of Least-Developed Countries establishes, among other things, that these countries will not be required to undertake any commitments and concessions which are inconsistent with their individual development, financial and trade needs. Alongside other more specific provisions for flexible and favourable treatment, it also allows for the completion of their schedules of concessions and commitments in Market Access and in Services by April 1995 rather than 15 December 1993.

#### ◆ Agreement on Agriculture

The negotiations have resulted in four main portions of the Agreement; the Agreement on Agriculture itself; the concessions and commitments Members are to undertake on market access, domestic support and export subsidies; the Agreement on Sanitary and Phytosanitary Measures; and the Ministerial Decision concerning Least-Developed and Net Food-Importing Developing countries.

Overall, the results of the negotiations provide a framework for the long-term reform of agricultural trade and domestic policies over the years to come. It makes a decisive move towards the objective of increased market orientation in agricultural trade. The rules governing agricultural trade are strengthened which will lead to improved predictability and stability for importing and exporting countries alike.

The agricultural package also addresses many other issues of vital economic and political importance to many Members. These include provisions that encourage the use of less trade-distorting domestic support policies to maintain the rural economy, that allow actions to be taken to ease any adjustment burden, and also the introduction of tightly prescribed provisions that allow some flexibility in the implementation of commitments. Specific concerns of developing countries have been addressed including the concerns of net-food importing countries and least-developed countries.

The agricultural package provides for commitments in the area of market access, domestic support and export competition. The text of the Agricultural Agreement is mirrored in the GATT Schedules of legal commitments relating to individual countries (see above).

In the area of **market access**, non-tariff border measures are replaced by tariffs that provide substantially the same level of protection. Tariffs resulting from this “tariffication” process, as well as other tariffs on agricultural products, are to be reduced by an average 36% in the case of developed countries and 24% in the case of developing countries, with minimum reductions for each tariff line being required. Reductions are to be undertaken over six years in the case of developed countries and over ten years in the case of developing countries. Least-developed countries are not required to reduce their tariffs.

The tariffication package also provides for the maintenance of current access opportunities and the establishment of minimum access tariff quotas (at reduced-tariff rates) where current access is less than 3% of domestic consumption. These minimum access tariff quotas are to be expanded to 5% over the implementation period. In the case of “tariffed” products, “special safeguard” provisions will allow additional duties to be applied to shipments at prices denominated in domestic currencies below a certain reference level or in case of a surge of imports. The trigger in the safeguard for import surges depends on the “import penetration” currently existing in the market, i.e. where imports currently make up a large proportion of consumption, the import surge required to trigger the special safeguard action is lower.

Domestic support measures that have, at most, a minimal impact on trade (“green box” policies) are excluded from reduction commitments. Such policies include general government services, for example, in the areas of research, disease control, infrastructure and food security. It also includes direct payments to producers, for example, certain forms of “decoupled” (from production) income support, structural adjustment assistance, direct payments under environmental programmes and under regional assistance programmes.

In addition to the green box policies, other policies need not be included in the Total Aggregate Measurement of Support (Total AMS) reduction commitments. These policies are direct payments under production-limiting programmes, certain government assistance measures to encourage agricultural and rural development in developing countries and other support which makes up only a low proportion (5% in the case of developed countries and 10% in the case of developing countries) of the value of production of individual products or, in the case of non-product-specific support, the value of total agricultural production.

The Total AMS covers all support provided on either a product-specific or non-product-specific basis that does not qualify for exemption and is to be reduced by 20% (13.3% for developing countries with no reduction for least-developed countries) during the implementation period.

Members are required to reduce the value of mainly direct *export subsidies* to a level 36% below the 1986-90 base period level over the six-year implementation period, and

the quantity of subsidised exports by 21% over the same period. In the case of developing countries, the reductions are two-thirds those of developed countries over a ten-year period (with no reductions applying to the least-developed countries) and subject to certain conditions, there are no commitments on subsidies to reduce the costs of marketing exports of agricultural products or internal transport and freight charges on export shipments. Where subsidised exports have increased since the 1986-90 base period, 1991-92 may be used, in certain circumstances, as the beginning point of reductions although the end-point remains that based on the 1986-90 base period level. The Agreement on Agriculture provides for some limited flexibility between years in terms of export subsidy reduction commitments and contains provisions aimed at preventing the circumvention of the export subsidy commitments and sets out criteria for food aid donations and the use of export credits.

“Peace” provisions within the agreement include: an understanding that certain actions available under the Subsidies Agreement will not be applied with respect to green box policies and domestic support and export subsidies maintained in conformity with commitments; an understanding that “due restraint” will be used in the application of countervailing duty rights under the General Agreement; and setting out limits in terms of the applicability of nullification or impairment actions. These peace provisions will apply for a period of 9 years.

The agreement sets up a committee that will monitor the implementation of commitments, and also monitor the follow-up to the Decision on Measures Concerning the Possible Negative Effects of the Reform Programme on Least-Developed and Net Food-Importing Developing Countries.

The package is conceived as part of a continuing process with the long-term objective of securing substantial progressive reductions in support and protection. In this light, it calls for further negotiations in the fifth year of implementation which, along with an assessment of the first five years, would take into account non-trade concerns, special and differential treatment for developing countries, the objective to establish a fair and market-oriented agricultural trading system and other concerns and objectives noted in the preamble to the agreement.

#### ◆ **Agreement on Sanitary and Phytosanitary Measures**

This agreement concerns the application of sanitary and phytosanitary measures - in other words, food safety and animal and plant health regulations. The agreement recognises that governments have the right to take sanitary and phytosanitary measures but that they should be applied only to the extent necessary to protect human, animal or plant life or health and should not arbitrarily or unjustifiably discriminate between Members where identical or similar conditions prevail.

In order to harmonise sanitary and phytosanitary measures on as wide a basis as possible, Members are encouraged to base their measures on international standards, guidelines and recommendations where they exist. However, Members may maintain or introduce

measures which result in higher standards if there is scientific justification or as a consequence of consistent risk decisions based on an appropriate risk assessment. The Agreement spells out procedures and criteria for the assessment of risk and the determination of appropriate levels of sanitary or phytosanitary protection.

It is expected that Members would accept the sanitary and phytosanitary measures of others as equivalent if the exporting country demonstrates to the importing country that its measures achieve the importing country's appropriate level of health protection. The agreement includes provisions on control, inspection and approval procedures.

◆ **Decision on Measures Concerning the Possible Negative Effects of the Reform Programme on Least-Developed and Net Food-Importing Developing Countries**

It is recognised that during the reform programme least-developed and net food-importing developing countries may experience negative effects with respect to supplies of food imports on reasonable terms and conditions. Therefore, a special Decision sets out objectives with regard to the provision of food aid, the provision of basic foodstuffs in full grant form and aid for agricultural development. It also refers to the possibility of assistance from the International Monetary Fund and the World Bank with respect to the short-term financing of commercial food imports. The Committee of Agriculture, set up under the Agreement on Agriculture, monitors the follow-up to the Decision.

◆ **Agreement on Textiles and Clothing**

The object of this negotiation has been to secure the eventual integration of the textiles and clothing sector - where much of the trade is currently subject to bilateral quotas negotiated under the Multifibre Arrangement (MFA) - into the GATT on the basis of strengthened GATT rules and disciplines.

Integration of the sector into the GATT would take place as follows: first, on 1 January 1995; each Party would integrate into the GATT products from the specific list in the Agreement which accounted for not less than 16% of its total volume of imports in 1990. Integration means that trade in these products will be governed by the general rules of GATT.

At the beginning of Phase 2, on 1 January 1998, products which accounted for not less than 17% of 1990 imports would be integrated. On 1 January 2002, products which accounted for not less than 18% of 1990 imports would be integrated. All remaining products would be integrated at the end of the transition period on 1 January 2005. At each of the first three stages, products should be chosen from each of the following categories: tops and yarns, fabrics, made-up textile products and clothing.

All MFA restrictions in place on 31 December 1994 would be carried over into the new agreement and maintained until such time as the restrictions are removed or the products integrated into GATT. For products remaining under restraint, at whatever stage, the agreement lays down a formula for increasing the existing growth rates. Thus, during Stage 1, and for each restriction previously under MFA bilateral agreements in force for

1994, annual growth should be not less than 16% higher than the growth rate established for the previous MFA restriction. For Stage 2 (1998 to 2001 inclusive), annual growth rates should be 25% higher than the Stage 1 rates. For Stage 3 (2002 to 2004 inclusive), annual growth rates should be 27% higher than the Stage 2 rates.

While the agreement focuses largely on the phasing-out of MFA restrictions, it also recognises that some members maintain non-MFA restrictions not justified under a GATT provision. These would also be brought into conformity with GATT within one year of the entry into force of the Agreement or phased out progressively during a period not exceeding the duration of the Agreement (that is, by 2005).

It also contains a specific transitional safeguard mechanism which could be applied to products not yet integrated into the GATT at any stage. Action under the safeguard mechanism could be taken against individual exporting countries if it were demonstrated by the importing country that overall imports of a product were entering the country in such increased quantities as to cause serious damage - or to threaten it - to the relevant domestic industry, and that there was a sharp and substantial increase of imports from the individual country concerned. Action under the safeguard mechanism could be taken either by mutual agreement, following consultations, or unilaterally but subject to review by the Textiles Monitoring Body. If taken, the level of restraints should be fixed at a level not lower than the actual level of exports or imports from the country concerned during the twelve-month period ending two months before the month in which a request for consultation was made. Safeguard restraints could remain in place for up to three years without extension or until the product is removed from the scope of the agreement (that is, integrated into the GATT), whichever comes first.

The agreement includes provisions to cope with possible circumvention of commitments through transshipment, re-routing, false declaration concerning country or place of origin and falsification of official documents.

The agreement also stipulates that, as part of the integration process, all members shall take such actions in the area of textiles and clothing as may be necessary to abide by GATT rules and disciplines so as to improve market access, ensure the application of policies relating to fair and equitable trading conditions, and avoid discrimination against imports when taking measures for general trade policy reasons.

In the context of a major review of the operation of the agreement to be conducted by the Council for Trade in Goods before the end of each stage of the integration process, the Council for Trade in Goods shall by consensus take such decisions as it deems appropriate to ensure that the balance of rights and obligations in this agreement is not upset. Moreover, the Dispute Settlement Body may authorise adjustments to the annual growth of quotas for the stage subsequent to the review with respect to Members it has found not to be complying with their obligations under this agreement.

A Textiles Monitoring Body (TMB) oversees the implementation of commitments and prepares reports for the major reviews mentioned above. The agreement also has

provisions for special treatment to certain categories of countries - for example, those which have not been MFA members since 1986, new entrants, small suppliers, and least-developed countries.

◆ **Agreement on Technical Barriers to Trade**

This agreement will extend and clarify the Agreement on Technical Barriers to Trade reached in the Tokyo Round. It seeks to ensure that technical negotiations and standards, as well as testing and certification procedures, do not create unnecessary obstacles to trade. However, it recognises that countries have the right to establish protection, at levels they consider appropriate, for example for human, animal or plant life or health or the environment, and should not be prevented from taking measures necessary to ensure those levels of protection are met. The agreement therefore encourages countries to use international standards where these are appropriate, but it does not require them to change their levels of protection as a result of standardisation.

Innovative features of the revised agreement are that it covers processing and production methods related to the characteristics of the product itself. The coverage of conformity assessment procedures is enlarged and the disciplines made more precise. Notification provisions applying to local government and non-governmental bodies are elaborated in more detail than in the Tokyo Round agreement. A Code of Good Practice for the Preparation, Adoption and Application of Standards by standardising bodies, which is open to acceptance by private sector bodies as well as the public sector, is included as an annex to the agreement.

◆ **Agreement on Trade-Related Aspects of Investment Measures**

The agreement recognises that certain investment measures restrict and distort trade. It provides that no contracting party shall apply any TRIM inconsistent with Articles III (national treatment) and XI (prohibition of quantitative restrictions) of the GATT. To this end, an illustrative list of TRIMs agreed to be inconsistent with these articles is appended to the agreement. The list includes measures which require particular levels of local procurement by an enterprise (“local content requirements”) or which restrict the volume or value of imports such an enterprise can purchase or use to an amount related to the level of products it exports (“trade balancing requirements”).

The agreement requires mandatory notification of all non-conforming TRIMs and their elimination within two years for developed countries, within five years for developing countries and within seven years for least-developed countries. It establishes a Committee on TRIMs which will, among other things, monitor the implementation of these commitments. The agreement also provides for consideration, at a later date, of whether it should be complemented with provisions on investment and competition policy more broadly.

◆ **Agreement on Implementation of Article VI (Anti-dumping)**

Article VI of the GATT provides for the right of contracting parties to apply anti-dumping measures, i.e. measures against imports of a product at an export price below its “normal

value” (usually the price of the product in the domestic market of the exporting country) if such dumped imports cause injury to a domestic industry in the territory of the importing Contracting Party. More detailed rules governing the application of such measures are currently provided in an Anti-dumping Agreement concluded at the end of the Tokyo Round. Negotiations in the Uruguay Round have resulted in a revision of this Agreement which addresses many areas in which the current Agreement lacks precision and detail.

In particular, the revised Agreement provides for greater clarity and more detailed rules in relation to the method of determining that a product is dumped, the criteria to be taken into account in a determination that dumped imports cause injury to a domestic industry, the procedures to be followed in initiating and conducting anti-dumping investigations, and the implementation and duration of anti-dumping measures. In addition, the new agreement clarifies the role of dispute settlement panels in disputes relating to anti-dumping actions taken by domestic authorities.

On the methodology for determining that a product is exported at a dumped price, the new Agreement adds relatively specific provisions on such issues as criteria for allocating costs when the export price is compared with a “constructed” normal value and rules to ensure that a fair comparison is made between the export price and the normal value of a product so as not to arbitrarily create or inflate margins of dumping.

The agreement strengthens the requirement for the importing country to establish a clear causal relationship between dumped imports and injury to the domestic industry. The examination of the dumped imports on the industry concerned must include an evaluation of all relevant economic factors bearing on the State of the industry concerned. The agreement confirms the existing interpretation of the term “domestic industry”. Subject to a few exceptions, “domestic industry” refers to the domestic producers as a whole of the like products or to those of them whose collective output of the products constitutes a major proportion of the total domestic production of those products.

Clear-cut procedures have been established on how anti-dumping cases are to be initiated and how such investigations are to be conducted. Conditions for ensuring that all interested Parties are given an opportunity to present evidence are set out. Provisions on the application of provisional measures, the use of price undertakings in anti-dumping cases, and on the duration of anti-dumping measures have been strengthened. Thus, a significant improvement over the existing Agreement consists of the addition of a new provision under which anti-dumping measures shall expire five years after the date of imposition, unless a determination is made that, in the event of termination of the measures, dumping and injury would be likely to continue or recur.

A new provision requires the immediate termination of an anti-dumping investigation in cases where the authorities determine that the margin of dumping is *de minimis* (which is defined as less than 2%, expressed as a percentage of the export price of the product) or that the volume of dumped imports is negligible (generally when the volume of dumped imports from an individual country accounts for less than 3% of the imports of the product in question into the importing country).

The agreement calls for prompt and detailed notification of all preliminary or final anti-dumping actions to a Committee on Anti-dumping Practices. The agreement will afford Parties the opportunity of consulting on any matter relating to the operation of the agreement or the furtherance of its objectives, and to request the establishment of panels to examine disputes.

◆ **Agreement on Implementation of Article VII (Customs Valuation)**

The Decision on Customs Valuation would give customs administrations the right to request further information on importers where they have reason to doubt the accuracy of the declared value of imported goods. If the administration maintains a reasonable doubt, despite any additional information, it may be deemed that the customs value of the imported goods cannot be determined on the basis of the declared value, and customs would need to establish the value taking into account the provisions of the Agreement. In addition, two accompanying texts further clarify certain of the Agreement's provisions relevant to developing countries and relating to minimum values and importations by sole agents, sole distributors and sole concessionaires.

◆ **Agreement on Pre-shipment Inspection**

Pre-shipment inspection (PSI) is the practice of employing specialised private companies to check shipment details - essentially price, quantity, quality - of goods ordered overseas. Used by governments of developing countries, the purpose is to safeguard national financial interests (prevention of capital flight and commercial fraud as well as customs duty evasion, for instance) and to compensate for inadequacies in administrative infrastructures.

The agreement recognises that GATT principles and obligations apply to the activities of pre-shipment inspection agencies mandated by governments. The obligations placed on PSI-user governments include non-discrimination, transparency, protection of confidential business information, avoidance of unreasonable delay, the use of specific guidelines for conducting price verification and the avoidance of conflicts of interest by the PSI agencies.

The obligations of exporting contracting parties towards PSI users include non-discrimination in the application of domestic laws and regulations, prompt publication of such laws and regulations and the provision of technical assistance where requested.

The agreement establishes an independent review procedure - administered jointly by an organisation representing PSI agencies and an organisation representing exporters - to resolve disputes between an exporter and a PSI agency.

◆ **Agreement on Rules of Origin**

The agreement aims at long-term harmonisation of rules of origin, other than rules of origin relating to the granting of tariff preferences, and to ensure that such rules do not themselves create unnecessary obstacles to trade.

The agreement sets up a harmonisation programme, to be initiated as soon as possible after the completion of the Uruguay Round and to be completed within three years of initiation. It would be based upon a set of principles, including making rules of origin objective, understandable and predictable. The work would be conducted by a Committee on Rules of Origin (CRO) in the WTO and a technical committee (TCRO) under the auspices of the Customs Co-operation Council in Brussels.

Much work was done in the CRO and the TCRO and substantial progress has been achieved in the three years foreseen in the Agreement for the completion of the work. However, due to the complexity of the issues the HWP could not be finalised within the foreseen deadline. The CRO continued its work in 2000. In December 2000, the General Council Special Session agreed to set, as the new deadline for completion of the remainder of the work, the Fourth Session of the Ministerial Conference, or at the latest the end of 2001. The negotiating texts are contained in documents G/RO/41 and G/RO/45.

Until the completion of the harmonisation programme, Contracting Parties would be expected to ensure that their rules of origin are transparent; that they do not have restricting, distorting or disruptive effects on international trade; that they are administered in a consistent, uniform, impartial and reasonable manner, and that they are based on a positive standard (in other words, they should state what does confer origin rather than what does not).

An annex to the agreement sets out a “common declaration” with respect to the operation of rules of origin on goods which qualify for preferential treatment.

#### ◆ **Agreement on Import Licensing Procedures**

The revised agreement strengthens the disciplines on the users of import licensing systems - which, in any event, are much less widely used now than in the past - and increases transparency and predictability. For example, the agreement requires parties to publish sufficient information for traders to know the basis on which licences are granted. It contains strengthened rules for the notification of the institution of import licensing procedures or changes therein. It also offers guidance on the assessment of applications.

With respect to automatic licensing procedures, the revised agreement sets out criteria under which they are assumed not to have trade restrictive effects. With respect to non-automatic licensing procedures, their administrative burden for importers and exporters should be limited to what is absolutely necessary to administer the measures to which they apply. The revised agreement also sets a maximum of 60 days for applications to be considered.

#### ◆ **Agreement on Subsidies and Countervailing Measures**

The Agreement on Subsidies and Countervailing Measures is intended to build on the Agreement on Interpretation and Application of Articles VI, XVI and XXIII which was negotiated in the Tokyo Round.

Unlike its predecessor, the agreement contains a definition of subsidy and introduces the concept of a “specific” subsidy - for the most part, a subsidy available only to an enterprise or industry or group of enterprises or industries within the jurisdiction of the authority granting the subsidy. Only specific subsidies would be subject to the disciplines set out in the agreement.

The agreement establishes three categories of subsidies. First, it deems the following subsidies to be “prohibited”: those contingent, in law or in fact, whether solely or as one of several other conditions, upon export performance; and those contingent, whether solely or as one of several other conditions, upon the use of domestic over imported goods. Prohibited subsidies are subject to new dispute settlement procedures. The main features include an expedited timetable for action by the Dispute Settlement body, and if it is found that the subsidy is indeed prohibited, it must be immediately withdrawn. If this is not done within the specified time period, the complaining member is authorised to take countermeasures. (See the section on “Dispute Settlement” for details on the procedures).

The second category is “actionable” subsidies. The agreement stipulates that no member should cause, through the use of subsidies, adverse effects to the interests of other signatories, i.e. injury to domestic industry of another signatory, nullification or impairment of benefits accruing directly or indirectly to other signatories under the General Agreement (in particular the benefits of bound tariff concessions), and serious prejudice to the interests of another member. “Serious prejudice” shall be presumed to exist for certain subsidies including when the total *ad valorem* subsidisation of a product exceeds 5%. In such a situation, the burden of proof is on the subsidising member to show that the subsidies in question do not cause serious prejudice to the complaining member. Members affected by actionable subsidies may refer the matter to the Dispute Settlement body. In the event that it is determined that such adverse effects exist, the subsidising member must withdraw the subsidy or remove the adverse effects.

The third category involves non-actionable subsidies, which could either be non-specific subsidies, or specific subsidies involving assistance to industrial research and pre-competitive development activity, assistance to disadvantaged regions, or certain type of assistance for adapting existing facilities to new environmental requirements imposed by law and/or regulations. Where another member believes that an otherwise non-actionable subsidy is resulting in serious adverse effects to a domestic industry, it may seek a determination and recommendation on the matter.

One part of the agreement concerns the use of countervailing measures on subsidised imported goods. It sets out disciplines on the initiation of countervailing cases, investigations by national authorities and rules of evidence to ensure that all interested Parties can present information and argument. Certain disciplines on the calculation of the amount of a subsidy are outlined as is the basis for the determination of injury to the domestic industry. The agreement would require that all relevant economic factors be taken into account in assessing the state of the industry and that a causal link be established between the subsidised imports and the alleged injury. Countervailing

investigations shall be terminated immediately in cases where the amount of a subsidy is *de minimis* (the subsidy is less than 1% *ad valorem*) or where the volume of subsidised imports, actual or potential, or the injury is negligible. Except under exceptional circumstances, investigations shall be concluded within one year after their initiation and in no case more than 18 months. All countervailing duties have to be terminated within 5 years of their imposition unless the authorities determine on the basis of a review that the expiry of the duty would be likely to lead to continuation or recurrence of subsidisation and injury.

The agreement recognises that subsidies may play an important role in economic development programmes of developing countries, and in the transformation of centrally-planned economies to market economies. Least-developed countries and developing countries that have less than \$1,000 per capita GNP are thus exempted from disciplines on prohibited export subsidies, and have a time-bound exemption from other prohibited subsidies. For other developing countries, the export subsidy prohibition would take effect 8 years after the entry into force of the agreement establishing the WTO, and they have a time-bound (though fewer years than for poorer developing countries) exemption from the other prohibited subsidies. Countervailing investigation of a product originating from a developing-country member would be terminated if the overall level of subsidies does not exceed 2% (and from certain developing countries 3%) of the value of the product, or if the volume of the subsidised imports represents less than 4% of the total imports for the like product in the importing signatory. For countries in the process of transformation from a centrally-planned into a market economy, prohibited subsidies shall be phased out within a period of seven years from the date of entry into force of the agreement.

In anticipation of the negotiation of special rules in the *civil aircraft* sector, under the subsidies agreement, civil aircraft products are not subject to the presumption that *ad valorem* subsidisation in excess of 5% causes serious prejudice to the interests of other Members. In addition, the Agreement provides that where repayment of financing in the civil aircraft sector is dependent on the level of sales of a product and sales fall below expectations, this does not in itself give rise to such presumption of serious prejudice.

#### ◆ Agreement on Safeguards

Article XIX of the General Agreement allows a GATT member to take a “safeguard” action to protect a specific domestic industry from an unforeseen increase of imports of any product which is causing, or which is likely to cause, serious injury to the industry.

The agreement breaks major ground in establishing a prohibition against so-called “grey area” measures, and in setting a “sunset clause” on all safeguard actions. The agreement stipulates that a member shall not seek, take or maintain any voluntary export restraints, orderly marketing arrangements or any other similar measures on the export or the import side. Any such measure in effect at the time of entry into force of the agreement would be brought into conformity with this agreement, or would have to be phased out within four years after the entry into force of the agreement establishing the WTO. An

exception could be made for one specific measure for each importing member, subject to mutual agreement with the directly concerned member, where the phase-out date would be 31 December 1999.

All existing safeguard measures taken under Article XIX of the General Agreement 1947 shall be terminated not later than eight years after the date on which they were first applied or five years after the date of entry into force of the agreement establishing the WTO, whichever comes later.

The agreement sets out requirements for safeguard investigation which include public notice for hearings and other appropriate means for interested Parties to present evidence, including on whether a measure would be in the public interest. In the event of critical circumstances, a provisional safeguard measure may be imposed based upon a preliminary determination of serious injury. The duration of such a provisional measure would not exceed 200 days.

The agreement sets out the criteria for “serious injury” and the factors which must be considered in determining the impact of imports. The safeguard measure should be applied only to the extent necessary to prevent or remedy serious injury and to facilitate adjustment. Where quantitative restrictions are imposed, they normally should not reduce the quantities of imports below the annual average for the last three representative years for which statistics are available, unless clear justification is given that a different level is necessary to prevent or remedy serious injury.

In principle, safeguard measures have to be applied irrespective of source. In cases in which a quota is allocated among supplying countries, the member applying restrictions may seek agreement with others. Members having a substantial interest in supplying the product concerned. Normally, allocation of shares would be on the basis of proportion of total quantity or value of the imported product over a previous representative period. However, it would be possible for the importing country to depart from this approach if it could demonstrate, in consultations under the auspices of the Safeguards Committee, that imports from certain Contracting Parties had increased disproportionately in relation to the total increase and that such a departure would be justified and equitable to all suppliers. The duration of the safeguard measure in this case cannot exceed four years.

The agreement lays down time limits for all safeguard measures. Generally, the duration of a measure should not exceed four years though this could be extended up to a maximum of eight years, subject to confirmation of continued necessity by the competent national authorities and if there is evidence that the industry is adjusting. Any measure imposed for a period greater than one year should be progressively liberalised during its lifetime. No safeguard measure could be applied again to a product that had been subject to such action for a period equal to the duration of the previous measure, subject to a non-application period of at least two years. A safeguard measure with a duration of 180 days or less may be applied again to the import of a product if at least one year had elapsed since the date of introduction of the measure on that product, and if such a measure had not been applied on the same product more than twice in the five-year period immediately preceding the date of introduction of the measure.

The agreement envisages consultations on compensation for safeguard measures. Where consultations are not successful, the affected members may withdraw equivalent concessions or other obligations under GATT 1994. However, such action is not allowed for the first three years of the safeguard measure if it conforms to the provisions of the agreement, and is taken as a result of an absolute increase in imports.

Safeguard measures would not be applicable to a product from a developing country member, if the share of the developing country member in the imports of the product concerned does not exceed 3% and that developing country members with less than 3% import share collectively account for no more than 9% of total imports of the product concerned. A developing country member has the right to extend the period of application of a safeguard measure for a period of up to two years beyond the normal maximum. It can also apply a safeguard measure again to a product that had been subject to such an action after a period equal to half of the duration of the previous measure, subject to a non-application period of at least two years.

The agreement would establish a Safeguards Committee which would oversee the operation of its provisions and, in particular, be responsible for surveillance of its commitments.

#### ◆ General Agreement on Trade in Services (GATS)

The Services Agreement which forms part of the Final Act rests on three pillars. The first is a Framework Agreement containing basic obligations which apply to all member countries. The second concerns national schedules of commitments containing specific further national commitments which will be the subject of a continuing process of liberalisation. The third is a number of annexes addressing the special situations of individual services sectors.

Part I of the basic agreement defines its scope - specifically, services supplied from the territory of one Party to the territory of another; services supplied in the territory of one Party to the consumers of any other (for example, tourism); services provided through the presence of service providing entities of one Party in the territory of any other (for example, banking); and services provided by nationals of one Party in the territory of any other (for example, construction projects or consultancies).

Part II sets out general obligations and disciplines. A basic most-favoured-nation (m.f.n.) obligation states that each Party "shall accord immediately and unconditionally to services and service providers of any other Party, treatment no less favourable than that it accords to like services and service providers of any other country." However, it is recognised that m.f.n. treatment may not be possible for every service activity and, therefore, it is envisaged that Parties may indicate specific m.f.n. exemptions. Conditions for such exemptions are included as an annex and provide for reviews after five years and a normal limitation of 10 years on their duration.

Transparency requirements include publication of all relevant laws and regulations. Provisions to facilitate the increased participation of developing countries in world services

trade envisage negotiated commitments on access to technology, improvements in access to distribution channels and information networks and the liberalisation of market access in sectors and modes of supply of export interest. The provisions covering economic integration are analogous to those in Article XXIV of GATT, requiring arrangements to have “substantial sectoral coverage” and to “provide for the absence or elimination of substantially all discrimination” between the Parties.

Since domestic regulations, not border measures, provide the most significant influence on services trade, provisions spell out that all such measures of general application should be administered in a reasonable, objective and impartial manner. There would be a requirement that Parties establish the means for prompt reviews of administrative decisions relating to the supply of services.

The agreement contains obligations with respect to recognition requirements (educational background, for instance) for the purpose of securing authorisations, licenses or certification in the services area. It encourages recognition requirements achieved through harmonisation and internationally-agreed criteria. Further provisions state that Parties are required to ensure that monopolies and exclusive service providers do not abuse their positions. Restrictive business practices should be subject to consultations between Parties with a view to their elimination.

While Parties are normally obliged not to restrict international transfers and payments for current transactions relating to commitments under the agreement, there are provisions allowing limited restrictions in the event of balance-of-payments difficulties. However, where such restrictions are imposed they would be subject to conditions; including that they are non-discriminatory, that they avoid unnecessary commercial damage to other Parties and that they are of a temporary nature.

The agreement contains both general exceptions and security exceptions provisions which are similar to Articles XX and XXI of the GATT. It also envisages negotiations with a view to the development of disciplines on trade-distorting subsidies in the services area.

Part III contains provisions on market access and national treatment which would not be general obligations but would be commitments made in national schedules. Thus, in the case of market access, each Party “shall accord services and service providers of other Parties treatment no less favourable than that provided for under the terms, limitations and conditions agreed and specified in its schedule.” The intention of the market-access provision is to progressively eliminate the following types of measures: limitations on numbers of service providers, on the total value of service transactions or on the total number of service operations or people employed. Equally, restrictions on the kind of legal entity or joint venture through which a service is provided or any foreign capital limitations relating to maximum levels of foreign participation are to be progressively eliminated.

The national-treatment provision contains the obligation to treat foreign service suppliers and domestic service suppliers in the same manner. However, it does provide the possibility

of different treatment being accorded the service providers of other Parties to that accorded to domestic service providers. However, in such cases, the conditions of competition should not, as a result, be modified in favour of the domestic service providers.

Part IV of the agreement establishes the basis for progressive liberalisation in the services area through successive rounds of negotiations and the development of national schedules. It also permits, after a period of three years, Parties to withdraw or modify commitments made in their schedules. Where commitments are modified or withdrawn, negotiations should be undertaken with interested Parties to agree on compensatory adjustments. Where agreement cannot be reached, compensation would be decided by arbitration.

Part V of the agreement contains institutional provisions, including consultation and dispute settlement and the establishment of a Council on Services. The responsibilities of the Council are set out in a Ministerial Decision.

The first of the annexes to the agreement concerns the movement of labour. It permits Parties to negotiate specific commitments applying to the movement of people providing services under the agreement. It requires that people covered by a specific commitment shall be allowed to provide the service in accordance with the terms of the commitment. Nevertheless, the agreement would not apply to measures affecting employment, citizenship, residence or employment on a permanent basis. The annex on financial services (largely banking and insurance) lays down the right of Parties, notwithstanding other provisions, to take prudential measures, including for the protection of investors, deposit holders and policy holders, and to ensure the integrity and stability of the financial system. However, a further understanding on financial services would allow those participants who choose to do so to undertake commitments on financial services through a different method. With respect to market access, the understanding contains more detailed obligations on, among other things, monopoly rights, cross-border trade (certain insurance and reinsurance policy writing as well as financial data processing and transfer), the right to establish or expand a commercial presence, and the temporary entry of personnel. The provisions on national treatment refer explicitly to access to payments and clearing systems operated by public entities and to official funding and refinancing facilities. They also relate to membership of, or participation in, self-regulatory bodies, securities or futures exchanges and clearing agencies.

The annex on telecommunications relates to measures which affect access to and use of public telecommunications services and networks. In particular, it requires that such access be accorded to another Party, on reasonable and non-discriminatory terms, to permit the supply of a service included in its schedule. Conditions attached to the use of public networks should be no more than is necessary to safeguard the public service responsibilities of their operators, to protect the technical integrity of the network and to ensure that foreign service suppliers do not supply services unless permitted to do so through a specific commitment. The annex also encourages technical co-operation to assist developing countries in the strengthening of their own domestic telecommunications sectors. The annex on air-transport services excludes from the agreement's coverage

traffic rights (largely bilateral air-service agreements conferring landing rights) and directly related activities which might affect the negotiation of traffic rights. Nevertheless, the annex, in its current form, also states that the agreement should apply to aircraft repair and maintenance services, the marketing of air-transport services and computer-reservation services. The operation of the annex would be reviewed at least every five years.

In the final days of the services negotiations, three Decisions were taken - on Financial Services, Professional Services and the Movement of Natural Persons. The Decision on Financial Services confirmed that commitments in this sector would be implemented on an MFN basis, and permits Members to revise and finalise their schedules of commitments and their MFN exemptions six months after the entry into force of the Agreement. Contrary to some media reports, the audio-visual and maritime sectors have not been removed from the scope of the GATS.

◆ **Agreement on Trade-Related Aspects of Intellectual Property Rights, Including Trade in Counterfeit Goods**

The agreement recognises that widely varying standards in the protection and enforcement of intellectual property rights and the lack of a multilateral framework of principles, rules and disciplines dealing with international trade in counterfeit goods have been a growing source of tension in international economic relations. Rules and disciplines were needed to cope with these tensions. To that end, the agreement addresses the applicability of basic GATT principles and those of relevant international intellectual property agreements; the provision of adequate intellectual property rights; the provision of effective enforcement measures for those rights; multilateral dispute settlement; and transitional arrangements.

Part I of the agreement sets out general provisions and basic principles, notably a national-treatment commitment under which the nationals of other Parties must be given treatment no less favourable than that accorded to a Party's own nationals with regard to the protection of intellectual property. It also contains a most-favoured-nation clause, a novelty in an international intellectual property agreement, under which any advantage a Party gives to the nationals of another country must be extended immediately and unconditionally to the nationals of all other Parties, even if such treatment is more favourable than that which it gives to its own nationals.

Part II addresses each intellectual property right in succession. With respect to copyright, Parties are required to comply with the substantive provisions of the Berne Convention for the protection of literary and artistic works, in its latest version (Paris 1971), though they will not be obliged to protect moral rights as stipulated in Article 6bis of that Convention. It ensures that computer programmes will be protected as literary works under the Berne Convention and lays down on what basis data bases should be protected by copyright. Important additions to existing international rules in the area of copyright and related rights are the provisions on rental rights. The draft requires authors of computer programmes and producers of sound recordings to be given the right to authorise

or prohibit the commercial rental of their works to the public. A similar exclusive right applies to films where commercial rental has led to widespread copying which is materially impairing the right of reproduction. The draft also requires performers to be given protection from unauthorised recording and broadcast of live performances (bootlegging). The protection for performers and producers of sound recordings would be for no less than 50 years. Broadcasting organisations would have control over the use that can be made of broadcast signals without their authorisation. This right would last for at least 20 years.

With respect to trademarks and service marks, the agreement defines what types of signs must be eligible for protection as a trademark or service mark and what the minimum rights conferred on their owners must be. Marks that have become well-known in a particular country shall enjoy additional protection. In addition, the agreement lays down a number of obligations with regard to the use of trademarks and service marks, their term of protection, and their licensing or assignment. For example, requirements that foreign marks be used in conjunction with local marks would, as a general rule, be prohibited.

In respect of geographical indications, the agreement lays down that all Parties must provide means to prevent the use of any indication which misleads the consumer as to the origin of goods, and any use which would constitute an act of unfair competition. A higher level of protection is provided for geographical indications for wines and spirits, which are protected even where there is no danger of the public's being misled as to the true origin. Exceptions are allowed for names that have already become generic terms, but any country using such an exception must be willing to negotiate with a view to protecting the geographical indications in question. Furthermore, provision is made for further negotiations to establish a multilateral system of notification and registration of geographical indications for wines.

Industrial designs are also protected under the agreement for a period of 10 years. Owners of protected designs would be able to prevent the manufacture, sale or importation of articles bearing or embodying a design which is a copy of the protected design.

As regards patents, there is a general obligation to comply with the substantive provisions of the Paris Convention (1967). In addition, the agreement requires that 20-year patent protection be available for all inventions, whether of products or processes, in almost all fields of technology. Inventions may be excluded from patentability if their commercial exploitation is prohibited for reasons of public order or morality; otherwise, the permitted exclusions are for diagnostic, therapeutic and surgical methods, and for plants and (other than micro-organisms) animals and essentially biological processes for the production of plants or animals (other than microbiological processes). Plant varieties, however, must be protectable either by patents or by a *sui generis* system (such as the breeder's rights provided in a UPOV Convention). Detailed conditions are laid down for compulsory licensing or governmental use of patents without the authorisation of the patent owner. Rights conferred in respect of patents for processes must extend to the products directly obtained

by the process; under certain conditions alleged infringers may be ordered by a court to prove that they have not used the patented process.

With respect to the protection of layout designs of integrated circuits, the agreement requires parties to provide protection on the basis of the Washington Treaty on Intellectual Property in Respect of Integrated Circuits which was opened for signature in May 1989, but with a number of additions: protection must be available for a minimum period of 10 years; the rights must extend to articles incorporating infringing layout designs; innocent infringers must be allowed to use or sell stock in hand or ordered before learning of the infringement against a suitable royalty; and compulsory licensing and government use is only allowed under a number of strict conditions.

Trade secrets and know-how which have commercial value must be protected against breach of confidence and other acts contrary to honest commercial practices. Test data submitted to governments in order to obtain marketing approval for pharmaceutical or agricultural chemicals must also be protected against unfair commercial use.

The final section in this part of the agreement concerns anti-competitive practices in contractual licences. It provides for consultations between governments where there is reason to believe that licensing practices or conditions pertaining to intellectual property rights constitute an abuse of these rights and have an adverse effect on competition. Remedies against such abuses must be consistent with the other provisions of the agreement.

Part III of the agreement sets out the obligations of member governments to provide procedures and remedies under their domestic law to ensure that intellectual property rights can be effectively enforced, by foreign right holders as well as by their own nationals. Procedures should permit effective action against infringement of intellectual property rights but should be fair and equitable, not unnecessarily complicated or costly, and should not entail unreasonable time-limits or unwarranted delays. They should allow for judicial review of final administrative decisions. There is no obligation to put in place a judicial system distinct from that for the enforcement of laws in general, nor to give priority to the enforcement of intellectual property rights in the allocation of resources or staff.

The civil and administrative procedures and remedies spelled out in the text include provisions on evidence of proof, injunctions, damages and other remedies which would include the right of judicial authorities to order the disposal or destruction of infringing goods. Judicial authorities must also have the authority to order prompt and effective provisional measures, in particular where any delay is likely to cause irreparable harm to the right holder, or where evidence is likely to be destroyed. Further provisions relate to measures to be taken at the border for the suspension by customs authorities of release, into domestic circulation, of counterfeit and pirated goods. Finally, Parties should provide for criminal procedures and penalties at least in cases of willful trademark counterfeiting or copyright piracy on a commercial scale. Remedies should include imprisonment and fines sufficient to act as a deterrent.

The agreement would establish a Council for Trade-Related Aspects of Intellectual Property Rights to monitor the operation of the agreement and governments' compliance with it. Dispute settlement would take place under the integrated GATT dispute-settlement procedures as revised in the Uruguay Round.

With respect to the implementation of the agreement, it envisages a one-year transition period for developed countries to bring their legislation and practices into conformity. Developing countries and countries in the process of transformation from a centrally-planned into a market economy would have a five-year transition period, and least-developed countries 11 years. Developing countries which do not at present provide product patent protection in an area of technology would have up to 10 years to introduce such protection. However, in the case of pharmaceutical and agricultural chemical products, they must accept the filing of patent applications from the beginning of the transitional period. Though the patent need not be granted until the end of this period, the novelty of the invention is preserved as of the date of filing the application. If authorisation for the marketing of the relevant pharmaceutical or agricultural chemical is obtained during the transitional period, the developing country concerned must offer an exclusive marketing right for the product for five years, or until a product patent is granted, whichever is shorter.

Subject to certain exceptions, the general rule is that the obligations in the agreement would apply to existing intellectual property rights as well as to new ones.

#### ◆ Understanding on Rules and Procedures Governing the Settlement of Disputes

The dispute settlement system of the GATT is generally considered to be one of the cornerstones of the multilateral trade order. The system has already been strengthened and streamlined as a result of reforms agreed following the Mid-Term Review Ministerial Meeting held in Montreal in December 1988. Disputes currently being dealt with by the Council are subject to these new rules, which include greater automaticity in decisions on the establishment, terms of reference and composition of panels, such that these decisions are no longer dependent upon the consent of the Parties to a dispute. The Uruguay Round Understanding on Rules and Procedures Governing the Settlement of Disputes (DSU) will further strengthen the existing system significantly, extending the greater automaticity agreed in the Mid-Term Review to the adoption of the panels' and a new Appellate Body's findings. Moreover, the DSU will establish an integrated system permitting WTO Members to base their claims on any of the multilateral trade agreements included in the Annexes to the Agreement establishing the WTO. For this purpose, a Dispute Settlement Body (DSB) will exercise the authority of the General Council and the Councils and committees of the covered agreements.

The DSU emphasizes the importance of consultations in securing dispute resolution, requiring a Member to enter into consultations within 30 days of a request for consultations from another Member. If after 60 days from the request for consultations there is no settlement, the complaining Party may request the establishment of a panel. Where consultations are denied, the complaining Party may move directly to request a panel.

The Parties may voluntarily agree to follow alternative means of dispute settlement, including good offices, conciliation, mediation and arbitration.

Where a dispute is not settled through consultations, the DSU requires the establishment of a panel, at the latest, at the meeting of the DSB following that at which a request is made, unless the DSB decides by consensus against establishment. The DSU also sets out specific rules and deadlines for deciding the terms of reference and composition of panels. Standard terms of reference will apply unless the Parties agree to special terms within 20 days of the panel's establishment. And where the Parties do not agree on the composition of the panel within the same 20 days, this can be decided by the Director-General. Panels normally consist of three persons of appropriate background and experience from countries not party to the dispute. The Secretariat will maintain a list of experts satisfying the criteria.

Panel procedures are set out in detail in the DSU. It is envisaged that a panel will normally complete its work within six months or, in cases of urgency, within three months. Panel reports may be considered by the DSB for adoption 20 days after they are issued to Members. Within 60 days of their issuance, they will be adopted, unless the DSB decides by consensus not to adopt the report or one of the Parties notifies the DSB of its intention to appeal.

The concept of appellate review is an important new feature of the DSU. An Appellate Body will be established, composed of seven members, three of whom will serve on any one case. An appeal will be limited to issues of law covered in the panel report and legal interpretations developed by the panel. Appellate proceedings shall not exceed 60 days from the date a Party formally notifies its decision to appeal. The resulting report shall be adopted by the DSB and unconditionally accepted by the Parties within 30 days following its issuance to Members, unless the DSB decides by consensus against its adoption.

Once the panel report or the Appellate Body report is adopted, the Party concerned will have to notify its intentions with respect to implementation of adopted recommendations. If it is impracticable to comply immediately, the Party concerned shall be given a reasonable period of time, the latter to be decided either by agreement of the Parties and approval by the DSB within 45 days of adoption of the report or through arbitration within 90 days of adoption. In any event, the DSB will keep the implementation under regular surveillance until the issue is resolved.

Further provisions set out rules for compensation or the suspension of concessions in the event of non-implementation. Within a specified time-frame, Parties can enter into negotiations to agree on mutually acceptable compensation. Where this has not been agreed, a Party to the dispute may request authorisation of the DSB to suspend concessions or other obligations to the other Party concerned. The DSB will grant such authorisation within 30 days of the expiry of the agreed time-frame for implementation. Disagreements over the proposed level of suspension may be referred to arbitration. In principle, concessions should be suspended in the same sector as that in issue in the panel case. If this is not practicable or effective, the suspension can be made in a different sector of

the same agreement. In turn, if this is not effective or practicable and if the circumstances are serious enough, the suspension of concessions may be made under another agreement.

One of the central provisions of the DSU reaffirms that Members shall not themselves make determinations of violations or suspend concessions, but shall make use of the dispute settlement rules and procedures of the DSU.

The DSU contains a number of provisions taking into account the specific interests of the developing and the least-developed countries. It also provides some special rules for the resolution of disputes which do not involve a violation of obligations under a covered agreement but where a Member believes nevertheless that benefits are being nullified or impaired. Special decisions to be adopted by Ministers in 1994 foresee that the Montreal Dispute Settlement Rules which would otherwise have expired at the time of the April 1994 meeting are extended until the entry into force of the WTO. Another decision foresees that the new rules and procedures will be reviewed within four years after the entry into force of the WTO.

#### ◆ Trade Policy Review Mechanism

An agreement confirms the Trade Policy Review Mechanism, introduced at the time of the Mid-term Review, and encourages greater transparency in national trade policy-making. A further Ministerial decision reforms the notification requirements and procedures generally.

#### ◆ Decision on achieving greater Coherence in Global Economic Policy-making

This will set out concepts and proposals with respect to achieving greater coherence in global economic policy-making. Among other things, the text notes that greater exchange rate stability based on more orderly underlying economic and financial conditions should contribute to “the expansion of trade, sustainable growth and development, and the timely correction of external imbalances.” It recognises that while difficulties whose origins lie outside the trade field cannot be redressed through measures taken in the trade field alone, there are nevertheless interlinkages between the different aspects of economic policy. Therefore, WTO is called upon to develop its co-operation with the international organisations responsible for monetary and financial matters. In particular, the Director-General of WTO is called upon to review, with his opposite numbers in the World Bank and the International Monetary Fund, the implications of WTO’s future responsibilities for its co-operation with the Bretton Woods institutions.

#### ◆ Government Procurement

The Final Act contains an agreement related to accession procedures to the Government Procurement Agreement which is designed to facilitate the membership of developing countries. It envisages consultations between the existing members and applicant governments. These would be followed by the establishment of accession working parties to examine the offers made by applicant countries (in other words, the public entities

whose procurement will be opened up to international competition) as well as the export opportunities for the applicant country in the markets of existing signatories.

This agreement should be distinguished from the new Agreement on Government Procurement.

## 9.4 World Trade Organisation

During the ambitious Uruguay Round, GATT was updated to include new obligations upon its signatories. One of the most significant changes was the creation of the WTO. Out of the total members of GATT, 75 existing members and the members of the EEC became the founding members of the WTO. The WTO became functional on January 1, 1995. The other 52 GATT members re-joined the WTO in the following two years. Since the founding of the WTO, 21 new non-GATT members have joined and 29 are currently negotiating membership.

WTO is an international organisation established with the objective of improving the welfare of the peoples of the member countries. The Secretariat is located in Geneva, Switzerland, headed by a Director-General. Currently the Director-General of WTO is Mr. Pascal Lamy. As on October 2007, there were a total of 151 member countries in the WTO.

The functions of WTO are:

- ◆ Administering WTO trade agreements
- ◆ Forum for trade negotiations
- ◆ Handling trade disputes
- ◆ Monitoring national trade policies
- ◆ Technical assistance and training for developing countries
- ◆ Co-operation with other international organisations

Until the establishment of the WTO, GATT functioned *de facto* as an organisation, conducting rounds of talks addressing various trade issues and resolving international trade disputes. While GATT was a set of rules agreed upon by nations, the WTO is an institutional body. The WTO expanded its scope from traded goods to trade within the service sector and IPRs. WTO agreements are generally multilateral in nature. However, during several rounds of GATT negotiations, particularly the Tokyo Round, plurilateral agreements created selective trading and caused fragmentation among members. Hence, plurilateral agreements also exist and are recognised in the WTO system of agreements.

Though GATT has been replaced by WTO, the General Agreement still exists as WTO's umbrella treaty as trade in goods. At the same time, WTO has a much broader scope than GATT. As mentioned earlier, whereas GATT regulated trade in merchandise goods, the WTO also covers trade in services, such as telecommunications and banking, and other issues such as intellectual property rights.

The WTO is the only international agency overseeing the rules of international trade. It polices free trade agreements, settles trade disputes between governments and organises trade negotiations. Its decisions are absolute and every member must abide by its rulings. So, when any two members are in dispute over any trade related aspect it is the WTO which acts as judge. WTO members are empowered by the organisation to enforce its decisions by imposing trade sanctions against countries that have breached the rules.

**WTO's Institutional Structure** - The highest body of the WTO is the Ministerial Conference. This meets every two years and, among other things, elects the organisation's Director-General as well as oversees the work of the General Council. It is also for providing the platform for 'Trade Rounds' and for negotiating global trade deals aimed at reducing barriers to free trade.

◆ **Ministerial conferences**

- 1) **First ministerial conference** - Held in Singapore in 1996 between 9 to 13 December. Disagreements between largely developed and developing economies emerged during this conference over four issues initiated by this conference, which led to them being collectively referred to as the Singapore Issues<sup>1</sup>.
- 2) **Second ministerial conference** - Held in Geneva, Switzerland in 1998 between 18 to 20 May.
- 3) **Third ministerial conference** - Held in Seattle, Washington, 1999. It ended in failure, with massive demonstrations drawing worldwide attention<sup>2</sup>.
- 4) **Fourth ministerial conference** - Held in Doha in Qatar from November 9 to 14, 2001. It launched the Doha Round of 2001.
- 5) **Fifth ministerial conference** - Held in Cancun, Mexico in 2003 between 10 to 14 September. It aimed at forging agreement on the Doha round. An alliance of 22 southern nations led by India, China and Brazil. Known as G 20 resisted demands from the north for agreements on the Singapore Issues and called for an end to agricultural subsidies within the European Union and the U.S. The talks broke down without progress.

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<sup>1</sup> The "Singapore issues" refers to four working groups set up during the First Ministerial Conference wherein, there groups are tasked with these issues: transparency in government procurement, trade facilitation (customs issues), trade and investment, and trade and competition. These issues were pushed at successive Ministerials by the European Union, Japan and Korea, and opposed by many developing countries. The United States was lukewarm about the inclusion of these issues, indicating that it could accept some or all of them at various times, but preferring to focus on market access.

<sup>2</sup> The round was a huge failure due to disagreements between developed and developing countries. Intended as the launch of a new round of trade negotiations that would have been called "The Millennium Round", the negotiations were marred by poor organisation and controversial management of large street protests. Developing countries felt that they have been excluded from talks as the United States and the European Union attempted to cement their own mutual deal on agriculture. The negotiations collapsed and were reconvened at Doha in November 2001.

- 6) **Sixth ministerial conference** - Held in Hong Kong from December 13 to 18, 2005. It was considered vital if the four-year-old DDA negotiations were to move forward sufficiently to conclude the round in 2006. In this meeting, countries agreed to phase out all their agricultural export subsidies by the end of 2013, and terminate any cotton export subsidies by the end of 2006. Further concessions to developing countries included an agreement to introduce duty free, tariff free access for goods from the Least Developed Countries, following the Everything But Arms initiative of the European Union, but with up to 3% of tariff lines exempted. Other major issues were left for further negotiation to be completed by the end of 2006.
- 7) **Seventh ministerial conference** - Held in Geneva from November 30 to December 02, 2009. The general theme for discussion was “The WTO, the Multilateral Trading System and the Current Global Economic Environment.”
- 8) **Eighth ministerial conference** - The Eighth Ministerial Conference was held in Geneva, Switzerland, from 15 to 17 December 2011. In parallel to the Plenary Session, where Ministers made prepared statements, three Working Sessions took place with the following themes: “Importance of the Multilateral Trading System and the WTO”, “Trade and Development” and “Doha Development Agenda”. The Conference approved the accessions of Russia, Samoa and Montenegro. In the final session, Ministers adopted a number of decisions and the Chair made a concluding statement.
- 9) **Ninth ministerial conference** - To be held in Bali, Indonesia from December 03 to 06, 2013.

The daily work of the ministerial conference is handled by the General Council. The General Council which assumes the second level in WTO's formal structure is made up of ambassadors from member States who also serve on various subsidiary and specialist committees. Among these are the Dispute Settlement Panels which rule on individual country-against-country trade disputes and the Trade Policy Review Body that undertakes trade policy reviews of Members.

Apart from the General Council, there are three Councils for Trade that work under the General Council. These three Councils are -

- i) The Council for Trade in Goods
- ii) The Council for Trade-Related Aspects of Intellectual Property Rights
- iii) The Council for Trade in Services

Each council works in different fields. Apart from these three councils, six other bodies report to the General Council reporting on issues such as trade and development, the environment, regional trading arrangements and administrative issues. There are also a number of subsidiary bodies functioning under each of the three Councils.

Certain other committees are also present in the institutional structure of WTO, like the Committee on Trade and Environment (CTE), Committee on Trade and Development, Committee for developing countries, Committee on Regional Trade Agreements, etc.

**The Doha Round and Beyond** - The Doha Round was launched by the WTO at the Fourth Ministerial Conference in Doha, Qatar in November 2001. The Doha round was to be an ambitious effort to make globalisation more inclusive and help the world's poor, particularly by slashing barriers and subsidies in farming. The initial agenda comprised both further trade liberalisation and new rule-making, underpinned by commitments to strengthen substantial assistance to developing countries.

The Doha Round began with a ministerial-level meeting in Doha, Qatar in 2001. Subsequent ministerial meetings took place in Cancun, Mexico (2003), and Hong Kong (2005). Related negotiations took place in Geneva, Switzerland (2004, 2006, 2008); Paris, France (2005); and Potsdam, Germany (2007).

The most recent round of negotiations on July 23-29 2008, broke down after failing to reach a compromise on agricultural import rules. Major negotiations are not expected to resume until 2009.

After the failure of the Washington Conference, trade ministers agreed to undertake a new round of multilateral trade negotiations at Doha. However, the Doha Round too, collapsed in 2006 as any productive agreements were not finalised. The Fifth Ministerial Conference in Cancun in 2003 and the Sixth Ministerial Conference in Hong Kong from December 13 to 18, 2005 were also a part of the Doha Round itself. On July 24, 2006, the WTO's Director General formally suspended the negotiations.

Even so, the Doha Round of negotiations provided a mandate on a range of subjects and work areas. In Doha, Ministers also approved a linked decision on implementation. They addressed the problems that developing countries face in implementing the current WTO agreements. The original mandate was later on refined at the work at the Fifth and Sixth Ministerial Conferences.

The ministers passed various declarations in this round which is commonly known as the Doha Development Round.

I) **Doha Development Agenda (DDA)** - In the Doha Round, first main declaration passed was known as the Doha Development Agenda (DDA). The text of the document was adopted on November 14, 2001.

DDA folded the on-going negotiations in agriculture and services into a broader agenda. In addition, the Doha agenda included the topic of industrial tariffs, topics of interest to developing countries, changes to WTO rules, and other provisions.

The negotiations on trade and the environment are part of the DDA. They were included with the objective is to enhance the mutual support of trade and environmental policies.

The negotiations focus on three main themes:

- ◆ the relationship between the WTO and MEAs
- ◆ the collaboration between WTO and MEA secretariats
- ◆ the elimination of tariffs and non-tariff barriers on environmental goods and services

II) **Doha Declaration** - The second Document adopted in the Doha Round was the Doha Declaration. There are 21 subjects listed in the Doha Declaration. Most of these involve negotiations; other work includes actions under “implementation”, analysis and monitoring. The subjects are as follows:

- 1) Implementation related issues
- 2) Agriculture
- 3) Services
- 4) Market access for non-agricultural products
- 5) Trade-related aspects of intellectual property rights (TRIPS)
- 6) Relationship between trade and investment
- 7) Interaction between trade and competition policy
- 8) Transparency in government procurement
- 9) Trade facilitation
- 10) Anti-dumping and subsidies
- 11) Regional trade agreements
- 12) Dispute settlement understanding
- 13) Trade and environment
- 14) Electronic commerce
- 15) Small economies
- 16) Trade, debt and finance
- 17) Trade and technology transfer
- 18) Technical co-operation and capacity building
- 19) Least-developed countries
- 20) Special and differential treatment
- 21) Organisation and management of the work programme

The subject of agriculture was most significant in the Doha talks. The Doha Ministerial Declaration mandate for agriculture called for comprehensive negotiations aimed at substantial improvements in market access; reductions of, with a view to phasing out, all forms of export subsidies; and substantial reductions in trade-distorting domestic support. These topics - domestic support, export subsidies, and market access - have become the three pillars of the agricultural negotiations.

The Declaration also provided that special and differential treatment for developing countries would be an integral part of all elements of the negotiations. The Declaration took note of non-trade concerns reflected in negotiating proposals of various member countries and confirmed that they would be taken into account in

the negotiations. March 31, 2003 was set as the deadline for reaching agreement on “modalities” (targets, formulas, timetables, etc.) for achieving the mandated objectives, but that deadline was missed. During the rest of 2003, negotiations on modalities continued in preparation for the fifth WTO Ministerial Conference held in Cancun, Mexico September 10-14, 2003.

The Doha declaration pledged to enable developing countries to ‘secure a share in the growth of world trade commensurate with the needs of their economic development’ through two key routes:

- ◆ Improving market access to Northern markets for developing countries by reducing import tariffs that prevent increase prices and distort competitiveness.
- ◆ Phasing out domestic and export subsidies, that enable the over-production of goods at very low prices, often leading to the dumping of these goods at prices that are cheaper than those of locally produced goods.

**III) Doha Implementation Decision** - No area of WTO work received more attention or generated more controversy in the two years before the Fourth Ministerial Conference in Doha, Qatar, than the issue of “implementation”, specially the developing countries’ problems in implementing the WTO Agreements.

Hence in the Doha Round, an additional document called Doha Implementation Decision was also adopted. The decision, combined with paragraph 12 of Doha Declaration, provided a two-track solution to the problem of implementation in the following manner:

- ◆ More than 40 items under 12 headings were settled at or before the Doha conference, for immediate delivery.
- ◆ The vast majority of the remaining items are immediately the subject of negotiations.

**IV) The Declaration on TRIPS Agreement and Public Health** - Another document that was adopted was the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) agreement and Public Health. It sought to alleviate developing country dissatisfaction with aspects of the TRIPS regime. It delayed the implementation of patent system provisions for pharmaceutical products for least developed countries until 2016. The declaration committed member states to interpret and implement the agreement to support public health and to promote access to medicines for all. The Declaration recognised certain “flexibilities” in the TRIPS agreement to allow each member to grant compulsory licenses for pharmaceuticals and to determine what constitutes a national emergency, expressly including public health emergencies such as HIV/AIDS, malaria and tuberculosis or other epidemics.

**V) Other Ministerial Documents** - Other Ministerial Declarations and Decisions adopted, apart from the ones mentioned above were the Subsidies - Procedure for extensions under Article 27.4 (of Subsidies and countervailing measures agreement) for certain developing country members, Decision on waiver of EU-ACP Partnership Agreement as well as the Decision on EU transitional regime for banana imports.

## Collapse of the Doha talks

The Doha failure was not just a sudden one. The history of the Doha round has been filled with double-talk, with rich countries often demanding poor countries concede ground in unfair ways, with poor countries occasionally taking a strong stance against these demands, and the EU and US in particular driving for more open markets in poorer countries, sometimes even blaming the poorer countries for failed talks, or calling deals criticised as bad for the poor, as good for the poor<sup>3</sup>.

The Doha “Development” Round, as it has been known, was nicknamed that way to show that this round of trade negotiations was to favour developing countries’ ability to develop and prosper from global trade, while acknowledging the unequal nature of global trade, dominated by industrialised countries, at the direct expense of the developing world.

All Doha Round talks are overseen by the Trade Negotiations Committee (TNC), whose chair is WTO’s Director General, which is currently Pascal Lamy. The negotiations are being held in five working groups and in other, existing bodies in the WTO. Selected topics under negotiation are clubbed in five groups: market access, development issues, WTO rules, trade facilitation and other issues.

The Doha round was set to be concluded in four years in December 2005 after two more ministerial conferences had produced a final draft declaration.

### ◆ Cancún, 2003

The 5th WTO Ministerial Conference in Cancun, Mexico was held in mid-September, 2003. The talks intended to forge concrete agreement on the Doha round objectives, collapsed after four days during which the members could not agree on a framework to continue negotiations. Low key talks continued since the ministerial meeting in Doha but progress was almost non-existent.

Issues similar to those raised in Doha were raised again, with the accompanying controversies. The talks again collapsed because developed countries did not wish to finish discussion on issues raised in previous meetings. Instead, they wanted to talk about new issues. Whereas, the developing nations wanted to continue the talks on the long lingering issues. They wanted to finish discussion on the previous issues because it impacts them the most. While the talks failed, it was the first time the developing world took a united stance against the developed countries.

### ◆ Geneva, 2004

The aftermath of Cancun was one of standstill and stocktaking. Negotiations were suspended for the remainder of 2003. In the months leading up to the talks in Geneva, the EU accepted the elimination of agricultural export subsidies “by date certain”. The Singapore issues were moved off the Doha agenda. Compromise was also achieved over

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<sup>3</sup> Shah, Anup (2006), *WTO Doha Development Trade Round Collapse*, Global Issues; Social, Political, Economic and Environmental Issues That Affect Us All.

the negotiation of the Singapore issues as the EU and others decided. Developing countries too played an active part in negotiations this year, first by India and Brazil negotiating directly with the developed countries on agriculture, and second by working toward acceptance of trade facilitation as a subject for negotiation.

After intense negotiations in late July 2004, WTO members reached what has become known as the Framework Agreement, which provides broad guidelines for completing the Doha round negotiations. The agreement contains a 4-page declaration, with four Annexes (A-D) covering agriculture, non-agricultural market access, services, and trade facilitation, respectively. In addition, the agreement acknowledges the activities of other negotiating groups (such as those on rules, dispute settlement and intellectual property) and exhorts them to fulfil their Doha round negotiating objectives. The agreement also abandoned the January 1, 2005 deadline for the negotiations and set December 2005 as the date for the 6th Ministerial to be held in Hong Kong.

#### ◆ Paris, 2005

Paris talks were hanging over a few issues: France protested moves to cut subsidies to farmers, while the U.S., Australia, the EU, Brazil and India could not mutually agree on issues relating to chicken, beef and rice. Most of the sticking points were small technical issues, making trade negotiators fear that agreement on large politically risky issues will be substantially harder.

#### ◆ Hong Kong, 2005

The Hong Kong Convention Centre was the site of the sixth WTO Ministerial Conference that took place from December 13 to 18, 2005. This meeting, one of the most important in the world, was to discuss a number of trade-related issues, key for developing and developed nations, alike. This meeting continued from the earlier “Doha round” where it was recognised that the global trading system was unequal and unfair for most of the world and so the meetings should place development at the fore. Thus this meeting is being billed as a “Development Round”. However, the concerns as per previous years continued to include the lack of transparency and democracy in the decision-making processes, and the alleged power that the developed nations have over the developing and least developed distorting trade in their favour. The previous Ministerial meeting collapsed as the developing world took a strong stance and stood up to the rich nations. Yet, once again, the same kinds of issues resurfaced in this fresh round of talks.

#### ◆ Geneva, 2006

The July 2006 talks in Geneva failed to reach an agreement about reducing farming subsidies and lowering import taxes, and continuation of the negotiations will take months to resume.

#### ◆ Potsdam, 2007

In June 2007, negotiations within the Doha round broke down at a conference in Potsdam, as a major impasse occurred between the US, the EU, India and Brazil. The main

disagreement was over opening up agricultural and industrial markets in various countries and also how to cut rich nation farm subsidies.

#### ◆ Geneva, 2008

On 21 July 2008, negotiations started again at the WTO's HQ in Geneva on the Doha round but stalled after nine days of negotiations over the refusal to compromise over the special safeguard mechanism. Negotiations had continued since the last conference in June 2007. Around 40 ministers attended the negotiations, which were only expected to last five days but instead lasted nine days. India's Commerce Minister, Mr. Kamal Nath, was absent from the first few days of the conference due to a vote of confidence being conducted in India's Parliament. On the second day of the conference, US Trade Representative Susan Schwab announced that the U.S. would cap its farm subsidies at \$15 billion a year, from \$18.2 billion in 2006. However, the proposal was on the condition that countries such as India and Brazil drop their objections to various aspects of the round.

However, the negotiations collapsed on 29 July 2008, over issues of agricultural trade between the United States, India and China. Talks fell apart after an agricultural safeguard measure for developing countries to raise tariffs in cases of import surges. There were disagreements on issues including special protection for Chinese and Indian farmers and African and Caribbean banana imports to the EU. Mr. Kamal Nath, India's Commerce Minister said "I'm not risking the livelihood of millions of farmers. The most important thing was the livelihood security, the vulnerability of poor farmers, which could not be traded off against the commercial interests of the developed countries." India's position has been supported by over 100 different developing countries representing a billion subsistence farmers.

In particular, there was insoluble disagreement between India and the United States over special safeguard mechanism (SSM), a measure designed to protect poor farmers by allowing countries to impose a special tariff on certain agricultural goods in the event of an import surge or price fall. However, the United States, China and India could not agree on the threshold that would allow the mechanism to be used, with the United States arguing that the threshold had been set too low. India has insisted that developing countries must be able to protect their agricultural sector against sudden surges of subsidised imports from the US and EU. Nevertheless, India's Commerce Minister, Kamal Nath, on this issue, said "I would only urge the Director-General [of the WTO] to treat this [failure of talks] as a pause, not a breakdown, to keep on the table what is there."

#### **Basic Issues related to the Doha talks**

Agriculture has become the linchpin of the agenda for both developing and developed countries. Three other issues have been important. The first pertains to compulsory licensing of medicines and patent protection. A second deals with a review of provisions giving special and differential treatment to developing countries; a third addresses problems that developing countries are having in implementing current trade obligations.

### ◆ Agriculture

Agriculture has become the most important and controversial issue. The first proposal in Qatar, in 2001, called for the end agreement to commit to substantial improvements in market access; reductions (and ultimate elimination) of all forms of export subsidies; and substantial reductions in trade-distorting support.

The United States is being asked by the European Union (EU) and the developing countries, led by Brazil and India, to make a more generous offer for reducing trade-distorting domestic support for agriculture. The United States is insisting that the EU and the developing countries agree to make more substantial reductions in tariffs and to limit the number of import-sensitive and special products that would be exempt from cuts. Import-sensitive products are of most concern to developed countries like the European Union, while developing countries are concerned with special products - those exempt from both tariff cuts and subsidy reductions because of development, food security, or livelihood considerations. Brazil has emphasized reductions in trade-distorting domestic subsidies, especially by the United States, while India has insisted on a large number of special products that would not be exposed to wider market opening. In the latest round of talks held in Geneva, the issue basically revolved around the SSM (special safeguard mechanism) for developing countries to raise tariffs in cases of import surges.

### ◆ Intellectual Property related issues

The IP issues under consideration are:

- 1) Establishment of an international register of wines and spirits GI (geographical indications), product names associated with places and characteristics (“GI Register”)
- 2) Possibility of extending higher level GI protection (TRIPS Article 23) to products other than wines and spirits (“GI extension”)
- 3) Proposed amendment to the WTO Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) that would bring it in line with obligations under the UN Convention on Biological Diversity (CBD), adding a requirement for disclosure of origin in patent applications and possibly ensuring benefit-sharing with communities to deter biopiracy (“CBD amendment”). The issue also involves the balance of interests between the pharmaceutical companies in developed countries that held patents on medicines and the public health needs in developing countries.

### ◆ Special and differential treatment

In the Doha Ministerial Declaration, the trade ministers reaffirmed special and differential (S&D) treatment for developing countries and agreed that all S&D treatment provisions “...be reviewed with a view to strengthening them and making them more precise, effective and operational.”

The negotiations have been split along a developing-country/developed-country divide. Developing countries wanted to negotiate on changes to S&D provisions, keep proposals

together in the Committee on Trade and Development, and set shorter deadlines. Developed countries wanted to study S&D provisions, send some proposals to negotiating groups, and leave deadlines open. Developing countries claimed that the developed countries were not negotiating in good faith, while developed countries argued that the developing countries were unreasonable in their proposals.

#### ◆ Implementation issues

Before the Doha Ministerial, WTO Members resolved a small number of implementation issues. At the Doha meeting, the Ministerial Declaration directed a two-path approach for the large number of remaining issues:

- a) where a specific negotiating mandate is provided, the relevant implementation issues will be addressed under that mandate; and
- b) the other outstanding implementation issues will be addressed as a matter of priority by the relevant WTO bodies. Outstanding implementation issues are found in the area of market access, investment measures, safeguards, rules of origin, and subsidies and countervailing measures, among others.

## 9.5 WTO and Environment

Though the GATT did not expressly provide for environment related issues pertaining to trade in detail, however environment issues were addressed to in Article XX (b) and (g) as part of general exceptions. The issue of trade and environment was not on the agenda of the Uruguay Round of Multilateral Trade Negotiations. However, the Preamble of the Agreement establishing the WTO mentions the goal of “optimal use of the world’s resources in accordance with the objective of sustainable development.” The WTO has no specific agreement dealing with the environment. Nevertheless, a number of WTO agreements include provisions dealing with environmental concerns. The Agreement on Technical Barriers to Trade (TBT Agreement) and the Agreement on Sanitary and Phyto-sanitary Measures (SPS Agreement) address environment related issues.

After the conclusion of the Uruguay Round in 1994, a Committee on Trade and Environment (CTE) was established in the WTO. The broad mandate of the CTE was to promote an understanding of the relationship between trade measures and environmental measures for achieving sustainable development and to make recommendations on the need for modifications of the provisions of the multilateral trading system to ensure compatibility with an open, equitable and non-discriminatory trading system.

In keeping with the above mandate, the CTE developed a Comprehensive Work Programme, which covers the items as below:

- ◆ **Item 1:** The relationship between the provisions of the multilateral trading system and trade measures for environmental purposes, including those pursuant to Multilateral Environmental Agreements (MEAs).

- ◆ **Item 2:** The relationship between environmental policies relevant to trade and environmental measures with significant trade effects and the provisions of the multilateral trading system.
- ◆ **Item 3:** The relationship between the provisions of the multilateral trading system and charges and taxes for environmental purposes and the relationship between the provisions of the multilateral trading system and requirements for environmental purposes relating to products, including standards and technical regulations, packaging, labelling and recycling.
- ◆ **Item 4:** The provisions of the multilateral trading system with respect to the transparency of trade measures used for environmental purposes and environmental measures and requirements which have significant trade effects.
- ◆ **Item 5:** The relationship between the dispute settlement mechanisms in the multilateral trading system and those found in Multilateral Environment Agreements.
- ◆ **Item 6:** The effect of environmental measures on market access, especially in relation to developing countries, in particular to the least-developed among them, and environmental benefits of removing trade restrictions and distortions.
- ◆ **Item 7:** Issue of export of domestically prohibited goods (DPGs).
- ◆ **Item 8:** The relevant provisions of the Agreement on Trade-related Aspects of Intellectual Property Rights (TRIPS).
- ◆ **Item 9:** The work programme envisaged in the decision on Trade in Services and the Environment.
- ◆ **Item 10:** Inputs to the relevant bodies in respect of appropriate arrangements for relations with intergovernmental and non-governmental organisations referred to in Article V of the WTO Agreement.

#### **A) The Agreement on Technical Barriers to Trade (TBT Agreement)**

The Agreement on Technical Barriers on Trade also known as the TBT Agreement is an international treaty of the WTO. The object of the TBT Agreement is “to ensure that technical negotiations and standards, as well as testing and certification procedures, do not create unnecessary obstacles to trade.”

Though the concept of a TBT Agreement was conceived during the course of Tokyo Round, it was formally negotiated during the Uruguay Round of the GATT and entered into force with the establishment of the WTO at the beginning of 1995.

Till the adoption of the SPS Agreement, the TBT Agreement was the only agreement dealing with product standards. Therefore, the agreement clarifies that it deals with all the products including the agricultural products, but the provisions do not apply to sanitary and phytosanitary measures as defined in the SPS Agreement (Article 1.5).

## **B) The Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement)**

The Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement) is an international treaty of WTO. It was also negotiated during the Uruguay Round and entered into force with the establishment of the WTO at the beginning of 1995.

Under the SPS agreement, the WTO sets constraints on member-states' policies relating to food safety (bacterial contaminants, pesticides, inspection and labelling) as well as animal and plant health (phytosanitary) about imported pests and diseases.

The two main objectives of the SPS Agreement are:

- 1) To protect and improve human health, animal health and the phytosanitary situation of all member countries
- 2) To protect members from arbitrary or unjustifiable discrimination due to different sanitary and phytosanitary standards

## **C) Committee on Trade and Environment (CTE)**

The WTO forerunner, the GATT had constituted as far back as in 1971 a group on 'Environmental measures and international trade'. The preamble to the WTO Agreement also has a direct reference to the goal of sustainable development explicitly stating the need to protect and preserve the environment.

During the Fifth Ministerial Conference of the World Trade Organisation at Cancun, Mexico, the issues discussed by the 148 countries included trade and environment. This was due to the resurgence of interest in environmental standards and trade.

The WTO formalised the issues by setting up a Committee on Trade and Environmental (CTE). The CTE established a relationship between environmental standards and sanitary and phytosanitary measures by the adoption of the Agreement on the application of sanitary and phytosanitary measures (SPS Agreement) and agreed, in principle, to negotiations without violating relationships among WTO rules, specific trade obligations of multilateral environmental agreements and rights of any WTO member that is not a party to the Measures of Environmental Agreement (MEA).

Work on trade and environment at the WTO takes place in the CTE which is responsible for covering the intersection of the environment services, goods and intellectual property. Paragraph 31 of the Doha Ministerial Declaration instructed the CTE to focus particular attention on market access for developing nations, intellectual property and labelling. The WTO allows exceptions from its rules for environmental concerns provided that these policies are implemented without discrimination and must not be a disguised restriction on international trade.

WTO decisions on trade and the environment have the potential to come into conflict with non-WTO international environmental agreements or multilateral environmental

agreements (MEAs), even though so far no action affecting trade and taken under an international environmental agreement has been challenged in the GATT-WTO system. The CTE believes that work through these MEAs can be a more effective way of dealing with environmental issues than the WTO dispute settlement mechanism. However, disagreements may arise between WTO members who are not all party to the same MEA.

During the negotiations on trade, the consensus was that environmental standards should not obstruct flow of regular exchange of information between the MEA and WTO committees, and negotiations should lead to reduction or elimination of tariff and non-tariff barriers to environmental goods and services.

The Marrakesh agreement establishing the WTO and its decisions on trade and environment mandated a work programme covering items of interest to developing and developed countries such as:

- 1) The relationship between the provision of the multilateral trading system and trade measures for environmental purposes, including those pursuant to MEAs;
- 2) Eco-labelling, particularly the issue of whether national laws could fairly require the labelling of en-embodied process and production methods, that is, aspects of goods or services not identifiable in the final product;
- 3) The effects of environmental measures on market access, particularly for developing countries as a whole and Least Developed Countries especially; and
- 4) Environmental benefits of removing trade restrictions and distortions. In more liberalised economies with high environmental standards, industries think that governments of poor countries lower their standards to keep the cost of production low and attract foreign investment and jobs from rich countries.

#### ◆ CTE and the Regulation of Environment

The first step for regulation of environment is the classification and identification of environmental issues. Submitting a memorandum to the WTO, the Negotiating Group on Market Access and the Committee on Trade and Environment suggested that the WTO prepare a list of environmental goods subject to negotiations. The WTO has explicitly taken an integrated view that an open, equitable and non-discriminatory multilateral trading system can help achieve ecologically sustainable development and advance members' national and international efforts to better protect and conserve environmental resources. Developing countries, particularly agriculture exporters, have drawn attention to the environmental benefits of trade liberalisation and tighter WTO disciplines.

They argue that further liberalisation of farm trade will reduce the environmental impact of agriculture by increasing resource allocation efficiency. For instance, the removal of agricultural input subsidies should lead to a substantial reduction in the use of marginal agricultural land, which is only productive with high fertilizer, water and other inputs.

Trade is a powerful engine of economic growth and that economic growth is vital to creating conditions that favour advancing environmental protection, improving social conditions or sustaining ethical values. By opening markets, particularly to exports from developing countries and by keeping markets open through clear and enforceable rules, the global trading system is a natural ally of sustainable development.

### **Carbon Trading**

The carbon dioxide in the atmosphere is one of a number of gases that help to keep the earth warm. Without those temperatures could be up to 30 degrees lower and the earth would not support life. In the last 40 years in particular, one has witnessed a radical increase in the carbon emissions and this has increased the warming effect on the planet, through the trapping of solar heat in the earth's atmosphere.

Burning of fossil fuels is a major source of industrial greenhouse gas emissions, especially for power, cement, steel, textile, fertilizer and many other industries which rely on fossil fuels (coal, electricity derived from coal, natural gas and oil). The major greenhouse gases emitted by these industries are Carbon dioxide, methane, nitrous oxide, Hydrofluorocarbons (HFCs), etc. It is a scientific fact that there exists a relationship between emissions and climate change. However, principal area of disagreement between scientists is on the pace that this change in climate will accelerate. Some climatologists predict an increase in several degrees of the average global temperature which will have an enormous effect upon fragile ecosystems and potentially on low lying areas such as the Maldives, where any ocean level rise associated with the melting of polar ice caps could be catastrophic. Others suggest that the process will be more gradual and that our ability to control emissions will head off a catastrophe.

Carbon Trading is a market based mechanism for helping mitigate the increase of CO<sub>2</sub> in the atmosphere. Carbon trading markets are developed that bring buyers and sellers of carbon credits together with standardised rules of trade.

Carbon credits are a key component of national and international emissions trading schemes that have been implemented to mitigate global warming. They provide a way to reduce greenhouse effect emissions on an industrial scale by capping total annual emissions and letting the market assign a monetary value to any shortfall through trading. Credits can be exchanged between businesses or bought and sold in international markets at the prevailing market price. Credits can be used to finance carbon reduction schemes between trading partners and around the world.

Any entity, typically a business, that emits CO<sub>2</sub> to the atmosphere may have an interest or may be required by law to balance their emissions through mechanism of Carbon sequestration. These businesses may include power generating facilities or many kinds of manufacturers.

There are also many companies that sell carbon credits to commercial and individual customers who are interested in lowering their carbon footprint on a voluntary basis.

These purchasers buy the credits from an investment fund or a carbon development company that has aggregated the credits from individual projects. The quality of the credits is based in part on the validation process and sophistication of the fund or development company that acted as the sponsor to the carbon project.

#### **The ethics of carbon trading<sup>4</sup>**

There is a belief that carbon trading offers a golden opportunity for developing countries like India to get foreign funds. However, is it ethical for richer countries to continue to contribute more than their share of global carbon emissions by buying 'cheaper' emission reduction opportunities in poorer countries?

The problem of climate change caused by the increasing concentration of greenhouse gases in the atmosphere needs concerted action by all countries of the world. The impact of one ton of carbon dioxide emissions is the same irrespective of whether the emission occurs in New York, Beijing, Mumbai or Latur. This implies that in order to reduce the total annual global carbon dioxide emissions to a fixed target, it is necessary to decide a basis for national or regional emissions.

The global community led by the Intergovernmental Panel on Climate Change agreed upon the Kyoto Protocol in 1997 (ratified in 2005) where Annex-I countries (38 industrialised/developed countries) agreed to reduce their GHG (Greenhouse Gases) emissions by 2008-2012 to an average of about 5% below their 1990 levels.

The Kyoto targets range from + 10% (Iceland) to - 8% (EU). The developing countries were exempt from targets at Kyoto. This indicates differentiated responsibility. However, the basis for targets seems to be emissions in a predefined base year. This implies that countries that have higher emissions due to higher per capita energy use would be entitled to higher targets.

A logical basis for deciding emission quotas could be on a per capita basis. However, this basis is not agreed upon by the global community. Even the country averages hide significant intra-country variations.

A recent study by Greenpeace India computed the carbon dioxide emissions of different income classes in India and showed that the high income households (>Rs. 360,000/ year income) have average emissions around the world average while low income households (< Rs. 36,000/ year income) have emissions of about 20% of this value.

The Kyoto protocol permits meeting the national targets partially by trading emission allowances and carbon project credits through the emission trading system, joint implementation, and the clean development mechanism (CDM). This has resulted in the emergence of a carbon trading market.

The logic is that there are projects available in developing countries to mitigate carbon dioxide emissions - e.g., afforestation, energy efficiency and renewables - that can

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<sup>4</sup> Source: Banerjee, Rangan & Rao, Anand B (11 Dec, 2007), *The Ethics of Carbon Trading*, Economic Times.

supply cheaper emission reduction credits. This implies that developed countries can continue to have higher emissions (than their emission quotas or rights) as long as they can buy these rights by funding equivalent emission reduction projects in developing countries.

Hence the problem can be 'neatly' ("efficiently") solved by the market without undue difficulty. No structural adjustments or lifestyle changes are required in the developed countries. This would also benefit the developing countries as there would be significant fund transfers for the carbon credits.

What is the problem with this 'win-win' market solution? We are looking at the carbon reduction market as a great opportunity. Is this ensuring a fair price? Is it ethical? Are nations avoiding their responsibility to reduce carbon emissions to sustainable levels by using their ability to buy out emission rights?

At present, the volumes of certified emission reductions of carbon dioxide (CERs) recorded annually by the UNFCCC (UN agency regulating the emission reduction) are 174 million tones. The price for CERs is kept quite low (less than \$20 per CER).

Suppose there was no global carbon market and each country had to balance its own carbon budget. Simulations done by European researchers indicate that if the countries had to meet their Kyoto targets, the economic cost incurred by the US would be \$32 billion, by the EU would be \$14 billion and for Japan, it would be about \$6 billion. This would indicate costs of reduction ranging from \$41 to \$55 per tonne of CO<sub>2</sub>. This is more than double the existing price of the CERs.

The targets set at Kyoto are a start but unlikely to help achieve the stabilisation scenario of carbon dioxide. Reductions of 40% or more would be required by the Annex-I countries. Hence even the supply/demand equilibrium for carbon reductions in the global market is skewed since a much lower demand is initially mandated resulting in the developed countries benefiting from a carbon price that is lower than its fair value. The questions of ethics and equity are difficult issues to address.

The climate change negotiation is now about getting the two largest 'future' emitters India and China on board. India, a country hosting 17% of the world population has contributed only 2.4% to the total accumulated emissions since 1750.

The annual per capita energy consumption in the country is very low (0.53 tones of oil equivalent per person), whereas the average per capita electricity consumption in India is about 450 kWh per year – less than 1/5th of the world average and 1/30th of the US average. The economy is growing at the rate of 8%-10% in the past few years and the energy demand is on the rise.

To meet the developmental needs and to satisfy the aspirations of the people to achieve better living conditions, the energy consumption is expected to rise throughout the next decade or two. A significant part of the growth in the energy sector will be met through the coal reserves in the country. So, the carbon emission from India is likely to show a

sharper rise than the historical trend, unless zero-emission coal plants become a reality in the near future.

At present, India is actively participating in CDM activity (~ 300 projects with 28 million CERs registered per year). Most of these projects allow the industrialised countries to pick up the low hanging fruits at the cheapest price. How can we ensure that substantial part of the Kyoto reduction targets are met through mitigation measures within Annex-I countries themselves?

Unless that happens, stabilisation to any undisruptive GHG concentration level seems to be impossible. We should get fair compensation for the carbon credits to help in our development goals, especially when we are compromising our future emission rights by selling the carbon credits. It is high time industrialised countries looked beyond the purchase of cheap emission credits through CDM.

Providing access to cleaner technologies (unconditional technology transfer) and ensuring a fair carbon price may help address the equity issues.

#### ◆ **Kyoto Protocol**

The limits on greenhouse-gas emissions were set by the Kyoto Protocol. The Kyoto Protocol is an agreement made under the United Nations Framework Convention on Climate Change (UNFCCC). The Protocol was an international agreement between more than 170 countries, and the market mechanisms were agreed through the subsequent Marrakesh Accords.

Nations that have contributed the most to global warming have tended to benefit directly in terms of greater business profits and higher standards of living, while they have not been held proportionately accountable for the damages caused by their emissions. The negative effects of climate change will be felt all over the world, and actually the consequences are expected to be most severe in least-developed nations which have produced few emissions.

The Kyoto Protocol sets limits on total emissions by the world's major economies, a prescribed number of "emission units". Individual industrialised countries have mandatory emissions targets they must meet.

The Protocol allows countries that have emissions units to spare (emissions permitted to them but not "used") to sell this excess capacity to countries that are over their targets. It is believed that this so-called "carbon market" is both flexible and realistic. Countries not meeting their commitments will be able to "buy" compliance, but the price may be steep. The higher the cost, the more pressure they will feel to use energy more efficiently and to research and promote the development of alternative sources of energy that have low or no emissions.

The details of a global stock market where such a trading could be held were not specified in the Protocol. These rules were among the workaday specifics included in the 2001 "Marrakesh Accords".

A country's actual emissions have to be monitored and guaranteed to be what they are reported to be; and precise records have to be kept of the trades carried out. Accordingly, "registries" are being set up, along with "accounting procedures", an "international transactions log" and "expert review teams" to police compliance.

The Protocol agreed 'caps' or quotas on the maximum amount of GHG for developed and developing countries, listed in its Annex-I. In turn, these countries set quotas on the emissions of installations run by local business and other organisations, generically termed 'operators'. Countries manage this through their own national 'registries', which are required to be validated and monitored for compliance by the UNFCCC. Each operator has an allowance of credits, where each unit gives the owner the right to emit one metric tonne of carbon dioxide or other equivalent GHG. Operators that have not used up their quotas can sell their unused allowances as carbon credits, while businesses that are about to exceed their quotas can buy the extra allowances as credits, privately or on the open market. As demand for energy grows over time, the total emissions must still stay within the cap, but it allows industry some flexibility and predictability in its planning to accommodate this.

## 9.6 Dispute Settlement Understanding in WTO

In 1994, the WTO members agreed on the Understanding on Rules and Procedures Governing the Settlement of Disputes (DSU) annexed to the "Final Act" signed in Marrakesh in 1994. Dispute settlement is regarded by the WTO as the central pillar of the multilateral trading system, and as a "unique contribution to the stability of the global economy". WTO members have agreed that, if they believe fellow-members are violating trade rules, they will use the multilateral system of settling disputes instead of taking action unilaterally.

Dispute Settlement panels and subsidiary Appellate Body under the Dispute Settlement Body (DSB) resolve the disputes and the Appellate Body to deal with appeals. The DSB functions under the General Council. Like the General Council, the DSB is composed of representatives of all WTO Members. The DSB is responsible for administering the dispute settlement and for overseeing the entire dispute settlement process.

If a member State considers that a measure adopted by another member State has deprived it of a benefit accruing to it under one of the covered agreements, it may call for consultations with the other member State. If consultations fail to resolve the dispute within 60 days after receipt of the request for consultations, the complainant State may request the establishment of a panel. It is not possible for the respondent State to prevent or delay the establishment of a panel, unless the DSB by consensus decides otherwise. The panel, normally consisting of three members appointed *ad hoc* by the Secretariat, sits to receive written and oral submissions of the Parties, on the basis of which it is expected to make findings and conclusions for presentation to the DSB.

The proceedings are confidential, and even when private Parties are directly concerned, they are not permitted to attend or make submissions separate from those of the State in question.

The panel's report is provided to the Parties. After two weeks it is circulated to all the members of the WTO. The report must be adopted at a meeting of the DSB within 60 days of its circulation, unless the DSB by consensus decides not to adopt the report or a Party to the dispute gives notice of its intention to appeal.

Appeal is allowed only on the issues of law. An appeal may be made to the Appellate Body. The report of the Appellate Body is to be adopted by the DSB unless the DSB decides by consensus within 30 days of its circulation not to adopt the report.

Within thirty days of the adoption of the report, the member concerned is to inform the DSB of its intentions; if the member explains that it is impracticable to comply immediately with the recommendations and rulings, it is to have a "reasonable period of time" in which to comply. If no agreement is reached about the reasonable period for compliance, that issue is to be the subject of binding arbitration. If there is a disagreement as to the satisfactory nature of the measures adopted by the respondent State to comply with the report, that disagreement is to be decided by a panel, if possible the same panel that heard the original dispute, but apparently without the possibility of appeal from its decision.

If all else fails, two more possibilities are set out. They are -

- ◆ If a member fails within the "reasonable period" to carry out the recommendations and rulings, it may negotiate with the complaining State for a mutually acceptable compensation.
- ◆ If no agreement on compensation is reached within twenty days of the expiry of the "reasonable period", the prevailing State may request authorisation from the DSB to suspend application to the member concerned of concessions or other obligations under the covered agreements. The DSB shall grant the authorisation within thirty days of the expiry of the reasonable period, unless it decides by consensus to reject the request.

It is very essential to give special attention to the problems and interest of the developing countries. If one Party to a dispute is a developing country, that Party is entitled to have at least one panellist who comes from a developing country. Further, if a complaint is brought against a developing country, the time for consultations (before a panel is convened) may be expended, and if the dispute goes to a panel, the deadlines for the developing country to make its submissions may be relaxed. Formal complaints against least developed countries are discouraged, and if consultations fail, the Director-General and the Chairman of the DSB stand ready to offer their good offices before a formal request for a panel is made.

The Dispute Settlement Undertaking provides that "particular attention" is to be paid to the interests of the developing countries, and that the report of panels shall "explicitly indicate" how account has been taken of the "differential and more favourable treatment" provisions of the agreement under which the complaint is brought.

## Environment Related Disputes

### 1) Tuna Dolphin Cases (I and II)

Often regarded as emblematic of the trade-environment debate, the two GATT Tuna-Dolphin Disputes (1991 Tuna-Dolphin I and 1994 Tuna-Dolphin II) were the first to test the legitimacy of using environmentally-unfavourable foreign process and production methods (PPMs) as justification for trade restrictions. The disputes came at a time when trade and environment issues were lurking in the wings of the GATT. Tuna-Dolphin I revolved around a US primary embargo on Mexican tuna caught using purse-seine nets that incidentally trapped a high number of dolphins, while Tuna-Dolphin II cantered on a secondary US embargo against countries who re-exported tuna from nations under the US primary embargo.

In great part due to the impact of the Tuna-Dolphin cases, the GATT Working Group on Environmental Measures and International Trade, dormant since its inception in 1971, was reactivated a few months after the first Tuna-Dolphin decision in 1992. Due to the partisan nature of the issues involved in the cases, a three-way divergence of views that fell within either the “environment”, “development” or “trade” approaches, has developed that characterised analysis of the disputes.

### The 1991 and 1994 GATT Tuna-Dolphin Cases<sup>5</sup>

#### Facts, Process and Interventions

Pursuant to the Marine Mammal Protection Act (MMPA), in 1990 the United States imposed an embargo on yellowfin tuna from Mexico because the Mexican manner of harvesting yellowfin tuna resulted in incidental loss of dolphin above the standards set in the MMPA. In May 1991, again pursuant to the MMPA, an embargo was placed on yellowfin tuna from those “intermediary nations” which could not certify that the tuna they were exporting to the United States had been captured in accordance with U.S. standards on dolphin mortality. The intention of the intermediary nation provision was to prevent the tuna-harvesting-States from evading the U.S. dolphin standards by trans-shipping yellowfin tuna through a second State. France and Italy, amongst others, were subject to the May 1991 yellowfin tuna embargo. Following litigation in the United States, the intermediary nation tuna embargo was extended in January 1992 to include, amongst other States, Spain and the United Kingdom.

Specifically regarding the Mexican situation, several facts need to be noted: Mexican fishers were attempting to comply with the requirements of the MMPA; the fishing activities were taking place in either international or Mexican waters (non-U.S. waters); there were no facts to suggest that the dolphin were “American”; dolphin is not an endangered species; and the Mexican fishers were not breaching Mexican law or any international agreement concerning either dolphin protection or tuna harvesting.

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<sup>5</sup> Source: Abridged from the Article - “*Protecting international marine living resources with trade embargos - GATT and International reaction to US practices*”, by Ted L. Mcdorman, [http://www.highnorth.no/Library/Trade/GATT\\_WTO/pr-in-ma.htm](http://www.highnorth.no/Library/Trade/GATT_WTO/pr-in-ma.htm)

Mexico, a member of GATT since 1986, complained that the U.S. embargoes of yellowfin tuna were inconsistent with Article XI(1) of the GATT. Under the dispute settlement regime of the GATT, no State can be *forced* to have its trade measures subjected to third party scrutiny, although where serious disputes arise the panel process, a quasi-adjudicative procedure, is almost always accepted by the disputants. The United States accepted that a GATT dispute settlement panel was the appropriate way to deal with the Mexican complaint.

In addition to the United States and Mexico, eleven countries made representations to the 1991 GATT Panel. None of the eleven, which included Australia, Canada, the European Community, Norway and Japan, supported the U.S. position. In the end, the *U.S.-Mexico Tuna-Dolphin Panel* also did not accept the U.S. position, finding that the U.S. embargoes under the MMPA on Mexican yellowfin tuna and on yellowfin tuna from intermediary States were GATT illegal.

The position at that time was that the decisions of GATT dispute settlement panels do not become legally binding on disputants until the panel reports are adopted by the GATT Council. Adoption of the *U.S.-Mexico Tuna-Dolphin Panel* was not actively pursued by Mexico because of the impending conclusion with the United States of the North America Free Trade Agreement (NAFTA) and the political outcry in the United States against the decision of the 1991 GATT Panel. The United States attempted to overcome the decision of the GATT Panel through revisions to regulations of the Inter-American Tropical Tuna Commission (IATTC) to reduce or eliminate dolphin mortality and revisions to the MMPA effectuated by the International Dolphin Conservation Act of 1992.

When it became clear that Mexico was not going to press for adoption by the GATT Council of the *U.S.-Mexico Tuna-Dolphin Panel*, the European Community commenced the formal GATT dispute settlement process which ultimately led to the 1994 *U.S.-E.E.C. Tuna-Dolphin Panel* report. The European Community was particularly concerned about the U.S. tuna embargo imposed against intermediary States, but the entire issue of embargoes on yellowfin tuna triggered by non-compliance with dolphin mortality standards imposed under the MMPA was revisited. None of the six intervening States in the 1994 *U.S.-E.E.C. Tuna-Dolphin Panel*, Australia, Canada, Japan, New Zealand, Thailand or Venezuela, supported the position of the United States. The 1994 GATT Panel was the equivalent of an appeal of the 1991 GATT Panel report. The appeal was upheld - the 1994 GATT Panel concluded that the MMPA embargoes were inconsistent with U.S. GATT obligations.

### The Panel Decisions

Both the 1991 and 1994 GATT Panels took the view that Article XI(1) was applicable to the U.S. tuna embargoes, and therefore, the core of both the GATT Panel decisions was the application of Article XX(b) and (g), the exceptions to Article XI(1).

### The U.S.-Mexico Tuna-Dolphin Panel

The *U.S.-Mexico Tuna-Dolphin Panel* took the view that for a trade embargo to fit the health exception, Article XX(b), or the scarce resource exception, Article XX(g), the

health or resource interest being protected had to be in the country taking the measure. In the case of Article XX(b), the Panel took the view that the original drafters of the exception were only concerned with the “life or health of humans, animals or plants *within* the jurisdiction of the importing country.” Regarding Article XX(g), the Panel felt that the provision was aimed at protection of scarce natural resources *within* a country’s jurisdiction and thus, the provision did not justify measures designed to regulate natural resource activities outside a country’s jurisdiction.

The principal reasoning of the 1991 GATT Panel is conveniently condensed in two virtually identical paragraphs, one dealing with Article XX(b), the other Article XX(g): The Panel considered that if the broad interpretation of Article XX(b) suggested by the United States were accepted allowing trade embargoes to protect health and resources outside the jurisdiction of the United States, each Contracting Party could unilaterally determine the life or health policies from which other Contracting Parties could not deviate without jeopardizing their rights under the General Agreement. The General Agreement would then no longer constitute a multilateral framework for trade among all Contracting Parties but would provide legal security only in respect of trade between a limited number of Contracting Parties with identical internal regulations.

The 1991 Panel stated that pursuant to the GATT “a Contracting Party may not restrict imports of a product merely because it originates in a country with environmental policies different from its own.” It is this statement that was seen by environmentalists as one of the biggest problems with the 1991 GATT Panel report. However, even the normally environmentally-sensitive Nordic countries indicated that a country is not free “to require that imported products [be] produced as cleanly abroad as at home.” Any other conclusion reached by the GATT Panel would allow certain countries to dictate to others what internal standards must exist and enforce their views with trade sanctions, and this would clearly be an invasion of a foreign country’s sovereignty. Moreover, as the Panel observed, any other conclusion would permit trade only between countries with identical regulations, and this would amount to a dismantling of the GATT.

### **The U.S.-E.E.C. Tuna-dolphin Panel**

The restriction read into Article XX(b) and (g) by the 1991 *U.S.-Mexico Tuna-Dolphin Panel* that the living resource or health being protected had to be in the country employing the embargo was forcibly argued by the European Community before the 1994 GATT Panel as the proper interpretation of Article XX(b) and (g). The *U.S.-E.E.C. Tuna-Dolphin Panel*, however, did not accept the principal rationale of the 1991 GATT Panel decision. The 1994 GATT Panel took the view that the wording of Article XX(b) and (g) did not specifically restrict their application to situations where the living resources or environment had to be *in* the territory of the State employing the embargo.

Despite the easy application and convenient logic of the location restriction for Article XX(b) and (g), the 1994 GATT Panel was correct to reject it as a limitation. The essence of the complaint about the U.S. embargo was not that the dolphin standards for tuna capture applied in non-American waters, but that the embargo-imposed U.S. dolphin

mortality standards on non-Americans harvesting tuna in non-American waters. As the 1994 GATT Panel made clear, GATT rules do not prevent American laws from applying to Americans harvesting living resources in non-American waters, which might be the case if resource location were the principal criteria. Having rejected that a location limitation was part of Article XX(b) and (g), the 1994 GATT Panel turned to a detailed examination of the two provisions.

Respecting Article XX(g), the GATT Panel examined whether both the purpose and effect of the tuna embargo were to ensure the effectiveness of restrictions imposed by the United States on its own fishers regarding dolphin conservation. Article XX(g) creates an exception to Article XI (1) if the embargo is tied to the effectiveness of domestic restrictions. The 1994 GATT Panel concluded that the tuna embargo “could not, by itself, further the United States conservation objectives”, rather the only way the tuna embargo would be effective in protecting dolphin was if affected foreign States altered their laws and practices. The Panel concluded that the tuna embargoes “were taken so as to force other countries to change their policies with respect to persons or things within their own jurisdiction.” While Article XX(g) did not provide a clear answer whether such a measure fit within its wording, the GATT Panel concluded:

“That measures taken so as to force other countries to change their policies, and that were effective only if such changes occurred, could not be primarily aimed either at the conservation of an exhaustible natural resource, or at rendering effective restrictions on domestic production or consumption, in the meaning of Article XX(g).”

Respecting Article XX(b), the 1994 GATT Panel examined whether the tuna embargo was “necessary”, in that there was no reasonable alternative for the protection of dolphins. As in the examination of the application of Article XX(g), the GATT Panel took the view that the U.S. tuna embargo would achieve its desired conservation effect only if the foreign State altered its laws and practices and that the goal of the U.S. embargo was to “force” such changes.

“The Panel concluded that measures taken so as to force other countries to change their policies, and that were effective only if such changes occurred, could not be considered ‘necessary’ for the protection of animal life and health in the sense of Article XX(b).”

The 1994 *U.S.-E.E.C. Tuna-Dolphin Panel* concluded, therefore, that neither Article XX(b) nor (g) were available to protect the U.S. tuna embargoes and thus the tuna embargoes employed under the MMPA to conserve dolphin were inconsistent with Article XI(1). The 1994 GATT Panel report was presented to the GATT Council in the summer of 1994. A decision on adoption of the *U.S.-E.E.C. Tuna-Dolphin Panel* was deferred.

## 2) Shrimp Turtle Case<sup>6</sup> Facts of the Case

The WTO Shrimp-Turtle dispute is arguably the most important environment-related case to come before the trade body tribunal. The dispute centres on a 1989 US law (Section

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<sup>6</sup> Source: Centre For Trade and Development, Prabhash Ranjan, [http://www.centad.org/disputes\\_dis\\_02.asp](http://www.centad.org/disputes_dis_02.asp)

609 of the Endangered Species Act) that required the US government to certify that all shrimp imported to the country are caught with that reduce the number of turtles caught in shrimp nets and protect sea turtles from incidental drowning in shrimp trawling nets. In other words, shrimp of only those countries that use turtle-friendly technology is allowed unrestricted entry into the US.

The US-imposed trade embargo was expanded in May 1996 to include all shrimp- exporting countries. The US imposed a ban on the importation of shrimp and shrimp products from India, Malaysia, Pakistan and Thailand, under Section 609 of US Law. However, an exception was allowed under this law. It allowed the importation of shrimp (in cases where turtles were killed) provided the concerned country had a programme aimed at conserving turtles or controlling the incidental deaths of turtles whilst catching shrimp, similar to the one the US had. Further, those countries that did not have a programme aimed at conserving or controlling turtle deaths were allowed to export shrimp to the US provided they used turtle excluding devices (TED) similar to ones used in the US. India, Pakistan, Malaysia and Thailand neither used TEDs nor had a programme aimed at conserving or controlling the deaths of turtles.

India, Pakistan, Malaysia and Thailand lodged complaints at the WTO in early 1997, claiming that Section 609 violated a number of WTO rules. On 9 January 1997, Malaysia and Thailand requested the formation of a panel. On 30 January 1997, Pakistan made a similar request. A panel was established on 25 February 1997. On the same day, India too made a request for the establishment of a panel on the same matter, and another panel was established. On 15 April 1997, the two panels were merged to form a single panel.

On 6 April 1998, a dispute settlement panel ruled against the shrimp embargo, arguing that it represented the kind of unilateral measure that 'insofar as [it] could jeopardise the multilateral trading system, could not be covered by Article XX<sup>7</sup>.' The panel's report was circulated on 15 May 1998. The panel found that the US ban on shrimp was in violation of its obligations under Article XI.1 and Article XX of GATT.

The US appealed against this ruling of the dispute settlement panel to the Appellate Body. US challenged certain provisions of the law, as interpreted by the panel, before the appellate body (AB). The AB circulated its report on 12 October 1998. It reversed the findings of the panel that the US measure was not within the scope of measures permitted under Article XX of GATT 1994. However, it concluded that the US measure, although qualifying for provisional justification under Article XX (g), failed to meet all the requirements of Article XX.

On 6 November 1998, the disputes settlement body (DSB) adopted the AB report and the panel report, as modified by the AB report.

### **Ruling of the dispute settlement panel**

The panel held that the ban imposed by the US on the import of shrimp from these four countries was in violation of Article XI of GATT. Article XI prohibits countries from

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<sup>7</sup> GATT Article XX allows WTO-inconsistent measures to be followed for environmental and health reasons.

maintaining quantitative restrictions (QR) on imports. Article XI.1 states that countries cannot impose any prohibitions or restrictions on imports coming from other countries, either in the form of quotas or import/export licenses. The only form of restriction that a country can employ is the imposition of tariffs. In other words, countries are not allowed to impose non-tariff barriers except in certain cases such as critical shortages of foodstuff, the application of food standards, or to safeguard any balance of payment problems, etc.

In this case, the panel found that the ban imposed by the US on shrimp was like a quantitative restriction and hence conflicted with its obligations under Article XI of GATT. This ruling was not contentious and was not even challenged by the US. However, the panel's other ruling, where it said that the US measure was not stifled under Article XX of GATT, created a stir.

The panel said that the ban imposed by the US on the import of shrimp and shrimp products did not come under Article XX of GATT. Before we understand the panel's ruling it is important to understand what Article XX of GATT says. Article XX of GATT gives the 'general exceptions' whereby countries can restrict the importation of a particular product into their territories based on certain non-trade concerns like protection of public morals or protection of the life and health of humans, animals and plants. However, this restriction will only be valid provided the following conditions are satisfied:

- ◆ The restrictions are not applied in any manner which would arbitrarily or unjustifiably discriminate between countries that have the same conditions.
- ◆ The restrictions are not disguised restrictions on international trade. In other words, such restrictions should not be used as protectionist measures in the name of safeguarding public morals or the life and health of humans, animals or plants, etc.

**These conditions are referred to as the *chapeau* of Article XX.**

The US argued that its measure to impose a ban on the import of shrimp and shrimp products from these four countries was justified under Article XX (g), which allows a ban on imported products related to the conservation of exhaustible natural resources - which is one of the non-trade concerns given in Article XX of GATT. The panel disagreed. But it is important to note that the disagreement was not based on the issue of whether banning the import of shrimp to save turtles from being killed was a measure justifiable under Article XX (g). Rather, it was based on whether or not use of a unilateral measure to restrict imports was the right approach.

The panel argued that the *chapeau* of Article XX of GATT allowed countries to derogate from the GATT provisions provided they do not undermine the multilateral trading regime. Further, according to the panel, if countries started using unilateral measures or policies to restrict or condition market access for a given product, GATT and WTO agreements could no longer serve as a multilateral framework for trade among members, as there would be no security or predictability. The panel, it seems, thought that the US ban on shrimp in the name of protecting turtles was a unilateral environmental policy that it

wanted to impose on other countries. This, according to the panel, could give rise to a precedent where other countries will also start using unilateral policies to restrict market access to countries.

Hence, the panel found that the US measure to ban the importation of shrimp and shrimp products violated Article XX of GATT and was therefore illegal. The US challenged this finding and so the matter came to the AB.

### **Ruling of the appellate body (at the time of appeal by US)**

The panel's finding, that imposing such unilateral measures to restrict importation was illegal, received flak from many quarters. The principal reason was that the case represented a conflict between trade and the environment. Since the panel had decided in favour of trade, the environmental lobby was up in arms against the ruling.

The panel in this case relied on the jurisprudence that emerged out of the tuna-dolphin dispute in GATT, days before the WTO came into existence. According to this jurisprudence, any conflict between a trade and non-trade issue should be resolved in favour of the former.

However, in this case, the Appellate Body (AB) reversed the findings of the panel. The body said that use of unilateral measures could not be considered to be per se inconsistent with the principles of the multilateral trading regime. The AB not only overturned the panel's decision in this case, it also rejected the jurisprudence that had developed out of the tuna-dolphin dispute.

However, this does not mean that the AB found the US ban on shrimp vis-à-vis the four countries legal. The reason for finding the move illegal, given by the AB, was different from the panel's reasoning. The AB said that the panel had adopted a flawed methodology to determine whether the US measure was in violation of Article XX. According to the AB, there are two parts to assessing the validity of a measure vis-à-vis Article XX. The first part is the measure itself. In other words, it first needs to be determined whether the measure adopted by a country falls under any one of the paragraphs given in parts (a) to (j) of Article XX.

Once it has been determined that the particular measure falls under one of these items, the second part is to see whether or not it has been applied in accordance with the *chapeau* of Article XX. In other words, according to the panel, the *chapeau* of Article XX only offers guidance regarding the manner in which a particular measure can be applied. The basic purpose is to see that the conditions given in the *chapeau* of Article XX are honoured while applying a respective measure. According to the AB, while assessing a measure on the touchstone of Article XX, first it needs to be determined whether the measure falls under any of the exceptions given in Articles XX (a) to (j). If the measure does not fall under any of these exceptions then the enquiry will stop and the measure will be considered a violation of Article XX.

However, if the measure falls under any of these exceptions, the next step is to find out whether they are applied in a manner that does not arbitrarily or unjustifiably discriminate between countries where the same conditions prevail, or do not constitute disguised restrictions to international trade (that is, they are not protectionist measures). The panel did not follow this sequence. It tried doing the second step first and hence its methodology was incorrect.

### Completing the legal analysis

The AB, after clarifying the legal position regarding how to implement Article XX, applied the law to the facts. It first tried to find out whether the ban imposed by the US on shrimp imports from the four countries fell under one of the exceptions (Article XX (a) to Article XX (j)) of Article XX.

The US had invoked Article XX (g) to justify the ban imposed on shrimp imports. Article XX (g) allows countries to take measures ‘relating to conservation of exhaustible natural resources. Hence, in this case, the AB needed to find out whether imposing a ban on the import of shrimp because shrimp could be caught only by killing turtles (in countries that did not follow turtle harvesting techniques or did not use TED) fell under ‘conservation of exhaustible natural resources. In other words, was the measure aimed at conserving sea turtles a measure that falls under ‘conservation of exhaustible natural resources’?

The AB held that this particular measure of the US *did* fall under Article XX (g). It is interesting to see how the AB reached this conclusion.

India, Pakistan and Thailand argued that reasonable interpretation of the term ‘exhaustible’ was that it refers to ‘finite resources such as minerals, rather than biological or renewable resources’. Malaysia argued that sea turtles could only be considered under Article XX (b) (adopting measures aimed at protecting the life and health of humans, animals and plants), since XX (g) was meant only for ‘non-living exhaustible natural resources.

The AB rejected these arguments. It argued that Article XX (g) was not limited to the conservation of ‘mineral’ or ‘non-living’ natural resources. Living resources too are finite and hence exhaustible. The AB emphasized the principle of sustainable development given in the preamble of the WTO and argued that both living and non-living things could be exhaustible natural resources. Further, the AB held that sea turtles were included in Appendix-I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora, which lists all species that are threatened with extinction and affected by trade.

Hence, the AB reached the conclusion that sea turtles fall under the category of ‘exhaustible natural resources’ and since the US ban on shrimp imports was a measure related to conserving sea turtles, it qualified as an exception under Article XX (g).

After having determined that the ban on shrimp products fell under one of the exceptions of Article XX, the AB went on to find out whether this exception was in accordance with the *chapeau* (the two conditions given above) of Article XX.

The AB argued that the conditions given in the *chapeau* of Article XX were meant to ensure that the exceptions given in Article XX were not misused or abused for protectionist purposes. Here, the AB found that application of the US measure was in violation of the conditions given in the *chapeau*, that is, it constituted ‘unjustifiable discrimination’ and ‘arbitrary discrimination’ for three reasons.

First, US conservation of sea turtles required all countries to adopt a similar regulatory scheme to conserve sea turtles as adopted by the US. The AB held that the US could not impose a condition on all member countries of the WTO for similar regulatory programmes to those that it followed without taking into consideration the different conditions that may prevail in different countries.

Second, the AB struck down the US’s policy of not allowing shrimp imports from countries that, although they had used Turtle Escape Device (TED) technology comparable in effectiveness to that of the US, had caught the shrimp from waters that were not certified by the US. This policy of the US conveyed that the principal reason behind banning shrimp imports was not the conservation of sea turtles but to impose a similar regulatory mechanism in countries with different conditions.

Third, the AB held that the US measure constituted ‘unjustifiable discrimination’ because it did not negotiate with the four complaining countries, whereas it did negotiate with countries of the Western Hemisphere for the protection and conservation of sea turtles.

### **Implementation of the decision**

On January 27, 2000, the US stated that it had implemented the rulings of the AB. It had issued fresh guidelines for implementing its shrimp-turtle law. It introduced greater flexibility in assessing the turtle-harvesting programmes of other countries, keeping in mind the different conditions.

### **3) Gasoline Case**

The Gasoline case is one of the first WTO cases, brought by Venezuela and later Brazil against the US. On 23 January 1995, only days after the WTO and its new dispute settlement procedure came into being, Venezuela complained to the Dispute Settlement Body that the United States was applying rules that discriminated against gasoline imports. Venezuela formally requested consultations with the United States, as required under WTO dispute settlement process.

The case arose because the United States applied stricter rules on the chemical characteristics of imported gasoline than it did for domestically refined gasoline.

### **Basic issue of the dispute**

Following a 1990 amendment to the Clean Air Act, the US Environmental Protection Agency (EPA) promulgated the Gasoline Rule on the composition and emissions effects of gasoline, in order to reduce air pollution in the US. From 1 January 1995 (coincidentally

the date when the WTO came into being), the Gasoline Rule permitted only gasoline of a specified cleanliness (“reformulated gasoline”) to be sold to consumers in the most polluted areas of the country. In the rest of the country, only gasoline no dirtier than that sold in the base year of 1990 (“conventional gasoline”) could be sold.

The Gasoline Rule applied to all US refiners, blenders and importers of gasoline. It required any domestic refiner which was in operation for at least 6 months in 1990, to establish an individual refinery baseline, which represented the quality of gasoline produced by that refiner in 1990.

The Environmental Protection Agency also established a statutory baseline, intended to reflect average US 1990 gasoline quality. The statutory baseline was assigned to those refiners who were not in operation for at least six months in 1990, and to importers and blenders of gasoline. Compliance with the baselines was measured on an average annual basis. The regulation required the cleanliness of gasoline sold in America’s most polluted cities to improve by 15% over 1990 levels, and all gasoline sold elsewhere in the U.S. to preserve at least 1990 levels.

The Venezuelan Government took its case to the WTO claiming that the U.S. foreign standard pertaining to reformulated gasoline rules put Venezuelan domestic refiners at an unfair disadvantage since US gasoline companies did not have to meet the same standards. It was alleged that this violated the “national treatment” principle<sup>8</sup> and could not be justified under exceptions to normal WTO rules for health and environmental conservation measures.<sup>9</sup> The case did not challenge a country’s right to set environmental standards. The central question was about discrimination - whether the US measure discriminated against imported gasoline and in favour of domestic refineries.

Just over a year later (on 29 January 1996) the dispute panel completed its final report. (By then, Brazil had joined the case, lodging its own complaint in April 1996. The same panel considered both complaints.) The dispute panel agreed with Venezuela and Brazil. The US was found to be violating WTO rules because it discriminated against the gasoline imports.

The United States appealed. In the appeal on the Panel’s findings on Article XX(g), the Appellate Body found that though the baseline establishment rules contained in the Gasoline Rule fell within the terms of Article XX(g), but failed to meet the requirements of the “chapeau” (introductory paragraph) of Article XX. The Appellate Body completed its report, and the Dispute Settlement Body adopted the report on 20 May 1996, one year and four months after the complaint was first lodged. The appeal report upheld the panel’s conclusions (although it made some changes to the panel’s legal interpretation). In the reformulated gasoline ruling (by appellate body), it was held that the US had every right to adopt the highest possible standard to protect its air quality. The WTO’s Appellate Body also confirmed that WTO members may enact any environmental protection

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<sup>8</sup> Article III- GATT

<sup>9</sup> Article XX - GATT

legislation they choose so long as it does not discriminate against foreign imports. However, since the US laws require its own domestic gas producers to follow less stringent standards than those imposed on imported gasoline (in this case from Venezuela and Brazil), the Appellate Body ruled against US as it was held that the US had applied its gasoline standard in a discriminatory manner.

The United States and Venezuela then took six and a half months to agree on what the United States should do. The agreed period for implementing the solution was 15 months from the date the appeal was concluded (20 May 1996 to 20 August 1997). The Dispute Settlement Body monitored progress - the United States submitted "status reports" on 9 January and 13 February 1997, for example. The United States agreed with Venezuela that it would amend its regulation within 15 months, and on 26 August 1997, it reported to the Dispute Settlement Body that a new regulation had been signed on 19 August.

#### 4) Asbestos Case

In this case, the Complainant was Canada and the Respondent were the European Communities (do you mean countries). The Third Parties of the case were Brazil, Zimbabwe and United States.

On 28 May 1998, Canada requested consultations with the EC in respect of measures imposed by France, in particular Decree of 24 December 1996, with respect to the prohibition of asbestos and products containing asbestos, including a ban on imports of such goods. Canada initiated a challenge in the WTO dispute settlement body (DSB) against France's decree banning asbestos from its markets. Canada argued that the French Decree was against Canadian production and export of asbestos and therefore violated the WTO's trade liberalisation rules. In this dispute, the European Communities led by France<sup>10</sup>, represented the culmination of a longstanding effort by Canada to maintain its asbestos mining industry in the face of growing global regulation.

The basic issues were that adoption of a total ban on asbestos use by France and the EC threatens not just Canada's entry into these markets, but also, and perhaps more importantly, Canada's ability to export asbestos to developing countries that might follow the lead of their more industrialised peers. Canada alleged that these measures violate Articles 2, 3 and 5 of the SPS Agreement, Article 2 of the TBT Agreement, and Articles III, XI and XIII of GATT 1994. Canada also alleged nullification and impairment of benefits accruing to it under the various agreements cited.

On 8 October 1998, Canada requested the establishment of a panel. At its meetings on 21 October 1998, the DSB deferred the establishment of a panel. Further to a second request to establish a panel by Canada, the DSB established a panel at its meeting on 25 November 1998. The US reserved its third-party rights. The report of the panel was circulated to Members on 18 September 2000. The Panel found that:

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<sup>10</sup> The European Communities represent individual Member States in WTO disputes because they have exclusive jurisdiction in international trade relations.

- ◆ the “prohibition” part of the Decree of 24 December 1996 does not fall within the scope of the TBT Agreement;
- ◆ the part of the Decree relating to “exceptions” does fall within the scope of the TBT Agreement. However, as Canada had not made any claim concerning the compatibility with the TBT Agreement of the part of the Decree relating to exceptions, the Panel refrained from reaching any conclusion with regard to the latter;
- ◆ chrysotile asbestos fibres as such and fibres that can be substituted for them as such are like products within the meaning of Article III:4 of the GATT 1994;
- ◆ the asbestos-cement products and the fibro-cement products for which sufficient information had been submitted to the Panel are like products within the meaning of Article III:4 of the GATT 1994;
- ◆ with respect to the products found to be like, the Decree violates Article III:4 of the GATT 1994;
- ◆ insofar as it introduces a treatment of these products that is discriminatory under Article III:4, the Decree is justified as such and in its implementation by the provisions of paragraph (b) and the introductory clause of Article XX of the GATT 1994;
- ◆ Canada has not established that it suffered non-violation nullification or impairment of a benefit within the meaning of Article XXIII:1(b) of the GATT 1994.

On 23 October 2000, Canada notified the Dispute Settlement Body of its decision to appeal certain issues of law covered in the Panel Report and legal interpretations developed by the Panel.

The Appellate Body circulated its report on 12 March 2001. The Appellate Body:

- ◆ ruled that the French Decree, prohibiting asbestos and asbestos-containing products had not been shown to be inconsistent with the European Communities’ obligations under the WTO agreements;
- ◆ reversed the Panel’s finding that the TBT Agreement does not apply to the prohibitions in the measure concerning asbestos and asbestos-containing products and found that the TBT Agreement applies to the measure viewed as an integrated whole. The Appellate Body concluded that it was unable to examine Canada’s claims that the measure was inconsistent with the TBT Agreement;
- ◆ reversed the Panel’s findings with respect to “like products”, under Article III:4 of the GATT 1994. The Appellate Body ruled, in particular, that the Panel erred in excluding the health risks associated with asbestos from its examination of “likeness”.
- ◆ reversed the Panel’s conclusion that the measure is inconsistent with Article III:4 of the GATT 1994. The Appellate Body itself examined Canada’s claims under Article III:4 of the GATT 1994 and ruled that Canada has not satisfied its burden of proving the existence of “like products” under that provision; and
- ◆ upheld the Panel’s conclusion, under Article XX(b) of the GATT 1994, that the French Decree is “necessary to protect human ... life or health”.

In this appeal, the Appellate Body adopted an additional procedure “for the purposes of this appeal only” to deal with *amicus curiae* submissions. The Appellate Body received, and refused, 17 applications to file such a submission. The Appellate Body also refused to accept 14 unsolicited submissions from non-governmental organisations that were not submitted under the additional procedure. At its meeting of 5 April 2001, the DSB adopted the Appellate Body report and the panel report, as modified by the Appellate Body report.

## 9.7 Conclusion

Even though in theory the WTO decision making process operates on consensus, in reality, WTO negotiations proceed not by consensus of all members, but by a process of informal negotiations between small groups of countries. This is because the relative market size is the primary source of bargaining power. It is believed that there are advantages to such a system as it encourages efforts to find the most widely acceptable decision. However, the disadvantages are many and include large time requirements and many rounds of negotiation to develop a consensus decision, and the tendency for final agreements to use ambiguous language on contentious points that makes future interpretation of treaties difficult.

Such negotiations are often called “Green Room” negotiations or “Mini-Ministerials”. These processes have been regularly criticised by many of the WTO’s developing country members which are often totally excluded from the negotiations.

The WTO has been the focal point of criticism from people who are worried about the effects of free trade and economic globalisation. Opposition to the WTO centres on four main points:

- ◆ WTO is too powerful, in that it can in effect compel sovereign States to change laws and regulations by declaring these to be in violation of free trade rules.
- ◆ WTO is run by the rich for the rich and does not give significant weight to the problems of developing countries. For example, rich countries have not fully opened their markets to products from poor countries.
- ◆ WTO is indifferent to the impact of free trade on workers’ rights, child labour, the environment and health.
- ◆ WTO lacks democratic accountability, in that its hearings on trade disputes are closed to the public and the media.

On the other hand, supporters of the WTO argue that it is democratic, in that its rules were written by its member States, many of whom are democracies, who also select its leadership. They also argue that, by expanding world trade, the WTO in fact helps to raise living standards around the world.

# UNIT 10

## RIGHT TO ENVIRONMENT AS HUMAN RIGHT

### Contents

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### 10.1 Introduction

The relationship that exists between environmental degradation and the violation of basic human rights, has been the focus of recent debates in national and international human rights and environmental fora. Perspectives of human rights to cases of environmental disruption, like the Bhopal and Chernobyl disasters, has become more acknowledged over the years depicting the fact that human rights and the environment are so inherently interlinked that a clean and healthy environment could be termed a basic human right. Let us not forget that degraded environmental conditions contribute to a large extent, to the spread of communicable diseases. In developing countries, most of the population lack basic health care services, almost a third of these people have no access to safe water supply. The exhaustion of natural resources leads to unemployment and forced migration, and this would, in turn, affect the enjoyment and exercise of basic human rights. Other common concerns relating to conservation of natural resources and protecting human dignity are *inter alia* pollution of rivers, construction of dams and barrages without proper environment impact assessment, lack of access to drinking water free from toxin or other contaminants, increased use of pesticides, degradation of marine and coastal resources, dumping of land based solid waste into the sea, inland mining, poor land use practices, over fishing, destructive fishing techniques, shrimp cultivation, loss of coastal habitats and deforestation, land based pollution etc. have their immediate effects on livelihood and human security thus affecting the basic human rights of peoples. As it is clear to us, poverty situations and human rights abuses are further worsened by environmental degradation. As a result of such environmental destructive actions there is a realisation in the last few decades the link between human rights and environment

leading to an emergence of manifestation that a clean and healthy environment is essential to the realisation of fundamental human rights such as the right to life, personal integrity, family life, health and development.

Many international treaties and local laws and regulations world over on environmental protection have been introduced in the second half of the 20th century. The 1972 Stockholm Declaration proclaimed that man's natural and manmade environment are essential to his well-being and to the enjoyment of basic human rights - even the right to life itself. In 1986, the United Nations General Assembly recognised the relationship between the quality of human environment and the enjoyment of basic human rights [UNGA resolution 2398 (XXII) 1986]. The 1992 Rio Declaration emphasized sustainable development and environmental protection. Moreover, Agenda 21 called for the fulfilment of basic needs, improved living standards for all, better protected and managed ecosystems and a safer, more prosperous future.

The right to a safe environment can be sculpted to fit the general idea of human rights by conceiving it as primarily imposing responsibilities on governments and international organisations. It calls on them to regulate the activities of both governmental and non-governmental agents to ensure that environmental safety is maintained. The basis for justification of this right is that environmental problems pose serious threats to fundamental human interests, values, or norms in the society. Therefore, governments must appropriately be endowed with the responsibility of protecting people against these threats. Information access as key to promote good governance and environmental rights has been the key feature in most of the multilateral environmental agreements.

**Concept of Human Rights: An Overview** - Human rights are international norms that help to protect all people everywhere from severe political, legal and social abuses dealing mainly with how people should be treated by their governments and institutions. Human rights protect people against familiar abuses of people's dignity and fundamental interests. These rights exist in morality and in law at the national and international levels. It is the responsibility of the State or governments to ensure enforcement of human rights and to call for compliance of other States actors and individuals with the same. Some examples: right to a fair trial when charged with a crime, right to engage in political activity, right to freedom of religion etc.

The Universal Declaration of Human Rights (1948) sets out a list of over two dozen specific human rights that countries should respect and protect. After the creation of the Universal Declaration, efforts were made to create treaties that would make the rights in the Universal Declaration into norms of international law. And it was decided to create two separate treaties. Drafts of the two International Covenants were submitted to the General Assembly for approval in 1953, but approval was much delayed. Almost twenty years after the Universal Declaration, the United Nations General Assembly finally approved the International Covenant on Civil and Political Rights and the International Covenant on Economic, Social and Cultural Rights both in 1966. The Civil and Political Covenant contains most of the civil and political rights found in the Universal Declaration. The Social Covenant contains the economic and social rights found in the second half of the

Universal Declaration. These treaties embodying Universal Declaration rights received enough State Parties to become operative in 1976 and have now become the most important UN human rights treaties.

These specific rights of the Universal Declaration of Human Rights can be divided into six or more families: *security rights* that protect people against crimes such as murder, massacre, torture and rape; *due process rights* that protect against abuses of the legal system such as imprisonment without trial, secret trials, and excessive punishments; *liberty rights* that protect freedoms in areas such as belief, expression, association, assembly, and movement; *political rights* that protect the liberty to participate in politics through actions such as communicating, assembling, protesting, voting, and serving in public office; *equality rights* that guarantee equal citizenship, equality before the law, and non-discrimination; and *social (or "welfare") rights* that require provision of education to all children and protections against severe poverty and starvation. Another family that might be included is *group rights*. The Universal Declaration does not include group rights, but subsequent treaties do. Group rights include protections of ethnic groups against genocide and the ownership by countries of their national territories and resources. The other important development in the evolution of group rights is environmental rights the justification for this right must show that environmental problems pose serious threats to fundamental human interests, values, or norms; that governments may protect.

## 10.2 Environmental Protection and Human Rights

As it develops, international environmental law raises many issues already familiar to international human rights lawyers. In the environmental context, questions related to the existence and application of minimum international standards and the proper role of individuals and other non-governmental organisations in the international legal process have raised analogous issues to those arising in international human rights law. The international legal issues are closely related, as is now reflected in the developing activities of human rights bodies. Allegations of civil rights breaches continue to abound in the environmental discussion and debate and of environmental campaigners; restrictions on the right of association and assembly; the mistreatment of 'whistle-blowers'; press censorship; and restrictions on rights of access to environmental information.

In 1968, the UN General Assembly first recognised the relationship between the quality of the human environment and the enjoyment of basic rights. The 1972 Stockholm declaration proclaimed that, man's natural and manmade environment 'are essential to his well-being and to the enjoyment of basic human rights - even the right to life itself and declared in Principle I that:

Man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being, and he bears a solemn responsibility to protect and improve the environment for present and future generations.

The international community has not, however, defined in practical terms the threshold below which the level of environmental quality must fall before a breach of a person's

human rights will have occurred. Nevertheless, some non-binding and widely accepted declarations supporting the individual's right to a clean environment have been adopted. Although the 1982 World Charter for Nature does not expressly provide for the individual's right to a clean environment, it was one of the first instruments to recognise the right of individuals to participate in decision-making and have access to means of redress when their environment has suffered damage or degradation. The 1989 Declaration of the Hague on the Environment recognised; the fundamental duty to preserve the ecosystem and the right to live in dignity in a viable global environment, and the consequent duty of the community of nations vis-à-vis present and future generations to do all that can be done to preserve the quality of the environment. The UN General Assembly has declared that 'all individuals are entitled to live in an environment adequate for their health and well-being'; and the UN Commission on Human Rights has affirmed the relationship between the preservation of the environment and the promotion of human rights. More specifically, the Sub-Commission on Prevention of Discrimination and Protection of Minorities has considered the relationship between human rights and the movement and dumping of toxic and dangerous products and wastes, supported further study, and considered the relationship between human rights in the context of chemical weapons. The Sub-Commission has also received reports on 'Human Rights and the Environment' which analyse many of the key concepts and provide information on decisions of international bodies. More specifically, the UN Commission on Human Rights has declared that the movement and dumping of toxic and dangerous products endanger basic human rights such as 'the right to the highest standard of health, including its environmental aspects'. Efforts to further develop language on environmental rights continue under the auspices of several international institutions including the Council of Europe and the UN Economic Commission for Europe. Other efforts include the IUCN's draft International Covenant on Environment and Development prepared by the IUCN's Commission on Environmental Law.

Many States have adopted national measures linking the environment and individual rights. The constitution of about 100 States now expressly recognises the right to clean environment. These constitutional provisions vary in their approach: they provide for a State duty to protect and preserve the environment; or declare that the duty to be the responsibility of the State and citizens; or declare that the duty is imposed only upon citizens; or declare that the individual's right together with the individual or collective duty of citizens to safeguard the environment; or provide for a combination of various State and citizen duties together with an individual right.

What are the practical consequences of recognising the link between international human rights law and the protection of the environment? The question may be addressed in the context of the distinction which has been drawn in international human rights law between economic and social rights, and civil and political rights. The nature and extent of economic and social rights determine the substantive rights to which individuals are entitled, including in particular the level below which environmental standards (for example, in relation to pollution) must not fall if they are to be lawful. Civil and political rights which are also substantive in nature and sometimes referred to as 'due process' rights,

determines procedural and institutional rights (such as the right to information or access to judicial or administrative remedies). International environmental law has progressed considerably in building upon existing civil and political rights and developing important new obligations, most notably in the 1998 Aarhus Convention which provides for rights of access to information, to participation in decision indicate that international courts and tribunals are increasingly willing to find violations of substantive environmental rights.

It is pertinent to learn about the relationship between human rights law and environmental law while discussing about the two fields of law. Both the fields have some common objectives in terms of social, cultural ethos and values that have enabled linkages between the two fields. Interestingly human rights law and environmental law's common values are rooted within the 'collective consciousness' of the society that has opened up new vistas for renewed environmental awareness. The other notable development is that both the fields of law have become internationalised and institutionalised within the system of United Nations and the civil society as well. The international community has assumed the commitment to observe the realisation of human rights and respect for the environment. On the other hand, the phenomena brought on by environmental degradation transcends national and political boundaries and is of critical importance to the preservation of world peace and security. In view of the foregoing, it can be stated that the law of human rights and environmental law have universalised their object of protection making a transition from human centric nature of protection that further resulted in a wider concept of protection, namely, 'Human Security'. Linkages between human rights and protection of environment had been long recognised since Stockholm and Rio Declarations leading to emergence of this link in many international and regional treaties. Before we discuss the synergy or emergence of human rights provision in environment treaties and vice versa, it is relevant to illustrate the interrelationship between environment quality and human rights basing on issues relating to scope of right to water as human right; indigenous peoples right to conservation and protection of environment.

#### ◆ Right to water as human right

Water, a limited natural resource and a public good fundamental for life and health, is required for a range of different purposes, besides personal and domestic uses, to realise many of the human rights enshrined in the International Covenant on Economic, Social and Cultural Rights (ICESSR). Water is essential for securing livelihoods (right to gain a living by work) and to produce food (right to adequate food) and ensure environmental hygiene (right to health) enjoying certain cultural practices (right to take part in cultural life). Therefore, human right to water is indispensable for leading a life in human dignity. It is a prerequisite for the realisation of other human rights. Over a billion persons lack access to a basic water supply, while several do not have access to adequate sanitation, which is the primary cause of water contamination and diseases linked to water. The continuing contamination, depletion and unequal distribution of water is exacerbating existing poverty. Environmental hygiene, as an aspect of the right to health under Article 12(2)(b) of the ICESSR, encompasses taking steps on a non-discriminatory basis to prevent

threats to health from unsafe and toxic water conditions. The right to water, like any human right, imposes three types of obligations on States parties: obligations to respect, obligations to protect and obligations to fulfil. It should also be seen in conjunction with other rights enshrined in the International Bill of Human Rights, foremost amongst them the right to life and human dignity.

The right to water has been recognised in a wide range of international documents, including treaties, declarations and other standards. For instance, Article 14(2) of the Convention on the Elimination of All Forms of Discrimination Against Women (1979) stipulates that States Parties shall ensure to women the right to “enjoy adequate living conditions, particularly in relation to ... water supply”. Article 24(2) of the Convention on the Rights of the Child (1989) requires States Parties to combat disease and malnutrition “through the provision of adequate nutritious foods and clean drinking-water”. Around the world there is a need to provide water security, which means ensuring that freshwater, coastal and related ecosystems are protected and improved; that sustainable development and political stability are promoted, that every person has access to enough safe water at an affordable cost to lead a healthy and productive life and that the vulnerable are protected from the risks of water-related hazards.

Therefore, governments should ensure that natural water resources are protected from contamination by harmful substances and pathogenic microbes. Likewise, States parties should monitor and combat situations where aquatic ecosystems serve as a habitat for vectors of diseases and pose a risk to human living environments.

#### ◆ **Indigenous Peoples’ right to conservation and protection of environment**

As we all know the link between global environmental change and the rights of indigenous populations’ results from the close relationship between indigenous peoples’ cultural and economic situations and their environmental settings. The Universal Declaration of Human Rights (1948) and International Covenant on Civil and Political Rights (1966) have specific significance for indigenous peoples. The Universal Declaration provides a common standard for the human rights of all peoples and all nations, and proclaims the importance of traditional, political and civil rights, as well as basic economic social and cultural rights. The Covenant spells out civil and political rights and guiding principles based on the Universal Declaration.

The 1957 International Labour Organisation (ILO) Convention No. 107, Protection and Integration of Indigenous and Other Tribal and Semi-Tribal Populations in Independent Countries, addresses the right of indigenous peoples to pursue material well-being and spiritual development, and was a first international instrument in specific support of indigenous peoples. Largely because of its view that indigenous peoples should be integrated into the larger society, a view that subsequently came to be seen by many as inappropriate, Convention No. 107 was followed in 1989 by ILO Convention 169, Convention Concerning Indigenous and Tribal Peoples in Independent Countries. Convention No. 169 presents the fundamental concept that the way of life of indigenous and tribal peoples should and will survive, as well as the view that indigenous and tribal peoples and their

traditional organisations should be closely involved in the planning and implementation of development projects that affect them. As the most comprehensive and most current international legal instrument to address issues vital to indigenous and tribal peoples, Convention No. 169 includes articles that deal with consultation and participation, social security and health, human development, and the environment. To date, Convention No. 169 has been ratified by only a few countries, and so far by none in the Asian and Pacific Region.

This sensitive relationship was well recognised in Agenda 21, which specifies that “in view of the interrelationship between the natural environment and its sustainable development and the cultural, social, economic and physical well-being of indigenous people, national and international efforts to implement environmentally sound and sustainable development should recognise, accommodate, promote and strengthen the role of indigenous people and their communities”. The 1992 Convention on Biodiversity calls on Contracting Parties to respect traditional indigenous knowledge with regard to the preservation of biodiversity and its sustainable use. The Vienna Declaration and Programme of Action emerging from the 1993 World Conference on Human Rights recognise the dignity and unique cultural contributions of indigenous peoples, and strongly reaffirms the commitment of the international community to the economic, social, and cultural well-being of indigenous peoples and their enjoyment of the fruits of sustainable development.

The emerging concern for indigenous peoples prompted the United Nations to declare 1993 as the International Year of the World’s Indigenous Peoples and the decade from December 1994 as the Indigenous Peoples Decade. On September 13, 2007, the General Assembly of the United Nations adopted the Declaration of the Rights of Indigenous People (herein after referred to as ‘Declaration’). The General Assembly refers to the Charter of the United Nations and the Universal Declaration of Human Rights as the bases of the right of indigenous people to full enjoyment of human rights and fundamental freedoms. The General Assembly recognises that indigenous people contribute to the diversity and richness of civilisations and cultures, which constitute the common heritage of mankind.

The Declaration addresses both individual and collective rights, cultural rights and identity, right to education, employment, health, language etc. 144 States voted in favour of the Declaration. Some of the countries which voted in favour of the Declaration were India, Indonesia, Japan, Malaysia, Netherlands, Switzerland etc. Those who voted against were Australia, Canada, New Zealand and the Russian Federation.

The Declaration states that indigenous people have the right to maintain and strengthen their distinct political, legal, economic, social and cultural institutions and to participate in the political, economic, social and cultural life of the State. Also, the Declaration sets forth responsibilities for States in terms of taking effective and appropriate measures to ensure continuing improvement of their economic and social conditions, with special emphasis on vulnerable groups like women, children, elders and persons with disabilities. States shall also give legal recognition and protection to lands, territories and resources traditionally owned or used otherwise by indigenous people.

### 10.3 Environmental Rights in International Law

Principle 1 of the Stockholm Declaration established a foundation for linking human rights and environmental protection, declaring that man has a fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being. It also announced the responsibility of each person to protect and improve the environment for present and future generations. Resolution 45/94 the UN General Assembly stated that all individuals are entitled to live in an environment adequate for their health and well-being and called for enhanced efforts towards ensuring a better and healthier environment. The 1992 Conference of Rio de Janeiro on Environment and Development formulated the link between human rights and environmental protection largely in procedural terms. Principle 10 of the Rio Declaration on Environment and Development proclaims as follows:

*Environmental issues are best handled with the participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided.*

Rights to information, participation and remedies in respect to environmental conditions thus formed the focus of the Rio Declaration. In addition to Principle 10, the Declaration includes provisions on the participation of different components of the population: women (Principle 20), youth (Principle 21), and indigenous peoples and local communities (Principle 22). Public participation also is emphasized in Agenda 21. The Preamble to Chapter 23 states:

*One of the fundamental prerequisites for the achievement of sustainable development is broad public participation in decision-making. Furthermore, in the more specific context of environment and development, the need for new forms of participation has emerged. This includes the need of individuals, groups, and organisations to participate in environmental impact assessment procedures and to know about and participate in decisions, particularly those that potentially affect the communities in which they live and work. Individuals, groups and organisations should have access to information relevant to environment and development held by national authorities, including information on products and activities that have or are likely to have a significant impact on the environment, and information on environmental protection measures.*

Chapter 23 proclaims that individuals, groups and organisations should have access to information relevant to the environment and development, held by national authorities,

including information on products and activities that have or are likely to have a significant impact on the environment, and information on environmental protection matters. Agenda 21 also calls on governments and legislators to establish judicial and administrative procedures for legal redress and remedy for actions affecting the environment that may be unlawful or infringe on rights under the law, and to provide access to individuals, groups and organisations with a recognised legal interest. Section III of Chapter 23 identifies major groups whose participation is needed: women, youth, indigenous and local populations, non-governmental organisations, local authorities, workers, business and industry, scientists, and farmers. Agenda 21 also calls for public participation in environmental impact assessment procedures and in decisions, particularly those that potentially affect the communities in which individuals and identified groups live and work. It also encourages governments to create policies that facilitate a direct exchange of information between the government and the public in environmental issues, suggesting the EIA process as a potential mechanism for participation.

Ever since preparations started for the Rio Conference, global and regional treaties adopted in the fields of human rights and environmental protection have included provisions specific to the rights contained in Principle 10. Generally, global and regional environmental treaties since 1991 contain at least some reference to public information, access or remedies.

The following sections refer to the relevant human rights provisions in multilateral environmental treaties adopted since the Rio Conference began in 1991.

## Treaty Provisions

### Global environmental treaties

- 1) An obligation to inform is foreseen by Annex-II to the *Protocol on Environmental Protection on the Conservation of Antarctic Fauna and Flora* (Madrid, 1991). According to Article 5, the Parties shall prepare and make available information setting forth and providing lists of Specially Protected Species and relevant protected Areas to all those persons present or intending to enter the Antarctic Treaty area with a view to ensuring that such persons understand and observe the provisions of the Annex. A parallel provision is inserted in Annex-V of the Protocol, on Area Protection and Management, according to which, each Party shall make available information setting forth, *inter alia*, the location of protected areas and of historic monuments and sites, as well as the management plans, with a view to ensuring that all persons visiting or proposing to visit Antarctica understand and observe the provisions of the Annex.
- 2) The *Framework Convention on Climate Change* (June 4, 1992), Article 4(1)(i) obliges Parties to promote public awareness and to “encourage the widest participation in this process including that of non-governmental organisations”. Article 6, provides that its Parties “shall promote and facilitate at the national and, as appropriate, sub-regional and regional levels, and in accordance with national laws and regulations, and within their respective capacities” public access to information and public participation.

- 3) *Protocol to amend the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage* and the *Protocol to amend the International Convention on Civil Liability for Oil Pollution Damage* (London, November 27, 1992) extends the provisions of the 1969 conventions that aim to provide remedies for those who suffer harm from oil pollution damage.
- 4) The *Convention on Biological Diversity* refers in its preamble to the general lack of information and knowledge regarding biological diversity and affirms the need for the full participation of women at all levels of policy-making and implementation. Article 13 calls for education to promote and encourage understanding of the importance of conservation of biological diversity. Article 14 provides that each contracting party, as far as possible and as appropriate, shall introduce appropriate environmental impact assessment procedures and where appropriate allow for public participation in such procedures. The Convention allows for public participation in environmental impact assessment procedures in Article 14(1)(a) and calls for the participation of indigenous and local peoples in decisions about sharing their knowledge, innovations and practices concerning conservation and sustainable use of biological diversity. (Art. 8(j)).
- 5) *International Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, particularly in Africa* (Paris, June 17, 1994) contains numerous provisions on environmental rights, including in the Preamble, Article 10(2)(e), 13(1)(b), 14(2) (19) and 25. The *Convention* goes furthest among recent treaties in calling for public participation, embedding the issue throughout the agreement. Article 3(a) and (c) begin by recognising that there is a need to associate civil society with the actions of the State. The treaty calls for an integrated commitment of all actors: national governments, scientific institutions, local communities and authorities, and non-governmental organisations, as well as international partners, both bilateral and multilateral.
- 6) The IAEA *Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management* is based to a large extent on the principles contained in the IAEA document “The Principles of Radioactive Waste Management”. The Preamble of the treaty recognises the importance of informing the public on issues regarding the safety of spent fuel and radioactive waste management. This view is reinforced in Articles 6 and 13, on the citing of proposed facilities; they require each State Party to take the appropriate steps to ensure that procedures are established and implemented to make information available to members of the public on the safety of any proposed spent fuel management facility or radioactive waste management facility.
- 7) The *International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea* (London, May 3, 1996) is similar to the *Convention on Liability for Oil Pollution Damage*. It ensures a remedy for those injured by damage, imposes a mandatory insurance requirement, and establishes limits on liability and a compensation fund.

- 8) Article 32 of the *UN Convention on the Law of the Non-navigational Uses of International Watercourses* (New York, May 21, 1997) concerns freedom from discrimination in respect to remedies. It says that watercourse States shall not discriminate on the basis of nationality or residence or place when the injury occurred, in granting to persons who suffered or are under a serious threat of suffering significant transboundary harm, in accordance with their legal system, access to judicial or other procedures, or a right to claim compensation or other relief in respect of significant harm caused by such activities carried on in their territory.
- 9) On September 12, 1997, a *Joint Protocol to amend the Vienna Convention on Civil Liability for Nuclear Damage (21 May 1963) and the Paris Convention on Third Party Liability in the Field of Nuclear Energy (29 July 1960) as amended*, updated the provisions imposing civil liability on owners or operators of nuclear facilities and providing remedies for those injured as a result of nuclear incidents.
- 10) *Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade* (September 10, 1998). Article 15(2) requires each State Party to ensure, “to the extent practicable” that the public has “appropriate” access to information on chemical handling and accident management and on alternatives that are safer for human health or the environment than the chemicals listed in Annex-III to the Convention.
- 11) *Cartagena Protocol on Biosafety to the Convention on Biological Diversity* (Montreal, January 29, 2000), Article 23 concerns public awareness and participation, requiring the Parties to facilitate awareness, education and participation concerning the safe transfer, handling and use of living modified organisms in relation to the conservation and sustainable use of biological diversity, considering risks to human health. Access to information on imported LMOs should be insured and the public consulted in the decision-making process regarding such organisms, with the results of such decisions made available to the public. Further, each Party shall endeavour to inform its public about the means of public access to the Biosafety Clearing-House created by the Convention.
- 12) Article 10(1) of the *Convention on Persistent Organic Pollutants* (Stockholm, May 22, 2001) aims at “protecting human health and the environment from persistent organic pollutants”. The treaty provides that each Party shall, within its capabilities, promote and facilitate provision to the public of all available information on persistent organic pollutants and ensure that the public has access to public information and that the information is kept up-to-date (Art.10 (1)(b) and (2)). Educational and public awareness programmes are to be developed especially for women, children and the least educated. Parties are to make accessible to the public on a timely and regular basis the results of their research, development and monitoring activities pertaining to persistent organic pollutants (Art. 11). Parties that exchange information pursuant to the Convention shall protect any confidential information, but information on health and safety of humans and the environment shall not be regarded as confidential (Art.9 (5)).

### Global human rights treaties

- 1) The *Convention on the Rights of the Child* (New York, November 20, 1989) refers to aspects of environmental protection in respect to the child's right to health. Article 24 provides that States Parties shall take appropriate measures to combat disease and malnutrition "through the provision of adequate nutritious foods and clean drinking water, taking into consideration the dangers and risks of environmental pollution". (Art. 24(2)(c)). Information and education are to be provided to all segments of society on hygiene and environmental sanitation. (Art. 24(2)(e)).
- 2) *ILO Convention No. 169 concerning Indigenous and Tribal Peoples in Independent Countries* (Geneva, June 27, 1989) contains numerous references to the lands, resources, and environment of indigenous peoples. Article 2 provides that actions respecting indigenous peoples shall be developed with the participation of the peoples concerned. Special measures are to be adopted for safeguarding the environment of such peoples consistent with their freely-expressed wishes (Art. 4). States Parties must consult indigenous peoples (Art. 6) and provide for their participation in formulating national and regional development plans that may affect them (Art. 7). Environmental impact assessment must be done of planned development activities with the co-operation of the peoples concerned (Art. 7(3)) and "Governments shall take measures, in co-operation with the peoples concerned, to protect and preserve the environment of the territories they inhabit." (Art. 7(4)). Rights to remedies are provided in Article 12. Part II of the Convention addresses land issues, including the rights of the peoples concerned to the natural resources pertaining to their lands. The rights include "the right to participate in the use, management and conservation of these resources." (Art. 15). Article 30 requires the governments to make known to the peoples concerned their rights and duties.

### Regional human rights treaties

- 1) The *African Charter on Human and Peoples' Rights*, (Banjul June 26, 1991) contains several provisions related to environmental rights. Article 21 provides that "All peoples shall freely dispose of their wealth and natural resources and adds that this right shall be exercised in the exclusive interest of the people." Article 24, which could be seen to complement or perhaps conflict with Article 21, states that "All peoples shall have the right to a general satisfactory environment favourable to their development." Article 7 provides that "every individual shall have the right to have his cause heard".
- 2) Article 11 of the *Additional Protocol to the American Convention on Human Rights in the area of Economic, Social and Cultural Rights* (San Salvador, November 17, 1988), is entitled: "Right to a healthy environment". It proclaims:
  - ◆ Everyone shall have the right to live in a healthy environment and to have access to basic public services.
  - ◆ The States Parties shall promote the protection, preservation and improvement of the environment.

- 3) The *European Convention on the Exercise of Children's Rights* (Strasbourg, January 25, 1996) aims at ensuring access to information and participation of children in decisions relevant to them, as well as appropriate remedies.

## 10.4 Right to Environment as a Human Rights in India

A broad recognition of the linkage between human rights and the environment since the United Nations Conference on Environment and Development has come through the development of Principle 10 of the Rio Declaration on Environment and Development. States and international organisations are increasingly recognising the rights of access to information, public participation, and access to justice. A notable example of such progress was the entry into force of the 1998 Aarhus Convention. Respect for human rights is broadly accepted as a necessary condition for environmental protection and sustainable development. The fact that effective enjoyment of human rights protection, and that human rights and the environment are interdependent and inter-related is now broadly reflected in national and international practices. In relation to substantive matters, a growing body of case law from many national jurisdictions is clarifying the linkages between human rights and the environment, in particular by: 1) recognising the right to a healthy environment as a fundamental human right; 2) allowing litigation based on this right, and facilitating its enforceability in domestic law by liberalising provisions on standing; 3) acknowledging that other human rights recognised in domestic legal systems can be violated as a result of environmental degradation. The important role that the judiciary (national and international) can play in this regard cannot be overlooked.

Therefore, a rights-based approach can enhance the impact of policies and programmes at the national and international levels on this matter. It is important that Government and civil society groups associated with the protection and promotion of human rights and the environment should be more proactive in facilitating protection of environment and individuals. There is need for further developments in this respect, including through the adoption of new international legal instruments (at regional levels or, some suggest, the global level) to provide effectively for rights of access to information, public participation in decision-making and access to justice.

The Constitution (Forty Second Amendment) Act 1976 explicitly incorporated environmental protection and improvement as part of State policy through the insertion of Article 48A of the Constitution of India. Article 51A (g) imposed a similar responsibility on every citizen "to protect and improve the natural environment including forests, lakes, rivers and wildlife and to have compassion for all living creatures". The Indian Supreme Court has made a significant contribution in attempting to define right to environment. When a claim is brought under a particular article of the Constitution, this allows an adjudicating body such as the Supreme Court to find a breach of this article, without the need for a definition of an environmental right as such. All that the Court needs to do is what it must in any event do; namely, define the Constitutional right before it. Accordingly, the Court prepared to find a risk to life, or damage to health, on the facts before it, would set a standard of environmental quality in defining the right

litigated. This is well illustrated by the cases that have come before the Supreme Court, in particular in relation to the broad meaning given to the Right to Life under Article 21 of the Constitution. The right to life has been used in a diversified manner in India. It includes, *inter alia*, the right to survive as a species, quality of life, the right to live with dignity and the right to livelihood. Article 21 of the Indian Constitution states: 'No person shall be deprived of his life or personal liberty except according to procedures established by law.' The Supreme Court expanded this right in two ways. *Firstly*, any law affecting personal liberty should be reasonable, fair and just. *Secondly*, the Court recognised several unarticulated liberties that were implied by Article 21. It is by this second method that the Supreme Court interpreted the right to life and personal liberty to include the right to the environment.

*Rural Litigation and Entitlement Kendra v. State of U.P* (1985) was one of the earliest cases where the Supreme Court dealt with issues relating to environment and ecological balance. The expanded concept of the right to life under the Indian Constitution was further elaborated on in *Francis Coralie Mullin v. Union Territory of Delhi* (1981) where the Supreme Court set out a list of positive obligations on the State, as part of its duty correlative to the right to life. In this case, the Court adopted an expanded understanding of human rights. It is only through such an understanding that claims involving the environment can be accommodated within the broad rubric of human rights. The link between environmental quality and the right to life was further addressed by the Supreme Court in the *Charan Lal Sahu v. Union of India* (1990). Similarly, in *Subash Kumar v. State of Bihar* (1991), the Court observed that 'right to life guaranteed by Article 21 includes the right of enjoyment of pollution-free water and air for full enjoyment of life'. Through this case, the Court recognised the right to a wholesome environment as part of the fundamental right to life. This case also indicated that the municipalities and a large number of other concerned governmental agencies could no longer rest content with unimplemented measures for the abatement and prevention of pollution. They may be compelled to take positive measures to improve the environment. The Supreme Court has used the right to life as a basis for emphasizing the need to take drastic steps to combat air and water pollution. It has directed the closure or relocation of industries and ordered that evacuated land be used for the needs of the community. The courts have taken a serious view of unscientific and uncontrolled quarrying and mining, issued orders for the maintenance of ecology around coastal areas, shifting of hazardous and heavy industries and in restraining tanneries from discharging effluents.

Another expansion of the right to life is the right to livelihood (Article 41), which is a directive principle of State policy. This extension can check government actions in relation to an environmental impact that has threatened to dislocate the poor and disrupt their lifestyles. A strong connection between the right to livelihood and the right to life in the context of environmental rights has thus been established over the years. Especially in the context of the rights of indigenous people being evicted by development projects, the Court has been guided by the positive obligations contained in Article 48A and 51A(g), and has ordered adequate compensation and rehabilitation of the evictees.

Matters involving the degradation of the environment have often come to the Court in the form of petitions filed in the public interest. This mode of litigation has gained momentum and has facilitated espousal of the claims of those who would have otherwise gone unrepresented.

## 10.5 Right to Development under International Law

In March 1987, the World Commission on Environment and Development, popularly known as the Brundtland Commission, focused on the critical relationship between development and environment:

*The ability to choose policy paths that are sustainable requires that the ecological dimensions of policy be considered at the same time as the economic, trade, energy, agricultural, industrial, and other dimensions - on the same agendas and in the same national and international institutions. That is the chief institutional challenge of the 1990s.*

The global concern with the malfunctioning of the international economy - with its manifest inability to meet the expectations of developed and developing countries, its manifest failures to generate the desired levels of global growth or to meet the basic needs of the greater majority of the world's people - had led in the seventies to the search for a (New International Economic Order) NIEO. The quest for order connotes a search for principles and norms which would mould policies and strategies of States as well as of international organisations, in particular international financial institutions. But instead of yielding consensus on such a framework, the proposals for an NIEO were perceived unsympathetically by the developed States as an unacceptable threat to their interests. This resulted in adversarial discussions, and ultimately to a stalemate in international organisations. The concerns, however, which have led to the proposals for the NIEO, have been expressed in fresh attempts to focus on the imperatives of development on a global scale.

This elucidation of the concept of development in the UNHRD, for instance, focused on 'the human person' as the central subject of development and sought to find the basis of an international obligation on the part of States and of the international community to promote development by relying on the respect for the basic human rights of all person, which had been given universal recognition. Not only did it seek to find a new basis for founding responsibility of States and international community to promote development, it also identified important elements which must be embraced by the concept of 'development' - such elements as: equality of opportunity for all in their access to basic resources, education, health services, food, housing, employment and the fair distribution of income, ensuring an active role for women in the development process, and adoption of economic and social reforms to remove social injustices. Another important component is for State to 'encourage popular participation in all spheres as an important factor in development'.

The Report of the World Commission on Environment and Development published in March 1987 focused on the critical link between development and environment:

*Ecology and economy are becoming even more inter-woven-locally regionally, nationally and globally-into a seamless net of causes and effects...*

Impoverishing the local resource base can impoverish wider areas. Deforestation by highland framers causes flooding on lowland farms; factory pollution robs local fishermen of their catch. Such local cycles now operate nationally and regionally. Dryland deforestation sends environmental refugees in their millions across national borders. Deforestation in Latin America and Asia in causing more floods in downhill, downstream nations. Acid precipitation and nuclear fall-out spread across the borders of Europe. Similar phenomena are emerging on a global scale and loss of ozone. Internationally traded hazardous chemicals entering goods are themselves internationally traded...

Over the past few decades, life threatening environmental concerns have surfaced in the developing world. Yet these developing countries must operate in a world in which the resources gap between most developing and industrialised world dominates in the rulemaking of some key international bodies, and in which the industrialised world has already used much of the planet's ecological capital. This inequality is the planet's main 'environmental' problem; it is also its main 'development' problem.

#### - **New framework to tackle chronic problems**

The Brundtland report addresses the chronic problems of hunger, malnutrition, illiteracy and other incidents of poverty in the developing world and identifies the deficiencies both in economic system and the ecological system which obstructs development: deteriorating terms of trade, trade barriers, mounting debt burdens, high risk technologies which accelerate the consumption of finite resources and cause pollution environmental degradation.

The need for a new framework in which to promote global development and protect the global environment is underlined and the concept of 'sustainable development' is put forward as an overriding global objective to be secured by the universal acceptance of new principles and rules.

Thus 'sustainable development' is defined as development that 'meets the needs of the present without compromising the ability of future generations to meet their own needs'. Key elements implicit in the concept are spelt out thus:

- ◆ The concept of sustainable development does imply limits - not absolute limits but limitations imposed by the present state of technology and social organisations and environmental resources and the ability of the biosphere to absorb the effect of human activities;
- ◆ Sustainable development requires meeting the basic needs of all and extending to all the opportunity to fulfil their aspirations for a better life. A world in which poverty is endemic will always be prone to ecological and other catastrophes;

- ◆ Meeting essential needs requires not only a new era of economic growth for nations in which the majority are poor, but those poor get their full share of the resources required to attain the growth;
- ◆ Such equity would be aided by political systems that secure effective citizen participation in decision-making and by greater democracy in international decision-making;
- ◆ Sustainable development requires that those who are affluent adopt lifestyles within the planet's ecological means - in their use of energy, for example, further rapidly growing population can increase the pressure on resources;
- ◆ Sustainable development is not a fixed state of harmony but rather a process of change in which the exploitation of resources, the divesting of investments, the orientation of technological development and institutional change are made consistent with future as well as present needs.

A critique of the Brundtland report suggests that the principles urged by it need to be supplemented by other principles, in order to achieve sustainable development. Thus, the following additional principles have been urged in the study entitled *Beyond Brundtland*:

- ◆ the principle of the cultural and social integrity of development; quoting a statement from Lloyd Timberlake, it would mean that 'development must grow from within, and not be slapped on from the outside';
- ◆ the ecological principle; development must be compatible with and restore diversity and rely on sustainable forms of resources use;
- ◆ the solidarity principle: development must provide the basic necessities of life and secure living conditions for all people, promote equity and avoid unequal exchange;
- ◆ the emancipation principle: development must foster self-reliance, local control over resource empowerment and participation by the underprivileged and marginalised, and opportunity for action people can feel is fulfilling;

This concept encapsulates many of the principles and normative prescriptions which had earlier been put forward in the NIEO proposals, and which are spelt out in the UNHRD. Thus, human persons as the centre of development are recognised whose needs, present and future, are made the central concern of development - since the needs envisaged are human needs. Global disparities call for application of equitable principles to ensure meeting the 'basic needs of all'. A global strategy for promoting growth is urged which will adopt an integrated approach recognising the linkages between natural resources, financial resources, technology and the operation of institutions at the national and international level. Such a strategy calls for institutional and legal change.

#### Related Legal Documents

- ◆ *1977 United Nations Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques (ENMOD)*

- ◆ *Additional Protocol I to the 1949 Geneva Conventions Relating to the Victims of Armed Conflict*
- ◆ *Rome Statute of the International Criminal Court*

## 10.6 Conclusion

Over the past decade, environmental considerations have been integrated into human rights discourse and, to a lesser extent, into the definition and application of international humanitarian rules governing methods and means of armed conflict. In relation to human rights, notwithstanding the fact that most human rights treaties do not expressly refer to environmental considerations, practice under those conventions recognises that a failure to adequately protect the environment may give rise to individual human rights, particularly in relation to rights associated with the enjoyment of a person's home and property. Equally, practice recognises that the collective interests of a community in taking steps to protect the environment may justify reasonable interference with property or other rights. In both aspects, the principal need is to ensure that a balance is found between individual and collective rights. In the recent past, human rights procedures may also have begun to define the content of participatory rights in the environmental domain: the non-compliance mechanism established under the 1998 Aarhus Convention represents an innovative step.

In relation to armed conflict, it is ironic that proceedings before the ICJ concerning the legality of the use of nuclear weapons catalysed an important debate on the relationship between methods and means of warfare and the protection of the environment. The Court's advisory opinion has recognised, for the first time, the existence of norms of international environmental law as custom, and that they are applicable equally in times of armed conflict.

# INTERNATIONAL HUMANITARIAN LAW AND ENVIRONMENT

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### 11.1 Introduction

Rio Declaration on Environment and Development, 1992 provides that

*“Warfare is internally destructive of sustainable development. States, therefore, shall respect international law providing protection for the environment in terms of armed conflict and cooperate in its further development as necessary.”*

There is obvious evidence that modern warfare or warfare in general involves conflicts not only between the warring Parties or combatant, but also between man and nature. Environmental destruction has become an inevitable result of modern warfare and military tactics. Animal and plant species become extinct, forests become deserts, fertile farmland becomes a minefield, water becomes contaminated and native vegetation disappears. The nuclear, chemical and biological weapons that emerged during the late 20th century present threats to life itself and can hasten host of environmental disasters, such as deforestation and erosion, global warming, desertification, or holes in the ozone layer. The devastating effects of military weapons on the environment is reflected throughout the history of the 20th century, in World War I, World War II, the Korean and Vietnam wars, the Cambodian civil war, Gulf Wars I and II, the Afghan Civil War, and the Kosovo Conflict. The United Nations Environment Programme (UNEP) has conducted over twenty post-conflict assessments since 1999 in order to determine the environmental impacts of war. The result of these findings is the obvious destruction of environment during war and the exploitation and illegal trade of natural resources in the aftermath of prolonged

armed conflicts. A significant example of using the environment as a weapon in armed conflict occurred in the Gulf War in 1990-91, when Iraqi President Saddam Hussein ordered his troops to invade Kuwait. The Iraqi armed forces deliberately released crude oil into the Gulf, and set fire to Kuwaiti oil fields. For this very reason, The Gulf War was called or termed an “eco-war”. When a conflict occurs, the immediate responsibility would be to save lives and minimise suffering, in a way the focus is on human centric needs. Although one might argue that priority should be given to protection of individuals, environmental concerns cannot be ignored or overlooked during conflict situations. As we all know, in many parts of the developing countries and elsewhere people depend on natural resources for their livelihood. Therefore, a degraded environment affects peoples’ livelihood as well, which might lead to further instability and humanitarian crises.

In view of the foregoing, one can say that law of environmental protection and International Humanitarian Law (IHL) are closely related topics of growing concern to the international community. Their close relationship and common rational basis create a need to use environmental principles and experiences in interpreting the environmental aspects of the International Humanitarian Law that relate to environmental damage during war and prohibit the manipulation of the environment for hostile purposes.

## 11.2 Scope and Meaning of International Humanitarian Law

In the course of this unit, there is continuous reference to conflicts or armed conflicts in general. It is important for us to understand the meaning of the term ‘armed conflict’ before embarking on the nature and scope of International Humanitarian Law. No specific definition can be attributed to conflicts as they occur due to variety of socio, economic and political reasons. In general terms, an armed conflict can be defined as any disagreement involving the use of weapons between two or more Nations. An international war crimes tribunal in an important case, *The Prosecutor v. Dusko Tadic* (1995) defined armed conflict as follows:

*An armed conflict exists whenever there is a resort to armed force between States or protracted armed violence between governmental authorities and organised armed groups or between such groups within a State.*

Discussions about armed conflicts largely focus on moralistic or pragmatic reasons. For instance F.L.Grievies, an international theorist, in his seminal work, “Conflict and Order: An Introduction to International Relation”, identifies four characteristics of the nature of conflict: “First, human conflict is a fact of modern social life and is likely to remain so for the indefinite future. Second, the abolition of war is a dream. Third, theories of Armageddon are likely to be not only empty but even dangerous, and fourth, wars may be inevitable but nuclear war is unthinkable.” To put it simply, when humanity ceases to exist and people and Nations get mired in political ideologies that itself might lead to the genesis of disagreements between and amongst Nations.

International humanitarian law is a set of rules which seek, for humanitarian reasons, to limit the effects of armed conflict. It protects persons who are not or are no longer

participating in the hostilities and restricts the means and methods of warfare. IHL applies only to armed conflict and does not cover or address internal tensions, disturbances or sporadic violence. International humanitarian law is also known as the law of war or the law of armed conflict does not regulate whether a State may actually use force; this is governed by an important, but distinct, part of international law set out in the United Nations Charter. It is part of international law, which is the body of rules governing relations between States. International law is contained in agreements between States, in treaties or conventions and in customary rules, which consist of State practice considered by them as legally binding, and in general principles. The principal documents of international humanitarian law are the four Geneva Conventions of 1949 and their Additional Protocols of 1977.

The first Geneva Convention of 1949 protects wounded and sick soldiers on land during war. This Convention represents the fourth updated version of the Geneva Convention on the wounded and sick following those adopted in 1864, 1906 and 1929. It contains 64 articles. These provide protection for the wounded and sick, but also for medical and religious personnel, medical units and medical transports. The Convention also recognises the distinctive emblems.

The second Geneva Convention protects wounded, sick and shipwrecked soldiers at sea during war. This Convention replaced the Hague Convention of 1907 for the Adaptation to Maritime Warfare of the Principles of the Geneva Convention. It closely follows the provisions of the first Geneva Convention in structure and content. It has 63 articles specifically applicable to war at sea and also protects hospital ships.

The third Geneva Convention applies to prisoners of war. This Convention replaced the Prisoners of War Convention of 1929. It contains 143 articles whereas the 1929 Convention had only 97. The categories of persons entitled to prisoner of war status were broadened in accordance with Conventions I and II. The conditions and places of captivity were more precisely defined, particularly with regard to the labour of prisoners of war, their financial resources, the relief they receive, and the judicial proceedings instituted against them. The Convention establishes the principle that prisoners of war shall be released and repatriated without delay after the cessation of active hostilities. The Convention has five annexes containing various model regulations and identity and other cards.

The fourth Geneva Convention applies to protection of civilians, included occupied territories. The Geneva Conventions, which were adopted before 1949 were concerned with combatants only, not with civilians. The events of World War II showed the disastrous consequences of the absence of a convention for the protection of civilians in wartime. The Convention adopted in 1949 takes account of the experiences of World War II. It is composed of 159 articles. It contains a short section concerning the general protection of populations against certain consequences of war, without addressing the conduct of hostilities, as such, which was later examined in the Additional Protocols of 1977. The bulk of the Convention deals with the status and treatment of protected persons, distinguishing between the situation of foreigners on the territory of one of the Parties to the conflict and that of civilians in occupied territory. It spells out the obligations of

the Occupying Power vis-à-vis the civilian population and contains detailed provisions on humanitarian relief for populations in occupied territory. It also contains a specific regime for the treatment of civilian internees. It has three annexes containing a model agreement on hospital and safety zones, model regulations on humanitarian relief and model cards.

The Conventions define fundamental rights for combatants removed from the fighting due to injury, illness, or capture and for civilians. The 1977 Additional Protocols, which supplement the Geneva Conventions, further expand those rights. In the two decades that followed the adoption of the Geneva Conventions, the world witnessed an increase in the number of non-international armed conflicts and wars of national liberation. In response, two Protocols Additional to the four 1949 Geneva Conventions were adopted in 1977. They strengthen the protection of victims of international (Protocol I) and non-international (Protocol II) armed conflicts and place limits on the way wars are fought. Protocol II was the first-ever international treaty devoted exclusively to situations of non-international armed conflicts. Implementation of international humanitarian law concerns two situations *viz* International armed conflicts that involve at least two countries and armed conflicts that take place in one country (such as those between a government and rebel forces).

Today, all nations have ratified the Geneva Conventions, thus recognising a legal obligation to uphold them in the midst of war. Nations that ratify these humanitarian treaties are required to enact domestic laws to provide legal sanctions against violators. While the world community can apply few legal sanctions against Nations that violate the law, there are numerous practical reasons for them to respect IHL. They are enumerated below:

- ◆ The humane treatment of individuals by one side often dictates treatment by the other
- ◆ The impact of world opinion
- ◆ The safeguarding of a civilisation and its economic resources
- ◆ The use of IHL as a means to facilitate the resolution of conflicts and return to a state of peace

Legal action against violators can take place before an international tribunal, such as occurred following World War II, and after the conflicts in Former Yugoslavia and Rwanda. In addition, trials of a soldier or civilian by his or her country's authorities may be conducted by a military or civilian court under the authority of that nation's legal code.

The most effective means of securing compliance with these humanitarian rules is through widespread public education in peacetime. In ratifying the Geneva Conventions, Nations agree to educate their military and the public. The more knowledgeable members of the armed forces and the general public are about the law, the more likely it is to be obeyed. The rules of IHL for the protection of the environment aim not to prevent damage altogether, but rather to limit it to a level deemed tolerable.

### Basic Tenets of International Humanitarian Law

- ◆ Combatants who are out of the fight and those not taking part in hostilities are entitled to respect for their lives and physical and moral integrity. They are to be protected and treated humanely, without adverse discrimination.
- ◆ It is forbidden to kill or injure an enemy who surrenders or who is out of the fight.
- ◆ The wounded and sick are to be collected and cared for by the Party that has them in its power. Medical personnel, establishments, transports and materials are to be protected. The protective emblems must be respected.
- ◆ The lives, dignity, personal rights and religious convictions of captured combatants and civilian internees must be respected, which includes their protection against violence and reprisals. They have the right to correspond with their families and to receive humanitarian assistance.
- ◆ Those protected by the law are entitled to fundamental judicial guarantees.
- ◆ No one is to be subjected to physical or mental torture, corporal punishment, or cruel and degrading treatment.
- ◆ Civilians are not to be the objects of attack.

Although IHL focuses on the treatment of civilians and prisoners of war and the use of weapons of mass destruction, it does not neglect environment protection completely. But, protecting people's lives only and leaving them in a polluted environment, as a result of armed conflict, is not adequate. While armed conflict may directly kill civilians, a polluted environment will directly harm civilians and indirectly kill them. Humanitarian organisations that strive hard to prevent human casualties during armed conflicts, of late have also identified that environmental protection to achieve real humanitarian protection. This protection could reduce or limit damage to the environment. For example, during the Iraqi Freedom military operation in 2003, a water production factory was targeted in Baghdad, causing severe water supply shortages to the residents over there. These shortages can cause contagious sickness, as a direct result of uncleanliness. The International Committee of the Red Cross (ICRC) personnel in co-operation with Iraqi engineers succeeded in repairing damaged engines enabling them to produce 50% of the water supplies needed by the civilians.

## 11.3 International Humanitarian Law and Environment

Specific rules of international humanitarian law contained in Additional Protocol I confer protection to the environment by prohibiting widespread, long-term and severe damage to the natural environment. In addition, other rules and principles ensure protection of the environment, though without mentioning it specifically. This is particularly the case with general customary principles, such as the principle of distinction and that of proportionality.

When the Rome Conference adopted the Statute of the International Criminal Court (ICC) in July 1998, it included as a war crime the causation of "widespread, long-term

and severe damage to the natural environment”. Such “greening” of international humanitarian law promises heightened sensitivity to the environmental consequences of warfare. The ICC Statute provision, however, is but the most recent example of a growing environmental consciousness vis-à-vis military operations that first began to surface over two decades ago. There is no doubt, however that willful and wanton destruction of the environment or causing widespread, long-term and severe damage to the environment are serious violations. This is supported by the inclusion of these violations of humanitarian law in the list of war crimes over which the International Criminal Court has jurisdiction.

#### ◆ War Crimes

Over the past century, the international community has shown considerable concern for the humanitarian consequence of war. Examples of this concern include the adoption of the four 1949 Geneva Conventions on the law of war, public condemnation of the use of landmines, and the creation of non-partisan international criminal tribunals in the former Yugoslavia and Rwanda. Negotiations have established a permanent International Criminal Court, principally designed to adjudicate genocide and crimes against humanity. The international community has been more hesitant in accounting for the environmental consequences of war. This reluctance exists notwithstanding the severity of military damage to the environment, often intentionally inflicted. Modification and desecration of the natural environment is seen by many as a strategic mechanism to safeguard State sovereignty. In large part, such activity remains permissible because there is no definitive or readily enforceable code of conduct governing what warring Parties can and cannot do to the environment. All the international community has been able to negotiate are scattered collateral references in a variety of treaties and conventions. At most, these references provide some definitional parameters as to what constitutes unacceptable treatment of the environment in times of war.

The concept of war crimes is a concept of customary international law. It requires States to try and punish members of their own armed forces who commit such crimes, as well as anyone else who commits such crimes on national territory or on territory under national control. In addition, international law established universal jurisdiction to try war crimes, in the sense that States even have the ordinary jurisdiction to try war criminals with whom they do not have the ordinary jurisdictional connections mentioned above - although they have no obligation to do so.

All of the war crimes defined are solely for international armed conflict and that is a serious gap. The only war crime defined for non-international armed conflict that could be potentially relevant is the “destruction of the property of an adversary unless such destruction be imperatively demanded by the necessities of the conflict”.

In combination with the substantive humanitarian law rules that protect the environment, such as rules on targeting and the more specific prohibition against widespread, long-term, and severe damage to the natural environment, humanitarian law offers more specific prohibition against causing widespread, long-term, and severe damage to the natural environment, humanitarian law offers some reasonable prospects for determining responsibilities, assessing damages and awarding compensation.

### ◆ Armed Conflicts and Environment

The international community has many instruments that refer to armed conflict and the environment, including Protocol I Additional to the Geneva Conventions which prohibits the use of methods or means of warfare which are intended, or may be expected, to cause widespread, long-term and severe damage to the natural environment. The Protocol also requires that care be taken in warfare to protect the natural environment against widespread, long-term and severe damage. This protection includes a prohibition of the use of methods or means of warfare which are intended or may be expected to cause such damage to the natural environment and thereby to prejudice the health or survival of the population. It also prohibits attacks against the natural environment by way of reprisals.

In addition to the Protocol just mentioned, States - at the recently held World Summit on Sustainable Development - reaffirmed their commitment to the Rio Declaration, which recognises that warfare is inherently destructive of sustainable development. Principle 24 continues that

“States shall therefore respect international law providing protection for the environment in times of armed conflict and cooperate in its further development, as necessary.”

Damage to the natural environment from armed conflict can undermine the natural resource base on which millions of people depend for their livelihood. Armed conflict is always a tragic failure. Although in some extreme circumstances it takes force to move through to a new stage of co-operation and progress, the human and ecological price that is paid for modern warfare is colossal, and the debt it leaves behind takes years or decades to pay off. While it is difficult in the current atmosphere of crisis to stand back and put the situation in its broader perspective, which is nevertheless what we must do.

Environmental protection is heralded as a laudable goal by a broad variety of international agreements. Only a small subset of these demonstrates any consensus on what constitutes acceptable or unacceptable use of the environment as a tool of war. It is only recently that the international community has made tentative inroads into contemplating the prosecution of those who engage in unacceptable use of the environment during wartime. In this latter regard, the Rome Statute of the International Criminal Court is important. Under the Rome Statute, intentional infliction of harm to the environment may constitute a “war crime”. However, Article 8, which defines “war crimes”, limits the jurisdiction of the International Criminal Court to “war crimes in a particular when committed as a part of a plan or policy or as part of a large-scale commission of such crimes”. To this end, there is an immediate question whether isolated incidents will even fall within the purview of the Court. A more important limitation however, is the fact that prohibiting harm to the natural environment is only explicitly mentioned once in the entire Rome Statute. In this regard, Article 8(2)(b)(iv) prohibits intentionally launching an attack in the knowledge that such attack will cause incidental loss of life or injury to civilians or damage to civilian objects or widespread, long-term and severe damage to the natural environment

which would be clearly excessive in relation to the concrete and direct overall military advantage anticipated.

The negotiation history of Article 8(2)(b)(iv) merits a brief review. The draft version of the Rome Statute - which served as the basis for the final negotiations - listed three other options along with the language that, was eventually adopted in Article 8(2)(b)(iv). As adopted, Article 8(2)(b)(iv) triggers numerous interpretive concerns. By way of overview, there are three principal components to the language. Of Article 8(2)(b)(iv): (1) the actual physical act - or *actus reus* - which consists of inflicting “widespread, long-term and severe damage” to the natural environment; (2) the mental element - or *mens rea* - namely, that the infliction of this harm must be done intentionally and with knowledge that the attack will create such damage; and (3) a justification element, which allows “military advantage” to operate as a defence for a criminal wrongdoing even if both the physical and mental elements are found.

A successful prosecution under the Rome Statute will, first and foremost, have to show that the accused launched an attack which caused “widespread, long-term and severe damage to the natural environment”. Of great importance is that all three elements must be proven conjunctively. The language of “widespread, long-term and severe” is derived from other international agreements relating to the use of the environment in times of war, for example Article I of the 1977 United Nations Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques (ENMOD) and the 1977 Additional Protocol I to the 1949 Geneva Conventions (Protocol I). Given its derivation, it may be that the Rome Statute does not advance environmental concerns beyond the progress made in these prior documents. In fact, by providing that all three elements conjunctively must be shown to exist, this language regresses from the wording to the ENMOD Convention, which bass responsibility disjunctively on proof of any one of these characteristics. The meaning of “widespread”, “long-term” and “severe” is not so clear in the Rome Statute. Some interpretive guidance can be provided by the work of the Geneva Conference of the Committee on Disarmament (CCD) Understanding regarding the application of these terms in the ENMOD Convention also does not define its terms. The CCD Understanding provides as follows: “widespread”: encompassing an area on the scale of several hundred square kilometers; “long-term”: lasting for a period of months, or approximately a season; “severe”: involving serious or significant disruption or harm to human life, natural and economic resources or other assets.

Criminal behaviour is evaluated not only on the actual physical act, but also on the mindset of the criminal when that act was committed. In the case of Article 8(2)(b)(iv), criminal sanctions will not only fall upon the most invidious offender: the individual who knows that his or her behaviour will cause widespread, long-term and severe damage to the environment and notwithstanding proof of this knowledge, still commits the act with the full intention of causing such damage. Proof that someone did not know that the act would lead to “widespread, long-term, and severe” damage would, under the present wording, be sufficient to absolve that individual. In this respect, the language of Article 8(2)(b)(iv) is very narrow, declining to extend liability for negligently or carelessly inflicting

environmental damage. Greater detail as to the intentions of the negotiating Parties emerges from footnotes in the Draft Rome Statute. These footnotes reinforce the conclusion that a significant mental element generally is required to establish culpability. The negotiators “accept that it will be necessary to insert a provision... which sets out the elements of knowledge and intent”, which must be found to have existed for an accused to be convicted of a war crime. An accused’s actions are to be evaluated in light of the “relevant circumstances of, and information available to, the accused at the time”. Given this defence, it will be important to educate military and political officials in both developing and developed nations as to the environmentally harmful effects of certain types of warfare, and to disseminate technologies to avoid reliance on such strategies in the first place. In this regard, the work of the International Committee of Red Cross (ICRC) can play a pivotal role. The ICRC has published a document entitled “Guidelines for Military Manuals and Instructions on the Protection of the Environment in Times of Armed Conflict”, which is intended as a tool to facilitate the instruction and training of armed forces in an often-neglected area of international humanitarian law: the protection of the natural environment.

Under the Rome Statute, even if there is intentional, widespread, long-term and severe damage to the natural environment, liability will be found only if this damage is “clearly excessive in relation to the concrete and direct overall military advantage anticipated”. This limitation on culpability traces its roots to the doctrine of “military necessity”, a long-standing customary principle which has, in the past, often been used to mitigate or eliminate responsibility for grievous breaches of “humanitarian standards”. In short, “military necessity” is “[a] subjective doctrine which ‘authorises’ military action when such action is necessary for the overall resolution of a conflict, particularly when the continued existence of the acting State would otherwise be in jeopardy.” In other words, “[w]hen the existence... of a State stands in unavoidable conflict with such State’s treaty obligations, the latter must give way, for the self-preservation and development... of the nation are the primary duties of State.”

Equally important, the environmental war crimes provisions of the Rome Statute do not apply to internecine, as opposed to inter-state, conflicts. Article 8(2)(c) and (e), which lists the types of war crimes punishable within internal armed conflicts, omitted “widespread, long-term and severe harm to the environment” from the list, though the Draft Statute included proposed language that would have paralleled Article 8(2)(b)(iv). Basic principles of treaty interpretation provide that this omission is deliberate and evinces a desire not to punish environmental desecration when committed in an internal conflict. Further limitations on the application of the entire Rome Statute to internal conflicts are found in Article 8(2) (f), which provides that it:

*“applies to armed conflicts not of an international character and this does not apply to situations of internal disturbances and tensions, such as riots, isolated and sporadic acts of violence or other acts of a similar nature. It applies to armed conflicts that place in the territory of a State when there is protracted armed conflict between governmental authorities and organised armed groups or between such groups.”*

In sum, nations appear even less willing to support objective standards of criminal behaviour in internal than in international conflicts this is a major limitation. Recent events in Rwanda and the former Yugoslavia underscore that the environment will suffer even in the event of a civil war. Insurgency and counter-insurgency guerrilla civil wars have a particularly devastating effect on local environments. Insurgents often use tropical forests as home bases and hiding grounds; counter insurgency forces often respond by slashing and burning forests and by polluting rivers, viewing both as legitimate theatres of operations. Given the current dearth of standards in this area, the development of international law applicable to internal conflicts should be a top priority for policymakers.

The 1949 Geneva Convention IV, Article 53, states that “any destruction by the occupying power of real or personal property belonging individually or collectively to private persons, or to the State, or to other public authorities...is prohibited, except when such destruction is rendered absolutely necessary by military operations”. As with the Hague Regulations, this provision is limited by the military necessity defence and is inapplicable to the global commons. Additionally, this provision requires the destruction to occur within a nation that is actually occupied by another; indiscriminate aerial bombing in which enemy forces are not occupying the other nation’s territory would fall outside its scope.

Resolution 687 of the UN Security Council, adopted in the aftermath of the 1990-91 Gulf War, made Iraq accountable for “any direct loss, damage, including environmental damage and the depletion of natural resources... as a result of Iraq’s unlawful invasion and occupation of Kuwait”. This is an important precedent upon which to ground civil liability for environmental destruction. The creation of the United Nations Compensation Commission to value damages and assess liability is also an important step in implementing responsibility for environmental wrongdoing during wartime.

In sum, these fragments, together with the express pronouncements in the Rome Statute, provide some definitional guidelines as to the permissible use of the environment during wartime. Unfortunately, they create a “...current international legal framework [that] is vague and unenforceable in environmental matters.” The background to and the language of the Rome Statute reveal stagnation in the drive to sanction the use of the environment as a tool of war. Consideration should be given to developing ways of going beyond this language.

#### ◆ The Crime of Ecocide

Some commentators have suggested making it a crime recklessly or intentionally to harm the environment, both within and outside the context of war. This crime, labelled “genocide” or “ecocide” - the environmental counterpart of genocide - would be enshrined in a single international convention. The legal theory of ecocide is as follows: significantly harming the natural environment constitutes a breach of a duty of care, and this consists, at least, in tortuous or delictual conduct and, when undertaken with wilfulness, recklessness, or negligence, ought to constitute a crime. Defining the crime to encompass negligent or wilfully blind conduct is particularly important; as we have seen, proof of

intentionality can be difficult to establish. In this regard, lessons can be learned from the domestic context. We ought to reevaluate merit of collapsing environmental wrongdoing within a criminal context such as the ICC, which is primarily geared to prosecute violators of humanitarian law on a strict intentionality basis. Pressing policy considerations of preserving the integrity of the environment for future generations argue in favour of attaching liability for environmental infractions at a lower standard. As a result, it would be important for the effectiveness of any ecocide provision to capture not only the *mens rea* standard of criminal law, but also negligence, reasonable foreseeability, willful blindness, carelessness, and objective certainty standards, many of which animate tort law and civil liability.

It is also important to ground the *actus reus* not in the existence of “widespread, long-term and severe” damage, but simply in the existence of damage *per se*. The extent of damage, together with the pervasiveness of the mental element, would only inform sentencing principles. If enforcement authorities are given sufficient discretion in terms of sentencing, then a broader liability provision can not only be effective, but also respect shared notions of fundamental justice.

The jurisdiction of an international ecocide tribunal would be based on the transboundary nature of environmental destruction, together with its cumulative and pernicious effects on the global commons. However, any international tribunal ought to be guided by the principles of complementarities in its relationships with national courts. In negotiating jurisdiction, it is important for an Ecocide Convention to apply equally to natural persons, legal persons and public authorities as well as States. State responsibility is particularly crucial in order for civil damages and restitution to be viable remedies. Although there may be nascent international consensus that State responsibility for destruction of the environment is *ius cogens*, it is unclear whether the international community would be prepared to criminalise such destructive behaviour, when undertaken in the context of armed conflict, beyond the contours suggested by the Rome Statute. What is clear, however, is that by failing to try to do so, the international community is shirking responsibility for one of the principal factors threatening the integrity of the plane for future generations. Although the concept of ecocide may sound utopian within the context of the present framework of reference, this framework needs to be challenged. After all, the notion of what is politically realistic is, and has always been, essentially elastic.

Collapsing environmental crimes within the permanent International Criminal Court might not be the most effective ways to prosecute such crimes. One overarching problem is that the International Criminal Court is principally designed to punish and deter genocide and crimes against humanity *per se*. Environmental offences are basically ancillary offences, and might get lost in the shuffle. An example of this is in Rwanda, where the environmental destruction of the internecine conflict - which has been ongoing since 1994 - is significant. The Rwandan civil war saw two national parks land mined, endangered species poached, agricultural lands rendered barren to coerce migration of persecuted peoples, and systematic resettlement exhausting moderate lands - specifically in eastern Congo - of their agricultural capacities.

### ◆ International Environmental Law during an Armed Conflict

War and other military activities can have a detrimental impact on the environment.

The protection of environment during times of war and military activities is addressed partially by international environmental law and partially by international law. Further sources are also found in areas of law such as the human rights law, the laws of war, the law of armed conflict, the local laws of each affected country and so on.

The National laws dealing with environmental degradation caused by military activities during peacetime are also not very strong. Many countries regard military activities as sacrosanct, permitting environmental destruction in the name of country protection. However, some countries do take their environmental responsibilities more seriously in relation to military activities and it is perhaps from these national experiences in controlling excesses that future international controls may be better modelled and implemented.

The first issue which arises concerns the applicability of the various rules of international environmental law to military activities, including preparatory activities. The general rules of public international law provide little guidance as to the legal validity and consequences of those treaties following the outbreak of military hostilities. The validity and effect of a particular treaty during war and/or armed conflict will often turn on the terms of the treaty itself. The general instruments of international environmental law and policy also fail to provide any guidance on this question. The 1972 Stockholm Declaration focuses exclusively on nuclear weapons. Principle 26 provides that:

*Man and his environment must be spared the effects of nuclear weapons and all other means of mass destruction. States must strive to reach prompt agreement, in the relevant international organs, on the elimination and complete destruction of such weapons.*

The 1982 World Charter for Nature adopts a more general approach, stating the 'general principle' that nature shall be secured against degradation caused by warfare or other hostile activities, and declaring that 'military activities damaging to nature shall be avoided'. The wording of the 1992 Rio Declaration gets closer to the point but is still ambiguous, stating in Principle 24 that:

*Warfare is inherently destructive of sustainable development. States shall therefore respect international law providing protection for the environment in time of armed conflict and co-operate in its further development, as necessary.*

Although not legally binding, the wording of Principle 24 could either be interpreted as requiring States to respect those rules of international law which provides protection for the environment in times of armed conflict, or as requiring States to respect international law by protecting the environment in times of armed conflict.

Most environmental treaties are silent on the issue of their applicability following the outbreak of military hostilities. Some, including those on civil liability for damage, include provisions excluding their applicability when damage occurs as a result of war and armed conflict. Others include provisions allowing for total or partial suspension at the instigation of one of the Parties, while yet others require the consequences of hostilities to influence decision-making in the application of the treaty by its institutions. Some treaties do not apply to military activities even during peacetime operations, while others are specifically applicable to certain activities which may be associated with hostilities. Finally, the terms and overall purpose of some treaties make it abundantly clear that they are designed to ensure environmental protection at all times. The 1997 Watercourses Convention adopts a different approach, making a renvoi (meaning - 'send back' or 'to return unopened') to international humanitarian law: its Article 29 provides that: 'International watercourses and related installations, facilities and other works shall enjoy the protection accorded by the principles and rules of international law applicable in international and non-international armed conflict and shall not be used in violation of those principles and rules.'

#### ◆ Specific Rules regarding Environmental Protection during Armed Conflict

The first treaty to establish rules specifically protecting the environment from the consequences of military activities was the 1977 Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques (1977 ENMOD Convention). It prohibits Parties from engaging in 'military or any other hostile use of environmental modification techniques having widespread, long-lasting or severe effects as the means of destruction, damage or injury' to any other Party. The Convention defines 'environmental modification techniques' as 'any technique for changing - through the deliberate manipulation of natural processes - the dynamics, composition or structure of the Earth, including its biota, lithosphere, hydrosphere and atmosphere, or of outer space.'

Several months after the ENMOD Convention was concluded, the 1977 Additional Protocol I to the 1949 Geneva Conventions Relating to the Victims of Armed Conflict was adopted. The 1977 Additional Protocol I contains two explicit obligations designed to protect the environment which, given the large number of parties and views expressed by States, may now reflect a rule of customary international law. Under Article 35, it is 'prohibited to employ methods and means of warfare which is intended, or may be expected, to cause widespread, long-term and severe damage to the natural environment'. Article 55, entitled 'Protection of natural environment', provides that:

*Care shall be taken in warfare to protect the natural environment against widespread, long term and severe damage. This protection includes a prohibition of the use of methods or means of warfare which are intended or may be expected to cause such damage to the natural environment and thereby to prejudice the health or survival of the population.*

The Protocol also prohibits attacks against the natural environment by way of reprisals. In its Advisory Opinion on nuclear weapons, the ICJ noted that these provisions of Additional

Protocol I provide additional protection for the environment, and impose 'powerful constraints for all the States having subscribed to these provisions'. The implication that the 'powerful constraints of the Protocol did not - at least in 1996 - reflect customary law, may no longer hold true with the adoption of the 1998 Statute of the International Criminal Court and France's accession, on 11 April 2001, to the Protocol'.

## 11.4 Provisions Relating to Environmental Protection in International Humanitarian Law

It is well-known that incidental to negative effects of armed conflicts are destruction of environment. The law of environmental protection has developed primarily in the twentieth century, whereas the international law of war or armed conflict has evolved over many centuries. But it has only recently developed characteristics similar to the law of environmental protection. Today, the laws of war contain a number of limitations on environmentally disruptive activities during hostilities. There exists an environmental ethic in both the regimes of law which is indicative of a common philosophy or common value system shared by them. Attacking environment as a means of waging war is not a novel concept. There are a number of wars in which attempts have been made to annihilate the enemy by assaulting the environment. Environment represents the hope and future of every society. Destroying the environment means destroying the society itself.

Today's wars are deadlier wars. Brutal disregard for humanitarian norms and for the Geneva Conventions' rules of warfare now extends to environment which is attacked during conflicts. Therefore, the issue of destruction of the environment is one of the most disturbing aspects of armed conflicts today. Greater environmental destruction in modern warfare and the development of the technological capacity for greater destruction of the environment in the modern age are the two dangerous trends. Therefore, the need to understand the international laws that govern the means and methods of warfare is greater than ever. In 1992, the United Nations General Assembly held an important discussion on the protection of environment during armed conflicts and adopted a Resolution (47/37) that urged Member States to take all measures to ensure compliance with existing international law on the protection of environment during armed conflicts. It also recommended that into their military manuals and ensure that they are disseminated. Consequent to this, the International Committee of the Red Cross (ICRC) issued a set of guidelines in 1994 that summarised the existing applicable international rules for protecting the environment during armed conflicts.

The environment protection provisions in the framework of the International Humanitarian Law might be divided into general provisions and specific provisions.

### A) General Provisions

The general provisions identified in IHL instruments can be read broadly to include both humanitarian protection and environment protection. The objective of these provisions is to limit the ability of Parties to armed conflict to choose such means and methods of warfare that might affect the environment.

### 1) The Choice of Methods or Means of Warfare or Injuring the Enemy is not Unlimited

The Charter of the United Nations prohibits war and most armed conflicts. But use of force is justified if used in self-defence in accordance with the UN Charter. When war occurs, combatants should seek specifically to neutralise the other Party's armed forces, and not to cause unnecessary harm to civilian population or the natural environment. Therefore, it is implied that environmental warfare should be prohibited completely. Historically, the limit on Parties to armed conflicts' choice of methods of warfare was set forth in the Declaration of St. Petersburg of 1868. The Declaration condemns the use of arms that exceed the goal of war that is to weaken the military forces of the enemy. This limit might be extended to protect the environment, since the use of weapons that would affect the environment is also likely to aggravate sufferings of individuals.

### 2) Principle of Discrimination

The term 'discriminate' is purely a military term, according to which combatants must always distinguish between civilians and civilian objects on the one hand, and combatants and military targets on the other. For example, schools, hospitals, worship places etc. should be excluded from military operations. If this principle is violated, it not only affects civilians and civilians' installations but would also affect environment and natural resources.

### 3) Principle of Proportionality

To be lawful, weapons and strategy or tactics must be proportional to their military objective. Disproportionate weaponry and tactics are excessive, and as such illegal. The principle of proportionality places limits on Parties to armed conflicts in choosing methods and tactics of warfare. This principle requires weighing the balance between a valid military target and environmental effects. Before destroying a natural resource site by military activity, the military authority should balance the expected environmental harm vis-à-vis the military benefits expected to be gained. If the harm is excessive in relation to the concrete and direct military advantage anticipated, it is considered a war crime. For instance, destroying a protected area of endangered species may be judged a war crime, if that destruction outweighs any military benefit.

### 4) Principle of Humanity

This principle, otherwise called "Martens clause" stems from the premise to preserve - even in armed conflict - a certain minimum of human dignity. Acts not expressly forbidden are therefore still subject to a test of basic humanity. This principle played a major role in the Nuremberg Trials during the Second World War period. The principle of humanity states that a soldier's aim is to disable other combatants in order to reach a defined military objective. Indiscriminate attacks and attacks against civilians or civilian targets are strictly prohibited. Also, important, according to this principle is the need to avert chemical and biological warfare. The use of such methods and tactics of warfare will certainly affect the environment.

## B) Specific Provisions

As it is impossible to cover all the relevant legal instruments here, the focus would be limited to important provisions.

The importance of the general principles stated in the 1868 St. Petersburg Declaration has already been mentioned. The Hague Convention respecting the Laws and Customs of War on Land (Convention No. IV of 1907) reaffirms and expands on those principles. Its annexed Regulations contain a provision, namely, Article 23 para. 1(g), that states that it is forbidden “to destroy or seize the enemy’s property, unless such destruction or seizure be imperatively demanded by the necessities of war”, is one of the earliest provisions for the protection of the environment in armed conflict.

Several treaties that limit or prohibit the use of certain means of warfare also contribute to the protection of the environment in armed conflict. They are the Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases and of Bacteriological Methods of Warfare, adopted in Geneva, 1925 and the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction, 1972. It means military use of biological organisms or their toxic products to cause death, disability or damage to man, his domestic animals or crops. The Geneva Gas Protocol of 1925 prevents the use of bacteriological methods of warfare. The 1972 Bacteriological Convention supplemented by a Final Declaration adopted in 1986, makes possession and use of bacteriological weapons illegal. The 1972 Convention has been further expanded by the new Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and Their Destruction, 1993. The 1981 Convention on Inhumane Weapons also prohibits the use of toxic weapons and chemical weapons. But there is, as yet, no customary international law against biological weapons. If this form of warfare were used on a major scale in war, the environmental damage would be extensive. As with chemical weapons, the effect of biological weapons is indiscriminate.

The other important Convention affording the environment specific protection is the Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques (“ENMOD”) Convention adopted by the United Nations on 10 December 1976 and Protocol I of 1977 additional to the Geneva Conventions of 1949.

The Environmental Modification Convention prevents environmental modification techniques of waging war. Article I declares that State Parties do not engage in military or any other hostile use of environmental modification techniques, having widespread, long-lasting or severe effects as the means of destruction, damage or injury to any other State Party. Environmental modification includes deliberate manipulation of natural process - the dynamics, composition or structure of the earth including its biota, lithosphere, hydrosphere and atmosphere or outer space.

The most potential environmental modification technique that human ingenuity has devised is the nuclear weapon. By seeding cumulus clouds with silver and lead iodides,

the U.S. tried to manipulate rainfall for military purposes. It is uncertain whether these efforts to manipulate the environment were effective. Nevertheless, it has been concluded that extensive and successful cloud seeding can result in flooding and erosion, disruption of wild life and plant life and the presence of silver and iodide in the food chain.

In the absence of an Environmental Modification Convention, environmental modification as a means of warfare would be permissible if military necessity existed. This Convention however, takes away this justification for the State Parties to it in relation to each other.

Specific rules of international humanitarian law contained in Additional Protocol I to the 1949 Geneva Conventions confer protection to the environment by prohibiting widespread, long-term and severe damage to the natural environment. In addition, other rules and principles ensure protection of the environment, though without mentioning it specifically. This is particularly the case with general customary principles, such as the principle of distinction and that of proportionality.

Article 35 (3) and Article 55 of Protocol I are perhaps the most important environmental protection aspects of the laws of war and require significant consideration of the environmental impact of military weapons and methods during hostilities. The causing of widespread, long-term, severe damage by belligerents would be defensible under the doctrine of military necessity. But the military necessity would have to be something similar to self-defence. Mere denial of ground cover to the enemy is not a military necessity. In cases of mass destruction, the question to be examined is: whether military necessity could be a defence to the destruction caused? In the absence of a “defence of military necessity”, Protocol I would hold a belligerent criminally liable for causing extensive damage.

It is a basic rule that objects indispensable to the survival of civilian population should be protected at all times both during peace and war. Article 54, Protocol I, describe typical indispensable objects for the survival of the civilian population. Two things must be considered to comply with this Article, when planning military operations. Firstly: Toxic pollution of the food chain, as the effects of discharges of hazardous wastes into the ecosystem is now well-known. Therefore, care must be taken to prevent pollution of the sources of food of the local population. For example, in the realm of naval warfare, this might require careful target selection so as to ensure that the cargo of a vessel does not pollute the waters in which it sinks (particularly bulk oil carriers). Secondly: Aquifers: They are underground natural water bearing rock structures extremely important to the environment. They provide drinking water used in private and commercial wells, irrigation water for agricultural purposes etc. Aquifers are vulnerable to depletion by excessive human demands and contamination by hazardous substances through soil percolation. Once contaminated, underground water sources are difficult to clean. Thus, law of armed conflict needs to consider the impact of military operations on aquifers as they are indispensable objects to the survival of the civilian population.

Thus, it can be said that the international law of armed conflict has aspects which reflect its concern for environmental protection. For example, Article 55 of the Protocol

I limits widespread long-term and severe damage to the environment. The primary purpose of this limitation is to protect the environment and its secondary purpose is to limit the destruction caused by war. Secondly, the laws of war use environmental protection law to strengthen the pre-existing limitations on armed conflicts. For example, Article 56 of Protocol I prohibits destruction of works and installations containing dangerous forces. This limitation serves the primary purpose of reducing losses caused by war and, its secondary purpose is to benefit the environment.

## 11.5 Environmental Impact Assessment of Armed Conflicts

It is important to assess the impact of armed conflicts on environment for minimising damage to environment and natural resources during armed conflicts. It should be an obligation to conduct an advance assessment of the impact of military action on the environment. Given the extensive and in some cases irreversible consequences of such action, it is crucial to adopt preventive measures, and for that the first step is for everyone involved to assess the environmental impact of every planned military undertaking. More often information concerning the environmental impact of armed conflict has been supplied by humanitarian organisations on the basis of their wide-ranging experience of post-conflict reconstruction all over the world. It is imperative to tackle the problem of environmental impact in the pre-conflict or planning phase. So the principle of prevention is should be clearly adopted by Parties to conflicts and it should also become part of the military manuals. Let us not forget that the war preparation phase already has a detrimental impact on the ground in the form of a more intensive use of natural resources resulting from military manoeuvres (deforestation and the building of dams, encampments and infrastructure such as roads and runways, bridges and water supply and waste water disposal systems).

All this leads to productive zones being abandoned by the local population as they are occupied by the armed forces, leading to a deterioration of farmland, local enterprises, services and the environment in general. It has to be realised that the greater the damage and the more it hampers the stabilisation process, the higher the price to be paid for the reconstruction process.

A 2009 report by the UN's Environmental Programme UNEP, titled "From Conflict to Peacebuilding - the Role of Natural Resources and the Environment" discusses the linkages between armed conflict, peace building and the environment. The UNEP's report is interesting in that it addresses an extremely important issue. At the same time, it holds some valuable recommendations although some are more realistic and relevant than others. The main task for environmental considerations in times of armed conflict is exactly in these situations. When hostilities have ceased, there is a strong need to secure relative normality as quickly as possible in terms of providing basic resources for civilian populations, facilitating a stable agricultural and economic infrastructure by securing the delivery of clean water and other resources etc. all in order to secure the return to normality and alleviate the suffering of civilians. In this light, the Report deserves credit for addressing the link between peace building and the environment.

The Report makes a number of recommendations. Firstly, the Report recommends that the UN system needs to improve its capacity to deliver early warning and early action in countries that are vulnerable to conflicts over natural resources. Secondly, the Report recommends that oversight and protection of natural resources during armed conflicts is improved. Thus, the Report, *inter alia*, calls for new legal instruments protecting natural resources during armed conflicts. More interestingly, the Report calls to consider sharing of natural resources in the deal-making of peace agreements and indeed in the peacekeeping process. Moreover, the Report recommends that the UN's peacekeeping operations become better at taking the environment and natural resources into account. The Report notes that often it is not until many years into an intervention that the issue of natural resource management receives attention. This is arguably the most important recommendation of the Report. Although it might seem rather obvious, it is paramount that the peacekeeping missions in place in various countries are aware and equipped to deal with the specific environmental conditions in each country. At the same time, it would appear that this recommendation would not be all that difficult to implement within the existing UN peacekeeping organisation. Finally, the Report recommends that the international community ought to help national authorities in post-conflict countries with better administrating extraction processes.

In all of this, the media has a crucial part to play, in that they are the ones to convey the message about environmental devastation. Public opinion can in turn bring pressure to bear on the Parties to armed conflict; this is what happened with the Vietnam war, as a result of the media images of ravaged areas broadcast all over the world which showed to one and all the pointless cruelty of certain actions. Public disapproval eventually swayed the political decision-makers who ended up bowing to the pressure of public opinion. Such an outcome is scarcely possible where the reporting is done by embedded journalists.

## 11.6 Conclusion

Environmental warfare has been used throughout history. However, the trend over the years has been the tendency to cause greater destruction to the environment than ever before. Munitions have been used against larger and ill-defeated target areas, resulting in high levels of environmental damage. It is because of this environmentally destructive trend in modern warfare and the development of technology capable of even greater destruction that the law of armed conflict has adopted environmental protection principles. Today, under customary as well as conventional international law of warfare the importance of preserving environment has finally been recognised. Consequently, the selection of military weapons, methods and objects of attack should also be based on ecological considerations, e.g., impact on nature, destruction of natural balance, and introduction of irreversible processes.

# UNIT 12

## ENVIRONMENT AND CONFLICT MANAGEMENT

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### 12.1 Introduction

Since World War II, there has been a steady expansion of multilateral negotiations/conference diplomacy within international relations. Except for the management of relations between neighbouring States and the strategic relationship between the two superpowers during the Cold War, multilateral negotiations become the dominating feature in the international arena. Dispute settlement provisions are not unique to Multilateral Environmental Agreements (MEAs) - they have long been an essential element of international Agreements, because they provide the procedures by which disagreements among the Parties regarding the agreement can be resolved.

Dispute settlement provisions are included in a growing number of MEAs (most of the major global MEAs have dispute resolution mechanisms). Despite the number of available procedures, in practice States have shown reluctance to submit to the formal dispute settlement. In part, this is due to the fact that most of these provisions are not compulsory. Thus, in order for an aggrieved Party to avail itself of the mechanism, the other Party must consent to using the mechanism. Generally speaking, MEAs tend to focus on mechanisms that promote compliance, rather than on formal dispute settlement procedures. In more than a decade, the provisions for an arbitral tribunal under the CBD have never been invoked formally - and this is not unique for MEAs.

Population explosion and technological advancement led to exploitation of precious natural resources. It created preconditions for mass extinction and global catastrophe. Environmental problems have no longer remained domestic but having become transnational in nature. These problems now demand the collective attention of everyone and of all Nations. So in order to facilitate collective action to mitigate global environmental problems, it is important to overcome religious, cultural disparities or

barriers, so as to work together to solve common problems. To do so, we need to create better ways of communicating across borders and improved techniques for collaboratively negotiating our differences, engaging in open and honest dialogue, and resolving environmental disputes equitably without warfare or propaganda. In this genre mediation and alternative dispute resolution (ADR) techniques encourage fair, respectful, participatory, and democratic ways of communicating, solving problems, negotiating collaboratively, engaging in constructive dialogues, and resolving conflicts internationally based on consensus. Without these methods we will be unable to sustainably solve our problems or survive, and for these reasons, it is critical that the world's nations adopt mediation, ADR and any other techniques for resolving environmental conflicts.

## 12.2 Nature and Scope of Environmental Conflicts

According to Article 33(1) of the UN Charter:

*“The parties to any dispute, the continuance of which is likely to endanger the maintenance of international peace and security shall, first of all, seek a solution by negotiation, enquiry, mediation, conciliation, arbitration, judicial settlement, resort to regional agencies or arrangements, or other peaceful means of their own choice.”*

Clearly, this provision applies to environmental disputes. The list proposed includes almost all the means of peaceful settlement of interstate disputes, well established in international law.

- ◆ *Negotiation* means proposals made by one or the other of the Parties to a dispute and the reaction to the other Party, including counterproposals, in order to reach an agreement. Negotiations should be conducted in good faith; the Parties must carefully examine the proposals of their partners and try to make progress towards an agreement. Unilateral acts which could comprise the result of the negotiation should be avoided.
- ◆ *Good offices*, which are not listed in Article 33(1), consist in the intervention of a third Party trying to persuade the Parties to a dispute to meet and find pacific means of settlement.
- ◆ *Enquiry* is the establishment of the facts of a determined case by an independent body.
- ◆ *Mediation* consists in bringing the Parties to a dispute together and submitting to them concrete proposals for the settlement of the dispute.
- ◆ *Conciliation* is a combination of enquiry and mediation; a third Party first established the facts of the case and then makes proposals for the settlement.
- ◆ *Arbitration* is the settlement of a dispute by a third Party - a single person, an existing body or a commission specially created - whose decision is accepted in advance by the Parties to the dispute.

In all these cases all the Parties to the dispute must agree on a procedure and on the choice of the third Party who will be charged with the enquiry, mediation, conciliation or arbitration.

The two-remaining means of settlement, judicial settlement and resort to regional agencies or arrangements, are different, since the bodies which play the role of third Parties pre-exist and have established procedures which must be followed. Regional agencies or arrangements mostly have a potential character which may influence the terms of the settlement. Judicial settlement generally means a decision by the International Court of Justice, the main judicial organ of the UN, the statute of which is annexed to the UN Charter (Article 92). This body consists of 15 independent judges. Its jurisdiction must be explicitly accepted by States which equally accepted the Court's jurisdiction, or by a special agreement for a determined case. Decisions of the Court are always obligatory and must be executed. Although the decision of the Court has no binding force except between the Parties and in respect of that particular case, its scientific and moral authority is such that rules states by the Court in its decision are generally considered to express customary international law.

### **Settlement Authorities**

One of the fundamentals of international environmental law is the 1941 arbitral award in the Train Smelter Case. During the following long period, no international jurisdiction or arbitration tribunal decided environmental issues on the merits of the case, in spite of the fact that many treaties related to environmental protection explicitly state that disputes arising from the application or interpretation of their clauses should be referred either to the International Court of Justice or to arbitration. Practically all the recent major treaties adopted in this field include such provisions. Agenda 21 also encourages recourse to the ICJ which has formed a special Chamber in order to be prepared to deal with any environmental case.

Recent developments have improved the situation. In an advisory opinion of 1996 on the Legality of the Threat or Use of Nuclear Weapons, the ICJ recognised the importance of environmental protection and confirmed Principle 21 of the Stockholm Declaration. In addition, the 1997 judgment in the case of the Gabcikovo-Nagymaros Project insists on the need to take environmental norms into account even for the application and interpretation of former treaties.

The fact that until now international jurisdictions were not used for the settlement of environmental disputes can be explained in different ways. One explication is that in many international environmental treaty's provisions related to dispute settlement also include the resort to organisms created by individual environmental treaties, such as a conference of the Parties or an implementation committee, for questions which the implementation or the interpretation of the treaty concerned can raise. Another possible explication is that States obviously prefer to give priority to the compensation of victims of trans-frontier pollution or other harmful environmental effects, rather than getting involved in international negotiations or dispute settlement procedures. The increasingly

accepted solution is to transfer concrete problems from the interstate level to the interpersonal level. When a transnational element is present in a case which could create jurisdictional or interstate problems - e.g. trans-frontier pollution harms private property in the neighbouring State - the polluter and the victim are directed to bring the case before the domestic authorities which are competent according to the rules of international private law. Also, States have sought to overcome the difficulties by prior agreement, in concluding treaties or adopting other international texts, to resolve at least some of the problems in three fields where the effects of environmental harm may be the most serious: the production of nuclear energy, the transportation of oil or other hazardous substances by sea and oil pollution caused by seabed activities.

The 1960 Paris Convention on Third Party Liability in the field of Nuclear Energy, drafted for members of OECD, and the 1963 Vienna Convention on Civil Liability, open to all UN member States, contain regulations concerning the compensation of victims of nuclear activities.

Marine pollution, by oil or by hazardous substances, in particular compensation for environmental injury that may be caused by it, is regulated by an entire system based on the 1969 International Convention on Civil Liability for Oil Pollution Damage as modified several times.

Several common traits are found in these agreements:

- ◆ Identification of the polluter is assured through a presumption which channels responsibility. Thus in case of damage, the responsibility automatically is imputed to the exploiter of the hazardous installation or the ship owner, whether they are at fault or not.
- ◆ The solution of the problem of liability is facilitated by imposing strict liability or damage, which means that no fault is required to decide that the person designated is liable. However, a certain number of escape clauses corresponding e.g. to fraudulent conduct of the victim, war, natural catastrophe, exist to avoid such liability.
- ◆ Jurisdictional competence is determined in designating the proper forum, in some cases that of the plaintiff, in other cases that of the polluter or in permitting the victim the free choice of a tribunal.
- ◆ The execution of judgments rendered is assured in foreign countries. Such solutions can help prevent international disputes.

#### a) Law of the Sea Tribunal

With the entry into force of the UN Convention on the Law of the Sea (UNCLOS) in 1994, the Law of the Sea Tribunal was established. The Tribunal may hear any dispute concerning the application or interpretation of UNCLOS, except as otherwise provided in the Convention. Its jurisdiction also extends to disputes concerning the interpretation or application of other agreements related to the purposes of UNCLOS that are submitted to the Tribunal in accordance with the other agreements. In deciding cases, the Tribunal applies the United Nations Convention on the Law of the Sea and other rules of

international law not incompatible with the Convention. The Tribunal is competent for disputes arising between the following entities:

- ◆ States Parties;
- ◆ State enterprises, natural persons, or legal or judicial persons that are sponsored by States Parties and carrying out activities in the “Area” (namely, the seabed, ocean floor, and subsoil thereof lying beyond the limits of national jurisdiction); and
- ◆ the “Authority” (which is the organisation through which States organise and control activities in the Area) or the “Enterprise” (which is the organ of the Authority that carries out activities in the Area as well as the transporting, processing, and marketing of minerals recovered from the Area).

Alongside the Seabed Dispute Chamber, which has jurisdiction in disputes regarding activities in the Area, the Tribunal may form such chambers, composed of three or more of its elected members, as it considers necessary for dealing with particular categories of disputes.

#### **b) The International Court of Environmental Arbitration and Conciliation (ICEAC)**

It facilitates the settlement of environmental disputes submitted by States, natural persons, or legal persons through conciliation and arbitration. It was established in 1994 in Mexico by 28 lawyers from 22 different States.

Upon request, the Court may give Consultative Opinions relating to disputes and other issues of environmental law. Consultative Opinions may be:

- ◆ Preventive, to ascertain whether a proposed action is compatible with environmental law;
- ◆ Confirmatory, to confirm that an action has been carried out in compliance with environmental law; or
- ◆ Denunciatory, to enquire whether an action by another person complies with environmental law, and if not to make that information available to the international community.

For example, in 2003, the Court issued a Consultative Opinion on the Compatibility between Certain Provisions of the Convention on Biological Diversity and the Agreement on Trade-Related Aspects of Intellectual Property Rights as to the Protection of Traditional Knowledge. Other Consultative Opinions relate to “Regulation of Fishing Methods and Gear”, “Protection of the Meridian Frog”, and the transportation and disposal of waste and dangerous substances in Sonora, Mexico.

In resolving disputes and in issuing Consultative Opinions, the Court invokes and applies a range of bodies of law, including:

- ◆ international treaties and applicable private contracts;
- ◆ general rules and principles of international environmental law;
- ◆ relevant national law, in accordance with generally accepted rules of private international law; and

- ◆ any other principles, rules, or standards that the Court deems relevant, including equity.

### c) International Court of Justice

The ICJ is the primary judicial organ of the United Nations. Pursuant to provisions in various international agreements (including the Statute of the ICJ, the organic document establishing the ICJ), the ICJ is charged with resolving various disputes between States. States can recognise compulsory jurisdiction of the Court; in doing so, many States exempt certain classes of cases from compulsory jurisdiction. This partial exemption is controversial but has been upheld. The ICJ can also issue non-binding Advisory Opinions at the request of UN bodies.

There are 15 Members of the Court, who are elected by the UN Member States and other States Parties to the Statute of the ICJ. In some instances, Judges Ad Hoc may sit on an ICJ panel to hear and decide a case. Pursuant to Article 38 of the ICJ Statute, the Court may consider a variety of legal sources in deciding cases:

- ◆ international conventions, whether general or particular, establishing rules expressly recognised by the contesting States;
- ◆ international custom, as evidence of a general practice accepted as law;
- ◆ the general principles of law recognised by civilised nations;
- ◆ subject to the provisions of Article 59, judicial decisions and the teachings of the most highly qualified publicists of the various nations, as subsidiary means for the determination of rules of law.

The ICJ differs from many other international tribunals in that:

- ◆ ICJ judges must be continuously at the disposal of the Court and cannot sit on other tribunals;
- ◆ the ICJ is permanent in its constitution and its established rules; and
- ◆ Parties do not have to pay fees or administrative costs, which are covered by the UN.

Recognising the rapid growth of international environmental law and the growing number of international cases that touched on environmental matters, the ICJ established a specialised Chamber for Environmental Matters in July 1993. The Chamber consists of a panel of seven ICJ judges. The Chamber is empowered to hear environmental cases only with the consent of the Parties to the case. As a practical matter, though, the ICJ's environmental cases generally proceed through the standard ICJ process, and have yet to take advantage of the specialised Chamber.

### d) Permanent Court of Arbitration

Established in 1899, the Permanent Court of Arbitration (PCA) resolves disputes among States, private Parties, and intergovernmental organisations through arbitration, conciliation and fact finding. It claims to be “the first global mechanism for the settlement of inter-state disputes”.

Each Party to the PCA can appoint up to four arbitrators (“Members of the Court”) to a standing roster. When there is a dispute for the PCA to resolve, each Party appoints two arbitrators from this roster, and the four arbitrators (two from each Party) select an umpire.

The International Bureau is the PCA’s Secretariat. It assists Parties in selecting arbitrators, and performs other legal and administrative functions. English and French are the official working languages of the PCA, although the Parties can agree to conduct proceedings in any language.

The PCA has adopted guidelines and model clauses for traditional dispute settlement in environmental treaties. These generally rely upon and build upon precedents, since existing approaches have been tested and are more likely to be adopted. In 2001, the PCA Administrative Council adopted Optional Rules for Arbitration of Disputes Relating to the Environment and/or Natural Resources. The Environmental Conciliation Rules, adopted in 2002, complement the earlier rules on arbitration. These Rules were developed by the International Bureau and a working group and drafting committee of experts in environmental law and arbitration.

The PCA also provides guidance on drafting environment-related dispute settlement clauses. For example, in 2003 the UNECE approved reference to the PCA Environmental Arbitration Rules in its draft “Legally Binding Instrument on Civil Liability under the 1992 Watercourses and TEIA Conventions”. The PCA has also collaborated with the CBD, the Biosafety Protocol, and UNFCCC COPs.

The PCA convenes seminars on international law and publishes the papers in independent volumes. These have included International Investments and Protection of the Environment: The Role of Dispute Resolution Mechanisms (2001) and Resolution of International Water Disputes (2003).

Key features of the Environmental Arbitration Rules are:

- ◆ availability for use by any combination and number of parties: States, intergovernmental organisations, non-governmental organisations, multinational corporations, and other private entities where all Parties can agree to use them. This was seen as necessary because disputes concerning the environment often involve multiple Parties of mixed origin (governmental/ non-governmental and even commercial). Special attention was given to ensuring harmony with existing environmentally related agreements so that references to these procedures could be inserted in such agreements seeking to adopt arbitration rules.
- ◆ Provisional measures of protection and security focused on mitigating or preventing serious harm to the environment.
- ◆ a roster of government nominated arbitrators, experienced in natural resources and environmental law, who can make themselves immediately available to the parties. That panel is nominated by the Member States and the Secretary-General as the case may be.

- ◆ a roster of government nominated experts in environmental science available to assist either the Parties or the tribunal. That panel would be nominated by Member States and the Secretary-General so that Parties would have immediate access to expert advice.
- ◆ confidentiality procedures designed to protect information impacting national security, and for commercial Parties, intellectual property, trade secrets, and other proprietary information, and where the Parties so agree, allowing for a “confidentiality advisor” to view information and report on it, but not reveal it in detail to the party from whom it did not originate nor to the tribunal.
- ◆ reduced time-periods as compared to intended to permit a speedy and dynamic response to the issues presented to the tribunal.

Taken together then, the Environmental Arbitration and Conciliation Rules are a concrete response to the calls issued in Rio Principle 26, asking States to find means to “...resolve all their environmental disputes peacefully...”, and Rio Principle 10 by providing access to justice to “all concerned citizens”. It is now hoped that States will consider adoption of references to these Rules in multilateral environmental agreements as the procedures for arbitration. Indeed, the PCA has been involved in the negotiations of multilateral environmental agreements which foresee, but have not yet adopted such arbitration or conciliation procedures, such as the United Nations Framework Convention on Climate Change. Further, these Rules will prove useful in future liability regimes, such as the one being contemplated under the United Nations Cartagena Protocol on Biosafety. The United Nations Economic Commission for Europe has convened a working group to draft a Civil Liability Protocol to the 1992 Watercourses and 1997 Transboundary Effects of Industrial Accidents Conventions, and that working group has adopted a reference for private-private arbitration of claims arising under that Protocol using the PCA Environmental Rules. Parties negotiating Bilateral Investment Treaties, Production Sharing Contracts, Emissions Trading Contracts, Bilateral and Regional Environmental Agreements, Liability Conventions, and any agreement relating to natural resources and environment should consider a reference to these Rules.

#### **e) Strategic Use of International and Domestic Dispute Resolution Mechanisms in the Danube Delta Case**

In 2003, The Government of Ukraine approved a project to dig a deep-water navigation channel through Ukraine’s portion of the Danube Delta Bilateral Biosphere Reserve. Ecopravo-Lviv (EPL), a Ukrainian public interest environmental law NGO, challenged this decision on both environmental and procedural grounds (including a lack of public participation in the EIA process). In addition to seeking remedies in national courts (see case study under Guideline 41(i)), EPL filed complaints with a variety of relevant international bodies in late 2003 and early 2004. These include:

- ◆ The Compliance Committee of the [Aarhus Convention] (on access to information, public participation in decision-making and access to justice in environmental matters). Romania also subsequently filed a complaint with the Compliance Committee;

- ◆ The Implementation Committee of the Espoo Convention (on EIA in a transboundary context). [The Implementation Committee refused, by a vote of 4-3 in 2004, to consider the complaint.] Romania subsequently filed a complaint with the Implementation Committee;
- ◆ A Letter of Emergency Notification filed with the Executive Secretary of the Convention on the Conservation of Migratory Species;
- ◆ An Emergency Complaint filed with the Permanent Secretariat of the International Commission for the Protection of the Danube River; and
- ◆ A Letter of Notification filed with the Secretariat of the African-Eurasian Waterbird Agreement (AEWA).

In addition, EPL has raised the issue with the Ramsar Convention and the UNESCO Man and Biosphere Programme, and both institutions have expressed concern about the channel.

This strategy of seeking relief through multiple domestic courts and international dispute resolution mechanisms can be resource intensive. Also, non-state actors that seek recourse from an international mechanism may - but not necessarily - be required to exhaust domestic remedies first. Exhaustion of remedies depends on the terms of the particular MEA or institution, and there often are exceptions for specific instances (e.g., emergency or futility).

A 2001 UNEP study on “Dispute Avoidance and Dispute Settlement in International Law” highlighted methods for resolving potential disputes regarding MEAs. The study emphasized the need to address potential disputes at the earliest possible stage in order to avoid disputes, as well as utilising informal, non-confrontational approaches to address disagreements and disputes. Ideally, dispute settlement provisions of an MEA will simply be there as a “safety net”, to be employed only when measures to promote compliance and avoid disputes have not been effective. Dispute settlement provisions typically call for less confrontational measures, such as good offices and conciliation, to be attempted first. If these are unsuccessful, more formal measures such as arbitration or other judicial arrangements may be employed.

Increasingly, dispute settlement bodies accept complaints by NGOs and private individuals against States, as well as interventions (including *amicus curiae* or “friend of the court” briefs) by NGOs in disputes between States. These bodies include, for example, the World Trade Organisation (*amicus* briefs), the Inter- American Court for the Protection and Promotion of Human Rights (complaints in environmental cases), and the International Court of Justice (*amicus* briefs).

### 12.3 India and Transboundary Water Conflicts

We are living in an era of industrialisation and rampant urbanisation. One of the pitfalls of this process is exploitation of natural resources leading to resource scarcity and environmental degradation. These events in turn contribute to environmental conflicts

that may turn violent on some occasions. Such environmental conflicts could be categorised as conflicts over water and mineral resources, including oil and diamonds and struggle for land and territorial rights. Most importantly, during the second half of the 20th century, focus on depleted and unsustainable uses of natural resources gained momentum with changing socio-economic and political developments. These involve issues associated with the natural environment and how humans will or will not be allowed to interact with it. Therefore it is important to understand and explore the values of interrelationships between humans, their habitats, and natural environment. Axiomatic to this relationship is the debate concerns the extent to which environmental abundance or scarcity contributes to underlying causes of conflict. Throughout history, countries have battled over natural resources. Between 1950 and 1976, fishing rights contributed to disputes between England and Iceland in three Cod Wars, although the disputes were ultimately settled through diplomatic means. One natural resource that will be a likely source of major conflict is water as many of the world's major rivers and underground aquifers cross national boundaries. So far, even in politically tense areas of the world such as the Middle East, neighbouring countries have generally succeeded in maintaining agreements for the sharing water supplies. However, a number of violent conflicts have erupted, in part, over the abundance of resources. In several African nations, lucrative mineral resources - oil, diamonds, and other strategically important minerals - have fuelled ongoing conflicts. Sierra Leone, Congo, Liberia, and Angola have all experienced horrific civil wars in recent decades, and a major factor in those wars has been over diamonds. All four countries have been devastated by warfare due primarily to predatory governing elites using their control over the resources to enrich themselves and outfit armies used to maintain their command.

### **India and Transboundary Water Conflicts**

It is estimated that by 2025, over half of the world's inhabitants will be directly affected by water scarcity. Most of them will live in either China or India. Conflict over water can be considered at two levels. First, there is the possibility of internal political conflict due to the inability of governments to provide sufficient water to various dependants. Second, there is the possibility of international or inter-regional conflict over transboundary water supplies. The implicit understanding is that countries or regions that already face internal unrest are particularly vulnerable to resource conflicts. The 2006 UN report, "From water wars to bridges of co-operation: Exploring the peace-building potential of a shared resource", details just a small number of these instances.

### **India-China Water Conflict**

China has access to about 7% of the world's water resources, but is home to around 20% of the global population, while India possesses around 4% of water resources with only a slightly smaller populace. Both countries, along with eight other Asian nations and 47% of the world's people, are heavily dependent on the Tibetan Plateau for water. Research indicates that in the near future, India and China will most likely find themselves confronted by just such high levels of water stress. Six major Asian river basins begin in the Tibetan Plateau - the Indus (India, Pakistan); the Ganges (Nepal, India, Bangladesh);

the Brahmaputra (India, Bangladesh); the Salween (China, Burma, Thailand); the Mekong (China, Laos, Thailand, Cambodia, Vietnam); and the Yangtze (China). Over 45,000 glaciers seasonally drain into these rivers, but experts warn that due to global warming they are shrinking at twice the rate of other glaciers worldwide. This factor, combined with increasing water consumption, desertification, rapid industrialisation and pollution, mean that demand for the pristine and previously plentiful water of the Tibetan Plateau is increasing. Yet, it is also drying up. Trans-boundary water supply is developing into a major, if largely unremarked upon as yet, politico-security issue for Asia's two giants. The Chinese Ministry of Water Resources' 2005 report, "Tibet's Water Will Save China", underscores the strategic importance of Tibet vis-à-vis water. It discusses the controversial South-North Water Transfer Project, which entails three man-made rivers channelling water from the Plateau to China's arid north. This scheme will divert water from the Yarlung Tsangpo, Dadu and Jinsha rivers, which rise in the Plateau, and carry it to the Yellow River (Huang He) to provide water for human consumption, farming and industry. Three diversion routes are involved in the project but it is the diversion of the Yarlung Tsangpo that is the most controversial and technologically challenging of the three routes. The river flows eastwards through southern Tibet before making a spectacular U-turn at its easternmost point, called the Shuomatan Point or the "Great Bend", just prior to entering India. Here it is joined by two other major rivers and from this point of confluence, it is known as the Brahmaputra. It is also here that China plans to divert water. This diversion will mean that the amount of water in the Brahmaputra will fall significantly, affecting India's northeast and Bangladesh. It will also severely affect agriculture and fishing due to an increase in water salinity and silting downstream. India and China have no water-sharing treaty and although they had agreed to set up a joint expert-level mechanism on interstate river waters.

### **India-Pakistan Water Conflict**

South Asia is a region with heavy dependence on its rivers to meet its need for fresh water. The primary issue that could trigger a regional crisis could be over the Indus River that flows into Pakistan from India. Both countries have systematically brought up the dispute regarding the flow of the Indus River and its tributaries in their bilateral relations. The Indus River water dispute originates from the provision of the Indus Water Treaty (IWT), which came into force in 1960. The purpose of the IWT is to end issues regarding the Indus River within a framework of an institutional mechanism. Pakistan further claims that India is diverting its waters and the construction of hydroelectric dams by India is reducing the flow of water to Pakistan. Pakistan has been objecting to India's Kishenganga power project; it claims that this project will divert the waters of the Ganga and will also lead to a 27% shortage in water in Pakistan.

### **India-Bangladesh Water Conflict**

Similarly, India and Bangladesh have disputes over the sharing of the Ganges River and Bangladesh argues that it does not get a fair share of the Ganga waters or its territory gets flooded during the monsoons because of the release of the excess waters by India. The Tipaimukh Multipurpose Hydroelectric Dam Project which was commissioned by India

in the year 2006, has been in the news recently as concerns have been raised by the Bangladesh government as well as civil society and environmental groups both in India and Bangladesh, over the impact of the dam on the region. The dam project had been on the drawing board for a long time until the project was awarded to North Eastern Electric Power Corporation (NEEPCO) in 2003, only to be replaced by the State-owned National Hydro-electric Power Corporation (NHPC) in July 2009 due to the concerns of the Manipur State government over NEEPCO. The Tipaimukh Dam is located near the confluence of the Barak and the Tuivai rivers in the Tipaimukh sub-division of the Churachandpur district of Manipur. This area is close to the Manipur-Mizoram-Assam border, and therefore the project involves the three States in Northeast India. The Barak river which flows downstream to meet the Surma river system in Bangladesh, is considered to be the lifeline of the Sylhet region in Bangladesh. There have been intense debates in Bangladesh among civil society groups, environmental groups, human rights organisations and media over the implications of the Tipaimukh Dam on the share of water coming from upper-riparian India. The water sharing of transboundary rivers between India and Bangladesh had an unpleasant past with the Farakka dispute over sharing of waters of the Ganges which is still under negotiation. The Water Resources Minister of Bangladesh in 2009 emphasized the need to have negotiations on the concerns and issues raised between both countries. Bangladesh has urged India to conduct a joint study of the implications that the Tipaimukh Dam would have on the region and the future flow of water in the concerned river system, which directly affects Bangladesh, being the lower-riparian country.

### **India-Nepal Water Conflict**

India and Nepal disagree over the agreements on the Mahakali and the Kosi Rivers. Nepal complains that these are unjust and do not perpetrate an equal sharing of waters between the countries. One of the major problems relating to sharing of waters among the South Asian countries has been the construction of large hydro-electric projects which divert shared river waters between countries. In this regard for resolving or managing these conflicts, it has been suggested that South Asian Association for Regional Cooperation (SAARC) should encourage joint water management solutions like for example hydro-electric projects and energy exchanges between the countries.

### **India-Bhutan Water Conflict**

Initially, India and Bhutan entered into a cooperation based on the development of small-scale hydro projects such as Tala, Chukha and Kurichu. In 2006, both countries inked a Power Purchase Agreement for thirty-five years that allowed India to generate and import 5000 MW of hydro-power from Bhutan, the quantum of which increased to 10,000 MW in 2008. However, the people of Bhutan raised objections to such projects on their long run effects in the country, such as for instance, if Bhutan ever decides to construct storage projects, issues will get intense and more problematic when it comes to dealing with India. The internal challenge in Bhutan is with respect to water accessibility.

Let us briefly analyse the other cases of environmental and resource conflicts.

### **Antarctica**

Systematic exploration and territorial claims on Antarctica extend back to the turn of the century. After World War II these claims expanded and threatened to militarise the continent. Meteorology, oceanography, glaciology and other kinds of environmental research in or near Antarctica figured prominently in 1957-58. The 1959 Antarctic Treaty, negotiated with U.S. and USSR leadership, calls for the continued absence of military activities and the suspension of all territorial claims. For Antarctica, scientific co-operation appears to have eased the way for political co-operation.

### **Atmospheric Testing**

Atmospheric testing of nuclear weapons was a highly visible form of threat behaviour during the Cold War. Many reinforcing events in the mid-1950s led to concern about radioactive fallout from the testing. The public most feared the health effects of fallout; radioactive elements were, for example, measurable in milk. The test ban soon became a cause of the nuclear disarmament movement. The succession of large nuclear yield tests that began in the late 1940s and ended, for the most part, in the early 1960s injected much NO<sub>2</sub> into the stratosphere. The oxides of nitrogen are mainly produced in the fireball, with heating and cooling of the captured air. The largest annual yield of nuclear tests occurred in 1962, 108 megatons, including two explosions of 30 megatons. The largest yield was an explosion in 1961 of 58 megatons. About three-fourths of total yield in the peak years around 1960 exploded in the atmosphere. The bulk of these detonations was in the upper troposphere and stratosphere, but Starfish detonated a yield of 1.4 megatons in the thermosphere at an altitude of 400 km. Altitude matters greatly for NO<sub>2</sub> production calculations. NO<sub>2</sub> absorbs solar radiation, and its enhanced presence in the stratosphere for a period of two decades could have reduced the sunlight reaching the surface by a few percent. Climatologists, in fact, observed a temporary cooling trend in the Northern hemisphere, where nearly all atomic tests occurred. Part of the task of making nuclear bombs is performing the calculations of atmospheric effects, so several environmental scientists worrying about the climatic and other effects on both sides had ample access to high-level officials in government and the military. This access, and related trust, probably helped expedite the 1963 Limited Test Ban.

### **Acid Deposition**

From the late 1960s, the Scandinavian countries began claiming that the acidity of their rain was increasing and that it was caused by European, especially English, emissions upwind. The acidity allegedly damaged Scandinavian lakes and woods. Beginning in 1972, the Organisation for Economic Co-operation and Development (OECD) conducted a study of long-range transport of air pollutants to assess such claims. Similar conflicts and joint study efforts arose between the United States and Canada in the late 1970s, and peaked, with harsh words but no violence, in the early 1980s.

## Climate Change

Global warming induced by greenhouse gases emitted by human activities could cause conflicts in at least two ways. Erratic, unfavourable weather and climate could raise pressures for migration, certainly an irritant for some receiving States. In recent years such environmental migrants, have numbered around 10 million annually. The bulk have been concentrated in a few countries, such as Afghanistan, Ethiopia and Burundi. Political threats to well-being, violence, and economic suffering as well as droughts and floods produce refugees. Studies attribute rather few refugees directly and solely to environmental disasters and shortages of resources.

The second way climatic change could cause conflict is through inequitable or apparently inequitable means to reduce carbon emissions, especially from coal and oil. Conflict might arise between the rich, developed countries of the so-called North and those of the poorer South. The South wants to increase its use of carbon and continue exporting it, while the North is ambivalent about curbing its appetite. The idea of “joint implementation”, basically financial transfers from the North to the South (and the former Soviet Union) for emission reduction in the South that might also lower globally the cost of emission restraints, developed under the auspices of the Intergovernmental Panel on Climatic Change (IPCC), a body of several thousand technical experts. The idea has now moved into the political and diplomatic arena.

The IPCC originated in volunteer efforts under the auspices of the scientist-controlled Scientific Committee on Problems of the Environment (SCOPE) of the non-governmental International Council of Scientific Unions (ICSU) to provide international equivalents of U.S. National Research Council studies on global warming.

## 12.4 Conclusion

With human population increasing and natural resources dwindling, conflicts over environmental issues continue to rise in frequency and intensity. With growing emphasis on environmental issues of international concern, there is need for building consensus among competing stakeholders and interests. Political commitment to tenets of democracy and good governance is crucial for sustainable management of natural resources. A conflict impact assessment in exploration of natural resources is important is often an important starting point. Countries should include the basic development co-operation policy for achieving coherence and to de-escalate the violence over natural resources. Crisis prevention and conflict management are relevant not only to government bodies but also to private actors. Groups in civil society originating from conflict areas are of prime importance because they are very familiar with regional conditions, they are often well accepted and they are able to ensure long-term involvement. Non-governmental organisations (NGOs) operating at international level are also important actors. Growing attention is being paid to the importance of local and international private enterprises for conflict situations.

# UNIT 13

## UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE AND THE KYOTO PROTOCOL

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### 13.1 Introduction

Awareness about the climate, its development and changes differ in different communities. It has presumably, always been high among the more intelligent members of primitive societies living in vulnerable regions. To establish a history of the changes in climate is not easy because of the difficulties in obtaining truly representative measurements. Climate change has been universally recognised as a global problem. While, historically, the preponderance of greenhouse gas emissions has been in developed countries, emissions will increase rapidly with expected and needed economic growth in developing countries. The principal reason for lack of progress is that in developing countries, climate change is not an important focus of economic or development policy and only recently has it been considered among national environmental policy objectives. Climate change remains too marginal compared to the pressing issues of food security, poverty, natural resource management, energy needs and access, or urban land use to capture the attention of leading actors. Various parties to the United Nations Framework Convention on Climate Change (UNFCCC) 1992, as well as independent scientific analysis, have reiterated that strong and inclusive global co-operation that integrates sustainable development and climate change policy objectives will be needed to address these global environmental issues.

Current international climate change policies have been uniquely driven by global environmental policy concerns, and very little attention has been given to local development and the environmental impacts of specific policies. However, from the

local perspective, ancillary benefits of climate change policies, such as increased energy efficiency and the health impacts of local air pollution, may be significant and may therefore be very important in promoting local action.

The earth's climate is determined in large part by the presence in the atmosphere of naturally occurring greenhouse gases, including in particular water-vapour, carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), CFCs, nitrous oxide (N<sub>2</sub>O) and tropospheric ozone (O<sub>3</sub>). These are transparent to incoming shortwave solar radiation but absorb and trap longwave radiation emitted by the earth's surface. Their presence exerts a warming influence on the earth. Scientific evidence suggests that continued increases in atmospheric concentrations of selected greenhouse gases due to human activities will lead to an enhanced 'greenhouse effect' and global climate change.

## 13.2 UN Framework Convention on Climate Change, 1992

According to the Second Report Intergovernmental Panel on Climate Change (IPCC), the body responsible for studying the scientific aspects of climate change, it is estimated that if the present rate of greenhouse gas (GHG) emissions continues, the earth's temperature will rise by 1.4 to 5.8°C by 2100. The Fourth Report of the IPCC has confirmed unequivocally the warming of the climate system and the increase in global air and ocean temperatures, rising global average sea levels and reductions of snow and ice. The probing questions asked are - How do we define what constitutes "dangerous anthropogenic"? How do we prepare the human race to face sea level rise and a world with new geographical features? Is the current pace and pattern of development sustainable? What changes in lifestyles, behaviour patterns and management practices are needed, and by when?

It may be recalled that the UN General Assembly in 1988, the adopted a resolution, which unequivocally determined that "climate change is a common concern of mankind" and which required "urgent action by all States". This initiated political negotiations, which led to the completion of an international convention regime to address the issue. By 1992, sufficient scientific and political consensus had been reached to allow 154 States to sign the United Nations Framework Convention on Climate Change, 1992 ("Convention").

This is an extremely alarming situation which may would lead to submerging of a number of low-lying States such as Bangladesh, Sri Lanka, Maldives and Egypt and a number of small island States, on account of rising sea levels, followed by natural disasters such as drought and floods, loss of biological diversity and spread of endemic diseases.

Based on this evidence and a number of other preparatory negotiations the international community adopted the United Nations Framework Convention on Climate Change (UNFCCC) on 9 May 1992. It entered into force on 23 March 1994. Because of UNCED's political prominence, many international environmental debates were merged into the process, such as those of the conventions on climate change and biodiversity, which were not negotiated at UNCED or in the Prepcom meeting but were signed in Rio following

separate negotiations. Formal international discussion of a convention on climate change began in 1988 with the establishment of the Inter-governmental Panel on Climate Change (IPCC), an advisory body of scientists and officials that assessed comprehensively climate science, impacts and response strategies. IPCC served as a forum for “prenegotiation”, because many of its participants expected it to be followed by formal negotiations under the same authority. Instead, the UN General Assembly passed a resolution on December 1990 that established the Inter-governmental Negotiating Committee (INC).

The negotiation of a treaty to address climate change and its effects was formally set in motion by the UN General Assembly determined that ‘climate change is a common concern of mankind’ and urged governments and intergovernmental and non-governmental organisations to collaborate in concerted effort to prepare, as a matter of urgency, a framework convention on climate change. The 1992 Convention on Climate Change went beyond the scope of the 1985 Vienna Convention, which took nearly three times as long to negotiate among a smaller group of States. The word ‘Framework’ in the title is something of a misnomer, since the 1992 Convention established:

- 1) Commitments to stabilise greenhouse gas concentration in the atmosphere at a safe level, over the long term, and to limit emissions of greenhouse gases by developed countries in accordance with soft targets and timetables;
- 2) A financial mechanism and a commitment by certain developed country Parties to provide financial mechanism and a commitment by certain incremental costs and adaptation measures;
- 3) Two subsidiary bodies to the conference of the Parties;
- 4) A number of important guiding ‘Principles’; and
- 5) Potentially innovative implementation and dispute settlement mechanisms.

The Convention was the first international environmental agreements to be negotiated by virtually the whole of the international community, with 143 States participating in the final session of the INC/FCCC. The relation between the Climate Change Convention and vital national, economic, social and environmental interests was evident from the different interest groups of States which emerged during the negotiation.

The main objective of the 1992 UNFCCC is to tackle the negative effects of climate change. The Convention’s stated aim is to stabilise anthropogenic (human-induced) greenhouse gas concentration at a level that allows ecosystems to adapt naturally to climate change so that food production is not threatened, while enabling economic development to proceed in a sustainable manner (Art. 2). In achieving this aim, the Parties to the Convention are to be guided by a number of principles that reflect the understanding of global environmental responsibility elaborated in the Rio Declaration on Environment and Development and Agenda 21.

Some of the general commitments under the UNFCCC include:

- ◆ The establishment of national inventories of greenhouse gas emissions and sinks;

- ◆ The promotion of scientific and technical co-operation;
- ◆ The sustainable management of forests, oceans and ecosystems; and
- ◆ The integration of climate change considerations in national social, economic and environmental policies.

While undertaking these obligations Parties shall strive to avoid occurrence of climate change on such a level that would impede socio-economic development and threaten food production.

The Convention provides a framework for adopting measures towards reduction of GHG's, based on the principle of common but differentiated responsibilities and a precautionary action, wherein adverse effects of climate change are addressed as a common concern of mankind. Without permitting reservations, the UNFCCC calls upon States to protect the climate for present and future generations.

Under the Convention, some Parties are classified as Annex-I Parties, and have binding commitments. Annex-I Parties include industrialised nations that have committed to return to their anthropogenic emissions to 1990 levels by 2000. Towards this end, the Annex-I Parties are required to adopt national policies and measures to mitigate the negative effects of climate change by both limiting the emission of greenhouse gases and by protecting greenhouse gas sinks.

However, the wording of the 1992 UNFCCC is considered to be rather vague and the extent to which it represents a binding obligation has therefore been questioned (Art. 4(2)). In recognition of the fact that these commitments are only the first step in addressing the problem of climate change, the Convention provides for the review of the adequacy of the commitments at an early stage, and then at regular intervals (Art. 4(2)(d)). This provision led to further negotiations on setting the specific emission reduction targets found in the 1997 Kyoto Protocol.

The Conference of the Parties ("COP") to the UNFCCC serves as the highest and principal supervisory plenary body responsible for outlining the policy and implementing the obligations of the treaty. The COP meets regularly i.e. annually to review the adequacy, implementation and effectiveness of the Convention and the Kyoto Protocol.

The COP receives advice from the Subsidiary Body for Scientific and Technological Advice ("SBSTA") which reviews and advises on the state of scientific and technical knowledge (Art. 9), and the Supplementary Body for Implementation ("SBI"), which makes recommendations on policy and implementation issues (Art. 10).

### ***Preamble, definition, objective and principles***

The Convention's Preamble reflects a wide range of interests. It includes matters jettisoned from the 'Principles', and expressly recognises, *inter-alia*, 'the principle of sovereignty', that the largest share of historical and current global emissions has originated in developed countries. The Preamble also refers to the concepts of 'per capita emissions' and 'energy

efficiency', matters which did not receive sufficient support to be included in the operational part of the Convention.

The ultimate objective of the Climate Change Convention is to stabilise greenhouse gas concentration in the atmosphere 'at a level that would prevent dangerous anthropogenic interference with the climate system'. However, the Convention implicitly recognises that some climate change is inevitable, since the objective is to be achieved within a timeframe sufficient to allow 'ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner'. Parties should adopt measures and policies which are 'precautionary', 'cost-effective' and 'comprehensive', and which take into account different 'socio-economic contexts'.

Finally, throughout the 'Principles', section and elsewhere in the Convention, reference is made to the need to ensure 'sustainable economic growth' in order to address the problems of climate change.

### ***Commitments***

#### **◆ General**

The general commitments include the development of national inventories of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, and the formulation and implementation of national and, where appropriate, regional programmes containing measures to mitigate climate change by addressing emissions and removals of these gases and by facilitation of adequate adaptation to climate change.

#### **◆ Specific**

At the heart of the Convention are the specific commitments relating to sources and sinks of greenhouse gases binding in all developed country Parties and the EC under Article 4(2). The extent of these commitments is unclear as a result of the convoluted, language agreed to by way of compromise between developed and developing countries. The Parties agreed to begin a process to enable [the conference of the Parties] to take appropriate action for the period beyond 2000, including the strengthening of the commitments of the Parties through the adoption of a protocol or another legal instrument. This process led to the adoption of a protocol to the Convention at the third conference of the Parties in Kyoto in 1997. The Kyoto Protocol set quantified targets and a timetable for the reduction of greenhouse gas emissions by developed country parties.

The convention provides for 'joint implementation' by Parties of their policies and measures which would lay the foundation for the efforts of those States which sought to ensure that emission reductions should be carried out in the most 'cost effective' way possible. The Convention additionally requires that 'a certain degree of flexibility', should be allowed to developed country parties 'undergoing the transition to a market economy'.

### ***Institutional arrangements***

The Climate Change Convention establishes a conference of the Parties, a secretariat, two subsidiary bodies and a financial mechanism. It met for the first time in 1995 and has subsequently met annually. It has several functions, including:

- i) To examine periodically the obligations of the Parties;
- ii) To facilitate the co-ordination of measures;
- iii) To promote and guide comparable methodologies for preparing inventories of greenhouse gas emissions;
- iv) To assess the implementation of the Convention by all Parties and the overall effect of measures; and
- v) To adopt regular reports on the implementation of the Convention.

A multidisciplinary Subsidiary Body for Scientific and Technological Advice was established to provide information on scientific and technological matters to the conference of the Parties. A Subsidiary Body for Implementation was established to assist the conference of the Parties in the assessment and review of the implementation of the Convention. Although some States wanted to limit participation, both subsidiary bodies are open to participation by all Parties.

The convention defines a financial mechanism for the provision of financial resources on a grant or concessional basis, including for the transfer of technology. The mechanism is required to have an equitable and balanced representation of all Parties within a transparent system of governance.

### ***Implementation and Dispute Settlement***

Apart from the role of the conference of the parties and the Subsidiary Body of Implementation, the Convention provides for the possibility of establishing a 'multilateral consultative process' for the resolution of implementation questions, which will be available to Parties on their request. This whittles down two more ambitious original proposals. Additionally, a dispute settlement Article provides for possible compulsory recourse to arbitration or the International Court of Justice with the consent of relevant Parties to a dispute, as well as the possibilities for the compulsory establishment of a conciliation commission with the power to make a recommendatory award, at the request of one of the Parties to a dispute twelve months after notification of the dispute. The Convention provides for amendment, the adoption and amendment of Annexes, and the adoption of Protocols, no reservations are permitted. Prior to its entry into force, Article 21 of the Convention established interim arrangements concerning the designation of an interim secretariat, co-operation with the IPCC and other scientific bodies.

## **13.3 The 1997 Kyoto Protocol**

The Kyoto Protocol to the Framework Convention on Climate Change was adopted by the third conference of the Parties in December 1997. Negotiations for Protocol to the

Convention commenced in 1995 after the first conference of the Parties, meeting in Berlin, determined that the commitments provided for in Article 4(2) (a) and (b) of the Convention were 'not adequate' and decided to launch a process to strengthen the commitments of Annex-I Parties through the adoption of a protocol or another legal instrument. The process was not intended to introduce any new commitments for non-Annex-I Parties, but merely to 'reaffirm existing commitments in Article 4.1 and continue to advance the implementations of these commitments. Negotiations were to be conducted as matter of urgency with a view to adopting the results at the third conference of the Parties in 1997. At the second conference of the Parties at Geneva in 1996, a Ministerial Declaration was adopted by which Ministers urged their respective representatives to accelerate negotiations on a legally binding protocol or another legal instrument. Given the economic and developmental implications, it is not surprising that the Kyoto Protocol negotiations were among the most difficult and complex ever conducted for a multilateral environmental agreement. Deep divisions between the Parties emerged in relation to a range of key issues, such as emissions reduction targets, sinks, emissions trading, joint implementation and the treatment of developing countries. In early 2001, the future of the Protocol was thrown into doubt with the announcement by President George W. Bush that the United States (responsible for a quarter of 1990 global greenhouse gas emissions) would not ratify the Protocol. Nevertheless, at the resumed session of the sixth conference of the Parties, held in Bonn in July 2001, the remaining States Parties reached agreement on mechanisms for implementing commitments under the Protocol. The Bonn Agreements were not drafted as a legal text, but, at a political level, reflected an important breakthrough on many of the critical negotiating issues, and a clear signal that the world community was prepared to go ahead with the Kyoto Protocol, even without United States support. The Parties were able to incorporate almost all of the deals made in Bonn into the legal text of the 'Marrakesh Accords', a series of decisions concerning the implementation of the Kyoto Protocol which paved the way for its entry into force.

### ***Policies and Measures***

Article 2 of the Protocol contains a list of policies and measures which Parties may implement in order to achieve their quantified limitation and emission reduction targets. During negotiations for the Protocol, the European Union pushed for the adoption of mandatory and co-ordinated 'policies and measures' but this was resisted by the United States, Canada, Australia and some other Annex-I Parties who sought more flexible approach, with policies and measures to be determined principally by each individual Party. This latter approach was largely adopted in Article 2, which provides that each Annex-I Party, in achieving its emissions limitation and reduction commitments under Article 3, shall implement policies and measures 'in accordance with its national circumstances'. A list of indicative measures follows, which includes enhancement of energy efficiency, the protection and enhancement of sinks, the promotion of sustainable forms of agriculture, increased research on and use of new renewable forms of energy, measures to limit or reduce emissions in the transport sector and the limitation or reduction of methane emissions.

### ***Entry into force and Amendments***

In order to enter into force, the Protocol requires the ratification, acceptance, approval or accession of at least fifty-five Parties to the Convention, which must include Annex-I Parties which accounted for at least 55% of the total carbon dioxide emissions of Annex-I Parties in 1990. The refusal of the world's largest greenhouse emitter, the United States, to ratify the Protocol made the participation by other Annex-I Parties with significant emission, such as Japan, the European Community and Russia, essential for the Protocol to come into force.

Amendments to the Protocol can be adopted by a three-fourths majority vote of the Parties present and voting at the meeting at which it is proposed for adoption, followed by its ratification or acceptance by at least three-fourths of the Parties to the Protocol.

Negotiations on a successor to the Kyoto Protocol dominated the 2007 United Nations Climate Change Conference. A meeting of environment ministers and experts held in June called on the conference to agree a road-map, timetable and 'concrete steps for the negotiations' with a view to reaching an agreement by 2009.

**Climate Change and Sustainable Development** - By wastefully exploiting natural resources, and by the thoughtless application of technology, the industrial and agrarian societies have attained a potential for inflicting damage on a scale that has seriously endangered the survival of man on this planet. Data records clearly indicate that the increase in past trends is currently maintained in practically all areas that are of environmental global warming, tropospheric ozone, air, soil and water pollution, including chemical and radioactive wastes, as well as allergies, viral and carcinogenic diseases. There are a large number of protective measures available, but their effectiveness in reducing the climate impacts varies widely. Climate and environment are some of the most critical factors on which a sustainable future depends. They must, therefore, be protected.

The term "sustainable development" has its origins in the International Union for the Conservation of Nature's (IUCN's) 1980 World Conservation Strategy report (IUCN, WWF and UNEP, 1980), but it was with the World Commission on Environmental and Development report, entitled *Our Common Future* (1987) that the term gained broad currency. The commission defined sustainable development as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs.'

The most conspicuous services that the natural environment provides are food and inputs to production, including energy, metals and timber. The natural environment also provides more fundamental services, without which human life on earth would not be possible. These are known as Global Life-Support services, since they provide the basic necessities to allow human life such as food, shelter, and the maintenance of suitable climatic and atmospheric conditions.

### Commitments under the Protocol

As intended by the Berlin Mandate, the 1997 Kyoto Protocol covers the period beyond the year 2000 and requires stronger commitments from Annex-I Parties to achieve quantified emission reductions within a specified timeframe. These commitments cover the six greenhouse gases listed in Annex-A of the Kyoto Protocol (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulphur hexafluoride), and each Annex-I Party's particular 'quantified emission reduction target' (QELROS) is listed in Annex-B. These targets are designed to ensure that combined emissions from these 'Annex-B Parties' are reduced to at least 5% below 1990 levels between 2008 and 2012. However, since emission levels have risen substantially since 1990, this measure is still unlikely to stabilise human induced global warming.

In accordance with Article 4(2) of the Convention, differentiated targets were set for Annex-B Parties taking into account their particular circumstances, including their ability to access clean technology. The differentiated emission reduction targets were based on 1990 emission levels, and range from an 8% reduction for the EU to a 10% increase for Iceland (called "assigned amounts"). Changes in land use or forest plantations which result in emission reductions could also be used in principle to meet a Party's emission reduction target, provided such changes do result in a real reduction (the 'sinks' must become permanent).

All Annex-B Parties are obliged to make demonstrable progress in meeting their emission reduction targets by 2005. However, the 1997 Kyoto Protocol does not actually prescribe how the targets are to be achieved. A range of indicative measures are proposed, which include: Promoting energy efficiency; promoting renewable energy; phasing out subsidies that contravene the objectives of the Convention; protecting and enhancing sinks; and promoting sustainable forms of agriculture.

To strengthen the UNFCCC, largely a framework convention the Kyoto Protocol was adopted in 1997 and it entered into force in February 2005 with more than 175 Parties.

The chief objective of the Protocol is that "...the Parties agree to individually or jointly, ensure that the aggregate anthropogenic (human-based) carbon dioxide equivalent emissions or GHG emissions by Annex-I Parties do not exceed their assigned amount, calculated pursuant to their quantified emission limited and reduction commitments inscribed in Annex-I and in accordance with the provisions of this Article, with a view to reducing their overall emissions of such gases by at least 5% below 1990 levels in the commitment period 2008 to 2012." It also provides for two Annexes A and B that provide a list of the GHGs and countries and their quantified limitation reduction commitments.

### Flexibility Mechanisms

In order to achieve these reductions Annex-I (industrialised or developed countries), have been provided innovative set of tools, called 'flexibility mechanisms' through which they can meet their Kyoto targets. These mechanisms are designed to help the Annex-I Parties maximise the cost-efficiency of meeting their emission reduction targets. These

flexible mechanisms allow State Parties (and authorised private or public sector organisations or businesses) to reduce emissions by undertaking projects in other countries or by trading in emission reduction credits, and then counting these reductions towards their own emission reduction targets. The use of the flexible mechanisms is subject to the condition that the emission reductions targets are to be supplemental to national action to reduce emissions. However, domestic reduction of targets has been seen to be completely ignored by many Annex-I countries.

These mechanisms include: emission trading, the clean development mechanisms (CDM), joint implementation. CDM involves projects, which are undertaken by the industrialised countries in the developing world for reduction of GHG and sustainable development measures. Joint implementation as a word suggests would be a co-operative exercise between Annex-I Parties, to enable trade emission certificates between them on the basis of their assigned amounts. And emission trading involves trading of excess emission allowances, which an industrialised country may have gained.

### **Compliance Mechanism**

It may be recalled that Compliance was one of the most contentious issues at COP-7 in Marrakech, but the Parties eventually adopted compliance procedures which represent the ‘teeth’ of the climate change regime. The Marrakech Accords provide for the creation of a new institution, the Compliance Committee, charged with promoting compliance, providing advice and assistance to the Parties, determining cases of non-compliance and applying appropriate “consequences” for non-compliance.

The Compliance Committee has two branches; a ‘Facilitating Branch’ and a more judicial-like ‘Enforcement Branch’. The Facilitative Branch will provide advice and assistance on the implementation of the Kyoto Protocol, giving out ‘early-warnings’ in case where a Party is in danger of not complying with its emission reduction target. The Facilitative Branch will be able to make recommendations and mobilise financial and technical resources to help the Party comply. The Enforcement Branch will determine whether an Annex-I Party has met its emissions target, complied with its monitoring and reporting requirements, and met the eligibility tests for participation in the flexible mechanisms.

The compliance procedures will be triggered primarily by the results of the review of Parties’ annual reports; and a Bureau of the Compliance Committee will be responsible for allocating questions of implementation to the appropriate branch. The Enforcement Branch makes decisions by double majority voting, so that majority from each block of the members of a branch (i.e., both Annex-I and non-Annex-I Parties) must approve it. Public participation in the proceedings will be possible. If a Party feels that it has been denied due process during the enforcement proceedings, it can lodge an appeal with the COP/MOP.

When a Party does not comply with the monitoring and reporting requirements of the 1997 Kyoto Protocol, the Enforcement Branch can require the relevant Party to submit an action plan that includes an analysis of the causes of non-compliance, undertake

corrective measures to remedy the non-compliance, and set a timetable for the implementation of the action plan. If an Annex-I Party is not in compliance with the eligibility requirements for the Protocol's flexible mechanism, the Enforcement Branch will be able to order the suspension of the Party's eligibility to participate in the mechanisms until the Party has achieved compliance.

If an Annex-I Party fails to meet its emission reduction target, the Enforcement Branch will be able to apply the following consequences:

- ◆ For every ton of emissions by which a Party exceeds its target, 1.3 tons can be deducted from its emissions allocation (assigned amount) for the subsequent compliance period;
- ◆ The Party will have to prepare a detailed plan explaining how it will meet its reduced target for the subsequent compliance period; and
- ◆ The Party will not be able to use international emissions trading to sell any of its emissions allocation until it has demonstrated that it will be able to comply with its current target.

From the above, it is clear therefore that the compliance regime of the Kyoto Protocol is a strong one that can make an Annex-I Party who has not undertaken binding targets to fulfil its obligations.

It may however, be noted that the Bonn Secretariat to the UNFCCC in 2009 came up with a compliance report clearly stating that except Norway, Finland and a few Scandinavian countries other Annex-I countries have not complied with their commitments.

Annex-I Parties have refused to fulfil their obligation as per the flexible mechanisms over the issue of 'sinks'. Sinks - largely denotes the demand of the developed countries to include forest cover in the carbon (GHG) sequestration measures and accounting of the assigned amounts of GHG reduction. The G-77 and China have opposed these moves, as they fear that afforestation, re-forestation and deforestation measures will impinge upon the use of their sovereign resources.

### **Copenhagen Meeting on Climate Change**

COP 15 took place in Copenhagen, Denmark, from December 7 to December 18, 2009.

The overall goal for the COP 15/MOP 5 United Nations Climate Change Conference in Denmark was to establish an ambitious global climate agreement for the period from 2012 when the first commitment period under the Kyoto Protocol expires. Ministers and officials from 192 countries took part in the Copenhagen meeting and in addition there were participants from a large number of civil society organisations.

The Copenhagen COP met in the background of a number of States wanting a legally binding text to emerge doing away with the Kyoto Protocol. Chief among them was the United States that had made it clear that it would attend the meeting with the understanding that KP stood dead and buried. A large number of African and small island

States opposed and continue to oppose this understanding as they believe that KP can continue with a new negotiated commitment period. The two main target States were India and China who the US believes should be brought on board to undertake binding commitments like Annex-I countries. As many Annex-I industrialised countries are now reluctant to fulfil commitments under the Kyoto Protocol, a large part of the diplomatic work that lays the foundation for a post-Kyoto agreement was undertaken up to the COP 15.

At Copenhagen, the work of the Long-Term Action Plan (LCA) under the UNFCCC and the work under the Ad Hoc Working Group on Kyoto Protocol (AWG-KP) were taken up at parallel meetings. After nearly three weeks of negotiation with more than 100 world leaders attending the meeting the Danish Presidency circulated a draft agreement on climate change. This draft text called the Copenhagen accord was adopted with the meeting of leaders from US, EU Countries, India, South Africa, Brazil and other countries. The draft Accord as it is called is not a legally binding document, but could be politically binding on those countries that agreed to place it before the plenary. In that sense, it is binding on the 'Friends of the Chair' called by the Danish Presidency. It may be noted that some countries objected to the Accord and many openly supported it on the final day plenary. The Accord was only taken note of and all it provides is a pledge for helping countries adversely affected by climate change, such as LDCs, small island States, developing countries with financial and technological resources to meet their incremental costs in combating climate change. A Special Green Climate Change Fund has been established for this purpose.

### Post Copenhagen

Other COPs that followed were:

- ◆ 2010: COP 16/MOP 6, Cancún, Mexico

COP 16 was held in Cancún, Mexico, from November 29 to December 10, 2010. The outcome of the summit was an agreement adopted by the States' Parties that called for the 100 billion USD per annum "Green Climate Fund", and a "Climate Technology Center" and network. However, the funding of the Green Climate Fund was not agreed upon. Nor was any commitment to a second period of the Kyoto Protocol agreed upon, but it was concluded that the base year shall be 1990 and the global warming potentials shall be those provided by the IPCC.

All Parties "*Recognising that climate change represents an urgent and potentially irreversible threat to human societies and the planet, and thus requires to be urgently addressed by all Parties.*" It recognises the IPCC Fourth Assessment Report goal of a maximum 2°C global warming and all Parties should take urgent action to meet this goal. It also agreed upon greenhouse gas emissions should peak as soon as possible, but recognising that the time frame for peaking will be longer in developing countries, since social and economic development and poverty eradication are the first and overriding priorities of developing countries.

◆ 2011: COP 17/MOP 7, Durban, South Africa

The 2011 COP 17 was held in Durban, South Africa, from November 28 to December 9, 2011. The conference agreed to a legally binding deal comprising all countries, which will be prepared by 2015, and to take effect in 2020. There was also progress regarding the creation of a Green Climate Fund (GCF) for which a management framework was adopted. The fund is to distribute US\$100 billion per year to help poor countries adapt to climate impacts.

While the president of the conference, Maite Nkoana-Mashabane, declared it a success, scientists and environmental groups warned that the deal was not sufficient to avoid global warming beyond 2°C as more urgent action is needed.

◆ 2012: COP 18/MOP 8, Doha, Qatar

Qatar hosted COP 18 which took place in Doha, Qatar, from 26 November to 7 December 2012. The Conference produced a package of documents collectively titled *The Doha Climate Gateway*. The documents collectively contained:

- 1) An amendment of the Kyoto Protocol (to be ratified before entering into force) featuring a second commitment period running from 2012 until 2020 limited in scope to 15% of the global carbon dioxide emissions due to the lack of commitments of Japan, Russia, Belarus, Ukraine, New Zealand (nor the United States and Canada, who are not Parties to the Protocol in that period) and due to the fact that developing countries like China (the world's largest emitter), India and Brazil are not subject to emissions reductions under the Kyoto Protocol.
- 2) Language on loss and damage, formalised for the first time in the conference documents.

The conference made little progress towards the funding of the Green Climate Fund. Russia, Belarus and Ukraine objected at the end of the session as they had a right to under the session's rules.

◆ 2013: COP 19/MOP 9, Warsaw, Poland

COP 19 is the 19th yearly session of the Conference of the Parties (COP) to the 1992 United Nations Framework Convention on Climate Change (UNFCCC) and the 9th session of the Meeting of the Parties (MOP) to the 1997 Kyoto Protocol (the protocol having been developed under the UNFCCC's charter). The conference was held in Warsaw, Poland from 11 to 22 November 2013.

◆ 2014: COP 20/MOP 10, city Lima, Peru

COP 20 is the 20th yearly session of the Conference of the Parties (COP) to the 1992 United Nations Framework Convention on Climate Change (UNFCCC) and the 10th session of the Meeting of the Parties (MOP) to the 1997 Kyoto Protocol (the protocol having been developed under the UNFCCC's charter). The conference was held in Lima, Peru from 1 to 14 December 2014.

- ◆ 2015: COP 21/MOP 11, city Paris, France

COP 21 is the 21st yearly session of the Conference of the Parties (COP) to the 1992 United Nations Framework Convention on Climate Change (UNFCCC) and the 11th session of the Meeting of the Parties (MOP) to the 1997 Kyoto Protocol (the protocol having been developed under the UNFCCC's charter). The conference was held in Paris, France from 30 November to 11 December 2015.

- ◆ 2016: COP 22/MOP 12, city Marrakech, Morocco

COP 22 is the 22nd yearly session of the Conference of the Parties (COP) to the 1992 United Nations Framework Convention on Climate Change (UNFCCC) and the 12th session of the Meeting of the Parties (MOP) to the 1997 Kyoto Protocol (the protocol having been developed under the UNFCCC's charter) and the first session of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement. The conference was held in Marrakech, Morocco from 7 November to 18 December 2016.

- ◆ 2017: COP 23/MOP 13, city Bonn, Germany

COP 23 is the 23rd yearly session of the Conference of the Parties (COP) to the 1992 United Nations Framework Convention on Climate Change (UNFCCC) and the 13th session of the Meeting of the Parties (MOP) to the 1997 Kyoto Protocol (the protocol having been developed under the UNFCCC's charter) and the second session of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement. The conference was held in Bonn, Germany from 5 November to 16 December 2017.

- ◆ 2018: COP 24/MOP 14, city Katowice, Poland

COP 24 is the 24th yearly session of the Conference of the Parties (COP) to the 1992 United Nations Framework Convention on Climate Change (UNFCCC) and the 14th session of the Meeting of the Parties (MOP) to the 1997 Kyoto Protocol (the protocol having been developed under the UNFCCC's charter) and the third session of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement, which agreed on rules to implement the Agreement. The conference was held in Katowice, Poland from 2 December to 15 December 2018.

- ◆ 2019: COP 25/MOP 15, city Madrid, Spain

COP 25 is the 25th yearly session of the Conference of the Parties (COP) to the 1992 United Nations Framework Convention on Climate Change (UNFCCC) and the 15th session of the Meeting of the Parties (MOP) to the 1997 Kyoto Protocol (the protocol having been developed under the UNFCCC's charter) and the second meeting of the parties for the Paris Agreement. The conference was held in Madrid, Spain from 2 December to 13 December 2019.

## 13.4 Paris Agreement

On 12 December 2015, Parties to the UNFCCC at COP 21 in Paris reached a landmark agreement to combat climate change and to accelerate and intensify the actions and investments needed for a sustainable low carbon future. The Paris Agreement brings all nations into a common cause to undertake ambitious efforts for combating climate change and adapting to its effects, with enhanced support to assist developing countries to do so.

The Paris Agreement's central aim is to keep a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius. Additionally, the agreement aims to increase the ability of countries to deal with the impacts of climate change, and at making finance flows consistent with a low GHG emissions and climate-resilient pathway. The Agreement further provides for an enhanced transparency framework for action and support.

The Paris Agreement requires all Parties to put forward their best efforts through "nationally determined contributions" (NDCs) and to strengthen these efforts in the years ahead. This implies all Parties to report regularly on their emissions and on their implementation efforts. There is also a provision for a global stocktake every 5 years to assess the collective progress towards achieving the purpose of the agreement and to inform further individual actions by Parties.

The Paris Agreement, produced at the end of COP21, carries legal status. The mandate behind the Paris talks called for an outcome with legal force, which by interpretation means an agreement that constitutes a treaty under the Vienna Convention on the Law of Treaties.

The Paris Agreement opened for signature on the Earth Day (on 22 April 2016) at UN Headquarters in New York. The Agreement entered into force on 4 November 2016, 30 days after the so-called "double threshold" (ratification by 55 countries that account for at least 55% of global emissions) had been met.

A work programme was launched in Paris to develop modalities, procedures and guidelines on a broad array of issues. Since 2016, Parties work together in the subsidiary bodies (ABA, SBSTA and SBI) and various constituted bodies.

The Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA) met for the first time in conjunction with COP 22 in Marrakesh (in November 2016) and adopted its first two decisions.

Salient aspects of the Paris Agreement are as follows<sup>1</sup>:

- 1) Long-term temperature goal (Art. 2) - The Paris Agreement, in seeking to strengthen the global response to climate change, reaffirms the goal of limiting global temperature increase to well below 2 degrees Celsius, while pursuing efforts to limit the increase to 1.5 degrees.
- 2) Global peaking and 'climate neutrality' (Art. 4) -To achieve this temperature goal, Parties aim to reach global peaking of greenhouse gas emissions (GHGs) as soon as possible, recognizing peaking will take longer for developing country Parties, so as to achieve a balance between anthropogenic emissions by sources and removals by sinks of GHGs in the second half of the century.
- 3) Mitigation (Art. 4) - The Paris Agreement establishes binding commitments by all Parties to prepare, communicate and maintain a nationally determined contribution (NDC) and to pursue domestic measures to achieve them. It also prescribes that Parties shall communicate their NDCs every 5 years and provide information necessary for clarity and transparency. To set a firm foundation for higher ambition, each successive NDC will represent a progression beyond the previous one and reflect the highest possible ambition. Developed countries should continue to take the lead by undertaking absolute economy-wide reduction targets, while developing countries should continue enhancing their mitigation efforts, and are encouraged to move toward economy-wide targets over time in the light of different national circumstances.
- 4) Sinks and reservoirs (Art.5) -The Paris Agreement also encourages Parties to conserve and enhance, as appropriate, sinks and reservoirs of GHGs as referred to in Article 4, paragraph 1(d) of the Convention, including forests.
- 5) Voluntary cooperation/Market- and non-market-based approaches (Art. 6) - The Paris Agreement recognizes the possibility of voluntary cooperation among Parties to allow for higher ambition and sets out principles - including environmental integrity, transparency and robust accounting - for any cooperation that involves internationally transferal of mitigation outcomes. It establishes a mechanism to contribute to the mitigation of GHG emissions and support sustainable development, and defines a framework for non-market approaches to sustainable development.
- 6) Adaptation (Art. 7) - The Paris Agreement establishes a global goal on adaptation - of enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change in the context of the temperature goal of the Agreement. It aims to significantly strengthen national adaptation efforts, including through support and international cooperation. It recognizes that adaptation is a global challenge faced by all. All Parties should engage in adaptation, including by formulating and

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<sup>1</sup> UNFCCC webpage What is the Paris Agreement?sourced from <<https://unfccc.int/process-and-meetings/the-paris-agreement/what-is-the-paris-agreement>>

implementing National Adaptation Plans, and should submit and periodically update an adaptation communication describing their priorities, needs, plans and actions. The adaptation efforts of developing countries should be recognized

- 7) Loss and damage (Art. 8) - The Paris Agreement recognizes the importance of averting, minimizing and addressing loss and damage associated with the adverse effects of climate change, including extreme weather events and slow onset events, and the role of sustainable development in reducing the risk of loss and damage. Parties are to enhance understanding, action and support, including through the Warsaw International Mechanism, on a cooperative and facilitative basis with respect to loss and damage associated with the adverse effects of climate change.
- 8) Finance, technology and capacity-building support (Art. 9, 10 and 11) - The Paris Agreement reaffirms the obligations of developed countries to support the efforts of developing country Parties to build clean, climate-resilient futures, while for the first time encouraging voluntary contributions by other Parties. Provision of resources should also aim to achieve a balance between adaptation and mitigation. In addition to reporting on finance already provided, developed country Parties commit to submit indicative information on future support every two years, including projected levels of public finance. The agreement also provides that the Financial Mechanism of the Convention, including the Green Climate Fund (GCF), shall serve the Agreement. International cooperation on climate-safe technology development and transfer and building capacity in the developing world are also strengthened: a technology framework is established under the Agreement and capacity-building activities will be strengthened through, inter alia, enhanced support for capacity building actions in developing country Parties and appropriate institutional arrangements. Climate change education, training as well as public awareness, participation and access to information (Art 12) is also to be enhanced under the Agreement.
- 9) Climate change education, training, public awareness, public participation and public access to information (Art 12) is also to be enhanced under the Agreement.
- 10) Transparency (Art. 13), implementation and compliance (Art. 15) - The Paris Agreement relies on a robust transparency and accounting system to provide clarity on action and support by Parties, with flexibility for their differing capabilities of Parties. In addition to reporting information on mitigation, adaptation and support, the Agreement requires that the information submitted by each Party undergoes international technical expert review. The Agreement also includes a mechanism that will facilitate implementation and promote compliance in a non-adversarial and non-punitive manner, and will report annually to the CMA.
- 11) Global Stocktake (Art. 14) - A “global stocktake”, to take place in 2023 and every 5 years thereafter, will assess collective progress toward achieving the purpose of the Agreement in a comprehensive and facilitative manner. It will be based on the best available science and its long-term global goal. Its outcome will inform Parties in

updating and enhancing their actions and support and enhancing international cooperation on climate action.

- 12) Decision 1/CP.21 also sets out a number of measures to enhance action prior to 2020, including strengthening the technical examination process, enhancement of provision of urgent finance, technology and support and measures to strengthen high-level engagement. For 2018 a facilitative dialogue is envisaged to take stock of collective progress towards the long-term emission reduction goal of Art 4. The decision also welcomes the efforts of all non-Party stakeholders to address and respond to climate change, including those of civil society, the private sector, financial institutions, cities and other subnational authorities. These stakeholders are invited to scale up their efforts and showcase them via the Non-State Actor Zone for Climate Action platform Parties also recognized the need to strengthen the knowledge, technologies, practices and efforts of local communities and indigenous peoples, as well as the important role of providing incentives through tools such as domestic policies and carbon pricing.

#### India's Intended Nationally Determined Contribution

India in response to ratification of the Paris Agreement submitted its nationally determined contribution (NDCs) on Oct 2, 2015 which highlights India's intended climate actions post 2020 to scale up mitigation efforts. India's NDC include eight targets of which three are quantitative and other five are qualitative. The three quantitative targets are:

- 1) reduction in the emissions intensity of its GDP by 33 to 35 per cent by 2030 from 2005 level;
- 2) increase the share of non-fossil fuels-based electricity to 40 per cent by 2030; and
- 3) to create an additional carbon sink of 2.5 to 3 billion tonnes of CO<sub>2</sub> equivalent through additional forest and tree cover by 2030.

#### 2020 : Unprecedented year for planet and people

The year 2020 is proving to be exceptionally challenging to maintain the momentum of global climate effort for climate change amidst the Covid-19 pandemic. The Conference of Parties 26 which was scheduled to take place in November, 2020 has been postponed until 2021 due to the pandemic but 2020 remains to be crucial year in which countries are expected to submit the new or revised nationally determined contributions.

According to a new multi-agency report from leading science organizations, United in Science 2020, it states that transformational action is needed to achieve the Paris Agreement targets.

The qualitative targets focus on adaptation, innovative financing, technology transfer, capacity building, and include traditional values as a means to achieve the mitigation targets.

## 13.5 IEL Instruments to Tackle Ozone Depletion

The Ozone Layer comprises of the O<sub>3</sub> molecules (Ozone) that are found in the earth. Ninety per cent of atmosphere O<sub>3</sub> is found in the stratosphere with maximum concentration occurring at altitudes of 25 km over the equator and 15 km over the poles. The Ozone Layer is thought to provide a shield against harmful exposure to ultraviolet radiation from the sun and controls the temperature structure of the stratosphere. O<sub>3</sub> which also acts as a greenhouse gas at lower altitude, is a respiratory irritant, and can adversely affect plant growth. Since the 1990s there have been losses in the ozone layer above the Arctic. Since then, significant thinning has also been discovered in the northern hemisphere and ozone depletion has become progressively greater over the course of the 1990s. Serious levels of UVB radiation have been observed over Antarctica, Australia and Mountainous regions of Europe, and damage to phytoplankton has been discovered in Antarctica.

The depletion of the Ozone Layer is caused by the anthropogenic emission of certain inert gases, particularly chlorofluorocarbons (CFCs) and halons. When these gases reach the Ozone Layer; they are exposed to ultraviolet rays and break down, releasing free chlorine (from CFCs) and bromine (from halons) which break up the Ozone molecules and deplete the Ozone Layer increasing the levels of ultraviolet rays are thought to cause harm to human health and the environment, including organisms in the marine environment . CFCs are used extensively as refrigerants, air conditioner, coolants and aerosol spray can ingredients and in the manufacture of Styrofoam.

The protection of the Ozone Layer from these destructive elements is the subject of a complex legal regime comprising the 1985 Vienna Convention for the Protection of the Ozone Layer (the 1985 Vienna Convention) and the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer (the 1987 Montreal Protocol). Since 1990, there have been various adjustments to the production and consumption of controlled substances. Since the 1960s monitoring functions have been carried out by States individually and jointly, as well as under the World Meteorological Organisation (WMO) Global Ozone Observing System. In 2002, evidence began to emerge to suggest that the global regime was limiting the rate of increase in the degradation of the Ozone Layer over the Antarctica. The damage might begin to decrease in magnitude, following a decrease in the levels of the Ozone depleting gases in the stratosphere and of the Ozone depleting chemicals in the troposphere<sup>2</sup>.

### Ozone thinning, Ozone holes and the UVR problem

A key question in the global change research is how far human influence on the atmospheric Ozone will actually increase the deleterious effect of UVR reaching the earth's surface. Concern over the thinning of the stratospheric Ozone goes back to the International Geophysical Year of 1957, when an international network of 'Dobson Stations' was set up to monitor atmospheric ozone using a technique pioneered by a scientist of the same name.

<sup>2</sup> UNEP Press Release, 16 September 2002.

The strength of this threat, coupled perhaps with a feeling that this was one aspect of adverse global change about which, 'something could be done' led to the production and use of 'substances that deplete the Ozone Layer' was signed by the governments of most nations at a meeting in Montreal in 1987, aiming at a 50% reduction in production of CFCs by the year 2000. Tighter structures were agreed for the developed nations than for the developing nations. Most people would see the signing of the Montreal convention as a great victory for those concerned with the global issue, as indeed it was. Nonetheless, the interplay of politics and economics in this type of international agreements are rarely as simple as they may seem, the environmental danger represented by CFCs had been evident to the chemical industry for some research and development directed to finding alternative propellant and other substances for CFCs were naturally interested in seeing CFCs put under restriction. The Montreal Protocol took care of those interests.

#### A) 1985 Vienna Convention

The Vienna Convention was negotiated over 5 years under the auspices of UNEP. It was the first treaty to address a Global atmospheric issue and is open to participation by all States. It has attracted widespread support from all industrialised nations and a very large number of developing countries. It established a framework for the adoption of measures 'to protect human wealth and the environment against adverse effects resulting or likely to result from human activities which modify or are likely to modify the Ozone Layer'<sup>3</sup>. The Vienna Convention does not set targets or timetables for action but requires four categories of 'appropriate measure' to be taken by Parties in accordance with means at their disposal and their capabilities, on the basis of relevant scientific and technical considerations. These obligations are: co-operation or systematic observations, research and information exchange; the adoption of appropriate legislative or administrative measures and co-operation on policies to control, limit, reduce or prevent activities that are likely to have adverse effects resulting from modifications to the Ozone Layer; and co-operation in the formulation of measures, procedures and standards to implement the Convention as well as with competent international bodies. Parties are free to adopt additional domestic measures, in accordance with international law, and maintain in force compatible measures already taken. The Convention also requires co-operation in the legal, scientific and technical, socio-economic and legal information relevant to the Convention subject to rules of confidentiality, and the development and transfer of technology and knowledge taking into account the particular needs of developing countries.

The Parties transmit information to the conference of the Parties on their implementation measures. That body is entrusted with the implementation of the Convention, assisted by a Secretariat whose services are provided by UNEP. The conference of the Parties has other functions including the adoption of protocols.

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<sup>3</sup> Art. 2(1); the 'Ozone Layer' is defined as 'the layer of atmospheric ozone above the planetary boundary layer' : Art 1(1).

## B) 1987 Montreal Protocol and the Adjustments and Amendments

### ◆ *Introduction*

The first and to date the only Protocol to the Vienna Convention is the 1987 Montreal Protocol. It is a landmark international environmental agreement, providing a precedent for new regulatory techniques and institutional arrangements and the adoption and implementation of innovative financial mechanisms. With hindsight, the Montreal Protocol appears to be relatively straightforward instruments and the fact that its approach has subsequently been relied upon extensively in other international environmental negotiations belies the controversy and complexity surrounding it at the time of its negotiations. Montreal Protocol sets forth specific legal obligations including limitations and reductions on the calculated levels of consumption and production of certain controlled Ozone depleting substances. Its negotiations and conclusion, shortly after the 1985 Vienna Convention were prompted by new scientific evidence indicating that emissions of certain substances were significantly depleting and modifying the Ozone Layer and would have potential climatic effects. Like the Vienna Convention, the Montreal Protocol and its amendment have attracted widespread support. The 1990, 1992 and 1997 Amendments and Adjustments introduced important changes to the Montreal Protocol.

### ◆ *Control Measures: Consumption and Production*

Article 2 of the 1987 Montreal Protocol adopted limitation and reductions requirements on the consumption and production of all Annex-A substances. By Article 6, as amended by the '92 and 99' Amendments, the Parties are to assess with the assistance of panels of experts all the Article 2 control measures on the basis of available scientific environmental, technical and economic information. Montreal Protocol also provides for transfer of production and the rules regarding facilities under construction.

By Article 2(8) of the 1987 Montreal Protocol, Parties which are member States of regional economic integration organisation may 'jointly fulfil' their obligations provided that their total combined level of consumption does not exceed levels set by the Protocol, and that certain procedural obligations are fulfilled (the Parties to any such agreements must inform the Secretariat and all member States of the regional organisation, and the organisation itself).

### ◆ *Control Measures: Trade in controlled Substances*

Article 4 of the Montreal Protocol established innovative trade provisions to achieve its environmental objectives. Although initially somewhat controversial, they are now widely recognised for their effectiveness in creating incentives for States to become Party to the Protocol. These measures address the trade in controlled substances by Parties with States which are not Parties to the Protocol; the trade in products containing controlled substances.

Montreal Protocol also requires Parties to discourage exports of technology for producing and using controlled substances, and to refrain from providing new subsidies, aid, credits,

guarantees or insurance for the export to Non-Party States of production, equipment's, plants or technology which would facilitate the production of controlled substance, certain exceptions to this exist.

◆ *Developing Countries*

The 1987 Montreal Protocol included provisions to take account of the special needs of developing countries, including large users of CFCs such as India and China, who were unwilling to become Parties to the Protocol. Article 5(1) of the Protocol allowed developing country Parties whose calculated level of consumption was less than 0.3 kilograms per capita a grace period of ten years beyond dates set for phase-out in Article 2(1) to (4) of the Protocol. In addition, but without specifying how it was to be achieved, the parties agreed to facilitate access to 'environmentally safe alternative substance' and to provide developing countries with substitute products<sup>4</sup>.

### **Kigali Agreement**

The Kigali Agreement is an amendment to the Montreal Protocol. The Agreement aims at reducing global hydrofluorocarbons (HFC) by 85% from respective baselines by 2045. Kigali Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer entered into force on 1 January 2019, following ratification by 65 countries. As per the UN Environment Programme (UNEP, or UN Environment) it will help reduce the production and consumption of HFCs, potent greenhouse gases (GHGs), and thus avoid global warming by up to 0.4°C this century.

The Kigali Agreement is a reaffirmation of the global intent to mitigate climate change and exemplifies international co-operation in this regard. The Kigali Amendment to the Montreal Protocol is legally binding and came into force from January 1, 2019. The Agreement upholds the principle of Common but Differentiated Responsibilities and Respective Capabilities (CBDR & RC). It provides a realistic and viable roadmap for the implementation of a phase-out schedule for high global warming potential (GWP) HFCs.

Under this Agreement, India pledged to freeze the use of HFCs by 2028, and eventually reduce it to 15% of 2025 levels by 2047. India has instructed domestic manufacturing units producing HFC 23 as a by-product to internalize the costs of its disposal.

## **13.6 Conclusion**

The UNFCCC/Kyoto Protocol provides the legal regime for reduction of GHGs. But the law and international politics do not see eye to eye. The US, for instance, is largest polluter with more than 24%, the EU with 22%, Russian federation with 18%, Japan with 7% are the Major GHG emitter States. India and China put together do not account for more than 4% of world GHG Emissions.

The legal regime on climate change casts the historic responsibility on Annex-I Parties to undertake green GHG emissions in the first commitment period i.e. from 2008 to 2012.

<sup>4</sup> 1987 Montreal Protocol, Art. 5(2) and (3).

But the evidence and record produced by the UNFCCC Secretariat in Bonn says otherwise. Except Norway and Sweden none of the other Annex-I Parties have undertaken their assigned amount of GHG reduction. The politics has further undermined the legal regime because the United States refuses to become a Party to the Kyoto Protocol. The United States signed but did not ratify the Protocol and Canada withdrew from it in 2011.

At the COP held in Bali, Indonesia in December 2007 a road map was suggested to undertake serious reduction of GHG in the coming years on the main pillars of mitigation, adaptation, a long term action plan and transfer of technology to developing and less developed States. The developing countries led by India and China fought tooth and nail the efforts of Annex-I Parties to include them within the first commitment period. India's stand in this regard among various other issues has always been that GHG mitigation must be based on the principle of common but differentiated responsibilities (including historical emissions and current emissions levels and conversions to equal per capita) and respective capabilities and result in actual global reduction in GHG emissions. Such mitigation efforts should not have any adverse impact on GDP growth and poverty alleviation in developing countries.

India's National Environment Policy 2006 also advocates adherence to the principle of common but differentiated responsibilities and Equal per-capita entitlements of global environmental resources to all countries. The priority should always be on guaranteeing every country's right to development.

The then PM of India Shi Manmohan Singh, put forward India's position when in the G8+05 Summit in June 2007 in Heiligendamm, Germany he stated that:

*“We recognise wholeheartedly our responsibility as a developing country. We wish to engage constructively and productively with the international community and to add our weight to global efforts to preserve and protect the environment. We are determined that India's per-capita GHG emissions are not going to exceed those of developed countries even while pursuing policies of development and economic growth. We must work together to find pragmatic, practical solutions, which are for the benefit of entire humankind. These should include mitigation and adaptation strategies with fair burden sharing and measures to realise sustainable patterns of consumption and production. The process of burden sharing must be fair. It should take into account where the primary responsibility for the present levels of GHG concentration rests and not perpetuate poverty among the developing countries. No strategy should foreclose for them the possibilities of accelerated social and economic development.”*

The critics primarily have expressed the challenges with the UNFCCC process by stating that Climate change is not a conventional environmental issue but has implicated virtually every aspect of a State's economy, so it makes countries nervous about growth and development. This is an economic issue every bit as it is an environmental one. Hence, looking at climate change from the environmental spectrum alone, as aimed in UNFCCC

framework is a highly inefficient system for enacting international policy, as it attempts to work in isolation and completely neglects and even opposed economic growth. Because the framework system includes over 190 countries and because negotiations are governed by consensus, small groups of countries can often block progress.

The failure to achieve meaningful progress and reach effective - CO<sub>2</sub> reducing - policy treaties among the Parties over the past eighteen years is stated as a justification by countries like the United States for failing to ratify the UNFCCC's largest body of work – the Kyoto Protocol. Countries like Canada have withdrawn from the Kyoto Protocol claiming a desire to not force its citizens to pay penalties that would result in wealth transfers out of Canada. In 2010, Japan stated that it will not sign up to a second Kyoto term, because it would impose restrictions on it not faced by its main economic competitors, China, India and Indonesia. A similar indication was given by the Prime Minister of New Zealand in November 2012. At the 2012 conference, last minute objections at the conference by Russia, Ukraine, Belarus and Kazakhstan were ignored by the governing officials, and they have indicated that they will likely withdraw or not ratify the treaty. These defections place additional pressures on the UNFCCC process that is seen by some as cumbersome and expensive.

Paris Agreement has brought some hope as it has the potential to compel governments and industry to adopt sustainable ways to execute their business. The agreement is a reflection of the political will as certain elements are legally binding and some not. These adjustments could be to avoid potential risks of non-ratification of the agreement. It can be argued that the Paris Agreement will provide the roadmap for future climate change action. Public international law does not drive nations to go beyond what they are already doing and this gets reflected in the Paris Agreement, which notices the nationally determined contributions (NDCs) pledge by 185 countries covering 94 per cent of the global emissions and 97 per cent of global populations that were submitted ahead of the Paris conference.

# TREATY ON ANTARCTIC AND POLAR REGIONS

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### 14.1 Introduction

Antarctica due to its environs is subject to a number of special rules for environmental protection. As is well-known, the Antarctic region comprises 26% of the world's uninhabited area, reflecting a rich marine biodiversity and ecosystem and home to a number of birds such as penguin and others. However, as the Arctic falls in the domestic jurisdiction of some States, it is largely subject to national regulation.

The Antarctic region is governed by four treaties, which include: the Antarctic Treaty of 1959; the Convention for the Conservation of Antarctic Seals, 1972; the Convention on the Conservation of Antarctic Marine Living Resources, 1980; the Convention on the Regulation of Antarctic Mineral Resources Activities, 1988; and the Protocol on Environmental Protection to the Antarctic Treaty, 1991.<sup>1</sup>

### 14.2 Antarctic Treaty System

The **Antarctic Treaty** and related agreements, collectively called the **Antarctic Treaty System (ATS)**, regulate the international relations with respect to Antarctica. For the purposes of the treaty system, Antarctica is defined as all land and ice shelves south of 60°S latitude parallel.

Antarctica is the world's only continent without a native human population. The Antarctic Treaty was signed in Washington on 1 December 1959 by the twelve countries whose scientists had been active in and around Antarctica during the International Geophysical Year (IGY) of 1957-58. The experience of IGY had shown that it was possible to establish bases on Antarctica and engage in scientific co-operation without getting into conflict

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<sup>1</sup> See generally *Training Manual on International Environmental Law*, UNEP, 2006.

about the different, sometimes overlapping, claims of sovereignty over the continent. The original signatories consisted of the seven countries with claims over parts of Antarctica - Argentina, Australia, Chile, France, New Zealand, Norway and the United Kingdom - and five other countries with Antarctic activities, namely Belgium, Japan, South Africa, the Soviet Union and the United States.

The Antarctic Treaty which came into effect on 23 June 1961 has been signed by 46 countries, 28 of which are Consultative Parties. Through this agreement, the countries active in Antarctica consult on the uses of a whole continent, with a commitment that it should not become the scene or object of international discord. In its fourteen articles the Treaty:

- ◆ stipulates that Antarctica should be used exclusively for peaceful purposes, military activities, such as the establishment of military bases or weapons testing, are specifically prohibited;
- ◆ guarantees continued freedom to conduct scientific research, as enjoyed during the IGY;
- ◆ promotes international scientific co-operation including the exchange of research plans and personnel, and requires that results of research be made freely available;
- ◆ sets aside the potential for sovereignty disputes between Treaty Parties by providing that no activities will enhance or diminish previously asserted positions with respect to territorial claims, provides that no new or enlarged claims can be made, and makes rules relating to jurisdiction;
- ◆ prohibits nuclear explosions and the disposal of radioactive waste;
- ◆ provides for inspection by observers, designated by any Party, of ships, stations and equipment in Antarctica to ensure the observance of, and compliance with, the Treaty;
- ◆ requires Parties to give advance notice of their expeditions; provides for the Parties to meet periodically to discuss measures to further the objectives of the Treaty; and
- ◆ puts in place a dispute settlement procedure and a mechanism by which the Treaty can be modified.

The Treaty also provides that any member of the United Nations can accede to it. Since entering into force on 23 June 1961, the Treaty has been recognised as one of the most successful international agreements. Problematic differences over territorial claims have been effectively set aside and as a disarmament regime it has been outstandingly successful. The Treaty Parties remain firmly committed to a system that is still effective in protecting their essential Antarctic interests. Science is proceeding unhindered.

Since the first Antarctic Treaty Consultative Meeting (ATCM) in 1961, the Parties have met frequently, now annually, to discuss issues as diverse as scientific co-operation, measures to protect the environment, and operational issues and are committed to taking decisions by consensus. This process has allowed the Antarctic Treaty to evolve

into a system with a number of components that meet the special needs of managing activities in the Antarctic, while protecting national interests. This regime is now known by the broader title of the Antarctic Treaty System, which operates under the umbrella of the annual ATCM.

**The Antarctic Treaty System explained** - The Antarctic Treaty System comprises the Treaty itself and a number of related agreements. It also includes a range of organisations that contribute to the work of the decision-making forums. In addition, it also includes the recommendations, measures, decisions and resolutions of the Consultative Meetings relating to matters such as:

- ◆ scientific co-operation;
- ◆ protection of the Antarctic environment;
- ◆ conservation of plants and animals;
- ◆ preservation of historic sites;
- ◆ designation and management of protected areas;
- ◆ management of tourism;
- ◆ information exchange;
- ◆ collection of meteorological data;
- ◆ hydrographic charting;
- ◆ logistic co-operation; and
- ◆ communications and safety.

The Treaty Parties have put in place rules relating to specific issues. The development of these agreements has allowed the implementation, with greater precision, of legally binding provisions for the regulation of activities in Antarctica.

The Antarctic Treaty System which has grown up around the original treaty now consists of the following agreements in addition to the treaty itself:

- 1) The Convention for the Conservation of Antarctic Seals (CCAS), signed in London on 1 June 1972.
- 2) The Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR), signed in Canberra on 20 May 1980.
- 3) The Protocol on Environmental Protection to the Antarctic Treaty, signed in Madrid on 4 October 1991.

In addition, there are some 300 measures adopted by the Antarctic Treaty Consultative Meeting (ATCM), which since 1994 meets annually. Other agreements - some 200 recommendations adopted at treaty consultative meetings and ratified by governments - include:

- ◆ Agreed Measures for the Conservation of Antarctic Fauna and Flora (1964) (entered into force in 1982)

- ◆ The Commission for the Conservation of Antarctic Marine Living Resources (1982) formed under the CCAMLR
- ◆ The Convention on the Regulation of Antarctic Mineral Resource Activities (1988) (signed in 1988, not in force)
- ◆ Protocol on Environmental Protection to the Antarctic Treaty prevents development and provides for the protection of the Antarctic environment through five specific annexes on marine pollution, fauna and flora, environmental impact assessments, waste management and protected areas. It prohibits all activities relating to mineral resources except scientific. A sixth annex - on liability arising from environmental emergencies - was adopted in 2005 but is yet to enter into force.

Let us examine some of the important agreements under the Antarctic Treaty System:

#### **A) The Convention on Conservation of Antarctic Seals**

The Convention for the Conservation of Antarctic Seals (CCAS) was adopted by Antarctic Treaty Parties in 1972 and entered into force in 1978. It was adopted in response to the vulnerability of Arctic seals to commercial activities. It has been ratified by 15 States including 10 of the 12 original Antarctic Treaty consultative Parties, with New Zealand and Australia being the exceptions. The Convention limits the number of seals that are to be hunted, and in some cases completely prohibits the hunting of species of some animals. The main purpose of the Convention is to limit the vulnerability of six species of seals found in the Antarctic to commercial exploitation.

The Convention covers all the species of seals in Antarctic waters. It sets out conservative catch limits on Crabeater, Leopard and Weddell seals. The Convention prohibits catching of Ross, Elephant and Fur seals completely. It also provides for closed seasons and closed areas with respect to the commercial sealing activities.

#### **B) The Convention on the Conservation of Antarctic Marine Living Resources**

The Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR) was signed in 1980 but came into force in 1982, as part of the Antarctic Treaty System, in pursuance of the provisions of Article IX of the Treaty. It was established mainly in response to concerns that an increase in krill catches in the Southern Ocean could have a serious effect on populations of krill and other marine life; particularly on birds, seals and fish, which mainly depend on krill for food. Presently it has been ratified by 29 States. The geographical scope of the CCAMLR applies to south of 60°S Latitude. It also applies to areas south of the Antarctic convergence at points meandering with biological boundary in the southern Ocean which may extend as far north as 45°S Latitude.

The aim of the Convention was to conserve marine life of the Southern Ocean. However, this does not exclude harvesting carried out in a rational manner. For the achievement of the goals of the Convention, the collection of large quantities of information and the development of appropriate scientific and analytical techniques is required.

A 'precautionary' approach has been implemented to minimise risk associated with unsustainable practices in conditions of uncertainty. This approach is complemented by

the need to take into account ecological links between species and ‘natural’ as opposed to ‘human-induced’ variability. Finally, conservation measures adopted by CCAMLR are based on scientific advice and require enforcement to be effective.

The Convention establishes a Commission, established under Article IX to give effect to the Convention’s objectives and principles set out in Article II. The main purpose of the Commission is to manage the marine living resources of the area for which it is responsible. The resources specifically exclude whales and seals, which are the subject of other conventions, namely, the International Convention for Regulation of Whaling and the CCAS.

The Commission is assisted by a number of bodies, namely, The Scientific Committee that provides scientific advice to the Commission, the COPs which is responsible to conduct regular meetings, the Secretariat, located in Hobart, Tasmania, Australia, to provide administrative support, an annual budget and so on.

### C) The Protocol on Environmental Protection to the Antarctic Treaty

In the 1980s the Consultative Parties to the Antarctic Treaty developed the Convention on the Regulation of Antarctic Mineral Resource Activities, which was concluded in 1988 in Wellington. However, before any country had ratified it, the Consultative Parties changed course and decided instead to expand their existing environmental measures into a comprehensive system for the protection of the Antarctic environment.

The outcome of this process was the Protocol on Environmental Protection to the Antarctic Treaty, also known as the Environment Protocol, signed in Madrid on 4 October 1991. The Protocol designates Antarctica as a “natural reserve, devoted to peace and science”, and sets forth basic principles and detailed, mandatory rules applicable to human activities in Antarctica, including obligations to accord priority to scientific research. Article 7 of the Protocol prohibits all activities relating to Antarctic mineral resources, except for scientific research. Up to 2048, the Protocol can only be modified by unanimous agreement of all Consultative Parties to the Antarctic Treaty. Also, the prohibition on mineral resource activities cannot be removed unless a binding legal regime on Antarctic mineral resource activities is in force (Art. 25.5).

The Environment Protocol has six Annexes. Annex-I, *Environmental Impact Assessment*, Annex-II, *Conservation of Antarctic Fauna and Flora*, Annex-III, *Waste Disposal and Waste Management*, and Annex-IV, *Prevention of Marine Pollution*, were adopted together with the Protocol itself. The Protocol and the first four annexes entered into force on January 14, 1998. Annex-V on *Area Protection and Management* was adopted by the 16th Antarctic Treaty Consultative Meeting in Bonn on 17 October 1991 and entered into force on 24 May 2002. An annex on liability, which had been foreseen in Article 16 of the Protocol, was adopted as Annex-VI, *Liability Arising from Environmental Emergencies*, by the 28th ATCM in Stockholm on June 14, 2005 and is being ratified by the Consultative Parties.

The Protocol established the Committee for Environmental Protection (CEP) under Article 11, as an expert advisory body to provide advice and formulate recommendations to the

Antarctic Treaty Consultative Meetings in connection with the implementation of the Protocol. The CEP meets every year at the same time as the Antarctic Treaty Consultative Meeting. Article 12 provides the functions of the Committee.

#### **D) Antarctic Mineral Resources Convention (CRAMRA), 1988**

Since 1982 the Consultative Parties were engaged in a series of negotiations aimed at establishing a treaty based minerals regimes for the Antarctic continent. At Montevideo ATCM 1987 a draft treaty embodying the essence of a minerals regime was finalised and the Convention was adopted in 1988.

The Convention provides for a number of important principles - precautionary approach, rules on liability for environment damage, mandatory environment impact assessment, a compliance mechanism and developed dispute settlement procedures, reversal of the burden of proof from the plaintiff to the polluter. The Convention also provides for obligations relating to: the right to scientific research, preservation of historic monuments and rational use of marine living resources. The Convention ran into rough weather because two States: France and Australia, having consultative status refused to ratify the convention in 1989.

It may be noted that the CRAMRA will only enter into force upon ratification by 16 Parties holding Consultative Party status, including 5 developing countries and 11 developed countries.

#### **E) Madrid Protocol Environment Protection to the Antarctic Treaty, 1991**

The drive towards any form of exploitation of mineral resources in Antarctica was literally frozen, when 23 out of the 26 consultative status Parties and 8 non-consultative Parties, adopted the Antarctic Environment Protocol in 1991.

Its chief objective is to protect the Antarctic environment and other dependent associated ecosystems with a view to protect Antarctica in the interest of mankind as a whole. The Protocol establishes a 50-year moratorium on exploitation from the date of its entry into force. It establishes a very stringent regime of environmental protection with Parties not being allowed to make reservations to the Protocol. This is more clearly reflected in Article 7 which states “.....any activity relating to mineral resources, other than scientific research, shall be prohibited.” The rigor of this Article has, however, toned down by a provision that allows a review conference 50 years after it enters into force.

The 1991 protocol on environment protection was agreed with remarkable speed and entered into force on 14 January 1998. By 2008, 33 States had ratified/approved the protocol. It designates the Antarctic Treaty Areas as a natural reserve devoted to peace and science and provides a framework for the comprehensive protection of the Antarctic environment and dependent and associated ecosystems. Article 25 imposes a 50-year moratorium on all mineral exploitation in Antarctica and this moratorium can be lifted only if all of the Consultative and Non-Consultative Parties to the Antarctic Treaty agree to a binding legal regime on Antarctic mineral resource activities that includes an agreed

means for determining whether (and, if so, under which conditions) any such activities would be acceptable. After 50 years, a proposal to lift the ban will need a simple majority of all Consultative and Non-Consultative Parties with the proviso that three quarters of the States that were Consultative Parties at the time adoption of the 1991 Protocol must agree.

Despite the 1991 Protocol imposing a 50-year moratorium, the expected increase in world demand for energy may expose Antarctica to countries and markets looking for alternative petroleum supplies. If Antarctica is indeed eventually opened for oil pollution occurrences such as oil tanker spills, dumping of waste oil, natural oil seepage and well-blowouts will rise substantially.

The Protocol also establishes a Committee for Environment Protection and sets out detailed mandatory rules in six Annexes dealing with need for co-operation, environment impact assessment, conservation of flora and fauna, waste disposal and waste management, prevention of marine pollution by ships, designation of Antarctic specially protected areas and tourism and other non-governmental activities requiring visiting rights.

It provides for inspections to ensure compliance will require the establishment of contingency plans for environment emergency and requires annual reporting by each Party to the Protocol also makes arrangements for compulsory binding dispute settlement procedures. It thus substantially strengthens the binding nature of provision on conservation and environment protection in Antarctica.

The UK was the first country to sign the 1991 protocol. It ratified it following the Antarctic Act 1994, which made provision in UK law for the ratification of Protocol and extended the application of UK law to UK nationals in Antarctica. The 1993 Act requires anyone remaining in Antarctica on a British expedition, station, vessel or aircraft to have permit. All mineral resources activities by UK nationals are prohibited unless a permit for scientific research or in connection with construction, repair or maintenance of a British station or transport infrastructure. Killing, injuring or capturing any native animal or bird is also prohibited, as is significant damage to native plants and the introduction of non-native species without a permit. Entering restricted areas established by the Protocol is unlawful without either a permit or the written authorisation of another Contracting Party. These offences may be prosecuted as if they had been committed in United Kingdom.

### 14.3 Related Organisations

One of the important issues where there has been little progress is the establishment of a liability regime for environmental damage to the Antarctic environment. A number of specialised bodies assist the Treaty Parties in the conduct of their work. Specific tasks may be directed to these bodies, or they may be invited to provide observers or experts to participate in Treaty forums.

The Scientific Committee on Antarctic Research (SCAR) co-ordinates Antarctic research programmes and encourages scientific co-operation. Through its various subordinate

groups, it is able to provide expert information on a range of disciplines and on the scientific implications of operational proposals of the Treaty meetings.

The Council of Managers of National Antarctic Programmes comprises the heads of each of the national Antarctic operating agencies. COMNAP meets annually to exchange logistic information, encourage co-operation and develop advice to the Treaty parties on a range of practical matters.

The Antarctic Treaty Parties have also developed a close relationship with environmental inter-governmental and non-government organisations that represent the broader community interests in conservation. Organisations such as the International Union for the Conservation of Nature, the United Nations Environment Programme and the Antarctic and Southern Ocean Coalition are also invited to the Treaty meetings as experts.

Bodies with technical expertise relevant to the Treaty discussions also participate. They include the International Hydrographic Organisation, the World Meteorological Organisation and the Intergovernmental Oceanographic Commission.

The International Association of Antarctic Tour Operators is an industry body representing the interests of the growing tourist trade in Antarctica. Many tour operators are affiliated with IAATO, which also provides experts to the annual Treaty meetings.

Similarly, the Antarctic Treaty Secretariat was established in 2004 to:

- ◆ support the Antarctic Treaty Consultative Meeting (ATCM) and the Committee for Environmental Protection (CEP),
- ◆ promote the official information exchange between the Parties of the Antarctic Treaty,
- ◆ collect, maintain and publish the records of the ATCM and the CEP, and
- ◆ provide information on the Antarctic Treaty system.

Under the Treaty, each Party has enjoyed peaceful co-operation and freedom of scientific research. That research has contributed significantly to knowledge of the Earth and is contributing to the protection of the global environment. Environmental monitoring in Antarctica has, for example, led to the discovery of the seasonal depletion of atmospheric ozone over the Antarctic.

As the Antarctic Treaty System matures it has become recognised as one of the most successful sets of international agreements, setting an example of peaceful co-operation for the rest of the world. As an environmental regime it is unique - an entire continent, which is essentially undisturbed, will remain protected because of the commitment and co-operation of the Treaty Parties.

As is well-known, the Arctic Ocean region like the Antarctic region is a frozen ocean covered by land on all sides. The Russian Federation, Denmark, Norway, United States and Canada have at various times made territorial claims over the Arctic region. There are a number of international law issues pertaining to the Arctic region, which have become more relevant today with the planting of a titanium flag by the Russian Federation on the Arctic Ocean bed in 2009. These issues involve:

(i) territorial sovereignty claims and the United Nations Convention on the Law of the Sea (UNCLOS) 1982; (ii) marine environmental protection/pollution/climate change concerns (iii) need for a strong international legal structure to protect the Arctic Ocean.

### **UNCLOS and Continental Shelf delineation**

Article 76 of UNCLOS provides that if a coastal State is able to prove certain morphological highs of the Arctic Ocean floor (sea floor highs) that includes ridges, plateaus and caps are natural prolongations of its land territory, then such floors shall be included in the State's continental shelf. Many States with territorial claims of extended continental shelves have approached the Commission on the Limits of the Continental Shelf, the body responsible for recommending continental shelf limits. The Russian Federation claims that two ridges - Lomonosov and Alpha- Mendeleev are natural prolongation of its land territory; Norway has made a claim that the Yermak plateau is a natural prolongation of its territory. Likewise, Canada, Denmark are conducting studies of the Lomonosov ridge similar to the Russian Federation's claims; and the USA not yet a Party to UNCLOS is considering an Article 76 claim that the Chukhi Cap at the plateau of the Arctic coast is also a natural prolongation of its own territory.

The Commission it must be remembered is a technical body making confidential 'recommendations' to help the State in its delineation process. States may reject its recommendations, while others are equally free to reject or protest the claims of a State. In such situations States can resort to the dispute settlement procedures provided in the UNCLOS namely - negotiation, conciliation, and Third Party adjudication by the International Court of Justice or the International Tribunal for the Law of the Sea.

### **Protection of the Arctic marine environment, flora and fauna**

With States making myriad territorial claims, protection of the Arctic region and its flora and fauna assumes special importance. It is estimated that 25% of the world oil and gas deposits are to be found in the Arctic region. While it is premature to guess when development of oil and gas in the region would begin, it is safe to State that such activity would adversely affect the fragile ecosystem. An oil spill or accident would seriously threaten wildlife flora and fauna. The Exxon Valdez oil spill (1989) in Alaska's Prince Sound emptied nearly 11 million gallons of crude oil in the region, wherein more than two lakh birds and marine mammals were killed. And although it is more than two decades since that disaster, with the persistence of oil the effects are still being felt. It is also well-known that oil and gas activities involve huge infrastructure development of the region and cause noise pollution, which can seriously affect wildlife in the icy region. Breeding and migratory instincts of reindeer and caribou would be affected. Animals like walrus, seal and whales that hunt on basis of noise signals may lose the feeding sites. To add to the animals' woes, effects of global warming as stated by the Fourth Report of the IPCC have affected the Arctic region, more than anywhere else. Lesser ice can also disturb the food chain of these animals and as is well documented the polar bear already a 'highly endangered species' on the IUCN's Red List cannot survive without summer ice in the Arctic region.

## India and Antarctica

The first Indian permanent station “Dakshin Gangotri” was established in the Antarctic ice shelf in 1983. Subsequently, the second permanent station “Maitri” was established in the year 1989 to carry out scientific research activity in and around Schirmacher oasis in Antarctica. Considering the requirement of research and the need to expand the scientific studies in other frontiers in Antarctica apart from Schirmacher Oasis, India conducted a reconnaissance during the XXIII Indian Antarctic Scientific Expedition (IASE) and XXIV-IASE in the month of February 2004 and February 2005, towards selection of a suitable location for a new station.

As a part of the XXIII Indian Scientific Antarctic Expedition to Antarctica (ISEA), a Task Force undertook reconnaissance surveys in the Amery Ice Shelf - Prydz Bay area between 66°E and 78°E longitude to identify a suitable site. After extensive traverses in the Vestfold Hills Rauer group of islands, Larsemann Hills and Bolingen islands of the Prydz Bay area, the team finally identified the probable locations for the third Indian station.

**India and the Arctic Region** - India too now has a Station ‘Himadri’ in the Arctic region after having joined the scientific research body Ny-Alesund Scientific Manager’s Council (NYSMAC) last year. States with an eye on the natural resources of the region will refuse to give up their territorial claims and new disputes for continental shelf delimitation are bound to come up before international tribunals. But the real challenge before the international community would be, to draw up a binding Arctic Treaty, similar to the Antarctic Treaty regime, without compromising the sovereignties of States in the region, but at the same time protecting the lives of indigenous people, local communities and the ecosystem of the region.

## 14.4 Conclusion

The Arctic region, unlike the Antarctic has no single comprehensive binding hard law treaty governing actions of States. The only binding law treaty is the Agreement on the Conservation of Polar Bears, 1973. Besides, many of the international treaties to which Arctic States are Parties fail to address the peculiar problems of the region and address only specific issues of the region. Examples being the International Convention for the Prevention of Oil Pollution from Ships and its 1978 Protocol (MARPOL); the 1990 International Convention on Oil Preparedness, Response and Co-operation; 1992 Convention on Biological Diversity; 1973 Convention on the International Trade in Endangered Species of Wild Flora and Fauna; and the 1985 Vienna Convention for the Protection of the Ozone Layer. These conventions to a large extent do not look at the Arctic as an ecosystem and ignore the environmental interdependence between different life forms on land and the marine environment. It is also seen that although the Arctic States have in place an Environmental Protection Strategy implemented through the Arctic Council they have been unable to address the global problems facing their region today.

A number of measures have been suggested in contemporary literature to protect the Arctic from the adverse effects of States’ territorial claims. One has been, to declare the Arctic Ocean and its natural resources as a “common heritage of mankind (CHM)”.

Such a claim would be similar to what is known as the CHM under the UNCLOS, 1982. Such a CHM/global commons would not be available to a single State for appropriation, but available to mankind as a whole for peaceful purposes and even for economic development, such as resource (read gas and oil) extraction from the area. The concept of CHM is also provided under the 1979 Agreement Governing the Activities of the States on the Moon and Other Celestial Bodies (Moon Treaty). The Treaty provides that “the Moon and its natural resources are the common heritage of mankind” and that the main objective of the Treaty is the “orderly and safe development of the natural resources of the moon; [t]he expansion of opportunities in the use of those resources; and [a]n equitable sharing by all States Parties in the benefits derived from those resources.”

Another Treaty regime that could influence the drawing up of a regime for the protection of the Arctic area is the Antarctic Treaty, 1959. It may be recalled that the Antarctic Treaty area too was subject to fierce territorial claims by Argentina, Chile, Australia, New Zealand, France and the United Kingdom. The latter even brought proceedings against Argentina and Chile in the International Court of Justice. It was largely due to the efforts of the United States and the United Nations that international community came around to convince the claimant States to freeze their territorial rights and impose a moratorium on any claim to the Antarctic region. This however, did not tantamount to States renouncing their “sovereignty claims or prejudice Parties regarding their recognition or non-recognition of other Parties’ claims”. What was achieved and is important to highlight is that States agreed to devote their collective energies to undertake co-operation and treat Antarctica as a laboratory for conducting peaceful scientific research for common good. An elaborate treaty regime to protect the region also includes the - Convention for the Conservation of Antarctic Seals 1972; Convention on the Conservation of Antarctic Marine Living Resources 1980; Convention on the Regulation of Antarctic Mineral Resource Activities 1988; and the Protocol on Environmental Protection to the Antarctic Treaty 4 October 1991.

The Antarctic region, thanks to the efforts of the international scientific community and the willingness of nations, is today a protected area. A secure international legal structure ensures the protection of the fragile environment. The beautiful icy landscapes, the rich marine fauna, krill, penguins, seals, albatrosses all make the place a genuine science laboratory of the earth.

Likewise, the Arctic with its beautiful glaciers, boreal forests and meadows, animal life like the Laysan albatross, the Kodiak bear, varieties of caribou, seals, whales and the breath-taking permafrost. However, as has been discussed in detail above, this region essentially an ocean, and can become partially navigable in the future, especially the ice disappears.

There is enough evidence to show that the effects of climate change are melting ice in the Polar Regions. The international community must and act fast, especially in the Arctic region as these regions help protect the ocean temperatures and save earth from global warming and ensuing desertification. It is a known fact that the Russian Federation and other countries have continental shelf claims covering the entire Arctic Ocean. Unless a binding legal regime is put in place, what could not be done in CRAMRA will happen in the Arctic region.

# UNIT 15

## UN CONVENTION ON THE LAW OF THE SEA AND THE UNEP REGIONAL SEAS PROGRAMME

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### 15.1 Introduction

In this unit we will seek to look at the historical evolution of the Law of the Sea, the UN Convention on the Law of the Sea and protection of the marine environment, the UNEP Regional Seas Programme and conclusions and recommendations. The United Nations Convention on Law of the Sea (UNCLOS), also called the Law of the Sea Convention and the Law of the Sea Treaty is the international agreement that resulted from the third United Nations Convention [Conference] on the Law of the Sea, which took place from 1973 through 1982. The Law of the Sea Convention defines the rights and responsibilities of nations in their use of the world's oceans, establishing guidelines for businesses, the environment, and the management of marine natural resources. The Convention concluded in 1982 replaced four 1958 treaties. UNCLOS came into force in 1994, a year after Guyana became the 60th State to sign the treaty. To date 155 countries and the European Community have joined in the Convention. The United States has signed the treaty, but the Senate has not ratified it.

While the Secretary General of the United Nations receives instruments of ratification and accession and the UN provides support for meetings of States Party to the Convention, the UN has no direct operational role in the implementation of the Convention. There is, however, a role played by organisations such as the International Maritime Organisation, the International Whaling Commission, and the International Seabed Authority (the latter being established by the UN Convention).

## 15.2 Protection of the Marine Environment through Law

The Romans were the first to fully recognise the utility of freedom of the seas, and they declared that the seas were “common to all men”. However, at the height of the Roman Empire, the entire Mediterranean Sea was regarded as a Roman lake. Thus, one may argue that the concept of such waters being ‘common to all men’ was simply a way of stating the right of the *Roman citizens* over the seas.

With the breakdown of social order of the Roman authority, various modern States, such as Spain and Portugal emerged as major maritime powers who undertook navigation and exploration in search of treasures such as gold and spices. In the later centuries, the concept of freedom of seas arose once again, with many other European States such as Britain, Netherlands challenging Spain and Portugal’s right to exclusive trade with the far of countries in Asia and Africa. In his treatise, Dutch jurist Grotius argued, that every nation was free to travel to every other nation and to trade with it, utilising the high seas for that purpose<sup>1</sup>. According to Grotius, the sea fell in a category of things which could not be placed under ‘ownership’ because it could not be reduced to possession, and one vessel’s navigation was not an impediment to others. Later, this concept ripened into the doctrine of ‘Freedom of High Seas’, with many judicial authorities from the 18th century onwards affirming that the high seas are free and open for the use of all and may not be appropriated to any nation.

### *The UN Conventions and codification of ‘Territorial Sea’ and ‘reasonable use’*

The First UN Conference on the Law of the Sea was held in Geneva in 1958 and the Convention on the High Seas was adopted. (Convention on the High Seas, April 29, 1958, 13 UST 2312 (1962), 450 UNTS 82 (in force September 30th, 1962)). Under this Convention however, this freedom was to be exercised by all States “with reasonable regard to the interests of other States”.

The Geneva Convention on the Territorial Sea and the Contiguous Zone, April 29, 1958, 15 UST 1606 (1964), 516 UNTS 205 (in force 10th September 1964), provides that “the sovereignty of a State extends beyond its land territory and its internal waters, to a belt of sea adjacent to its coast, described as the territorial sea...The sovereignty of a coastal State extends to the air space over the territorial sea as well as to its bed and subsoil.” It has now been accepted as a rule of customary international law, together with the freedom of the high seas. Articles 1 and 2 of this Convention states that common places and the high seas are open to *legitimate and sustainable use* by all the States warding off absolute sovereignty of a particular State.

Such an understanding is also supported by State practice which has been upheld by decisions of arbitral tribunals and judicial bodies such as the International Court of Justice.

It is also seen that the State practice that has evolved considered the high seas were open for all, and not to be made territory of any State. To understand what ‘territory’,

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<sup>1</sup> Hugo Grotius, *Mare Liberum*, Oxford, England: Clarendon Press, Magoffin translation, 1916.

and thus ‘sovereignty’, of a State means, we must realise that it is a well recognised principle of international law that no State can be deemed subordinate to external authority, including the rule of a body of international law. In the case of *The Schooner Exchange v. McFaddon* 11US (7 Cranch) 116, at 156, (1892) it was held that -

*“The jurisdiction of the nation within its own territory is necessary and exclusive and absolute. It is susceptible of no limitation not imposed by itself. Any restriction upon it, deriving validity from an external source, would imply a diminution of its own sovereignty to the extent of the restriction.”*

Likewise, in *The Right of Passage case over Indian Territory case, (Portugal v. India)*, 1960 ICJ Reports) it was held that a State’s conduct within its own territory is unrestricted by international legal rules. The specific right of States to render independent decisions with respect to their natural resources and their right to freely use and exploit their natural wealth and resources has been identified in a series of statement from the UN General Assembly Resolution 626 (VII), 21 December 1952 and General Assembly Resolution 1803 (XVII), 14 December 1962 dealing with permanent sovereignty over natural resources. Thus the ‘territory’ of a State is understood to be that geographical extent over which and for which a State can make independent legislations, without requiring to consult any external authority or entity.

In the *Anglo-Norwegian Fisheries case* (ICJ Reports 1951), the ICJ held that “[t]he delimitation of the sea areas has always had an international aspect, it cannot be dependent merely on the will of the coastal States as expressed in its municipal law.” In the *Icelandic Fisheries case* (ICJ Reports 1974.), it was indicated that the States not only have a duty in customary international law to allocate common resources equitably but also to conserve them for future benefits in the interest of sustainable utilisation. This case does support the existence of a customary obligation on the part of the nations to co-operate in conservation and sustainable use of common property resources of High seas.

### 15.3 The United Nations Convention on the Law of the Sea, 1982 (UNCLOS)

In 1982, the United Nations Convention on the Law of the Seas (“UNCLOS”) was adopted and was intended to be a comprehensive restatement of almost all aspects of the Law of the Sea. Its basic objective is to establish -

*“A legal order for the seas and oceans which will facilitate international communication, and will promote the peaceful uses of the seas and the oceans and equitable and efficient utilisation of their resources, the conservation of their living resources, and the study, protection and preservation of marine environment.”*

There are six main sources of ocean pollution addressed in the Convention: land- based and coastal activities; continental-shelf drilling; potential seabed mining; ocean dumping; vessel-source pollution; and pollution from or through the atmosphere.

First of all, the Convention lays down, the fundamental obligation of all the States to protect and preserve the marine environment. It further urges all States to co-operate on a global and regional basis in formulating rules and standards and otherwise take measures for the same purpose.

Coastal States are empowered to enforce their national standards and anti-pollution measures within their territorial sea. Every coastal State is granted jurisdiction for the protection and preservation of the marine environment of its EEZ. Such jurisdiction allows coastal States to control, prevent and reduce marine pollution from dumping, land-based sources or seabed activities subject to national jurisdiction, or from or through the atmosphere. With regard to marine pollution from foreign vessels, coastal States can exercise jurisdiction only for the enforcement of laws and regulations adopted in accordance with the Convention or for “generally accepted international rules and standards”. Such rules and standards, many of which are already in place, are adopted through the competent international organisation, namely the International Maritime Organisation (IMO).

On the other hand, it is the duty of the “flag State”, the State where a ship is registered and whose flag it flies, to enforce the rules adopted for the control of marine pollution from vessels, irrespective of where a violation occurs. This serves as a safeguard for the enforcement of international rules, particularly in waters beyond the national jurisdiction of the coastal State, i.e., on the high seas.

Furthermore, the Convention gives enforcement powers to the “port State”, or the State where a ship is destined. In doing so, it has incorporated a method developed in other Conventions for the enforcement of treaty obligations dealing with shipping standards, marine safety and pollution prevention. The port State can enforce any type of international rule or national regulations adopted in accordance with the Convention or applicable international rules as a condition for the entry of foreign vessels into their ports or internal waters or for a call at their offshore terminals. This has already become a significant factor in the strengthening of international standards.

Finally, as far as the international seabed area is concerned, the International Seabed Authority, through its Council, is given broad discretionary powers to assess the potential environmental impact of a given deep seabed mining operation, recommend changes, formulate rules and regulations, establish a monitoring programme and recommend issuance of emergency orders by the Council to prevent serious environmental damage. States are to be held liable for any damage caused by either their own enterprise or contractors under their jurisdiction.

With the passage of time, United Nations involvement with the law of the sea has expanded as awareness increases that not only ocean problems but global problems as a whole are interrelated. Already, the 1992 United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro, Brazil in 1992, placed a great deal of emphasis on the protection and preservation of the oceans’ environment in harmony with the rational use and development of their living resources, thus establishing the

concept of “sustainable development” embodied in Agenda 21, the programme of action adopted at the Conference.

The necessity to combat the degradation and depletion of fish stocks, both in the zones under national jurisdiction and in the high seas and its causes, such as overfishing and excess fishing capacity, by-catch and discards, has been one of the recurrent topics in the process of implementation of the programme of action adopted in Rio de Janeiro.

In this respect, among the most important outputs of the Conference was the convening of an intergovernmental conference under United Nations auspices with a view to resolving the old conflict between coastal States and distant-water fishing States over straddling and highly migratory fish stocks in the areas adjacent to the 200 nautical-mile exclusive economic zones. This Conference adopted the 1995 Agreement on Straddling Fish Stocks and Highly Migratory Fish Stocks which introduces a number of innovative measures, particularly in the area of environmental and resource protection obliging States to adopt a precautionary approach to fisheries exploitation and giving expanded powers to port States to enforce proper management of fisheries resources.

The protection and preservation of the marine environment under Part XII of the United Convention of the Law of the Sea, 1982 (hereinafter Convention) provides a comprehensive legal framework for controlling the serious degradation of the marine ecosystem. Although Articles 192 to 237 deal with protection and preservation of the marine environment *per se*, environmental clauses are found in a number of different provisions dealing with maritime zones.

The importance attached to environmental provisions of the Law of the Sea under the Convention is evident in Article 1 of the Preamble, which provides that -

*“Consequently the States Parties recognise the desirability of establishing through this Convention, with due regard for the sovereignty of all States, a legal order for the seas and oceans which will facilitate international communication, and will promote the peaceful uses of the seas and oceans, the equitable and efficient utilisation of their resources, the conservation of their living resources, and the study, protection and preservation of the marine environment.”*

It can thus be seen that unlike the four Geneva Conventions on the Law of Sea 1958, the 1982 UN Convention on the Law of the Sea provides for a comprehensive environmental law regime governing the uses of the seas, including exploration and exploitation of their resources.

The provisions on the protection and preservation of marine environment constitute a substantial part of the UN Law of the Sea Convention. Prior to the adoption of this Convention pollution of the sea by oil and pollution by dumping ships and aircraft was of major concern to the international community. In addition, conservation of marine fisheries either because of over exploitation in some cases or parts of the sea or adverse impact of pollution or available fish stocks was also a matter of concern but generally was dealt as part of regulation of fishery resources of the sea.

Article 24 of the 1958 Convention on the High Seas required States to draw up regulations to prevent pollution of the seas by the discharge of oil from ships or pipelines or resulting from the exploration and exploitation of the seabed and the subsoil. Article 25 of the same Convention required States to take measures to prevent pollution of the seas from dumping of radioactive wastes taking into account relevant international standards and regulations. However, radioactive pollution was not defined by the Convention.

Similarly, Article 5(7) of the 1958 Convention of the Continental Shelf obliged States to undertake appropriate measures in the safety zones established around continental shelf, installations, to protect living resources from harmful agents. However, harm resulting from such exploitation to the marine environment beyond the limits of national jurisdiction was not covered. Similarly, various conventions that dealt with oil pollution from ships or nuclear materials only provided for a piecemeal approach to deal with problems posed to marine environment due to pollution from different sources.

However, the United Nations Conference on Human Environment held at Stockholm in 1972 put the problem of protection and preservation of the marine environment in a better perspective and certain basic concepts and principles adopted by the Stockholm declaration on assessment and control of marine pollution provided the basis for the development of articles of Part XII of the 1982 Convention. Principle 7 of the Stockholm Declaration provides that “States shall take all possible steps to prevent pollution of the seas by substances that are liable to create hazards to human health, to harm living resources and marine life, to damage amenities or to interfere with other legitimate uses of the sea.”

The scope of the Convention is very wide as it takes into consideration the global dimension of marine pollution and the different sources of pollution. It extends the scope to environmental degradation in the maritime zones, internal waters, high seas and also the international seabed area.

The Convention in essence is a basic universal legal instrument, which establishes general rules to serve as the legal framework for specific global or regional instruments. It thus plays a co-ordinating role and states in Article 237 that obligation under Part XII are without prejudice to the specific obligations assumed by States under special conventions and agreements concluded previously and relate to the protection and preservation of the marine environment. However, it provides a rider that such specific obligations should be carried out in a manner consistent with the general principles and objectives of the Convention.

Part XII of the United Nations Convention on the Law of the Sea provides a comprehensive framework governing all sources of marine pollution. A general obligation is provided in Article 192 wherein “States have the obligation to protect and preserve the marine environment.” Further Article 193 reiterates the rights of permanent sovereignty of States over their natural resources and provides that “States have the sovereign right to exploit the natural resources pursuant to the environmental policies and in accordance with their duty to protect and preserve the marine environment.”

While undertaking an obligation to protect and preserve their environment UNCLOS provides that States are under a duty to use “the best practicable means at their disposal and in accordance with their capabilities.” This clearly takes into consideration the needs and aspirations of a number of developing countries whose priority is often socio-economic development and are faced with limited resources to invest them on achieving higher and higher international environmental standards often set and urged by the developed States.

One of the important functions of Part XII of UNCLOS is to provide international rules and standards for the enforcement of marine pollution abatement activities. States also are under duty to undertake a due diligence obligation (prevent, reduce and control) and the best available means at their disposal and in accordance with the capabilities. This requires in some respects harmonisation of national policies with international rules and standards with regard to preservation of the marine environment.

As regards standards setting, Section 5 of Part XII deals with six sources of marine pollution. This includes pollution from land based sources (Article 207); pollution from seabed activity subject to national jurisdiction (Article 208); pollution from activities in the Area (Article 209); pollution by dumping (Article 210); pollution from vessels (Article 211); and pollution from or through the atmosphere (Article 212).

As regards pollution from land-based sources States are under an obligation to adopt national legislations, regional and global rules, while bearing in mind their economic capacities and also the need for their socio-economic development. To date, there is no global treaty or convention regulating land based marine pollution. However, the UNEP is actively engaged in a Global Programme for Action (GPA) for adopting detailed national, regional and if possible international rules for combating land based marine pollution.

With respect to pollution from seabed activity Part XII provides for a similar obligation. Pollution from activities in the Area is to be governed by international rules, regulations and procedures established in accordance with Part XI of UNCLOS. The International Seabed Authority, the body responsible for seabed activities, adopted the Regulation governing Prospecting, Exploration and Exploitation of poly-metallic nodules in July 2001. This regulation provides for detailed rule for future exploitation of seabed minerals and resources.

A combination of national legislation and international rules is envisaged with respect to pollution by dumping. States are under an obligation to abide by a due diligence duty to preserve the marine environment from dumping. Moreover Article 210 also provides that dumping within the territorial sea or the Exclusive Economic Zone or the continental shelf, may not be carried out without the express prior approval of the coastal State.

## 15.4 Biodiversity in the Marine Ecosystems

It is seen that the oceans cover nearly 70% of the planet’s surface area, and marine and coastal environments contain diverse habitats that support an abundance of marine life.

Marine organisms of the same species live in a specific area are populations of that particular species. They are dependent on other populations of plant and animals. For example, a variety of marine animals in a food chain system coexist. Life in our seas produces a third of the oxygen that we breathe, offers a valuable source of protein and moderates global climatic change. This forms whole single unit often called as a marine ecosystem. Some examples of important marine ecosystems include oceans, estuaries and salt marshes, lagoons, tropical mangrove forests and coral reefs etc. These marine ecosystems are intricately linked with global atmosphere and other ecosystems.

Today marine ecosystems are facing an unprecedented human-induced threat from industrial pollution, fishing which is often illegal, unreported and unregulated (IUU); pollution from maritime transportation, disposal of solid and other wastes including dumping at sea, and introduction of exotic and alien species and the threat of global climate change that affects oceans and seas.

An important area on the agenda of the Convention on Biological Diversity is that of marine biodiversity. It is important to have an eco-systemic approach to the protection and preservation of the marine environment. An 'Ecosystem' means a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit. 'Biological diversity' as defined under the Convention on Biological Diversity means the variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.

#### ◆ Sustainable Fisheries

Fish currently supply the greatest percentage of the world's protein consumed by humans. This fact may soon change, however, given that most of the world's major fisheries are being fished at levels above their maximum sustainable yield; and many regions are severely overfished. More than 70% of the world's fisheries are overexploited, which threatens the health, economy and livelihoods of communities all over the world. The global fishing fleet is estimated to be 250% larger than needed to catch what the ocean can sustainably produce.

There are a number of issues that need to be addressed quickly in order to preserve fish stocks as a natural resource.

These include among others:

#### - Overfishing

Overfishing, formally defined as "situations where one or more fish stocks are reduced below predefined levels of acceptance by fishing activities" means that fish stocks are depleted to the point where they may not be able to recover. Areas such as the eastern coast of Canada and the north-eastern coast of the U.S. have fished certain species to collapse, which consequently caused the fishing communities that relied on those stocks

to collapse. In some cases, depleted fish stocks have been restored; however, this is only possible when the species' ecosystem remains intact. If the species depletion causes an imbalance in the ecosystem, not only is it difficult for the depleted stocks to return to sustainable levels, other species dependent on the depleted stocks may become imbalanced causing further problems.

Access agreements through government deals are helping fisheries in developing nations negotiate better agreements with rich countries that will help protect the marine environment and livelihoods of fishing communities. These local people rely on fish to sustain their health and their livelihoods.

Foreign fishing fleets of enormous size and power from rich countries can overwhelm local people and deplete the fish stocks causing further harm to the marine environment by disrupting the food chain. The more fish stocks become overexploited, the more fisheries must search for productive waters which are then quickly depleted.

The seafood industry, like all industries, is largely market driven. Seafood consumers are increasingly aware of the threats to global fish stocks yet greater awareness is needed so that the market demands sustainable products from well-managed fisheries. A potentially powerful intervention is being implemented by organisations such as Blue Ocean Institute and the Monterey Bay Aquarium by publishing seafood guides to help consumers make informed choices when buying seafood. Furthermore, recent legislation requires fish sellers to identify the source of seafood. Some retail outlets such as Whole Foods Market are committed to preserving the ocean's resources by raising awareness and selling only products of well-managed fisheries. Organisations such as the WWF have worked with corporations such as Unilever, one of the world's largest consumer food companies, to form the Marine Stewardship Council (MSC), which provides a mechanism for identifying and certifying sustainable fisheries.

An independent, global charity, the MSC is headquartered in London and works to promote sustainable marine fisheries, and responsible, environmentally appropriate, socially beneficial and economically viable fishing practices. This is accomplished by the development of a set of standards, the MSC Principles and Criteria for Sustainable Fishing, to assess and certify fisheries. These standards are based on scientific data and were developed with relevant stakeholders. Third-party certifiers are used to assess MSC certified products. The MSC "seal of approval" allows consumers to purchase fish and other seafood from well-managed sources.

#### - **Inadequate conservation and management practices**

The ocean seems invulnerable because it is vast and under-explored; however, it is increasingly important to know that its resources are finite, and depletion of these resources beyond sustainable levels is irreversible. Overfishing not only causes depletion in individual fish stocks, but also disruption to entire ecosystems and food webs in the ocean. Management of these ecosystems as a whole is needed to ensure the sustainability of commercial fish stocks. The management of ecosystems as opposed to managing only target species entails:

- Maintaining populations of target species to enable their natural role in ecosystems and to enable sustainable reproduction rates.
- Eliminating the use of fishing gear that creates a high level of bycatch, or the incidental catch of non-target species.
- Closing feeding, breeding and spawning grounds to protect marine ecosystems.

The European Union has established a European Common Fisheries Policy (CFP) that seeks to prevent overfishing by better management of fisheries and by liaising with other national governments and markets to ensure sustainability. Another solution is the establishment of no-take zones and marine reserves, areas where fishing is prohibited, to help replenish commercial fish stocks to secure long-term sustainability.

200-mile Exclusive Economic Zones (EEZs) were established in the 1970s to protect fishing resources in developing countries. Foreign vessels negotiate to obtain access to waters within the EEZs. Unfortunately, while this aids developing countries and their fishing communities, the alternative for foreign fleets is to fish the high sea, depleting those resources, or to fish illegally. Access Agreements to the EEZ's have alleviated this problem by negotiating a lump sum to allow foreign boats to fish their waters. Nevertheless, access agreements continue to contribute to overfishing and to threatening the food security of developing countries. More equitable and sustainable negotiations are needed.

◆ **Habitat loss as a result of harmful fishing practices, which have decreased some fish populations**

Reducing or eliminating destructive fishing practices is essential to sustainable fishing. Bottom trawling destroys habitats, indiscriminate fishing practices such as drift nets, long-lining and cyanide fishing are destructive to habitats and non-targeted species, lost or discarded fishing gear is also destructive to underwater habitats. Deep-sea trawling is particularly harmful to ecosystems because it strips the entire environment of all living things including deep ocean corals. Continued stripping of deep-sea areas may cause species to become extinct before they have a chance to be identified by science. Illegal Unregulated and Unreported (IUU) fishing is also often destructive to the marine environment and the species that rely on it.

The use of cyanide is a popular method of capturing live reef fish for the seafood and aquarium markets. Cyanide fishers squirt cyanide into coral reefs where fish seek refuge, which stuns them making them easy to catch. Cyanide poisons reefs and kills other reef organisms. Less than half the fish caught with cyanide survive long enough to be sold to aquariums or restaurants. It is widely used in Southeast Asia and is spreading to other parts of the world where market demand for live reef fish has created incentives for local fishers. Live fish are much more profitable and are sold to the aquarium trade and to luxury fish markets in Asia.

A moratorium on deep-sea trawling is needed to stop this destructive practice. The damage done to deep sea corals and undiscovered species is immeasurable. National governments and the United Nation's Food and Agriculture Organisation have developed

an International Plan of Action on IUU Fishing, but better monitoring and enforcement is needed.

Viable alternatives are needed and/or laws enacted to stop the destructive practice of cyanide fishing. Consumers can help greatly by choosing to only purchase aquarium fish from retailers that do not purchase fish caught by cyanide. This benefits the consumer as well given that the vast majority of reef fish caught using this method die within a few weeks.

#### ◆ Government subsidies

Governments provide subsidies to fisheries to enable them to increase the catching capacity of their fleets in the form of new vessels and improvements to existing boats, fuel subsidies, tax benefits and job support. Japan is the largest subsidiser of its fishing industry providing US\$2-3 billion annually. These subsidies are intended to support the fishing industry in these countries, however they do more harm than good with the increased capacity causing the overexploiting of commercial fish stocks and increasing the amount of waste due to bycatch.

Redirecting these funds to be used for improving fishery management would greatly help reduce fishing pressure on already depleted stocks, and would support the industry by preserving the resource for the future. In the EU, subsidies to support new or to improve existing boats are decreasing and changes in social measures such as retraining fishermen for alternative employment are increasing. Organisations such as WWF are working with the World Trade Organisation to end subsidies by governments that support poor fishing practices.

## 15.5 UNEP Regional Seas Conventions

One of the immediate tasks before the United Nations Environment Programme (UNEP) after its inception in 1972, was the development of the regional seas programme to address the growing incidents of marine pollution. In 1974, the UNEP established the regional seas programme to be able to help and assist the coastal nations in their endeavour to mitigate and prevent the pollution and degradation of the world's coastal areas, inshore water and open oceans. The Regional Seas Programme has been viewed by many as a "comprehensive, progressive assault upon the degradation of the marine environment." This programme is often tailor-made to suit the peculiar needs and circumstances of the regions.

It largely involves: an action plan for co-operation and the management, protection, rehabilitation and development of the coastal and marine resources; an intergovernmental agreement in the nature of Framework Convention embodying in most instances a set of general principles and obligations, (although in some cases there may be binding agreements); and, detailed protocols dealing with specific regional problems such as oil spills, dumping, emergency co-operation and also specially protected marine areas.

As regards the legal scope of these regional conventions they largely apply to their respective regions. However, in some cases invitations are open to States and other intergovernmental and international organisations to participate.

Today, more than 140 countries participate in 13 Regional Seas programmes established under the auspices of UNEP which involve the Black Sea, Wider Caribbean, East Asian Seas, Eastern Africa, South Asian Seas, ROPME Sea Area, Mediterranean, North-East Pacific, North-West Pacific, Red Sea and Gulf of Aden, South-East Pacific, Pacific, and Western Africa. Six of these programmes, are directly administered by UNEP.

Apart from the 1974 Helsinki Convention (Baltic Sea ), 1974 Paris Convention and 1992 OSPAR (North - Sea and North - East Atlantic ) and the 1976 Barcelona Convention (Mediterranean), there were number of regional sea Conventions adopted under the UNEP auspices. These include the 1978 Kuwait Convention (Persian and Arabian Gulf), the 1981 Abidjan Convention (West-Africa), the 1982 Jeddah Convention (Red Sea and Gulf of Aden), 1982 Lima Convention (South- East Pacific), the 1983 Cartagena Convention (Caribbean), 1985 Nairobi Convention (East-Africa ) and the 1986 Noumena Convention (South-Pacific). Incidentally, the 1976 Barcelona Convention, the 1981 Lima Convention, 1978, the Kuwait Convention and the 1983 Cartagena Conventions, have all adopted special regimes by way of Protocols to govern marine pollution from land-based sources.

Most of these regional seas Conventions incorporate three basic elements. These include: general obligations to prevent, reduce and abate pollution; identification of the geographical application of the area of the Convention; and lastly, they identify the types of discharges into the seas. A cursory look at some of these Conventions shows that the Barcelona Convention, the Kuwait Convention and the Jeddah Convention provide for a prevent, reduce and abate (due diligent) approach. Whereas, the Cartagena Convention uses the words “prevent, reduce and control”. As opposed to this, the Abidjan Convention provides for a “prevent, reduce, combat and control approach”. In sum, it can be stated that most of these Conventions adopt a cautious approach, unlike the 1976 Barcelona Convention and the Helsinki Convention which after their amendments provide for a more stringent precautionary principle and a polluter pays principle based approach.

The applicable area of the Convention is generally provided for as the ‘Convention area’. However, there are a few exceptions namely, the Jeddah and the Abidjan Conventions. Moreover, as will be seen in the following sections the Mediterranean Protocol of 1996 to the Barcelona Convention, and the 1985 Quito Protocol to the 1981 Lima Convention make elaborate provisions for including ‘internal waters’, within the ambit of the Convention area.

With regard to the types of discharges, the 1978 Kuwait Convention, the 1983 Jeddah Convention and the 1976 Barcelona Convention include ‘airborne pollution’ as a combined product with land-based sources of marine pollution. However, the Abidjan Convention and the Cartagena Convention contain two separate sections, one on land-based marine pollution and the other dealing with airborne pollution.

**Mediterranean Region**<sup>2</sup> (Convention for the Protection and Development of the Marine Environment and Coastal of the Mediterranean Sea (Barcelona Convention), Barcelona 1976)

This Convention also called the **Barcelona Convention** was adopted on 16 February 1976, and entered into force on 12 February 1978. It adopts the definition for pollution provided by the UN Convention on the Law of the Sea wherein ‘pollution is largely regarded as anthropocentric’. It calls upon the Contracting Parties to undertake individual and joint due diligence measures to prevent, abate and combat pollution in the Mediterranean Sea area.

The Convention also calls upon the Parties to prevent pollution caused from a number of point sources. For the purpose of the present thesis, it would be germane to mention that Article 5 titled “Pollution caused by Dumping from Ships and Aircrafts” calls upon ‘the Contracting Parties to take all appropriate measures to prevent and abate pollution of the Mediterranean Sea area caused by dumping from ships and aircrafts.’

To keep pace with the growing environmental consciousness in the region, the Barcelona Convention was revised in 1995 and a new convention titled Convention for the Protection of Marine Environment and Coastal Region of the Mediterranean was adopted in 1995. Unlike the 1976 Barcelona Convention, the amended Convention provides for a set of general obligations.

These obligations follow a similar due diligence approach to prevent, control and reduce marine pollution. However, it needs to be noted that general obligations also include a more pro-active role by Contracting Parties wherein they are called upon to “...combat and to the fullest possible extent eliminate pollution from the Mediterranean Sea area and to protect and enhance the marine environment in that area so as to contribute to its sustainable development.”

The principle of “sustainable development” has been given the status of a general obligation under this Convention. This substantive obligation is further developed as Contracting Parties are bound by the obligation to undertake and apply within their capabilities, the principles of precautionary rule, the polluters pays principle, environment impact assessment and promote an integrated management of the coastal zones bearing mind the ecological needs of the region. Article 5 of the Convention titled “Pollution caused by Dumping from Ships and Aircrafts or Incineration at Sea” provides that “the Contracting Parties shall take appropriate measures to prevent, abate and the fullest extent eliminate pollution of the Mediterranean Sea area caused by dumping from ships and aircraft or incineration at sea.”

The Convention also provides for detailed institutional mechanisms within the auspices of the UNEP for implementation of the obligations provided hereunder.

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<sup>2</sup> Countries of this region include: France, Monaco, Spain, Malta, Tunisia, Morocco, Algeria, Libya, Croatia, Slovenia, Italy, Bosnia and Herzegovina, Yugoslavia, Albania, Greece, Turkey, Cyprus, Syria, Lebanon, Israel and Egypt.

A Protocol to the Barcelona Convention titled Protocol for the Prevention and Elimination of Pollution of the Mediterranean by Dumping from the Ships and Aircraft (Dumping Protocol) was adopted in Barcelona Spain 1976<sup>3</sup> and entered into force on 12 February 1978. This Protocol was succeeded by the Protocol for the Prevention and Elimination of Pollution of the Mediterranean Sea by Dumping from Ships and Aircraft and Incineration at Sea, 1995.

**ROPME Region** (Kuwait Regional Convention for Co-operation on the Protection of the Marine Environment from Pollution 1978)<sup>4</sup>

The Governments of Bahrain, Iran, Iraq, Kuwait, Oman, Qatar, Saudi Arabia and United Arab Emirates adopted the Kuwait Convention for the protection of the marine environment.

Like other UNEP conventions, the **Kuwait Convention** also adopts the Law of the Sea definition of the “pollution of the marine environment”. It places due diligence obligations on all the Contracting Parties to prevent, abate and combat pollution of the marine environment in the Kuwait sea area. The Parties are called upon to establish national standards, laws and regulations on dumping which are consistent with established standards of the London Convention.

The **Kuwait Convention** provides for co-operation in dealing with pollution emergencies, scientific and technical co-operation, environmental impact assessment as well as liability and compensation measures for pollution damage. It also establishes regional organisations for the protection of the marine environment.

Although the Convention provides for adoption of additional protocols, presently there is no specific protocol regulating pollution of the sea area by dumping. A protocol on protection of the marine environment against pollution from land-based sources was adopted on 21 February 1990.

**West and Central Africa** (Convention for Co-operation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region, 1981)<sup>5</sup>

The **Abidjan Convention** while following a due diligence approach to the control of marine pollution adopts the Law of the Sea definition for “pollution of the marine environment”. Parties are called upon to undertake general obligations for establishing national laws and standards governing pollution by dumping in accordance with those established by international and regional organisations. They also have to take measures to avoid cross-sectoral positions as a part of the larger environmental management of the Convention area.

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<sup>3</sup> ILM, vol. 15, No.1, 1976, pp. 300-306.

<sup>4</sup> Countries of this region include: Iraq, Iran, Kuwait, Saudi Arabia, Bahrain, Qatar, the United Arab Emirates and Oman.

<sup>5</sup> Countries of this region include: Congo, Democratic Republic of Congo, Equatorial Guinea, Gabon and Sao Tome and Principe.

The Abidjan Convention also provides for combating pollution emergencies, development of environmental impact assessment, technical co-operation and rules on liability and compensation for pollution damage.

Red Sea and Gulf of Aden (Regional Convention for the Conservation of the Red Sea and Gulf of Aden Environment 1982).

The Jeddah Convention like another UNEP Conventions adopts the Law of the Sea definition of marine pollution and calls upon member States to follow due diligence approach towards preventing, reducing, abatement and *combating* marine pollution. The word “combating”, not found in other UNEP Regional Seas Programmes, shows the resolve of the region to fight pollution, as they already suffer from vessel-source pollution.

It also provides for a definitional clause on conservation which means rational use by man of living and non-living and marine coastal resources in a manner ensuring optimum benefit for the present generations, while maintaining the potential of that environment to meet the needs and aspirations of future generations. Such a definition should be construed as including conservation, protection, maintenance, sustainable and renewable utilisation, and enhancement of the environment.

The Convention provides for rules on co-operation in pollution emergencies, scientific co-operation EIA and rules on liability and compensation.

Regional organisation for the conservation of the Red Sea and the Gulf of the Aden environment has been established for implementing the Convention.

**Wider Caribbean** (Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region)<sup>6</sup>

The **Cartagena Convention** adopted on 24 March 1983 provides for a due diligence approach to reduce, prevent and control pollution in the Convention area.

Article 6 of the Convention calls upon the Contracting Parties to take appropriate measures to prevent, reduce and control pollution caused by dumping of waste consistent with applicable international standards.

Similar to other UNEP Conventions, the Cartagena Convention has obligations to co-operate in cases of emergencies, environment impact assessment, scientific and technical co-operation and rules on liability and compensation, in accordance with international law.

Although, the Cartagena Convention provides for a Protocol concerning Pollution from Land-based sources, there is no specific protocol on dumping of radioactive substances.

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<sup>6</sup> Countries of this region include: Cuba, Haiti, Jamaica, Mexico, Belize, Guatemala, Honduras, Nicaragua, Costa Rica, Panama, Columbia, Bahamas, Dominican Republic, Netherlands, Antigua and Barbuda, Saint Christopher and Nevis, Dominica, France, Saint Lucia, Barbados, Saint Vincent and Grenadines, Grenada, Trinidad and Tobago, Suriname, Guyana, Venezuela, UK and USA.

This is not to deny that the protocol can regulate pollution caused by radioactive substances that are passed as effluents and emissions from land based sources.

**East Africa** (Convention for the Protection, Management and Development of the Marine and Coastal Environment of the East Africa Region, Nairobi 1985)<sup>7</sup>

The **Nairobi Convention** calls upon Parties to protect and manage the marine and coastal environment on a due diligence basis. Contracting Parties have also been called upon to take measures in conformity with international law and regulate effective discharge of pollutants consistent with established international standards on dumping.

Article 6 deals with pollution by dumping and states that Parties shall take all appropriate due diligence measures to prevent, reduce and combat pollution of the Convention area caused by dumping bearing in mind applicable international standards and recommended practices. The Convention provides similar co-operation for combating pollution emergencies, technical assistance, EIA and rules of liability. The UNEP has been designated with secretarial functions.

**Black Sea** (Convention on the Protection of the Black Sea against Pollution, Bucharest, 1992)<sup>8</sup>

The **Bucharest Convention** was adopted on 21 April 1992 and entered into force on 15 January 1994. Similar to the Barcelona Convention, the Bucharest Convention adopts the definition of pollution provided by the UN Convention on the Law of the Sea. The Black Sea, one of the worst areas effected by radioactive waste disposal defines dumping as “any deliberate disposal of waste or other matter from the vessels or aircraft and any deliberate disposal of vessels and aircraft themselves”, similar to the global regime on dumping controlled by the London Convention 1972.

A general provision adopting international law proscriptions provides that the Contracting Parties will participate in the Convention bearing in the mind the “sovereign equality of the States, non-interference in internal matters, mutual benefit and respect for relevant principles and norms of international law”.

It is however, difficult to understand as to why the Convention provides sovereign immunity to State owned ships and warships that are immune from the application of this convention. In this regard, it may be seen as no mere coincidence that during the erstwhile regime of communist rule in Soviet Union, the largest amount of clandestine dumping of radioactive waste was undertaken by State owned vessels and warships.

The Bucharest Convention is a framework convention and like all UNEP regional sea instruments provide for due diligence obligations to - prevent, reduce and control pollution. Article X of the Convention specifically deals with pollution by dumping and

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<sup>7</sup> Countries of this region include: Somalia, Kenya, Tanzania, Seychelles, Comoros, Mozambique, Madagascar, Mauritius, France (Reunion) and South Africa.

<sup>8</sup> Countries of this region include: Bulgaria, Ukraine, Russian Federation, Romania, Turkey and Georgia.

calls upon Contracting Parties to undertake mandatory measures to prevent, reduce and control pollution caused by dumping in the Black Sea area. It also prohibits granting of any permits by Contracting Parties within their jurisdiction to allow dumping by natural or juridical persons hailing from non-Black Sea States. A novel section dealing with protection of the marine living resources is provided for under Article XIII of the Bucharest Convention. It calls upon the Contracting Parties to not only prevent, reduce and control pollution in the Black Sea area, but also ask them to pay special attention to avoiding harm to marine life and living resources, in particular by changing their habits and creating hindrance to fishing and other legitimate uses of the Black Sea, and in this respect shall give due regard to recommendations of the competent international organisations.

A detailed clause on responsibility and liability has also been provided for, wherein Contracting Parties have been called upon to adopt rules and regulations “on liability for damage caused by the natural or juridical persons to the marine environment of the Black Sea in areas where it exercises, in accordance with international law, its sovereignty, sovereign rights or jurisdiction”.

The Convention makes it mandatory for the Contracting Parties to harmonise their legal systems to be able to provide prompt and adequate compensation for the pollution caused by the marine environment.

An institutional mechanism in the form of a Commission has been provided for implementation of the Bucharest Convention. It is also important to note that the Convention does not provide for any form of reservation.

**Protocol on the Protection of the Black Sea Marine Environment against by Pollution by Dumping:** A Protocol was adopted along with Convention on 21 April 1992 and it entered into force on 15 January 1994. Article 2 of the Protocol provides “dumping in the Black Sea of wastes or other matter containing substances listed in Annex-I of this Protocol is prohibited”. Annex-I of the Protocol prohibits a number of substances, chief among them being “radioactive substances and waste, including used radioactive fuel”.

The Protocol follows the listing system whereby permits are required for dumping of noxious, as well as, other wastes on the basis of their toxicity and scientific quality. It may also be noted that the Protocol follows the reverse listing procedure adopted by the 1996 Protocol to the London Convention, wherein only those substances that are listed are prohibited.

In such a situation there is a mandatory obligation upon the Contracting Parties to only allow substances of lesser hazardous value and risk, to be allowed for dumping. Moreover, such a reversal of listing also leads to the reversal of the ‘burden of proof’, whereby the dumper will have to show that all dumped substances are safe and it is not for the pollution victim to prove his case.

The precautionary approach prohibits the dumping of hazardous nuclear waste on the excuse that insufficient scientific evidence is available as to the future effects on human body and surrounding environment.

The Commission provided under the Bucharest Convention has been given an important role of monitoring dumping activities wherein competent national authorities who have issued permits for dumping in accordance with Articles 3, 4 and 5 would have to submit their records to it for perusal.

The Protocol also provides for a compulsory obligation to co-operate and exchange information on all activities concerning dumping and issuance of permits between the Contracting Parties. The Annexes appended to the Protocol form an integral part of the Protocol. Moreover, the characteristics and composition of the dumped matter will have to be taken into consideration while issuing permits for dumping at sea. The important factors that need to be taken into account include: amount of matter to be dumped, physical and biological properties, long term toxicity, persistence, bio-accumulation and transformation in the marine environment and the probability of the dumped substance affecting the marketability of marine resources, such as fishes.

Further, the Contracting Parties will also have to bear in mind the possible effects on the other legitimate uses of the sea while undertaking dumping.

It is also to be noted that the practical availability of alternate disposal options would have to be found to safeguard dumping at sea, which would entail exhausting land-based disposal options, before issuing permits for dumping of radioactive waste.

At the policy level too, it is seen that the Black Sea States have adopted various regional policy decisions calling for a ban on radioactive dumping at Sea. The Odessa Ministerial Declaration on the Protection of the Black Sea adopted on 7 April 1993 took a decision to “to ban, with immediate effect, the dumping of radioactive materials in the Black Sea”.

**South Pacific** (Convention for the Protection of the Natural Resources and Environment of the South Pacific Region, Noumena 1986)<sup>9</sup>

The Pacific region comprises 22 island States with 33 million square km. area, i.e. nearly four times the area of the continent of Australia and three times that of USA. Even as it represents 6% of the earth's surface, land area of the region is only 2%. There is great disparity among the islands in size and economic well-being, wherein Papua New Guinea the largest State of the region is 93, 000 times larger than the smallest island of Pitcairn.

The area around the Pacific has been one of the worst polluted due to the long standing policy of France to conduct underground and atmospheric nuclear tests in the Muroroa and Fangatufa Atolls in the South Pacific region and also the nuclear testing by the United States in the Bikini Atolls.

For the Pacific Islanders, the ocean is a way of life. They are intrinsically involved with the oceans as a means of food source and a basis of their rituals, traditions and customs.

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<sup>9</sup> Countries of this region include: Federated States of Micronesia, USA, Republic of Marshall Islands, Nauru, Tuvalu, Kiribati, Cook Islands, France, Palau, Australia, Papua New Guinea, New Zealand, Fiji, Solomon Islands, Niue, Western Samoa and UK.

It is because of this link that any threat or destruction of the oceans is viewed as destruction of their culture and way of life. The activities which impact upon their marine environment include over fishing, use of poisons and explosives for fishing, pollution from sewage, fertilizers, toxic substances and numerous other anthropocentric activities. Although the region has witnessed environmental degradation from various sources, radioactive pollution and the innate inability of the Pacific island States to do anything, is one that has caught the eye of the international community.

Environmental issues were first addressed in the South Pacific through the South Pacific Conference held in 1950. But it was the US and French nuclear tests that brought the community together. The efforts of non-governmental organisations, such as the World Conservation Union or the IUCN, led to the adoption of the Convention for the Protection of the Natural Resources and the Environment of the South Pacific, also called the Noumena Convention.

The South Pacific Regional Environmental Programme (SPREP) was established in 1978. Though in the initial years it functioned as a part of the South Pacific Commission, today it functions independently.

Today, a host of conventions - the Noumena Convention, the United Nations Convention on the Law of the Sea 1982 and others regulate the South Pacific region. But for the purposes of our study, relevant to ocean dumping of radioactive wastes, we will concentrate on: the Convention for the Protection of the Natural Resources and Environment of the South Pacific Region (the Noumena Convention), 1986 its Protocol, and the Rarotonga Protocol.

### **The Noumena Convention**

The Noumena Convention area comprises all the Pacific Island States, Australia and New Zealand. Besides these States, the Convention area includes "areas of high seas which are enclosed from all sides by the 200 nautical mile zones". The Convention also leaves wide open for addition of areas within its geographical scope. Article 3 provides, Any Party may add areas under its jurisdiction within the Pacific Ocean between the Tropic of Cancer and 60°S latitude and between 130°E longitude and 120°W longitude to the Convention Area.

Adopting the London Convention definition on dumping, the Convention provides for a set of general obligations. These include a due diligence approach of preventing, reducing and controlling pollution caused by dumping. Parties shall utilise their fullest capacities towards this end and shall endeavour to harmonise their national policies. Bearing in mind the peculiar problem of the region, Parties are also called upon to formulate regional standards, agreed measures and procedures taking into consideration international standards prescribed by various competent global and regional organisations.

Article 10 of the Noumena Convention titled "Disposal of Wastes", calls upon Parties to adopt a due diligence approach towards controlling pollution caused by dumping of wastes, which also includes "...prohibition of dumping radioactive wastes or other radioactive matter in the Convention area."

To be able to save the seabed from dumping, Article 10 also provides that -

Without prejudice to whether or not disposal into the seabed and subsoil of wastes or other matter constitutes 'dumping', the Parties agree to prohibit the disposal into the seabed and subsoil of the Convention Area of radioactive wastes or other radioactive matter.

A further extension of this resolve is seen wherein disposal would also "...apply to the continental shelf of a Party where it extends, in accordance with international law, outwards beyond the Convention area."

Article 12 is separately devoted to prohibition of nuclear testing. Although appearing to be a meek effort, it calls upon Parties to take all appropriate measures to prevent, reduce and control pollution in the Area, which might result from the testing of nuclear devices.

The Noumena Convention calls upon Parties to "take appropriate measures to protect and preserve rare or fragile ecosystems and depleted, threatened, or endangered flora and fauna as well as their habitat in the Convention area".

Parties are also obligated to develop and maintain with the assistance of global and regional organisations, technical guidelines and legislation giving adequate emphasis to environmental and social factors to facilitate balanced development of their natural resources and planning of their major projects, which affect the marine environment. Other obligations include: co-operation in combating pollution in cases of emergency; scientific and technical co-operation; sharing of information and; a clause on liability and compensation.

The South Pacific Commission serves as the institutional mechanism for implementation of the Convention.

### **Protocol to the Noumena Convention for the Prevention of Pollution of the South Pacific Region by Dumping, 1986**

To be able to cope better, with the persistent problem of dumping of wastes, the Protocol for the Prevention of Pollution of the South Pacific by Dumping was adopted in 1986.

A similar set of due diligence obligations to prevent, reduce and control pollution is provided by the Protocol. However, it must be noted that dumping in the territorial sea, the EEZ or the continental shelf of a Party shall not be carried out without the express prior approval of the Party. Any approval of such dumping will have to be undertaken pursuant to agreement of the other Parties of the Protocol and the geographical situation to be affected by the dumping operation. Parties are also called upon to ensure that national laws and regulations are consistent with relevant internationally recognised rules and procedures relating to dumping. Parties are under an obligation to undertake environmental impact assessments (EIAs) before undertaking any hazardous operation.

Like the global regime on dumping i.e. the London Convention, the Protocol adopts a listing approach whereby listed “prohibited substances” in Annex-I of the Protocol are prohibited from dumping. A permit system is provided for issuance of special permits and general permits for dumping of substances listed in Annexes-I and II.

It however, needs to be noted that certain exculpatory situations have been provided wherein an emergency situation “posing unacceptable risk to human health”, without any other recourse would make it obligatory upon a Party to issue a permit for dumping.

Under the Protocol, Parties would have to designate appropriate authorities that shall oversee dumping activities and are also responsible for implementation of the Protocol. The SPREP is the institutional mechanism responsible for assisting the Parties in preparation of reports as well as conveyance of notification of proposed dumping activities.

### **The South Pacific Nuclear Free Zone Treaty (Rarotonga Treaty)**

The Heads of States of 13 independent and self-governing States in the South Pacific region adopted the Rarotonga Treaty in 1985. It entered into force on 11 December 1986.

Although in essence, the Treaty is a nuclear free zone treaty, the reach of the agreement has wider ramifications for nuclear contamination of the region.

The preamble of the Treaty, while emphasizing the catastrophe nuclear weapons can cause also reflects the resolve of the Pacific community whereby they are “Determined to keep the region free of environmental pollution by radioactive wastes and other radioactive waste matter”.

The Treaty has two provisions on dumping of radioactive wastes. Under Article 7 of the treaty Parties undertake “...not to dump radioactive wastes at sea within the South Pacific nuclear free zone; and two, “...not to assist anyone in dumping such wastes at sea, in the zone”. It also obligates Parties ‘to support the conclusion of a regional protocol as soon as possible to the Noumea Convention which would preclude dumping of radioactive wastes at sea by anyone anywhere in the region’”. Such an obligation was fulfilled by adoption the adoption of the 1986 Protocol to the Noumea Convention.

To add to these obligations Parties are called upon to “...respect international law with regard to the freedom of the seas and ...to ensure that performance of obligations is verifiable by international standards.”

### **Waigani Convention**

As opposed to the Noumea and the Rarotonga treaties, the Waigani Convention *per se* deals with the movement and disposal of hazardous wastes in the South Pacific region.

The Convention reflects intergenerational equity concerns of the region in the first preambular paragraph which provides that Parties to the Convention are “...conscious of their responsibility to protect, preserve and improve the environment of the South Pacific for the good health, benefit and enjoyment of present and future generations of the

people of the South Pacific.” Further, it adds that the Parties are “concerned about the dangers posed by radioactive wastes to the people and environment of the South Pacific”.

Although, the Convention does not deal with radioactive waste disposal/dumping, Article 4 casts a ‘general obligation’ upon Parties. Paragraph 1 (a) of Article 4 titled “Hazardous Wastes and Radioactive Wastes Import and Export Ban”, provides:

That each Pacific Island Developing Party shall take appropriate legal, administrative and other measures within the area under its jurisdiction to ban the import of all hazardous and *radioactive wastes* from outside the Convention area. ...further, such import shall be deemed an illegal and criminal Act.

Paragraph 3 titled “Ban on Dumping of Hazardous Wastes and Radioactive Wastes at Sea provides that “each Party which is a Party to the London Convention, the South Pacific Nuclear Free Zone Treaty, 1985, the 1982 United Nations Convention on the Law of the Sea or the Protocol for the Prevention of Pollution of the South Pacific Region by Dumping, 1986 reaffirms the commitment under those instruments which require it to prohibit dumping of hazardous and *radioactive wastes* at sea.” Further, it exhorts States which are “...not a Party either to the London Convention or the Protocol for the Prevention of Pollution of the South Pacific Region by Dumping 1986, should consider becoming a Party to *both* of these instruments.”

Such a proliferation of law making has led to the establishment of an effective legal framework regulating entry, handling, transport, discharge, dumping and other activities associated with radioactive substances.

**South East Pacific Region** (Convention for the Protection of the Marine Environment and Coastal Area of the South-East Pacific, Lima 1981)<sup>10</sup>

The South East Pacific Region (Convention for the Protection of the Marine Environment and Coastal Area of the South-East Pacific, also called the Lima Convention, adopts the UN Convention on the Law of the Sea definition of ‘pollution of the marine environment’. The Convention follows a due diligence approach to prevent, reduce and control pollution caused by dumping. Parties are also called upon to ensure that regulations and laws are consistent with accepted international standards on dumping. Principle 21 of the Stockholm Conference is echoed in the general obligations wherein Parties shall:

Take measures to ensure that activities under their jurisdiction or control are so conducted that they do not cause damage by pollution to others or to their environment, and that pollution arising from incidents or activities under their jurisdiction or control does not, as far as possible, spread beyond the areas where the High Contracting Parties exercise sovereignty and jurisdiction.

Article 4 of the Lima Convention provides for a combined effort to prevent, reduce and control pollution of the marine environment, which includes combating pollution from land-based sources, dumping, vessels and installations.

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<sup>10</sup> Countries of this region include: Panama, Chile, Peru, Ecuador and Columbia.

It also provides for co-operation during emergencies, monitoring of pollution, a mandatory environmental impact assessment, exchange of information and data and a clause on liability and compensation. To further strengthen their resolve to keep radioactive contamination out of the South-East Pacific, a Protocol on radioactive pollution was adopted.

### **Protocol for the Protection of the Southeast Pacific against Radioactive Pollution, 1989**

The Protocol to the Lima Convention of 21 September 1989 applies to the maritime area of the South-East Pacific within the 200-mile maritime zone over which the High Contracting Parties exercise sovereignty and jurisdiction. It also applies to the entire continental shelf when the High Contracting Parties extend it beyond their 200 miles.

It provides for a detailed set of general obligations where the Contracting Parties agree, “to prohibit dumping of radioactive wastes and other radioactive substances in the sea and or on the seabed within the Protocol area.”

The Protocol also provides that Contracting Parties agree, “To prohibit all burial of radioactive wastes and other radioactive substances in the marine subsoil within the area to which the Protocol applies.”

The definition of dumping is more expansive than the London Convention, wherein dumping means.

Any deliberate disposal at sea of radioactive wastes and other radioactive substances from vessels, aircraft, platforms or other man-made structures at sea; any deliberate sinking at sea of vessels, aircraft, platforms or other man-made structures *containing or transporting such wastes or other substances*.

The Protocol provides for undertaking due diligence obligations for the prevention, reduction and control of radioactive pollution in the region. It makes it obligatory for all High Contracting Parties to enact national laws and regulations to prohibit the dumping and burial of radioactive wastes and other substances. It calls upon Parties to co-operate for exchange of scientific information, monitoring programmes, co-operation in times of emergencies and training programmes.

A novel system of penalties imposing compliance mechanism has been provided for, wherein “Each High Contracting Party undertakes to ensure compliance with the provisions of the Protocol and to take steps to prevent and penalise any activity in contravention thereof.” To ensure stringent compliance, no reservations are permitted under the Protocol.

The Permanent Commission for the South Pacific serves as the executive Secretariat and the institutional mechanism for the implementation of the Protocol.

The Treaty for the Prohibition of Nuclear Weapons in Latin America and the Caribbean, 1967 (Tlatelolco Treaty) also prohibits contamination of the marine environment by radioactive wastes and other substances.

## 15.6 Conclusion

The UN Convention on the Law 1982 is widely regarded as the constitution of the oceans. It establishes a legal order that not only protects the marine environment but also ensures peaceful and orderly relations among States. The Convention has provided a global framework which has prompted not only global action but also regional and national actions.

The Convention not only codified customary law but also progressively developed existing understanding on the uses of the seas. For example, India adopted its domestic law namely the Territorial Waters, Continental Shelf, Exclusive Economic Zones and Other Maritime Zones Act 1976, much before the UN Convention was adopted in 1972 and it entered into force only in 1994. Part XII of the Convention provides a wide framework for adopting global/regional conventions on all the six types of pollution. The oil pollution conventions under the auspices of IMO and the UNEP Regional Conventions are a testament to this fact.

The UNEP Regional Seas is hailed as the most successful flagship programme of the organisation. The easily acceptable PRC standards of prevent, reduce and control pollution on the basis of capacities have endured the programmes to many States. The principle of 'reasonable regard for the oceans' has now been translated to a concrete programmatic action.

# UNIT 16

## LAW ON INTERNATIONAL WATER COURSES

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### 16.1 Introduction

Water is one of the most widely shared resources of the planet. Rivers often constitute the border between States or flow across different countries and lakes often lie on the territory of different States. Therefore, water can be a factor for competition as well as a reason of co-operation among States. Disputes for the control of water resources have a long history. Also, major water development projects (e.g. the construction of a dam) have caused violence and civil strife. But throughout history, States have manifested their interest in co-operating for the management of water resources and have recognised the need to establish rules and principles for a peaceful co-operation<sup>1</sup>.

Theorists have come up with a variety of doctrines on how to share water resources among nations. However, because of the volatile political situation prevalent among most nations, in addition to the genuine requirement of water, none of the theories have been accepted *in toto* by any of the countries. Water disputes have not only arisen between two or more nations, but even amongst States, like in India Narmada Dam dispute and the Cauvery River Dispute can be characterized as one such dispute.

### 16.2 Territorial Sovereignty Theory

The principle of absolute territorial sovereignty suggests that States have the right to unrestrained use of resources found within their territories, irrespective of the

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<sup>1</sup> See generally *Training Manual on International Environmental Law*, UNEP, 2006.

transboundary consequences of such use. This principle is often equated with the *Harmon Doctrine*. The doctrine gets its name after former United States Attorney General Judson Harmon. In 1895, in response to a dispute between the United States and Mexico over the utilisation of the Rio Grande, Attorney General Harmon, declared that, “the rules, principles and precedents of international law impose no liability or obligations upon the United States.”

Most States and legal publicists have rejected this principle outright. In the *Lake Lanoux Arbitration (France v. Spain)*. 24 I.L.R 101 ( Arbitral Tribunal 1957) for example, the international tribunal concluded that upper riparian States are obligated to consider the rights and interests of lower riparian States, as well as to attempt to reconcile any disputes over water resource use or modification projects.

Under the Natural Water Flow Theory also known as the *territorial integrity theory* every lower riparian owner is entitled to the natural flow of the river unhampered by the upper riparian owners, otherwise it results in violation of its territorial sovereignty. In other words, this theory is diametrically opposite to the *Harmon Doctrine*. The rider, however, is that the former has the right to make reasonable use of the water while it was in his territory.

The Equitable Utilisation Theory provides that a State can freely use waters flowing through its territory on the condition that this utilisation does not prejudice the interests of other riparian States.

It is stated that concrete rights to water usage create a feeling of entitlement that can be stifling to negotiation. However, the *equitable utilisation* principle furthers the negotiation process because it avoids this sense of entitlement, providing for a more flexible negotiation process. Furthermore, the doctrinal incorporation of this principle also allows for an agreement with terms that will be adaptable.

This doctrine essentially deals with ‘equitable’ distribution of water in States and not an ‘equal’ distribution of water, making it difficult to evolve principles for determining the equitable share of each riparian State which may apply in all cases or situations. The idea is the maximum benefit accruing to all the riparian States of the river, keeping in view the economic and social needs of the different riparian States. To arrive at a proper or a just balance is not an easy task. The problems of each State and river are unique and a solution in one case may not be feasible for adoption in another. Hence, the working out of an equitable share for each basin State requires an analysis of complex technical and economical data and the judicious balancing of conflicting claims of and uses of the river by different riparian States. Therefore, there can be no set international guidelines to deal with such a situation or which can accurately lay down how much water should be distributed in certain specific situations. The problem is further complicated by the fact that the diverse uses of the river by the different States are not simultaneous.

This principle of Equitable Utilisation which was first highlighted in the *Corfu Channel Case* (ICJ Reports 1947), received strong support from the International Court of Justice

(ICJ) in the *Gabcikovo-Nagymaros Case*<sup>2</sup>. The Court concluded that Slovakia by unilaterally assuming control of a shared resource deprived Hungary of its right to an equitable and reasonable share of the natural resources of the Danube. The Court found that because of this unilateral action, Slovakia failed to respect the international legal norm of proportionality, as it was required to do.

### 16.3 UN Convention on International Watercourses, 1997

The international watercourse law is in evolution since the preparation and adoption of the Helsinki Rules, 1966. The International Law Commission took some twenty years later to further develop and crystallise the law. The draft articles adopted by the International Law Commission in 1994 provided the basis for the United Nations to adopt the Convention on the Law of the Non-Navigational Use of International Watercourses, 1997.

The Watercourses Convention was adopted by the General Assembly on 21st May, 1997, as an annex to Resolution 51/229. The Convention is not yet in force; it will enter into force when it has been ratified by 35 States. The Watercourses Convention defines the term “watercourses” (Art. 2) as “a system of surface waters and ground waters constituting by virtue of their physical relationship a unitary whole and normally flowing into a common terminus” and an “international watercourse” as a watercourse “parts of which are situated in different States”. This definition takes into account the reality of the hydrological cycle and suggests the need for States to take into consideration the physical unity of interconnected surface water and groundwater when managing shared freshwater resources. However, it does not apply, strictly speaking, to groundwater that is not connected in some way with surface water, so-called “confined” groundwater.

Part II of the Watercourses Convention contains a number of general principles, some of which are reflective of customary international law, and are binding on all States. These include:

- ◆ Obligation to utilise an international watercourse in an equitable and reasonable manner;
- ◆ Duty to prevent significant harm to other riparian States; and
- ◆ Obligation to provide prior notification of planned measures that might affect other States sharing a watercourse.

The first of these principles is the principle of equitable utilisation and participation (Art. 5). The principle of equitable utilisation, as set forth above, is chiefly concerned with appointment, or allocation, of water between States sharing an international watercourse. It therefore relates primarily to water use, and thus to water quantity, rather than to water quality.

Similar to the Helsinki Rules on International Watercourses 1966, the Watercourses Convention sets forth in Article 6 a non-exhaustive list of factors to be taken into account

<sup>2</sup> Case Concerning the Gabcikovo-Nagymaros Project (*Hungary v. Slovakia*) 1997 ICJ 7, (Sept. 25).

by a State to ensure that its utilisation of an international watercourse is equitable and reasonable. These factors include:

- ◆ Geographic, hydrographic, hydrological, climatic, ecological and other factors of a natural character;
- ◆ Social and economic needs of the watercourse States concerned;
- ◆ Population dependent on the watercourse in each watercourse State;
- ◆ Effects of the use or uses of the watercourses in one watercourse State on other watercourse States;
- ◆ Existing and potential uses of the watercourse;
- ◆ Conservation, protection, development and economy of use of the water resource of the watercourse and the costs of measures taken to that effect; and
- ◆ Availability of alternatives, of comparable value, to a particular planned or existing use.

It is important to understand that the weight to be given to each factor “is to be determined by its importance in comparison with that of other relevant factors.” In determining what is a reasonable and equitable use “all relevant factors are to be considered together and a conclusion reached on the basis of the whole.”

Another fundamental principle governing States’ conduct in relation to international watercourses is the obligation not to cause significant harm, contained in Article 7 of the Convention. According to paragraph 1 of Article 7, States sharing a watercourse must “in utilising an international watercourse in their territories, take all appropriate measures to prevent the causing of significant harm to other watercourse States.”

Article 7 of the Convention imposes an obligation on a watercourse State, in utilising an international watercourse in its territory to prevent the causing of significant harm to other watercourse States. However, harm is not defined. “Significant” relates to the threshold of harm to be avoided. This means any harm which is not negligible or *de minimus* but more than observable or appreciable. Further, the obligation imposed is one of due diligence which requires the State to take all appropriate measures. This does not impose an obligation of avoiding the harm altogether. In that sense it is not an absolute obligation. However, in case of harm of a significant nature, the Watercourse State is under an obligation to consult the affected watercourse States to eliminate or mitigate such harm and where appropriate to discuss the question of compensation.

Article 7 is an important article and on which negotiations both in the Commission and later in the Working Group engaged considerable disagreement. One perspective was that the obligation not to cause significant harm cannot override the right to reasonable and equitable utilisation. Such use should continue while the State causing harm could only be required to consult and negotiate suitable arrangements to mitigate the harm involved and where appropriate pay due compensation. On the other hand, the view is taken that any use which involved significant harm automatically makes such a use as

not reasonable or equitable and hence the use itself should be prohibited if significant harm could not be avoided or as soon as it has resulted. The latter view did not remain and the final text adopted by the Convention let the options open to States involved or concerned either to terminate the activity or to continue with the same in a modified form or by making necessary payments by way of compensation. All possibilities are open but the end results can only be achieved through negotiations and by mutual agreement.

Articles 8-10 provide for co-operation among watercourse States. According to Article 8, States sharing a watercourse must “co-operate on the basis of sovereign equality, territorial integrity, mutual benefit and good faith in order to attain optimal utilisation and adequate protection of an international watercourse”, and “may consider the establishment of joint mechanisms or commissions.....to facilitate co-operation on relevant measures and procedures in the light of experience gained through co-operation in existing joint mechanisms and commissions in various regions.”

Another form of co-operation is provided for in Article 9, according to which States sharing a watercourse should regularly “exchange readily available data and information on the condition of the watercourse” and related forecasts, in particular those relating to the hydrological, meteorological, hydro-geological and ecological nature of the watercourse, including its water quality. If the required information is not readily available, the requested State should “employ its best efforts to comply with the request”, although it may condition compliance upon payment of the reasonable costs of collecting and processing the data or information. Supply of timely hydrological data is very important, especially in the rainy seasons when various projects are under stress by excess water.

The Convention under Article 10 establishes that none of the different categories of the uses of the watercourse (e.g. navigation, irrigation, hydroelectric power production, industrial uses and so on) has priority over other kinds of uses in the absence of an agreement or custom to the contrary and it provides that, whenever different uses of an international watercourse conflict with each other, such conflict “shall be resolved with reference to [the principles of equitable and reasonable utilisation and participation and obligation to not cause significant harm], with special regard being given to the requirements of vital human needs.”

According to the Watercourses Convention, a riparian State must provide timely notification to other watercourse States of planned measures which may have a significant adverse effect upon them. These measures may include, for instance, new irrigation schemes, dams, plants discharging their waste into the stream etc. to other riparian States. This will allow the other riparian States to synchronise their existing uses with the new use or to determine whether the new use will cause them harm or will be inequitable. In the latter case, the States concerned will have an opportunity to reach an appropriate resolution before the plans are implemented and it becomes more difficult to do so. Articles 11-19 of the Convention establish detailed notification procedures for such cases. Notification can also be important from the safety point of view. Co-operation between States can also help in planning activities in one’s own country on the basis of

the data supplied. It must be remembered all water related projects are extremely cost intensive and early notification helps riparian States in designing the activities.

### Protection of environment

The Convention also has a separate chapter, Part IV on protection, preservation and management, Part V on harmful conditions and emergency situations. The Watercourses Convention contains a general obligation and several specific ones relating to the protection and preservation of international watercourses. The general obligation, set forth in Article 20, provides as follows: "Watercourse States shall, individually and, where appropriate, jointly, protect and preserve the ecosystems of international watercourses."

The specific obligations related to pollution, alien species, and the marine environment include that States must "prevent, reduce and control the pollution of an international watercourse that may cause significant harm to human health or safety, to the use of the waters for any beneficial purpose or to the living resources of the watercourse." (Art. 21). This may be seen as a specific application of the general obligation to prevent harm reflected in Article 7. Article 22 requires States to take all necessary measures to prevent the introduction of species, alien or new, into an international watercourse, which may be detrimental to the ecosystem of the watercourse resulting in significant harm to other watercourses. Article 23 deals with duty of the watercourse States to take necessary measures to protect and preserve the marine environment, including estuaries. Article 27 puts a duty on watercourse States to prevent or mitigate conditions that may be harmful to other watercourse States whether resulting from natural causes or human conduct.

The Watercourse Convention also contains provisions on the prevention and mitigation of harmful conditions and emergency situations (Art. 27 and 28 respectively), dealing with the prevention of such harmful conditions as floods, ice hazards, water-borne diseases, erosion, salt-water intrusion, drought and desertification, and with emergency situations that may be brought on by such phenomena as floods, landslides and industrial accidents. In case of an emergency, Article 28 requires a watercourse State within whose territory an emergency originates to take all practical measures in co-operation with potentially affected States and where appropriate competent international organisations to prevent, mitigate and eliminate harmful effects of the emergency.

Article 32 noted the other more recent concept of environmental law on non-discrimination.

Watercourse States are free to enter into more specific agreements including agreements to protect the environment itself from significant harm as a result of reasonable and equitable utilisation of an international watercourse. The Convention also contains a non-binding dispute settlement procedure if no agreement is reached among the Parties on a procedure of settlement of disputes. Article 33(3) of the Convention provides for submitting the dispute, at the request of any of the Parties to the dispute, to impartial fact finding. The parties are under a duty to consider the report of the fact-finding commission in good faith but it is not automatically binding.

In the next section we shall look at a few river treaties and look at how they have functioned.

◆ Indus Water Treaty

The Indus Treaty between India and Pakistan has acquired a reputation internationally as a successful instance of conflict resolution. It has been working reasonably well despite a difficult political relationship between the two countries and was not abrogated even during periods of war. The Indus River rises in Tibet and crosses the Indian subcontinent in the form of six separate rivers. These waters are used most notably for agricultural irrigation, domestic consumption and transport. The partitioning of India and Pakistan in 1947 resulted in India controlling most of the headwaters of the river, while Pakistan controlled the larger share of the irrigated lands. In the ensuing dispute, India relying on the principle of territorial sovereignty initially asserted that it had the right to use the waters as it saw fit. Under this doctrine, Pakistan would have had no say if India chose to divert most of the headwaters for its own purposes. Initial negotiations between India and Pakistan did not proceed well. India continued to maintain its territorial sovereignty rights, while Pakistan sought some sort of equitable resolution to the dispute. Proposals for Commissions to settle the disputes were rejected, and obligations under past agreements were repudiated. A settlement to the dispute did not seem likely. This stalemate was ended, however, when the President of the International Bank for Reconstruction and Development (World Bank) offered his organisations services as a mediator to the dispute. Both parties accepted this offer, and the treaty borne of the subsequent negotiations was based on the principle of equitable utilisation. The Indus Water Treaty allocated three of the six rivers to each of the negotiating countries. It also resulted in the formation of a Permanent Indus Commission with one representative from each country, and it delineated various means through which any future disputes would be settled. The Indus Water Treaty of 1960 demonstrates the effectiveness of the principle of *equitable utilisation*. This doctrine emphasizes distribution of resources in the manner that is most beneficial to all the parties involved. Equitable utilisation has proven to be a mainstay of international water rights negotiations. This treaty also elucidates the practicality and efficiency of having a strong, non-political mediator.

Of late the Treaty has come under the scanner because of the disputes that have arisen between India and Pakistan with respect to the Baglihar and Kishenganga hydroelectric projects. In case of Baglihar Pakistan has approached the Neutral Expert who gave his determination in 2007 with respect to the design of the Plant. With respect to Kishenganga, Pakistan has approached the Court of Arbitration envisaged under the Treaty as it believes that India's diversion of the river into another river violates the Treaty and river diversion is not permitted under the Treaty.

◆ The Ganges River Treaty

In the relationship between India and Bangladesh, the dispute over Ganga waters was for two decades an important component, perhaps the most important one and though it now stands resolved by the treaty of December 1996, it would be a mistake to regard it

as having wholly disappeared. Though India traditionally has had better relations with Bangladesh than with Pakistan, India and Bangladesh have a turbulent history of water sharing. The Ganges River flows south from Nepal into West Bengal, where it splits into two rivers. One portion continues to flow south through Indian territory and becomes the Hooghly River. The other portion, taking the name Padma River, flows east into Bangladesh. To appreciate the significance of the 1996 Ganges River Treaty, one must consider it in the context of the negotiations that preceded it. It began with India's 1951 decision to construct the Farakka Barrage on the Ganges River ten miles away from Bangladesh in the Indian territory of West Bengal. The Farakka Barrage, which was not completed until 1971, was built to divert water from the Ganges River to the Hooghly. During the twenty years between the announcement of the construction and its completion, Pakistan (of which Bangladesh was then a part) closely opposed the Barrage's construction through various diplomatic means. After Bangladesh gained its independence from Pakistan, its relationship with India improved. Nevertheless, the Farakka Barrage remained a "thorny issue, and Bangladesh opposed it vehemently". Despite this dispute, Bangladesh and India have been able to come to an agreement on water issues in a number of instances. Furthermore, the 1996 agreement was based on the principle of *equitable utilisation*, presenting a more efficient use of the waters.

#### ◆ Mahakali River Treaty

The Mahakali River Treaty between India and Nepal also signed in 1996 is another example of a water allocation agreement based on many of the same principles. The relationship between India and Nepal has typically been very strong and peaceable. However, much like the relationship between India and Bangladesh, water sharing and water related developments have proven to be a weak spot in diplomacy. There is a notable exception to the similarities between the situation between Nepal and India and that between India and Bangladesh; Nepal has the advantage of being upstream from the more powerful India. Thus, though the Mahakali agreement is at least ostensibly modelled on the principles of equitable utilisation, it does demonstrate how inequality of power can manifest itself in negotiations. The *equitable utilisation* principle is used most prominently in the Mahakali treaty in those portions pertaining to the proposed Pancheshwar Multipurpose Purpose. This project will be placed along a portion of the Mahakali River that forms the border between India and Nepal. One of the concerns relates to the Kalapani issue. The Nepalese object to the Indian military presence in the area called Kalapani. This is a territorial dispute. In regard to the treaty, itself, there is a difference between the Indian and Nepalese views on what the 'equal sharing' principle implies.

#### ◆ Mekong River Dispute

Similar is the case of the Mekong River that involves a dispute between six riparian States: the upper basin States, Myanmar and China have so far been only marginally involved in co-operation. In 1995 Cambodia, Laos, Thailand and Vietnam (the lower basin States) signed an Agreement on Co-operation for the Sustainable Development of the Mekong River Basin. The Mekong Basin Commission is the intergovernmental body which co-ordinates the Mekong Basin states. However, China is not a member and has

been developing large dams in the upper basin which seem to be significantly disrupting flows. Estimates suggest as much as 50% of dry season flow is lost affecting fisheries and flood lands in at least 4 countries.

Other crisis disputes include the utilisation of the Amu Darya and Syr Darya flowing across the cradle of civilisations in Central Asia. At present, for 55 million inhabitants of five post-Soviet countries, namely Kazakhstan, Kirgizstan, Tajikistan, Turkmenistan and Uzbekistan, depend on these two rivers are the source of livelihood for the people because they provide irrigation, hydroelectric power, fishing, internal navigation, and most importantly, potable water. The transition from the unified, centralised, regional water management system of the Soviet Union to an incoherent, often disputed piecemeal governance under the dispensation of five countries has made the rivers an issue of discord.

#### ◆ The Jordan River Dispute

Despite its small size, the Jordan River is one of the most important in the region and the locus of intense international competition. It is shared by Jordan, Syria, Israel and Lebanon. Since the establishment of Israel, this basin has been the centre of intense international conflict and the dispute over the waters of the Jordan River is an integral part of the ongoing conflict.

Tensions also exist in the Jordan basin between Syria and Jordan over the construction and operation of a number of Syrian dams on the Yarmouk River. These dams were built to allow Syria to make use of the Yarmouk's flow, which would otherwise be available for use in Israel or Jordan.

#### ◆ The Nile River Dispute

The nations that share the Nile are Egypt, Sudan, Ethiopia, Kenya, Tanzania, Zaire, Uganda, Rwanda and Burundi. The Nile River is also a shared water resource of tremendous regional importance, particularly for agriculture in Egypt and Sudan. A treaty was signed in 1959 allocating the water of the Nile between Egypt and Sudan. Although this treaty has effectively reduced the risk of conflict between the two countries over water, none of the other seven nations of the basin is party to it, and several have expressed a desire to increase their use of Nile River water. Additional use of water by these other nations of the Nile basin, particularly by Ethiopia, could reduce water available to the downstream nations and greatly increase tensions over water.

International water law is one of the most contemporary areas of dispute because of the shrinking of freshwater resources, The ILC is seized of the matter with the topic Sharing of Transboundary Resources, as well as Transboundary Aquifers. Ever increasing population and the life styles, freshwater resources are drying up. Added to this global warming and desertification are also affecting the natural aquifers. The Jordan and Euphrates dispute in the Israeli-Arab world are prime examples of this phenomenon.

Although bilateral treaties have always regulated river sharing, the 1997 UN Convention is a genuine attempt at providing a legal framework for providing appropriate guidance for States to enter into suitable agreements taking into account the particular characteristics of an international watercourse they share.

Someone has said that the next global war would be fought for water. It is never too late to act. The principles of rational and equitable sharing of watercourses regarded as reflective of customary law provide an opportunity for co-operation to end this disaster and States in their wisdom must attempt to incorporate the provisions of the Watercourses Convention to avoid future water disputes.

## 16.4 Regional Seas Agreement

International law, particularly the formulation of legal agreements between nations with commonly shared resources; provide a powerful tool for regulating access to those resources and for controlling activities with potentially destructive impacts on the environment. There are several international agreements and a series of regional and national agreements which are directly relevant to the conservation of marine biodiversity. These include agreements to regulate pollution resulting from maritime activity, control trade in endangered marine species, curb the hunting of endangered whales, protect coastal sites of universal value, trace the effects of climate change on marine ecosystems, and deal with pollution from land-based activities. In addition, there are currently nine UNEP Regional Seas Conventions with their attendant protocols which address marine issues of particular regional importance.

UNCLOS was preceded by the emergence of the UNEP Regional Seas Programme, an ambitious attempt at developing treaties and soft rules and standards at the regional levels, taking account of the different needs and capabilities of the various regions. The Regional Seas Programme followed the 1972 Stockholm Conference and the creation of UNEP. In 1974, the FAO General Fisheries Council for the Mediterranean has sponsored guidelines for framework convention on the protection of the environment against pollution in the Mediterranean. This led to the adoption in February 1975, under the auspices of UNEP, of the Mediterranean Action Plan, which has since been a model for other regions, the Plan comprised five basic components: environmental assessment, environmental management, institutional arrangements, financial arrangements and regional legal instruments. It was followed by the 1976 Barcelona Convention for the Protection of the Mediterranean Sea Against Pollution (1976 Barcelona Convention) and two Protocols: a Protocol Ships and Aircraft (1976 Barcelona Dumping Protocol), and a Protocol for Co-operation in Combating Pollution of the Mediterranean Sea by Oil and Other Harmful Substances in Cases of Emergency (1976 Barcelona Emergency Protocol). In November 1976, UNEP convened its first 'Task Force on Legal Instruments for Regional Seas'; and in 1978 the UNEP Governing Council endorsed a Regional Seas Programme, which is now a part of the broader UNEP Programme Activity Centre for Oceans and Coastal Areas.

The UNEP Regional Seas Programme extends to fourteen regional areas: of these, thirteen regions now have their own Action Plans, and an Action Plan for the Upper South-West Atlantic is in development. Ten regions are the subject of the binding international agreements: the Mediterranean, the Arabian Gulf, the Gulf of Guinea, the South-East Pacific, the Red Sea and the Gulf of Aden, the Caribbean, the Indian Ocean and East Africa, the South Pacific, the Black Sea and the North-East Pacific. The UNEP Regional Seas Programme now comprises a total of thirty-two framework Conventions and Protocols; others are under negotiation.

### Other Regional Arrangements

Other arrangements outside the UNEP Regional Seas Programme establish regional rules for protection of the marine environment. Apart from treaties specifically addressing particular sources of pollution, the most developed arrangements address the North-East Atlantic and North Sea, the Baltic region, the Arctic, the Caspian Sea and Scandinavia. A number of regional and global conventions addressing the protection of natural resources include provisions on the protection of the marine environment. Significant obligations have also been adopted by regional intergovernmental conferences; although not formally binding as a matter of international law, such declarations or recommendations have influenced the subsequent development of international law by treaty or resolution of international law. Examples include measures for the protection of the North Sea environment adopted by four international conferences.

The rules for the protection of the marine environment are among the most highly developed in the field of international environmental law. A range of regulatory techniques are applied to tackle pollution from different sources, with pollution from ships and by dumping at sea often addressed by rules of considerable specificity. Some evidence suggests that conventions such as MARPOL 73/78, the oil pollution liability conventions and the dumping conventions have contributed positively to the protection of the marine environment. However, there is more evidence to suggest that these sources do not pose the greatest threat and that so long as the oceans remain the dumping ground for the land-based sources of pollution from industrial and domestic activities the benefits arising from the modest successes which have been achieved will be of limited consequences over the long term. In this regard, the UNCLOS Annex-VII arbitral tribunal established to resolve the MOX dispute between Ireland and the UK may clarify and make a singular contribution to the interpretation of the rules.

The great majority of marine pollution originates from land-based sources and these are subject to regulation which is, according to GESAMP, of only limited effectiveness. At best, existing regulation of land-based sources might marginally limit the rate of increase; it has not resulted in real decreases in the total amount of pollutants entering the oceans and seas from this source. The fact that the regional and global rules have attracted widespread support suggests either that they are not being applied or that they are inadequate. Clearly there exists an urgent need for regulatory measures to 'prevent, reduce and control pollution'. Experience in this and other sectors indicates that targets and timetables for regulated phase-out will provide a more effective regulatory tool,

and in those regard the soft targets and timetables set out in the Action Plan endorsed by Ministers when they signed the 1992 OSPAR Convention identify a likely new trend. Whatever regulatory techniques are deployed there is additionally a clear need for a more stringent application of existing rules, the development of new techniques and instruments to address pollution from land-based and other sources, and more effective enforcement mechanisms, including independent monitoring and surveillance. The entry into force of UNCLOS has created some momentum by speeding up the extension of port State control, and also by bringing a range of new institutional arrangements into operation which may, in time, contribute positively to the prevention of marine pollution. The emphasis in Agenda 21 on improving coastal zone management and regulating human habits recognises that the protection of the oceans and seas will ultimately be achieved only by integrating considerations requiring the protection of the marine environment into activities which are carried out on land. This suggests the need for a cradle-to-grave regulatory approach which would also require greater use of environmental impact assessment procedures and the integration into those procedures of a consideration of the consequences on the marine environment. Regulating the oceans currently targets the rubbish dump; it will be more effective when it targets the sources.

## 16.5 International Maritime Organisation (IMO)

The International Maritime Organisation (IMO) was established by the UN in 1948. At the time of its establishment, it was known as the Inter-Governmental Maritime Consultative Organisation (IMCO), with the purpose of co-ordinating international maritime safety and related practices. However, the IMO did not enter into full force until 1958. IMO is a specialised agency of the UN which is responsible for measures to improve the safety and security of international shipping and to prevent marine pollution from ships. It develops and maintains a comprehensive regulatory framework for shipping. It is also involved in legal matters, including liability and compensation issues and the facilitation of international maritime traffic. Its remit today includes safety, environmental concerns, legal matters, technical co-operation, maritime Security and the efficiency of shipping.

The IMO was established by the Geneva Convention adopted in 1948. The first meeting of IMO took place in January, 1959. 167 Nations are Member-Countries of the IMO and three Nations are Associate Members. IMO is based in the United Kingdom with around 300 international staff. The concept of IMO was born after the Titanic disaster of 1912. Up until that time, each nation had made its own rules about ship design, construction and safety equipment. The IMCO was formed in response to the Titanic event. However, IMCO had to be put to hold when World War I broke out. After the war ended, IMCO was revived and produced a group of regulations concerning shipbuilding and safety called Safety of Life at Sea (SOLAS), which is still one of the most important treaties pertaining to maritime safety.

The IMCO eventually became IMO. When IMO first began operations, its chief concern was to develop international treaties and other legislation concerning safety and marine pollution prevention. By the late 1970s, however, this work had been largely completed,

though a number of important instruments were adopted in more recent years. IMO is now concentrating on keeping legislation up to date and ensuring that it is ratified by as many countries as possible. Currently the emphasis is on trying to ensure that these conventions and other treaties are properly implemented by the countries that have accepted them.

Many of the main IMO treaties (including, for example, **SOLAS, the Tonnage and Load Lines Conventions, the Collision Regulations, the International Convention on Standards of Training, Certification and Watch-keeping for Seafarers** as well as **International Convention for the Prevention of Pollution from Ships, 1973** also known as **MARPOL**), have all been ratified by States that are, collectively, responsible for more than 98% of the world's fleet.

The Organisation of IMO consists of an Assembly, a Council and four main Committees:

- ◆ The Maritime Safety Committee;
- ◆ The Marine Environment Protection Committee;
- ◆ The Legal Committee; and
- ◆ The Technical Co-operation Committee.

There is also a Facilitation Committee and a number of Sub-Committees support the work of the main technical committees. The Secretariat of the IMO is situated in London.

The governing body of IMO is the Assembly which is made up of all 167 Member States and meets normally once every two years. It adopts the budget for the next biennium together with technical resolutions and recommendations prepared by subsidiary bodies during the previous two years. The IMO also has a Council that acts as a governing body in between Assembly sessions. It prepares the budget and work programme for the Assembly. The main technical work of the IMO is carried out by the various Committees and numerous sub-committees.

## 16.6 Conclusion

In 1997, more than 100 nations gathered to adopt the UN Watercourses Convention - a flexible and overarching global legal framework that establishes basic standards and rules for co-operation between watercourse States on the use, management, and protection of international watercourses.

The UN Watercourses Convention counts today 27 contracting States - 8 short of the number required for entry into force.

In early 2006, WWF launched a global initiative to promote the UN Watercourses Convention and accelerate its ratification process. The initiative has mobilised several governments and other stakeholders in efforts to raise awareness, build capacity and support countries interested in becoming Parties to the convention. Such partners include Green Cross, the UN Secretary General's Advisory Board on Water and Sanitation (UNSGAB),

the IHP-HELP Centre for Water Law, Policy and Science, under the auspices of UNESCO, and the Global Nature Fund, among others.

Today, WWF and its partners are calling for the entry into force of the UN Watercourses Convention. In an effort to achieve this goal, WWF has collected signed postcards, symbolising the signatory's commitment to call for additional ratifications and a pledge to work proactively towards having the convention in force. The postcard campaign is meant to be an inspiring living process, with successive endorsement messages adding up, in order to help build a critical body of support, resources and capacity for facilitating additional ratifications for the convention's entry into force.

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**COURSE 3:  
INTERNATIONAL ENVIRONMENTAL  
LAW AND POLICY-II**

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# ENVIRONMENT AND INTELLECTUAL PROPERTY RIGHTS

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### 17.1 Introduction

With any type of property there are property rights. In law, intellectual property (IP) is an umbrella term for various legal entitlements which attach to certain names, written and recorded media, and inventions. The holders of these legal entitlements may exercise various exclusive rights in relation to the subject matter of the IP. In contrast with real property or physical property, which one can see, feel and use, IP is intangible. IPs are ideas and thoughts, or products of mind. As long as these ideas or thoughts are not expressed in a tangible form, they remain protected and cannot be used by others.

IP refers to creations of the mind: inventions, literary and artistic works, and symbols, names, images and designs used in commerce. It is divided into two categories: Industrial property, which includes inventions (patents), trademarks, industrial designs and geographic indications of source; and Copyright, which includes literary and artistic works such as novels, poems and plays, films, musical works, artistic works such as drawings, paintings, photographs and sculptures, and architectural designs. Rights related to copyright include those of performing artists in their performances, producers of phonograms in their recordings, and those of broadcasters in their radio and television programmes.

When IPs are expressed in a tangible form they can be protected. IPRs have been created to protect the right of individuals to enjoy their creations and discoveries. IPRs can be

traced back to the fourteenth century when European monarchs granted proprietary rights to writers for their literary works. Usually IPR are protected by one of the three legal theories: copyrights, trademarks and patents. These theories demonstrate that IPR are private rights. They have been created to ensure protection against unfair trade practice. Owners of IP are granted protection by a State and/or Country, under varying conditions and periods of time. This protection includes the right to:

- i) defend their rights to the property they created;
- ii) encourage their continuing innovativeness and creativity; and
- iii) assure the world a flow of useful, informative and intellectual works.

Intellectual property laws and enforcement vary widely from jurisdiction to jurisdiction. There are inter-governmental efforts to harmonise them through international treaties such as the 1994 World Trade Organisation (WTO) Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs), while other treaties may facilitate registration in more than one jurisdiction at a time. Disagreements over medical and software patents and the severity of copyright enforcement have so far prevented consensus on a cohesive international system.

With the growing recognition of IPR, the importance of worldwide forums on IPs is realised. These agreements and treaties include the General Agreement on Tariffs and Trade (GATT), the World Intellectual Property Organisation (WIPO), and the Trade related Aspects of Intellectual Property Rights (TRIPs) treaty. All these agreements have been created to promote a balanced international trading field and to prevent the international trade of counterfeit goods. Another important reason to justify these agreements and their enforcement is the protection of IPR in underdeveloped countries and to enable them to create a sound and viable technological base, allowing participation in international trade.

Legal issues arising out of the application of patent and other intellectual property rights have been raised in the development of international environmental law and policy, in three broad areas: first, the extent to which intellectual property rights granted, for example, in accordance with the WTO Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs), may limit the transfer of environmentally sound technology as required by international conventions; secondly, whether intellectual property rights should be granted to potentially environmentally damaging technologies for example, the grant of patents in respect of living organisms; and, thirdly, the extent to which intellectual property rights can or should protect indigenous environmental knowledge which has been in the public domain for decades or more.

#### **Some of the kinds of IPRs are:**

##### *Patent*

A patent is an exclusive right given to an inventor to exclude all others from making, using and/or selling the invention. The purpose of a patent is to promote the progress of science and useful arts. Patent law promotes this progress by giving the inventor the right of exclusion.

### *Trademark*

A trademark is a symbol that helps to distinguish one product or company from another. Symbols help the consumer identify products and/or a company and include designs, shapes, numbers, slogans, smells, sounds or anything that helps the consumer to identify the products and/or companies. The primary purpose of trademark is to 'identify the origin or ownership of the article to which it is affixed' but experts insist that the primary purpose of a trademark is to guarantee that a company's investment in research and development.

### *Copyrights*

The main consideration in a copyright situation is the concept of originality. The right to protection arises from the original effort and labour of the creator in seeking, arranging and/or listing the content in a new, original form not found in the public domain. Works are not copyrightable if they are mere ideas, transient sounds or gestures; they must be in a tangible form, either visually or audibly, creating the representation of the original work. Copyright protection generally is only valid in the country that grants the protection. Many countries respect the copyright of other countries, but if one wants protection in a certain country it is best to apply for a copyright in that country. The agriculture industry used copyright protection regularly.

### *Trade Secret*

A trade secret is probably the most interesting of the rights available in IP. A trade secret is any information that gives a company a competitive edge over competitors and which the company maintains as secret and away from public knowledge. The protection provided by a trade secret has an indeterminable term, which may be perpetual. Trade secret is sometimes the only thing that allows a company to compete in today's market.

### *Industrial Design*

An industrial design is the ornamental or aesthetic aspect of an article. The design may consist of three-dimensional features, such as the shape or surface of an article, or of two-dimensional features, such as patterns, lines or colour.

Industrial designs are applied to a wide variety of products of industry and handicraft: From technical and medical instruments to watches, jewellery, and other luxury items; from house wares and electrical appliances to vehicles and architectural structures; from textile designs to leisure goods. To be protected under most national laws, an industrial design must appeal to the eye. This means that an industrial design is primarily of an aesthetic nature, and does not protect any technical features of the article to which it is applied.

### *Geographical Indication<sup>1</sup>*

A geographical indication is a sign used on goods that have a specific geographical origin and possess qualities or a reputation that are due to that place of origin. Most commonly,

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<sup>1</sup> World Intellectual Property Organisation.

a geographical indication consists of the name of the place of origin of the goods. Agricultural products typically have qualities that derive from their place of production and are influenced by specific local factors, such as climate and soil.

Whether a sign functions as a geographical indication is a matter of national law and consumer perception. Geographical indications may be used for a wide variety of agricultural products, such as, for example, “Tuscany” for olive oil produced in a specific area of Italy (protected, for example, in Italy by Law No. 169 of February 5, 1992), or “Roquefort” for cheese produced in France (protected, for example, in the European Union under Regulation (EC) No. 2081/92 and in the United States under US Certification Registration Mark No. 571.798).

## 17.2 Intellectual Property and its Protection

Our planet earth remains a home for a vast variety of organisms. It is actually this diversity of life that distinguishes our planet from the entire universe. Starting from the unicellular bacteria to the massive aquatic creatures like sharks and whales to the living plants which produce their own energy via photosynthesis, all are constituted under a term of Environment. Estimates of the magnitude of biodiversity have ranged from as few as 4 million to as many as 111 million extant species<sup>2</sup>. Since earth evolved around 200 billion years ago, the tree of life has sprouted countless branches which have further evolved into newer branches ultimately leading to a system of diverse nature. Although our planet has had an environment of a very diverse nature, the activities of humans are leading to an adverse situation. The rate of extinction of species is increasing at a very rapid rate, much faster than what it was before domination of human beings on earth’s ecosystems.

Intellectual Property Rights, on the other hand are created and associated with new technologies and economic growth. It seems very unlikely that such a right would ever endeavour the protection and conservation of environment. Intellectual property is basically a creation of human mind. It is a property which belongs solely to the creator since it is created by his own intellect. It is not in the form of physical property which is visible to others. It cannot be touched or used. These are ideas and thoughts which when expressed in a tangible form, can be protected. A question then arises as to why is intellectual property to be protected. The answer lies in a simple fact that since it is a creation of a person’s intellect, it should belong to him in its entirety and therefore cannot be abridged or taken away by others. The companies and individuals expend a lot of investment, energy and money into conceptualisation and production of new and innovative products and processes and they have a right, at least for a period of time, to:

- ◆ have their name associated with their product;
- ◆ get paid for their efforts and recover their investments;
- ◆ frustrate the efforts of the free riders who wrongfully try to make money out of such creations without having any input.

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<sup>2</sup> Dr. Andrew W. Torrance, Patent Law, HIPPO, and the Biodiversity Crisis, 9 J. MARSHALL REV. INTELL. PROP. L. 624 (2010).

Such protection also stimulates creativity and innovation necessary for the productivity, competitiveness and national economic development.

Today, with the growing recognition of IPR, companies and associations all over the world want to protect their intellectual properties internationally. It is because of this fact that countries have signed numerous Agreements and Treaties. These Agreements and Treaties include the General Agreement on Tariffs and Trade (GATT), the World Intellectual Property Organisation (WIPO) and the Trade-related Aspects of Intellectual Property Rights (TRIPS).

Intellectual Property Rights generally comprise of Patents, Copyrights, Trademarks, Industrial Design, Trade Secrets and Layout-designs of Integrated Circuits. These have been created to make sure that the Intellectual Property of a person is protected against unfair practices.

### ***What is Copyright?***

A copyright is the exclusive right granted to the author or creator to do certain things with an original work, including the right to reproduce, publish, perform the work in public and make adaptations to it. Copyright does not protect ideas as such, but only the original expression of ideas. These rights can be licensed, transferred and/or assigned. Copyright lasts for a certain time period after which the work is said to enter the public domain. Copyright protection is generally only valid in that country that grants the protection. Countries do respect the copyright of other countries but if one wants protection, then it is best to apply for a copyright in that country. The agriculture industry uses copyright protection regularly.

### ***What is Patent?***

Patent is a monopoly granted by statute of a country for a limited term over a new and useful invention that involves inventive step. Invention may either for a product or process. The rights enjoyed by owner of the patent are proprietary in nature and the patentee or his agent or licensees has the exclusive right to use and have the benefits of patented invention and prevent unauthorised use, during the period of patent protection. Period during which the owner enjoys the benefits is called term of the patent. Registration is a prerequisite for patent protection and the protection granted is territorial in nature i.e., patent granted in a country will give the owner of the patent right only within that country.

### ***To qualify for a patent, the invention must meet three basic tests:***

- ◆ First, it must be novel, meaning that the invention did not previously exist.
- ◆ Second, the invention must be non-obvious, which means that the invention must be a significant improvement to existing technology. Simple changes to previously known devices do not comprise a patentable invention.
- ◆ Finally, the proposed invention must be useful. Legal experts commonly interpret this to mean that no patent will be granted for inventions that can only be used for an illegal or immoral purpose.

### ***What is Trademark?***

A Trade Mark is a visual symbol in the form of a word, a device, or a label applied to articles of commerce with a view to indicate to the purchasing public that it is a good manufactured or otherwise dealt in by a particular person as distinguished from similar goods dealt or manufactured by other persons.

Its objective is to deal with the precise nature of the rights which a person can acquire in respect of a TM, the mode of acquisition of such rights, the method of transfer of those rights to others, the precise nature of infringement of such rights and the remedies available in respect thereof.

- ◆ It identifies the product of its origin
- ◆ It guarantees its unchanged quality
- ◆ It advertises the products
- ◆ It creates an image for products.

## **17.3 Constitutional Amendments in India Ensuring Environmental Protection**

The protection of environment had been and still is one of the primary concerns for our country India. For this purpose, we take into consideration, the two very important conventions one of them being negotiated in the Stockholm Conference in 1972, and the other in Rio de Janeiro in 1992. The Stockholm Conference on Environment and Development exerted great influence on environmental policymaking leading to an amendment of the Constitution, passage of important legislations such as the Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981 and creation of institutions such as Central and State Pollution Control Boards for implementing the provisions of the Acts.

The Convention on Biological Diversity was negotiated in 1992. It represents an effort of a united international legal system to integrate environment with the economic sectors. The provisions of this Convention make sure that the trade in genetic resources must take place within a framework of rules which proceed towards an era of sustainable development.

### **A) Constitutional Amendments**

The 42nd Constitution Amendment Act, 1976, inserted specific provisions for environmental protection in the form of Directive Principles of State Policy and Fundamental Duties. Article 48A (Directive Principles) enunciates that 'the state shall endeavour to protect and improve the environment and to safeguard the forests and wild life of the country.' Article 51A(g) (Fundamental Duties): 'To protect and improve the natural environment including forests, lakes, rivers, wildlife and to have compassion for living creatures.' Two entries 17A - Forests and 17B - Protection to wild animals and birds were added in the Concurrent List.

**a) The Wild Life (Protection) Act, 1972**

This Act was enacted under the provisions of Article 252 to prevent the decline of wild animals and birds. It prohibits the poaching of certain animals except for the purpose of education or scientific research. In respect of certain wild animals, license is made a prerequisite for their hunting. It provides that a State Government may declare any area to be a sanctuary or as a national park if it considers that such area is of adequate ecological, faunal, floral, natural or zoological significance for protecting, propagating or developing wildlife or its environment.

**b) The Water (Prevention and Control of Pollution) Act, 1974**

The first important environmental law enacted by Parliament is the Water (Prevention and Control of Pollution) Act, 1974. This Act paved the way for the creation of Central Pollution Control Board (CPCB) and State Pollution Control Boards (SPCBs). The main function of the CPCB 'shall be to promote cleanliness of streams and wells in different areas of the States.'

**c) Forest (Conservation) Act, 1980**

This Act was passed to prevent deforestation, which results in ecological imbalance and environmental deterioration. It prohibits forestland to be used for non-forest purposes, except with the prior approval of the Central Government.

**d) The Air (Prevention and Control of Pollution) Act, 1981**

The preamble to the Act states that 'whereas decisions were taken at the United Nations Conference on the Human Environment held in Stockholm in June 1972, in which India participated, to take appropriate steps for the preservation of the natural resources of the Earth which, among other things, include the preservation of the quality of air and control of air pollution. The Central Government used Article 253 to enact this law and made it applicable throughout India.

**e) The Environment (Protection) Act, 1986**

This Act was enacted in the aftermath of the Bhopal gas tragedy in 1984 claiming more than 3000 lives. The Statement of Objects and Reasons of this Act refers to the decisions taken at the Stockholm Conference in June 1972 and expresses concern about the decline in environmental quality, increasing pollution, loss of vegetal cover and biological diversity, excessive concentrations of harmful chemicals in the ambient atmosphere, growing risks of environmental accidents and threats of life system.

According to this Act environment includes 'water, air and land and the interrelationship which exists among and between water, air and land, and human beings, other living creatures, plants, micro-organism and property.'

**f) The National Environment Tribunal Act, 1995**

The aim of the Act is to provide for strict liability for damages arising out of any accident occurring while handling any hazardous substance and for the establishment of a National

Environment Tribunal for effective and expeditious disposal of cases arising from such accident, with a view to giving relief and compensation or damages to persons, property and the environment and for matters connected therewith or incidental thereto. It cites the decision reached at the U.N. Conference on Environment and Development held at Rio de Janeiro in June 1992 which called upon the countries to develop national laws regarding liability and compensation for the victims of pollution and other environmental damages.

**g) The National Green Tribunal Act, 2010**

The National Green Tribunal (NGT) has been established on 18.10.2010 under the National Green Tribunal Act 2010 for effective and expeditious disposal of cases relating to environmental protection and conservation of forests and other natural resources including enforcement of any legal right relating to environment and giving relief and compensation for damages to persons and property and for matters connected therewith or incidental thereto. NGT is a specialised body equipped with the necessary expertise to handle environmental disputes involving multi-disciplinary issues. NGT is not bound by the procedure laid down under the Code of Civil Procedure, 1908, but shall be guided by principles of natural justice. The Tribunal's dedicated jurisdiction in environmental matters provides for speedy environmental justice and help reduce the burden of litigation in the higher courts. The Tribunal is mandated to make and endeavour for disposal of applications or appeals finally within 6 months of filing of the same.

**B) Biodiversity**

Biodiversity or biological diversity refers to the variability among living organisms, including genetic and structural differences, between individuals and between species. It is called an ecosystem in which they live and of which they are a part.

Biodiversity is a term with as many definitions as there are biologists who study it. Edward O. Wilson in his book "Diversity of Life" has defined biodiversity as, "the variety of organisms considered at all levels, from genetic variants belonging to the same species through arrays of species to arrays of genera, families, and still higher taxonomic levels; includes the variety of ecosystems, which comprise both the communities of organisms within particular habitats and the physical conditions under which they live."

**a) Biodiversity - an uneven distribution**

The distribution of biodiversity is uneven throughout the earth with some areas in excess and some areas with bare minimum of the ecosystems. According to the geographical knowledge, forests are found to be extremely dense in and around the equatorial region and minimum in the poles. Tropical rainforests have the largest concentration of biodiversity and also possess more than half of the known species. Ironically, such dense forests are found near the borders of the least developed or the developing countries. For example, such types of rainforests are found in the African countries like Nigeria, Kenya, Congo, Rwanda, Ethiopia, Zimbabwe to name a few. Almost 80% of the world's biodiversity can be found in such forests.

## b) Impact of Biodiversity on Life on Earth

Biodiversity describes the huge variety of species (both plant and animal) found on Earth and the natural way in which ecosystems and communities are formed. Over time, humans have had a major impact on Earth's biodiversity.

- ◆ Approximately 30% of medicines are developed from plants or animals,
- ◆ Soil enrichment through the decomposition of dead animals and plants and waste breakdown by organisms such as insects and worms,
- ◆ Green plant photosynthesis.

Ecosystems support a rich diversity of species which interact with their surrounding environments to produce a number of benefits; these include:

- ◆ air and water purification
- ◆ provision of many of man's necessities such as shelter, food, fuel and building materials
- ◆ stabilisation of the Earth's climate
- ◆ detoxification of waste products
- ◆ plant pollination
- ◆ weather and environmental control through floods and fire
- ◆ control of erosion
- ◆ control of many fatal diseases
- ◆ source of many medicines

## c) Rapid loss of Biodiversity

Society's growing consumption of resources and increasing populations have led to a rapid loss of biodiversity, eroding the capacity of earth's natural systems to provide essential goods and services on which human communities depend. Human activities have raised the rate of extinction to 1,000 times its usual rate. If this continues, earth will experience the sixth great wave of extinctions in billions of years of history. Already, an estimated two of every three bird species are in decline worldwide, one in every eight plant species is endangered or threatened, and one-quarter of mammals, one-quarter of amphibians and one-fifth of reptiles are endangered or vulnerable.

Also, in crisis are forests and fisheries, which are essential biological resources and integral parts of the earth's living ecosystems. The United Nations report finds that 100 million hectares of tropical forest were lost from 1980 to 2000<sup>3</sup>. Forests are home to 50-90% of terrestrial species, provide ecosystem services such as carbon storage and flood prevention, and are critical resources for many linguistically and culturally diverse societies and millions of indigenous people.

Overfishing, destructive fishing techniques and other human activities have also severely jeopardised the health of many of the world's fish stocks along with associated marine

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<sup>3</sup> UN Report: Nature's Dangerous Decline 'Unprecedented'; Species Extinction Rates 'Accelerating.'

species and ecosystems. In fact, the United Nations report state that 33% of marine fish stocks in 2015 have been harvested at unsustainable levels; 60% are maximally sustainably fished; 7% are underfished The Food and Agriculture Organisation of the UN estimates that nearly two-thirds of ocean fisheries are exploited beyond our capacity. Over one billion people, mostly in developing countries, depend on fish as their primary source of animal protein.

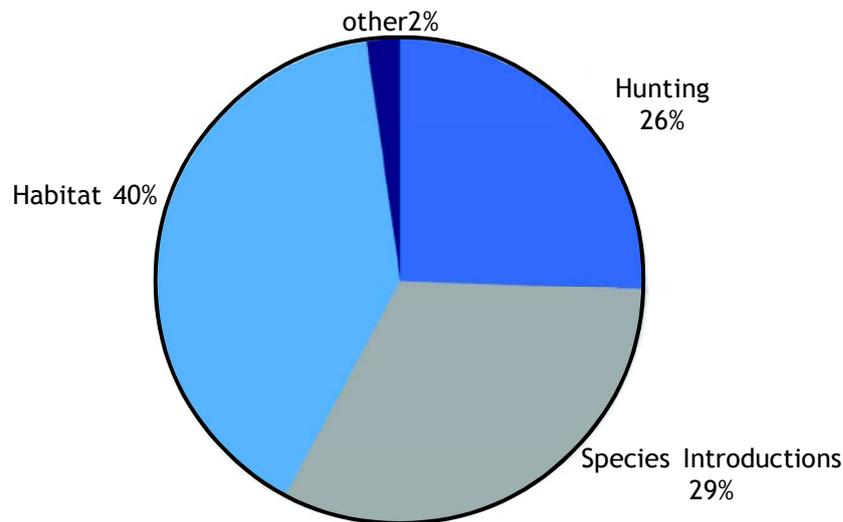


Figure 1 : Known Causes of Animal Extinctions Since 1600

## 17.4 Intellectual Property Rights and Biodiversity

In the recent years, there have been a range of significant developments related to intellectual property rights (IPRs) and biodiversity. At least two major international agreements, both legally binding, deal with this issue: The Convention on Biological Diversity (CBD) and the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs) of the World Trade Organisation (WTO). In addition, the World Intellectual Property Organisation (WIPO) and other international institutions are increasingly becoming active on the subject.

While IPRs such as copyrights, patents and trademarks are centuries old, the extension of IPRs to living beings and knowledge/ technologies related to them is relatively recent. In 1930, the U.S. Plant Patent Act was passed, which gave IPRs to asexually reproduced plant varieties. Several other countries subsequently extended such or other forms of protection to plant varieties, until in 1961, an International Convention for the Protection of New Varieties of Plants was signed. Most signatories were industrialised countries, who had also formed a Union for the Protection of New Varieties of Plants (UPOV). This treaty came into force in 1968.

### a) Protection against Loss of Habitat

Most of the species extinctions from 1000 AD to 2000 AD are due to human activities, in particular destruction of plant and animal habitats. Raised rates of extinction are being driven by human consumption of organic resources, especially related to tropical forest destruction. It is estimated that more than a third of the earth's biomass is tied up in only the few species that represent humans, livestock and crops.

Now, we all know that most of the biodiversity is concentrated in and around the borders of the tropical, developing nations. Although these nations have very few resources to conserve their biodiversity, they are disproportionately targeted by the developed countries, which hope to discover new and valuable natural bio chemicals in order to patent and commercialise. On the contrary, if there be a bar to this step of patentability, then it would not only serve the interest of conserving the environment but also help to align the interests of the developed countries. To ensure survival of a source organism, a patent owner might pursue conservation efforts such as purchasing, leasing, or acquiring conservation easements to the land on which the source organism was found, hiring guards and paying local residents to protect the source organism and its habitat from harm, and negotiating with local, regional, or national governments and agencies to gain co-operation to ensure that the source organism survives. A rational patent owner would protect the value of the patent by employing whatever safeguards were warranted to ensure survival of a source organism. All organisms are dependent on a web of ecological interactions for survival, and, consequently, they survive best when they remain integrated within their native ecosystems. Given a substantial number of patents claiming inventions based on natural bio chemicals, recognition of the extinction bar to patentability could spur the creation of a significant network of privately- funded patent parks around the world, but especially in the developing, tropical countries richest in biodiversity. The magnitude of the conservation incentive created by the extinction bar to patentability may be difficult to calculate, but, at the very least, the incentives it provides to conserve biodiversity will decrease the destruction of land rich in biodiversity at the margins of land use decisions.

#### **b) Protection against Invasion of non-native species**

Organisms that live outside their native geographic ranges are termed as exotics. Invasive species are exotic species that have successfully invaded (or are likely to invade) an ecosystem, causing significant ecological, economic, or human health problems.

The widespread introduction of exotic species by humans is a potent threat to biodiversity. When exotic species are introduced to ecosystems and establish self-sustaining populations, the endemic species in that ecosystem that have not evolved to cope with the exotic species may not survive. The exotic organisms may be either predators, parasites, or simply aggressive species that deprive indigenous species of nutrients, water and light. These invasive species often have features, due to their evolutionary background and new environment, that make them highly competitive; able to become well-established and spread quickly, reducing the effective habitat of endemic species.

Invasion of non-native species is an important and often overlooked cause of extinctions.

The African Great Lakes - Victoria, Malawi and Tanganyika - are famous for their great diversity of endemic species, termed "species flocks", of cichlid fishes. In Lake Victoria, a single, exotic species, the Nile Perch, has become established and may cause the extinction of most of the native species, by simply eating them all.

Patents can play a strong role in combating invasives. Inventors have patented many inventions intended to eradicate, detect, or predict the spread of invasives. Patent law provides several powerful options that allows governments rapid, or immediate, access

to patented technologies useful in preventing or combating spread of invasives. If the government does not act immediately against an invasive, patent breaking is an option.

Patent breaking refers to total abrogation or revocation of the rights conferred by a patent. According to the terms of both the North American Free Trade Agreement (NAFTA) and the World Trade Organisation Trade-Related Aspects of Intellectual Property (TRIPs) side-agreement, patent breaking involves an additional requirement that the scope and duration of use shall be limited to the purpose for which it was authorised.

### **c) Protection against Pollution**

Humans are not the only species that suffer the ill effects of environmental degradation. Pollutants are pervasive even in the Arctic, where high levels of DDT are found in marine mammals, affecting their ability to reproduce.

In 2010, ozone pollution from the Ohio Valley is damaging trees in the southern Appalachian Mountains, while acid rain (and now “mercury rain”) continues to plague the lakes and forests of the upper Midwest, the Adirondacks, Ontario, and New England.

Weakened immune systems and failure to reproduce are common effects of toxic pollution on a wide array of species. In some cases, pollution from silt and nutrients chokes the life out of aquatic ecosystems, while in other cases physical barriers, such as dams, prevent native fish species from reproducing. The accumulation of carbon dioxide in the atmosphere, and the global climate change this accumulation is causing, currently poses one of the most serious dangers to biodiversity, as temperatures, weather patterns, and sea levels all shift in response. Pollution from human sources has many adverse effects on biodiversity worldwide.

In addition to legal prohibitions, taxation to discourage usage, and environmental clean-ups, the patent system offers a powerful approach to the threat of pollution. New technologies can replace existing toxins with more benign substitutes, remediate the effects of toxins already in the environment by offering methods to detoxify or remove them, and offer new, cleaner, more efficient processes in the place of older, dirtier, less efficient ones. The owner of a patent can prevent others from making, selling, offering to sell or importing any patented invention. A patent owner may choose to license others to practice a patented invention, or may choose not grant licenses at all.

### **d) Protection against Population Growth**

With over seven billion people living on Earth, and more arriving every day, basic human needs for fresh water and fuel are making unprecedented demands on our global and local ecosystems. Beyond the necessities of survival, there is increasing demand throughout the globe for more material goods and services.

Americans consume more resources per capita than people in any other nation on earth. As other nations strive to increase material wealth and the comforts and conveniences we take for granted, the strain on natural resources and biodiversity will only increase.

Patent protection is intended to spur technological innovation by creating incentives for inventors to devote their valuable money, time and talents to the invention of new

technologies. Without patent protection or trade secrecy, innovations can be freely appropriated by others, dissipating the incentive to invent. Patent protection prevents such free-riding, and provides inventors with the prospect of compensation for their investment in inventing new technologies. Without patent protection, inventive activity would be less than socially optimal, and would result in correspondingly less than socially optimal technological innovation. By internalising the externalities caused by free-riding, a patent system creates an incentive to innovate.

#### e) Protection against Commercial Exploitation/Over hunting

Over-hunting, over-fishing and industrial-scale “mining” of natural resources have placed many species in peril. Three examples clearly show this damaging practice:

*Over-harvesting of regional fisheries* has driven several fish species to the brink of extinction - from the once-fabled cod fisheries of Georges Banks to the abalone stocks in California - and reduced the overall diversity of marine life. *Industrial-scale logging*, for wood products and timber, destroys or fragments millions of acres of forests each year, along with the habitat they provide to many uniquely adapted species, such as the endangered red cockaded woodpecker, which lives in heavily exploited long-leaf pine forests in the Southeast US.

*Over-hunting and illegal trade in endangered species* are a prime threat to their survival. For instance, box turtles in the US are illegally collected and exported as pets, and, they die in the tens of thousands each year. These species are very slow to reproduce, and, in some populations, poaching has resulted in too few hatchlings surviving to offset adult mortality.

The patents afford the inventor the opportunity to be the sole manufacturer, supplier, or licensor of his new invention. A threat to biodiversity can, at least in part, spur technological innovation that ameliorates such a threat, and that the patent system may facilitate such a beneficial outcome.

## 17.5 Various Legal Instruments for Biological Protection

The protection of biological resources has been one of the main issues at the national and the international level. This is because of the increase in the use of biological diversity by way of genetic engineering, in particular genetically modified seeds. A question arises as to why is this step to be protected. The answer is simple; the products developed by the biotechnology industry can often easily be copied once they have been put in the market. It is because of this that the introduction of intellectual property rights over genetically modified organisms, seeds and animals has been strongly urged for. Following are certain very important Agreements which play a very important role in the protection of such inventions.

### ***Convention on Biological Diversity (CBD)***

An important element of the dialogue between the developed and the developing nations is the Convention on Biological Diversity, which was negotiated in the UN Conference on

Environment and Development held in Rio in 1992, and which entered into force on 29 December, 1993.

**a) The main objectives of CBD are:**

- ◆ the conservation of Biological diversity,
- ◆ the sustainable use of its components
- ◆ fair and equitable sharing of benefits by access to resource and transfer of technology.

**b) Concept of State Sovereignty**

The concept of State sovereignty is of high importance since it grants States sovereign rights to exploit their resources pursuant to their own environmental policies together with the responsibility to ensure that activities within their own jurisdiction or control do not cause damage to the environment of other states. It provides a number of general obligations for its member States. These include a commitment to develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity.

**c) Relevance of IPR to CBD**

The biodiversity convention provides a general legal framework regulating access to biological resources and the sharing of benefits arising from their use. It attempts to provide a framework that respects donor countries' sovereign rights over their biological and genetic resources while facilitating access to those resources for users.

Article 16 of the CBD is of particular importance because it raises the issue of transfer of technology to developing countries, and specifically mentions patents in this connection. Further, the biodiversity convention provides that donor countries of microorganisms, plants or animals used commercially have the right to obtain a fair share of the benefits derived from such use. Article 19 relates to access to the results and benefits of biotechnology by the countries which provide the resources. With regard to biodiversity related knowledge, the convention acknowledges the relevance of intellectual property rights but requires member states to ensure that intellectual property rights support the convention's objectives. Some industrialised countries had concerns that these provisions would lead to inadequate compensation and because of this the USA initially refused to sign CBD. Though it can be justified that these resources are mainly availed from the developing countries and the compensation in royalties should not be paid for this.

***The International Treaty on Plant Genetic Resources for Food and Agriculture (PGRFA Treaty)***

The non-binding International Undertaking on Plant Genetic Resources was adopted by the Food and Agriculture Organisation in 1983. It provided that the plant genetic resources were a "common heritage" of human kind. This meant that all countries had free access to resources from other parts of the world. But its rejection of the Intellectual Property Rights and the exclusion of the plant breeders' and farmers' rights led to the negotiation of another treaty known as the International Treaty on Plant Genetic Resources for Food and Agriculture (PGRFA Treaty). The provisions of this treaty are:

- ◆ It is concerned with the promotion of sustainable agriculture and food security,
- ◆ It addresses the question of farmers' rights,
- ◆ Protection of traditional knowledge,
- ◆ Farmers' participation in profit sharing as well as decision-making regarding the management of plant generic resources.

In doing so, this Convention delineates a regime for access and benefit sharing and in this process provides direct and indirect links to intellectual property right instruments.

### ***Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPs)***

This agreement, concluded as part of the WTO extends standards of intellectual property rights protection of Organisation for Economic Co-operation and Development (OECD) countries to other WTO member States. It covers different fields of intellectual property among which patent rights are the most important from the perspective of the management of biological resources. The TRIPs agreement establishes the principle that patents should be available in all fields of technology. Some general exceptions to patentability are permitted in particular to protect human health or the environment but all member States must, for instance, extend patentability to micro-organisms. They must also offer legal protection for plant varieties either through patents or through an alternative property rights system (*sui generis*). Overall, the TRIPs agreement marks a radical shift from previous intellectual property rights treaties in requiring that member States provide legal protection to inventions based on biological resources.

TRIPs refers explicitly to the environment in its Section 5, which deals with patents. It says (in paragraphs 2 and 3 of Article 27 (Articles 27.2 and 27.3) that members can make certain inventions ineligible for patenting:

- ◆ ***To protect human, animal or plant life or health, to avoid serious harm to the environment:*** A member can exclude an invention from patentability if it believes the invention has to be prevented (within its territory) for these and certain other objectives.
- ◆ ***Plants and animals:*** Micro-organisms have to be eligible for patenting. So do non-biological and microbiological processes for the production of plants or animals. Invented plant varieties have to be also eligible for protection either by patenting, or by an effective system specially created for the purpose ("*sui generis*"), or a combination of the two. Otherwise, plants and animals do not have to be eligible for patenting.

The TRIPs Agreement allows members to refuse to patent inventions that may endanger the environment (provided their commercial exploitation is prohibited as a necessary condition for the protection of the environment). For ethical or other reasons, they can also exclude plants or animals from patentability, subject to the conditions described above.

## 17.6 Legal Instruments for Protection of Biological Resources in India

Environmental law has developed a great deal in India over the last thirty years. It has been possible mostly because of the influence of the international treaties and conventions. The Convention on Biological Diversity and the TRIPs have played a very important role in introducing the necessary steps for the protection of the biological resources in India.

### *The Biological Diversity Act, 2002*

India is one of the 12 mega biodiversity countries of the world. With only 2.5% of the land area India already accounts for 7-8% of the recorded species of the world. India is a party to the Convention on Biological Diversity (1992). The main objectives of the convention are:

- ◆ Conservation of biological diversity
- ◆ Sustainable use of its components
- ◆ Fair and equitable sharing of the benefits arising out of utilisation of genetic resources.

The proposed legislation primarily addresses the issue concerning access to genetic resources and associated knowledge by foreign individuals, institutions or companies, and equitable sharing of benefits arising out of the use of these resources and knowledge by the country and the people.

The biodiversity legislation provides for a regulatory system by which access to knowledge relating to biodiversity can be granted. Providing for an approval procedure for a patent or any other intellectual property right based on any Indian biological material and knowledge is seen by several groups campaigning against “patents on life” as a significant departure from the earlier stance of the Government of India. The Act does not prohibit IPRs and therefore the criticism is that it facilitates the privatisation of India’s traditional knowledge. The Act only forbids an application for any IPR in or outside India without prior approval of the National Biodiversity Authority (Section 6 of TRIPs). The National Biodiversity Authority may either allow or disallow an application for a patent or any other IPR.

### *The Plant Variety Act*

The Protection of Plant Varieties and Farmers’ Rights Act, 2001 (Plant Variety Act) was drafted in response to a specific provision requiring the introduction of plant variety protection, Article 27 (3)(b) of the TRIPs agreement. The Act sets out “to recognise and protect the rights of the farmers in respect of their contribution made at any time in conserving, improving and making available plant genetic resources for the development of new plant varieties” as well as “to protect plant breeders’ rights to stimulate investment for research and development, both in the public and private sector, for the development of new plant varieties.”

### ***The Patents (Amendment) Act of 2002***

The ratification of the TRIPs agreement meant that significant changes had to be brought to India's Patents Act of 1970. The Act specifically rules out the patentability of living things or non-living substances occurring in nature and further rejects the patentability of plants and animals. Further, the Act not only retains the exception concerning product patents for food and drugs but also now specifies that it excludes biochemical, biotechnological and microbiological processes. In reaction to concerns over biopiracy and the unwarranted use of traditional knowledge, the Act first proposes to impose the disclosure of the source and geographical origin of biological material used in an invention.

## **17.7 Issues and Concerns Related to Protection of IPR**

### **a) Transfer Technology**

The first issue of IPR concerns the claim by developed States, in the negotiation of international environmental agreements, that they are precluded from imposing technology transfer requirement on persons within their jurisdiction or control because of their obligations under national and international laws for the protection of intellectual property, patents and biotechnology.

This issue has been particularly acute in the context of the development of biotechnology and the conservation of biodiversity, and is also addressed by Agenda 21 in relation to technology transfer, where the international community declared the need to consider the role of patent protection and intellectual property rights and to examine their impact on the access to and transfer of environmentally sound technology, particularly to developing countries. Significantly, Agenda 21 recognises the bar which intellectual property rights might place on the transfer of technologies: in a passage which balances competing interest, Agenda 21 calls for measures to be taken which are in 'compliance with and under the specific circumstances recognised by the relevant international conventions adhered to by States'.

The 1992 Biodiversity Convention was the first international environmental treaty to tackle the issue of intellectual property, its provisions reflecting a concern about the possible threat to intellectual property rights posed by technology transfer obligations, as well as the need to ensure the equitable allocation of 'ownership' rights in biological materials. Taken together, the various provisions are inconclusive as to which rights will prevail in the event of a conflict. The Biodiversity Convention recognises the need to protect property rights, providing in Article 16(2) that the access to and transfer of technology which is subject to patents and other intellectual property rights is to be provided 'on terms which recognise and are consistent with the adequate and effective protection of intellectual rights'. However, in Article 16(5) the Convention also recognises that rights in intellectual property may have an influence on the implementation of the Convention, and calls on parties to co-operate on intellectual property rights 'subject to national legislation and international law in order to ensure that such rights are supportive and do not run counter to [the Convention's] objectives'. In this regard, the conference of the parties has recognised that intellectual property rights may have implications for the implementation of the Convention and the achievement of its objectives. Finally,

the language of Article 22 of the Convention suggests that intellectual property rights and obligations deriving from an existing international property rights and obligations would cause a serious damage or threat to biological diversity. The language of this latter provision, if interpreted to provide for the supremacy of the Biodiversity Convention, raises the possibility that it might conflict with the international treaties protecting intellectual property rights, which conflict would fall to be resolved by recourse to the ordinary rules of public international law. In the meantime, the Biodiversity Convention introduces a note of uncertainty into the debate about the primacy of intellectual property rights which caused sufficient concern to the United States to contribute to a delay in signing and an unwillingness to ratify. The United States may be reassured by the ECJ decision declining to recognise an inherently adverse link between the patentability of certain inventions and compliance with obligations to promote technology transfers, under the 1992 Biodiversity Convention.

In 2001 Treaty on Plant Genetic Resources aims to ensure the conservation and sustainable use of plant genetic resources and the fair and equitable sharing of benefits. It includes provisions designed to facilitate the transfer of technologies for the conservation of genetic resources. The heart of the Treaty is a 'Multilateral System' of access and benefit-sharing in respect of plant genetic resources for the food and agriculture listed in Annex-I to the Convention and which are under the management and control of parties and in the public domain. The parties agree to facilitate access to resources forming part of the Multilateral System, and to that end recipients agree not to claim any intellectual property or other rights that limit access to the resources or their genetic parts or components. Accesses to resources protected by intellectual and other property rights are to be consistent with relevant international agreements and with relevant national laws. The Treaty also provides that benefits accruing from the Multilateral System are to be shared fairly and equitably, including through the exchange of information and access to and transfer of technology.

Additionally, the parties undertake to provide and facilitate access to technologies for the conservation and use of resources under the Multilateral System and, recognising that some technologies can only be transferred through genetic material, to do so in conformity with the requirements of Article 12 'while respecting applicable property rights and access laws'. Technology which is protected by intellectual property rights is to be transferred to developing countries and countries with economies in transition under:

*Fair and most favourable terms, in particular in the case of technologies for use in conservation as well as technologies for the benefit of farmers in developing countries. Including on concessional and preferential terms where mutually agreed. Such access and transfer shall be provided on terms which recognise and are consistent with the adequate and effective protection of intellectual property rights.*

## **b) IPRs Related to Environment**

A second and related issue raised by intellectual property rights in the context of international environmental law concerns the extent to which environmental considerations may limit or prevent the grant of patent (or other intellectual property

rights) to products which may have adverse consequences for the environment. The 1973 European Patent Convention (establishing the European Patent Office (EPO)) provides that European patents will not be granted for inventions the publication or exploitation of which would be contrary to *ordre public* or morality because it is prohibited by law or regulation in some or all of the parties. It also prohibits the grant of patents in respect of 'plant or animal varieties or essentially biological processes for the production of plants or animals'.

The case law relating to Article 53 of the 1973 European Patent Convention illustrates the circumstances in which there may exist a certain tension between the grant of patents and the protection of the environment. In *Lubrizol Genetics Inc.*, objections were made to the grant of a patent on the grounds, among others, that such a grant would lead to a loss of biodiversity. The EPO stated that others, that such grant would be addressed within the *ordre public*/morality exception, and decided that a 'fair test to apply is to consider whether it is probable that the public in general would regard the invention as so abhorrent that the grant of a patent right would be inconceivable', noting that Article 53 (a) was likely to be invoked only in rare and extreme cases. On the facts, the EPO rejected the challenge, noting in respect to the loss of biodiversity argument that biotechnology increased genetic diversity by increasing new plant varieties that traditional breeding techniques could also result in loss of biodiversity, and that biotechnology should not be singled out among various factors causing loss of biodiversity. The EPO also expressed the view that 'patent law is not an appropriate instrument for regulating the development of new technologies and the legislature should determine whether a certain technology is so dangerous and unacceptable to the public that it should be suppressed.'

In *Harmone Relaxin*, the test applied by EPO in relation to the morality test was whether the grant of a patent for an invention, 'would universally be regarded as outrageous', and noting that the existence of a draft EU Biotechnology Directive indicated that the patenting of human gene sequences was not universally considered to be outrageous. That case was appealed to the EPO Technical Board of Appeal since the passing of the EU Biotechnology Directive 98/44/EC of 6 July 1998, and the earlier decision was upheld in light of the interpretation provided by the Directive of the concept of *ordre public*.

However, the cases indicate that, although it is possible to raise arguments against the grant of a patent based upon environmental grounds, the prospects of success are limited. The decisions indicate a tendency to focus on the environmental consequences flowing from the intended use, rather than the environmental consequences of misuse, whether accidental or otherwise. They also indicate a relatively high threshold of proof of environmental damage, in terms not dissimilar to the approach taken by the ICJ in the *Gabcikovo-Nagymaros* case. Further, no decision appears, thus far at least, to have invoked the precautionary principle (or approach), at least expressly.

The EPO adjudicatory bodies have been careful to avoid establishing general rules of wholesale application, thus requiring each case to be dealt with on its own merits. At the global level, the 1994 WTO TRIPs Agreement established a regime requiring WTO members to make patents available for any inventions whether products or processes, in all fields of technology without discrimination, subject to the normal tests of novelty, inventiveness and industrial applicability. It also requires that patents be available and

patent rights be enjoyable without discrimination as to the place of invention and regardless of whether products are imported or locally produced.

Like the 1973 European Convention, the TRIPs Agreement allows exceptions to the general rule on patentability, of which two are environmentally relevant. The first is that patents should not be granted to inventions which are contrary to *ordre public* or morality (including inventions dangerous to human, animal or plant life or health or seriously prejudicial to the environment). The second exception is that members may exclude plants and animals other than microorganisms and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes.

Neither of these exceptions have yet been the subject of proceedings in an environmental case, but it is likely that the term *ordre public* would be held to mean the same in the TRIPs Agreement as in the 1973 European Patent Convention from which it derives. If so, it will remain open to States bound by TRIPs to deny patent protection to environmentally damaging inventions.

## 17.8 Conclusion

The legal relationship between environmental protection and financial resources, technology transfer and intellectual property rights is well established and becoming increasingly complex. This results from the developments at the regional and global levels in the period shortly before UNCED, and is now reflected in the two conventions and other international acts adopted at UNCED, and subsequent legislative and judicial developments. The consequence is a two way interchange, also reflected in recent developments relating to the interplay of trade and environment: on the one hand international environmental law and lawyers must take account of, and apply, legal concepts and rules deriving from the rules relating to the international economic system, including the protection of intellectual property rights; on the other hand, international economic institutions and their legal systems must integrate environmental considerations across the range of their activities. This is a logical step in the progressive development of international environmental law, and follows earlier phases in which standards were set, institutions created, and procedural requirements put in place. There are four fundamental challenges which will need to be properly addressed if environmental considerations are to be moved from the periphery of international legal and institutional arrangements to their center. First, international development assistance resources, and in particular those provided by the multilateral development banks, must be subjected to a regime which:

- 1) sets forth clear international legal obligations which ensure that adequate environmental standards are applied;
- 2) ensures that procedural obligations relating to environmental information and assessment are put in place and complied with; and
- 3) allows efficient and effective mechanisms to be put in place which will ensure that decisions which do not satisfy basic environmental requirements are reviewed and rejected if found wanting.

# TRADITIONAL KNOWLEDGE AND ENVIRONMENT

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### 18.1 Introduction

This is an age where information is the key to success in all relevant spheres of life. Today, the big nations have realised the fact that it is the small developing nations which remain home to a vast majority of biological resources. These developing nations possess invaluable treasures worth billions of dollars. The varieties of plants and trees found in and around these nations, amount to collection of genetic material with countless potential applications. Moreover, the value of these vast collections is further increased due to the experimental practices of the local communities living in these areas.

On one hand, these local communities have their own norms and rules according to which they govern their resources, both tangible and intangible. These resources are to be enjoyed by them only within their group. On the other hand, the developed countries look to these aspects from the point of view of intellectual property rights. They believe in the system of inventions and rents to be paid, and if this is not made possible, they believe it to be their inherent right to take away the scientific knowledge of the developing countries without giving anything in return. They do not lay special emphasis on the term “traditional knowledge” and it becomes a term used in the public domain.

## 18.2 What is Traditional Knowledge?

Traditional knowledge (TK) refers to the matured long-standing traditions and practices of certain regional, indigenous or local communities. Traditional knowledge also encompasses the wisdom, knowledge and teachings of these communities. In many cases, traditional knowledge has been verbally passed from generation to generation. Some forms of traditional knowledge are expressed through legends, stories, songs, rituals, laws, etc., or by certain other means.

Traditional knowledge has been used for centuries by indigenous and local communities under local laws, customs and traditions. It has been transmitted and evolved from generation to generation. It has played, and still plays, an important role in vital areas such as food security, the development of agriculture and medical treatment. However, Western societies have not, in general, recognised any significant value in Traditional Knowledge nor any obligations associated to its use, and have passively consented to or accelerated its loss through the destruction of the communities' living environment and cultural values. It is broadly recognised that traditional knowledge may contribute to the conservation of the environment, biodiversity and sustainable agricultural practices. However, the international community has only now begun to consider whether there is a need to take steps to protect such knowledge, and whether the existing system of intellectual property or new forms of protection will be required.

There is to date no universally recognised definitions for traditional knowledge as such. "Traditional knowledge" has a number of different subsets, some of them designated by expressions such as "indigenous knowledge", "folklore", "traditional medicinal knowledge" and others. Contrary to a common perception, traditional knowledge is not necessarily ancient. It is evolving all the time, a process of periodic, even daily creation as individuals and communities take up the challenges presented by their social and physical environment. In many ways therefore, traditional knowledge is actually contemporary knowledge. Traditional knowledge is embedded in traditional knowledge *systems*, which each community has developed and maintained in its local context. The commercial and other advantages deriving from that use could give rise to intellectual property questions that could in turn be multiplied by international trade, communications and cultural exchange.

Traditional knowledge is mainly of a practical nature, particularly in such fields as agriculture, fishing, health, horticulture and forestry. Increasingly, traditional knowledge is being used as a resource by modern industry, but indigenous and local communities rarely receive an equitable share of the benefits of the use of their traditional knowledge. There is a need to protect traditional knowledge with appropriate policies and legislation and by increasing awareness.

The Director General of United Nations Educational, Scientific and Cultural Organisation (Mayor, 1994) defines traditional knowledge:

The indigenous people of the world possess an immense knowledge of their environments, based on centuries of living close to nature. Living in and from the richness and variety

of complex ecosystems, they understand the properties of plants and animals, the functioning of ecosystems and the techniques for using and managing them that is particular and often detailed. In rural communities in developing countries, locally occurring species are relied on for many - sometimes all - foods, medicines, fuel, building materials and other products. Equally, peoples' knowledge and perceptions of the environment, and their relationships with it, are often important elements of cultural identity.

According to WIPO, "traditional knowledge" comprises: tradition-based literary, artistic or scientific works; performances; inventions; scientific discoveries; designs; marks, names and symbols; undisclosed information; and, all other tradition-based innovations and creations resulting from intellectual activity in the industrial, scientific, literary or artistic fields.

In the above definition, tradition-based refers to knowledge systems, creations, innovations and cultural expressions which:

- ◆ have generally been transmitted from generation to generation;
- ◆ are generally regarded as pertaining to a particular people or its territory; and,
- ◆ are constantly evolving in response to a changing environment.

Two protective paradigms have been employed to protect traditional knowledge using intellectual property tools:

- 1) To prevent others from using or securing intellectual property rights over traditional knowledge. For example, some communities have created traditional knowledge databases to evidence their traditional knowledge as prior art in order to prevent perceived abuses such as biopiracy.
- 2) To secure protective legal rights over traditional knowledge. This is achieved by either using the existing laws or using legislative means to enact new *sui generis* laws.

The international standards emerging out of the World Intellectual Property Organisation (WIPO) and the Convention on Biological Diversity (CBD) are that :

- 1) The development of any policies, laws or rules regarding traditional knowledge and associated resources must involve the full and effective participation of indigenous and local communities;
- 2) The access to traditional knowledge and resources (particularly genetic resources) can only be obtained through the free, prior informed consent (FPIC) of indigenous and local communities; and
- 3) Indigenous and local communities have the right to determine the form of benefit sharing, and use by others can only proceed on the basis of mutually agreeable terms between the custodians or holders of knowledge and resources and external Parties.

In 1996, the conference of the Parties to the 1992 the CBD called for case studies on the impact of IPRs on the achievement of the Convention's objectives, including, relationships between such rights and the knowledge, practices and innovations of indigenous and

local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity. There has also been extensive work by WIPO in the field of traditional knowledge, but there have been no international harmonisation of standards of protection in this area and none is in sight.

Practice differs among national jurisdictions: in some traditional knowledge may be protected by regular intellectual property rights, and in other *sui generis* regimes have been put in place. Recent international developments include the introduction of farmer's right into FAO International Undertaking on Plant Genetic Resources and the 2001 Treaty, and Article 8(j) of the 1992 Biodiversity Convention.

These efforts provide a starting point of the development of international rules governing the protection of traditional knowledge, recognising the tension between the objectives of facilitating access to environmental benefits, on the one hand, and providing appropriate financial and other benefits to the holders of the knowledge, including through sharing of the monetary and other benefits of commercialisation.

The preservation, management and sustainable use of genetic resources and of associated traditional knowledge, as well as the sharing of the benefits that they offer, are headline news today. They are topics that occupy public debate in a wide range of sectors, including: food and agriculture; biological diversity and environment; innovation and regulation in biotechnology; economic, social and cultural development.

With the rise of modern biotechnology, genetic resources have taken on increasing economic, scientific and commercial value for a wide range of stakeholders. In addition, the traditional knowledge associated with those resources has attracted widespread attention from a growing audience.

At the same time other tradition-based creations, like folklore and the many forms in which it is expressed, have acquired a new economic and cultural potential, thanks to the multitude of commercial and dissemination options made available by the Internet and the global information society.

### 18.3 History of Traditional Knowledge

The region surrounding the developing and the under developed nations, is rich in biological resources and traditional knowledge. In former times, and still today, traditional knowledge and practices provided the basis for the well-being and livelihoods of the indigenous communities, maintaining their health and replenishing the environment. In modern times, traditional knowledge and biological resources have been used by the food industry, the pharmaceutical industry, and the cosmetic industry, and there is a long history of traditional knowledge in the evolution of modern food crops. Farmers in such indigenous region domesticated and developed carrots, mustard, gooseberries, apples, pears, apricots, oranges, lemons and cardamom. Similarly, the use of herbal medicine dates back as far as the Indus Valley civilisation in 2600 BC; Chinese medicine and Ayurvedic medicine developed by local people are still used today. This kind of traditional knowledge is very important to modern pharmaceutical research in that it

works as an initial screen and can help isolate the medically significant properties of plants and animals. Several modern drugs, including anti-cancer drugs, antibiotics, malaria drugs and analgesics, were developed from plant and animal resources based on traditional knowledge.

Indigenous and local communities have a wealth of knowledge about the areas in which they live and their natural resources, but many do not understand their rights over the knowledge and often, unwittingly, give their rights away. For example, indigenous and local communities in the Himalayan region rarely receive a fair and equitable share of benefits arising from the use of their knowledge. Increasingly, it is being realised that indigenous and local communities are entitled to this and special measures are being put in place to control, develop, and protect their scientific knowledge, technologies and cultural practices. In the Philippines, for another example, indigenous local communities are entitled to this through the requirement of 'prior informed consent'. In Peru, compensation to local communities for the use of traditional knowledge, even if it is within the public domain, is provided for by national policy.

#### a) Scope of Traditional Knowledge

Traditional Knowledge encompasses very different types of knowledge. These may be distinguished by the elements involved, the knowledge's potential or actual applications, the individual or collective form of possession, and its legal status.

Traditional Knowledge includes, for example, information on the use of biological and other materials for medical treatment and agriculture, production processes, designs, literature, music, rituals and other techniques and arts. This broad set includes information of a functional and of an aesthetic character, that is, processes and products that can be used in agriculture or industry, as well as intangibles of cultural value.

Mostly, Traditional Knowledge comprises of knowledge which has been developed in the past, but which still continues to be developed. Most Traditional Knowledge is, in effect, of non-contemporary nature. This implies that it has been used for generations and in many cases collected and published by anthropologists, historians, botanists or other researchers and observers. However, it is not static; it evolves and generates new information as a result of improvements or adaptation to changing circumstances.

Traditional Knowledge may be possessed by individuals (e.g. healing practices and rituals), by some members of a group, or be available to all the members of a group which is known as the "common knowledge", for example with knowledge on herbal-home remedies which is held by millions of women and elders.

While some Traditional Knowledge can be used and understood outside its local/traditional/communal context, this is not always the case. There are often spiritual components in it peculiar to each community. Knowledge that cannot be utilised beyond its communal context has little or no commercial value, despite the value that such knowledge may have for the life of the originating community.

To summarise, Traditional Knowledge includes information of different kinds and functions, developed in ancestral times but subject to contemporary improvement and adaptation.

It is expressed in various documented and non-documented forms, and may possess commercial value depending on its potential or actual use.

#### Examples of Traditional Knowledge

- ◆ The quinine tree (*Cinchona officinalis*), until recently the only antidote to malaria, was known to the Andean people.
- ◆ The hoodia cactus was used by Kung Bushman in Africa to stave off hunger.
- ◆ Turmeric (*Curcuma domestica*) is used on the Indian subcontinent to heal wounds.
- ◆ The Kani people in South India use argyapaachya to suppress fatigue and reduce stress.

#### b) Concept in the Words of Native People

- ◆ Traditional knowledge is practical common sense based on teachings and experiences passed on from generation to generation.
- ◆ It is to know the country. It covers knowledge of the environment - plants, trees, snow, weather, resources and the relationships between things.
- ◆ It is holistic. It cannot be compartmentalised and cannot be separated from the people who hold it. It is rooted in the spiritual health, culture and language of the people. It is a way of life.
- ◆ Traditional knowledge is an authority system. It sets out the rules governing the use of resources and to respect them. There is also an obligation to share. It is dynamic, cumulative and stable. It is truth.
- ◆ Traditional knowledge is a way of life. The best logic is to use traditional knowledge in good ways. It is using the heart and the head together. It comes from the spirit in order to survive.
- ◆ It gives credibility to the people.

#### c) Protecting Traditional Knowledge

Traditional knowledge is still a relatively novel concern in international law. The development of genetic engineering has largely contributed to raising its importance. Developing countries find themselves with most traditional knowledge and developed countries are the ones that are keen to use it in further applications. At present, there is not much binding effective international law that safeguards and protects traditional knowledge.

The patent on the “use of turmeric in wound healing” is but one of the many examples of how patents are being sought over various aspects of biological resources and products derived from the same. What complicates matters in such patents is that the various useful properties and knowledge regarding biological resources have been identified and preserved through consistent skill, observation and usage by various local and indigenous communities through the world. In the field of pharmaceutical research, indigenous knowledge contributes towards the identification of the material in developing the drug, and often provides information of its precise uses in treating particular illnesses,

its means of preparation and its dosage. Modern science and patent law, however, do not recognise this as valuable “innovation”. Access to such resources and information is, therefore, assumed to be “free”.

Patents, by definition, cannot be granted over something that is obvious; that is known or anticipated by prior use; that is a product of nature, and not a product of human creativity. However, laws of different countries vary in the criteria used for assessment of the degree of human innovation that is required for qualifying for a patent. In the turmeric case, it was possible for the CSIR to establish that the patent claim was not “new”. However, it may not be possible to establish this in each of the examples mentioned. In the *basmati* patent, for instance, the Government of India has challenged only three of the 20 claims granted to the patent holder, Ricetec; the belief being that there was enough evidence on record only to challenge these. What was being challenged were only claims regarding certain characteristics of *basmati* (specifically starch index, aroma and grain dimensions); and not the other claims of the patent pertaining to the novelty of the rice lines and plants cultivated from these.

Patents over herbal mixtures and compositions (such as the examples above), however, present greater scope for argument for revocation, since the properties of each of the ingredients in the composition, and sometimes the composition itself, is not “novel”.

Another issue for consideration is that while in the case of turmeric, the use was commonly held knowledge, there would be many instances when use/s of a specific plant or herb is known only to a particular community or tribe or individual. “Patenting” products developed from such biological material poses further challenges.

India and other developing countries have emphasized in various communications to the World Trade Organisation (WTO) that the rights of holders of traditional knowledge to share benefits arising out of innovation on the basis of their knowledge and the biological resources nurtured by them, should be recognised. They have also recommended that applications for patents should mandatorily disclose the source of origin of the biological resource and knowledge pertaining to it, so as to facilitate benefit sharing with the originators of the knowledge and resource. The United States has strongly opposed this as a “legal and administrative nightmare”.

This kind of a stand by the U.S. would only lead to greater misappropriation of biological resources and knowledge pertaining to the same.

## 18.4 Convention on Biological Diversity

At the Earth Summit held in 1992, the Convention on Biological Diversity (CBD) was concluded, to which India is a party. The basic objectives of the CBD are: conservation, sustainable use of biological diversity and equitable sharing of benefits arising from the use of biodiversity. It further mandates the signatories to it to respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities and encourage the equitable sharing of benefits arising from the utilisation of such knowledge, innovations and practices. As a legally binding treaty, the CBD can be expected to have some influence on these issues. To ensure that there are legal mechanisms in

place to ensure that this knowledge is not freely appropriated, the Indian government is in the process of finalising a law titled the Biological Diversity Bill. The bill contains various provisions for regulating access to biological resources, patent claims, and indigenous knowledge protection.

NGOs and institutions in India are attempting to document the knowledge, skills and techniques of local communities related to biological resources through the Community (or People's) Biodiversity Register, in the belief that such documentation would be a deterrent to biopiracy; as well as for instilling a greater sense of pride among local communities over the knowledge they possess. The Register processes documents of community and individual knowledge of occurrence, practices of propagation, sustainable harvests and conservation, as well as economic uses of biodiversity resources. All information accumulated in the Register can be used or distributed only with the knowledge and consent of the local community, so that it is in a position to refuse access to the register and to set conditions under which access would be allowed. The community, while consenting, can charge fees for access to the Register and collection of biological resources. Decisions on how to disburse the funds are to be made through village community meetings.

The fear about biodiversity registers is they may place knowledge hitherto regarded as "secret" by communities, in the public domain, and that once this is done, it would be an open invitation for corporate and research interests to freely use it. On the positive side, these registers are expected to function as tools to establish claims of individuals and communities over knowledge and uses of biodiversity resources, and to bring to them an equitable share of benefits flowing from the use of such knowledge and resources. This, however, can be achieved only when legal mechanisms of control over the register are put in place, which is not yet the case.

The Biodiversity Convention has proved to be one of the liveliest forums for debate of issues concerning traditional knowledge partly because it is a nearly universal treaty and partly because it is much more open than other forums to inputs from civil society in general.

In Article 8(j), the Convention on Biological Diversity requires Parties to "respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity" and promotes the "wider application" of traditional knowledge with the approval and involvement of the holders of traditional knowledge.

Article 10(c) similarly provides that CBD Parties "shall protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements."

### ***Agreement on Trade Related Aspects of Intellectual Property Rights***

The TRIPs Agreement was negotiated through a period of 1984-1993 at the World Trade Organisation's (WTO) initial formative years. General Agreement on Tariffs and Trade (GATT) offered the platform to all Contracting Parties for the exercises on TRIPs.

The major objectives of the TRIPs agreement can first be considered:

- ◆ Setting minimum standard of protection in terms of defined intellectual properties.
- ◆ Promotion of technological innovation and transfer and dissemination of technology to the mutual advantage of disseminators and users of technological knowledge.
- ◆ Exclusion of patentability that threaten human, animal or plant life and health.

### ***Failure of TRIPs***

TRIPs has been a bone of contention between the developed and the developing countries. A number of apparent flaws could be detected from the viewpoint of developing countries. Developing countries, therefore, feel the need for some specific modifications viz.

- ◆ There is no general prohibition of patenting plants and animals. The absence of such a clause led to the demand that the naturally occurring plants, animals, or the parts of plants and animals including the gene sequence, as also the biological processes for production of plants, animals and their parts should be outside the provision of TRIPs.
- ◆ Each country should have the right to promulgate and adopt its own *sui generis* system for the protection of plant varieties.
- ◆ Consent of the relevant authorities of the country of origin of living materials, e.g., plant from which the product is derived must be obtained before granting patents.
- ◆ Patent inconsistent with Article 15 of CBD [Access to Genetic Resources (empowering national government to determine) on mutually agreeable terms and with prior informed consent] must not be granted.
- ◆ Patent holder must share economic benefit derived out of biological material transferred from another country, i.e., the country of origin.
- ◆ Effective monopoly by granting patent rights over 20 years may prevent access to technologies and should, therefore, be reduced.
- ◆ A positive relaxation on the exclusive rights of patent holder on some drugs in pharmaceutical sector is needed to make the same available for the viability of the healthcare system in developing countries.

Therefore, TRIPs Agreement and other international agreements on intellectual property rights, by contrast, fail to recognise the value of traditional knowledge as a source of innovation. These instruments were designed mostly to protect “western” forms of innovation and do not provide adequate mechanisms that address the special nature of traditional knowledge.

TRIPs Agreement does not even mention traditional knowledge. This has two main consequences. On the one hand, if traditional knowledge innovations fulfil the criteria for protection under existing categories of intellectual property rights they are not excluded from the purview of the Agreement. On the other hand, there is no recognition of the special nature of traditional knowledge under TRIPs.

#### ◆ World Intellectual Property Organisation (WIPO)

The other main forum where traditional knowledge protection and preservation has been discussed is WIPO. Following the adoption of TRIPs Agreement, WIPO has sought to maintain its leading position with regard to the development of intellectual property rights regimes. The protection of traditional knowledge through intellectual property rights became a topic of sufficient importance by the end of 1990s for WIPO to pick it up. It has since attempted to establish itself as a pivotal player in the various attempts to define regimes for traditional knowledge protection and associated mechanisms such as benefit sharing.

#### ◆ Biosafety Protocol

The Cartagena Protocol on Biosafety (CPB) was adopted in Montreal, Canada, on January 30, 2000 by delegates of 128 parties to the Convention on Biological Diversity (CBD). It came into force in the same year. CPB regulates the transboundary movements of some genetically modified organisms (GMOs) and calls for Precautionary Principles (PP) by confirming the rights to take action if there is suspicion of any potential environmental damage. Minimum standard of risk assessment and safety measures for transboundary movement of GMOs can now be set using CPB. It provides right to choose between genetically modified, conventional and organic products. Further, according to Article 8 of CPB the 'Party of export shall notify or require the exporter to ensure notification to the competent national authority of Party of import'. Also included in CPB is the agreement to support a Special Biosafety Clearing House (BCH) - a central portal with basic information system and provisions of links to other relevant websites. The Cartagena Protocol can only be effectively used with appropriate national regulation. The regulation on import of GM seeds into developing countries like India will expectedly help to protect Farmers' Rights to livelihood.

#### ◆ Protection by *sui generis* system

Current trends show an increasing number of national laws providing direct or indirect protection for traditional knowledge. Direct protection is provided by establishing mechanisms exclusively designed for protecting traditional knowledge, including '*sui generis*' systems. Indirect protection occurs as a consequence of more general laws oriented towards the protection of indigenous rights or laws regulating access to genetic resources. The mandate given to Article 8(j) Working Group is to consider non-intellectual property based *sui generis* forms of protection of traditional knowledge, innovations and practices relevant for the conservation and sustainable use of biodiversity. This includes various options not directly related to intellectual property rights protection such as questions of ownership and access to traditional knowledge including the question of prior informed consent, benefit sharing, registers of traditional knowledge and a system of registration of traditional knowledge.

## 18.5 Traditional Knowledge and the Convention on Biodiversity: India's Position

The colonial model of governance still influences the law on biodiversity in India. The inadequacy of the existing India laws and mechanism can be realised despite the

development of various international processes and resultant international instruments to gear laws for the protection of TK and conservation of biodiversity in general as well as to address the issue of equity and justice in particular.

### ***The Biological Diversity Act, 2002***

As a signatories of CBD, India enact Biological Diversity Act in 2002 to regulate access to biological resources, to put in place benefit sharing arrangement in the event of commercialisation of biological resources and formulated mechanism for the protection of traditional knowledge and its holders. However, the Act does not explicitly bring in the indigenous and local communities in the decision making processes. The IP are not represented in the National Biodiversity Authority (NBA).

Free, Prior and Informed Consent (FPIC) is absent in Section 41(2) of the Act relating to the use of biodiversity and knowledge within the jurisdiction of local communities.

It is subjected to manipulation as '*gram sabha*' is replaced by 'local bodies' which does not reflect the spirit of the local context. Citizens are not provided locus standi to go to the court under the Act, as provided for in all other environmental laws of India.

There are no adequate formal legal instruments or mechanisms for the protection of traditional knowledge or for a meaningful benefit-sharing arrangement. There are also various loopholes in the Act to be considered adequate or progressive from the point of view of indigenous peoples.

**The Biological Diversity Rules, 2004** were notified by the Union Ministry of Environment and Forests (MoEF) on April 15, 2004, under the Biological Diversity Act, 2002.

## **18.6 Relation between Genetic Resources, Traditional Knowledge and IPRs**

The relationship between genetic resources, traditional knowledge and intellectual property rights is among the most controversial agenda items in the negotiations of several international organisations. A key issue is illegal access and use of genetic resources and traditional knowledge, known by the term Biopiracy. In many cases of illegal access, intellectual property rights are used to circumvent obligations derived from the Convention on Biological Diversity (CBD). Moreover, overbroad patents continue to be granted that adversely affect the sovereign rights of nations and indigenous and other local communities.

At the center of this debate is the World Trade Organisation's Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs). The TRIPs Agreement, despite outcries from the public, ignores these concerns and fails to offer balanced solutions to the problem. In the absence of a permanent international solution, there is a strong need for the initiation of a sustainability review of relevant international agreements in order to prevent illegal access and use of genetic resources and traditional knowledge.

### ***Why Protect Traditional Knowledge?***

There is a difference in opinion regarding the question as to why is traditional knowledge to be protected. Some understand this concept in the context of IPRs, where protection essentially means to exclude the unauthorised use by third parties. Others regard protection as a tool to preserve traditional knowledge from uses that may erode it or negatively affect the life or culture of the communities that have developed and applied it. Protection here has a more positive role in supporting Traditional Knowledge based communities' livelihoods and cultures.

#### **a) Equity Considerations**

The underlying concept in many proposals for the protection of Traditional Knowledge is based on equity considerations. Traditional Knowledge generates value that, due to the system of appropriation and reward currently in place, is not adequately recognised and compensated. The protection of Traditional Knowledge would, therefore, be necessary to bring equity to essentially unjust and unequal relations.

An example of this rationale is found in plant genetic resources. Traditional farmers conserve and use plant genetic resources. The value of plant genetic resources is preserved and enhanced by their utilisation for planting, seed production and continuous selection of the best adapted farmers' varieties. Such farmers generally interact among themselves on the basis of barter or exchange across the fence, thus fostering the diffusion of their varieties and their further development. However, the varieties conserved and developed by farmers are later collected, subjected to research and breeding, and are then made to enter the commercial channels through seed companies. While the latter can protect the improved varieties under Plant Breeders' Rights (PBRs) and benefit from them, the farmers are not compensated for the germplasm they have contributed and the value they have created. An essential characteristic of farmers' varieties is their variation over time. For this reason, such varieties cannot normally meet the stability and uniformity requirements imposed under PBRs.

#### **b) Conservation Concerns**

A second factor underlying the claim for protection of Traditional Knowledge is based on the importance of such knowledge for conservation purposes. Thus, maintenance of biological diversity in farming systems generates value for the global community.

IPRs might be used to generate income to sustain activities that would otherwise be abandoned. If traditional farmers for example, abandoned the use and breeding of farmers' varieties, getting attracted by the higher income obtainable through planting higher yielding modern varieties, then a serious loss of biodiversity could occur. However, on the conceptual level, it is doubtful whether the protection of farmers' varieties under an IPRs system would have any positive impact on their conservation or stimulate breeding activity, and whether protection would serve the purpose of strengthening the rights of communities and traditional farmers over their resources.

Under this approach, the protection of Traditional Knowledge helps meet society's broader objectives for the conservation of the environment, sustainable agriculture and food security.

### c) Preservation of Traditional lifestyle

Others see the protection of Traditional Knowledge as providing a framework to encourage the maintenance of practices and knowledge embodying traditional life styles. In this sense, the notion of “protection” is quite different from the notion applied under IPRs. The preservation of Traditional Knowledge is not only a key component of the right to self-identification and a condition for the continuous existence of indigenous and traditional peoples; it is also a central element of the cultural heritage of humanity.

The Crucible group suggests that by vesting legally recognised ownership of knowledge in communities through IPRs it will raise the profile of that knowledge and encourage respect for it both inside and outside the knowledge holding communities. This will make the learning and development of such knowledge a more attractive prospect for the younger members of such communities, thus perpetuating its existence. The possibility of economic returns for the use of that knowledge by third Parties acts as a further incentive for community members to respect their knowledge and continue to engage in practices in which that knowledge is used and generated.

### d) Avoiding Biopiracy

“Biopiracy” is defined as the process through which the rights of indigenous cultures to genetic resources and knowledge are “erased and replaced for those who have exploited indigenous knowledge and biodiversity”. In fact, a large number of patents have been granted on genetic resources and knowledge obtained from developing countries, without the consent of the possessors of the resources and knowledge.

In some cases, the protection of Traditional Knowledge aims to prevent the unauthorised appropriation (“biopiracy”) of traditional knowledge and to ensure benefit sharing, as provided for under Articles 8 (j), 15, 16 and 19 of the CBD, rather than the establishment of a system of positive appropriation. The Government of India, for instance, proposed, as a way to harmonise the TRIPS Agreement with the CBD, to incorporate in the Agreement a provision establishing that patents inconsistent with Article 15 of the CBD must not be granted. This Article requires prior informed consent for access to genetic resources, and the sharing of benefits arising from commercial use with the country of origin of the material.

The granting of patents unduly covering traditional knowledge may be prevented by improving the information available to patent offices for examination of novelty and inventive step. This would not be sufficient in the USA, however. According to Section 102 of the US patent law, information that has been published in a written form in the USA or in any other country is not patentable. But if the information was publicly used but not documented in a foreign country, novelty is not lost. Unless this relative standard of novelty is modified, the problems of appropriation of traditional knowledge under US patents will remain unsettled.

## 18.7 Relationship between CBD and TRIPs

The CBD and the TRIPs Agreement, both touch on issues of genetic resources and intellectual property, giving rise to a range of legal and practical issues concerning both their relationship in international law, and their implementation at the national level.

The relationship between the CBD and TRIPs has been difficult to reconcile, for a number of reasons. Some legal conflicts have occurred when implementing and applying both agreements in practice. Conflicts arise when TRIPs allows genetic material or traditional knowledge to be used in an inventive process or to be incorporated into an invention without the existence of prior informed consent and benefit sharing (i.e. illegal access and use) as required by the CBD.

A similar situation occurs when the TRIPs Agreement or national laws implemented pursuant to TRIPs allow for the filing of overly broad patent applications that include as part of the “invention” biological discoveries and genetic materials in their “natural state” or when the inventive step is examined in the patent filing procedures in an overly flexible manner. In this regard, national access laws have proved inadequate to prevent intellectual property rights’ being granted in situations where the genetic material has been illegally accessed or is used without authorisation in an inventive process or incorporated into an invention emanating from the national jurisdiction of a non-CBD party, clearly showing the international nature of the problem.

Some well-known cases of patent applications over naturally occurring genetic resources, biological discoveries or biological inventions using genetic resources being filed and, in some cases, granted include: Neem tree, turmeric, sweet berries, Enola bean and the ayahuasca plant. In all of these cases, there was neither an access contract with the source country nor the existence of consent by the relevant local communities.

### ***Sustainable use of Genetic Resources and Traditional Knowledge***

Many countries are seeking effective ways to implement the CBD and create coherence among international agreements dealing with genetic resources and traditional knowledge. Some steps have been achieved in the CBD and Food and Agriculture Organisation (FAO) contracts to clarify legal access through access contracts or through genetic material transfer agreements in the Bonn Guidelines on Access and Benefit Sharing and the International Treaty of Food and Agricultural Genetic Resources. Nevertheless, few tangible results have been achieved to prevent actions by those who illegally access genetic material or traditional knowledge.

Sustainable use of biodiversity can only be accomplished by establishing a system of access that requires WTO and World Intellectual Property Organisation (WIPO) Agreements to preserve genetic resources, measure environmental impacts, provide evidence of prior and informed consent by host governments and local communities, and ensure fair and equitable sharing of benefits deriving from genetic resources and traditional knowledge. Continued illegal access and unsustainable use threatens to promote “erosion” of genetic resources and traditional knowledge, reduce governmental funds available for conservation activities, create social inequity by failing to compensate traditional communities for use of their knowledge, and increase mistrust between the business community and biodiversity rich countries over the potential commercial use of genetic resources and traditional knowledge.

## 18.8 Protection of Traditional Knowledge under Existing Modes of IPR

### *Copyright, Patents and Trademark*

Copyright can be used to protect the artistic manifestations of Traditional Knowledge holders, especially artists who belong to indigenous and native communities, against unauthorised reproduction and exploitation. It could include literary works, theatrical works, pictorial works, textile works, musical works and three-dimensional works (eg. pottery and ceramics, sculptures).

The patent system could be used for the protection of technical solutions that are industrially applicable and universally novel and involve an inventive step. For genetic resources and Traditional Knowledge, patents may be taken out for instance for products isolated, synthesised or developed from genetic structures, micro-organisms and plants or animals or organisms existing in nature. Patent protection may also be obtained for processes associated with the use and exploitation of those resources, and also processes known to the native communities that meet the same conditions.

All goods manufactured and services offered by manufacturers, craftsmen, professionals and traders in native and indigenous communities, or by the bodies that represent them or in which they are grouped (co-operatives, guilds, etc.), may be differentiated from each other with trademarks and service marks. The trademark is an essential element in the commercial promotion of goods and services both nationally and abroad.

### *Plant variety Protection*

Plant variety protection, also referred to as a “plant breeder’s right”, is an exclusive right granted to the breeder of a new plant variety to exploit that variety. It is a form of intellectual property right and is an independent *sui generis* form of protection tailored to the protection of new plant varieties.

#### ◆ *Why protect plant variety?*

A question arises as to why should new plant varieties be protected? Breeding new varieties of plants requires a substantial investment in terms of skill, labour, material resources and money, and may take many years (10 to 15 years in the case of many plant species). A new variety, once released in the market, can in many cases be readily reproduced by others so as to deprive its breeder of the opportunity to profit adequately from his investment. The granting to a breeder of a new variety the exclusive right to exploit his variety both encourages him to invest in plant breeding and contributes to the development of agriculture, horticulture and forestry.

New plant products, cultivars and varieties of all species of plants may be protected under Plant Breeder’s Rights (PBRs). To be protected, a variety has to be different from known varieties and uniform and stable in its essential characteristics, even after a number of reproduction cycles. Varieties developed by the possessors of Traditional

Knowledge could also be legally protected in this way. Improvements to varieties representing the natural state of plant diversity could also constitute new varieties eligible for protection.

◆ *The International Union for the Protection of New Varieties of Plants (UPOV)*

The International Union for the Protection of New Varieties of Plants (UPOV) was established by the International Convention for the Protection of New Varieties of Plants (the UPOV Convention). The parties to the Convention (the member States) undertake to grant plant breeders' rights in respect of new plant varieties in accordance with the principles established in the Convention and thus on an internationally harmonised basis.

The subject matter of plant variety protection is the plant variety itself. The plant variety must exist physically to be protected. Knowledge frequently does not exist physically and is not appropriate for protection under the UPOV system. All new varieties meeting the distinctness, sufficient uniformity, stability and novelty criteria are protectable. New varieties developed by indigenous communities or farmers with traditional knowledge which have a fixed identity when reproduced may, in many cases, meet the UPOV criteria and be protectable.

In particular, it should be noted that the process of applying for plant variety protection is relatively simple and is normally completed by applicants themselves without the help of a legal specialist. As a result, transaction costs incurred in relation to the application and registration for plant variety protection are generally reasonably low. This feature facilitates the applications of small plant breeders, including individual farmers and local communities. Accordingly, the UPOV system could be used as a tool for promoting the plant varietal innovations of indigenous and local communities and thus the commercialisation of their traditional knowledge.

***Sui Generis Intellectual Protection for Traditional Knowledge***

The basic feature of a *sui generis* system should be to provide some form of protection for existing knowledge as a reward for ongoing contributions to biodiversity conservation and traditional knowledge safeguarding as well as protection for innovations which may be carried out with a view to develop new commercial products.

A *sui generis* traditional knowledge legal regime is one which ensures the integration of issues related to the protection of the intellectual assets of traditional knowledge holders with issues related to the sustainable management of the underlying resources. The development of a *sui generis* traditional knowledge protection regime could in this sense constitute a model for the development of 'sustainable intellectual property rights' providing for the integration of environment and agriculture concerns in intellectual property rights framework.

A *sui generis* traditional knowledge protection regime could be generally conceived along the lines of *sui generis* farmers' rights. *Sui generis* farmers' rights are in fact *sui generis* rights for holders of traditional knowledge related to plants used in agriculture.

The reason for bringing in farmers' rights is its link to the fact that plant variety protection has been the object of significant attention through Article 27(3)b of the TRIPs Agreement.

### ***Sui Generis Protection in India***

The Biological Diversity Act mentions the fact that traditional knowledge protection is an agenda which should be taken up by the Central Government. The Plant Variety Act limits itself to farmer's rights and does not take traditional knowledge in a broader sense. But, in order to foster further development in this regard, private proposals have been put forward in the past few years.

The first is the **"Traditional Knowledge (Preservation and Protection) Bill, 2000"**. This Bill seeks to achieve the protection of traditional knowledge in the public domain from unauthorised appropriation and to facilitate collective management of traditional knowledge. The main innovative feature of this Bill is to provide for a multi-layered management of traditional knowledge which seeks to put primary control with local people.

The other is the **"Traditional Knowledge (Protection and Regulation) Bill, 2003"**. This Bill proposes a rather different set of measures to achieve some form of traditional knowledge protection. In general, it provides an integrated response to traditional knowledge protection concerns. It is proposed as a replacement of the Biodiversity Act and is meant as an amendment to the Plant Variety Act.

The other is the **"Traditional Knowledge (Protection and Regulation to Access) Bill, 2009"**. This Bill proposes a *sui generis* model for the protection of traditional knowledge and traditional cultural expressions.

The other is the **"The Protection of Traditional Knowledge Bill, 2016"**. This Bill proposes protection, preservation, promotion and development of India's Traditional Knowledge and for matters connected therewith or incidental thereto.

### ***Traditional Knowledge and IPRs in The International Forums***

The issue of Traditional Knowledge has been addressed in several International Organisations and forums. The adoption of Article 8(j) of the CBD triggered the consideration of this issue. That provision is couched in programmatic terms, which are not operative or self-executing. In order to be applicable, national laws should determine how the communities' rights are to be recognised and enforced. However, it was an important step towards a more systematic treatment of the issue at the national and international levels.

Issues relating to Traditional Knowledge and intellectual property have been dealt with by UNEP/CBD, WIPO, UNCTAD and WTO. Some of these organisations have co-operated with each other. Thus, WIPO and UNEP undertook joint case studies on the role of IPRs in sharing of benefits from the use of this Knowledge and associated biological resources, and FAO and the CBD Secretariat regularly co-operate on issues of common interest in

agriculture. Of course, the role of these different organisations and forums significantly varies. While WIPO, WTO, FAO and the CBD may provide the framework for international negotiations, currently no negotiations are conducted under the auspices of UNCTAD, although it has convened a workshop on Traditional Knowledge. In addition, while WIPO is a specialised UN Organisation that promotes the protection of intellectual property and WTO deals with international trade (including TRIPs) in general, the CBD and FAO have a thematic focus on issues relating to genetic resources (as applied to agriculture in the case of FAO).

### ***World Intellectual Property Organisation (WIPO)***

WIPO's work on traditional knowledge and folklore began in 1978, when WIPO developed a *sui generis* model for national protection of folklore jointly with UNESCO. In 1998 WIPO launched a new work programme, including, *inter alia*, fact-finding missions to 28 countries on Intellectual Property (IP) and Traditional Knowledge, which produced a global report on Intellectual Property Needs and Expectations of Traditional Knowledge Holders' and three case studies on the role of Intellectual Property Rights in the sharing of benefits arising from the use of biological resources.

### ***Food and Agriculture Organisation (FAO)***

The FAO has a range of activities relating to access to genetic resources, their sustainable use, and promotion, protection and sustainable use of associated traditional knowledge. Activities in the Forestry Department, including the programmes on non-wood forest products and community forestry deserve special mention.

The biggest development was the adoption on 3 November 2001 of the International Treaty on Plant Genetic Resources for Food and Agriculture. It was adopted by the FAO Conference at its 31st session in Rome with no country voting against it (116 positive votes and two abstentions), after seven years of hard and complex negotiations.

The objectives of this Treaty are the conservation and sustainable use of plant genetic resources and the fair and equitable benefits arising out of their use, in harmony with the Convention on Biological Diversity, for sustainable agriculture and food security. This treaty:

- ◆ Covers all plant genetic resources relevant to food and agriculture.
- ◆ Provides a framework for international agricultural research.
- ◆ Provides for the realisation of Farmer's Rights by national governments through:
  - provides for the protection of relevant traditional knowledge,
  - provides equitable participation in sharing benefits derived from the use of plant genetic resources for food and agriculture,
  - provides participation in national decision-making related to their conservation and sustainable use.

### ***The World Trade Organisation (WTO)***

The Ministerial Declaration of the WTO's fourth Ministerial Conference (Doha-9-14 November 2001) emphasized the importance of Traditional Knowledge. It instructed the Council for Trade-Related Aspects of Intellectual Property Rights (TRIPs) to examine, *inter alia*, the relationship between the TRIPs Agreement and the Convention on Biological Diversity, the protection of traditional knowledge and folklore.

In the TRIPs Agreement, there is nothing that specifically prevents countries from developing systems to protect Traditional Knowledge at the national level. Developing countries have made a number of proposals to incorporate provisions related to the protection of such knowledge and avoidance of misappropriation in the TRIPs Agreement.

Developed countries do not, in general, contest the right of countries to protect Traditional Knowledge. They generally hold the view that the TRIPs Agreement and the CBD are mutually supportive and object to the idea of disclosure requirement of genetic resources in the process of patent applications.

### ***The United Nations Conference on Trade and Development (UNCTAD)***

The United Nations Conference on Trade and Development (UNCTAD) held on 30 October to 1 November 2000, an "Expert Meeting on Systems and National Experiences for Protecting Traditional Knowledge, Innovations and Practices". Over 250 people from 80 countries participated, including representatives of governments, indigenous groups, NGOs, Inter-Governmental Organisations (IGOs), academia, private companies, and international agencies and some 50 papers on country experiences were presented. The meeting's outcome, which reflected the diversity of views of experts, was taken up in February 2001 by UNCTAD's Commission on Trade in Goods and Services, and Commodities, which negotiated agreed recommendations to governments, to the international community, and to UNCTAD. Recommendations to governments included to:

- ◆ raise awareness about protection of Traditional Knowledge,
- ◆ support the innovation potential of local and indigenous communities, to facilitate the documentation of Traditional Knowledge,
- ◆ promote the commercialisation of Traditional Knowledge-based products.

### ***World Health Organisation (WHO)***

WHO has done a great deal of important work on traditional medicine. This includes the organisation of a WHO inter-regional Workshop on Intellectual Property Rights in the Context of Traditional Medicine in Bangkok, Thailand from 6-8 December 2000. This workshop *inter alia* discussed solutions for the protection of knowledge of traditional medicine. This workshop stressed the important role of traditional medicine in developing countries and reiterated that countries should develop a national traditional medicine policy, which should include the issue of Resource and Development in the area of traditional medicine, the formal recognition of traditional medicine systems and the integration of traditional medicine in the national health care system. The meeting

noted that many activities and products based on Traditional Knowledge, were important sources of income and health care, as well as environmentally sustainable routes to economic development for large parts of the population in many developing countries.

### ***United Nations Educational, Scientific and Cultural Organisation (UNESCO)***

UNESCO launched a cross-cutting initiative on “Local and Indigenous Knowledge Systems in a Global Society” (LINKS), which was included in UNESCO’s programme for 2002-03 and its medium-term strategy for 2002-07. The project was built upon early work on traditional knowledge in the 1970s and 1980s and the outcomes of the World Conference on Science, held in Budapest in 1999. It brought together all five UNESCO programme sectors, thereby underlining the importance of a historic approach to understanding, recognising and preserving local and indigenous knowledge. The development of synergies and linkages between indigenous knowledge and scientific knowledge for the purposes of biodiversity conservation is emphasized. Special attention will be paid to enhancing efforts to sustain indigenous knowledge as a living and dynamic resource within indigenous communities, with particular attention being paid to indigenous and local knowledge transmission, and the strengthening of dialogue between elders and youth. The opportunities and threats posed by formal educational processes and the innovative potential offered by new information and communication technologies will be examined in that context. UNESCO has also recently approved a Declaration on Cultural Diversity at its General Conference held in Paris in November 2001, which included an action plan that made a specific reference to supporting traditional knowledge, in particular that of indigenous peoples.

## **18.9 Conclusion**

Many of those involved in these issues consider matters of genetic resources, traditional knowledge and folklore to be linked to the laws and practices covering intellectual property use and protection. Indeed, there is already some overlap between the intellectual property system and more “informal” means of protection in these areas. For these reasons WIPO is working closely with its member States to clarify the intellectual property dimensions of these subjects.

Intellectual property is a legal concept which deals with creations of human ingenuity.

Such creations, whether they be inventions, designs, trademarks or artistic works, such as music, books, films, dances, sculpture or photography are considered and protected as property for a certain period in time, provided that the creators meet a certain criteria, for example, originality, defined by the relevant laws.

The intellectual property system is dynamic, characterised by its ability to evolve and adapt. Current technological advances, especially in information technology or biotechnology, as well as the evolution of society itself, necessarily call for constant re-evaluation of this system. Changes rarely take place without first being discussed - and often disputed - at national and international levels.

As for genetic resources and the sharing of the economic and other advantages that their utilisation generates, there are several different aspects to the link between access to those resources and intellectual property. For instance:

Genetic resources (whether or not preserved *in situ*) may have been altered by human intervention and may have taken on characteristics that are not found in nature. When those alterations lead to a biotechnological invention which is new, involves an inventive step and is capable of application on an industrial scale, the invention may qualify for patent protection.

Other altered resources, such as landraces or traditional varieties, are sometimes very important to local communities, and often to the future of plant genetic resources as well. They may not match the classical models of existing intellectual property regimes, but they would in certain cases qualify for protection by national legislation.

To give one example, any mention of ownership rights in a given invention achieved through access to genetic resources and traditional knowledge, or of the obligation to mention in patent documents the source of biological material and traditional knowledge sets off wide-ranging and often contentious debate. This debate reflects the importance of the material, moral, and sometimes sacred interests at stake, and also of the practical applications that exist in fields such as pharmaceutical, chemical and agricultural research.

# UNIT 19

## INTERNATIONAL CONVENTION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

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### 19.1 Introduction

Plant genetic resources are important for food and agriculture. It is essential that plant genetic resources should be conserved, improved and preserved for the benefit of the present as well as the future generations. Plant genetic resources are the raw material indispensable for crop genetic improvement. Genetic improvement can be by means of farmers' selection, classical plant breeding or modern biotechnologies. Therefore, it is essential that both the farmers as well as the breeders are protected for such genetic improvements.

The Paris Convention was the first attempt to address the issues of intellectual property protection at an international level. The International Union for the Protection of New Varieties of Plants (UPOV) system of plant variety protection came into being with the adoption of the International Convention for the Protection of New Varieties of Plants by a Diplomatic Conference in Paris on 2 December 1961. This was the point at which there was recognition of the intellectual property rights of plant breeders in their varieties on an international basis. The first UPOV Act was thus drafted in 1961, principally by industrialised governments seeking to provide protections for plant breeders in their own and overseas markets. The UPOV was later revised in Acts adopted in 1972, 1978 and 1991.

Following is a detailed study of the UPOV System of Plant Variety Protection, explaining what a plant variety is, the nature of plant breeding, the need for protection of plant varieties, effect of such protection and giving some basic information on the UPOV's organisational structure.

## 19.2 Plant Variety Protection

Protection is afforded to plant breeders as an incentive for the development of new varieties of plants, in order to provide sustainable progress in agriculture, horticulture and forestry. Improved varieties are a necessary, and very cost-effective, means of improving productivity, quality and marketability for farmers and growers. Breeding new varieties of plants requires a substantial investment in terms of skill, labour, material resources, money and time. The opportunity to obtain certain exclusive rights in respect of new varieties provides successful plant breeders with a better chance of recovering their costs and accumulating the funds necessary for further investment. In the absence of plant breeders' rights, those aims are more difficult to achieve since there is nothing to prevent others from multiplying the breeder's variety and selling it on a commercial scale, without recognising in any way the work of the breeder.

### *What is Plant Variety?*

A variety is a plant grouping within a single botanical taxon of the lowest known rank, defined by the expression of the characteristics resulting from a given genotype or combination of genotypes. The variety should be distinguished from other plant grouping by expression and should be considered as a unit with regard to its suitability for being propagated unchanged.

### *Importance of plant breeding*

Knowledge of nature is the raw material for the development of new varieties. Diversity is of great importance to plant breeding. Throughout history even the poorest farmer has been a plant breeder, perpetually improving seeds. For thousands of years, first by domestication and then simply by selecting the best plants in their fields to provide seed for their next crop, farmers have adapted plants to their needs. They have also progressively improved them. Despite the best efforts of the farmer-breeder, the development of new and more productive varieties with better qualities has been achieved only by the development of scientific plant breeding. New scientific and technical developments over the past century have permitted a much greater rate of improvement and efficiency in plants.

Agriculture is a way of life for the third world farmers and the transformation to the industrial process can affect their very survival. The present advances have resulted in a situation where agriculture has shifted from land to the laboratory. While assessing the advantages of plant breeding, these disadvantages have to be considered and adequate safeguards have to be incorporated to avoid these problems.

### ***Need for Protection***

New varieties of plants which produce improved yields, higher quality or provide better resistance to plant pests and diseases are a key element and a most cost-effective factor in increasing productivity in agriculture, horticulture and forestry, whilst minimising the pressure on the natural environment. The tremendous progress in agricultural productivity in various parts of the world is largely based on improved varieties.

World population continues to grow and it is necessary to find ways of increasing output through higher yields and less wastage, thereby minimising the use of land and other resources, all of which are becoming scarcer. But plant breeding has wider economic and environmental benefits than just increasing food production. The development of new improved varieties with, for example, higher quality increases the value and marketability of crops in the global market of the twenty-first century. The breeding and exploitation of new varieties is a decisive factor in improving rural income and overall economic development.

The process of plant breeding is long and expensive. Few breeders spend many years of their life, making substantial economic investment, in developing a new variety. In such a situation, if they are compensated for their efforts, then it would prove to be a worthy incentive. Hence, sustained breeding efforts are only possible if there is a chance to reward investment.

### ***Effects of plant variety protection***

***Increases efficiency:*** Countries with strong intellectual property protection for plant varieties have an efficient plant breeding which increases the available pool of new varieties. This will have an impact on the agricultural as well as food sector of the Country.

***Enhances foreign investment:*** Like all other forms of intellectual property protection, plant variety protection also enhances foreign investment as foreign breeders will be encouraged to invest in Countries having plant variety protection systems.

Agricultural biotechnology is a rapidly developing industry. One of the factors that hinders the development of agricultural biotechnology is the lack of strong legal protection systems for plant varieties.

The introduction of a legal framework is a suitable approach to encourage breeding of new varieties of plants for the benefit of society. Plant Variety Protection Laws should ensure that the rights of the breeder take into account the interests of the farmers. Legislation should ensure that the farmers who have identified, conserved and subsequently bred the genetic diversity are also given due share. This will act as an incentive for the farmer to conserve bio-diversity. An effective balance between the rights of the breeders and the farmers will be the ideal piece of legislation.

## 19.3 UPOV Convention

The International Union for the Protection of New Varieties of Plants (UPOV) is an intergovernmental organisation with headquarters in Geneva (Switzerland). The International Union for the Protection of New Varieties of Plants or UPOV (French: *Union internationale pour la protection des obtentions végétales*) is an intergovernmental organisation with headquarters in Geneva, Switzerland. The current Secretary-General of UPOV is Mr. Francis Gurry.

UPOV was established by the International Convention for the Protection of New Varieties of Plants. The Convention was adopted in Paris in 1961 and revised in 1972, 1978 and 1991. The objective of the Convention is the protection of new varieties of plants by an intellectual property right. By codifying intellectual property for plant breeders, UPOV aims to encourage the development of new varieties of plants for the benefit of society.

The purpose of the UPOV Convention is to ensure that the members of the Union acknowledge the achievements of breeders of new varieties of plants, by granting to them an intellectual property right, on the basis of a set of clearly defined principles.

To be eligible for protection, varieties have to be (i) distinct from existing, commonly known varieties, (ii) sufficiently uniform, (iii) stable and (iv) new in the sense that they must not have been commercialised prior to certain dates established by reference to the date of the application for protection.

### *Importance of its Membership*

By becoming a member of UPOV, a State or an intergovernmental organisation signals its intention to protect plant breeders on the basis of principles that have gained worldwide recognition and support. It offers its own plant breeders the possibility of obtaining protection in the territories of other members and provides an incentive to foreign breeders to invest in plant breeding and the release of new varieties on its own territory. It has the opportunity through membership of UPOV to share in and benefit from the combined experience of the members and to contribute to the worldwide promotion of plant breeding. A constant effort of intergovernmental co-operation is necessary to accomplish such an aim and this requires the support of a specialised Secretariat.

### *Basic functions*

The main activities of UPOV are concerned with promoting international harmonisation and co-operation, mainly between its members, and with assisting countries and certain organisations in the introduction of the UPOV system of plant variety protection. The fact that the UPOV Convention defines the basic concepts of plant variety protection that must be included in the domestic laws of the members of the Union leads, in itself, to a great degree of harmony in those laws and in the practical operation of the protection systems. Such harmony is enhanced, firstly, through specific activities undertaken within UPOV leading to recommendations and model agreements and forms and, secondly,

through the fact that UPOV serves as a forum to exchange views and share experiences. UPOV has established a detailed set of general principles for the conduct of the examination of plant varieties for distinctness, uniformity and stability, and more specific guidelines for some 230 genera and species. These documents are progressively updated and extended to further genera and species. Their use is not limited to plant variety protection but extends to other areas such as national listing and seed certification. The most intense co-operation between members concerns the examination of plant varieties. It is based on arrangements whereby one member can conduct tests on behalf of others or whereby one member accepts the test results produced by others as the basis for its decision on the grant of a breeder's right. Through such arrangements, members are able to minimise the cost of operating their protection systems and breeders are able to obtain protection in several territories at relatively low cost. The UPOV members and the UPOV Secretariat maintain contacts with and provide legal, administrative and technical assistance to the governments of a growing number of States expressing interest in the work of the Union and in the idea of plant variety protection. Regular contacts are also maintained with many intergovernmental and international non-governmental organisations. Information on plant variety protection legislation is published in *Plant Variety*.

### ***Its management***

The Council of UPOV consists of the representatives of the members of the Union. Each member that is a State has one vote in the Council. Under the 1991 Act, certain intergovernmental organisations may also become members of the Union. The Council is responsible for safeguarding the interests and encouraging the development of the Union and for adopting its programme and budget. The Council meets once a year in ordinary session. If necessary, it is convened to meet in extraordinary session. The Council has established a number of Committees, which meet once or twice a year.

The Secretariat of UPOV (called "the Office of the Union") is directed by a Secretary-General. Under a co-operation agreement with the World Intellectual Property Organisation (WIPO), a Specialised Agency of the United Nations, the Director General of WIPO is the Secretary-General of UPOV. He is assisted by a Vice Secretary-General.

### ***System of Protection***

The Convention defines both how the organisation must be governed and run, and the basic concepts of plant variety protection that must be included in the domestic laws of the members of the Union. These concepts include: The criteria for new varieties to be protected: novelty, distinctness, uniformity and stability.

In order to be granted breeder's rights, the variety in question must be shown to be new. This means that the plant variety cannot have previously been available for more than one year in the applicant's country, or for more than four years in any other country or territory. The variety must also be distinct, that is, easily distinguishable through certain characteristics from any other known variety (protected or otherwise).

The other two criteria, uniformity and stability, mean that individual plants of the new variety must show no more variation in the relevant characteristics than one would naturally expect to see, and that future generations of the variety through various propagation means must continue to show the relevant distinguishing characteristics. A breeder can apply for rights for a new variety in any union member country, and can file in as many countries as desired without waiting for a result from previous applications. Protection only applies in the country in which it was granted, so there are no reciprocal protections unless otherwise agreed by the countries in question.

There is a right of priority, and the application date of the first application filed in any country is the date used in determining priority.

The rights conferred to the breeder are similar to those of copyright in the United States, in that they protect both the breeder's financial interests in the variety and his recognition for achievement and labour in the breeding process. The breeder must authorise any actions taken in propagating the new variety, including selling and marketing, importing and exporting, keeping stock of, and reproducing. This means that the breeder can, for example, require a licensing fee for any company interested in reproducing his variety for sale. The breeder also has the right to name the new variety, based on certain guidelines that prevent the name from being deliberately misleading or too similar to another variety's name.

There are explicit exceptions to the rights of the breeder, known as the "breeder's exemption clause", that make it unnecessary to receive authorisation for the use of a protected variety where those rights interfere in the use of the variety for a private individual's non-monetary benefit, or the use of the variety for further research. For example, the breeder's rights do not cover the use of the variety for subsistence farming, though they do cover the use of the variety for cash crop farming.

Additionally, the breeder's authorisation is not required to use a protected variety for experimental purposes, or for breeding other varieties, as long as the new varieties are not "essentially derivative" of the protected variety.

The Convention specifies that the breeder's right must be granted for at least 20 years from grant date, except in the case of varieties of trees or vines, in which case the duration must be at least 25 years.

Finally, there are provisions for how to negate granted breeder's rights if the rights are determined to be unfounded. That is, if it is discovered after the application has been granted that the variety is not actually novel or distinct, or if it is discovered to not be uniform or stable, the breeder's rights are nullified. In addition, if it is discovered that the person who applied for protection of the variety is not the actual breeder, the rights are nullified unless they can be transferred to the proper person. If it is discovered after a period of protection that the variety is no longer uniform and stable, the breeder's rights are cancelled.

### ***UPOV and Genetically Modified Plant Varieties***

The UPOV has been updated several times to reflect changing technology and increased understanding of how plant variety intellectual property protection must work. The last revision was in 1991, and specifically mentioned genetic engineering only insofar as it is a method of creating variation. Under the UPOV Convention alone, genetically modified crops and the intellectual property rights granted to them are no different than the intellectual property rights granted for traditionally bred varieties. It is important to note that this necessarily includes the ability to use protected varieties for subsistence farming and for research.

In October 2004, two joint Symposia were held in Geneva with the World Intellectual Property Organisation (WIPO). These Symposia were the WIPO-UPOV Symposium on Intellectual Property Rights in Plant Biotechnology (24 October 2003) and the WIPO-UPOV Symposium on the Co-Existence of Patents and Plant Breeders' Rights in the Promotion of Biotechnological Developments (25 October 2003). No new policy was created at either of these events, but a consensus emerged that both patents and plant-breeder's rights must combine to promote plant biotechnology.

As a policy matter, the UPOV is known to consider open and un-restricted access to the genetic resources of protected plant varieties to be important to the continued development of new varieties. This opinion is indicated in the "breeders' exemption" clause of the Convention, as described above, and was reinforced in October of 2005 in a reply to a notification from the Convention on Biological Diversity.

In April of 2003, the Convention on Biological Diversity asked the UPOV for comment on the use of Genetic Use Restriction Technologies (also known as terminator genes) as they relate to the promotion of intellectual property rights. In the summary of their response, the UPOV stated that intellectual property protection is necessary because breeders must have the ability to recoup their money and labour investment in creating new varieties, and in that light, plants with terminator genes may still be accepted for protection if they meet the other criteria. However, the UPOV comment states that the Convention and its system of protection is sufficient to protect intellectual property rights, and that with proper legal protections in place, technologies like terminator genes should not be necessary.

## **19.4 UPOV and the System of Protection Provided**

UPOV has been established by the International Convention for the Protection of New Varieties of Plants ("the UPOC Convention"), which was signed in Paris in 1961. The Convention came into force in 1968. It was revised in Geneva in 1972, 1978 and 1991. The 1978 Act came into force on 8 November 1981. After the 1961 Act, drastic technical developments took place resulting in the emergence of genetic engineering and advanced tissue culture. These developments and the experience of operating the 1961 Convention, provided powerful motivators for the 1991 revision of the Convention. The 1991 Act came into force on 24 April 1998. By becoming a member of UPOV, a State signals its

intention to protect plant breeders on the basis of principles that have gained worldwide recognition and support. It offers its own plant breeders the possibility of obtaining protection in the other member States and provides an incentive to foreign breeder's to invest in plant breeding and seed production on its own territory. It has the opportunity through membership of UPOV to share in and benefit from the combined experience of the member States and to contribute to the worldwide promotion of plant breeding. A constant effort of intergovernmental co-operation is necessary to accomplish such an aim.

### ***Objectives of UPOV Convention***

The objective of the UPOV Convention is to provide and promote an effective system of plant variety protection, with the aim of encouraging the development of new varieties of plants, for the benefit of the society. The objective of plant breeding is to produce genetic structures that are new, distinct, uniform and stable. Breeders in all members of UPOV Convention enjoy the same level of protection. Enhancing international harmonisation is an indispensable tool for the protection of new plant varieties, for international trade and for the transfer of technology. Most of the plant variety legislations around the world is based on the UPOV legislation.

### ***A Sui Generis system of protection***

The UPOV Convention is a *sui generis* system of plant variety protection reflecting the specific feature of the subject of protection, which is a new plant variety and the circumstance under which this plant variety is used. The scope of protection under the Convention has been carefully defined to provide incentive for breeders to develop new varieties of plant beneficial for both farmers and consumers. A key feature of the UPOV Convention is that protected varieties, as a most important plant genetic resource, may be freely used by the worldwide community of breeder's for further breeding. Plant breeders' rights thereby help to enhance sustainable agriculture, productivity, income, international trade and economic development in general.

### ***The 1978 UPOV Act***

The 1978 UPOV Act includes eligibility requirements, exclusive rights, national treatment, reciprocity, terms of protection and exceptions and limitations to exclusive rights. It does not, however, contain any provisions on MFN treatment or enforcement.

### ***Subject matter requirements***

***Limited number of protected genera or specie:*** Not all plant varieties must be protected under the 1978 Act. Rather, Article 4 provides that member States are to progressively extend protection to an increasing number of genera or species, beginning with five on the date the treaty enters into force for that State and ending with twenty-four within eight years. In addition, member States are free to limit the Act's application within a particular genus or species to varieties with a particular manner of reproduction or multiplication, or a certain end-use.

*Preclusion of dual protection with breeder's right and patent:* The 1978 Act permits its signatories to protect plant varieties either with a distinct breeder's right or with a patent. However, Article 2(1) precludes member States from granting both forms of protection "for one and the same botanical genus or species".

*Protection of discovered varieties required:* Although the 1978 Act focuses on plant varieties created through classical breeding methods, it is generally accepted that the treaty requires member States to protect varieties which have been discovered.

### *Eligibility requirements*

Assuming that a plant variety falls within a protected genera or species, it is eligible for protection under the 1978 Act only if it is:

*Novelty:* To avoid protection for plant varieties that have already been exploited or are a matter of common knowledge, a new variety in which a breeder seeks protection must not have been sold on the market for more than a specified period of years prior to the date of application for protection (Article 6(1)(b)).

*Distinctness:* The 1978 Act states that a protectable plant variety must be "clearly distinguishable in one or more important characteristics from any other variety whose existence is a matter of common knowledge at the time when protection is applied for" (Article 6(1)(a)).

*Homogeneity:* Under the 1978 UPOV Act, a variety has to be "sufficiently homogeneous, having regard to the particular features of its sexual reproduction or vegetative propagation" (Article 6(1)(c)).

*Stability:* The stability requirement is a temporal one, requiring the breeder to show that the essential characteristics of its variety are homogeneous or uniform over time, even after repeated reproduction or propagation (Article 6(1)(d)). In practice, what has been shown to be homogeneous is usually considered to be stable as well.

### *National treatment and reciprocity*

Member states must grant the rights in the same manner to both national breeders and to breeders who reside in or are nationals of other 1978 Act member States. However, where a State extends legal protection to a specific genus or species, or where it provides more extensive exclusive rights to breeders than the rights required under the treaty, reciprocity is permitted.

### *Term of protection*

The 1978 Act requires a minimum term of protection of fifteen years, with the exception of vines, forest trees, fruit trees and ornamental trees, which are protected for no less than eighteen years.

### ***The 1991 UPOV Act***

The limited scope of the 1978 Act led a number of member States of the UPOV to adopt a revised Act with enhanced rights for plant breeders.

#### *Subject matter requirements*

*Phased-in protection of all genera or species:* Unlike its predecessor, the 1991 Act requires States to protect at least fifteen plant genera or species upon ratifying or acceding to the Act, and to extend protection to all plant varieties within ten years (Article 3(2)).

*Dual protection with breeder's right and patent permitted:* In response to demands from breeders in industrialised countries, the 1991 Act removed the 1978 Act's ban on dual protection and now permits member States to protect the same plant variety with both a breeders' right and a patent.

*Protection of discovered varieties:* The 1991 Act makes explicit the 1978 Act's implicit requirement that discovered varieties be protected. It does so through Article 1(iv)'s definition of a "breeder" as including a "person who bred, or discovered and developed, a variety".

#### *Eligibility requirements*

The four eligibility requirements that must be demonstrated to merit protection for a specific variety - novelty, distinctness, uniformity and stability - are preserved in the 1991 Act, subject to only minor changes in scope and wording (Articles 7 to 9). Thus, the 1991 Act has received the same criticism as the 1978 Act for its encouraging of genetic standardisation and its inability to protect more diverse plant varieties, traditional varieties or cultivated landraces.

#### *Rights of Breeder*

Member States must grant to the breeder certain rights over the end product of his variety namely, the harvested material. The effect of a grant of protection, in conformity with the UPOV Convention, is that the authorisation of the holder of the breeder's right is required before certain acts of exploitation of the variety can be affected. The breeder has the sole right to authorise-

- ◆ production or reproduction (multiplication),
- ◆ conditioning for the purpose of propagation,
- ◆ offering for sale,
- ◆ selling or other marketing,
- ◆ exporting,
- ◆ importing,
- ◆ stocking for any of these purposes.

The 1991 Act strengthens the breeder's position in very specific ways. It requires UPOV member States to grant to the breeder a right over all production of seed or other planting material, but leaves each State free to exclude from the breeders' right the use of seed saved and used on a farm. The protection accorded under the Convention is not a positive right to exploit the variety.

#### *Nullity of Breeder's Rights*

The Convention enables the Contracting Parties to nullify the breeder's right in cases: where the variety that was granted a breeder's, right did not qualify the requirements of novelty and distinctiveness at the time of the application for the grant of the right.

- where the grant of the breeder's right has been essentially based upon information and documents furnished by the breeder, and the condition regarding uniformity and stability was not satisfied at the time of application.
- that the breeder's right has been granted to a person who is not entitled to it.

#### *Cancellation of Breeder's Rights*

Where the condition of uniformity and stability are no longer fulfilled, the breeder's right granted shall be cancelled. The breeder's right shall also be cancelled if after being requested to do so and within a prescribed period.

The breeder does not provide the authority with the information, documents or material deemed necessary for verifying the maintenance of the variety.

The breeder fails to pay such fees as may be payable to keep his right in force; or the breeder does not propose, where the denomination of the variety is cancelled after the grant of the right, another suitable denomination.

#### *National treatment required*

Whatever the particular exclusive rights member States adopt in their plant variety protection laws, those rights must also be provided to the nationals of other 1991 Act member States. Unlike the 1978 Act, granting rights only on condition of reciprocity is not permitted (Article 4). For example, if a 1991 Act member chooses to grant more expansive exclusive rights to breeders than the exclusive rights required by the 1991 Act, it must grant those rights to breeders from all other 1991 Act member States.

#### *Terms of protection*

The 1991 Act extends the term of protection to 20 years, and requires a 25-year term for tree and vine varieties.

#### *Exceptions and limitations*

Another area of major revision concerns the reduced scope of exceptions and limitations to breeder's exclusive rights, which is found in Article 15 of the 1991 Act.

Private, non-commercial exception:

The 1991 Act makes explicit what was only implicit in the 1978 Act, namely that private, non-commercial activities with respect to new varieties are outside of the breeder's control. This exception would presumably permit subsistence farmers to use protected seeds and other propagating material for their own consumption.

Research exception:

The 1991 Act also recognises that breeders cannot restrict "acts done for experimental purposes". This exception would permit research and testing of protected varieties for scientific purposes that does not lead to commercial exploitation.

Limited breeders' exemption:

Like its predecessor, the 1991 Act recognises the right of breeders to use protected varieties to create new varieties. However, this exception is itself restricted in its application to such new varieties as are not "essentially derived" from protected varieties. (Articles 14(5) and 15). The drafters added this restriction to prevent second generation breeders from making merely cosmetic changes to existing varieties in order to claim protection for a new variety.

### *Breeder's privilege*

One of the key features of the UPOV Convention is that protected varieties, may be freely used by the worldwide community of breeders for further breeding. The rights of the breeder are subject to controls, in the public interest, against any possible abuse. The authorisation of the holder of a plant breeder's right is not required for the use of his variety for research purposes, including its use in the breeding of further new varieties. It is perfectly adapted to the protection of plants by safeguarding the legitimate interest of the breeder while leaving free access to genetic variability for the further work of variety creation.

### *Essentially derived varieties*

To discourage close copying of successful varieties, the 1991 Convention introduced a system of dependency for essentially derived varieties. If a genetic engineer uses a protected variety as the carrier for his innovation he may not be able to use the engineered variety without the authority of the owner of the protected variety, if the engineered variety is considered to be "essentially derived" from the protected variety. For a variety to be considered as essentially derived, it must fulfil three requirements in relation to the initial variety while retaining the expression of the essential characteristics of the initial variety namely:

- ◆ clear distinctness in the sense of the UPOV Convention;
- ◆ conformity to the initial variety in the expression of the essential characteristics that result from the genotype or combination of genotypes of the initial variety;
- ◆ predominant derivation from an initial variety.

### *Compulsory licences in the public interest*

Article 17 of the 1991 Act contains a compulsory licence provision. It permits members to restrict breeders' exclusive rights only for reasons of public interest and requires payment of equitable remuneration to the breeder whose rights are limited.

## 19.5 Protection of Plant Variety Under TRIPs

TRIPs Agreement provides that members may exclude essentially biological processes for the production of plants or animals other than non-biological and microbiological processes (Article 27.3(b)). However, the Agreement states that members shall provide for the protection of plant varieties either by patents or by an effective *sui generis* system or by a combination of both thereof. Considerable flexibility is left to the members of the Agreement to adopt the system of protection suited to them.

At the time of adoption of the TRIPs Agreement, most of the developed countries had systems for protection of plant varieties and most of them had adhered to the UPOV Convention.

But most of the developing countries have an agricultural economy and so protecting the interests of the breeders in preference to farmers can have a detrimental effect to the economy of the country. Taking UPOV as an international platform can also have consequences as the 1991 version of UPOV is more suited to the interests of the breeders rather than the farmers. Traditional and improved varieties of plants are bred by farmers under local farm conditions. Farmer identifies and improves seeds and also adds to the general pool of resources. UPOV system has been tested in the Western countries that have already a developed plant breeding system.

### a) Convention on Biological Diversity

The Convention recognised the importance of traditional men and women in the conservation and preservation of biodiversity. The CBD has affirmed that the States have sovereign rights over their own biological resources. One of the objectives of the Convention is the fair and equitable sharing of the benefits arising out of the utilisation of the genetic resources. The CBD provides access to genetic resources subject to the requirement of the national legislation and international law. The Convention gives emphasis on the conservation of biological diversity. Provision is made for *ex-situ* and *in-situ* conservation. The Convention specifies that access to genetic resources has to be determined by the national governments subject to their national legislation. Each contracting party shall develop and carry out scientific research based on genetic resources with the co-operation of other contracting parties. The benefits arising from the commercial utilisation of genetic resources shall be shared upon mutually agreed terms between contracting parties.

The Convention recognises the sovereign rights of the Nations over their natural resources. Access to genetic resources requires the consent of the Contracting Parties that are countries of origin and the access is to be granted on mutually agreed terms.

**b) International Treaty on Plant Genetic Resources for Food and Agriculture**

This is a treaty which to a large extent adopts the idea of Biodiversity Convention implying the idea of protection of biodiversity. This treaty came into force on 29 June 2004. India also has ratified this treaty. Its three basic objectives are benefit sharing, conservation and sustainable use. While the previous instrument - the International Undertaking on Plant Genetic Resources, 1983 promoted the sharing of plant genetic resources, the new treaty affirms States' sovereign rights over plant genetic resources for food and agriculture and condones the introduction of intellectual property rights. Though the treaty does not directly focus on plant breeder's rights, it delineates a regime for benefit sharing and access to biological diversity which links intellectual property with the treaty.

The treaty ensures sustainable use of plant genetic resources by requiring the Contracting parties to develop and maintain appropriate policy and legal measures that promote the sustainable use of plant genetic resources for food and agriculture. It also focuses on the situation of farmers by recognising their contribution to conserving and enhancing plant genetic resources for food and agriculture. The granting of plant variety rights benefited the developed countries and in exchange for this, the developing countries negotiated the concept of farmers' rights. The right to save, use, exchange and sell farm-saved seeds and propagating material, and to participate in decision-making and in the fair and equitable sharing of benefits arising from, the use of plant genetic resources for food and agriculture, is recognised in the Treaty and is considered as fundamental to the realisation of farmers' rights.

**c) Plant Variety Protection and Farmer's Rights in India**

For many years, India did not allow patent on seeds or plants and had no system of protection for plant varieties. The patent system in India emerged when India was a colony of the British and therefore the British had used its own system as a drawing account while drafting the Indian Patent Act. The feudalism and colonialism in India played a role in shaping the concept of property in India.

Indian policy was based on the concept that plant varieties and seeds were the common heritage of mankind. Though there was an increase in the rate of growth in agriculture, the State could not meet the rising demand for the food. The need for attaining self-sufficiency in food led to the pursuit of the green revolution. During the colonial period food production was on the decline. Land reforms had a great impact on the agrarian structure. The rise of the modern technology culminated in agricultural research. This formed the foundation of technological farming.

The first five year plan laid emphasis on agriculture with the primary aim of the Government of India. The foremost legislation in India for the protection of seeds was the Seeds Act, 1966, which provided for regulating the quality of certain seeds for sale.

The Indian Patent Act specifically excludes plants and animals in whole or any part thereof including seeds, varieties and species and essentially biological processes for production of plants and animals from the ambit of patent production.

Being a signatory to the TRIPs Agreement, India had to shift from its age old principle of common heritage and was obliged to provide either a patent protection or a *sui generis* system of protection or a combination thereof to plant varieties. The clause in the TRIPs Agreement leaves room to the member countries either to grant a patent protection or an effective *sui generis* system of protection. This led to a heated debate as to the system of protection to be adopted for plant varieties. Breeder's rights provide incentive only to the seed industry without taking into consideration the interests of the farmers. The enactment of the *Plant varieties and Farmer's Rights Act* saw an end to the heated debates of protecting the interests of the farmers alongside that of the breeders. Thus, the Indian legislation takes within its sweep the rights of the farmers along with that of the breeders.

### ***Object of the Act***

The Act aims to establish an effective system for the protection of plant varieties, the rights of the farmers and the breeders and to encourage the development of new varieties of plants in line with the TRIPs Agreement. This will facilitate the growth of the seed industry in the country and will ensure the availability of high quality seeds and planting material to the farmers.

### ***Varieties covered by Protection***

A variety shall be entitled to registration, provided the genera or species is specified in the Official Gazette or is an extant variety or a farmer's variety and that the applicant complies with the formalities provided by the law and also that the applicant pays the required fees.

Thus, the act makes clear that an application for registration can be made only in respect of three kinds of varieties:

A variety whose genera or species is specified in the Official Gazette under Section 29(2);

- 1) An extant variety;
- 2) A farmer's variety;
- 3) Essentially derived variety

#### **1) Extant Variety**

The Plant Protection Act of India has defined an extant variety as:

- ◆ a variety which is available in India and includes a variety notified under Section 5 of the Seeds Act;
- ◆ a farmer's variety;
- ◆ a variety about which there is common knowledge, or any other variety in the public domain.

## 2) Farmer's Variety

Farmer's varieties are cultivated and evolved by the farmers using traditional methods in their fields, about which they have knowledge. Traditionally cultivated and evolved varieties of farmers or the wild relative or land race of a variety of which the farmers have common knowledge is considered as a farmer's variety. A farmer as defined in the Act includes a person:

- ◆ who cultivates the land himself; or
- ◆ cultivates crops by directly supervising the cultivation of land through any other person; or
- ◆ conserves and preserves, severally or jointly, with any person any wild species or traditional varieties or adds value to such wild species or traditional varieties through selection and identification of their useful properties.

The UPOV Convention defines plant variety in terms of a plant grouping within a single biological taxon of the lowest known rank, which satisfies certain conditions.

## 3) Essentially Derived Variety

The concept of essentially derived varieties emerged with the UPOV Convention 1991. The definition of essentially derived variety in the Indian Act is similar to that found in the UPOV Convention. For a variety to be considered as essentially derived, it must fulfil three requirements in relation to the initial variety while retaining the expression of the essential characteristics of the initial variety, namely:

Predominant derivation from the initial variety while retaining the essential characteristics that result from the genotype or combination of genotypes of such initial variety;

Clear distinctiveness from the initial variety; and

Conformity to the initial variety in the expression of the essential characteristics that result from the genotype or combination of genotypes of the initial variety.

### ***Conditions for Protection***

According to the provisions of the Act, a new variety shall be registered subject to satisfying the requirements of novelty, distinctiveness, uniformity and stability.

#### ***Novelty:***

According to Section 15(3) (a), the condition of novelty is satisfied if at the date of filing of the application for registration for protection, the harvested material of such variety has not been sold or disposed off with the consent of the breeder for the purpose of exploitation of such variety.

***Distinctness:***

The Act states that a protectable plant variety must be “clearly distinguishable in one or more important characteristics from any other variety whose existence is a matter of common knowledge at the time when protection is applied for”.

***Uniformity:***

Under the Plant Variety Act, a variety has to be “sufficiently homogeneous, having regard to the particular features of its sexual reproduction or vegetative propagation”. (Section 15 (3)(c))

***Stability:***

The stability requirement is a temporal one, requiring the breeder to show that the essential characteristics of its variety are homogeneous or uniform over time, even after repeated reproduction or propagation (Section 15(3) (d)). In practice, what has been shown to be homogeneous is usually considered to be stable as well.

***Farmer’s Rights***

The farmer shall be deemed to be entitled to save, use, sow, re-sow, exchange, share or sell his farm produce including seed of a variety protected under this Act in the same manner as he was entitled before the coming into force of this Act. However, the farmer is not entitled to sell ‘*branded* seed of a variety protected under this Act’.

There are other kinds of rights of the farmers. The Act acknowledges the role of rural communities as contributors of landraces and farmer varieties in the breeding of new plant varieties. Breeders wanting to use farmers’ varieties for creating Essentially Derived Varieties (EDVs) cannot do so without the express permission of the farmers. Anyone can register a community’s claim and have it duly recorded at a notified center. If the claim is found to be genuine, a share of profits made from the new variety has to go into a National Gene Fund.

***Exemption from fees:***

Protecting farmers from the new set of provisions being put in place, the new Act stipulates that farmers wishing to examine documents and papers or receive copies of rules and decisions made by the various authorities will be exempt from paying any fees.

***Disclosure:***

Explicit and detailed disclosure in the passport data about the parentage of the new variety is required. If any concealment is detected in the passport data, the Breeders certificate stands to be cancelled.

***No terminator technology:***

Breeders must submit an affidavit that their variety does not contain a Gene Use Restricting Technology (GURT) or terminator technology. Genetic use restriction technology

(GURT), is the name given to proposed methods for restricting the use of genetically modified plants by causing second generation seeds to be sterile.

*Protection against innocent infringement:*

Rightly assuming that farmers may unknowingly infringe Breeders' Rights since they may not be used to the new situation, the law provides for protection from prosecution for innocent infringement.

***Rights of Breeders and Researchers***

Breeders' Rights are fully protected by the legislation. On registration, the breeder has complete rights of commercialisation for the registered variety. These include the right to produce, sell, market, distribute, import or export the registered variety.

*Penalties for infringing Breeders' Rights:*

Violation of a Breeders' Right can apply to the variety itself, as well as to its packaging. Penalties can range from Rs. 50,000 to ten lakh as well as a jail term ranging from three months to two years, depending on the severity of the damage caused. For repeated offence, fines can go up to Rs. 20 lakh and the jail term to three years. The new law has provisions for Researchers' Rights which allow scientists and breeders free access to registered varieties for research. The registered variety can also be used for the purpose of creating new varieties. This flexibility is curtailed only when the registered variety needs to be used repeatedly as a parental line for commercial production of another variety.

***Compulsory Licenses***

The grant of a compulsory license is provided for if it is shown that the reasonable requirements of the public for seeds have not been satisfied or that the seed of the variety is not available to the public at a reasonable price. The breeder may file an opposition, but should the charge be valid, the breeder can be ordered to grant a compulsory license under certain conditions, including the payment of a reasonable license fee. However, no compulsory license will be awarded if the Breeder can demonstrate reasonable grounds for his inability to produce the seed.

***Plant Varieties and Farmer's Rights Authority***

*Constitution of the Authority:*

The Central Government shall by notification in the Official Gazette establish an Authority to be known as the Protection of Plant Varieties and Farmers' Rights Authority.

The Authority shall consist of a Chairperson and fifteen members.

The Chairperson shall be a person of outstanding calibre and eminence especially in the field of plant varietal research or agricultural development.

The members shall also be appointed by the Central Government according to the requirements laid down under the Act.

The Chairperson shall appoint a Standing Committee consisting of five members one of whom shall be a member who is a representative from a farmers' organisation, to advise the Authority on all issues including farmers' rights. The Chairperson shall preside at the meetings of the Authority.

All questions coming before the Authority shall be decided by a majority of the votes of the members of the Authority.

If a member is in any way directly or indirectly concerned or interested in a matter to be decided at the meeting, he shall disclose the nature of his concern and shall not attend the meeting.

The acts done or proceedings of the Authority shall not be considered as invalid by reason of any vacancy or defect in the constitution of the Authority or any defect in the appointment of the person acting as the Chairperson or a member of the Authority or any irregularity in the procedure of the Authority not affecting the merits of the case.

*Powers and Functions:*

The Authority has the power to appoint Committees, officers and other employees for the efficient discharge of its duties and functions.

The Authority shall function to promote the encouragement for the development of new varieties of plants and to protect the rights of the farmers and breeders.

The Authority shall advise the Central Government for specifying and notifying the genera and species for registration of new plant varieties other than extant varieties and farmers' varieties.

The Authority is also vested with the function of developing DUS test and other test criteria and conduct such tests for characterisation of each variety of crop species notified by the Central Government.

Orders and decisions of the Authority shall be authenticated by the signature of the Chairperson or any other member authorised on their behalf.

The Authority of Registrar shall have all the powers of a Civil Court for the purpose of receiving evidence, administering oaths, enforcing the attendance of witnesses, compelling the discovery and production of documents and issuing commissions for the examination of witnesses. The Authority shall also have the power to order reasonable cost.

The order of the Authority shall be executable as a decree of the Civil Court.

For the purposes of this Act, Protection of Plant Varieties and Farmers' rights Authority has been established.

## 19.6 Plant Breeders' Right

Plant breeders' rights (PBR), also known as plant variety rights (PVR), are intellectual property rights granted to the breeder of a new variety of plant (or to another person or entity that can claim title in the new plant variety by, for example, agreement with the breeder or inheritance from a deceased breeder).

These laws typically grant the plant breeder control of the propagating material (including seed, cuttings, divisions, tissue culture) and harvested material (cut flowers, fruit, foliage) of a new variety for a number of years. With these rights, the breeder can choose to become the exclusive marketer of the variety, or to license the variety to others. In order to qualify for protection by plant breeders' rights, a variety must be new, distinct, uniform and stable. A variety is new if it has not been commercialised for more than one year in the country of protection. A variety is distinct if it differs from all other known varieties by one or more important botanical characteristics, such as height, maturity, colour, etc. A variety is uniform if the plant characteristics are consistent from plant to plant within the variety. A variety is stable if the plant characteristics are genetically fixed and therefore remain the same from generation to generation, or after a cycle of reproduction in the case of hybrid varieties. The breeder must also give the variety an acceptable "denomination", which becomes its generic name and must be used by anyone who markets the variety.

Breeders can bring suit to enforce their rights and can recover damages for infringement. Plant breeders' rights contain exemptions from infringement that are not recognised under patent law. Commonly, there is an exemption for farm-saved seed.

Farmers may store the production in their own bins for their own use as seed, but this does not necessarily extend to brown-bag sales of seed. Further sales for propagation purposes are not allowed without the written approval of the breeder. There is also a breeders' exemption (research exemption in the 1991 Act) that allows breeders to use protected varieties as sources of initial variation to create new varieties of plants (1978 Act), or for other experimental purposes (1991 Act). There is also a provision for compulsory licensing to assure public access to protected varieties if the national interest requires it and the breeder is unable to meet the demand.

There is tension over the relationship between patent rights and plant breeder's rights. There has been litigation in Australia, the United States, and Canada over the overlap between such rights. Each of these cases was decided on the principle that patents and plant breeders' rights were overlapping and not mutually exclusive. Thus, the exemptions from infringement of plant breeders' rights, such as the saved seed exemption, do not create corresponding exemptions from infringement of the patents covering the same plants. Likewise, acts that infringe the plant breeders' rights, such as exportation of the variety, would not necessarily infringe a patent on the variety, which only allows the patent owner to prohibit making, using or selling the patented invention.

The issue of the conflict between the Patents Act and the PPVFR Act in India, has been contested in Indian courts as well. This issue of the conflict between the Patents Act and the PPVFR Act was first brought into the limelight in India in 2017 when Monsanto instituted a patent and trademark infringement suit in the High Court of Delhi against various Indian seed companies for not paying the contractually determined trait fees. The Single Judge in the interim order refused to rule on patent validity at interim stage and instead, delved into whether the PPVFR Act was applicable. The Court cited Section 2(za) of the PPVFR Act, which states that “variety” refers to a “plant grouping”. It was stated that since the statute doesn’t throw further clarity on this term, one could refer to the explanatory notes on the definition of variety under the 1991 Act of the UPOV Convention (International Convention for the Protection of New Varieties of Plants). The definition of “plant variety” provided therein excludes disease resistant trait or a chemical or other substance like DNA or a plant breeding technology. The Court then concluded that Monsanto’s patented invention could not be classified as a plant variety since the patent was merely directed to a gene/trait.

The matter was then appealed before the division bench of the High Court of Delhi in 2018. The Court held that the patent was invalid under Section 3(j) of the Patents Act as the Section 3(j) excludes “plants and animals in whole or any part thereof other than micro-organisms but including seeds, varieties and species and essentially biological processes for production or propagation of plants and animals”. The Court further stated that Nuziveedu and its subsidiaries had applied for IP protection for all their Bt. Cotton Plant varieties under the PPVFR Act. The Court, in its order, observed that Section 2(za) of the Act included “transgenic variety”, and hence, the same could apply to Bt cotton plant varieties. The Court observed,

“...it is held that the learned single judge’s conclusion that the PV Act and the protective mechanism was an option, or alternative, which Monsanto could possibly have resorted to, in addition to patent protection, under the Patents Act, is incorrect. These two systems are not complimentary, but exclusive, in the case of all processes and products falling under Section 3 (j) of the Patents Act. Nuziveedu’s contention with respect to patent exclusion, therefore, succeeds. The court at the same time realises that the patent granted to Monsanto has stood all this while. Given these factors, it is held that Monsanto is at liberty to claim registration under the PV Act, with the benefit of its filing the patent application, as far as the date of filing and for purposes of Section 15 of the PV Act.”

The aforementioned decision of the Division Bench was further appealed to the Hon’ble Supreme Court of India in 2019. The Supreme Court held that the Division Bench should not have summarily invalidated the patent without a trial and set aside the judgment of the Division Bench of the High Court of Delhi and remanded the matter to the trial court.

### ***Effect of Plant Breeder’s Rights***

The UPOV Convention sets out a minimum scope of protection and offers members the possibility of taking national or regional circumstances into account in their legislation.

The UPOV Convention defines acts concerning propagating material in relation to which the holder's authorisation is required. Exceptionally, but only where the holder has set no reasonable opportunity to exercise his right in relation to the propagating material, his authorisation may be required in relation to any of the specified acts done with harvested material of the variety. Like all intellectual property rights, plant breeders' rights are granted for a limited period of time, at the end of which varieties protected by them pass into the public domain. The rights are also subject to controls, in the public interest, against any possible abuse. It is also important to note that the authorisation of the holder of a plant breeder's right is not required for the use of their variety for private and non-commercial purposes, for research purposes, nor for use in the breeding of further new varieties.

### ***Necessity for Protection of New Varieties***

Protection is afforded to plant breeders as an incentive for the development of new varieties of plants, in order to provide sustainable progress in agriculture, horticulture and forestry. Improved varieties are a necessary, and very cost-effective, means of improving productivity, quality and marketability for farmers and growers. Breeding new varieties of plants requires a substantial investment in terms of skill, labour, material resources, money and time. The opportunity to obtain certain exclusive rights in respect of new varieties provides successful plant breeders with a better chance of recovering their costs and accumulating the funds necessary for further investment. In the absence of plant breeders' rights, those aims are more difficult to achieve since there is nothing to prevent others from multiplying the breeder's variety and selling it on a commercial scale, without recognising in any way the work of the breeder.

### ***International Rights***

The United States of America had passed the Plant Patent Act in 1930 (US) at the urging of such notable figures as Thomas Edison and Luther Burbank's widow. Plant patents provided a special form of patent protection, which relaxed certain requirements of the utility patent law as applied to asexually reproduced varieties of plants. In 1957, the French Government held a conference in Paris concerned with the protection of new varieties. This led to the creation of the Union Internationale pour la Protection des Obtentions Vegetales (UPOV) and adoption of the first text of the International Convention for the Protection of New Varieties of Plants (UPOV Convention) in 1961. The purpose of the Convention was to ensure that the member States party to the Convention, acknowledge the achievements of breeders of new plant varieties by making available to them an exclusive property right, on the basis of a set of uniform and clearly defined principles.

The Convention was revised in Geneva in 1972, 1978 and 1991. Both the 1978 and the 1991 Acts set out a minimum scope of protection and offer member States the possibility of taking national circumstances into account in their legislation. Under the 1978 Act, the minimum scope of the plant breeder's right requires that the holder's prior authorisation is necessary for the production for purposes of commercial marketing, the

offering for sale and the marketing of propagating material of the protected variety. The 1991 Act contains more detailed provisions defining the facts concerning propagating material in relation to which the holder's authorisation is required. The breeder's authorisation is also required in relation to any of the specified acts done with harvested material of the variety, unless the breeder has had reasonable opportunity to exercise his right in relation to the propagating material. Under that provision, for example, a flower breeder who protects his variety in the Netherlands could block importation of cut flowers of that variety into the Netherlands from Egypt, which does not grant plant breeders' rights, because he had no opportunity to exercise any rights in Egypt. Member countries also have the option to require the breeder's authorisation with respect to the specified acts as applied to products directly obtained from the harvested material (such as flour or oil from grain, or juice from fruit), unless the breeder has had reasonable opportunity to exercise his right in relation to the harvested material.

The UPOV Convention also establishes a multilateral system of *national treatment*, under which citizens of any member State are treated as citizens of all member States for the purpose of obtaining plant breeder's rights. It also sets up a multilateral priority filing system, under which an application for protection filed in one Member State establishes a filing date for applications filed in all other member States within one year of that original filing date. This allows a breeder to file in any one member country within the one-year period required to preserve the novelty of his variety, and the novelty of the variety will still be recognised when he files in other member countries within one year of his original filing date. However, if the applicant does not wish to make use of priority filing he or she has four years in which to apply in all other member States, excepting the USA, for all species except tree and vine species in which case he or she has six years to make application. The trigger to start the four or six year period is not actually the date on which the first filing is made but the date on which the variety was first commercialised.

The UPOV Convention is not self-executing. Each member State must adopt legislation consistent with the requirements of the convention and submit that legislation to the UPOV Secretariat for review and approval by the UPOV Council, which consists of all the UPOV member States acting in committee. In compliance with these treaty obligations, the United Kingdom enacted the Plant Variety and Seeds Act, 1964 (UK). Similar legislation was passed in the Netherlands, Denmark, Germany, and New Zealand. In 1970 the United States followed the lead of seventeen Western European nations and passed the Plant Variety Protection Act, 1970 (US).

This legislation provided protection to developers of novel, sexually reproduced plants. However, the United States originally acceded to the UPOV Convention on the basis of the Plant Patent Act and did not bring the PVP Act into compliance with UPOV requirements until 1984 when the Commissioner of Plant Variety Protection promulgated rules to do so. Since the 1980's, the US Patent Office has granted patents on plants, including plant varieties: this provides a second way of protecting plant varieties in the USA. Australia passed the Plant Variety Protection Act, 1987 and the Plant Breeders Rights Act, 1994,

Australian patent law also permits the patenting of plant varieties. In total, 65 countries have signed the UPOV Convention and adopted plant breeders' rights legislation consistent with the requirements of the convention.

The WTO's Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs) requires member States to provide protection for plant varieties either by patents or by an effective *sui generis* (stand-alone) system, or a combination of the two. Most countries meet this requirement through UPOV Convention-compliant legislation. India has adopted a plant breeders' rights law that has been rejected by the UPOV Council as not meeting the requirements of the treaty.

The Rio Convention on Biological Diversity was signed in June 1992. While the Convention was not directly concerned with patent standards or plant breeder's rights, it heralds a new approach to the way biological resources are used.

One of the three objectives of the Convention on Biological Diversity, as set out in its Article 1, is the "fair and equitable sharing of the benefits arising out of the utilisation of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding". A framework for the implementation of this third objective of the Convention with regard to access to genetic resources is provided in Article 15 of the Convention. In addition, Article 8(j) contains provision to encourage the equitable sharing of the benefits arising from the utilisation of knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for conservation and sustainable use of biological diversity.

These provisions are also linked to the provisions on access to, and transfer of technology (Article 16), exchange of information (Article 17), technical and scientific co-operation (Article 18), the handling of biotechnology and distribution of its benefits (Article 19, paragraphs 1 and 2), and financial resources and financial mechanism (Article 20 and Article 21).

The FAO International Undertaking on Plant Genetic Resources is a non-binding agreement that provides for unrestricted access to plant genetic resources. The revised undertaking attempts to maintain relatively unrestricted access to specified crop species under the control of governments in the public domain while securing reasonable benefits, particularly for developing countries which provide significant sources of agricultural biological material for development and research in developed countries. The Undertaking stipulates the payment of benefits into an international account by recipients who commercialise research based on material covered by the undertaking. Material in public *ex situ* collections is expected to be free of charge.

### **Roundup**

In 1973 Monsanto introduced an herbicide based on glyphosate and sold under the brand name Roundup. Glyphosate works by blocking an enzyme needed to synthesise essential

amino acids in the plant and therefore kills essentially any plant it is sprayed on. In 1994 Monsanto introduced the first of a series of new, genetically-engineered varieties of corn, soybean, cotton and oilseed rape under the trademark *Roundup Ready*. These plants carry a version of the enzyme that is not blocked by glyphosate and therefore will grow after being sprayed with Roundup herbicide. These plant varieties are sold under a license agreement with Monsanto.

Traditionally, some grain farmers saved seed from their crop in sufficient quantity for the next season's planting. "Don't eat your seed corn" is the oldest injunction in farming, passed from father to son and mother to daughter for hundreds of generations. In corn (maize), the practice of saving seed died out in the first half of the 20th century as open-pollinated corn varieties were abandoned in favour of higher yielding and more stress-tolerant hybrid corn. Saving and replanting seed from a hybrid crop would result in a substantial yield loss that far outweighed the cost of new seed; however, the practice of saving seed is still common in open-pollinated crops such as soybeans and wheat. The Roundup-Ready gene is covered by several Monsanto patents and the patent license signed by farmers who want to buy Roundup-Ready seed prohibits this practice by limiting the license to the production of a single commercial crop. Farmers who want to buy Roundup-Ready seed must buy new seed each year.

## 19.7 Conclusion

Is UPOV suited for India - The UPOV model does not address the needs of India and other developing countries as it embodies the philosophy of the industrialised nations where the primary goal is to protect the interests of powerful seed companies who are the breeders. It does not recognise the notion of prior knowledge of the farming community and consequently takes no notice of the farmers' right to the benefits flowing out of such knowledge.

The move to join UPOV is not suited for an agrarian economy like India where seeds are essentially produced by farmers and farmers-cooperative and not by private corporations.

UPOV is anti-farmer as, among other disadvantages, it restricts the right to save seeds to replant, a practice followed by 75% of the Indian farming community. Although the first amendment in 1978 put limited restrictions on protected seed, the 1991 amendment brought in very strong protection as regards the same. In the latter amendment, the exemption for farmers to save seed has become provisional.

It does not recognise or support communities' inherent rights to biodiversity and their space to innovate.

UPOV aims at plant patents and now also permits dual protection of varieties. This effectively means that in the UPOV system, the same variety can be protected by Plant Breeders' Right and patents.

Contrary to the CBD, the UPOV model does not provide for benefit sharing with the farmers. Therefore, they end up paying royalties for their own germplasm that have been tampered with and repackaged by the Trans National Corporations.

The costs of testing, approval and acquiring an UPOV authorised Breeders' Right certificate could be extremely expensive which shall effectively preclude the participation of small companies, farmers' co-operatives or farmer/breeders, but for the largest seed companies.

UPOV model has the potential to aggravate the erosion of biodiversity which can prove extremely dangerous, especially in poor countries. Chemicals or genetic engineering will be used to try to compensate for crop vulnerability which farmers cannot afford. Uniformity leads to harvest loss and further food insecurity.

Contrary to the developed nations, research is conducted in India by public institutions like various agricultural organisations. The control of plant varieties in the hands of big seed companies and privatisation of genetic resources can affect research negatively. Additionally, UPOV rules on 'essential derivation' will act as a disincentive to researchers since TNCs can bully researchers to submit to accusations of plagiarism.

# UNIT 20

## CONVENTION ON BIOLOGICAL DIVERSITY

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### 20.1 Introduction

The term Biological diversity or biodiversity implies the variety of life on earth and the natural patterns it forms. It comprises not only all life forms but also includes the variety of ecosystems such as those that occur in deserts, forests, wetlands, mountains, lakes, rivers and agricultural landscapes as well as the natural components like the air, water and soil. Biodiversity is the combination of life forms and their interactions with each other as well as with the rest of the environment.

The biodiversity we see today is the fruit of billions of years of evolution, shaped by natural processes. Since times immemorial, human beings have used biological resources in order to sustain their lives. However, with the progression in human life, human beings started to exploit and abuse the gifts of nature. This over-utilisation of the resources of nature by humans has increasingly led to unnatural alterations of the biodiversity.

Preservation of biodiversity is in our self-interest since biological resources are the pillars which support our civilisation. Nature provides us with vital goods and services that are crucial for our subsistence. There is an urgent need to protect our biological resources given that if these resources once exhausted, they are irreplaceable. If these biological resources perish, it will not take much time for the human race to perish and become extinct forever.

Although several attempts have been made in the direction of protection of the Biological Diversity, the most significant of all attempts is the Convention on Biological diversity (CBD) also informally known as Biodiversity Convention.

## 20.2 The Convention on Biological Diversity

The United Nations Conference on the Human Environment held in Stockholm in 1972 led to the adoption of various instruments such as the Stockholm Declaration on Human Environment, the Action Plan including 109 resolutions and Resolutions. The Conference also led to the establishment of the United Nations Environment Programme (UNEP). Governments signed a number of regional and international agreements to tackle specific issues, such as protecting wetlands and regulating the international trade in endangered species. These agreements, along with controls on toxic chemicals and pollution, have helped to slow the tide of destruction but have not reversed it.

The World Commission on Environment and Development also known as the Brundtland Commission, in 1987, concluded that economic development must become less ecologically destructive. In its landmark report, 'Our Common Future', it said that: "Humanity has the ability to make development sustainable to ensure that it meets needs of the present without compromising the ability of future generations to meet their own needs." It also called for "a new era of environmentally sound economic development".

### a) Origin of CBD

The Convention on Biological Diversity (CBD) was adopted in The United Nations Conference on Environment and Development or the Earth Summit in 1992 held at Rio de Janeiro. At the Earth Summit the world leaders agreed on a comprehensive strategy for "sustainable development", which involves meeting our needs while ensuring that we leave a healthy and viable world for future generations.

The CBD was adopted with the primary objective of securing sustainable development. It was conceived as a practical tool for implementing the principles of Agenda 21. The Convention is a legally binding multilateral treaty having three main goals, namely:

- 1) conservation of biological diversity;
- 2) sustainable use of its components; and
- 3) fair and equitable sharing of benefits arising from genetic resources.

The Convention was opened for signature at the Earth Summit on 5 June 1992. The Convention initially had 157 signatories. It was entered into force on December 29, 1993.

The main objectives of the Convention as provided under Article 1 are: (i) the conservation of biological diversity; (ii) the sustainable use of its components; (ii) the fair and equitable sharing of benefits arising out of utilisation of genetic resources.

The Convention provides for a number of environmental provisions such as those relating to general measures of conservation including *in-situ* and *ex-situ* conservation, monitoring of biodiversity components, environment impact assessment, public education and awareness for conservation of biological diversity, access to genetic resources, access to technology and financial resources by developing countries.

It may be noted that 'biological resources' are not shared resources or common property like global commons - atmosphere, oceans and deep seabed. And as most of the bio-reserves are located within the territory of States, the Convention provides that States shall have the sovereign right to exploit their own resources pursuant to their own environmental policies. However, this right of permanent sovereignty of States over the natural resources is qualified and not absolute as States have 'the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or areas beyond the limits of national jurisdiction'.

The Convention sets out obligations and objectives for States to combat the destruction of plant and animal species and ecosystems and integrate conservation and sustainable use of biological diversity into relevant sectoral plans and policies and develop systems of protected areas. The Convention also provides for States to implement the obligations under provisions of the Convention and to decide themselves on the measures most effective to conserve biodiversity. Furthermore, the Contracting Parties agree to respect, preserve, and maintain knowledge and practices of indigenous and local communities, and encourage the equitable sharing of the benefits arising from the utilisation of such knowledge and practices.

The GEF services the implementation of the Convention through the implementing agencies - the United Nations Environment Programme, the United Nations Development Programme and the World Bank.

The Conference of the Parties decides issues of policy, programme priorities, and eligibility criteria relating to access to the financial mechanism.

What does the Convention recognise? - The convention recognised for the first time in international law that the conservation of biological diversity is "a common concern of humankind" and is an integral part of the development process. The agreement covers all ecosystems, species and genetic resources. It links traditional conservation efforts to the economic goal of using biological resources sustainably. It sets principles for the fair and equitable sharing of the benefits arising from the use of genetic resources, notably those destined for commercial use. It also covers the rapidly expanding field of biotechnology through its Cartagena Protocol on Biosafety, addressing technology development and transfer, benefit-sharing and biosafety issues. Some of the many issues dealt with under the Convention include:

- ◆ Measures and incentives for the conservation and sustainable use of biological diversity.
- ◆ Regulated access to genetic resources.
- ◆ Access to and transfer of technology, including biotechnology.

- ◆ Technical and scientific co-operation.
- ◆ Impact assessment.
- ◆ Education and public awareness.
- ◆ Provision of financial resources.

#### b) Key Issues under CBD

The treaty takes a comprehensive approach to conservation of biological diversity of the planet and the sustainable use of the biological resources. It also encompasses related socio-economic issues, such as sharing of benefits from the use of genetic resources and access to technology, including biotechnology. It secures right to control access to biological resources for the countries in which those resources are located. One objective of the CBD is to enable lesser-developed countries to better benefit from their resources and traditional knowledge. Some of the many issues dealt with under the convention include:

- ◆ Measures and incentives for the conservation and sustainable use of biological diversity.
- ◆ Regulated access to genetic resources and traditional knowledge, including **Prior Informed Consent** of the party providing resources to be obtained by the bio prospectors.
- ◆ Sharing, in a fair and equitable way, the results of research and development and the benefits arising from the commercial and other utilisation of genetic resources with the Contracting Party providing such resources (governments and/or local communities that provided the traditional knowledge or biodiversity resources utilised).
- ◆ Access to and transfer of technology, including biotechnology, to the governments and/or local communities that provided traditional knowledge and/or biodiversity resources.
- ◆ Technical and scientific co-operation.
- ◆ Impact assessment.
- ◆ Education and public awareness.
- ◆ Provision of financial resources.
- ◆ National reporting on efforts to implement treaty commitments.

To enable its implementation at the international and national levels the CBD provides for a set of general concepts and principles. These include permanent sovereignty over biological (natural resources); principle not to cause transboundary harm; common concern of humankind; intergenerational equity; and the precautionary approach.

#### ***Permanent sovereignty over biological resources***

During the negotiations of the CBD, the developing States saw many attempts by developed countries to declare biological resources as a common heritage of mankind, similar to

the concept under the 1982 UN Convention on the Law of the Sea. It was felt that the common heritage concept applied to seabed resources, which are beyond areas of national jurisdiction. Therefore, they resisted and rejected any move to declare resources within their territories/ national jurisdiction to be subject to any form of indirect international control. Article 3 of the CBD as it stands today provides for sovereign right of states over their biological resources.

### ***Transboundary harm***

As a compromise to the insertion of Article 3, the CBD provides that States have the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction. This principle is recognised as a part of general international law and would ensure the misuse of genetic/ biological resources would not result in transboundary harm. Principle 2 of the Rio Declaration exactly echoes this understanding when it states: “States have in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.” Today it may be noted that an obligation not to cause transboundary harm is largely accepted as a principle of general international law.

### ***Common concern of humankind***

To accommodate the deletion of the concept of “common heritage of mankind”, it was agreed to coin a new term “common concern of humankind”. The latter term would provide the necessary philosophical basis to call upon States to undertake common goals for stewardship of biological resources, which need to be protected/ conserved. Although the phrase appears more as a doctrine it adds value to reflect common concerns of all States.

### ***International equity***

The last paragraph of the preamble of the CBD states that contracting parties are determined to conserve and make sustainable use of biological diversity for the benefit of present and future generations. The principle of using biological resources in such a way that future generations also are ensured their rightful share is again an offshoot of ‘common concern’ principle which brings to fore the question of equity among countries in international relations. Man is at the command of all biological resources and while he exploits natural/ biological resources, he must ensure that the species is not rendered endangered or extinct or causes so serious a damage that future generations are unable to use such a resource. The principle of equity is also reflected in Principle 2 of the Stockholm Declaration and Principle 3 of the Rio Declaration.

### ***Precautionary principle/approach***

Human activities can often lead to environmental consequences which the present generation has little knowledge or control of. For example, it may be argued that use of

a “living modified organism (LMOs)” would yield better produce or variety of crop. However, on the other hand such a crop may also destroy the natural varieties forever. To be able to go slow and address the threat or damage that may be involved, the CBD calls for application of a precautionary approach. The preamble of the CBD states “...where there is a threat of significant reduction or loss of biological diversity, lack of full scientific certainty should not be used as a reason for postponing measures to avoid or minimise such a threat.”

Apart from these conceptual underpinnings, the CBD has a number of provisions that provide need to undertake sustainable measures at the national level; *in situ* and *ex-situ* conservation measures; access to and transfer of technology; institutional mechanism; international financial mechanism; dispute settlement etc.

### ***Measures for conservation and Sustainable use***

In Article 6, the CBD provides that Parties shall develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity. They shall also endeavour to integrate the conservation and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans, programmes and policies. It is seen that since the adoption of the convention more than 120 countries have been successful in devising national biodiversity strategies and action plans (“NBSAPS”). These strategies have been developed as primary tools at the national level for its implementation of the obligations under the CBD. India adopted the Biological Diversity Act, 2005 under the Ministry of Environment and Forests.

The identification of components of biological diversity and monitoring their conservation status is an important first step in the establishment of measures for conservation and sustainable use. In this regard, Article 7 of the CBD, therefore, requires Parties to identify components of biodiversity important for conservation and sustainable use and to monitor the components so identified paying particular attention to those requiring urgent conservation measures and also identify and monitor processes that may have significant adverse impacts on conservation and sustainable use of biodiversity.

In this regard Annex-I to the CBD contains indicative lists for the identification and monitoring of ecosystems species, communities and genes and genomes of social, scientific and economic importance. Article 8 and 9 set out the main conservation commitment wherein Parties are required to meet specific goals relating to *in-situ* and *ex-situ* conservation.

“*In-situ* conservation” under Article 2 of the CBD is defined as the “conservation of ecosystems and natural habitats and the maintenance and recovery of viable populations of species in their natural surroundings”. The *in-situ* conservation commitments outlined in Article 8 include, among others, the following:

- ◆ The establishment of a system of protected areas;
- ◆ The development of guidelines for the selection, establishment and management of protected areas;

- ◆ The regulation or management of biological resources important for the conservation of biological diversity within or outside protected areas, with a view of ensuring their conservation and sustainable use;
- ◆ The promotion of the protection of ecosystems, natural habitats and the maintenance of viable population of species in natural surroundings;
- ◆ Promotion of environmentally sound and sustainable development in areas adjacent to protected areas with a view to furthering the protection of these areas;
- ◆ The rehabilitation and restoration of degraded ecosystem and the recovery of threatened species;
- ◆ Management and control of the risks associated with living modified organisms resulting from biotechnology;
- ◆ Prevention, control and eradication of alien invasive species;
- ◆ The respect, preservation and maintenance of traditional biodiversity-related knowledge; and
- ◆ The development of appropriate legislative and regulatory frameworks.

Article 9 defines *Ex situ* as the “conservation is defined as the conservation of components of biological diversity outside their natural habitats”. Article 9 specifies the main *ex situ* conservation commitments; including:

- ◆ Adoption of measures for *ex situ* conservation of components of biological diversity, preferably in the country of origin of such components;
- ◆ Establishment and maintenance of facilities for *ex situ* conservation of and research on plants, animals and microorganisms;
- ◆ Adoption of measures for the recovery and rehabilitation of threatened species and for their reintroduction into their natural habitats;
- ◆ Regulation and management of collection of biological resources from natural habitats for *ex situ* conservation; and
- ◆ Co-operation in the provision of financial and other support for *ex situ* conservation.
- ◆ Sustainable use is defined in Article 2 as “...the use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generation.” The main sustainable use commitments outlined in Article 10, are:
  - Integrating consideration of the conservation and sustainable use of biological resources into national decision-making;
  - Adoption measures relating to the use of biological resources to avoid or minimise adverse impact on biological diversity;
  - Protecting and encouraging customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements;

- Supporting local populations in developing and implementing remedial action in degraded areas where biological diversity has been reduced; and
- Encouraging cooperation between governmental authorities and its private sector in developing methods for sustainable use of biological resources.

### c) Institutional Structure of CBD

The institutional structure of the CBD consists of a number of bodies including the Secretariat (situated at Montreal), the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) and the Conference of Parties (COP).

**The Secretariat** - The Secretariat of CBD is located in Montreal, Canada. It operates under the United Nations Environment Programme. The CBD functions on a daily basis through the Secretariat. It is responsible for organising meetings, draft documents, assists member Governments in the implementation of programmes, co-ordinate with other international organisations and collect and disseminate information.

#### **The Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA)**

- The SBSTTA is a body established under Article 25 of the CBD, with the view to provide expert advice to Conference of Parties and other bodies to the Convention. It is a multidisciplinary expert body which has the mandate to provide scientific and technical assessments of the status of biological diversity and of the effects of different measures taken in accordance with the Convention. It is required to identify innovative and efficient technologies relating to the conservation and sustainable use of biological diversity. The SBSTTA also provides advice on the ways and means of promoting development as well as transferring such technologies.

The SBSTTA has met twelve times till date and has provided 129 recommendations to the Conference of Parties. The meetings of SBSTTA are as follows:

- 1<sup>st</sup> Meeting of SBSTTA - held in Paris, France from September 4 to 8, 1995
- 2<sup>nd</sup> Meeting of SBSTTA - held in Montreal, Canada from September 2 to 6, 1996
- 3<sup>rd</sup> Meeting of SBSTTA - held in Montreal, Canada from September 1 to 5, 1997
- 4<sup>th</sup> Meeting of SBSTTA - held in Montreal, Canada from June 21 to 25, 1999
- 5<sup>th</sup> Meeting of SBSTTA - held in Montreal, Canada from January 31 to February 4, 2000
- 6<sup>th</sup> Meeting of SBSTTA - held in Montreal, Canada from March 12 to 16, 2001
- 7<sup>th</sup> Meeting of SBSTTA - held in Montreal, Canada from November 12 to 16, 2001
- 8<sup>th</sup> Meeting of SBSTTA - held in Montreal, Canada from March 10 to 14, 2003
- 9<sup>th</sup> Meeting of SBSTTA - held in Montreal, Canada from November 10 to 14, 2003
- 10<sup>th</sup> Meeting of SBSTTA - held in Bangkok, Thailand from February 7 to 11, 2005
- 11<sup>th</sup> Meeting of SBSTTA - held in Montreal, Canada from November 28 to December 2, 2005

- 12<sup>th</sup> Meeting of SBSTTA - held in Paris, France from July 2 to 6, 2007
- 13<sup>th</sup> Meeting of SBSTTA - held in Rome, Italy from February 18 to 22, 2008
- 14<sup>th</sup> Meeting of SBSTTA - held in Nairobi, Kenya, 10 to 21 May 2010
- 15<sup>th</sup> Meeting of SBSTTA - held in Montreal, Canada, 7 to 11 November 2011
- 16<sup>th</sup> Meeting of SBSTTA - held in Montreal, Canada, 30 April to 5 May 2012
- 17<sup>th</sup> Meeting of SBSTTA - held in Montreal, Canada, 14-18 October 2013
- 18<sup>th</sup> Meeting of SBSTTA - held in Montreal, Canada, 23-28 June 2014
- 19<sup>th</sup> Meeting of SBSTTA - held in Montreal, Canada, 2-5 November 2015
- 20<sup>th</sup> Meeting of SBSTTA - held in Montreal, Canada, 25-30 April 2016
- 21<sup>st</sup> Meeting of SBSTTA - held in Montreal, Canada, 11-14 December 2017
- 22<sup>nd</sup> Meeting of SBSTTA - held in Montreal, Canada, 2-7 July 2018
- 23<sup>rd</sup> Meeting of SBSTTA - held in Montreal, Canada, 25-29 November 2019

**The Conference of Parties (COP)** - The COP is the governing body, which brings together all States and Regional Organisations that have ratified the Convention. It is mandated to review the implementation of the Convention. More specifically, it reviews progress under the Convention, identifies new priorities to be pursued, sets work plans for members, amends the Convention, creates expert advisory bodies, reviews progress reports by member nations and collaborates with other international organisations and agreements.

The COP has initiated work on a number of thematic work programmes addressing agriculture biodiversity, forest biodiversity, island biodiversity, inland water ecosystems, dry and sub-humid lands and mountain biodiversity. Till date the COP has had nine ordinary meeting and one extraordinary meeting.

**COP 1** - held in Nassau, Bahamas from November 28 to December 9, 1994

**COP 2** - held in Jakarta, Indonesia from November 6 to 17, 1995

**COP 3** - held in Buenos Aires, Argentina from November 4 to 15, 1996

**COP 4** - held in Bratislava, Slovakia from May 4 to 15, 1998

**ExCOP 1** - First Extraordinary Meeting of the Conference of the Parties to the Convention on Biological Diversity held in Cartagena, Colombia from February 22 to 23, 1999 and in Montreal, Canada from January 24 to 28, 2000. The Cartagena meeting led to the adoption of a supplementary agreement to the Convention known as The Cartagena Protocol on Biosafety or the **Biosafety Protocol**.

**COP 5** - held in Nairobi, Kenya from May 15 to 26, 2000

**COP 6** - held in The Hague, Netherlands from April 7 to 19, 2002. The major achievement of COP 6 was adoption of **Bonn Guidelines** on access to genetic resources and the fair and equitable sharing of benefits arising from their utilisation.

**COP 7** - held in Kuala Lumpur, Malaysia from February 9 to 20, 2004. One of the major achievements of COP 7 was the adoption of **Akwé: Kon Guidelines** that were voluntary guidelines for the conduct of cultural, environmental and social impact assessments.

**COP 8** - held in Curitiba, Brazil from March 20 to 31, 2006

**COP 9** - held in Bonn, Germany from May 19 to 30, 2008

**COP 10** - held in Nagoya, Aichi Prefecture, Japan, 18 to 29 October 2010

**COP 11** - held in Hyderabad, India, 8 to 19 October 2012

**COP 12** - held in Pyeongchang, Republic of Korea, 6-17 October 2014

**COP 13** - held in Cancun, Mexico, 4-17 December 2016

**COP 14** - held in Sharm El-Sheikh, Egypt, 17-29 November 2018

**COP 15** - to be held in Kunming, China, Date yet to be confirmed

#### d) Biosafety Working Group

Article 19.3 of the CBD provides for Parties to consider the need and modalities of a protocol setting out procedures in the field of the safe transfer, handling and use of living modified organisms (LMOs) resulting from biotechnology that may have an adverse effect on biodiversity and its components. An ad hoc working group known as the **Biosafety Working Group (BSWG)** was established to this end at COP-2.

After its establishment, the working group primarily worked towards charting out the designs of a Protocol to address issues pertaining to Biosafety. After five years of negotiations, the Biosafety Protocol was finally adopted.

#### e) Cartagena Protocol on Biosafety

The Cartagena Protocol on Biosafety also known as Biosafety Protocol was adopted on 29 January 2000 and was entered into force on 11 September 2003. The Biosafety Protocol seeks to protect biological diversity from the potential risks posed by living modified organisms resulting from modern biotechnology. At present, 189 States are Parties to the Protocol.

The Protocol addresses the safe transfer, handling and use of LMOs that may have an adverse effect on biodiversity, taking into account human health, with a specific focus on transboundary movements. It makes clear that products from new technologies must be based on the precautionary principle and developing nations are allowed to balance public health against economic benefits. An Advance Informed Agreement (AIA) has been made mandatory before the transboundary movement of LMOs.

The Protocol further establishes a Biosafety Clearing - House (BCH) to facilitate information exchange, and contains provisions on capacity building and financial resources, with special attention to developing countries and those with domestic regulatory systems.

The governing body of the Protocol is the Conference of the Parties to the Convention on Biological Diversity serving as the meeting of the Parties to the Protocol (COP-MOP). Its

primary role is to regularly review the implementation of the Protocol and to make decisions necessary to promote its effective implementation. To date the COP-MOP has held nine meetings and has taken a total of 147 decisions.

**COP-MOP 1** - held at Kuala Lumpur, Malaysia from February 23 to 29, 2004

**COP-MOP 2** - held at Montreal, Canada from May 30 to June 3, 2005

**COP-MOP 3** - held at Curitiba, Brazil from March 13 to 17, 2006

**COP-MOP 4** - held at Bonn, Germany, from 12 to 16 May 2008

**COP-MOP 5** - held at Nagoya, from Japan 11 to 15 October 2010

**COP-MOP 6** - held at Hyderabad, India, 1 to 5 October 2012

**COP-MOP 7** - held at Pyeongchang, Republic of Korea, from 29 September to 3 October 2014

**COP-MOP 8** - held at Cancun, Mexico, from 4 to 17 December 2016

**COP-MOP 9** - held at Sharm El-Sheikh, Egypt, from 17 to 29 November, 2018

### 20.3 Access and Transfer of Technology

One of the most important elements for guaranteeing effective implementation of the CBD is “access to and transfer of technology”, as is the case with many other post-Rio multilateral environmental agreements, The CBD expressly recognises the role that technology transfer and co-operation can play in the realisation of its three objectives and is conceived as part of the positive measures to facilitate the effective implementation of the obligations. Issues relating to technology transfer and co-operation are addressed in Articles 16, 18 and 19 of the convention. In addition, issues regarding ‘training and research’ are considered important towards establishing national capacities to absorb technologies addressed in Article 12 of the convention.

Under Article 16(1) provides the basic obligation of all Parties whereby each contracting party “...undertakes ...to provide and/ or facilitate access for and transfer to other contracting parties of technology that are relevant to the conservation and sustainable use of biological diversity or make use of genetic resources and do not cause significant damage to the environment.” The obligation established has a number of important aspects. First, its scope is limited to the categories to technologies specified i.e. technologies relevant to the conservation and sustainable use of biological diversity or that make use of genetic resources. Second, the wording of the paragraph provides flexibility wherein Parties can implement their obligations depending on each concrete situation. Parties can also “provide and/ or facilitate” access for and transfer of technologies to other Parties. This appears to be important, since technologies are subject to intellectual property rights and Parties would have very limited leverage on the private sector to affect transfer, in this regard therefore, Parties can only facilitate transfers through such measures as providing appropriate incentives to the private sector. On the other hand, for technologies in the public domain, a Party could directly provide access for and transfer to another Party.

There are a number of other conditions regarding technology transfer established under Article 16(2), wherein ‘access to and transfer of technology’ to developing countries shall be provided and/or facilitated under ‘fair and most favourable terms’, including on concessional and preferential terms where mutually agreed, and where necessary in accordance with the financial mechanism established by Article 20 and 21. It would appear that the CBD requires developed country Parties provide access to technologies to developing countries on a fair and most favoured nation status. This would seem to suggest that access to and transfer of technology would be on terms other than those established by the international technology market.

How this is to be ensured by Parties in case of proprietary technology, that is, technologies subject to intellectual property rights, is an issue that is discussed in the international regime that is being negotiated on under the head ‘Access and Benefit Sharing of Genetic and Biological Resources’. However, the paragraph makes an important linkage with the convention’s financial mechanism and thereby it is clear that the resources available through the mechanism could be used to facilitate access to and transfer of proprietary technology to developing countries.

Article 16(2) of the CBD also provides that in the case of technology subject to patents and other intellectual property rights, access and transfer shall be provided on terms that recognise and are consistent of intellectual property rights. In fact, access to and transfer of proprietary technology is made subject to the existence of adequate and effective protection of intellectual property rights. This provision would seem to require that recipient countries have in place adequate and effective domestic intellectual property right regimes.

Article 16(3) of the CBD also provides that, Parties are required to “... take legislative, administrative or policy measures ...with the aim that Contracting Parties, in particular those that are developing countries which provide genetic resources are provided access to and transfer of technology make use of those resources, on ‘mutually agreed terms’, including technology protected by patents and other intellectual property right, where necessary through the provisions of Article 20 and 21 and in accordance with international law.. .” The obligation is imposed on ‘user countries’ i.e. developed countries to establish an enabling legal policy environment for access to and transfer of such technology to countries which provide genetic resources. This is important to ensure the effectiveness of the CBD relating to the fair and equitable sharing of benefits arising from the utilisation of genetic resources.

Lastly, under Article 16(4), Parties are required to ‘...take legislative, administrative or policy measures ...with the aim that the private sector facilitates access to joint development and transfer of technology ...for the benefit of both governmental institutions and the private sector of developing countries.’ It is important to understand the vast amount of global technology is owned by the private sector of developed countries. Developed country Parties are therefore required to play a facilitative role through legislative and policy development that would act as an incentive to their private sector actors to provide access to and transfer of technology to developing countries.

There are a number of other provisions in the Convention that are relevant to technology transfer. Article 18 that deals with ‘technical and scientific co-operation’ requires Parties to promote international co-operation in the field of conservation and sustainable use of biological diversity and to development methods of co-operation for the development and use of technologies and to promote the establishment of joint ventures for the development of technologies relevant to the objective of the convention.

Article 19 that relates to biotechnology requires Parties to establish “...legislative, administrative or policy measures to provide for the effective participation in biotechnological research activities by the Contracting Parties, especially developing countries, which provide the genetic resources for such research ...” and to “... take practicable measures to promote and advance priority access on a fair and equitable basis by Contracting Parties, especially developing countries, to the results and benefits arising from biotechnologies based upon genetic resources provided... .”

## 20.4 International Co-operation and the Financial Mechanism

Given the wide-ranging nature of the CBD, there are a number of provisions, which seek to deal with implementation through international co-operation. As such, provisions are made for international co-operation in the field of research and training particularly taking note of the needs of developing countries (Article 12); public education and awareness raising (Article 13). Furthermore, Article 17 and 18 deal with information exchange relevant to conservation and sustainable use of biodiversity and improved international technical and scientific co-operation.

Article 18(3) of the Convention provides for the establishment of a Clearing-House Mechanism (“CHM”) to facilitate technical and scientific co-operation. The CHM now established operates as a tool for information exchange and technical and scientific co-operation.

### COP 14<sup>1</sup>

The Conference of the Parties to the Convention on Biological Diversity held its fourteenth meeting in Sharm El-Sheikh, Egypt, from 17 to 29 November 2018. It adopted 38 decisions.

The decisions adopted relate, among other things, to: a review of progress towards the Aichi Biodiversity Targets; the process for the preparation for the post-2020 global biodiversity framework and for the Global Biodiversity Outlook; enhancing integration under the Convention and its Protocols and the Convention, including with respect to Article 8(j) and related provisions; capacity-building; resource mobilization; reporting and review mechanisms; and cooperation. A number of technical issues were addressed, including: scenarios for the 2050 Vision; mainstreaming; gender; links with health and with climate change; pollinators; wildlife management; protected areas; marine and

<sup>1</sup> Adopted from the Report of The Conference Of The Parties To The Convention On Biological Diversity On Its Fourteenth Meeting. It can be accessed at <<https://www.cbd.int/doc/c/1081/32db/e26e7d13794f5f011cc621ef/cop-14-14-en.pdf>>

coastal biodiversity; invasive alien species; digital sequence information; synthetic biology; traditional knowledge; and liability and redress. Finally, there are decisions on procedural and organisational matters.

## 20.5 India's Compliance with CBD

India signed the CBD on June 5, 1992 and hence, when the Convention came into force in the year 1993, India was already a signatory to it. India ratified the CBD on 18 February, 1994.

Article 6 of the Convention on **General Measures for Conservation and Sustainable Use** states that each Contracting Party shall, in accordance with its particular conditions and capabilities:

- a) Develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity or adapt for this purpose existing strategies, plans or programmes which shall reflect, *inter alia*, the measures set out in this Convention relevant to the Contracting Party concerned
- b) Integrate, as far as possible and as appropriate, the conservation and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans, programmes and policies.

Article 26<sup>2</sup> and Article 10(a)<sup>3</sup> are closely linked to Article 6. The first calls for Parties to present, through their national reports, information on measures which have been taken for the implementation of the provisions of the Convention and their effectiveness in meeting the objectives of the Convention. The latter encourages Parties to integrate consideration of the conservation and sustainable use of biological resources into national decision-making.

Article 6 creates an obligation for national biodiversity planning. A national strategy will reflect how the country intends to fulfil the objectives of the Convention in light of specific national circumstances, and the related action plans will constitute the sequence of steps to be taken to meet these goals.

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<sup>2</sup> Article 26 - Reports

Each Contracting Party shall, at intervals to be determined by the Conference of the Parties, present to the Conference of the Parties, reports on measures which it has taken for the implementation of the provisions of this Convention and their effectiveness in meeting the objectives of this Convention.

<sup>3</sup> Article 10 (a) - Sustainable use of Components of Biodiversity Each Contracting Party shall, as far as possible and as appropriate:

- a) Integrate consideration of the conservation and sustainable use of biological resources into national decision-making;
- b) Adopt measures relating to the use of biological resources to avoid or minimise adverse impacts on biological diversity;
- c) Protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements;
- d) Support local populations to develop and implement remedial action in degraded areas where biological diversity has been reduced; and
- e) Encourage co-operation between its governmental authorities and its private sector in developing methods for sustainable use of biological resources.

The requirement to integrate consideration of the conservation and sustainable use of biological resources into national decision-making, and mainstream issues across all sectors of the national economy and policy-making framework, are the complex challenges at the heart of the Convention.

Article 6 of the Convention requires the Parties to prepare **Biodiversity Action Plans** in their respective countries to implement the outcomes of the CBD. The signatory countries, including India, are required to establish Biodiversity Action Plans pursuant to this obligation. The National Biodiversity Strategy and Action Plan was initiated in India under this mandate of the CBD.

In 1992, the Ministry of Environment and Forests (MoEF) initiated consultations with ministries, governmental agencies, NGOs and academicians for preparing a national action plan for conserving the biodiversity. A National Policy and Macro-level Action Strategy on biodiversity was prepared. This document was a macro-level statement of policies, gaps and strategies needed for conservation and sustainable use of biological diversity. However, a need for a more detailed plan, including State level action planning, was felt. Hence, the ministry decided to prepare a **National Biodiversity Strategy and Action Plan (NBSAP)**.

NBSAP was formally initiated in 2000. MoEF assigned the task of Technical Co-ordination of the Plan to a national NGO, Kalpavriksh, and a 15 member Technical and Policy Core Group (TPCG) was set up to aid in the same. The administrative execution was entrusted to the Biotech Consortium of India Ltd. (BCIL). Funding for the project came from the Global Environment Facility through the United Nations Development Programme (UNDP).

The Strategic Plan of the Convention on Biological Diversity was decided in COP 6, held at the Hague in April 2002, as a vision for the implementation of the Convention by 2010. Two operational goals of this Strategic Plan stated that:

- ◆ To develop NBSAPs and integration of biodiversity concerns into relevant sectors as an effective framework for the implementation of the objectives of the Convention.
- ◆ Better understanding of importance of biodiversity and the Convention which leads to broader engagement across society in implementation.

In 2004, while the NBSAP was underway, India lobbied at the COP 7 of CBD that the year 2006 should be made the deadline for all countries to prepare and submit their respective NBSAPs.

#### a) Process of Development of NBSAP

The basic aim of initiating the process of NBSAP was to develop an implementable action plan that would help conserve India's vast biodiversity. The broad aim was to devise a plan that would orient utilisation of biological resources into sustainable directions, and ensure that decisions regarding access to such resources and the benefits accruing from them are taken democratically and equitably. The NBSAP process envisaged the formulation of several sub-national plans known as Biodiversity Strategy and Actions

Plans (BSAP) rather than preparing one national level plan. The BSAP was prepared at the following five levels:

- ◆ 18 Local and regional level plans for sub state Sites
- ◆ 33 State level plans for all of India's States and Union Territories
- ◆ 10 Inter-state (Eco-regional) level plans for ecologically significant regions cutting across State boundaries
- ◆ 13 Thematic level plans for major topics related to biodiversity
- ◆ 30 sub-thematic reviews commissioned for addressing specific aspects of biodiversity

Initially, 35 sub-thematic reviews were commissioned for addressing specific biodiversity aspects. However, not all reviews were submitted or completed. There are only 30 completed sub-thematic reviews commissioned for specified aspects of biodiversity.

These BSAPs were designed using flexible and innovative methodologies such as decentralised planning, moving upwards from grass-root level, public participation, public hearing, data collection, awareness programmes, organising workshops and biodiversity festivals, etc, for outreach and feedback.

Later on, attempts were made to build elements from all the BSAPs into the National level plan.

The process of development of NBSAP was attempted to be highly participatory, transparent and with openness to all points of view and interest groups reaching out to a large number of village-level organisations and movements, NGOs, academicians and scientists, government officers from various line agencies, the private sector, the armed forces, politicians and others who have a stake in biodiversity.

Methodologies used for preparation of NBSAP were also flexible and innovative. All plans were prepared by multi sectoral groups involving participation of persons from diverse backgrounds from both within and outside the government using various methodologies. Some of these methodologies were indicated to the executing agencies through the guidelines developed by the TPCG.

## **b) The National Biodiversity Strategy and Action Plan**

The national level document, originally called the draft National Action Plan was built on the following sources:

- ◆ Draft BSAPs at local, State, eco-regional and thematic levels produced during developmental process of NBSAP
- ◆ Draft sub-thematic reviews commissioned or voluntarily offered during NBSAP development process
- ◆ A large number of secondary sources that included previous national level documents such as National Wildlife Action Plan, National Forestry Action

Plan, country reports for Agenda 21, National Conservation Strategy, Biodiversity Conservation Prioritisation Project Report, National Environment Action Project, 9th and 10th Five Year Plan, inputs and comments from several people, etc.

The document was produced in two volumes. The basic aims of NBSAP were:

- ◆ Biodiversity conservation and ecological security
- ◆ Livelihood security

### Volume I

Volume I contained eight Chapters.

The **first** chapter dealt with background, objectives, scope and approach of the NBSAP methodology. It also critically analysed the project.

The **second** chapter contained the statement of principles on which the analysis and recommendations were based.

The **third** chapter dealt with evolutionary, physical and, historical context of India's biodiversity as well as contained subsections dealing with physical and geographical, evolutionary and socio-economic features of India, relevant to biodiversity.

The **fourth** chapter discussed the overall profile of India's biodiversity.

The **fifth** chapter dealt with some of the key causes for the loss of biodiversity including proximate causes like habitat destruction, hunting exploitation, fishing, introduction of exotic-plants and animals, homogenisation of ecosystems, etc and root causes like current model of development; progressive erosion of customary rights, increasing inequities in the society, inappropriate land and water tenure and their management systems, changes in ethical and moral values, lack of recognition of the full values of biodiversity, inflexible and contradictory laws, demographic changes, inappropriate trade systems, etc.

The **sixth** chapter discussed the ongoing initiatives in conservation, sustainable use, and equity, and the major actors involved. It included the history of such initiatives, description of current status, assessment of their efficacy, and identification of strengths, weaknesses and gaps. This chapter was divided into two subsections, namely, **Natural Ecosystem and Wild Taxa**, as well as **Agricultural Ecosystems and Domesticated Taxa**. These were further subdivided into the following sections:

- ◆ understanding and information (including research and monitoring),
- ◆ *in-situ* conservation,
- ◆ *ex-situ* conservation,
- ◆ sustainable use,
- ◆ equitable access, use and sharing of benefits,
- ◆ capacity building,
- ◆ inter-sectoral co-ordination,
- ◆ policies and laws,

- ◆ financial measures,
- ◆ technological measures, and
- ◆ International fora.

The **seventh** chapter dealt with broad strategies and related actions for achieving conservation, sustainable use, as well as equitable access and sharing of benefits for both natural ecosystem and wild taxa along with agricultural ecosystems and domesticated taxa. A total of 101 strategies and 345 actions were recommended in this chapter.

The **eighth** chapter dealt with the overall implementation mechanism needed for the strategy and actions presented in the earlier chapter.

The Volume also provides definition of key terms, glossary, list of abbreviation, index of agencies and organisations identified as lead agencies responsible for each action, annexure with list of TPCG, executing agencies and various people who contributed or commented on the NBSAP.

## Volume II

Volume II included summaries of each of local, State, eco-regional and thematic level BSAPs and sub-thematic reviews. It also contained annexures relevant to various parts of Volume I such as listings of protected areas and threatened species, forest types, germplasm collections, and so on. It also included a chart showing points of commonality between the strategies of NBSAP and those recommended in local, State and eco-regional level BSAPs.

In February 2009, the Ministry of Environment and Forests (MoEF) finally released India's National Biodiversity Action Plan.

### c) Key Strategies and Actions

The key recommendations contained in the Final Technical Report of NBSAP were:

- ◆ Preparing a land and water use plan, mapping the areas of the country that are essential for ecological and livelihood security and declaring them off-limits to large scale commercial developmental purposes.
- ◆ Creating and strengthening decentralising institutions of governance with the basic planning and decision making unit being at the village and hamlet level.
- ◆ Re-orienting development-related policies, laws and schemes to ensure that biodiversity and people's livelihoods are secured.
- ◆ 'Eco-regional planning' on the basis of ecological boundaries such as river valleys, forest blocks, coasts, etc., including 'eco-regions' cutting across State and international boundaries.
- ◆ Strengthening the Environmental Impact Assessment procedure, by integrating biodiversity in all its aspects (especially agricultural biodiversity, currently missing), and increasing the role of citizens.

- ◆ Integrating biodiversity concerns through inter-sectoral and inter-departmental co-ordination at local, district, State, and national levels.
- ◆ Expanding and strengthening the network of conservation sites for wild animals and plants, including protected areas (national parks and sanctuaries), community conserved areas (like sacred sites, community forests, village tanks), Biosphere Reserves, Ecologically Sensitive Areas, Heritage Sites, Medicinal Plant Conservation Areas, etc.
- ◆ Conserving areas (agrobiodiversity protected areas) critical for indigenous crop and livestock diversity, and promoting practices that would help to conserve this diversity amongst farmers, pastoralists, fisher folk and others, including through food policy.
- ◆ Respecting, protecting and building on traditional knowledge of biodiversity, including through community-led development of biodiversity knowledge registers, and innovative legal or other means of traditional knowledge rights that do not fall into the trap of privatised intellectual property rights like patents.
- ◆ Strengthening and promoting community-level crop gene banks and seed banks.
- ◆ Promoting indigenous, nutritionally-superior food crops such as coarse millets in the Public Distribution System, mid-day meal schemes, Food for Work programme, and other such public sector programmes.
- ◆ Regulating tourism in natural land and waterscapes, and facilitating genuine ecotourism through strictly enforced guidelines, including by enhancing the capacity of local communities to manage it.
- ◆ Tackling a range of threats to biodiversity, including quiet but widespread ones like alien (exotic) invasive species and climate change.
- ◆ Facilitating sustainable, bio-resource based livelihoods (including micro-enterprises), of fisher folk, *adivasis* and other forest-dwelling communities, small peasants, artisans, and pastoralists, with special attention to disprivileged sections like women, nomads and the landless.
- ◆ Building capacity of all sections of society to handle various issues of biodiversity conservation, especially of decision-makers, urban citizens, and others who are particularly alienated from ecological and livelihood concerns.
- ◆ Estimating the full economic and social values of biodiversity, especially its role in ensuring water and climatic stability, soil productivity, and people's livelihoods.
- ◆ Re-orienting State and national budgets, to squarely integrate the true and full value of biodiversity and the environmental services performed by natural land and waterscapes, and redirect funding for rural and urban development into conservation and sustainable use.
- ◆ Increasing funding for conservation measures, including through innovative financial mechanisms such as a tax on industries that use biological resources, an urban tax on rich citizens that benefit from 'free' services provided by natural ecosystems.

- ◆ Promoting traditional and new technologies that reduce the negative impact of current human activities and use ecologically sustainable alternative materials, such as organic farming, non-conventional energy, environmentally friendly architecture.
- ◆ Facilitating and developing ecologically conscious consumer groups and markets, such as for organic food, alternatives to plastics and other eco-friendly produce.
- ◆ Ensuring that decisions on genetically engineered or modified organisms (GMOs) are evaluated taking into account long term ecological and socio-economic studies by independent agencies, ensuring the participation of key stakeholders in decision-making and disclosure of information generated in evaluating biosafety.
- ◆ Advocating the integration of biodiversity and livelihood issues specific to India, at all international forums, including environmental treaties and economic agreements such as under WTO.

#### **d) Implementation: Issues and Current Status**

Before release, draft NBSAP went through extensive assessment by executive agencies, sub-thematic reviewers, and other partners of the NBSAP process, as also a few hundred other institutions, experts, government officials, NGOs, and activists. Its Executive Summary was made available in various languages to the public via websites and was made accessible to anyone for review. Information on its availability was also circulated through the mass media, NGOs and other networks. The draft was also publicly discussed during the Final National Workshop in December 2002. Apart from this, the Executive Summary of the first draft was also sent out to all those persons that had requested to participate in the NBSAP process in response to the Call for Participation.

The first draft was produced in October 2002. Shortly thereafter, the second draft was also made available in March 2003 and was widely circulated. Both the drafts were circulated under MoEF's name and included revisions based on comments of the Government of India ministries, State Governments, NGOs, community groups and individual experts.

The third revised version was prepared and was reviewed by a peer review group set up by the MoEF in mid-2003. The peer review group shared their views with the members of the technical implementing agency at a meeting organised and hosted by the MoEF in May 2003. It was only after this that a fourth draft was prepared and sent for external editing and finalisation. A final draft was produced in December 2003 thereafter, and the same was expected to be approved as the NBSAP.

However, in January 2004, MoEF took the view that the final draft could only be published as a Final Technical Report and not as NBSAP as it needed the approval of the Union Cabinet. The MoEF also stated that since the Cabinet had recently mandated MoEF to come up with a National Environment Policy (NEP) and since that would be a more overarching document, the NBSAP would have to be in harmony with it. The NBSAP could

therefore not be accepted as final till the NEP was finalised. The TPCG and the technical implementing agency considered this point unreasonable, given the fact that the NBSAP process had started four years earlier than the new process of development of NEP.

In May 2004 the MoEF further changed its position and did not sanction the publication of the draft even as a Final Technical Report. The MoEF stated that the draft cannot be published until the NEP and Cabinet approval of the NBSAP draft were both completed. A few could be photocopied however. It was also contended that MoEF was not comfortable with some parts of the report. MoEF officially conveyed to the technical coordinating agency not to make the report public in March 2005. However, a list of the specific points of discomfort was not made available in writing to the agency or the TPCG.

The information on the discrepancies was made available to the technical implementing agency through external sources like Parliament questions and using the Right to Information Act. In December 2004, in response to a 'Short Notice Question' raised by a Member of Parliament, the Ministry sent a written response which stated that: the draft report contained numerous irreconcilable discrepancies, scientific inaccuracies as well as certain implausible and unacceptable recommendations.

The main issue as stated in the letter was that the draft report was inconsistent with the draft NEP of 2004 that had already been put on the Ministry's website. It was stated that any long term Biodiversity Action Plan of the country should be in conformity with and flow from the proposed Environment Policy. The Ministry was therefore, of the view that the draft report should be scrutinised and then synthesised with the Environment Policy before being sent to the cabinet for approval.

In March 2005, MoEF wrote to Kalpavriksh, the technical co-ordinating agency, asking it not to publish or in any form make publicly available, the report submitted in December 2003. However, the technical co-ordinating agency, in consultation with the TPCG, decided to make the report available to the public in a published form, as the Final Technical Report of NBSAP. Hence, this report was posted on the agency's website and was also made available electronically for anyone who requested it. The final report was titled, **"Securing India's Future: Final Technical Report of the National Biodiversity Strategy and Action Plan (NBSAP)."**

The report was released to the public on 4 October 2005 in form of a printed version of the concise summary and a CD containing the full and final technical report, all the BSAPs, sub-thematic reviews and other documents related to the process. The day after the release, On October 05, the MoEF issued a press statement. The key points of the statement were:

- ◆ A team of scientists who reviewed the report have concluded that major part of the report is scientifically invalid.
- ◆ MoEF has rejected the report and started the process of developing the action plan afresh.

The Ministry however, submitted another report to the UNDP soon after rejecting the draft report. The draft was accepted only as a Final Technical Report (FTR) of the NBSAP process, and submitted as FTR, by MoEF to UNDP. After trying to get MoEF to publish this for a year or so, Kalpavriksh went ahead and published it in the form of a summary with a CD containing the full national plan and all other outputs. MoEF in 2008 produced a final action plan, which is a brief document that reads more like a broad strategy paper than an action plan. Critics say that it only goes a little bit ahead of a document it had itself released in 1999, the National Policy and Macro-level Action Strategy on Biodiversity.

Despite this setback, a number of outcomes of the NBSAP process have been positive. This includes the widespread networking that resulted in many new partnerships and exchanges of experience, the incorporation of several points from the FTR-NBSAP into the 11th 5 Year Plan, the publication of and consideration of several State action plans for implementation, and generation of awareness through various events and media coverage.

#### **e) Criticisms on Implementation**

It has been contended by the technical and administrative agencies, the TPCG as well as various persons involved in the process of NBSAP that the decisions of MoEF during the later stages of implementations were in complete contrast to the open and transparent process carried out throughout the initial NBSAP phase. It was alleged that the MoEF ignored the energy and inputs that thousands of people had put into the process, and also violated the contractual agreement between MoEF and UNDP/GEF.

Some critics have contended that since 2003 when the final national draft of the NBSAP was submitted to it, the MoEF has betrayed the spirit of the process making it non-transparent, sitting on and then “rejecting” the draft on flimsy grounds, and delaying the formulation of the final action plan.

The sudden change of stance of the Ministry is believed to be due to the change in constitution of the Ministry. Sources from the technical agency contended that since the new Secretary of the Ministry took charge, there have been unexpected turns in the process of NBSAP. There has been an undeniable confusion in the MoEF’s mishandling of the report.

When the Ministry submitted a new report to UNDP, the agencies involved in NBSAP process asserted that the report was a diluted version of the rejected draft report containing similar points that were a part of the draft report that the MoEF had found incorrect and inaccurate. It was also argued that this submission was made merely as a compromise since the Ministry was facing a deadline of the year 2006 when COP 8 was to be held.

The major reason as stated by critics for the MoEF’s change of stance is that the new Secretary of the Ministry was swayed in favour of draft NEP of 2004 and that the Ministry wanted NBSAP to be in tune with the newly conceived NEP. The causes stated for this change of stance are:

- ◆ MoEF favoured draft NEP of 2004 to draft report of NBSAP since it was more politically motivated and human centric.
- ◆ 90 groups and people's movements from across India stated in an Open Letter on 29 October 2005, the draft NEP was more an apology for conventional economic growth than a strong statement on how to conserve the environment. This led to the Ministry favouring the NEP even though NBSAP four years older.
- ◆ Another reason stated for the MoEF disfavoured the draft report was due to the fact that it challenged the view that environment expertise lies only in the government or some other formal scientific institution.
- ◆ The final technical report of NBSAP was pro-environment with recommendations for development of people's livelihood. The report also argued that the root of India's Biodiversity crisis was due to a fundamentally flawed developmental process and in decision making process that put power in the hands of a small elite group living in big cities. The report further stated that current phase of "globalisation" was a major environmental threat. The critics argue that statements like these in the NBSAP attracted displeasure of the Government of India.

### **Recommendations by critics on India's Stance**

The critics have alleged that India has lost its proactive role in the last few years, and worse still has started violating the CBDs provisions. In doing so, it is further endangering its already fast-eroding biodiversity, threatening the future of its uniquely and culturally diverse traditional communities and opening up traditional knowledge to various forms of biopiracy and misuse.

If it is to regain its international leadership role in the field of biodiversity, India must reverse the trend of the last few years. It must:

- ◆ Review and modify national laws and policies to bring them more in line with the CBD. It must strengthen EIA notifications to stop destructive projects and enable full citizens' participation, as well as reinforce the Biological Diversity Act and Rules to strongly protect traditional knowledge and empower communities, and the Wild Life Act to make conservation more effective, participatory and respectful of the rights of communities.
- ◆ Maintain the integrity of protective principles in current legislation that seek to protect farmers and community rights, biodiversity and indigenous knowledge.
- ◆ Finalise and implement a NBSAP that is true to the spirit and content of the NBSAP draft report submitted to the MoEF in end-2003.
- ◆ Halt the alarming spread of genetically engineered crops; in particular, safeguard India's position as country of origin of several crops.
- ◆ Develop and implement a legal regime for liability and redress, sensitive especially to the likely socio-economic impact on small farmers and traditional agricultural practices, especially in relation to new technologies.

- ◆ Oppose the promotion or acceptance of Genetic Use Restriction Technologies including “terminator”, consistent with its domestic position banning such technologies.
- ◆ Halt the opening up of biological resources and people’s knowledge to private corporations, which shifts control away from communities and threatens biodiversity with further erosion.
- ◆ Show greater commitment to community-centered conservation policies, and more openness to the involvement of indigenous/local communities in the operations of this forum.
- ◆ Display leadership in the South Asian region in the development of such ethics, including through forums like the South Asian Association of Regional Cooperation (SAARC).
- ◆ Respect India’s own constitutional principles mandating a bottom-up, decentralised approach that provides legitimacy to the government to represent the people at international forums such as the CBD.

#### f) Current trends in implementation

Although, implementation of a Biodiversity Action Plan based on the draft, report of NBSAP has not yet seen the light, a large number of local, state, eco-regional and thematic plans have already been implemented. Many implementation measures had been initiated even before the national plan process was over. Many States have implemented the recommendations of the respective BSAPs such as Arunachal Pradesh, Assam, Haryana, Sikkim, Madhya Pradesh, Mizoram, Karnataka, Rajasthan, Punjab, Uttarakhand, West Bengal, etc. Some States have also constituted Biodiversity Boards to look into implementation and other incidental matters.

BSAPs of various sub-state, eco-regional and thematic levels have also been adopted and implemented. Some sub-state BSAP that have been implemented are at Simlipal in Odisha), North Coastal Andhra and Deccan Area in Andhra Pradesh, Vidarbha in Maharashtra, Rathong Chu in Sikkim, Uttara Kannada in Karnataka, Lahaul Spiti in Himachal Pradesh and so on.

In the last two centuries India has lost over half its forests, 40% of its mangroves and a significant part of its wetlands. At least 40 species of plants and animals have become extinct, including the cheetah and the pink-headed duck, with several hundred more under the same threat. Crop and livestock breeds are not exempt either. All 18 indigenous breeds of poultry face the possibility of extinction.

A compelling need to implement the report is brought out by these facts. The report is wide-ranging in its recommendations, which stem from an understanding that the greatest threats come from a destructive process of development. It weaves together the effects that everything, from traditional water harvesting to globalisation to a centralised political system, ultimately has on the biodiversity of the country.

It is pertinent to note that India’s Sixth National Report (NR6) provides an update of progress in achievement of 12 National Biodiversity Targets (NBT) developed under the

Convention process in line with the 20 global Aichi biodiversity targets. The said Report highlights that while India has exceeded/overachieved two NBTs; it is on track to achieve eight NBTs and in respect of the remaining two NBTs India is striving to meet the targets by the stipulated time of 2020<sup>5</sup>.

## 20.6 Biological Diversity Act, 2002

Biodiversity encompasses the variety of all life on earth. India is one of the 12-mega diverse countries of the world. With only 2.5% of the land area, India already accounts for 7.8% of the global recorded species. India is also rich in traditional and indigenous knowledge, both coded and informal.

Recognising the sovereign rights of States to use their own biological resources, the CBD (1992) expects the Parties to facilitate access to genetic resources by other Parties subject to national legislation and on mutually agreed upon terms (Article 3 and 15 of CBD). Article 8(j) of the CBD recognises contributions of local and indigenous communities to the conservation and sustainable utilisation of biological resources through traditional knowledge, practices and innovations and provides for equitable sharing of benefits with such people arising from the utilisation of their knowledge, practices and innovations.

Biodiversity is a multi-disciplinary subject involving diverse activities and actions. The stakeholders in biological diversity include the Central Government, State Governments, institutions of local self-governmental organisations, industry, etc. One of the major challenges before India lies in adopting an instrument, which helps realise the objectives of equitable sharing of benefits enshrined in the Convention on Biological Diversity.

After an extensive and intensive consultation process involving the stakeholders, the Central Government brought Biological Diversity Act, 2002 with the following salient features:

- i) to regulate access to biological resources of the country with the purpose of securing equitable share in benefits arising out of the use of biological resources; and associated knowledge relating to biological resources;
- ii) to conserve and sustainably use biological diversity;
- iii) to respect and protect knowledge of local communities related to biodiversity;
- iv) to secure sharing of benefits with local people as conservers of biological resources and holders of knowledge and information relating to the use of biological resources;
- v) conservation and development of areas of importance from the standpoint of biological diversity by declaring them as biological diversity heritage sites;
- vi) protection and rehabilitation of threatened species;
- vii) involvement of institutions of State governments in the broad scheme of the implementation of the Biological Diversity Act through constitution of committees.

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<sup>5</sup> India submits Sixth National Report to the Convention of Biological Diversity (CBD).

## 20.7 Conclusion

The CBD negotiations before 1992 witnessed developing countries rallying around the need for access to benign and sound technological resources and new and additional financial resources for achieving sustainable development.

To accommodate many of these concerns the final text of the CBD includes some important elements namely: the precautionary principle; a comprehensive IPR regime issues related to liability and redress for damage caused to biodiversity and a compilation of global list of protected areas and spaces.

This is not to take away the importance of the treaty as adopted. It remains the first comprehensive treaty with a holistic, ecosystemic approach towards conservation and sustainable use of biological diversity. Being a framework Agreement, it provides for policy leeway for national level action based on the capacity of States to implement obligations.

The challenge ahead largely lies to chart a new programmatic action for the Convention post-Nagoya which will result in genuine economic development and also conservation of biodiversity. It's heartening to see that the Japanese have already prepared a blueprint based on the Satoyama Initiative that intends to mainstream biodiversity into developmental activities.

# UNIT 21

## ACCESS AND BENEFIT SHARING OF GENETIC AND BIOLOGICAL RESOURCES

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### 21.1 Introduction

The Genetic material carried by the organisms inhabiting the planet Earth - plants, animals, microbes and others, which has the potential of being utilised by humans are termed as “genetic resources”. These genetic materials are extremely important for humankind as they provide raw materials for the creation of several products and services required by humans. When utilised properly, they also provide humans with valuable information for understanding the natural world. However, like most other resources in the world, access of genetic resources has certain challenges. They are, firstly, not evenly distributed. Secondly, they tend to face issues in their areas of habitation that increasingly force them on the path of being endangered or moving into extinction. Due to these reasons, the task of analysing how these resources may be accessed as well as the ways in which benefits arising from their use are shared between the people or the countries using the resources (users) and the people or countries that provide them (providers) has become an important aspect. The study of this aspect is often referred to as Access and Benefit-sharing (ABS). It has been viewed by several around the world as promoting the conservation and sustainable use of these resources, which will further contribute to creating more equitable economies and assist in achieving sustainable development.<sup>1</sup>

Given the increasing importance of ABS in promoting environmental sustainability, this aspect was made one of three fundamental objectives of the Convention on Biological Diversity. Article 1 of the Convention explains it as the: “*fair and equitable sharing of*

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<sup>1</sup> CBD: ABS- Introduction to access and benefit-sharing(brochure); [cbd.int/abs/infokit/brochure-en.pdf](http://cbd.int/abs/infokit/brochure-en.pdf)

*benefits arising out of the utilisation of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and technologies, and by appropriate funding*". Article 15 of the Convention further provides for a framework for the implementation of this objective.

While discussing about ABS, we also need to understand that a great deal of our current knowledge regarding genetic resources was taken from the traditional knowledge of indigenous and local communities (ILCs). This aspect has been duly recognised by the Convention and is dealt with mainly Article 8(1), which contains provisions for promoting equitable sharing of benefits with respect to the utilisation of knowledge, innovation and practices of ILCs. These ILCs played and continue to play a unique role in conserving life on Earth. The provision of Article 8(1) did not only serve as a recognition of this role played by the ILCs, but also aided in bringing about a wider application of the Convention by gaining approval of the holders of traditional knowledge regarding biological diversity.

These provisions are connected to several other provisions in the Convention, including those on access to, and transfer of technology (Article 16), exchange and of information (Article 17), technical and scientific cooperation (Article 18), the handling of biotechnology and distribution of benefits (Article 19) and financial resources and financial mechanism (Articles 20 and 21).

For furthering the objective of ABS, the Conference of Parties in its fourth meeting in 1998 established a Panel of Experts on Access and Benefit-Sharing in order to clarify concepts and principles related to ABS. The panel met in two meetings, wherein several issues of importance such as mutually agreed terms (MAT), prior-informed consent, capacity-building and stakeholder involvement within the ABS process were discussed. It is pertinent to mention that the Conference of Parties in 2002 led to the establishment of an Ad-Hoc Open-Ended Working Group on Access and Benefit-sharing, a subsidiary body of COP, with the purpose of developing guidelines and approaches to assist Parties with the implementation of the access and benefit-sharing provision of CBD.

The year of 2002 was of significance to this initiative. Firstly, the Conference of Parties adopted the Bonn Guidelines on Access to Genetic Resources and Equitable Sharing of Benefits Arising out of their Utilisation. These were meant to assist Parties in the process of establishing administrative, legislative or policy measure on ABS and/or for negotiating contractual agreements in connection with ABS. Secondly, the World Summit on Sustainable Development was organised in Johannesburg in September 2002. Paragraph 44 (o) of the Plan of Implementation adopted by the Summit called for action to "negotiate within the framework of the Convention on Biological Diversity, bearing in mind the Bonn Guidelines, an international regime to promote and safeguard the fair and equitable sharing of benefits arising out of the utilisation of genetic resources". Furthermore, paragraph 44 (n) called for action to promote "the wide implementation of and continued work by the Parties to the Convention on the Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of Benefits arising out of their Utilisation, as an input to assist the Parties when developing and drafting legislative, administrative or

policy measures on access and benefit-sharing as well as contract and other arrangements under mutually agreed terms for access and benefit-sharing.” This forms the basis of International Regime on Access and Benefit-sharing<sup>2</sup>. As such, this summit saw, among other things, governments from world over issuing a call for action to negotiate an international regime to promote fair and equitable sharing of benefits arising from the use of genetic resources. In response to this call, the Ad-Hoc Open-ended Working Group on ABS (hereafter referred to as the Working Group) was given the mandate of elaborating, as well as negotiating on an international regime on ABS in accordance with decision VII/19 D of the COP. The final goal was the adoption of an instrument/instruments in this regard, which could do justice to the provisions contained in the three objectives as well as Articles 15 and 8(1) of the Convention.

After this, an Open-ended Inter-sessional Meeting on the Multi-Year Programme of Work of the Conference of Parties up to 2010 took place in Montreal, Canada in 2003. This meeting recommended the Working Group on ABS to consider the “process, nature, scope, elements and modalities of an international regime and provide advice to the Conference of the Parties at its seventh meeting on how it may wish to address this issue”. This meeting also saw further action being taken on the Bonn Guidelines, for an invitation was sent to the Parties, other Governments, ILCs and relevant organisations to provide their views on this topic to the Executive Secretary, who was then instructed to compile them. This was referred to in Decision VI/24 of the meeting.

Taking charge of this responsibility, the Working Group on ABS met 11 times till the year of 2010 to negotiate an international regime on ABS. It organised its second meeting in Montreal, Canada in December 2003, wherein it prepared the terms of reference for negotiation of an international regime. These recommendations were then submitted to the seventh Conference of Parties held in 2004 in Kuala Lumpur, Malaysia, wherein they were agreed upon. This formed a part of the decision VII/9 adopted by the Conference of Parties.

The Working Group held its third meeting in Bangkok, Thailand, from 14 to 18 February 2005 and its fourth meeting in Canada, Spain, from 30 January to 3 February 2006. At these meetings, the Working Group began negotiations for an international regime on access to genetic resources, in accordance with decision VII/19 D of the Conference of the Parties. The fourth meeting’s report also carried the recommendations on the way forward for the Eight Conference of Parties. The Eight Conference of Parties was organised in Curitiba, Brazil, in March 2006. Major outcomes of the Conference were set out in its decision VIII/4. These included the issuance of an instruction to the Working Group to complete working on the document before the Tenth Conference of Parties in 2010. Also, Tim Hodges from Canada and Fernando Casas from Columbia were appointed as the co-chairs of the Working Group.

The fifth meeting of the Ad-Hoc Group was held in Montreal in October 2008 while the sixth meeting was held at Geneva, Switzerland in January 2008. The sixth meeting’s

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<sup>2</sup> See [www.biodiv.org](http://www.biodiv.org) the CBD website for the introduction of ABS as an agenda item. Also see Earth Negotiations Bulletin, , Vol. 9 Number 452 - Monday, 2 June 2008.

report carried recommendations for the Ninth Conference of Parties, which was organised at Bonn, Germany in May 2008. In this meeting Working Group were asked to finalise the international regime and to submit the finalised instrument(s) for consideration and adoption to the tenth meeting of the Conference of Parties. This process was to be done in a way that does not preclude or prejudice any outcome regarding the instrument(s).

The Ninth COP decided to establish three distinct groups of technical and legal experts on the issues of: (i) compliance in the context of international regime on ABS; (ii) concepts, terms, working definitions and sectoral approaches; and (iii) traditional knowledge associated with genetic resources. These expert groups were intended to assist the Working Group by providing legal and, as appropriate, technical advice. The second group went on to meet in Windhoek, Namibia in December 2008, while the first group met at Tokyo, Japan in January 2009 and the third group met at Hyderabad, India in June 2009.

The Ad-Hoc Group held its seventh meeting at Paris, France in April 2009. In line with decision IX/12 of the Eight Conference of the Parties, the Working Group addressed the issues of objective, scope, compliance, fair and equitable benefit-sharing and access and entered into negotiations for the operational text on the same.

At its eighth meeting in November 2009 organised at Montreal, Canada, the Working Group addressed the operative text on all components of the regime and discussed its legal nature. The meeting adopted the Montreal Annex which consisted of a single, consolidated draft of the international regime, and a second annex on proposals for operational texts left in abeyance for consideration at the ninth meeting. It also established an intersessional process leading up to the ninth meeting, including: A Friends of the Co-Chairs group; a Co-Chairs' Inter-regional Informal Consultation; and a series of regional consultations.

The Ad-Hoc Group conducted its ninth meeting at Santiago de Cali, Columbia in March 2010. While carrying forward the negotiations for the regime, the Working Group accepted a draft protocol tabled by the co-chairs after deliberation with a variety of stakeholders. Delegates identified a series of key issues with respect to the draft protocol text and established four contact groups to address them. Following discussion on a range of important issues like benefit-sharing from derivatives and an internationally recognised certificate of compliance, the Working Group decided to establish an inter-regional group. However, due to procedural wrangling, the inter-regional group never managed to enter into text-based negotiations and talks temporarily broke down. Later on, in July 2010, the Working Group resumed its ninth meeting at Montreal. Herein, it convened an Interregional Negotiating Group (ING) to continue negotiations on the draft Protocol. The meeting witnessed significant advancements from the parties in reaching a common understanding over several core issues, including compliance, benefit-sharing from derivatives as well the relationship between the Protocol and other international instruments. The ING resumed its work first in Montreal and next in Nagoya, Japan until the last meeting of the Working Group that was organised at Nagoya on 16 October 2010.

At this meeting, the Working Group endorsed the work of ING and finally forwarded a draft protocol on ABS for the consideration of Parties at COP-10.

This document was adopted as the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilisation to the Convention on Biological Diversity on 29 October 2010 at the Tenth Conference of Parties also organised in Nagoya, Japan.

The Parties at the Tenth Conference also decided to establish the Open-ended Ad-Hoc Intergovernmental Committee for Nagoya Protocol on ABS (the Intergovernmental Committee) as an interim governing body for the Nagoya Protocol, so as to make preparations necessary for the first meeting of the Parties to the Protocol. The Nagoya Protocol was finally adopted on 12 October 2014, 90 days after the deposit of the fiftieth instrument of ratification. As on December 2019, the Protocol has been ratified by 114 Parties - 113 UN member states and the European Union. It is the second supplementary agreement to the CBD after the 2000 Cartagena Protocol on Biosafety, and currently serves as the leading international instrument on access and benefit-sharing with respect to genetic resources.

## 21.2 Nagoya Protocol on Access and Benefit Sharing

### *Objectives of Nagoya Protocol*

The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilisation (ABS) to the Convention on Biological Diversity is a supplementary agreement to the Convention on Biological Diversity. It provides greater legal certainty and transparency for both providers and users of genetic resources and associated traditional knowledge by:

- ◆ Establishing more predictable conditions for access to those resources; and
- ◆ Helping to ensure benefit-sharing when genetic resources leave the contracting Party providing the genetic resources.

The Nagoya Protocol on Access and Benefit Sharing is a global mechanism regulating the access and utilisation of biological resources. The agreement entered into force nearly five years ago, on 12 October 2014, as a supplement to the 1992 Convention on Biological Diversity. The Protocol creates incentives to conserve and sustainably use genetic resources, and as such, enhances the contribution of biodiversity to development and human well-being.

### **Core obligations**

The core obligations set out by Nagoya Protocol for its contracting Parties to take measures in relation to access to genetic resources, benefit-sharing and compliance are as follows:

### **Access obligations**

Domestic-level access measures are to:

- ◆ Create legal certainty, clarity and transparency
- ◆ Provide fair and non-arbitrary rules and procedures
- ◆ Establish clear rules and procedures for prior informed consent and mutually agreed terms
- ◆ Provide for issuance of a permit or equivalent when access is granted
- ◆ Create conditions to promote and encourage research contributing to biodiversity conservation and sustainable use
- ◆ Pay due regard to cases of present or imminent emergencies that threaten human, animal or plant health
- ◆ Consider the importance of genetic resources for food and agriculture for food security

### **Benefit-sharing obligations**

- ◆ Domestic-level benefit-sharing measures are to provide for the fair and equitable sharing of benefits arising from the utilisation of genetic resources with the contracting party providing genetic resources. Utilisation includes research and development on the genetic or biochemical composition of genetic resources, as well as subsequent applications and commercialisation. Sharing is subject to mutually agreed terms. Benefits may be monetary or non-monetary such as royalties and the sharing of research results.

### **Compliance obligations**

Specific obligations to support compliance with the domestic legislation or regulatory requirements of the contracting party providing genetic resources, and contractual obligations reflected in mutually agreed terms, are a significant innovation of the Nagoya Protocol. Contracting Parties are to:

- ◆ Take measures providing that genetic resources utilised within their jurisdiction have been accessed in accordance with prior informed consent, and that mutually agreed terms have been established, as required by another contracting party
- ◆ Cooperate in cases of alleged violation of another contracting party's requirements
- ◆ Encourage contractual provisions on dispute resolution in mutually agreed terms
- ◆ Ensure an opportunity is available to seek recourse under their legal systems when disputes arise from mutually agreed terms
- ◆ Take measures regarding access to justice
- ◆ Take measures to monitor the utilisation of genetic resources after they leave a country including by designating effective checkpoints at any stage of the value-chain: research, development, innovation, pre-commercialisation or commercialisation

### **Nagoya Protocol and traditional knowledge**

The Nagoya Protocol addresses traditional knowledge linked with genetic resources with provisions on access, benefit-sharing and compliance. Genetic resources where indigenous

and local communities have the established right to grant access to them are also addressed by the Nagoya Protocol. Contracting Parties are to take measures to ensure these communities' prior informed consent, and fair and equitable benefit-sharing, keeping in mind community laws and procedures as well as customary use and exchange.

The Protocol contains significant provisions relating to traditional knowledge associated with genetic resources held by indigenous and local communities, as well as to genetic resources held by indigenous and local communities where the rights of these communities over these resources have been recognised. The Protocol chalks out clear obligations to seek the prior informed consent of indigenous and local communities in these situations. It also provides for the sharing of benefits arising from the use of traditional knowledge associated with genetic resources, as well as benefits arising from the use of genetic resources in accordance with domestic legislation.

Parties to the Protocol are required to ensure that their nationals comply with the domestic legislation and regulatory requirements of provider countries related to access and benefit-sharing of traditional knowledge associated with genetic resources.

### **Key Articles of the Protocol**

Articles 5 (1) and (3) of the Protocol mandates that each Party has to take appropriate "legislative, administrative or policy measures" to ensure fair and equitable sharing of benefits arising out of the utilisation of Genetic Resources.

Article 5(1) the Nagoya Protocol reads as

'In accordance with Article 15, paragraphs 3 and 7 of the Convention, benefits arising from the utilisation of genetic resources as well as subsequent applications and commercialisation shall be shared in a fair and equitable way with the Party providing such resources that is the country of origin of such resources or a Party that has acquired the genetic resources in accordance with the Convention. Such sharing shall be upon mutually agreed terms.'

Article 5(3) of the Nagoya Protocol reads as,

'To implement paragraph 1 above, each Party shall take legislative, administrative or policy measures, as appropriate.'

Article 5(2) of the Protocol obligates that indigenous and local communities must be given fair and equitable share of benefits for access to Genetic Resources held by them in accordance with their established rights under the domestic laws of the Party concerned. Article 5(5) of the Protocol obligates Parties to take appropriate measures to ensure that these benefits are shared in a fair and equitable way with indigenous and local communities upon mutually agreed terms.

Article 5(2) of the Nagoya Protocol reads as,

'Each Party shall take legislative, administrative or policy measures, as appropriate, with the aim of ensuring that benefits arising from the utilisation of genetic resources that are held by indigenous and local communities, in

accordance with domestic legislation regarding the established rights of these indigenous and local communities over these genetic resources, are shared in a fair and equitable way with the communities concerned, based on mutually agreed terms.’

Article 5(5) of the Nagoya Protocol reads as,

‘Each Party shall take legislative, administrative or policy measures, as appropriate, in order that the benefits arising from the utilisation of traditional knowledge associated with genetic resources are shared in a fair and equitable way with indigenous and local communities holding such knowledge. Such sharing shall be upon mutually agreed terms.’

Articles 6 and 7 of the Nagoya Protocol obligates providing Parties to undertake appropriate legislative or regulatory measures to ensure Prior Informed Consent and Mutually Agreed Terms before access to genetic resources and traditional knowledge is granted. Article 6(3) of the Nagoya Protocol spells out what these measures must include to ensure smooth and transparent implementation. Article 6(3) of the Nagoya Protocol read as,

“3. Pursuant to paragraph 1 above, each Party requiring prior informed consent shall take the necessary legislative, administrative or policy measures, as appropriate, to:

- a) Provide for legal certainty, clarity and transparency of their domestic access and benefit-sharing legislation or regulatory requirements;
- b) Provide for fair and non-arbitrary rules and procedures on accessing genetic resources;
- c) Provide information on how to apply for prior informed consent;
- d) Provide for a clear and transparent written decision by a competent national authority, in a cost-effective manner and within a reasonable period of time;
- e) Provide for the issuance at the time of access of a permit or its equivalent as evidence of the decision to grant prior informed consent and of the establishment of mutually agreed terms, and notify the Access and Benefit-sharing Clearing-House accordingly;
- f) Where applicable, and subject to domestic legislation, set out criteria and/or processes for obtaining prior informed consent or approval and involvement of indigenous and local communities for access to genetic resources; and
- g) Establish clear rules and procedures for requiring and establishing mutually agreed terms. Such terms shall be set out in writing and may include, *inter alia*:
  - i) A dispute settlement clause;
  - ii) Terms on benefit-sharing, including in relation to intellectual property rights;
  - iii) Terms on subsequent third-party use, if any; and
  - iv) Terms on changes of intent, where applicable.”

**The ABS Clearing-House:** Article 14 of the Protocol establishes the Access and Benefit-sharing Clearing-House (ABS Clearing-House) as part of the clearing-house mechanism under Article 18, paragraph 3 of the Convention, as a means for sharing information on access and benefit-sharing.

**Assessment and review:** Article 31 of the Nagoya Protocol provides that the Conference of the Parties serving as the meeting of the Parties to the Protocol undertake, four years after the entry into force of the Protocol and thereafter at intervals determined by the Conference of the Parties serving as the meeting of the Parties to the Protocol, an evaluation of the effectiveness of the Protocol.

**Awareness-raising:** Article 21 of the Nagoya Protocol provides that each Party shall take measures to raise the awareness of the importance of genetic resources and traditional knowledge associated with genetic resources, and related access and benefit-sharing issues. It also provides an indicative list of such measures.

**Capacity-building and development:** Article 22 of the Nagoya Protocol provides that Parties shall cooperate in the capacity-building, capacity development and strengthening of human resources and institutional capacities to effectively implement the Protocol in developing country Parties and Parties with economies in transition. In doing so, Parties are required to fully take into account the needs of developing country Parties and Parties with economies in transition for financial resources and facilitate the involvement of indigenous and local communities and relevant stakeholders.

**Compliance with the Protocol:** Article 30 of the Nagoya Protocol provides that the first meeting of the Conference of the Parties serving as the meeting of the Parties to the Nagoya Protocol (COP-MOP) shall consider and approve cooperative procedures and institutional mechanisms to promote compliance with the provisions of the Protocol and to address cases of non-compliance.

**Global multilateral benefit-sharing mechanism:** Article 10 of the Protocol states that “Parties shall consider the need for and modalities of a global multilateral benefit-sharing mechanism to address the fair and equitable sharing of benefits derived from the utilisation of genetic resources and traditional knowledge associated with genetic resources that occur in transboundary situations or for which it is not possible to grant or obtain prior informed consent. The benefits shared by users of genetic resources and traditional knowledge associated with genetic resources through this mechanism shall be used to support the conservation of biological diversity and the sustainable use of its components globally.”

**Model contractual clauses, codes of conduct, guidelines and best practices and/or standards:** Articles 19 and 20 of the Protocol require each Party to encourage, as appropriate, the development, update and use of sectoral and cross-sectoral model contractual clauses for mutually agreed terms, and voluntary codes of conduct, guidelines and best practices and/or standards in relation to access and benefit-sharing. Furthermore, the Conference of the Parties serving as the meeting of the Parties to the

Protocol shall periodically take stock of the use of these tools and consider the adoption of specific codes of conduct, guidelines and best practices and/or standards.

**Resource mobilisation:** Article 25 of the Protocol calls for provision of financial assistance to developing country Parties and Parties with economies in transition to effectively implement the Protocol through the financial mechanism of the Convention (paragraphs 2, 3 and 5) and through bilateral, regional and multilateral channels (paragraph 6).

### 21.3 India's Experience of Implementing the Nagoya Protocol

There have been sustained efforts in India for fulfilling her commitments towards conservation of biodiversity, its sustainable use and the fair and equitable sharing of benefits. This is warranted by *inter alia* enactment of domestic legislations, framing of policies and action plans, and setting up of institutional structures for their implementation.

Article 29 titled as, 'Monitoring and Reporting' of the Protocol reads as,

“Each Party shall monitor the implementation of its obligations under this Protocol, and shall, at intervals and in the format to be determined by the Conference of the Parties serving as the meeting of the Parties to this Protocol, report to the Conference of the Parties serving as the meeting of the Parties to this Protocol on measures that it has taken to implement this Protocol.”

Decision NP-1/3 of COP-MOP 2014 had prescribed the format for the interim national report, which the Parties were to submit India submitted its compliance report to the Convention Secretariat on 1 November 2017.

#### Legislative Framework:

Subsequent to the entry into force of the Nagoya Protocol, India notified the Guidelines on Access to Biological Resources and Associated Knowledge and Benefit Sharing Regulations, 2014 (ABS Regulations, 2014) under the Biological Diversity Act, 2002. These guidelines strengthened the enforcement of the Act, 2002 in accordance with the provisions of the Protocol.

Biological Diversity Act, 2002, Biological Diversity Rules, 2004 and the ABS Regulations, 2014 together prescribe a comprehensive scheme of processing the applications for access to genetic resources and associated knowledge, and provide a template and terms for benefit sharing in Indian legislative context. For effective implementation of the access and benefit sharing measures, the Indian Government has authority under the Biological Diversity Act, 2002 to issue notifications as and when required to meet any exigencies.

Sections 3, 7 and 23 of the Biological Diversity Act, 2002 empower the National Biodiversity Authority (NBA) at the national level and the State Biodiversity Boards (SBBs) at the State Government level respectively to grant approval for access to genetic resources and associated knowledge as applicable.

Section 41(1) of the Biological Diversity Act, 2002 mandates Biodiversity Management Committees (BMCs) at the local level to document biological diversity found in their jurisdiction in the form of Peoples Biodiversity Registers (PBRs) and record traditional knowledge related thereto. This documentation is done with the engagement of local communities including women.

### **National Focal Point and Competent National Authority**

Ministry of Environment Forest and Climate Change (MoEFCC) has been designated as the National Focal Point (NFP) and NBA as the Competent National Authority (CNA), as required under Article 13 of the Nagoya Protocol. Designation of these national level authorities as NFP and CNA ensure coordination, transparency, facilitation of procedures and processes and sharing of information with Access and Benefit Sharing Clearing House (ABS-CH).

India shared its Internationally Recognised Certificate of Compliance (IRCC) on ABS-CH. An intermenstrual, inter-disciplinary expert group to work out the proposal for designation of checkpoints with modalities and procedures for their effective functioning has been set up by NBA. Patent offices are playing the role to some extent by informing the NBA about patent applications concerned with genetic resources and traditional knowledge based inventions/ innovations.

NBA along with the support of SBBs and domain experts undertook a country-wide capacity building programme to train members of BMCs and local communities to identify elements of biodiversity in their areas and collect traditional knowledge relating thereto for documentation of these in PBRs. NBA engages with diverse stakeholders for awareness generation *inter alia* through creation of knowledge products, web site, workshops and other awareness programmes.

### **Some implementation initiatives in India**

The India Business and Biodiversity Initiative (IBB) was launched in 2014 by the MoEFCC. This initiative is supported by Gesellschaft für Internationale Zusammenarbeit (GIZ), and is hosted by Confederation of Indian Industries (CII). The initiative serves as a national platform to sensitise, guide and mentor industries and businesses, particularly in healthcare, agriculture, forestry and mining for mainstreaming the sustainable use and management of biological resources. An expert group comprising members of IBBI maintains a close association with MoEFCC, NBA and SBBs on the aspect of implementation of ABS measures and has undertaken several initiatives to create awareness of and adherence to these ABS measures.

MoEFCC in association with UNDP India instituted India Biodiversity Awards, in 2012. These Awards are given every two years in four categories. Replicable mechanisms for ABS are one of the categories for the Awards.

## 21.4 Conclusion<sup>3</sup>

Humankind has always been - and will always be - completely dependent on the Earth, therefore our treatment of it is paramount to our survival. We have relied particularly on its wealth of biological resources and its biodiversity. For millennia, a balance has existed between the production and consumption of resources. The impact of people on the environment has made relatively few irreversible changes over this time. That is, until recently. Suddenly, the impact of these environmental changes on human activities (such as agriculture, increasing populations, industrialisation, and rising rates of consumption and standards of living) has become clear. The root of biodiversity loss and environmental degradation is the notion that biodiversity is the “common heritage of mankind” (*sic*) and must be preserved for future generations. This means that, while the environment belongs to no one, it is entirely our collective responsibility.

Beginning some 50 years ago, biodiversity losses began to increase at an alarming pace. Desertification became a recognised problem in many regions of the world with ensuing biodiversity loss. By the late 1970s, biodiversity loss, desertification, and even climate change, had begun to receive significant international attention as more and more people began to recognise that the Earth’s resources were finite and that our activities were unsustainable. Due to an accelerating depletion of resources, these resources began to have increased economic value. Deep concern over an environmental crisis was widely expressed for the first time in an international forum at the United Nations Conference on Environment and Development, commonly known as the Earth Summit, held in Rio de Janeiro, Brazil, in 1992. Concurrent to these activities, biotechnology emerged and with it came the promise of creating life-saving new drugs from genetic resources. Modern biotechnologies allowed new and novel uses of biological resources, giving additional value to biodiversity. At the confluence of these world events new concerns emerged over ownership, over the contributions of generations past, and over traditional knowledge (TK) held by indigenous populations. In short, equity concerns arose.

**Equity is a moral issue that has repercussions with respect to the distribution of benefits and environmental conservation.** However, equity is in the eye of the beholder; different individuals come to different conclusions about what is equitable and about how to achieve equity. Unfortunately, market systems created to place a *price* on equity do not work because market systems are constrained in what they measure. Furthermore, with regard to indigenous knowledge, because its products are intangible, once the knowledge or information is disseminated, control over the knowledge is lost. From an objective standpoint, that knowledge has no direct monetary value unless the knowledge can be *translated* into a market-based commodity (or service), whereby the value of different contributions (knowledge, technology, labour, capital, and so forth) can be quantified and traded.

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<sup>3</sup> Extracted from, “Bioprospecting, Traditional Knowledge, and Benefit Sharing”, <http://www.iphandbook.org/handbook/ch16/summary/>

In addition to these problems, the western system of **IP (intellectual property) rights, particularly patenting, is based on the premise that anything that is already known cannot be protected.** Indigenous knowledge is often communal, has been disclosed, and has been passed on from previous generations. The very nature of indigenous knowledge, therefore, does not meet the criteria for intellectual property in today's IP system. Not surprisingly, some people view the use of TK in modern science as a form of biopiracy, which is the unfair acquisition of biological resources and/or associated know-how. Some even argue that the modern IP rights system has harmful effects on indigenous peoples.

# NATURE AND ORIGIN OF INTERNATIONAL ENVIRONMENTAL ORGANISATIONS

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### 22.1 Introduction

In this is an era of dramatic change in international affairs, we can observe unprecedented examples of interdependence in a variety of the fields, such as environment, trade, economics, politics and security, etc. These trends often seek resolution through the mechanism of international negotiation. International negotiation and mediation have become a prevalent form of international activity. They are the principal non-violent means by which both official and unofficial actors resolve or manage international disputes and search for mutually acceptable agreements that satisfy joint goals.

International Negotiation addresses the processes of negotiations concerned with political, security, environmental, ethnic, economic, business, legal, scientific, and cultural issues and conflicts among nations, international and regional organisations, multinational corporations and other non-State actors.

International environmental regimes involve complex interactions between the Parties, their sub-national jurisdictions, their citizens and, sometimes, other stakeholders. In practice it often takes several rounds of negotiation before an effective regime emerges.

The rules governing these regimes differ from one to another reflecting the provisions of the relevant agreement. However, all draw on customary international law and a range of practices and principles that have become widely accepted.

The various regimes address a wide variety of issues, ranging from toxic substances to the protection of elephants, from air pollution to biodiversity. As well, they must respond to changing scientific information about the environment, changing perceptions of the significance of this information, and the constant feedback from the successes and failures of the measures adopted in support of their objectives.

International environmental regimes are based on consent. Scientifically based assessments of environmental developments provide the foundation for most of these agreements, and all of this activity depends on a free flow of information and ready access to decision-making in the regime. Transparency and participation are arguably the most important implementation tools of international environmental regimes but implementation may need the help of arm's-length agencies like an NGO.

Even then, implementing a Multilateral Environmental Agreement (MEA) at the national level and monitoring its progress at the international level are not simple matters. Among other things they require continual adjustment of the regime that is a result of intensive further research on the environmental problem, and on the regime's effectiveness. Public debate on the results of the research is also very essential tool in the actual implementation of the regime at a national level.

## 22.2 Conference of Parties (COP)

The COP is an entity representing all States and is responsible for the overall implementation of the MEA objectives. It reflects the political will of the contracting States and is designed to keep pace with the changing requirements of the sectoral environmental issue. It not only reflects the authority of the convention but also gives effect to the in-built law making process. All the Subsidiary bodies constituted under the MEA report to and function under the COP.

The Conference of the Parties (COPs) is the governing body of a Convention, and advances implementation of the Convention through the decisions it takes at its periodic meetings.

COP generally comes in session once in a year or two years. A formal amendment to the Convention or adoption of a separate Protocol to the Convention requires acceptance and/or ratification of the Parties.

## 22.3 Multilateral Environmental Agreements (MEA) and International Environmental Institutions (IEI)

Today with more than 3000 multilateral environmental agreements (MEAs), international organisations have come to play a very important role and are often considered to be a link between various States. So much so that there is an institutional proliferation and fragmentation of international institutions within and outside the UN system with parallel or complimentary or conflicting mandates.

IEIs have grown at a steady pace within and outside the United Nations. Many of these have been established as specialised agencies of the UN, functional and regional commissions, as well as programmes.

IEIs are vested with legal personality and are created on the basis of a constituent instrument. Such instruments can exist as an international treaty convention, or the constitution or founding charter of international organisations.

To give examples these IEIs or organisations form a complex web and link themselves with the UN with different co-operative arrangements.

- ◆ Functional UN Specialised Agencies which are international organisations established by Treaty based on the agreements they draw with the ECOSOC as per Article 63 of the UN Charter. Examples include the World Bank, the International Maritime Organisation (IMO), the Food and Agricultural Organisation (FAO), the United Nations Industrial Development Organisation (UNIDO), International Civil Aviation Organisation (ICAO) etc.
- ◆ UN General Assembly bodies established pursuant to Article 22 of the Charter of the UN such as United Nations Environment Programme (UNEP), and the Commission on Sustainable Development (CSD).
- ◆ Institutions based on the co-operative arrangements between other international institutions which include the Global Environment Facility (GEF), the Inter-Organisation Programme for the Sound Management of Chemicals (IOMC) and the Inter-governmental Panel on Climate Change (IPCC).
- ◆ Treaty based institutions such as Conference of Parties (COPs) and Meetings of Parties (MOPs) and the Secretariats of the multilateral environmental agreements and other subsidiary bodies.

It may be noted that the General Assembly, the ECOSOC and the Commission of Sustainable Development play an important role as co-ordinators.

In view of the above, an easier classification of these organisations can be undertaken on the basis of their functional roles and mandates. Here we very much agree with the classification provided in your notes namely:

- i) Functional international organisations;
  - ii) Specialised environmental institutions;
  - iii) Treaty bodies or institutional structures established by sectoral regimes;
  - iv) Multilateral financial institutions Let us now discuss them in detail.
- i) Functional International Organisations**

As stated earlier the post-Stockholm scenario witnessed a number of international organisations having varied areas of functioning and specialisation being asked to green their mandates. To name a few these may include: The International Labour Organisation

(ILO), Food and Agricultural Organisation (FAO), International Civil Aviation Organisation (ICAO), United Nations Educational, Scientific and Cultural Organisation (UNESCO), the World Health Organisation (WHO), the International Atomic Energy Agency (IAEA) and the World Meteorological Organisation (WMO). What this really meant was to draw up suitable linkages between various organisations for protection of the 'international environment' as such. Something similar is happening today after the Bali Summit where nearly all departments of the UN as well as governmental departments are questioning a need to refashion 'environmental negotiations' based on public goods/trade-based focus and understanding. While many organisations were and still continue to work based on their constituent instrument/ constitution, other had to amend the constitutions to bring them in line with the need for international protection and preservation of the environment.

For example: the ILO adopts 'conventions' relating to health and safety workers, the environmental rights provided to indigenous peoples; the FAO has adopted a number of agreements in the field of forestry and 'sustainable fisheries management'. An important Convention on Protection of Plant Genetic Resources was adopted under the FAO. Similarly, the IAEM which largely regulates the peaceful use of nuclear energy after the Chernobyl disaster adopted two conventions on: Early Notification of a Nuclear Accident (1986) and Assistance in the Case of a Nuclear Accident or Radiological Emergency (1986). The ICAO a competent organisation in the field of international civil aviation, is in the process of negotiating an agreement on greenhouse gases emitted by aircrafts.

## ii) Specialised Environmental Institutions (SEIs) UNEP

Many of the above organisations dealt with 'environment' problems in a routine way and for these reasons a need was felt for establishment of international organisations devoted exclusively to the field of environment. The UNEP is one such organisation, which was established soon after the 1972 UN Conference on Human Environment, held in Stockholm in 1972. It was established by a resolution of the General Assembly. Rather than taking this negatively, a more positive way to look at the whole issue is saying that States were unanimous to create such a body.

The UNEP functions within the UN Secretariat and is mainly responsible for co-ordinating activities related to the field of environment. The Council consists of 58 members, who lay the policies of the organisation. Its headquarters/Secretariat is based in Nairobi.

The establishment of the UNEP the growing problems of environment in different sectors, particularly in the developing world began to attract the attention of policy makers, environmental lobbies and States. Although, initially focus was on weather and climate modification and seabed exploitation, rivers and river basins, enclosed and semi-enclosed seas, transfrontier pollution and ground waters.

Between 1972-82, the UNEP did not make much progress in helping States to develop proper environmental legislations due to lack of proper resources and constraints faced by developing countries to accelerate their economic development in an environmentally

friendly way. Thereafter, it began to develop a more focused programme on development of environmental law through its Montevideo Programme on Development of Environmental Law, 1992. The Programme was devoted to conclusion of international agreements, development of international principles, guidelines and standards and provision of international assistance for national legislation and administration. One of the important contributions of the UNEP in law making has been the Regional Seas Programme established under its auspices. The 16 odd Programmes have seen adoption of more than 35 regional agreements regulating marine pollution. The areas covered include: land-based marine pollution, pollution by oil, pollution by solids, pollution by dumping, pollution by radioactive contamination (South Pacific), pollution by plastics etc.

In the last several years, a large number of international treaties were concluded under its auspices. To name a few of these include: The Convention on Migratory Species of Wild Animals, 1979, the Vienna Convention and the Montreal Protocol for the Protection of the Ozone Layer (1985 and 1987 respectively), the Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and their Disposal 1989 and the Convention on Biological Diversity 1992.

Most of the SEIs have definite mandates and institutional structure to help States to implement their obligations. This is not to deny that SEIs always derive the powers from their constituent instrument. But it is common knowledge in intuitional functioning that many SEIs also have “implied powers” such like the United Nations has. For example, although the General Assembly that created UNEP’s does not provide an active role for it, the organisation exercised ‘implied powers’ for servicing the adoption of multilateral instruments under its auspices.

The UNEP acts as a catalyst for action by other groups. The Action Plan of the UNEP has 3 main arms i) Environmental Assessment that provides for an Earth watch programme. ii) Management of the environment that involves organising under its auspices international conferences, especially regional conferences; and iii) Providing supporting measures that involve a Legal programme.

### **iii) Treaty Bodies or Sectoral/Regime Specific Institutions**

Besides these SEIs there are a number Treaty based institutions such as Conference of Parties (COPs) and Meetings of Parties (MOPs) and the Secretariats of the multilateral environmental agreements and other subsidiary bodies that help implementation of the MEA. The COP functions as the plenary and supreme decision-making body of the MEA. Although not a permanent standing body looking into day to day functioning the COP comprises all States and is responsible for the final decision of any MEA. Nearly all MEAs on climate change, biological diversity, ozone depletion, desertification etc. have COPs and the Protocols MOPs which realise the smooth and effective functioning and implementation of the obligations agreed upon in MEAs.

Another aspect of regime specific conventions is the need for a Secretariat that services the day-to-day functioning of the MEA. The UNEP for example services the administration

of five MEAs - CITES, CMS, Convention for Protection of the Ozone Layer, Basel Convention on Hazardous Wastes and the CBD.

COPs are generally headed by Executive Secretary who is the CEO of the Convention Secretariat established under the Convention. All subsidiary bodies responsible for scientific assistance and implementation of the MEA work under the overall supervision of the COP and also report to the COP. Every session of the COP is headed by a President who is generally from the host State which is hosting the COP.

#### iv) Multilateral Financial Institutions

Another important feature is the presence of international or multilateral financial institutions that contribute to the management and execution MEAs. These among others include: African Development Bank (AfDB), Asian Development Bank (ADB), European Bank for Reconstruction and Development (EBRD), United Nations Food and Agriculture Organisation (FAO), Inter-American Development Bank (IDB), International Fund for Agricultural Development (IFAD), and United Nations Industrial Development Organisation (UNIDO).

It is of utmost importance that along with States, the private sector and the lay civil society play a role in the implementation of the MEA. A classic example of this is the implementation of the Vienna/Montreal regime governing depletion of the Ozone layer. One of the reasons for the effective implementation of the regime has been the role played by the private sector and international financial institutions.

## 22.4 Commission on Sustainable Development

The United Nations Commission on Sustainable Development (CSD) was established at UNCED. It was established as an environmental institution devoted to the implementation of Agenda 21. Similar to the UNEP, the CSD too was adopted through a resolution of the General Assembly of the UN. It is designated as a 'functional commission' of the ECOSOC. It consists of 53 Members elected for a period of three years.

Role of the Commission has been assigned as a high-level forum tasked with sustainable development that includes:

- ◆ To review progress at the international, regional and national levels in the implementation of recommendations and commitments contained in the final documents of the United Nations Conference on Environment and Development (UNCED), namely: Agenda 21; and the Rio Declaration on Environment and Development.
- ◆ To elaborate policy guidance and options for future activities to follow up the Johannesburg Plan of Implementation and achieve sustainable development
- ◆ To promote dialogue and build partnerships for sustainable development with governments, the international community and the major groups identified in Agenda 21 as key actors outside the Central Government who have a major role to play in

the transition towards sustainable development. These Major Groups include women, youth, indigenous peoples, non-governmental organisations, local authorities, workers and trade unions, business and industry, the scientific community and farmers.

The Johannesburg Plan of Implementation mandated for:

- ◆ Renewed emphasis on integration of the three dimensions of sustainable development in a balanced way
- ◆ Focus on reviewing and monitoring progress in the implementation through a broad exchange of views and experiences, best practice and lessons learned
- ◆ Enhanced linkages between global, regional and national endeavours
- ◆ Integrated process that enhances coherence between the implementation of Agenda 21, initiatives and partnerships
- ◆ Greater involvement at the regional level
- ◆ Opportunity to look at new challenges and opportunities in the context of implementation
- ◆ Innovative methods of work
- ◆ Broader participation of all stakeholders, particularly UN agencies/ international financial institutions and the Major Groups
- ◆ Greater consideration to scientific contributions
- ◆ Contributions of educators
- ◆ Focus on a limited number of issues and
- ◆ Negotiations once every two years

The overburdened task of the CSD would become clear if one were to look at the thematic areas on sustainable development. These among others include: agriculture, atmosphere, biodiversity, climate change, capacity building, desertification and drought, energy, finance, forests, health, human settlement, industry, international law, institutional co-operation, land, mountains, oceans and seas, poverty, science, technology, toxic wastes etc. The CSD is also involved in Inter-Agency co-ordination on matters relating to water, gender, oceans and energy. To date 19 sessions of the CSD have been held.

## 22.5 Global Environmental Facility

The GEF is an independent financial organisation, that provides grants to developing countries for projects that benefit the global environment and promote sustainable livelihoods in local communities. During the pilot phase (1991-1994) the task of its implementation task was assigned to three bodies - the UNDP, UNEP and the World Bank. The GEF took shape when these agencies agreed by a tripartite agreement in 1991 and established by a resolution of the board of directors of the World Bank a grant mechanism to provide financing for projects in four focal areas: ozone layer depletion, global warming, biodiversity, and international waters. During this period, about \$US800 million, contributed or pledged by 28 countries, including 12 developing countries.

Since 1991, the GEF has provided \$6.8 billion in grants and generated over \$24 billion in co-financing from other sources to support over 1,900 projects that produce global environmental benefits in more than 160 developing countries and countries with economies in transition. Donor countries contribute all GEF funds.

The Organisational structure of GEF is as follows: GEF Member Countries include developing and developed countries, as well as those with economies in transition. Each country has a GEF representative known as a “Focal Point”. The GEF Council is the main governing body of the GEF comprising 32 members who represent GEF member countries. The GEF Council must approve all GEF full-size projects. The GEF Assembly is comprised of all the countries that are members of the GEF. It meets once every four years to review the policies and operations of the GEF. Only the Assembly can make any amendments to the GEF Instrument i.e. the document that established the GEF.

The Chief Executive Officer of the GEF CEO is Chairperson Monique Barbut who heads the GEF Secretariat. The Secretariat prepares reports submitted to the Assembly and Council. The Secretariat also co-ordinates the implementation of GEF’s projects and programmes, as well as the formulation of policies and operational strategies. The implementing Agencies and Executing Agencies are responsible for creating project proposals and for managing GEF projects. The non-governmental organisations (NGOs) participate in the GEF activities and assist in the design, execution, and monitoring of projects. Besides, the Scientific and Technical Advisory Panel (STAP) provides objective scientific and technical advice to the GEF. The Monitoring and Evaluation Unit conducts reviews of GEF’s work and publishes lessons learned so that the GEF’s effectiveness can be enhanced.

## 22.6 International Law Commission (ILC)

The ILC was created by the United Nations General Assembly in 1947 for the codification and progressive development of international law. The body is composed of 33 experts from different countries who are in the commission on the basis of their individual expertise in the field of international law and they do not represent their governments.

The ILC has considered a number of topics which have a bearing on international environmental law. Its work on the Draft Code of Crimes against the Peace and Security of Mankind adopted in 1996 provides in Article 20 that:

“any of the following was crimes constituted a crimes against the peace and security of mankind when committed in a systematic manner or on a large scale” Further, paragraph(g) reads “... in case of armed conflict, using methods or means of warfare not justified by military necessity with the intent to cause widespread long term and severe damage to the natural environment and thereby gravely prejudice the health or survival of the population where such damage occurs.”

The ILC has also adopted work on the Articles of Responsibility of States in 2001. The ILC distinguishes ‘State responsibility’ from ‘international liability for injurious consequences

arising out of sets not prohibited by international law'. The latter study exclusively dealt with the issue of transboundary environmental harm caused by activities which are not prohibited under international law. Such activities would include chemical industries, nuclear activities or other hazardous activities which would cause transboundary environmental harm.

The ILC work on water sources lead to the adoption of the UN Convention on Non-Navigational Uses of International Watercourses in 1997. The ILC as of date has on its agenda topics of "Transboundary Shared Natural Resources and Aquifers", both of which have many issues relating to environmental law.

## 22.7 Other UN Bodies

A number of UN bodies or specialised agencies have topics on their agenda that deal with environmental issues. The international community is aware that condition/state of environment is a subject that cannot be dealt with one single international organisation as the UNEP. While UNEP services the implementation of numerous treaties the Convention on Biological Diversity and the Vienna/ Montreal regime on Substances Depleting the Ozone Layer, other international organisations have had their fair share of responsibility in protecting the earth's environment. Specialised agencies or bodies like the United Nations Economic, Scientific and Cultural Organisation (UNESCO), Food and Agricultural Organisation (FAO), World Health Organisation (WHO), World Meteorological Organisation (WMO), International Atomic Energy Agency (IAEA), International Maritime Organisation (IMO), International Labour Organisation (ILO), International Civil Aviation Organisation (ICAO) and the World Trade Organisation (WTO) have been mandated areas of work, which do have an interface with environmental issues.

### a) UNESCO

The mandate of the UNESCO as is evident from its name is to address educational, scientific and cultural issues. However, the body based its work on the philosophical understanding that man activities affects the environment has commissioned studies relating to the environment. A 1970 study on man and environment was based on fourteen principal themes. These were : impact of human activities on different sectors of the environment and the conservation of natural areas and genetic resources contained therein. This led to the adoption of a "world bank" of biosphere reserves. One of the objectives of the biosphere reserves was to establish management models of space and water, combining human needs with the necessity of conservation. By 2003, 425 sites had been recognised a biosphere reserves in 95 countries.

UNESCO has also played a key role in the adoption of the Ramsar Convention on Wetlands of International Importance and the 1972 World Cultural and Natural Heritage Convention. India is a Party to these conventions. The former calls upon States to designate protected areas such as the Sundarbans and other natural parks/ habitats as Ramsar sites. The Taj Mahal, Qutub Minar, the Lotus Temple and other sites are designated as world heritage sites in India.

### b) Food and Agriculture Organisation (FAO)

The mandate of the FAO Statute of 16 October 1945 is to promote investment in agriculture, promote better soil and water management, improve yield of crops and livestock, invite the transfer of technology to, and the development of agriculture research in developing countries. A perusal of the mandate shows that many aspects are related to issues of environmental concern. The FAO is also called upon to promote the conservation of natural resources and the adoption of improved methods of agricultural production.

The FAO has an important role to play in adopting various strategies and legal instruments having a direct bearing on the conservation of the natural soil/ environment. These include:

- ◆ 1981 World Soil Charter
- ◆ 1985 International Code of Conduct on the Distribution and Use of Pesticides
- ◆ 1993 Agreement to Promote Compliance with International Conservation and Management by Fishing Vessels on High Seas
- ◆ International Treaty on Plant Genetic Resources for Food and Agriculture
- ◆ The Organisation has also participated in the drawing up of numerous legal texts and treaties, namely:
  - 1976 Barcelona Convention for the Protection of the Mediterranean and its Protocols;
  - 1987 London Guidelines for the Exchange of Information on Chemicals in International Trade;
  - 1995 Code of Conduct for Responsible Fisheries.

The FAO is also responsible for providing assistance to States for developing national legislation on subjects such as agriculture, forests, fishing and soil conservation.

### c) World Health Organisation (WHO)

Headquartered in Geneva, the WHO as its title suggests has a mandate to ensure “the attainment by all peoples of the highest possible level of health”. The WHO Assembly, the plenary body of the Organisation is competent to adopt guidelines/ instruments on matters concerning sanitary and quarantine requirements, standards, advertising and labelling for biological, pharmaceutical and similar products; standard on drinking water and air quality etc.

WHO strategies and programmes of action include:

- ◆ Global Strategy for Health and Environment
- ◆ Programme for the Promotion of Environment
- ◆ Health and Chemical Safety
- ◆ Food Safety Programme (jointly implemented with the FAO’s Codex Alimentarius Commission).

WHO also has played an important role in establishment of binding and non-binding health standards. In this regard it may be recalled that in 1993, the WHO along with the General Assembly of the United Nations had sought an advisory opinion from the International Court of Justice (ICJ) on the 'Legality of the Threat or Use of Nuclear Weapons' in context of its work on effects of nuclear weapons on health and environment.

**d) World Meteorological Organisation (WMO)**

WMO was established in 1947 and is based in Geneva. Some of its important purposes are to: facilitate worldwide co-operation in meteorological co-operation; promote the establishment and maintenance of meteorological centers and the rapid exchange of meteorological information. It may be noted that in 1988, the WMO along with UNEP, established the Intergovernmental Panel on Climate Change (IPCC) the body that looks at the scientific and other aspects of climate change. The WMO has played an important role in preparation and adoption of legal regimes on ozone depletion; climate change and transboundary atmosphere pollution.

**e) International Atomic Energy Agency (IAEA)**

The IAEA is based in Vienna was created in 1956 to hasten and increase "the contribution of atomic energy to peace, health and prosperity in the ensure world". The IAEA is not a formal specialised agency of the United Nations, but sends reports to the General Assembly and their UN agency.

The Organisation adopt norms for nuclear safety and codes of proper procedure including those for radioactive management. It has adopted guidelines on issues relating to monitoring and preventing radiological contamination of personnel and the environment; safe handling and the transport of radioactive material; treatment and disposal of radioactive wastes and containment and safely of nuclear power plants.

Following the Chernobyl nuclear disaster on 26 April 1986, the organisation was tasked to examine the consequences and suggest the framework necessary to elaborate international standards regarding nuclear accidents with international consequences. In 1989 two important conventions were adopted under IAEA auspices that too in a record time, namely:

- ◆ 1986 Convention on Early Notification a Nuclear Accident, and
- ◆ 1986 Convention on Assistance in the Case of Nuclear Accident or Radiological Emergency.

Some of the important instruments, standards/ recommendations adopted by IAEA are:

- ◆ 1963 IAEA Civil liability Convention.
- ◆ 1980 Convention on the Physical Protection of Nuclear material.
- ◆ 1986 Principles for Limiting Releases of Radioactive Elements into the Environment.
- ◆ 1989 International Criteria for the Safe Disposal of High Level Radioactive Wastes.
- ◆ 1990 Code of Practice on International Transboundary Movement of Radioactive Wastes.

#### f) International Labour Organisation (ILO)

The Organisation based in Geneva was created in 1919 during the League of Nations. The preamble of its Constitution states that it was established for the “protection of workers against sickness, disease and injury arising out of employment and the adoption of humane conditions of labour”.

The Organisation with its innovation concept of tripartite membership that includes representatives from the government, employer and of the employee has adopted numerous convention relating to industrial safety, health, occupational hazards and environmental standards at work place. Some of the these are:

- ◆ ILO Convention 148 on Working Environment (Air Pollution, Noise and Vibration).
- ◆ ILO Convention 167 concerning Safety and Health in Construction.
- ◆ ILO Convention 169 concerning indigenous and Tribal Peoples in Independent Countries.
- ◆ ILO Convention 170 concerning Safety in the Use of Chemicals in Workplace.

ILO has action programmes helping States to deal with designing and implementing national programmes for environmentally sound management of hazardous wastes, labelling chemical safety data etc.

#### g) International Civil Aviation Organisation (ICAO)

The ICAO has its headquarters in Montréal, Canada. Its objectives include: the promotion of safe, efficient and economical air transport and development of all aspects of international civil aviation. The principle focus of the Organisation from an environmental perspective is reduction of noise pollution caused by aircrafts. Towards this end, beginning from 1980's ICAO has established standards concerning of aircraft emissions through an 'engine certification scheme'. These standards establish limits for emission of oxides of nitrogen (NOX), carbon monoxide and unburned hydrocarbons from new engine during an aircraft's landing and takeoff.

Recent conventions regarding climate change and ozone depletion have led the scientific community questioning the contribution of aircraft emissions to these global problems. ICAO is one of those organisations which co-ordinates its activities with other convention Secretariat's such as the UNEP that services the Vienna/ Montreal regime on ozone depleting substances and the Bonn Secretariat of the UNFCCC/ Kyoto Protocol.

#### h) World Trade Organisation (WTO)

The General Agreement on Tariff and Trade (GATT 1947), was succeeded by the World Trade Organisation (WTO) formed in 1995. It may be important to note that the Agreement establishing the WTO, signed in Marrakech incorporated the original GATT and new undertakings on five main subjects. These Agreements as they are called include:

- ◆ Agreement on Technical Barriers to Trade.

- ◆ Agreement on Sanitary and phytosanitary measures.
- ◆ Agreement on Subsidies and Countervailing measures.
- ◆ Agreement on Trade related aspects of Intellectual Property Rights.
- ◆ General Agreement on Trade in Services.

It is important to understand that States joining the WHO undertake to comply with all these agreements.

The WHO has a dispute settlement understanding which provides for procedures for resolving trade disputes by means of a dispute settlement body (DSB). The DSB consists of panels and an Appellate Body.

The WHO also has a committee on Trade and Environment (CTE) which is mandated to identify trade related aspects of environment measures and where necessary to make recommendations to modify the rules of the multilateral trading problem. Some of the important tasks of CTE include: to look at the relationship between trade rules and the use of trade measures for environmental purposes; use of environmental charges and taxes; environment standards of packaging, labelling and re-cycling ; the effects of environmental measures on developing countries' market access and also the environmental benefits of removing trade restrictions and distortions.

#### **i) Regional Organisations**

Apart from the international organisations discussed above, there are regional organisations that have developed their own legislation, standards and regulations for protection and conservation of the environment. Regional organisation, many a times are more effective in combating environmental problems owing to their knowledge, homogeneity, cultural affinities, as well as geographical proximity to the environmental problem or hazard.

We shall attempt to look at few of these organisations for reasons of space and time. These include: The Council of Europe, European Union, Organisation of American States (OAS), South Pacific Regional Organisations and the African Union.

#### **j) Council of Europe**

The Council of Europe was created in 1949 and is based in Strasbourg. It has 44-member States. The States of the Council permit discussion on any aspect, except national defence/ security matters. Because of its homogenous culture and related prosperity compared to States from the Africa or Asian region the Council has been able to adopt many legislations some even pre-dating the Stockholm conference of 1972.

To list a few:

- ◆ 1965 European Water Charter.
- ◆ 1968 Declaration of Principles on Air Pollution Control.
- ◆ 1972 European Soil Charter.

Some of treaties adopted include:

- ◆ 1968 European Agreement on the Restriction of the Use of Certain Detergents in Washing and Cleaning Products.
- ◆ 1968 Convention for the Protection of Animals during International Transport.
- ◆ 1979 Berne Convention on the Conservation of European Wildlife and Natural Habitats.
- ◆ 1993 the Lugano convention on Civil Liability for Damage resulting from Activities Dangerous to the Environment.
- ◆ 1998 Convention on the Protection of the Environment through Criminal Law.

Another important convention although in the field of human right is the European Convention on Human Rights, which established the European Court of Human Rights that hears and has decided many cases relating to human right, where environmental harm or other aspects have been involved.

### **k) European Union**

As opposed to the Council of Europe or the Organisation for Economic Co-operation and Development (which we did not discuss), the European Union is an organisation that economically not politically binds the countries of the region.

The EU comprises 25 States and is based in Brussels, Belgium. The main bodies of the EU are - Council of European union, the European Commission, the European Parliament and the European Court of Justice.

The 1957 Treaty of Rome that established the European Economic Community provides for adoption of directives for approximation of legislative and administrative provisions that had a direct impact on the functioning of the European common market. Some of many directives regulate activities such as lead content of petrol, use of detergents, permissible sound levels and exhaust system of motor cycles; pollution caused by certain dangerous substances discharged with the aquatic environment; combating air pollution; accidents hazards of certain industrial plants; and regulation of toxic and hazardous wastes.

The 1986 Single European Act (SEA) superseded the original founding treaties of the EU. Later in 1992, SEA too was replaced by the Maastricht Treaty of the EU.

The European Parliament has established a Special Committee on Environment Questions, Public Health and Consumer Protection. The European Court of Justice decides cases within the community and also awards damages.

The EU policy on environment protection is based on the principle of precaution and polluter pays. EU also advocates prevention as a tool to control environmental damage at the source itself.

### **l) Organisation of American States (OAS)**

The OAS is the oldest regional political organisation established in 1890 and comprises 33 States. The OAS through its system of building international conference of American

States has enacted many legislation regarding wildlife, natural resources, endangered species, oil pollution etc. Some of these are:

- ◆ Lima Convention on Natural Protection and Wildlife Preservation in the Western Hemisphere, 1940.
- ◆ 1965 Mar Del Plate Conference on Problems related to the Conversation of Renewable Natural Resources of the Continent.
- ◆ 1977 First Protocol of the Cartagena Convention for the Protection of the Marine Environment.

In 1988 the Inter-American Juridical Committee (IJC) suggested the creation of an Inter-American system of Natural Conservation. However, due to differences such a body is yet to develop. Meanwhile in 1996 the OAS created a unit of 'Sustainable Development and Environment' in the Office of the Secretary General. It considers and provides policy guidance support to areas such as: integrated development of water resources, coastal zone management of water resources; coastal zone management, biodiversity and conservation, mitigation of natural disasters etc.

#### **m) South Pacific Regional Organisation**

Comprising 10000 small islands the South Pacific Commission was created in 1947 by Austria, France; the Netherlands, New Zealand, the United Kingdom and United States. Other Parties are Fiji, Papua New Guinea and Western Samoa. The Commission is a consultative and advisory body which makes recommendations on fisheries and forestry matters.

Some of the important environmental treaties by the regions are:

- ◆ 1976 Convention on the Conservation of Nature in the South Pacific.
- ◆ 1986 South Pacific Environment Programme.
- ◆ 1986 Noumena Convention for the Protection of the National Resources and Environment of South Pacific region.
- ◆ 1984 Raratonga Nuclear Free Zones Treaty.
- ◆ 1989 Convention for the Prohibition of Fishing with Long Driftnets in the South Pacific (Adopted by the South Pacific Permanent Commission countries comprising Chile, Peru, Ecuador and Colombia).

#### **n) Organisation of African Union**

Although created in 1963 as a political organisation the OAU/AU has environment concerns on its agenda. Some of the important issues of the African region to name a few are: protection of wildlife, demilitarisation, protection of toxic waste dumping or its transboundary movement and trade in endangered wildlife species.

The regional treaties include:

- ◆ 1986 African Convention on the Conservation of Nature and Natural Resources.

- ◆ 1996 Pelindaba Treaty declaring Africa as a Nuclear Weapon free zone.
- ◆ 1991 Bamako Convention on the Ban of Import into Africa and the Control of Transboundary Movement of Hazardous Wastes within Africa.
- ◆ 1981 African Charter on Human and Peoples Rights (which incidentally is the only human right treaty providing for a right to a general satisfactory environment).

## 22.8 Conclusion

The UNEP and the CSD are the two major IEIs we have today. There has been a growing demand to have a World International Environmental Organisation just like the WTO. No one knows whether such a body can become a reality because of the different mandates of environment and trade organisations and their linkages and conflicts.

International environmental law is largely sectoral in nature and shall remain that way. You cannot have a single comprehensive treaty addressing all environmental concerns. Liability and redressal regimes under MEAs are separately negotiated. The reality is that no one body whether UN or otherwise can manage so diverse and difficult areas. The private sector and the civil society have an important role to play.

# INTERNATIONAL ENVIRONMENTAL ORGANISATIONS AND NEGOTIATIONS

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### 23.1 Introduction

Multilateral environmental agreements (MEAs) are the predominant legal method for addressing transboundary environmental problems. Nowadays States, particularly least developed countries and developing countries, face the challenge of implementing over 300 MEAs with limited technical, financial and human resource capabilities. Several countries need to develop their capacities for the better implementation of environmental obligations at the national level in order to ensure adequate application and compliance of MEAs. Thus, training and capacity development are key resources for effective global environmental protection.

It is important to understand the context in which environmental discussions and negotiations occur. A key consideration is that MEAs have largely grown out of and been produced by large international conferences convened by the UN. Not all MEAs, however, originated in UN fora. An example is the Convention on International Trade in Endangered Species of Wild Fauna and Flora (known as CITES - adopted in 1973).

There are many emerging trends within MEA negotiations both in terms of substance and process. Substantive trends relate to the quality, scope and orientation of the actual MEA instruments. These include, for example:

- ◆ the increasing use of targets and integration of the three pillars of sustainable development in MEAs;

- ◆ the increased operationalisation of Rio principles, including common but differentiated responsibilities and precaution;
- ◆ the enhanced recognition of the importance of community resource interests; and innovations in terms of compliance and flexibility mechanisms.

By contrast, process trends focus on the innovations and other developments that characterise the way in which MEA decisions have actually been made. These include, for example:

- ◆ the increased pace of negotiations and proliferation of post agreement negotiations;
- ◆ innovations related to negotiation formats and alliances;
- ◆ multi-stakeholder processes (e.g. the Strategic Approach to International Chemicals Management negotiating process allowed non-State stakeholders
- ◆ NGOs, industry, labour organisations - a seat at the negotiating table), and
- ◆ the increasing challenges of fragmented decision making processes.

The identification of what exactly constitutes a specific trend is an inherently subjective endeavour

## 23.2 Climate Change

Awareness about the climate, its development and changes differs in different communities. It has presumably, always been high among the more intelligent members of primitive societies living in vulnerable regions. To establish a history of the changes in climate is not easy because of the difficulties in obtaining truly representative measurements. Climate change has been universally recognised as a global problem. While, historically, the preponderance of greenhouse gas emissions have been in developed countries, emissions will increase rapidly with expected and needed economic growth in developing countries. The principal reason for lack of progress is that in developing countries, climate change is not an important focus of economic or development policy and only recently has it been considered among national environmental policy objectives. Climate change remains too marginal compared to the pressing issues of food security, poverty, natural resource management, energy needs and access, or urban land use to capture the attention of leading actors. Various Parties to the United Nations Framework Convention on Climate Change (UNFCCC) 1992, as well as independent scientific analysis, have reiterated that strong and inclusive global co-operation that integrates sustainable development and climate change policy objectives will be needed to address these global environmental issues.

Current international climate change policies have been uniquely driven by global environmental policy concerns, and very little attention has been given to local development and the environmental impacts of specific policies. However, from the local perspective, ancillary benefits of climate change policies, such as increased energy efficiency and the health impacts of local air pollution, may be significant and may therefore be very important in promoting local action.

The earth's climate is determined in large part by the presence in the atmosphere of naturally occurring greenhouse gases, including in particular water-vapour, carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), CFCs, nitrous oxide (N<sub>2</sub>O) and tropospheric ozone (O<sub>3</sub>). These are transparent to incoming shortwave solar radiation but absorb and trap longwave radiation emitted by the earth's surface. Their presence exerts a warming influence on the earth. Scientific evidence suggests that continued increases in atmospheric concentrations of selected greenhouse gases due to human activities will lead to an enhanced 'greenhouse effect' and global climate change.

#### a) Convention on Climate Change

Because of UNCED's political prominence, many international environmental debates were merged into the process, such as those of the conventions on climate change and biodiversity, which were not negotiated at UNCED or in the Prepcom meeting but were signed in Rio following separate negotiations. Formal international discussion of a convention on climate change began in 1988 with the establishment of the Intergovernmental Panel on Climate Change (IPCC), an advisory body of scientists and officials that assessed comprehensively climate science, impacts, and response strategies. IPCC served as a forum for "prenegotiation", because many of its participants expected it to be followed by formal negotiations under the same authority. Instead, the UN General Assembly passed a resolution on December 1990 that established the Inter-governmental Negotiating Committee (INC).

The negotiation of a treaty to address climate change and its effects was formally set in motion by the UN General Assembly determined that 'climate change is a common concern of mankind' and urged governments and inter-governmental and non-governmental organisations to collaborate in concerted effort to prepare, as a matter of urgency, a framework convention on climate change. The 1992 Convention on Climate Change went beyond the scope of the 1985 Vienna Convention, which took nearly three times as long to negotiate among a smaller group of States. The word 'Framework' in the title is something of a misnomer, since the 1992 Convention established:

- 1) Commitments to stabilise greenhouse gas concentration in the atmosphere at a safe level, over the long term, and to limit emissions of a greenhouse gases by developed countries in accordance with soft targets and timetables;
- 2) A financial mechanism and a commitment by certain developed country Parties to provide financial mechanism and a commitment by certain incremental costs and adaptation measures;
- 3) Two subsidiary bodies to the conference of the Parties;
- 4) A number of important guiding 'Principles'; and
- 5) Potentially innovative implementation and dispute settlement mechanisms.

The Convention was the first international environmental agreements to be negotiated by virtually the whole of the international community, with 143 States participating in the final session of the INC/FCCC. The relation between the Climate Change Convention

and vital national, economic, social and environmental interests was evident from the different interest groups of states which emerged during the negotiation.

### *Preamble, definition, objective and principles*

The Convention's Preamble reflects a wide range of interests. It includes matters jettisoned from the 'Principles', and expressly recognises, *inter-alia*, 'the principle of sovereignty', that the largest share of historical and current global emissions has originated in developed countries. The Preamble also refers to the concepts of 'per capita emissions' and 'energy efficiency', matters which did not receive sufficient support to be included in the operational part of the Convention.

The ultimate objective of the Climate Change Convention is to stabilise greenhouse gas concentration in the atmosphere 'at a level that would prevent dangerous anthropogenic interference with the climate system'. However, the Convention implicitly recognises that some climate change is inevitable, since the objective is to be achieved within a timeframe sufficient to allow 'ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner'. Parties should adopt measures and policies which are 'precautionary', 'cost-effective' and 'comprehensive', and which take into account different 'socio-economic contexts'. Finally, throughout the 'Principles', section and elsewhere in the Convention, reference is made to the need to ensure 'sustainable economic growth' in order to address the problems of climate change.

### *Commitments*

#### ◆ *General*

The general commitments include the development of national inventories of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, and the formulation and implementation of national and, where appropriate, regional programmes containing measures to mitigate climate change by addressing emissions and removals of these gases and by facilitation of adequate adaptation to climate change.

#### ◆ *Specific*

At the heart of the Convention are the specific commitments relating to sources and sinks of greenhouse gases binding in all developed country Parties and the EC under Article 4(2). The extent of these commitments is unclear as a result of the convoluted, language agreed to by way of compromise between developed and developing countries. The Parties agreed 'to begin a process to enable [the conference of the parties] to take appropriate action for the period beyond 2000, including the strengthening of the commitments of the Parties through the adoption of a protocol or another legal instrument. This process led to the adoption of a protocol to the Convention at the third conference of the Parties in Kyoto in 1997. The Kyoto Protocol set quantified targets and a timetable for the reduction of greenhouse gas emissions by developed country Parties.

The convention provides for 'joint implementation' by Parties of their policies and measures which would lay the foundation for the efforts of those States which sought to ensure that emission reductions should be carried out in the most 'cost effective' way possible. The Convention additionally requires that 'a certain degree of flexibility', should be allowed to developed country Parties 'undergoing the transition to a market economy'.

### *Institutional Arrangements*

The Climate Change Convention establishes a conference of the Parties, a secretariat, two subsidiary bodies and a financial mechanism. It met for the first time in 1995 and has subsequently met annually. It has several functions, including to:

- i) examine periodically the obligations of the parties;
- ii) facilitate the co-ordination of measures;
- iii) promote and guide comparable methodologies for preparing inventories of greenhouse gas emissions;
- iv) assess the implementation of the Convention by all parties and the overall effect of measures; and
- v) adopt regular reports on the implementation of the Convention.

A multidisciplinary Subsidiary Body for Scientific and Technological Advice was established to provide information on scientific and technological matters to the conference of the Parties. A Subsidiary Body for Implementation was established to assist the conference of the Parties in the assessment and review of the implementation of the Convention. Although some States wanted to limit participation, both subsidiary bodies are open to participation by all Parties.

The convention defines a financial mechanism for the provision of financial resources on a grant or concessional basis, including for the transfer of technology. The mechanism is required to have an equitable and balanced representation of all Parties within a transparent system of governance.

### *Implementation and Dispute Settlement*

Apart from the role of the conference of the Parties and the Subsidiary Body of Implementation, the Convention provides for the possibility of establishing a 'multilateral consultative process' for the resolution of implementation questions, which will be available to Parties on their request. This whittles down two more ambitious original proposals. Additionally, a dispute settlement Article provides for possible compulsory recourse to arbitration or the International Court of Justice with the consent of relevant Parties to a dispute, as well as the possibilities for the compulsory establishment of a conciliation commission with the power to make a recommendatory award, at the request of one of the Parties to a dispute twelve months after notification of the dispute. The Convention provides for amendment, the adoption and amendment of Annexes, and the adoption of Protocols, no reservations are permitted. Prior to its entry into force, Article

21 of the Convention established interim arrangements concerning the designation of an interim secretariat, co-operation with the IPCC and other scientific bodies.

### **b) The 1997 Kyoto Protocol**

The Kyoto Protocol to the Framework Convention on Climate Change was adopted by the third conference of the Parties in December 1997. Negotiations for Protocol to the Convention commenced in 1995 after the first conference of the Parties, meeting in Berlin, determined that the commitments provided for in Article 4(2) (a) and (b) of the Convention were 'not adequate' and decided to launch a process to strengthen the commitments of Annex-1 Parties through the adoption of a protocol or another legal instrument. The process was not intended to introduce any new commitments for non-Annex-1 Parties, but merely to 'reaffirm existing commitments in Article 4.1 and continue to advance the implementations of these commitments'. Negotiations were to be conducted as matter of urgency with a view to adopting the results at the third conference of the Parties in 1997. At the second conference of the Parties at Geneva in 1996, a Ministerial Declaration was adopted by which Ministers urged their respective representatives to accelerate negotiations on a legally binding protocol or another legal instrument. Given the economic and developmental implications, it is not surprising that the Kyoto Protocol negotiations were among the most difficult and complex ever conducted for a multilateral environmental agreement. Deep divisions between the Parties emerged in relation to a range of key issues, such as emissions reduction targets, sinks, emissions trading, joint implementation and the treatment of developing countries. In early 2001, the future of the Protocol was thrown into doubt with the announcement by President George W. Bush that the United States (responsible for a quarter of 1990 global greenhouse gas emissions) would not ratify the Protocol. Nevertheless, at the resumed session of the sixth conference of the Parties, held in Bonn in July 2001, the remaining States Parties reached agreement on mechanisms for implementing commitments under the Protocol. The Bonn Agreements were not drafted as a legal text, but, at a political level, reflected an important breakthrough on many of the critical negotiating issues, and a clear signal that the world community was prepared to go ahead with the Kyoto Protocol, even without United States support. The Parties were able to incorporate almost all of the deals made in Bonn into the legal text of the 'Marrakesh Accords', a series of decisions concerning the implementation of the Kyoto Protocol which paved the way for its entry into force.

#### *Policies and Measures*

Article 2 of the Protocol contains a list of policies and measures which Parties may implement in order to achieve their quantified limitation and emission reduction targets. During negotiations for the Protocol, the European Union pushed for the adoption of mandatory and co-ordinated 'policies and measures' but this was resisted by the United States, Canada, Australia and some other Annex-1 Parties who sought more flexible approach, with policies and measures to be determined principally by each individual party. This latter approach was largely adopted in Article 2, which provides that each Annex-1 Party, in achieving its emissions limitation and reduction commitments under

Article 3, shall implement policies and measures ‘in accordance with its national circumstances’. A list of indicative measures follows, which includes enhancement of energy efficiency, the protection and enhancement of sinks, the promotion of sustainable forms of agriculture, increased research on and use of new renewable forms of energy, measures to limit or reduce emissions in the transport sector and the limitation or reduction of methane emissions.

#### *Entry into Force and Amendments*

In order to enter into force, the Protocol requires the ratification, acceptance, approval or accession of at least fifty-five Parties to the Convention, which must include Annex-I Parties which accounted for at least 55% of the total carbon dioxide emissions of Annex-I Parties in 1990. The refusal of the world’s largest greenhouse emitter, the United States, to ratify the Protocol made the participation by other Annex-I Parties with significant emission, such as Japan, the European Community and Russia, essential for the Protocol to come into force.

Amendments to the Protocol can be adopted by a three-fourths majority vote of the Parties present and voting at the meeting at which it is proposed for adoption, followed by its ratification or acceptance by at least three-fourths of the Parties to the Protocol.

Negotiations on a successor to the Kyoto Protocol dominated the 2007 United Nations Climate Change Conference. A meeting of environment ministers and experts held in June called on the conference to agree a road-map, timetable and ‘concrete steps for the negotiations’ with a view to reaching an agreement by 2009.

Note: India has ratified the second commitment period of the Kyoto Protocol that commits countries to contain the emission of greenhouse gases (GHGs). As such, with this, India became the 80th country to accept the amendment relating to the second commitment period (2013- 2020) of the Kyoto Protocol. The ratification of second protocol reaffirms India’s stand on climate action and underlines India’s leadership towards global cause of environmental protection and climate justice.

#### **c) Climate Change and Sustainable Development**

By wastefully exploiting natural resources, and by the thoughtless application of technology, the industrial and agrarian societies have attained a potential for inflicting damage on a scale that has seriously endangered the survival of man on this planet. Data records clearly indicate that the increase in past trends is currently maintained in practically all areas that are of environmental global warming, tropospheric ozone, air, soil and water pollution, including chemical and radioactive wastes, as well as allergies, viral and carcinogenic diseases. There are a large number of protective measures available, but their effectiveness in reducing the climate impacts varies widely. Climate and environment are some of the most critical factors on which a sustainable future depends. They must therefore be protected.

The term “sustainable development” has its origins in the International Union for the Conservation of Nature’s (IUCN’s) 1980 World Conservation Strategy report (IUCN, WWF and UNEP, 1980), but it was with the World Commission on Environmental and Development report, entitled *Our Common Future* (1987) that the term gained broad currency. The commission defined sustainable development as ‘development that meets the needs of the present without compromising the ability of future generations to meet their own needs.’

The most conspicuous services that the natural environment provides are food and inputs to production, including energy, metals and timber. The natural environment also provides more fundamental services, without which human life on earth would not be possible. These are known as Global Life-Support services, since they provide the basic necessities to allow human life such as food, shelter, and the maintenance of suitable climatic and atmospheric conditions.

### 23.3 Ozone Depletion

The Ozone Layer comprises of the O<sub>3</sub> molecules (Ozone) that are found in the earth. 90% of atmosphere O<sub>3</sub> is found in the stratosphere with maximum concentration occurring at altitudes of 25 kms over the equator and 15 kms over the poles. The Ozone Layer is thought to provide a shield against harmful exposure to ultraviolet radiation from the sun and controls the temperature structure of the stratosphere. O<sub>3</sub> also acts as a greenhouse gas at lower altitude, is a respiratory irritant, and can adversely affect plant growth. Since the 1990’s there have been losses in the ozone layer above the Arctic. Since then, significant thinning has also been discovered in the northern hemisphere and ozone depletion has become progressively greater over the course of the 1990’s. Serious levels of UVB radiation have been observed over Antarctica, Australia and Mountainous regions of Europe, and damage to phytoplankton has been discovered in Antarctica.

The depletion of the Ozone Layer is caused by the anthropogenic emission of certain inert gases, particularly chlorofluorocarbons (CFCs) and halons. When these gases reach the Ozone Layer; they are exposed to ultraviolet rays and break down, releasing free chlorine (from CFCs) and bromine (from halons) which break up the Ozone molecules and deplete the Ozone Layer increased levels of ultraviolet rays are thought to cause harm to human health and the environment, including organisms in the marine environment. CFCs are used extensively as refrigerants, air conditioner, coolants, and aerosol spray can ingredients and in the manufacture of Styrofoam.

The protection of the Ozone Layer from these destructive elements is the subject of a complex legal regime comprising the 1985 Vienna Convention for the Protection of the Ozone Layer (the 1985 Vienna Convention) and the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer (the 1987 Montreal Protocol). Since 1990, there have been various adjustments to the production and consumption of controlled substances. Since the 1960s monitoring functions have been carried out by States individually and jointly, as well as under the World Meteorological Organisation (WMO) Global Ozone Observing

System. In 2002, evidence began to emerge to suggest that the global regime was limiting the rate of increase in the degradation of the Ozone Layer over the Antarctica might begin to decrease in magnitude, following a decrease in the levels of the Ozone depleting gases in the stratosphere and of the Ozone depleting chemicals in the troposphere.<sup>1</sup>

#### a) Ozone thinning, Ozone holes and the UVR problem

A key question in the global change research is how far human influence on the atmospheric Ozone will actually increase the deleterious effect of UVR reaching the earth's surface. Concern over the thinning of the stratospheric Ozone goes back to the International Geophysical Year of 1957, when an international network of 'Dobson Stations' was set up to monitor atmospheric ozone using a technique pioneered by a scientist of the same name.

The strength of this threat, coupled perhaps with a feeling that this was one aspect of adverse global change about which, 'something could be done' led to the production and use of 'substances that deplete the Ozone Layer' was signed by the governments of most nations at a meeting in Montreal in 1987, aiming at a 50% reduction in production of CFCs by the year 2000. Tighter structures were agreed for the developed nations than for the developing nations. Most people would see the signing of the Montreal convention as a great victory for those concerned with global issue, as indeed it was. Nonetheless, the interplay of politics and economics in this type of international agreements are rarely as simple as they may seem, the environmental danger represented by CFCs had been evident to the chemical industry for some research and development directed to finding alternative propellant and other substances for CFCs were naturally interested in seeing CFCs put under restriction. The Montreal Protocol took care of those interests.

#### b) 1985 Vienna Convention

The Vienna Convention was negotiated over 5 years under the auspices of UNEP. It was the first treaty to address a Global atmospheric issue and is open to participation by all States. It has attracted widespread support from all industrialised nations and a very large number of developing countries. It established a framework for the adoption of measures 'to protect human wealth and the environment against adverse effects resulting or likely to result from human activities which modify or are likely to modify the Ozone Layer'<sup>2</sup>. The Vienna Convention does not set targets or timetables for action but requires four categories of 'appropriate measure' to be taken by Parties in accordance with means at their disposal and their capabilities, and on the basis of relevant scientific and technical considerations. These obligations are: co-operation or systematic observations, research and information exchange; the adoption of appropriate legislative or administrative measures and co-operation on policies to control, limit, reduce or prevent activities that are likely to have adverse effects resulting from modifications to the Ozone Layer; and co-operation in the formulation of measures, procedures and standards

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<sup>1</sup> UNEP Press Release, 16 September 2002.

<sup>2</sup> Art. 2(1); the 'Ozone Layer' is defined as 'the layer of atmospheric ozone above the planetary boundary layer': Art 1(1).

to implement the Convention as well as with competent international bodies. Parties are free to adopt additional domestic measures, in accordance with international law, and maintain in force compatible measures already taken. The Convention also requires co-operation in the legal, scientific and technical, socio-economic and legal information relevant to the Convention subject to rules of confidentiality, and the development and transfer of technology and knowledge taking into account the particular needs of developing countries.

The Parties transmit information to the conference of the Parties on their implementation measures. That body is entrusted with the implementation of the Convention, assisted by a Secretariat whose services are provided by UNEP. The conference of the Parties has other functions including the adoption of protocols.

### c) 1987 Montreal Protocol and the Adjustments and Amendments

The first and to date the only Protocol to the Vienna Convention is the 1987 Montreal Protocol. It is a landmark international environmental agreement, providing a precedent for new regulatory techniques and institutional arrangements and the adoption and implementation of innovative financial mechanisms. With hindsight, the Montreal Protocol appears to be a relatively straightforward instrument and the fact that its approach has subsequently been relied upon extensively in other international environmental negotiations belies the controversy and complexity surrounding it at the time of its negotiations. Montreal Protocol sets forth specific legal obligations including limitations and reductions on the calculated levels of consumption and production of certain controlled Ozone depleting substances. Its negotiations and conclusion, shortly after the 1985 Vienna Convention were prompted by new scientific evidence indicating that emissions of certain substances were significantly depleting and modifying the Ozone Layer and would have potential climatic effects. Like the Vienna Convention, the Montreal Protocol and its amendment have attracted widespread support. The 1990, 1992 and 1997 Amendments and Adjustments introduced important changes to the Montreal Protocol.

#### ◆ *Control Measures: Consumption and Production*

Article 2 of the 1987 Montreal Protocol adopted limitation and reductions requirements on the consumption and production of all Annex-A substances. By Article 6, as amended by the '92 and 99 Amendments', the Parties are assessed with the assistance of panels of experts all the Article 2 control measures on the basis of available scientific environmental, technical and economic information. Montreal Protocol also provides for transfer of production and the rules regarding facilities under construction.

By Article 2(8) of the 1987 Montreal Protocol, Parties which are member States of regional economic integration organisation may 'jointly fulfil' their obligations provided that their total combined level of consumption does not exceed levels set by the Protocol, and that certain procedural obligations are fulfilled ( the Parties to any such agreements must inform the Secretariat and all member States of the regional organisation, and the organisation itself).

◆ *Control Measures: Trade in Controlled Substances*

Article 4 of the Montreal Protocol established innovative trade provisions to achieve its environmental objectives. Although initially somewhat controversial, they are now widely recognised for their effectiveness in creating incentives for States to become Party to the Protocol. These measures address the trade in controlled substances by Parties with States which are not Parties to the Protocol; the trade in products containing controlled substances.

Montreal Protocol also requires Parties to discourage exports of technology for producing and using controlled substances, and to refrain from providing new subsidies, aid, credits, guarantees or insurance for the export to non Party States of production, equipments, plants or technology which would facilitate the production of controlled substance, certain exceptions to this exists.

◆ *Developing Countries*

The 1987 Montreal Protocol included provisions to take account of the special needs of developing countries, including large users of CFCs such as India and China, who were unwilling to become Parties to the Protocol. Article 5(1) of the Protocol allowed developing country Parties whose calculated level of consumption was less than 0.3 kilograms per capita a grace period of ten years beyond dates set for phase-out in Article 2(1) to (4) of the Protocol. In addition, but without specifying how it was to be achieved, the Parties agreed to facilitate access to 'environmentally safe alternative substance' and to provide developing countries with substitute products.<sup>3</sup>

## 23.4 Hazardous Material and Waste

A Hazardous Material is such a material that poses a substantial or potential threat to public health or the environment. A Hazardous Waste is a waste which is also dangerous to the health and environment in general. These may exhibit one or more of these characteristics:

- ◆ It is ignitable or highly inflammable
- ◆ It is prone to oxidising
- ◆ It is highly corrosive
- ◆ It is toxic
- ◆ It is radioactive
- ◆ It is eco-toxic
- ◆ It is explosive

a) **The Basel Convention**

In response to waste management, many countries met in Basel, Switzerland for the Basel Convention to create an International treaty to end the immoral dumping and

<sup>3</sup> 1987 Montreal Protocol, Art. 5(2) and (3).

exporting of hazardous waste principally from developed countries to undeveloped countries. The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal is an international treaty that seeks to end the unethical dumping and exporting of hazardous waste primarily from developed countries to undeveloped countries.

The Basel Convention was adopted on March 22, 1982 in Basel, Switzerland. It was entered into force on May 2, 1992. Currently the Basel Convention has been ratified by 63 countries, although the treaty is not legally binding unless the country has adopted it. Four countries who are Parties to the Convention but have not adopted it are the United States, Australia, New Zealand and Canada.

The Convention proposes three steps to minimise hazardous waste:

- 1) Lower the production of hazardous waste. It has been proven that cleaner production diminishes the cost of the producer and decreasing the damage done to the environment.
- 2) Treat and dispose of hazardous waste near their origin. It is better to dispose of hazardous materials locally because it will lower the chance, of spilling or leaking of the hazardous waste and if any problems occur, they would occur in the hands of its creator, thus inspiring the workers and communities to find a solution.
- 3) Diminish international movement of hazardous waste. The Basel Convention works to lower the movement of hazardous waste through a set of agreed rules and regulations.

#### **b) The Ban Amendment**

After the initial adoption of the Convention, some countries as well as certain environmental organisations argued that it did not go far enough. It was argued that a total ban on shipment of all hazardous waste to developing countries must be imposed. In particular, the original Convention did not prohibit waste exports to any location except Antarctica but merely required a notification and consent system known as “prior informed consent” or PIC.

This led to the Basel Ban Amendment in 1995. The Amendment, though not yet in force, but morally binding on the signatories, banned all dumping and exporting of hazardous waste. The Basel Ban applies to export for any reason, including recycling.

#### **Basel Action Network**

The Basel Action Network (BAN) was created to help the Ban Amendment progress across the globe. The BAN is a global organisation that is located in the US, Europe, and Asia. BAN works on many campaigns to improve the world. They work against the growth of toxic trade, products and technologies. BAN is also a definitive source of information on toxic trade; they want to help journalists and the general public to become more aware of toxic trade and inform people who are responsible for irresponsibly disposing of E-waste. BAN is also recognised by the UK as the leading organisation in environmental issues.

## 23.5 Multilateral Environmental Agreements and Dispute Settlement Mechanism

Since World War II, there has been a steady expansion of multilateral negotiations/conference diplomacy within international relations. Except for the management of relations between neighbouring States and the strategic relationship between the two superpowers during the Cold War, multilateral negotiations become the dominating feature in the international arena.

Dispute settlement provisions are not unique to Multilateral Environmental Agreements (MEAs) – they have long been an essential element of international Agreements, because they provide the procedures by which disagreements among the Parties regarding the agreement can be resolved.

Dispute settlement provisions are included in a growing number of MEAs (most of the major global MEAs have dispute resolution mechanisms). Despite the number of available procedures, in practice States have shown reluctance to submit to the formal dispute settlement. In part, this is due to the fact that most of these provisions are not compulsory. Thus, in order for an aggrieved Party to avail itself of the mechanism, the other Party must consent to using the mechanism. Generally speaking, MEAs tend to focus on mechanisms that promote compliance, rather than on formal dispute settlement procedures. In more than a decade, the provisions for an arbitral tribunal under the CBD have never been invoked formally - and this is not unique for MEAs.

### Some Basic Concepts

According to Article 33(1) of the UN Charter:

*“The Parties to any dispute, the continuance of which is likely to endanger the maintenance of international peace and security shall, first of all, seek a solution by negotiation, enquiry, mediation, conciliation, arbitration, judicial settlement, resort to regional agencies or arrangements, or other peaceful means of their own choice.”*

Clearly, this provision applies to environmental disputes. The list proposed includes almost all the means of peaceful settlement of interstate disputes, well established in international law.

- ◆ *Negotiation* means proposals made by one or the other of the Parties to a dispute and the reaction to the other Party, including counterproposals, in order to reach an agreement. Negotiations should be conducted in good faith; the Parties must carefully examine the proposals of their partners and try to make progress towards an agreement. Unilateral acts which could comprise the result of the negotiation should be avoided.
- ◆ *Good offices*, which are not listed in Article 33(1), consist in the intervention of a third Party trying to persuade the parties to a dispute to meet and find pacific means of settlement.

- ◆ *Enquiry* is the establishment of the facts of a determined case by an independent body.
- ◆ *Mediation* consists in bringing the Parties to a dispute together and submitting to them concrete proposals for the settlement of the dispute.
- ◆ *Conciliation* is a combination of enquiry and mediation; a third Party first established the facts of the case and then makes proposals for the settlement.
- ◆ *Arbitration* is the settlement of a dispute by a third Party - a single person, an existing body or a commission specially created - whose decision is accepted in advance by the Parties to the dispute.

In all these cases all the Parties to the dispute must agree on a procedure and on the choice of the third party who will be charged with the enquiry, mediation, conciliation or arbitration.

The two remaining means of settlement, judicial settlement and resort to regional agencies or arrangements, are different, since the bodies, which play the role of third Parties, pre-exist and have established procedures which must be followed. Regional agencies or arrangements mostly have a potential character which may influence the terms of the settlement. Judicial settlement generally means a decision by the International Court of Justice, the main judicial organ of the UN, the statute of which is annexed to the UN Charter (Article 92). This body consists of 15 independent judges. Its jurisdiction must be explicitly accepted by States which equally accepted the Court's jurisdiction, or by a special agreement for a determined case. Decisions of the Court are always obligatory and must be executed. Although the decision of the Court has no binding force except between the Parties and in respect of that particular case, its scientific and moral authority is such that rules States by the Court in its decision are generally considered to express customary international law.

### Settlement Authorities

One of the fundamentals of international environmental law is the 1941 arbitral award in the Train Smelter Case. During the following long period, no international jurisdiction or arbitration tribunal decided environmental issues on the merits of the case, in spite of the fact that many treaties related to environmental protection explicitly state that disputes arising from the application or interpretation of their clauses should be referred either to the International Court of Justice or to arbitration. Practically all the recent major treaties adopted in this field include such provisions. Agenda 21 also encourages recourse to the ICJ which has formed a special Chamber in order to be prepared to deal with any environmental case. Recent developments have improved the situation. In an advisory opinion of 1996 on the Legality of the Threat or Use of Nuclear Weapons, the ICJ recognised the importance of environmental protection and confirmed Principle 21 of the Stockholm Declaration. In addition, the 1997 judgment in the case of the Gabčíkovo-Nagymaros Project insists on the need to take environmental norms into account even for the application and interpretation of former treaties.

The fact that until now international jurisdictions were not used for the settlement of environmental disputes can be explained in different ways. One explication is that in many international environmental treaties provisions related to dispute settlement also include the resort to organisms created by individual environmental treaties, such as a conference of the Parties or an implementation committee, for questions which the implementation or the interpretation of the treaty concerned can raise.

Another possible explication is that States obviously prefer to give priority to the compensation of victims of transfrontier pollution or other harmful environmental effects, rather than getting involved in international negotiations or dispute settlement procedures. The increasingly accepted solution is to transfer concrete problems from the interstate level to the interpersonal level. When a transnational element is present in a case which could create jurisdictional or interstate problems - e.g. transfrontier pollution harms private property in the neighbouring State - the polluter and the victim are directed to bring the case before the domestic authorities which are competent according to the rules of international private law. Also, States have sought to overcome the difficulties by prior agreement, in concluding treaties or adopting other international texts, to resolve at least some of the problems in three fields where the effects of environmental harm may be the most serious: the production of nuclear energy, the transportation of oil or other hazardous substances by sea and oil pollution caused by seabed activities.

The 1960 Paris Convention on Third Party Liability in the field of Nuclear Energy, drafted for members of OECD, and the 1963 Vienna Convention on Civil Liability, open to all UN member States, contain regulations concerning the compensation of victims of nuclear activities.

Marine pollution by oil or by hazardous substances, in particular compensation for environmental injury that may be caused by it, is regulated by an entire system based on the 1969 International Convention on Civil Liability for Oil Pollution Damage as modified several times.

Several common traits are found in these agreements:

- ◆ Identification of the polluter is assured through a presumption which channels responsibility. Thus, in case of damage, the responsibility automatically is imputed to the exploiter of the hazardous installation or the ship owner, whether they are at fault or not.
- ◆ The solution of the problem of liability is facilitated by imposing strict liability or damage, which means that no fault is required to decide that the person designated is liable. However, a certain number of escape clauses corresponding e.g. to fraudulent conduct of the victim, war, natural catastrophe, exist to avoid such liability.
- ◆ Jurisdictional competence is determined in designating the proper forum, in some cases that of the plaintiff, in other cases that of the polluter or in permitting the victim the free choice of a tribunal.

- ◆ The execution of judgments rendered is assured in foreign countries. Such solutions can help prevent international disputes.

#### a) Law of the Sea Tribunal

With the entry into force of the UN Convention on the Law of the Sea (UNCLOS) in 1994, the Law of the Sea Tribunal was established. The Tribunal may hear any dispute concerning the application or interpretation of UNCLOS, except as otherwise provided in the Convention. Its jurisdiction also extends to disputes concerning the interpretation or application of other agreements related to the purposes of UNCLOS that are submitted to the Tribunal in accordance with the other agreements. In deciding cases, the Tribunal applies the United Nations Convention on the Law of the Sea and other rules of international law not incompatible with the Convention. The Tribunal is competent for disputes arising between the following entities:

- ◆ States Parties;
- ◆ State enterprises, natural persons, or legal or judicial persons that are sponsored by States Parties and carrying out activities in the “Area” (namely, the seabed, ocean floor, and subsoil thereof lying beyond the limits of national jurisdiction); and
- ◆ the “Authority” (which is the organisation through which States organise and control activities in the Area) or the “Enterprise” (which is the organ of the Authority that carries out activities in the Area as well as the transporting, processing, and marketing of minerals recovered from the Area).

Alongside the Seabed Dispute Chamber, which has jurisdiction in disputes regarding activities in the Area, the Tribunal may form such chambers, composed of three or more of its elected members, as it considers necessary for dealing with particular categories of disputes.

#### b) International Court of Environmental Arbitration and Conciliation (ICEAC)

It facilitates the settlement of environmental disputes submitted by States, natural persons, or legal persons through conciliation and arbitration. It was established in 1994 in Mexico by 28 lawyers from 22 different States.

Upon request, the Court may give Consultative Opinions relating to disputes and other issues of environmental law. Consultative Opinions may be:

- ◆ Preventive, to ascertain whether a proposed action is compatible with environmental law;
- ◆ Confirmatory, to confirm that an action has been carried out in compliance with environmental law; or
- ◆ Denunciatory, to enquire whether an action by another person complies with environmental law, and if not to make that information available to the international community.

For example, in 2003, the Court issued a Consultative Opinion on the Compatibility between Certain Provisions of the Convention on Biological Diversity and the Agreement on Trade Related Aspects of Intellectual Property Rights as to the Protection of Traditional Knowledge. Other Consultative Opinions relate to “Regulation of Fishing Methods and Gear”, “Protection of the Meridian Frog”, and the transportation and disposal of waste and dangerous substances in Sonora, Mexico.

In resolving disputes and in issuing Consultative Opinions, the Court invokes and applies a range of bodies of law, including:

- ◆ international treaties and applicable private contracts;
- ◆ general rules and principles of international environmental law;
- ◆ relevant national law, in accordance with generally accepted rules of private international law; and
- ◆ any other principles, rules, or standards that the Court deems relevant, including equity.

### c) International Court of Justice (ICJ)

The ICJ is the primary judicial organ of the United Nations. Pursuant to provisions in various international agreements (including the Statute of the ICJ, the organic document establishing the ICJ), the ICJ is charged with resolving various disputes between States. States can recognise compulsory jurisdiction of the Court; in doing so, many States exempt certain classes of cases from compulsory jurisdiction. This partial exemption is controversial but has been upheld. The ICJ can also issue non-binding Advisory Opinions at the request of UN bodies.

There are 15 Members of the Court, who are elected by the UN Member States and other States Parties to the Statute of the ICJ. In some instances, Judges ad hoc may sit on an ICJ panel to hear and decide a case. Pursuant to Article 38 of the ICJ Statute, the Court may consider a variety of legal sources in deciding cases:

- ◆ international conventions, whether general or particular, establishing rules expressly recognised by the contesting States;
- ◆ international custom, as evidence of a general practice accepted as law;
- ◆ the general principles of law recognised by civilised nations;
- ◆ subject to the provisions of Article 59, judicial decisions and the teachings of the most highly qualified publicists of the various nations, as subsidiary means for the determination of rules of law.

The ICJ differs from many other international tribunals in that:

- ◆ ICJ judges must be continuously at the disposal of the Court and cannot sit on other tribunals;
- ◆ the ICJ is permanent in its constitution and its established rules; and

- ◆ Parties do not have to pay fees or administrative costs, which are covered by the UN.

Recognising the rapid growth of international environmental law and the growing number of international cases that touched on environmental matters, the ICJ established a specialised Chamber for Environmental Matters in July 1993. The Chamber consists of a panel of seven ICJ judges. The Chamber is empowered to hear environmental cases only with the consent of the parties to the case. As a practical matter, though, the ICJ's environmental cases generally proceed through the standard ICJ process, and have yet to take advantage of the specialised Chamber.

#### d) Permanent Court of Arbitration

Established in 1899, the Permanent Court of Arbitration (PCA) resolves disputes among States, private Parties, and intergovernmental organisations through arbitration, conciliation and fact finding. It claims to be “the first global mechanism for the settlement of inter-state disputes”.

Each Party to the PCA can appoint up to four arbitrators (“Members of the Court”) to a standing roster. When there is a dispute for the PCA to resolve, each Party appoints two arbitrators from this roster, and the four arbitrators (two from each Party) select an umpire.

The International Bureau is the PCA's Secretariat. It assists Parties in selecting arbitrators and performs other legal and administrative functions. English and French are the official working languages of the PCA, although the Parties can agree to conduct proceedings in any language.

The PCA has adopted guidelines and model clauses for traditional dispute settlement in environmental treaties. These generally rely upon and build upon precedents, since existing approaches have been tested and are more likely to be adopted. In 2001, the PCA Administrative Council adopted Optional Rules for Arbitration of Disputes Relating to the Environment and/or Natural Resources. The Environmental Conciliation Rules, adopted in 2002, complement the earlier rules on arbitration. These Rules were developed by the International Bureau and a working group and drafting committee of experts in environmental law and arbitration.

The PCA also provides guidance on drafting environment-related dispute settlement clauses. For example, in 2003 the UNECE approved reference to the PCA Environmental Arbitration Rules in its draft “Legally Binding Instrument on Civil Liability under the 1992 Watercourses and TEIA Conventions.” The PCA has also collaborated with the CBD, the Bio safety Protocol, and UNFCCC COPs.

The PCA convenes seminars on international law and publishes the papers in independent volumes. These have included International Investments and Protection of the Environment: The Role of Dispute Resolution Mechanisms (2001) and Resolution of International Water Disputes (2003).

### e) Strategic Use of International and Domestic Dispute Resolution Mechanisms in the Danube Delta Case

In 2003, The Government of Ukraine approved a project to dig a deep-water navigation channel through Ukraine's portion of the Danube Delta Bilateral Biosphere Reserve. Ecopravo-Lviv (EPL), a Ukrainian public interest environmental law NGO, challenged this decision on both environmental and procedural grounds (including a lack of public participation in the EIA process). In addition to seeking remedies in national courts, EPL filed complaints with a variety of relevant international bodies in late 2003 and early 2004. These include:

- ◆ The Compliance Committee of the [Aarhus Convention] (on access to information, public participation in decision-making and access to justice in environmental matters). Romania also subsequently filed a complaint with the Compliance Committee;
- ◆ The Implementation Committee of the Espoo Convention (on EIA in a transboundary context). [The Implementation Committee refused, by a vote of 4-3 in 2004, to consider the complaint.] Romania subsequently filed a complaint with the Implementation Committee;
- ◆ A Letter of Emergency Notification filed with the Executive Secretary of the Convention on the Conservation of Migratory Species;
- ◆ An Emergency Complaint filed with the Permanent Secretariat of the International Commission for the Protection of the Danube River; and
- ◆ A Letter of Notification filed with the Secretariat of the African-Eurasian Waterbird Agreement (AEWA).

In addition, EPL has raised the issue with the Ramsar Convention and the UNESCO Man and Biosphere Programme, and both institutions have expressed concern about the channel.

This strategy of seeking relief through multiple domestic courts and international dispute resolution mechanisms can be resource intensive. Also, non-State actors that seek recourse from an international mechanism may - but not necessarily - be required to exhaust domestic remedies first. Exhaustion of remedies depends on the terms of the particular MEA or institution, and there often are exceptions for specific instances (e.g., emergency or futility).

### UNEP's study on Dispute Avoidance and Dispute Settlement in International Law

A 2001 UNEP study on "Dispute Avoidance and Dispute Settlement in International Law" highlighted methods for resolving potential disputes regarding MEAs. The study emphasized the need to address potential disputes at the earliest possible stage in order to avoid disputes, as well as utilising informal, non-confrontational approaches to address disagreements and disputes. Ideally, dispute settlement provisions of an MEA will simply be there as a "safety net", to be employed only when measures to promote compliance

and avoid disputes have not been effective. Dispute settlement provisions typically call for less confrontational measures, such as good offices and conciliation, to be attempted first. If these are unsuccessful, more formal measures such as arbitration or other judicial arrangements may be employed.

Increasingly, dispute settlement bodies accept complaints by NGOs and private individuals against States, as well as interventions (including *amicus curiae* or “friend of the court” briefs) by NGOs in disputes between States. These bodies include, for example, the World Trade Organisation (*amicus* briefs), the Inter-American Court for the Protection and Promotion of Human Rights (complaints in environmental cases), and the International Court of Justice (*amicus* briefs).

## 23.6 Conclusion

Global environmental crises, from vanishing biodiversity and degrading forests to collapsing fish stocks and climate change, will not be solved without some tough thinking about international governance.

The world’s response to these unfolding challenges has become a bewildering array of institutions, agreements and treaties that is in urgent need of reform. International organisations charged with addressing the sustainable development have a welter of mandates - but all too often their hands are tied by a lack of sufficient funding or authority to deliver on them. The UN Environment Programme (UNEP), which is mandated as the global authority for the environment, has one of the lowest annual budgets in the UN system - less than the price of a new Boeing 737. A lot of the funding that is available for the environment is also often channelled through facilities and funds that are disconnected from the very agency requested to set the global environmental agenda.

The problem is made worse by the fact that most of the hundreds of treaties meant to solve global environmental concerns have separate secretariats, which makes co-operation among the collection of bodies difficult, to put it mildly.

It is also a drain on scarce funds - a recent independent study has estimated the costs of separate secretariats are four times more compared with organisations that have all their related treaties under one roof. Resources could be better used to address the challenges.

For developing economies with scarce human and financial capacity, it is a particular challenge in terms of costs but also the sheer complexity and time-consuming nature of the current landscape. Over the period 1992-2007 for example, there were over 540 meetings linked to 18 international environmental treaties. These meetings generated more than 5,000 decisions, upon which countries are required to act.

There is an urgent need for an environmental organisation within the UN system with real influence that can stand side by side with strong organisations such as the World Trade Organisation and World Health Organisation.

History has proven that strong international institutions are the precondition for building any successful international co-operation. The global financial crisis and the collaboration through the G20 and the International Monetary Fund are recent examples. A planet of six billion people, which will be nine billion by 2050, requires governments to plan for tomorrow, otherwise tomorrow will plan itself.

If that planning is to be serious about solving persistent, systemic and emerging environmental crises, and if governments now accept that a low-carbon, highly resource efficient economy is the only way for the world to survive, let alone thrive in the 21st century, then strengthening the international environmental governance system must be part of the package of enlightened reforms under worldwide debate.

# MULTILATERAL ENVIRONMENTAL AGREEMENTS AND DISPUTE SETTLEMENT MECHANISMS

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### 24.1 Introduction

Since World War II, there has been a steady expansion of multilateral negotiations/conference diplomacy within international relations. Except for the management of relations between neighbouring States and the strategic relationship between the two superpowers during the Cold War, multilateral negotiations become the dominating feature in the international arena.

Dispute settlement provisions are not unique to Multilateral Environmental Agreements (MEAs) - they have long been an essential element of international Agreements, because they provide the procedures by which disagreements among the Parties regarding the agreement can be resolved.

Dispute settlement provisions are included in a growing number of MEAs (most of the major global MEAs have dispute resolution mechanisms). Despite the number of available procedures, in practice States have shown reluctance to submit to the formal dispute settlement. In part, this is due to the fact that most of these provisions are not compulsory. Thus, in order for an aggrieved Party to avail itself of the mechanism, the other Party must consent to using the mechanism. Generally speaking, MEAs tend to focus on mechanisms that promote compliance, rather than on formal dispute settlement procedures. In more than a decade, the provisions for an arbitral tribunal under the CBD have never been invoked formally - and this is not unique for MEAs.

## 24.2 Importance of Dispute Settlement Mechanisms

International environmental law places obligations on a State, which have to be implemented at the domestic/national level. Disputes in international law largely rise out of non-adherence to obligations arising out of treaty or customary laws. We will, in this chapter, try to understand in detail, not only dispute settlement, but also dispute avoidance techniques which now form part of not only institutional but also the practice of States.

International Environmental Law (IEL) provides for various reporting, monitoring and verification mechanisms and measures to deter non-compliance. The purpose of these obligations is clearly to guarantee compliance by a State by non-coercive and conciliatory means. We also had occasion to see that IEL places emphasis on effective national enforcement/implementation of international obligations through numerous mechanisms, incentives and capacity building measures. For example, Articles 213-220 of UNCLOS 1982 requires all States to enforce their laws and regulations and take the other measures necessary “to implement applicable international rules and standards. There is presumption that States that implement international obligations in ‘good faith’ as enshrined in treaties.”

Dispute settlement can have two roles - one a preventive/dispute avoidance role which largely looks at means and methods to ensure compliance. The facilitative measures described in the earlier paragraph are largely reflective of customary law. The principle of *sic utere jure tuo ut alienam non laedas* (hereinafter *sic utere tuo*) is recognised by a number of authorities as one of the fundamental postulates governing transboundary harm. In Latin the maxim means, “Use your own property as not to injure that of other”. In the *Trail Smelter Arbitration* United Nations Register on International Arbitral Awards (UNRIAA) vol.3, (1938/1941), at pages p.1907 and 1965 between United States and Canada where Canada complained of escape of noxious sulphur gases into its territory, from the United States, the Arbitral Tribunal stated that:

“No State has a right to use or permit the use of its territory in such a manner as to cause injury by fumes or to the territory of another or the properties or persons therein, when the case is of serious consequence and the injury is established by clear and convincing evidence.” The ratio of this case clearly points to the need for preventing transboundary harm. In hazardous or ultra-hazardous activities, the thumb rule is to ensure complete safety, wherein one may not have to resort to liability provisions which are stringent and attract rules of civil liability.

In contrast to dispute avoidance measures, a post facto situation after the damage has occurred, would largely involve rules of State responsibility or liability.

Be that, States in their domestic laws provide for various remedies for causing transboundary environmental harm. These may include administrative procedure, civil action claims or also criminal procedure in certain instances.

### Administrative procedures

Many European countries follow a civil law system which would involve administrative procedures by way of sanctions or remedies when statutory duties are not obeyed. Proceedings are initiated by governmental authorities against companies, individuals or associations. These authorities have administrative or quasi-judicial power to enforce environmental laws.

The remedies may involve fines, confiscation of machinery, closure of the installation, depriving a company or individual the right of public competition etc. Sometimes, sanctions may involve revoking of licenses or even denial of governmental contracts, or refusal by lending institutions to provide funds because of failure to meet environmental standards or clearances.

### Civil liability

It is often seen that preventive measures may not yield results all the time when environmental accident/injury results in damage. In order to deter the commission of harmful acts and also remedying the action or the injury suffered it is necessary to take civil liability measures. Many international treaties today transfer the onus of this damage from the State level to the individual or the operator who is in actual control of the activity.

Civil liability involves claims for damage to life, or limb of the person, or when injury causes damage to property and in some instances also damage to the environment itself. The last cause of action is increasingly being provided for treaties governing nuclear liability, liability for space activities, as well as other hazardous activities.

Civil liability as understood in international law is the liability of any legal or natural person under rules of national law adopted pursuant to international treaty obligations which apply harmonised minimum national standards. Civil liability agreements define the activity covered and the harm caused. They involve elements such as definition of damage, functional and geographic scope of damage; the rules of channelling liability (i.e. when the liability can be distributed to the operator of vessel, shipper, transporter owner, manufacturer, importer, exporter etc.), limitations on liability, compensation schemes, recognition and enforcement of foreign judgment and financial guarantees.

Civil liability rules generally apply to activities that are permitted although are known to be hazardous in nature. Liability as stated earlier is generally imposed on the 'operator' or the manager of the polluting activity. Although strict or no-fault liability is more developed in domestic law the conceptual underpinnings are also reflected in international treaties and agreements. There have been a number of Indian judgments on civil liability for undertaking hazardous activities. The *Sriram Gas Leak Case* (AIR 1987 SC...) set the trend for compensation for hazardous and dangerous activities undertaken by various enterprises in India. Later in the *Union Carbide Corporation v. Union of India* (AIR 1992 SC 248) the Supreme Court of India found an opportunity to further strengthen the need for absolute liability for damage resulting from escape of a poisonous methyl isocyanate.

However, an opportunity was lost to put into effect the ratio of the Sriram Gas Leak Case. While Chief Justice Ranganath Mishra observed that the departure from the *Ryland v. Fletcher* rule in the Sri Ram gas Leak Case was essentially an obiter, Justice Venkatachaliah (speaking for Justice K.N. Singh, N.D. Singh and himself, cast doubts on the standard of absolute liability and recognised the right of the Union Carbide to raise and urge defences from the 'without exception', absolute liability. Likewise, in *Indian Council for Enviro Legal Action v. Union of India* (AIR 1996 SC 1446) the Supreme Court Bench of two judges were of the view that the ratio of the Sri Ram gas leak case was still applicable in cases involving inherently dangerous activity. They further stated "... we are convinced that that law stated by this Court in *Sri Ram Gas leak case* is by far the most appropriate one - apart from the fact that it is binding upon us. (We have disagreed with a view that the law stated in the said decision is obiter). According to this rule, once the activity carried on is hazardous or inherently dangerous, the person carrying on such activity is liable to make good the loss caused to any person by his activity irrespective of the fact whether he took reasonable care while carrying on his activity. The rule is premised upon the very nature of the activity carried on .... "

The fundamental problem encountered with rules of State responsibility is also faced in civil liability regimes. Take for example a claim of a plaintiff for having suffered from radioactive contamination of waters/having consumed mercury affected fish. The pollution victim to succeed would have to prove causation, identify the polluter, prove damage, also prove that damage was caused by consuming fish from waters polluted by X company. As if these difficulties were not enough, the victim may also have to grapple with issues pertaining to jurisdiction, choice of law, execution of judgments etc. These difficulties can prove to be extremely exacting to the plaintiff under a traditional civil liability regime.

### 24.3 Adjudicative Jurisdiction

Often it is seen in instances of transboundary pollution that the plaintiff who has suffered the damage resides in a different State. However, rules of private international law favour jurisdiction in the defendants *domicile* under the rule of *forum non conveniens*. Support for a domicile-based approach could be on grounds that the defendant/accused would be able to defend him in local tribunals, the evidence of harmful activity is readily available, witnesses may be easily called etc. On the other hand, it can be argued that victim of pollution/plaintiff should have the benefit of local courts, evidence would be more readily available and compensation can be claimed on account of damage suffered. Besides, it can also be argued that why should the poor plaintiff be made to bear costs of litigation in a foreign country for no fault of his?

It is seen that practice of States has developed in this field. Some States are ready to apply the laws of the victim State to award compensation for pollution. In one case a German court awarded compensation to a resident of Sarrbrucken, who had complained of pollution caused by a French power station in Lorraine. The German Court applied French law and awarded damages. But there was no guarantee that this award would be

enforced in France. (*PORO v. Houilleres du Bassin de Lorriane*, 11 Oberlandesgericht (OLG) Saarbrucken 752 (1958)). To overcome these problems, EC countries adopted the Convention concerning Jurisdiction and the Enforcement of Judgments in Civil and Commercial Matters 1968. But other States have followed paths leading to different often conflicting results while applying the above Convention.

### Choice of Law

In civil liability suits ‘choice of law’ can also be a tricky issue. The court vested with jurisdiction shall determine the compensation to be awarded. The general rule is to apply the local law but there on grounds of non-discrimination and public policy may require the plaintiff’s complaint in no case shall be judged according to rules less favourable than those which would be used to judge the matter in the State where the activities took place. As was seen above in Poro’s case the German courts applied the more favourable French Law.

### Assessing Damages

In civil liability providing compensation can be difficult especially if you are evaluating damage to the environment itself. Often harm to the environment is viewed in property terms where a certain market value, loss of income or damage to economic or aesthetic value is attached. While assessing harm to the bio-diversity or other intangible aspects of the environment, a balanced assessment may prove to be very difficult. In a claim made towards ‘damage to the environment’ proving what the scope of this damage is can prove to be one of the most difficult issues. Scientific-legal issues such as: the proximity of harm, damage suffered and actual loss in monetary terms, ownership of the resources, long-term evaluation of damage and proof of irreversibility of harm, standing to bring claims, *locus standi* etc. would have to be shown. This was seen very illustratively in oil spill caused by the *Amoco Cadiz* (1978) a ship owned by American companies which polluted a large part of the French Coast. In the judgment the American judges refused to recognise any ‘ecological harm’. The Court “ ...did not award damages for injury of the biomass, the totality of life at sea, deeming the matter to be complex, attenuated, speculative and based on a chain of assumptions...damage was to *res nullis* and no one had a standing to claim compensation... .” ‘Damage to the environment’ can also involve applying a precautionary approach which may be to the detriment of the claimant.

## 24.4 Recognition and Execution of Foreign Judgments

Another issue typical of civil liability claims is the ‘recognition and enforcement/execution of foreign judgments’. States prefer to have bilateral or regional arrangements or treaties on the subject, like in case of the 1968 Brussels Convention. At the international level, the 1956 UN Convention on the Recognition and Enforcement of Foreign Judgments provides for reciprocal recognition and enforcement between countries who are Parties to the Convention.

Besides the topics discussed above, it is important to understand that IEL is largely sectoral in nature. And therefore, the civil liability regimes too are sectoral/product

specific. There cannot be a general common civil liability regime governing all pollutants. Some of the important treaties regulating hazardous activities by means of a civil liability regime include: The 1969 International Convention on Civil Liability for Oil Pollution (modified in 1971, 1976, 1984 and 1992); the 1971 Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage (modified by protocols); 1976 International Convention on Civil Liability for Oil Pollution Damage Resulting from the Exploration of Submarine Mineral Resources; 1996 Convention on Carriage of Hazardous and Noxious Substances; and the 2001 Convention on Civil Liability for Bunker Oil Pollution Damage.

With regard to nuclear operations the conventions are: the 1960 Convention on Third Party Liability in the Field of Nuclear Energy (regional OECD treaty); and the 1964 Vienna Convention on Civil Liability for Nuclear Damage (amended by a Joint Protocol adopted in 1988 and 1997).

In the field of transboundary movement of hazardous wastes, a Protocol on Liability and Compensation for Damage resulting from Transboundary Movements of Hazardous Wastes and Their Disposal 1999. A Supplementary Protocol on Liability and Redress to the Cartagena Protocol on Biosafety is being negotiated.

## 24.5 Dispute Settlement Bodies (DSBs) in the Field of Environment

There are a number of DSBs in the field of environmental law. But the most effective settlement procedure is that of “negotiation and consultation” which is an essential part of every MEA. The Conference of Parties (COP) to various conventions also help to investigate and resolve dispute amongst Parties in an amicable way. But parties are free to invoke different modes of dispute settlement, often provided in the body of the MEA itself. Some of the existing important DSBs have been discussed below.

### a) International Court of Justice (ICJ)

The International Court of Justice (ICJ) has addressed issues of environmental law particularly those involving principles of precaution and environmental impact assessment, very cautiously. It must, however, be noted that the Court touched upon two important principles of international law that provided a broad base for the development of international environmental law. In *the Corfu Channel* case (ICJ Reports 1949), it gave its imprimatur to the principle contained in the maxim *sic utere tuo ut alienam non laedas* i.e. a State should not knowingly allow its territory to be used for acts contrary to the rights of other States. Second, in the *Barcelona Traction Case* (ICJ Reports 1970) it promulgated the principle of obligation *erga omnes*. This principle could become the basis for developing obligations States owe to the entire international community in global problems such as ozone depletion, global warming, pollution of the high seas, and depletion of biological diversity.

The ICJ was also approached by New Zealand and Australia in the *Nuclear Test Case* (ICJ Reports 1976, later 1996) to declare that the atmospheric nuclear tests undertaken by France were prohibited as they violated principles of environmental law, namely the duty to carry out an environmental impact assessment, the precautionary principle and the concept of inter-generational equity and polluter pays principle. The Court, however, declined to exercise its jurisdiction in this case on the ground that the claim of Australia and New Zealand no longer had any object in view of the announcements made by France of its intention to cease the conduct of such tests.

The Court had the opportunity to deal with issues concerning environmental law in the case concerning *the Legality of Use or Threat of Use of Nuclear Weapons*. On an application made by the World Health Organisation and the UN General Assembly the Court was asked to render advisory opinion on the following questions: “in view of the health and environmental effects would the use of nuclear weapons by a State in war or other armed conflict be a breach of its obligations under international law including the WHO constitution” and “is the threat or use of nuclear weapons in any circumstances permitted under international law, (UN General Assembly). The Court rejected the request from the WHO on the ground that as a specialised agency of the United Nations concerned with effects of use of nuclear weapons on the health or the population of the world it has a mandate to discharge its responsibilities arising out of use of nuclear weapons, irrespective of the fact whether the use of nuclear weapons were legal or illegal. Accordingly, the Court held that WHO did not have the competence to raise the question of legality of nuclear weapons, which is outside its purview. However, in the case of the opinion requested by General Assembly the Court accepted its jurisdiction to render advisory opinion on the question raised by the General Assembly. It held:

- a) There is neither in customary nor conventional international law specific authorisation for the threat or use of nuclear weapons;
- b) A threat or use of force by means of nuclear weapons that is contrary of Article 2(4) of the UN Charter and that fails to meet all the requirements of Article 51 is unlawful;
- c) A threat or use of nuclear weapons should also be compatible with the requirements of the international law applicable in armed conflict particularly those of the principles and rules of international humanitarian law, as well as with specific obligations under treaties and undertakings which expressly deal with nuclear weapons; and
- d) There existed an obligation to pursue in good faith and bring to a conclusion negotiations leading to nuclear disarmament under effective international control.

The Court was, however, divided equally by seven votes to seven on the legality of holding nuclear weapons as a measure of nuclear deterrence on the point that there could be lawful use of nuclear weapons in an extreme circumstance of self-defence, in which the survival of a State would be at stake. However, with the casting of vote by the President of the Court the Court held that it would be lawful to hold the nuclear weapon as a deterrent and use it in the extreme circumstances of self-defence. However, the Court retrieved its position by once again ruling that the threat or the use of nuclear

weapons would generally be contrary to the rules of international law applicable in an armed conflict, in particular the principles and rules of humanitarian law.

This view, incidentally it may be noted, is in accordance with the view held by India as submitted in its memorial. In this connection it may be noted that the view of the Court in respect of the right of self-defence of a State appears to suffer from the disadvantage of treating the right in vacuum. That right should have been balanced as has been rightly pointed out by several judges Bedjaoui, Shahabuddeen, Weeramantary and Koroma, by the imperative needs of preservation of the human species itself and the preservation and protection of human environment.

The Court, however, attempted to balance environmental duties of States with their right of self-defence. The Court first recognised the general obligation of States to ensure that activities within their jurisdiction and control respect the environment of other States or of areas beyond national control. Noting “that the environment is not an abstraction but represents the living space, the quality of life and the very health of human beings, including generations unborn”, the Court noted that the general obligation of States “is now part of the corpus of international law relating to the environment”. While noting that it “does not consider that the treaties in question could have intended to deprive a State or the exercise of its right of self-defence under international law because of its obligation to protect the environment”, the Court pointed out that respect for the environment is one of the elements that needs to be considered, in assessing, whether an action is in conformity with the principles of necessity and proportionality.

In its Judgment in the *Gabcikovo-Nagymoros Project case (Hungary/Slovakia)* of 25 September 1997, the Court once again touched upon a number of important environmental issues. It first noted the observation of the International Law Commission with reference to State practice that “it is primarily in the last two decades that safeguarding the ecological balance has come to be considered an “essential interest” of all States. The Court recalled in this connection its own observation on the respect to be given to the obligations of States concerning environment in the *Case on the Legality of the Threat or Use of Nuclear Weapons*. More specifically, the Court addressed Hungary’s contention that it was entitled to terminate the 1977 treaty with Czechoslovakia because new requirements of international law for the protection of environment precluded performance of the treaty. In this connection, the Court noted that neither Party contended that new peremptory norms of environmental law had emerged since the conclusion of 1977 treaty in the absence of which there was no case made out to override or ignore the obligations under the 1977 treaty. On the other hand, any newly developed norms of environmental law relevant to the treaty could be incorporated into the treaty, but only by joint agreement.

Moreover, the obligations contained in Articles 15, 19 and 20 of the Treaty of 1977 were general and required to be transformed into specific obligations of performance through a process of consultation and negotiation. Their implementation required a mutual willingness to discuss in good faith actual and potential environmental risks. The Court, however, recognised that the Parties disagreed on the consequences of the application

of the principle of precaution to the project in question even as they recognised the importance of the principle. In this connection the Court noted the need for third Party involvement, which may be helpful and instrumental in finding a solution, provided each of the Parties, is flexible in its position.

A reading of the cases involved indicates that the International Court of Justice regards the basic principles of environmental law as important obligations of States. However, it noted that there could be differences on the interpretation and application of the principles in a given case and such differences were to be resolved through negotiation or third Party settlement.

### **b) International Tribunal for the Law of the Sea (ITLOS)**

The International Tribunal for the Law of the Sea is a specialised judicial body established by the United Nations Convention on the Law of the Sea (UNCLOS) as one of the options available to the Parties to the Convention for the compulsory settlement of disputes concerning the interpretation or application of the Convention. The UNCLOS regulates all aspects of the ocean space includes - its uses and its resources and includes, among others, such matters as fisheries, archipelagic States, maritime delimitation, regime of islands, protection and preservation of the marine environment, marine scientific research. That is why UNCLOS is often referred to as a “comprehensive constitution for the oceans”.

As a specialised court of law, the jurisdiction of the International Tribunal for the Law of the Sea is limited to matters related to this area of international law, including those contained in UNCLOS.

The ITLOS is not only open to States, but also to international organisations, which are also entitled to become Parties to it. In cases relating to activities in the international seabed area, the Seabed Disputes Chamber has jurisdiction in such disputes as those between States 2 Parties, the Authority or the Enterprise, State enterprises and natural or juridical persons, and between the Authority and a prospective contractor.

While States have a freedom of choice as regards the procedure under UNCLOS, it may be noted that the ITLOS has compulsory jurisdiction in two legal proceedings, which may require urgent action: provisional measures and prompt release of vessels and crews.

Most of the 13 cases submitted to ITLOS, have been limited to the two above urgent proceedings. In the order of the ITLOS on prompt release proceedings may be considered an appropriate and cost effective mechanism for Parties faced with the arrest of vessels and crews in the *MOX Plant Case, (Ireland v. United Kingdom)*, concerning the potential harmful effects on the marine environment of the Irish Sea resulting from the extension of a nuclear plant. The Tribunal stressed, “the duty to co-operate is a fundamental principle in the prevention of pollution of the marine environment” (para.82). Further, it also stated that prudence and caution required that the Parties exchange information concerning risks or effects of the operation of the plant (para.84).

In the *Case concerning Land Reclamation by Singapore in and around the Straits of Johor, Malaysia v. Singapore*, the Tribunal was faced with the question of the consequences on the environment of land reclamation activities carried out by Singapore. The Tribunal reaffirmed the duty of the Parties to co-operate and, for this purpose, to enter into consultations forthwith in order to establish promptly a group of independent experts to conduct a study to determine, within a period not exceeding one year, the effects of the land reclamation activities on the marine environment.

The Tribunal in its orders also gives application to a number of principles of international law and IEL. In the *M/V "SAIGA" (No. 2) Case*, Saint Vincent and the Grenadines agreed to submit to the Tribunal the merits of a dispute concerning the arrest of the vessel *Saiga*. The Tribunal, in its Judgment of 1 July 1999, adopted a number of significant interpretations of the Convention, particularly concerning flags of convenience, hot pursuit, enforcement of customs laws, the espousal of claims relating to crew members not of the nationality of the applicant State, among others.

Another dispute submitted to the Tribunal by special agreement is the *Case concerning the Conservation and Sustainable Exploitation of Swordfish Stocks in the South-Eastern Pacific Ocean*. This dispute between Chile and the European Community has been submitted to a special chamber of the Tribunal composed of four judges of the tribunal and one judge *ad hoc*. This case is still pending because both Parties have requested on more than one occasion, the extension of the time limit for making preliminary objections.

### c) Permanent Court of Arbitration (PCA)

It has been seen that the international community and civil society are increasingly feeling the need for fast speedy mechanisms for resolving environmental disputes. With the exception of the ITLOS, there are very institutional fora available to States and non-States for recourse to resolve environmental disputes.

The PCA recognising this gap adopted the Environmental Arbitration Rules and Conciliation Rules in June 2001. These Rules provide a forum where States can "resolve all their environmental disputes peacefully...in accordance with the Charter of the United Nations". These Rules are available to all "concerned citizens" with the possibility for access to justice, redress and remedy. Furthermore, in the spirit of Principle 7 of the Rio Declaration, the PCA has made its Financial Assistance Fund available to aid developing countries. This Fund may be drawn on when developing countries seek to resolve a dispute relating to the environment and/or natural resources using one of the PCA's sets of the Environmental Rules, or engaging the services of the PCA in facilitating and administering resolution of such a dispute.

The strength of these dispute resolution rules is strengthened by the political will shown by Member States to nominate internationally recognised jurists and scientists from their respective countries to serve on Expert Panels. Currently, there are over 100 persons on the lists of these two PCA Environmental Panels, the Panel of Arbitrators and the Panel of Scientific Experts.

Some innovative features of the PCA Environmental Arbitration and Conciliation Rules are their procedures for the rapid constitution of a tribunal, allowing for a speedy response to a dispute; regulation of confidentiality; availability of provisional measures; and modern choice of law provisions tailored to environmental and/or natural resources dispute resolution. The rules have also been streamlined to keep costs at a minimum.

Throughout its history, the PCA has offered dispute settlement services to the international community: fact-finding and inquiry, mediation/ conciliation and arbitration.

The Rules provide varied flexibility for States and/or non-States to address the issues concerning them in a *unified* forum adding a form of stability to the legal regimes provided by MEAs. Further, conciliation and arbitration under the PCA Rules can be used in the context of existing MEAs to promote their implementation.

## 24.6 Conclusion

The multilateral treaties are all negotiated instruments, which in the final analysis are 'as strong or weak' as states want them to be. For example, the Montreal regime on ozone depletion is a stellar example of an international treaty implemented in true letter and spirit. The reasons for the success of the regime is the innovative non-adversarial 'Implementation Committee' which facilitates developing and less developed countries to cope with the incremental cost incur in undertaking obligations. Something similar may also needed to be agreed upon in the climate change regime. One of the important aspects of dispute avoidance is that it helps States to settle issues amicably. Most of the MEAs provide for disputes settlement clauses where States can enter into negotiations or consultations to settle their disputes amicably. Resort to the ICJ and arbitration has also been provided for in nearly all MEAs. Many of the disputes settlement bodies seen above have grown as specialised chambers dealing with only environmental disputes.

Article 33 of the UN Charter provides for many important modes of amicable settlement such as negotiation, mediation, conciliation, good offices etc. States need to resort to these means of dispute settlement. While it may be proper to approach a court of arbitration/ICJ for dispute resolution, it must be remembered that judicial decisions will also provide the rationale for settlement. At the end of the day it is only States who have to implement the decisions of courts.

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**COURSE 4:  
NATIONAL ENVIRONMENTAL  
LAW AND POLICY-I**

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# UNIT 25

## ENVIRONMENTAL LAW AND THE INDIAN CONSTITUTION

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### 25.1 Introduction

The protection and preservation of the environment is integral to the culture and religion of most human communities. Nature is seen as an essential part of the society at large. A healthy environment is also essential to ensure basic human rights, including the right to life (Article 21), for no human right can be secured in a degraded environment. An example will highlight the importance of a green and healthy environment. Misuse of our natural resources, a key environmental issue, has direct impact on fundamental human rights such as the right to food, right to water, right to air and right to life itself. It is important to draw linkages between environment and human rights to further build bridges between legislations relating to the two.

The relationship we share with our environment is undergoing profound changes in the wake of modern scientific and technological developments. In India, from time to time various laws have been enacted for the protection of environment, flora and fauna, and Indian Constitution is the first Constitution in the world which contains specific provisions for the protection and improvement of environment. In India, in view of the various constitutional provisions and other statutory provisions contained in various laws relating to environment protection, the Supreme Court has held that the essential feature of “sustainable development” such as the “Precautionary Principle” and the “Polluter Pays Principle” are part of Environmental law of the Country.

The Forty-Second Amendment Act: Environmental protection and improvement were explicitly incorporated into the Constitution by the Constitution (Forty-Second Amendment) Act of 1976. Article 48A was added to the Directive Principles of State Policy. It declares: 'The State shall endeavour to protect and improve the environment and to safeguard the forest and wildlife of the country.' Article 51A(g) in a new chapter entitled 'Fundamental Duties', imposes a similar responsibility on every citizen 'to protect and improve the natural environment including forests, lakes, rivers and wildlife, and to have compassion for living creature. Together, the provisions highlight the national consensus on the importance of environmental protection and improvement and lay the foundation for a jurisprudence of environmental protection.

## 25.2 Duty of the State

Part IV of the Constitution of India contains the Directive Principles of State Policy. (DPSP) These directives are the active obligations of the State; they are policy prescriptions for the guidance of the Government.

Article 37 of Part IV of the Constitution limits the application of the directive principles by declaring that these principles shall not be enforceable by any Court. Therefore, if a directive is not followed by the State, its implementation cannot be secured through judicial proceedings. On the other hand, these principles are fundamental in the governance of the country and it is the duty of the State to apply these principles during the process of law-making.

### *Part IV - Directive Principles of State Policy*

- ◆ Article 48A. Protection and improvement of the environment and safeguarding of forests and wild life.
- ◆ The State shall endeavour to protect and improve the environment and to safeguard the forests and wild life of the country.

The parliament had considerable debate over the wording of the draft Article 48A. Several amendments were moved in both the houses of the Parliament. Seervai has correctly pointed out:

Article 48-A reflects an increasing awareness of people all over the world of the need to preserve the environment from pollution, especially in urban areas. Smoke, industrial waste, deleterious exhaust fumes from motor cars and other combustion engines are injurious to the health and well-being of the people and foul the atmosphere. The preservation of forests and their renewal by afforestation has long been recognised in India as of great importance both with reference to rainfall and to prevent erosion of the soil by depriving it of forests which protect it. The preservation of wild life is looked upon as necessary for the 'preservation of ecological balance'. Article 48-A rightly emphasises the fact that the State should try not only to protect but to improve the environment<sup>1</sup>.

<sup>1</sup> H.M. Seervai, *Constitutional Law of India: A Critical Commentary*, 2019 (Vol.2, 1993).

Article 39(e), 47 and 48-A of the Directive Principles of State Policy have a definite bearing on environmental problems. They, by themselves and collectively impose a duty on the State to secure the health of the people, improve public health and protect and improve the environment.

Environmental pollution may damage monuments of national importance, the protection of which is a duty of the State under Article 49 of the Constitution. Article 49 of the DPSP provide for the obligation of the State to protect monuments, places and objects of national importance. In the *Taj* case<sup>2</sup> the Supreme Court of India seems to have got inspiration from Article 49 while protecting the Taj Mahal, a monument protected under the Ancient Monuments and Archaeological Sites and Remains Act, 1958, from harmful Industrial emissions originating in and around Agra.

Article 51(c) directs the State to foster respect for international law and treaty obligations in the dealings of organised peoples with one another. Therefore, in view of the range of international treaties law and treaty obligations in Article 51 (c), read in conjunction with the specific treaty provision, serve to strengthen the hands of pro-conservation judge.

#### Part IV

##### Directive Principles of State Policy

37. Application of the principles contained in this Part - The provisions contained in this Part shall not be enforceable by any court, but the principles therein laid down are nevertheless fundamental in the governance of the country and it shall be the duty of the State to apply these principles in making laws.

39. Certain principles of policy to be followed by the State - The State shall, in particular, direct its policy towards securing-

- a) that the citizens, men and women equally, have the right to an adequate means of livelihood;
- b) that the ownership and control of the material resources of the community are so distributed as best to subserve the common good;
- c) that the operation of the economic system does not result in the concentration of wealth and means of production to the common detriment;
- d) that there is equal pay for equal work for both men and women;
- e) that the health and strength of workers, men and women, and the tender age of children are not abused and that citizens are not forced by economic necessity to enter avocations unsuited to their age or strength;
- f) that children are given opportunities and facilities to develop in a healthy manner and in conditions of freedom and dignity and that childhood and youth are protected against exploitation and against moral and material abandonment.

Contd...

<sup>2</sup> *M.C. Mehta v. Union of India*, AIR 1997 SC 734.

48A. Protection and improvement of environment and safeguarding of forests and wild life - The State shall endeavour to protect and improve the environment and to safeguard the forests and wild life of the country.

49. Protection of monuments and places and objects of national importance - It shall be the obligation of the State to protect every monument or place or object of artistic or historic interest, declared by or under law made by Parliament to be of national importance, from spoliation, disfigurement, destruction, removal, disposal or export, as the case may be.

51. Promotion of international peace and security - The State shall endeavour to -

- a) promote international peace and security;
- b) maintain just and honourable relations between nations;
- c) foster respect for international law and treaty obligations in the dealings of organised peoples with one another; and
- d) encourage settlement of international disputes by arbitration.

### 25.3 Fundamental Duties of the Citizens

The Constitution (Forty-second Amendment) Act, 1976 inserted part IV-A into the Constitution of India. This new part prescribes certain fundamental duties for the citizens of India. The sole Article of this part, Article 51-A, specifies ten fundamental duties.

Part IVA - Fundamental Duties Article 51A. Fundamental duties

It shall be the duty of every citizen of India ...

(g) to protect and improve the natural environment including forests, lakes, rivers and wild life, and to have compassion for living creatures;

Then Indian Constitution has imposed a joint responsibility upon the State; and every citizen of India to protect and improve the natural environment. In the words of Ranganath Mishra, J.:

“Preservation of environment and keeping the ecological balance unaffected is a task which not only Government but also very citizen must undertake. It is a social obligation and let it remind every citizen that it is his fundamental duty as enshrined in Article 51-A (g) of the Constitution”<sup>3</sup>.

After referring to Article 48-A and Article 51-A (g), the High Court of Himachal Pradesh concluded -

Thus, there is both a Constitutional pointer to the State and a Constitutional duty of the citizens not only to protect but also to improve the environment and to preserve and safeguard the forests, the flora and fauna, the rivers and lakes and

<sup>3</sup> *Rural Litigation and Entitlement Kendra v. State of U.P.*, AIR 1987 SC 359, 364.

all the other water resources of the country. The neglect or failure to abide by the pointer or to perform the duty is nothing short of a betrayal of the fundamental law which the State and, indeed, every Indian high or low, is bound to uphold and maintain<sup>4</sup>.

The Courts have reminded time and again to both State as well as citizens about their duties towards environment while deciding environmental issues by referring to Article 48-A and 51- A(g) of the Constitution.

#### Part IV-A

#### Fundamental Duties

51A. Fundamental duties - It shall be the duty of every citizen of India -

- a) to abide by the Constitution and respect its ideals and institutions, the National Flag and the National Anthem;
- b) to cherish and follow the noble ideals which inspired our national struggle for freedom;
- c) to uphold and protect the sovereignty, unity and integrity of India;
- d) to defend the country and render national service when called upon to do so;
- e) to promote harmony and the spirit of common brotherhood amongst all the people of India transcending religious, linguistic and regional or sectional diversities; to renounce practices derogatory to the dignity of women;
- f) to value and preserve the rich heritage of our composite culture;
- g) to protect and improve the natural environment including forests, lakes, rivers and wild life, and to have compassion for living creatures;
- h) to develop the scientific temper, humanism and the spirit of inquiry and reform;
- i) to safeguard public property and to abjure violence;
- j) to strive towards excellence in all spheres of individual and collective activity so that the nation constantly rises to higher levels of endeavour and achievement.

## 25.4 Fundamental Rights

### ◆ Right to Wholesome Environment

Part III of the Constitution of India contains fundamental rights. These rights were included in the Constitution after long debates in the Constituent assembly.

Part III - Fundamental Rights

Article 21. Protection of life and personal liberty

<sup>4</sup> *Kinkri devi v. State of Himachal Pradesh*, AIR 1988 HP 4,8.

No person shall be deprived of his life or personal liberty except according to procedure established by law.

Article 32. Remedies for enforcement of rights conferred by this Part

- 1) the right to move the Supreme Court by appropriate proceedings for the enforcement of the rights conferred by this Part is guaranteed.
- 2) The Supreme Court shall have power to issue directions or orders or writs, including writs in the nature of *habeas corpus*, *mandamus*, prohibition, *quo warranto* and *certiorari*, whichever may be appropriate, for the enforcement of any of the rights conferred by this Part.

It was the *Maneka Gandhi* case that heralded the new era of judicial thought. The court started recognising several unarticulated liberties that were implied by Article 21 and during this process the Supreme Court interpreted, after some hesitation the right to life and personal liberty to include the right to wholesome environment. The conflict between development needs and environmental protection has been the most controversial issue before the courts in deciding in environmental matters. Incidentally the *Dehradun Quarries* case that paved the way for right to wholesome environment has also focused on this continuing conflict. The judgments in Dehradun quarries cases were passed under Article 32 of the Constitution and involved closure of some of the quarries on the ground that their operation was upsetting ecological balance of the area. The indirect approval of the right to humane and healthy environment by the Supreme Court continued further in the *Oleum gas leak case*<sup>5</sup>.

Life cannot be possible without clean drinking water therefore; right to clean water is one of the attributes of the right to life in Article 21 of the Constitution<sup>6</sup>. The industrial establishments in and around residential colonies are another cause of concern, more so, when the industries have mushroomed contrary to the development plans. In *V. Lakshmi Pathy v. State of Karnataka*<sup>7</sup> the same issue came before the High Court of Karnataka. The High Court held that once a development plan had earmarked the area for residential purpose, the land was bound to be put to such use only. Thus, High Courts, it seems, were more enthusiastic and active in accepting and declaring that 'right to life' in Article 21 includes 'right to environment'.

#### ◆ Right to livelihood vis-à-vis Environment

The Supreme Court has recognised another aspect of the right to life enshrined under Article 21 of the Constitution, viz. the right to livelihood. There is a real chance of clash of these rights, i.e. right to environment and right to livelihood as government's action to close down industrial units for protection of environment may result in loss of job, dislocation of poor workers and might disrupt badly the lifestyles of people heavily dependent on such industries.

<sup>5</sup> *M.C. Mehta v. Union of India*, AIR 1987 SC 965.

<sup>6</sup> *Attakoya Thangal v. Union of India* 1990 (1) KLT 580.

<sup>7</sup> AIR 1992 Kant 57.

The right to livelihood has been recognised by the Supreme Court in the case of *Olga Tellis v. Bombay Municipal Corporation*<sup>8</sup>. The Court issued directions to the Municipal Corporation to provide alternative sites or accommodation to the slum and pavement dwellers near to their original sites; and to provide amenities to slum-dwellers.

In many cases the Supreme Court passed orders requiring State agencies and concerned person to resettle and rehabilitate the workers or other persons who were being displaced by the decision of the Court or of the Government to close down an industry or to relocate at a suitable place.

#### ◆ Right to Equality

Article 14 of the Constitution guarantees to every person the right - not to be denied equality before the law or the equal protection of the laws. The possibility of infringement of this Article by a government decision having impact on the environment cannot be ruled out. Article 14 strikes at arbitrariness because an action that is arbitrary must necessarily involve a negation of equality<sup>9</sup>.”

Thus, permission for contracts contrary to town planning regulation by the municipal authority may be challenged. Similarly, Article 14 may be invoked to challenge governmental sanction of projects having an adverse impact on the natural environment and where such sanctions involve arbitrary considerations.

#### ◆ Freedom of Trade

Article 19(1) (g) of the Constitution guarantees to all citizens of India, the right to practice any profession or to carry on any occupation or trade or business. This freedom however, is not unfettered.

An aggrieved industrialist may resort to Article 19 in case his trade and business interests are affected by the action of governmental agencies in the name of environmental protection. As environmental regulation grows more stringent and its enforcement becomes more vigorous, industrial challenge to agency action is likely to increase. Courts will then need to balance environmental interests with the fundamental right to carry on any occupation, trade or business guaranteed in Article 19(1) (g). Various standards have been prescribed by the Government for the discharge of different pollutants. An industry may challenge a very stringent standard which cannot be complied with, despite best efforts by available technology or if it is otherwise unreasonable.

#### ◆ Role of Panchayat and Municipalities (Article 243-B, 243-G)

The Constitution (Seventy-third Amendment) Act, 1992 and the Constitution (Seventy-fourth Amendment) Act, 1992 have given a Constitutional status to the panchayats and the Municipalities respectively. Article 243-B provides for the establishment of intermediate and district levels. Article 243-G authorises the legislature of State to endow the

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<sup>8</sup> AIR 1986 SC 180.

<sup>9</sup> *Ajay Hasia v. Khalid Mujib Shervardi*, AIR 1981 SC 487,499.

Panchayats with such powers and authority as may be necessary to enable them to function as institution of self-government.

The Eleventh Schedule along with other matters contains following matters which are directly or indirectly related to environment like, agriculture, soil conservation, water management and watershed development; fisheries; social forestry and farm forestry; minor forest produce; drinking water; health and sanitation; and maintenance of community assets.

The matters which are related to environment in the twelfth Schedule may be enumerated as follows:

Urban planning including town planning regulation of land use water supply; public health, sanitation, conservancy and solid waste management, urban forestry, protection of the environment and promotion of ecological aspects; provision of urban amenities such as park grounds; cremation grounds and electric crematoriums; prevention of cruelty to animals' regulation slaughter houses and tanneries.

Thus, it is evident that the Constitution imposes the duty to protect and preserve the environment in all the three tiers of the Government i.e. Central, State and local.

#### ◆ Public Interest Litigation (Article 32 and 226)

One of the most innovative parts of the Constitution is that of the Writ Jurisdiction that is conferred on the Supreme Court under Article 32 and on all the High Courts under Article 226. Under these provisions, the courts have the power to issue any direction or orders or writs, including writs in the nature of *habeas corpus*, *mandamus*, prohibition, *quo warranto* and *certiorari*, whichever is appropriate.

This has paved way for one of the most effective and dynamic mechanisms for the protection of environment, that is, Public Interest Litigations.

The powers of the Supreme Court to issue directions under Article 32 and that of high courts to issue directions under Article 226 have attained great significance in environmental litigation. The Public Interest Litigation has proved itself as an important tool in the hands of environmentalists and the judiciary for protection of environment from pollution and degradation. In certain cases, it has paved ways for the improvement of existing natural environment. The importance of PIL can easily be understood by the leading cases in the area of environment. In *M.C. Mehta v. Union of India*<sup>10</sup> (*Oleum Gas Leak* case) on a public interest petition by a lawyer of the Supreme Court, the Court grabbed the opportunity to deliberate upon certain very sensitive issues like scope of Article 32 and principles of liability, etc. the court held that the power of the Court under Article 32 to grant remedial relief may include the power to award compensation in appropriate cases. In *M.C. Mehta v. Union of India*<sup>11</sup> (*Kanpur Tanneries* case), a public interest litigation was filed by an active social worker and Supreme Court advocate for

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<sup>10</sup> AIR 1987 SC 1086.

<sup>11</sup> AIR 1988 SC 1115.

restraining tanneries near Kanpur, from polluting the river Ganga by discharging trade effluents into it. As a result, to rouse amongst the people the consciousness of cleanliness of the environment the Government of India and the Government of the States and of the Union Territories were advised by the Court to consider the desirability of organising various educational activities to raise awareness.

It is therefore evident that PIL has played an important role in protection of natural environment. It has been proved to be the most potent weapon in the hands of the environmentalists who wants to protect and save the environment. The judiciary has also used PIL as a tool for protection of the natural environment and has evolved various principles and doctrines in the field of environmental jurisprudence in order to save the environment.

### 1) Part III : Fundamental Rights

#### *Right to Equality*

14. Equality before law - The State shall not deny to any person equality before the law or the equal protection of the laws within the territory of India.

#### *Right to Freedom*

19. Protection of certain rights regarding freedom of speech, etc. - (1) All citizens shall have the right -

- a) to freedom of speech and expression;
- b) to assemble peaceably and without arms;
- c) to form associations or unions;
- d) to move freely throughout the territory of India;
- e) to reside and settle in any part of the territory of India; and
- f) has been repealed
- g) to practise any profession, or to carry on any occupation, trade or business.

21. Protection of life and personal liberty - No person shall be deprived of his life or personal liberty except according to procedure established by law.

#### *Right to Constitutional Remedies*

32. Remedies for enforcement of rights conferred by this Part -

- 1) The right to move the Supreme Court by appropriate proceedings for the enforcement of the rights conferred by this Part is guaranteed.
- 2) The Supreme Court shall have power to issue directions or orders or writs, including writs in the nature of *habeas corpus*, *mandamus*, prohibition, *quo warranto* and *certiorari*, whichever may be appropriate, for the enforcement of any of the rights conferred by this Part.

- 3) Without prejudice to the powers conferred on the Supreme Court by clauses (1) and (2), Parliament may by law empower any other court to exercise within the local limits of its jurisdiction all or any of the powers exercisable by the Supreme Court under Clause (2).
- 4) The right guaranteed by this article shall not be suspended except as otherwise provided for by this Constitution.

## 2) Part IX : Article 243B and 243G Panchayats

### 243B. Constitution of Panchayats -

- 1) There shall be constituted in every State, Panchayats at the village, intermediate and District levels in accordance with the provisions of this Part.
- 2) Notwithstanding anything in clause (1), Panchayats at the intermediate level may not be constituted in a State having a population not exceeding twenty lakhs.

243G. Powers, authority and responsibilities of Panchayats - Subject to the provisions of this Constitution, the Legislature of a State may, by law, endow the Panchayats with such powers and authority as may be necessary to enable them to function as institutions of self-government and such law may contain provisions for the devolution of powers and responsibilities upon Panchayats at the appropriate level, subject to such conditions as may be specified therein, with respect to -

- a) the preparation of plans for economic development and social justice;
- b) the implementation of schemes for economic development and social justice as may be entrusted to them including those in relation to the matters listed in the Eleventh Schedule.

## 3) Part VI: Article 226 The States

### Chapter V.—The High Courts in the States

#### 226. Power of High Courts to issue certain writs -

- 1) Notwithstanding anything in Article 32 every High Court shall have power, throughout the territories in relation to which it exercises jurisdiction, to issue to any person or authority, including in appropriate cases, any Government, within those territories directions, orders or writs, including writs in the nature of *habeas corpus*, *mandamus*, prohibition, *quo warranto* and *certiorari*, or any of them, for the enforcement of any of the rights conferred by Part III and for any other purpose.
- 2) The power conferred by clause (1) to issue directions, orders or writs to any Government, authority or person may also be exercised by any High Court exercising jurisdiction in relation to the territories within which the cause of

action, wholly or in part, arises for the exercise of such power, notwithstanding that the seat of such Government or authority or the residence of such person is not within those territories.

- 3) Where any party against whom an interim order, whether by way of injunction or stay or in any other manner, is made on, or in any proceedings relating to, a petition under clause (1), without -
  - a) furnishing to such Party copies of such petition and all documents in support of the plea for such interim order; and
  - b) giving such Party an opportunity of being heard, makes an application to the High Court for the vacation of such order and furnishes a copy of such application to the Party in whose favour such order has been made or the counsel of such Party, the High Court shall dispose of the application within a period of two weeks from the date on which it is received or from the date on which the copy of such application is so furnished, whichever is later, or where the High Court is closed on the last day of that period, before the expiry of the next day afterwards on which the High Court is open; and if the application is not so disposed of, the interim order shall, on the expiry of that period, or, as the case may be, the expiry of the said next day, stand vacated.
- 4) The power conferred on a High Court by this article shall not be in derogation of the power conferred on the Supreme Court by clause (2) of Article 32.

## 25.5 Role of Judiciary and Good Governance<sup>12</sup>

The concept of governance is as old as human civilisation. Good governance signifies the way an administration improves the standard of living of the members of its society by creating and making available the basic amenities of life; providing its people security and the opportunity to better their lot; instil hope in their heart for a promising future; providing, on an equal and equitable basis, access to opportunities for personal growth; affording participation and capacity to influence, in the decision-making in public affairs; sustaining a responsive judicial system which dispenses justice on merits in a fair, unbiased and meaningful manner; and maintaining accountability and honesty in each wing or functionary of the Government. The “participation” in order to be effective, needs to be informed and organised and, therefore, depends upon the availability to the subjects “freedom of association and expression” on one hand and existence of “an organised civil society” on the other. This is necessarily a pointer to a “representative democracy”.

The factor of “transparency” requires that information is freely available and the decisions are taken or enforced in a manner that adheres to the rules and regulations. The attribute of “responsiveness” necessitates that all public institutions and their processes strive “to serve all stake holders within a reasonable time frame”.

<sup>12</sup> Relevant extract were taken from Role of Judiciary in good governance By Justice Y.K. Sabharwal, Chief Justice of India.

Democracy, liberty and the rule of law together represent the troika that is universally accepted now as the index of civil society. Democracy signifies a government of, by and for the people. The protection of individual liberties follows the notion of democracy as a natural corollary. This entails the espousal of a methodical configuration of laws by which society might be regulated and different conflicting interests can be harmonised to the fullest extent. This is why “rule of law” is indispensable. It envisages the pre-eminence of law as opposed to anarchy or capricious dictates. It involves equal accountability of all before the law irrespective of high or low status.

Democracy has been evolved through centuries of experience amongst the people, who care for human persons, dignity and rights as the best and most acceptable form of good governance. It is a concept that occasions the idea that all citizens have a right to participate in the decision-making processes that lead to adoption of policies that are applicable to the societies<sup>13</sup>. It also means that there are some limits on majority decision-making and, hence the inevitability of certain basic rights being protected. It rests on maintaining a necessary equilibrium between the numerous competing interests, demands, constraints and compulsions that exist in any civic society eager for development. India was founded as a democratic welfare State which would allow equal opportunity to one and all, irrespective of caste, creed, colour, sex or any other form of discrimination; a State where everyone would have equal opportunity for personal growth and for contributing to the cause of nation. Democracy has been defined as “a Government by the people, of the people and for the people”.

The Directive Principles have been used as fundamental principles of governance tempered by the Fundamental Rights. From time to time, adjustments have been made in the Fundamental Rights - through legislative measures, executive action or judicial pronouncements - so as to further the object sought to be achieved by the Directive Principles. After all, the purpose of the Fundamental Rights on the one hand and the Directive Principles on the other is common; viz., to provide for an environment that can ensure dignified growth and development of each individual as a useful human being. In order to guarantee that the role of law would inure to, and for, everyone and the promises made by the Constitution would not remain merely on paper, the Constitution makers made provisions for independence of the judiciary.

Judiciary in India enjoys a very significant position since it has been made the guardian and custodian of the Constitution. It not only is a watchdog against violation of fundamental rights guaranteed under the Constitution and thus insulates all persons, Indians and aliens alike, against discrimination, abuse of State power, arbitrariness etc.

Liberty and Equality have well survived and thrived in India due to the pro-active role played by the Indian judiciary. The rule of law, one of the most significant characteristics of good governance prevails because India has an independent judiciary that has been sustained, amongst others, because of support and assistance from an independent bar

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<sup>13</sup> Article 25 of the International Covenant on Civil and Political Rights European Convention on Human Rights; and Article 23 of the International American Convention on Human Rights.

which has been fearless in advocating the cause of the underprivileged, the cause of deprived, the cause of such sections of society as are ignorant or unable to secure their rights owing to various handicaps, an enlightened public opinion and vibrant media that keeps all the agencies of the State on their respective toes. One of the most important principles of just democratic governance is the presence of constitutional limits on the extent of government power. Such limits include periodic elections, guarantees of civil rights, and an independent judiciary, which allows citizens to seek protection of their rights and redress against government actions. These limits help make branches of government accountable to each other and to the people. An independent judiciary is important for preserving the rule of law and is, therefore, the most important facet of good governance. The judicial system has an important role to play ultimately in ensuring better public governance. There may be a plethora of regulations, rules and procedures but when disputes arise, they have to be settled in a court of law. There is no area where the judgments of Supreme Court have not played a significant contribution in the governance - good governance - whether it be - environment, human rights, gender justice, education, minorities, police reforms, elections and limits on constituent powers of Parliament to amend the Constitution. This is only illustrative. Indian Judiciary has been pro-active and has scrupulously and overzealously guarded the rights fundamental for human existence.

The scope of right to life has been enlarged so as to read within its compass the right to live with dignity, right to healthy environment, right to humane conditions of work, right to education, right to shelter and social security, right to know, right to adequate nutrition and clothing and so on. This has been achieved by filling the vacuum in municipal law by applying, wherever necessary, International instruments governing human rights. The Supreme Court has, over the years, elaborated the scope of fundamental rights consistently, strenuously opposing intrusions into them by agents of the State, thereby upholding the rights and dignity of individual, in true spirit of good governance. In case after case, the Court has issued a range of commands for law enforcement, dealing with an array of aspects of executive action in general, and of police at the cutting-edge level in particular. Democratic form of Government of the kind adopted by India depends in its success of a system of free and fair elections regulated, monitored and controlled by an independent agency.

◆ **Declaration of Right by Supreme Court**

a) *Chetriya Pardushan Mukti Sangarsh Samiti v. State of UP* (AIR 1990 SC 2060)

“Every citizen has a fundamental right to have the enjoyment of quality of life and living as contemplated by Article 21 of the Constitution of India. Anything, which endangers or impairs that quality of life, is entitled to take recourse to Article 32 of the Constitution of India.”

b) *Subhash Kumar v. State of Bihar* (AIR 1991 SC 420)

“the right to life enshrined in Article 21 includes the right to enjoyment of pollution free water and air for the full enjoyment of life. If anything endangers

or impairs the quality of life, an affected person or a person genuinely interested in the protection of society would have recourse to Article 32.”

c) *Virendra Gaur v. State of Haryana* (1995 2 SCC 577)

“Article 21 protects right to life as a fundamental right. Enjoyment of the life and its attainment including their right to life with human dignity encompasses within its ambit, the protection and preservation of environment, ecological balance free from pollution of air and water, sanitation without which life cannot be enjoyed. Any contra acts would cause environmental pollution. Environmental, ecological, air, water pollution etc., should be regarded as amounting to violation of Article 21.”

d) *B.L. Wadehra v. Union of India* {(1996) 2 SCC 594}.

e) *Vellore Citizens Welfare Forum v. Union of India* {AIR 1996 SC 2715}

f) *AP Pollution Control Board v. M.V. Nayudu* {(1999) 2 SCC 718}

“Environmental concerns arising in the SC under Article 32 or under Article 136 or under Article 226 in the High Courts are of equal importance as human right concerns. In fact, both are to be traced to Article 21 which deals with the Fundamental Right to life and liberty.” It was further observed “while environmental aspects concern ‘life’, human rights aspects concern ‘liberty’.”

#### ◆ Case Studies - Declaration of Right by High Courts

a) *Damodhar Rao v. Municipal Corporation, Hyderabad* (AIR 1987 AP 170)

“there can be no reason why practice of violent extinguishments of life alone would be regarded as violative of Article 21 of Constitution. The *slow poisoning* by the *polluted atmosphere caused by environmental pollution* should also be regarded as amounting to violation of Article 21 of the Constitution.”

b) *L.K.Koolwal v. State of Rajasthan* (AIR 1988 Raj 2)

“Maintenance of health, sanitation and environment falls within Article 21 thus rendering the citizens the fundamental right to ask for affirmative action.”

c) *Attakoya Thangal v. Union of India* ( 1990 KLT 580)

“The right to sweet water, and the right to free air are attributes of the right to life, for these are the basic elements which sustain life itself.”

d) *V. Lakshmipathy v. State of Karnataka* (AIR 1992 Kant 57)

“Entitlement to clean environment is one of the *recognised basic human rights*.....The right to life inherent in Article 21 of the Constitution of India does not fall short of the required quality of life which is possible only in an environment of quality.”

“Where on account of human agencies, the quality of air and quality of environment are threatened or affected, the Court would not hesitate to *use its innovative power...to enforce and safeguard* the right to life to *promote public interest*.”

## 25.6 Sustainable Development

While many factors play an important role in development, good governance is now recognised as playing an essential role in the advancement of sustainable development. Good governance promotes accountability, transparency, efficiency, and rule of law in public institutions at all levels. In addition, it allows for sound and efficient management of human, natural, economic, and financial resources for equitable and sustainable development. Moreover, under good governance, there are clear decision making procedures at the level of public authorities, civil society participation in decision-making processes, and the ability to enforce rights and obligations through legal mechanisms.

These aspects of good governance do not in themselves ensure that society is run well nor do they guarantee sustainable development. However, their absence severely limits that possibility and can, at worst, impede it. Without proper functioning institutions of governance based on the rule of law that promote social stability and legal certainty, there cannot be investment and assumption of risk that form the basis of market economy development, let alone sustainable development.

Indeed, the strength of rule of law is the best predictor of a country's economic success.

Furthermore, deficiency in the rule of law encourages high rates of corruption, with further devastating consequences on the confidence of economic actors. This lack of investment, in turn, slows economic growth and consequently deprives the governments of resources to invest in education, social safety nets, and sound environmental management, all of which are critical for sustainable development. Introduction of good governance and rule of law, however, cannot be done overnight. The process is often a gradual one, involving changes to long-standing practices, entrenched interests, cultural habits, and social and even religious norms. A significant step was taken in this endeavour in 1998 when countries adopted the Convention on Access to Information.

Public Participation in Decision-making and Access to Justice in Environmental Matters. The Convention recognises that sustainable development can only be achieved through the involvement of all stakeholders and seeks to promote greater transparency and accountability among government bodies by guarantying three pillars for the public:

- 1) The rights of citizen access to information.
- 2) Citizen participation in decision making.
- 3) Citizen access to justice in environmental matters.

In other words, the Convention guarantees freedom of access to information on the environment, gives citizens a right to participate in environmental decision-making, and provides for recourse to judicial and administrative remedies when these rights are denied by State authorities<sup>14</sup>.

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<sup>14</sup> Rule of law, good governance, and sustainable development Morita, Sachiko and Zaelke, Durwood, Washington, DC 2007.

Let us now examine a few international documents which confer sustainable development and environmental rights similar to that provided in the Indian Constitution:

- ◆ **International Covenant on Economic, Social and Cultural Rights, 1966:**
  - Article 6: Every human being has the inherent right to life.
  - Article 11: Right to an adequate standard of living for himself and his family and to the continuous improvement of living conditions.
  - Article 12(1) : Right of everyone to the enjoyment of the highest attainable standard of physical and mental health.
  - Article 12(2) : Steps shall be taken by States for the improvement of all aspects of environmental and industrial hygiene.
- ◆ **United Nations Conference on the Human Environment (UNCHE) Stockholm, 1972:**
  - Principle 1: Man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being.
- ◆ **The United Nations Conference on Environment and Development (UNCED), Rio 1992:**
  - Human beings are at the centre of our concern for Sustainable Development.

They are entitled to a healthy and productive life in harmony with nature.

- ◆ **Proposed by UN Sub-commission on Prevention of Discrimination and Protection of Minorities - Study on “Human Rights and the Environment”:**
  - Principle 1: Human Rights and ecologically sound environment, Sustainable development and peace are inter-dependent and indivisible.
  - Principle 2: All persons have the right to a secure, healthy and ecologically sound environment. This right and other human rights including civil, cultural, economic, political and social rights, are universal, interdependent and indivisible.
- ◆ **Draft Declaration of Principles on Human Rights and Environment:**
  - Principle 5: All persons have the right to freedom from pollution, environmental degradation and activities that adversely affect the environment, threaten life, health, livelihood, well-being or sustainable development within, across or outside national boundaries.
- ◆ **Right to Environment - A Constitutional Right in different Countries:**
  - Greek Constitution, 1975: Article 24: “The protection of the natural and cultural environment constitutes a duty of the State.”
  - Spanish Constitution, 1978: Article 45: “Everyone has the right to enjoy an environment suitable for the development of the person as well as the duty to preserve it.”
  - Netherlands Constitution: Article 21: “It shall be the concern of the authorities to keep the country habitable and to protect and improve the environment.”

- Constitution of Federal Republic of Brazil, 1988: Article 225: “Everyone is entitled to an ecologically balanced environment.”
- Constitution of India: (Combined reading of Article 48A and 51A): The State and citizens have fundamental duty to protect the environment (Directive Principles of State Policy).

## 25.7 Conclusion

Attitudes toward nature and viewpoints on the human species’ relationship with nature have evolved over the course of history. Societies have always had to deal with environmental related problems. As populations have grown over time and human ability to organise society has grown in technological and economic complexity, the human-environment relationship has become increasingly problematic. In recent decades, economic affluence and greater access to information have fuelled increasing concern for the environment.

The human species has spent most of history living as hunters and gatherers. Given the species’ survival needs for water, access to water was an important consideration in these activities. As hunting and gathering groups were relatively small and quite mobile, water quality issues were not a major consideration. As the agricultural transition occurred, humans settled into more permanent villages, raising crops and tending animals. Access to water for irrigation enabled this agricultural transition. Many villages grew up in areas with prime access to water.

These permanent settlements grew into cities as farming techniques became more sophisticated and enough crops could be raised so that food water-related issues are important to environmental agendas. This is one of the examples of why movements start to emerge, basing on your understanding put your thoughts down.

# UNIT 26

## OTHER LAWS AND ENVIRONMENT (IPC, CRPC, TORTS)

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### 26.1 Introduction

Yajnavalkya Smriti, a historic Indian text on statecraft and jurisprudence, suggested to have been written before 5th century AD, prohibited the cutting of trees and prescribed punishment for such acts. Kautilya's Arthashastra, written in Mauryan period, emphasized the need for forest administration. Ashoka went further, and his Pillar Edicts expressed his view about the welfare of environment and biodiversity. British India also saw enactment of many laws related to environment like Shore Nuisance (Bombay and Kolaba) Act of 1853 and the Oriental Gas Company Act of 1857. The Indian Penal Code of 1860, imposed a fine on anyone who voluntarily fouls the water of any public spring or reservoir. In addition, the Code penalised negligent acts. Other laws included Bengal Smoke Nuisance Act of 1905 and the Bombay Smoke Nuisance Act of 1912. Whilst these laws failed in having the intended effect, and during British rule, were alleged to have been enacted only in letter, lacking any spirit, India was ready and independent India early on itself had paved way for environmental accountability and protective legislation.

Upon independence India adopted a constitution but retained some British-enacted environmental legislations, without any specific constitutional provisions on environment

protection. India amended its constitution in 1976. Article 48(A) of Part IV of the amended constitution, read: The State shall endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country. Article 51 A(g) imposed additional environmental mandates on the Indian State.

Other Indian laws from recent history include the Water (Prevention and Control of Pollution) Act of 1974, the Forest (Conservation) Act of 1980, and the Air (Prevention and Control of Pollution) Act of 1981. The Air Act was inspired by the decisions made at Stockholm Conference. The Bhopal gas tragedy triggered the Government of India to enact the Environment (Protection) Act of 1986. India has also enacted a set of Noise Pollution (Regulation and Control) Rules in 2000.

In 1985, Indian government created the Ministry of Environment and Forests. This ministry is the central administrative organisation in India for regulating and ensuring environmental protection.

Despite active passage of laws by the Central Government of India, the reality of environmental quality mostly worsened between 1947 to 1990. Most of Indian economy was nationalised and owned by India, and regulations were mostly ignored by State run enterprises. Rural poor had no choice, but to sustain life in whatever way possible. The State Governments of India often regarded environmental laws enacted by the Central Government as a mere paperwork formality. Air emissions increased, water pollution worsened, forest cover decreased.

Starting in 1990s, reforms were introduced. Since then, for the first time in Indian history, major air pollutant concentrations have dropped in every 5 year period. Between 1992 to 2010, satellite data confirms India's forest coverage has increased for the first time by over 4 million hectares, a 7% increase.

Air pollution, water pollution, garbage, and pollution of the natural environment are all challenges for India. The situation was worse between 1947 through 1995. According to data collection and environment assessment studies of World Bank experts, between 1995 through 2010, India has made one of the fastest progress in the world, in addressing its environmental issues and improving its environmental quality<sup>1</sup>. Still, India has a long way to go to reach environmental quality similar to those enjoyed in developed economies. Pollution remains a major challenge and opportunity for India.

Environmental issues are one of the primary causes of disease, health issues and long-term livelihood impact for India.

## 26.2 Law of Crimes and the Environment

Indian Criminal Laws are divided into three major acts i.e. Indian Penal Code, 1860, Code of Criminal Procedure, 1973 and Indian Evidence Act, 1872. Besides these major acts, special Criminal Laws are also passed by Indian Parliament i.e. Narcotic Drugs and

<sup>1</sup> Environment Assessment, Country Data: India. The World Bank. 2011.

Psychotropic Substances Act (1985), Prevention of Corruption Act, Food Adulteration Act, Dowry Prevention Act, Commission of Sati Act etc. thousands of minor laws are made in India. Indian Penal Code formulated in 1860, forms the backbone of criminal law in India. Jury trials were abolished by the government in 1960 on the grounds they would be susceptible to media and public influence. This decision was based on an 8-1 acquittal of Kawas Nanavati in *K.M. Nanavati v. State of Maharashtra*, which was overturned by higher courts.

Environmental crime refers to the violation of laws intended to protect the environment and human health. These laws govern air and water quality and dictate the ways in which the disposal of waste and hazardous materials can legally take place. Individuals or corporations can be found guilty of environmental crimes.

### i) Indian Penal Code, 1860

Public Nuisance under the Indian Penal Code focuses on the operation of the law of nuisance through specific statutory provisions in the Civil and Criminal Codes of India. The Indian penal Code of 1860 contains elaborate provisions defining the crime of public nuisance in its various aspects and instances and prescribes punishments. Chapter XIV of the Indian Penal Code deals with offences affecting public health, safety, convenience, decency and morals. While Section 268 defines Public Nuisance, there are two specific sections dealing with the fouling of water (Section 277) and making the atmosphere noxious to health (Section 278) which could be used against perpetrators of water and air pollution. Section 277 and 278 of the Indian Penal Code read as follows:

**277. Fouling water of public spring or reservoir.** Whoever voluntarily corrupts or fouls the water of any public spring or reservoir, so as to render it less fit for the purpose for which it ordinarily used, shall be punished with imprisonment of either description for a term which may extend to three months, or with fine which may extend to five hundred rupees or with both.

**278. Making atmosphere noxious to health.** Whoever voluntarily vitiates the atmosphere in any place so as to make it noxious to the health of persons in general dwelling or carrying on business in the neighbourhood or passing along a public way, shall be punished with fine which may extend to five hundred rupees.

The above two provisions have direct relevance to environmental protection as they seek to prevent water and air pollution through a penal strategy. However, their effective application towards achieving this objective is doubtful, because the technicalities of Indian criminal law require a complete satisfaction of the ingredients of the offence as stipulates in the penal provisions. Take for instance, the provision relating to fouling of water. The wording requires proof of the voluntary corruption or fouling of water, that the water must be of public spring or a reservoir and that the water must have been rendered less fit for the purpose for which it was ordinarily used. Such wording not only creates a burden for the prosecution to prove, but also provide the accused enough grounds to argue his way out. The above provisions did not liberate the criminal justice

process from the difficulties of the common law demanding elaborate evidence for sundry matters as well as technical interpretations of obvious things and events.

**Section 425:** Whoever with intent to cause, or knowing that he is likely to cause, wrongful loss or damage to the public or to any person, causes the destruction of any property, or any such change in any property or in the situation thereof as destroys or demises its value or utility or affects injuriously, commits “mischief”.

*Explanation 1:* It is not essential to the offence of mischief that the offender intended to cause loss or damage to the owner of the property injured or destroyed. It is sufficient if he intends to cause damage to any person by injuring any property, whether it belongs to that person or not.

*Explanation 2:* Mischief may be committed by an act affecting property belonging to the person who commits the act or to that person and others jointly causing diminution of water supply has been treated as mischief in Section 430 of the code and the possible direct cause may also be pollution. Adulterating of food or drink so as to make it noxious has also been made punishable<sup>2</sup>.

*Law of Crimes and Environment - Related Legislations (select provisions) Indian Penal Code, 1860-Section 268,277,278,425*

**Indian Penal Code, 1860**

#### **Chapter-XIV**

#### **Of Offences Affecting the Public Health, Safety, Convenience, Decency and Morals**

**268. Public nuisance** - A person is guilty of a public nuisance who does any act or is guilty of an illegal omission which causes any common injury, danger or annoyance to the public or to the people in general who dwell or occupy property in the vicinity, or which must necessarily cause injury, obstruction, danger or annoyance to persons who may have occasion to use any public right.

A common nuisance is not excused on the ground that it causes some convenience or advantage.

**277. Fouling water of public spring or reservoir** - Whoever voluntarily corrupts or fouls the water of any public spring or reservoir, so as to render it less fit for the purpose for which it is ordinarily used, shall be punished with imprisonment of either description for a term which may extend to three months, or with fine which may extend to five hundred rupees, or with both.

**278. Making atmosphere noxious to health** - Whoever voluntarily vitiates the atmosphere in any place so as to make it noxious to the health of persons in general dwelling or carrying on business in the neighbourhood or passing along a public way, shall be punished with fine which may extend to five hundred rupees.

<sup>2</sup> L.N. Mathur, “A Federal Legislative History of Control of Water Pollution in India” in *Legal Control of Environmental Pollution*, op. cit., p. 90.

### Of fraudulent deeds and disposition of property of mischief

**Mischief** - Whoever with intent to cause, or knowing that he is likely to cause, wrongful loss or damage to the public or to any person, causes the destruction of any property, or any such change in any property or in the situation thereof as destroys or diminishes its value or utility, or affects it injuriously, commits "mischief".

**Explanation 1** - It is not essential to the offence of mischief that the offender should intend to cause loss or damage to the owner of the property injured or destroyed. It is sufficient if he intends to cause, or knows that he is likely to cause, wrongful loss or damage to any person by injuring any property, whether it belongs to that person or not.

**Explanation 2** - Mischief may be committed by an act affecting property belonging to the person who commits the act, or to that person and others jointly.

#### Illustrations

- a) A voluntarily burns a valuable security belonging to Z intending to cause wrongful loss to Z. A has committed mischief.
- b) A introduces water into an ice-house belonging to Z and thus causes the ice to melt, intending wrongful loss to Z. A has committed mischief.
- c) A voluntarily throws into a river a ring belonging to Z, with the intention of thereby causing wrongful loss to Z. A has committed mischief.
- d) A, knowing that his effects are about to be taken in execution in order to satisfy a debt due from him to Z, destroys those effects, with the intention of thereby preventing Z from obtaining satisfaction of the debt, and of thus causing damage to Z. A has committed mischief.
- e) A having insured a ship, voluntarily causes the same to be cast away, with the intention of causing damage to the underwriters. A has committed mischief.
- f) A causes a ship to be cast away, intending thereby to cause damage to Z who has lent money on bottomry on the ship. A has committed mischief.
- g) A having joint property with Z in a horse, shoots the horse, intending thereby to cause wrongful loss to Z. A has committed mischief.
- h) A causes cattle to enter upon a field belonging to Z, intending to cause and knowing that he is likely to cause damage to Z's crop. A has committed mischief.

### ii) The Indian Criminal Procedure Code of 1973 (CrPC)

The Indian Criminal Procedure Code of 1973 has a significant chapter on maintenance of public order and tranquillity, which falls into four parts. Part A deals with unlawful assemblies (Sections 129-132), Part B with public nuisance (Sections 133-143), Part C with urgent cases of nuisance or apprehended danger (Section 144), and part D with disputes as to immovable property (Sections 145-148). Most relevant in our present context is

Section 133, which has been resorted to as an effective remedy to abate public nuisance in instances of environmental harm. This provision empowers a District Magistrate to pass conditional orders for the removal of nuisances. This section is supplemented with ancillary provisions, contained in Sections 134 to 143 of the Code, to constitute a comprehensive procedure tackling public nuisance.

Section 144 of the Code has to be seen as a significant provision conferring wide powers upon the Magistrate to deal with urgent cases of nuisance or apprehended danger and tranquillity. This magisterial power has been exercised only for the purpose of preventing public disorder arising out of public unrest or riot situations. The potential of this provision is vast, but it does not appear to have been utilised effectively in cases of environmental harm.

The provisions in the old Indian law, which have a bearing on the environment, have hardly been used in the past. The consciousness to protect the environment was not as strong then, as it is today. Unless there was awareness on the part of the people to approach the authorities neither the government nor the courts would have had the opportunity to make use of the statutory provisions.

The important role played by the judicial activism of the eighties made its impact felt more in the area of the environmental protection than in any other field. *Municipal council, Ratlam v. Vardhichand*<sup>3</sup> is a signpost. The Supreme Court identified the responsibilities of local bodies towards the protection of environment and developed the law of public nuisance in the Code of Criminal procedure as a potent instrument for enforcement of their duties.

The processes that are envisaged under Section 133 of the CrPC have a social justice component. The remedies available, and the powers exercisable, under the provision are conducive to the demands of the rule of law necessitated by the conditions of developing countries. The Supreme Court had no hesitation in endorsing the view that the municipality should prepare a scheme and abate the nuisance which was allowed to continue only due to the lack of initiative from the municipality.

*Law of Crimes and Environment - Related Legislations (select provisions) The Indian Criminal Procedure Code of 1973 (CrPC) - Section 133*

**The Indian Criminal Procedure Code, 1973**

**Chapter-X**

**Maintenance of Public Order and Tranquillity**

**B) Public nuisances**

**133. Conditional order for removal of nuisance** - (1) Whenever a District Magistrate or a Sub-divisional Magistrate or any other Executive Magistrate specially empowered in this behalf by the State Government, on receiving the report of a

*Contd...*

<sup>3</sup> AIR 1980 SC 1622.

police officer or other information and on taking such evidence (if any) as he thinks fit, considers -

- a) that any unlawful obstruction or nuisance should be removed from any public place or from any way, river or channel which is or may be lawfully used by the public; or
- b) that the conduct of any trade or occupation, or the keeping of any goods or merchandise, is injurious to the health or physical comfort of the community, and that in consequence such trade or occupation should be prohibited or regulated or such goods or merchandise should be removed or the keeping thereof regulated; or
- c) that the construction of any building, or, the disposal of any substance, as is likely to occasion conflagration or explosion, should be prevented or stopped; or
- d) that any building, tent or structure, or any tree is in such a condition that it is likely to fall and thereby cause injury to persons living or carrying on business in the neighbourhood or passing by, and that in consequence the removal, repair or support of such building, tent or structure, or the removal or support of such tree, is necessary; or
- e) that any tank, well or excavation adjacent to any such way or public place should be fenced in such manner as to prevent danger arising to the public; or
- f) that any dangerous animal should be destroyed, confined or otherwise disposed of, such Magistrate may make a conditional order requiring the person causing such obstruction or nuisance, or carrying on such trade or occupation, or keeping any such goods or merchandise, or owning, possessing or controlling such building, tent, structure, substance, tank, well or excavation, or owning or possessing such animal or tree, within a time to be fixed in the order -
  - i) to remove such obstruction or nuisance; or
  - ii) to desist from carrying on, or to remove or regulate in such manner as may be directed, such trade or occupation, or to remove such goods or merchandise, or to regulate the keeping thereof in such manner as may be directed; or
  - iii) to prevent or stop the construction of such building, or to alter the disposal of such substance; or
  - iv) to remove, repair or support such building, tent or structure, or to remove or support such trees; or
  - v) to fence such tank, well or excavation; or
  - vi) to destroy, confine or dispose of such dangerous animal in the manner provided in the said order:

*Contd...*

or, if he objects so to do, to appear before himself or some other Executive Magistrate subordinate to him at a time and place to be fixed by the order, and show cause, in the manner hereinafter provided, why the order should not be made absolute.

- 2) No order duly made by a Magistrate under this section shall be called in question in any Civil Court.

**Explanation** - A public place includes also property belonging to the State, camping grounds and left unoccupied for sanitary or recreative purposes.

### iii) Different Types of Environmental Crimes

Environmental crime covers a wide range of violations that result in harm befalling the environment and human life, from errors at the administrative or record keeping level to the actual illegal dumping of pollutants into the environment.

Environmental crimes may include but are not limited to the following:

- ◆ Littering
- ◆ Improper waste disposal
- ◆ Oil spills
- ◆ Destruction of wetlands
- ◆ Dumping into oceans, streams, lakes, or rivers
- ◆ Improperly handling pesticides or other toxic chemicals
- ◆ Burning garbage
- ◆ Improperly removing and disposing of asbestos
- ◆ Falsifying lab data pertaining to environmental regulations
- ◆ Smuggling certain chemicals, such as CFC refrigerants, into the U.S.
- ◆ Bribing government officials
- ◆ Committing fraud related to environmental crime

### iv) Punishment

Environmental law violators are usually hit with criminal fines, probation, jail time, or a combination of these punishments. While jail time may be the most formidable punishment for individuals who commit environmental crimes, fines are intended to deter large corporations from violating environmental laws and regulations. Without the threat of heavy monetary punishment, some corporations might find that noncompliance is more cost-effective than obeying the law. Environmental crime fines are meant to offset the financial allure of activities such as illegal dumping.

Enforcement is often carried out by joint task forces, which are composed of representatives from Federal, State, and local organisations. At the Federal level, the

Environmental Protection Agency (EPA) has enforcement authority over environmental law violations.

A Criminal Action differs from a Civil Action. Criminal actions generally differ from civil actions in at least two important ways. First, the government itself generally brings criminal actions to protect the public interest or the community as a whole whereas civil actions are generally brought by one private Party against another private Party. Second, the available sanctions in a criminal action include imprisonment whereas imprisonment is not available as a remedy in civil actions, except for the court's contempt power or while exercising such special powers.

#### v) Green Crimes

Green crime is defined as a crime against the environment. Green crime is linked to globalisation and the idea of transnational boundaries. Regardless of the division of nation States, the planet is one unified ecosystem which is global rather than local. Therefore, green crime goes beyond political borders. Green crimes include air pollution, water pollution, deforestation, species decline and the dumping of hazardous waste.

Many environment activists argue that the society today is a global risk society. This means that risks in the modern era are 'man-made' or 'manufactured risks', and so we cannot predict the consequences of these, e.g. global warming. This links in with the idea that individuals have adopted 'risk consciousness'. Green crime is therefore on the socio-political agenda.

There are two schools of thought regarding green crime: traditional and contemporary.

Traditional green criminology focuses on green crime which has by definition violated environmental law. They are concerned with regulations with regard to the environment. Situ and Emmons (2000) define environmental crime as "an unauthorised act or omission that violates the law". It investigates the patterns and causes of law breaking. These sociologists are structuralist sociologists and positivists in methodology. For these theorists, because criminal law is relative to each country, the same harmful environmental action may not be a crime in one country to the next. Legal definitions cannot provide a consistent standardisation of the harm. Definitions of green crime are tangled in political processes. Cultural sociologists have developed a global perspective on environmental harm.

An example of contemporary crimes would be the toxic leak in Hungary, which happened on 5th October 2010. A state of emergency was declared in three western countries after the chemical waste burst from a reservoir at an alumina plant. At least seven villages and towns were affected including Devecser, where the torrent was 2 m (6.5 ft) deep. The flood swept cars from roads and damaged bridges and houses, forcing the evacuation of hundreds of residents. The sludge - a mixture of water and mining waste containing heavy metals - was considered hazardous, according to Hungary's National Directorate General for Disaster Management (NDGDM).

Marxism focuses on green crime as an act of power. They believe that the ruling class shape and define the law to benefit their own exploitative interests in the environment. Such laws benefit transnational corporations. White-collar crime is difficult to detect especially if it is carried out in a developing nation. Green crime is usually focused on a smaller scale to make it more difficult to detect.

Transnational corporations adopt an anthropocentric view of environmental harm. This means that humans have the right to dominate nature for their own ends. Economic growth comes before the environment. Transnational organisations sell toxic waste to developing nations to dispose of, contributing to eco-poverty.

The 2006 Ivory Coast toxic waste dump was a health crisis in the Ivory Coast in which a ship registered in Panama, the 'Probo Koala', chartered by the Swiss-based oil and commodity shipping company Trafigura Beheer BV, offloaded toxic waste at the Ivorian port of Abidjan. The waste was then dumped by a local contractor at as many as 12 sites in and around the city of Abidjan in August 2006. The gas caused by the release of these chemicals is blamed by the United Nations and the government of the Ivory Coast for the deaths of 17 and the injury of over 30,000 Ivorians with injuries that ranged from mild headaches to severe burns of skin and lungs. Almost 100,000 Ivorians sought medical attention for the effects of these chemicals. The substance was claimed by Trafigura to have been "slops", or waste water from the washing of the Probo Koala's tanks. An inquiry in the Netherlands in late 2006 revealed the substance was more than 500 tonnes of a mixture of fuel, caustic soda, and hydrogen sulphide for which Trafigura chose not to pay a 1,000 Euro per cubic meter disposal charge at the port of Amsterdam. The 'Probo Koala' was later turned away by several countries before offloading the toxic waste at the Port of Abidjan.

Trafigura denied any waste was transported from the Netherlands, saying that the substances contained only tiny amounts of hydrogen sulphide, and that the company did not know the substance was to be disposed of improperly. In early 2007, the company paid US\$198 million for clean-up to the Ivorian government without admitting wrongdoing, and the Ivorian government pledged not to prosecute the company. A series of protests and resignations of Ivorian government officials followed this deal. A civil lawsuit in London was launched in 2008 by almost 30,000 Ivorians against Trafigura. In May 2009, Trafigura announced it would sue the BBC for libel after its 'Newsnight' programme alleged the company had knowingly sought to cover up its role in the incident. In September 2009 'The Guardian' obtained and published internal Trafigura emails showing that the traders responsible knew how dangerous the chemicals were. Shortly afterwards Trafigura offered an unnamed settlement figure to the class action suit against it.

The Ivory Coast example is seen as an example of Neo-Colonialism whereby a major power uses economic and political means to perpetuate or extend its influence over underdeveloped nations or areas. Anti-globalists believe that cases such as the one in Ivory Coast show that many first world nations have a 'we can do what we want to third world nations as they accept the money they are offered' attitude.

However, green crimes do not just hit third world nations. The BP oil spill off the coast of New Orleans brought the issue to the fore in the United States of America, seen as the world's most powerful nation.

Oil flowed from the Deepwater Horizon oil rig for three months in 2010 and the spill is said to be the largest accidental marine oil spill in the history of the fuel industry. The spill stemmed from a sea-floor oil gusher that resulted from the April 20, 2010 explosion. The explosion killed 11 men working on the platform and injured 17 others. On July 15, the leak was stopped by capping the gushing wellhead, after it had released approximately 205.8 million gallons of crude oil. It was estimated that 53,000 barrels of crude oil per day were escaping from the well just before it was capped.

Once the spill had been fixed, a blame game took place as to who was responsible. This even included President Obama who came out and blamed BP, raising the stakes still higher as he made clear it was a British company that had been responsible for an American disaster. Many frowned at the blatant flag-waving and the 'it's their fault not ours' approach. BP for its part blamed a subsidiary American company that was used to service devices at the bottom of the well that should have stopped any leaks, thus avoiding any spills.

A final report on the spill was released in January 2011. It blamed BP, Halliburton and Transocean for making a series of cost-cutting decisions. The report also highlighted the lack of a system to ensure well safety. It concluded that the spill was caused by a systemic failure and was not the fault of any rogue company or individuals. It also stated that unless action was taken to positively reform what the report highlighted, then such a disaster, twenty times worse than the Alaskan 'Exxon Valdez' disaster, could happen again.

The most serious environmental disaster of the 20th century was at Bhopal, India in December 1984. Hundreds of thousands of people were affected by a leakage of methyl isocyanate gas and other chemicals from the Union Carbide India Ltd pesticide plant in Bhopal. A government affidavit in 2006 stated the leak caused 558,125 injuries including 38,478 temporary partial injuries and approximately 3,900 severely and permanently disabling injuries<sup>4</sup>. Many suffered from long term and incurable respiratory complaints. The lungs, brain, eyes, muscles as well as gastro-intestinal, neurological, reproductive and immune systems of those who survived were severely affected.

To what extent was the incident at Bhopal a crime? The company initially said that the plant had been sabotaged by a disgruntled former employee and they, therefore, could not be held responsible for what had happened. However, as early as 1976, some eight years before the December incident, trade unions leaders within the plant had complained about safety concerns. Between 1981 and 1984, there were seven occasions when there was either a leak of gas or some form of safety incident occurred leaving workers either

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<sup>4</sup> AK Dubey (21 June 2010). "Bhopal Gas Tragedy: 92% injuries termed "minor"". *First14 News*. Archived from the original on 26 June 2010. Retrieved 2010-06-26.

injured or dead. Local authorities in Bhopal had warned the company on several occasions about the potential for accidents. Was profit put before safe working conditions as any improvements would obviously have had to be paid for with a possible interruption in the time the plant was working?

Legal proceedings involving Union Carbide, the United States and Indian governments, local Bhopal authorities, and the disaster victims started immediately after the catastrophe. Legal action against Union Carbide dominated the aftermath of the disaster. Other issues have continued to develop including the problems of ongoing contamination and associated criticism of the clean-up operation undertaken by UCIL. Civil and criminal cases are pending in the District Court of Bhopal, India, involving UCC and Warren Anderson, UCC CEO at the time of the disaster. In June 2010, seven ex-employees, including the former UCIL chairman, were convicted in Bhopal of causing death by negligence and sentenced to two years imprisonment and a fine of about \$2,000 each, the maximum punishment allowed by Indian law. An eighth former employee was also convicted, but died before the judgment was passed.

### 26.3 Law of Torts and the Environment

Litigation related to environmental contamination and toxins has grown at a rapid pace, as businesses come under greater scrutiny for their environmental practices and face potentially costly claims. Industrialisation has posed a serious concern for the protection of the environment. If we follow the development around the world in last two decades or so, it is clear that both judicial and legislative processes have applied the yardstick of 'Strict or Absolute Liability' to judge the conduct of the polluters. A toxic tort is a special type of personal injury lawsuit in which the plaintiff claims that exposure to a chemical caused the plaintiff's toxic injury or disease.

#### i) Hazardous and Inherently Dangerous Activities

Strict liability for ultra-hazardous activities might also be considered a general principle of law as it is found in the national law of many States in relation to ultra-hazardous activities. Under the English law, 'a person who for his own purposes brings on his own land and collects and keeps there anything likely to do mischief if it escapes, must keep it in at his peril, and, if he does not do so, is prima facie answerable for all the damage which is the natural consequence of its escape' as laid down by the landmark judgment of *Ryland v. Fletcher*<sup>5</sup>.

Absolute liability for the harm caused by industry engaged in hazardous and inherently dangerous activities is a newly formulated doctrine free from the exceptions to the strict liability rule in England. The Indian rule was evolved in *MC Mehta v. Union of India*,<sup>6</sup> which was popularly known as the Oleum gas leak case. It was public interest litigation under Article 32 of the Indian constitution.

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<sup>5</sup> (1868) LR 3 HL 330.

<sup>6</sup> AIR 1987 SC 1086.

In the judgment, on the substantive law it was emphasized that ‘the principle of absolute liability should be followed to compensate victims of hazardous and inherently dangerous activity.’ Industries engaged in such activities are absolutely liable to compensate those who are affected by the harm arising from such activities.

#### a) Some Important Legislations in detail

Legislation in the late 80’s and the 90’s reflect the law’s growing recognition of the capacity of ‘hazardous substances’ to cause damage to person, property and the environment. The Bhopal Gas Disaster and the judgment of the court in the *Oleum Gas Leak* case were the prelude to the Environment (Protection) Act, 1986, the Factories (Amendment) Act, 1987 and the Public Liability Insurance Act, 1991 (PLIA). The UN Conference on Environment and Development held at Rio de Janeiro in 1992 provided further spurt, as did environmental activism and environmental litigation. The National Environmental Tribunal Act, 1995 (NETA) is the most recent in the field of ‘accident’ law. The long title to the Act suggests that it is enacted to provide for strict liability for damages arising out of any accident occurring while handling any hazardous substance and for establishing a National Environmental Tribunal.

The NETA and PLIA are both concerned with the aftermath of the same occurrences. While the PLIA deals with interim compensation, the NETA established a tribunal, and provides guidelines, to adjudicate all claims arising out of “accidents”. There are points of convergence as well as difference, between the two Acts. The principles of liability and of compensation according to an enacted schedule are common to the PLIA and the NETA. Both legislations provide for no fault liability, making the “owner” liable for paying compensation assessed under the Acts. Both legislations exclude “workman” who is covered by the Workmen’s Compensation Act. However, while PLIA resorts to the device of insurance to spread risk and cost and requires the owner to go deep only where it goes beyond the limits set in the PLIA rules and the capacity of the Environment Relief Fund (ERF), the NETA appears to leave it to the owner to find the resources to pay compensation. There is a penal provision in the NETA which provides for a term of imprisonment up to three years, or fine which may extend to Rs. 10 lakhs or both, where any person “fails to comply with an order made by the Tribunal”.

Confronted with the possibility of mass torts resulting in injury, and loss to a number of victims, the more visible efforts of the State are in the direction of expediting the computing and payment of compensation. There is a consequent delinking of these issues from questions of culpability, answerability and of safety.

The schedule to the Act lists out the heads under which compensation may be claimed. It includes harm caused to the person, damage, loss or destruction of private property, expenses incurred by the government in the aftermath of an accident claims connected with harm, damage or destruction of fauna, flora and the soil, air, water, land and ecosystems; loss of business or employment and a residual head to cover “any other claim arising out of, or connected with, any activity of handling of hazardous substance”.

It is significant to note that there is no priority of claims. The crediting of the amount ordered to be paid on the ground of damage to the environment into the ERF merits scrutiny, particularly since the amounts in the ERF are intended to be used as a buffer between the exhaustion of insurance payments and the liability of the owner to cover the difference under the PLIA.

The unresolved questions of liability of the State as a joint tortfeasor, and of compensation resurfaced in *Naresh Dutt Tyagi v. State of U.P.* In this case, the Primary Co-operative Society, Garh Mukteshwar, District Ghaziabad, said to be a federating unit of the U.P. Co-operative Union Ltd. stored certain chemical pesticides in a godown. Fumes emanating from the pesticides leaked to the contiguous property through the ventilators killing three children and causing the petitioner's wife to miscarry. Proceedings to establish fault were on when the Supreme Court was approached to rule on whether such large-scale stocks of hazardous chemicals are permissible to be stored in a residential block, whether the storage is regulated by statutory provisions, if not, whether any breach of common law duty has occurred and whether the governmental authorities are liable in damages.

## ii) Civil Procedure Code, 1908

Under the Civil Procedure Code of 1908, civil suits against the perpetrators of public nuisance were allowed. By the amendment of the Civil Procedure Code in 1976, the procedure was made easier for the general public to seek recourse in the civil courts. Section 91 of the Code now reads as follows:

Public Nuisances and other wrongful acts affecting the public:

- 1) In the case of a public nuisance or other wrongful act affecting, or likely to affect, the public, a suit for a declaration and injunction or for such other relief as may be appropriate in the circumstances of the case, may be instituted,-
  - a) By the Advocate-General, or
  - b) With the leave of the court, by two or more persons, even though no special damage has been caused to such persons by reason of such public nuisance or other wrongful act.
- 2) Nothing in this section shall be deemed to limit or otherwise affect any right of suit which may exist independently of its provision.

Prior to the amendment in 1976 such suits were allowed only with the sanction of the Advocate General. Thus, a modification was brought about to the standing requirement which had been an obstacle in civil actions against environmental degradation. This is an important instance of early relaxation of procedural rules in the wider context of developing Indian public interest litigation.

Order 1 Rule 8 under the Civil Procedure Code of 1908, as amended in 1976 complements the above section and is significant for environmental litigation in India. This rule permits one person to sue or defend on behalf of all having the same interest in what are known

as “representative suits” over a single cause of action. Where the interest of the community at large is affected, the court has the power to direct one person or few to represent the whole community so that members of a class should have a common interest in a common subject matter and a common grievance and the relief sought should be beneficial to all. This rule is an enabling provision and does not prevent an individual from pursuing the same matter on his own right to seek relief.

An important feature of the civil litigation strategy adopted in India is the resort to injunctive relief rather than damages. Although in theory damages form an important principle in a tort action, in practice injunctive relief is used more in India for abating pollution. Lawyers in India, intent on abating pollution, often seek a temporary injunction against the polluter followed by a perpetual injunction on decree.

## 26.4 National Laws, Policies and Framework Pertaining to Water

Fresh water represents less than 0.5% of the total water on the earth surface. Rest of the water is either in the form of seawater or locked up in icecaps or soil. The worldwide consumption of water is doubling every 20 years, more than twice that of the increase in population.

Water is being used recklessly despite the fact that it is scarce. It is estimated that available technologies along with better practices, the agricultural water demand could be cut by about 50% and that in urban areas by about 33% without affecting the quality of life. However, most governments are not armed with adequate laws or regulations to protect their water systems.

India has almost 14 major, 44 medium and 55 minor river basins. India’s ground water resources are almost ten times its annual rainfall. Nearly 85% of the ground water is used for irrigation.

Of the 182.7 million hectares of land used for cultivation, only about 50 million hectares is currently irrigated, the rest is dependent entirely on monsoon rains. Therefore, enlarging the cropped area under assured irrigation is critical for the economy. However, bringing more land under irrigation will take time.

The availability of water in the country is decreasing with every passing day and unless something is done to conserve water, we may be courting trouble viz population, agriculture and industry. Various reports have warned that India, with a sixth of the world’s population would face a rapidly growing water crisis, both in urban and rural areas. Such water crisis experts caution could have serious economic and social consequences. According to a Report of the World Bank, it is assessed, “India faces a turbulent water future. Unless water management practices are changed - and changed soon - India will face a severe water crisis within the next two decades and will have neither the cash to build new infrastructure nor the water needed by its growing economy and rising population.”

India gets 90% of its rainfall during the summer monsoon season that lasts from June to September. For the rest of the months there is hardly any rain. As a result of the seasonal nature of rain, India can make use of not more than 20% of its potentially available fresh water resources.

Moreover, Himalayan glaciers are said to be receding rapidly and many could melt entirely by 2035. If the giant Gangotri glacier that supplies 70% of the Ganges flow during the dry season disappears, the Ganges would become a seasonal river, flowing during the rainy season but not summer dry season, when irrigation water needs are the most.

The per capita availability of renewable fresh water in the country has fallen drastically over the last 50 years. The water table is rapidly falling with unregulated over exploitation of groundwater. By 2025, water scarcity in India is expected to be acute and big dams, mega river-linking projects or privatised water distribution may not help. Other than rainfall, the two other important sources of water are rivers and ground water. India has 14 major, 44 medium and 55 minor river basins. India's ground water resources are almost ten times its annual rainfall. Like surface water nearly 85% of the ground water is used mainly for irrigation.

Currently only about 10% of the wastewater generated is treated. The rest is discharged as it is into our water bodies. Due to this, pollutants enter ground water and other water bodies. This water, which ultimately ends up in our household, is often highly contaminated carrying disease-causing microbes. Nina Brooks in her paper entitled 'Imminent water crisis in India' notes: "India's water crisis is predominantly a man-made problem. India's climate is not particularly dry, nor is it lacking in rivers and groundwater. Extremely poor management, unclear laws, government corruption, and industrial and human waste have caused this water supply crunch and rendered what water is available practically useless due to the huge levels of pollution. In managing water resources, the Indian government must balance competing demands between urban and rural, rich and poor, the economy and the environment."

#### **i) Constitutional Provisions pertaining to Water and Water Resources**

As most of the rivers in the country are inter-State, the regulation and development of waters of these rivers, is a source of inter-State differences and disputes. In the Constitution, water is a matter included in Entry 17 of List-II i.e. State List. This entry is subject to the provision of Entry 56 of List-I i.e. Union List.

The relevant provisions are Entry 17 in the State List, Entry 56 in the Union List and Article 262. There are other articles and entries, which may have a bearing on the matter; but the ones above mentioned, are specifically concerned with water.

Entry 17 in the State List runs as follows:

*"17 - Water, that is to say, water supplies, irrigation and canals, drainage and embankments, water storage and water power subject to the provisions of Entry 56 of List I."*

Water is indeed in the State List but this is subject to the provisions of Entry 56 in the Union List, which runs as follows:

*“56 - Regulation and development of Inter-State Rivers and river valleys to the extent to which such regulation and development under the control of the Union is declared by parliament by law to be expedient in the public interest.”*

As such, the Central Government is conferred with powers to regulate and develop Inter-State Rivers under Entry 56 of List I of Seventh Schedule to the extent declared by the Parliament by law to be expedient in the public interest.

It also has the power to make laws for the adjudication of any dispute relating to waters of Inter-State River or river valley under Article 262 of the Constitution. In case of disputes relating to waters, Article 262 provides:

*“Article 262- Adjudication of disputes relating to waters of Inter-State Rivers or river valleys*

- 1) Parliament may by law provide for the adjudication of any dispute or complaint with respect to the use, distribution or control of the waters of, or in, any Inter-State river or river valley.*
- 2) Notwithstanding anything in this Constitution, parliament may by law provide that neither the Supreme Court nor any other court shall exercise jurisdiction in respect of any such dispute or complaint as is referred to in clause (1).”*

It stands to reason that the legislative competence of a State under Entry 17 must be exercised in such a manner as not to prejudice the interests of other States and create a water dispute within the meaning of Article 262. This has been clearly stated in some of the Tribunals' awards.

Water is not in the Concurrent List; but it is both in the Union List and in the State List. The role given to the Centre in regard to Inter-State Rivers and river valleys is at least potentially an important one; and this is reinforced by the use of the provisions of Entry 20 in the Concurrent List, namely, 'economic and social planning', by virtue of which major and medium irrigation, hydro-power, flood control and multi-purpose projects have been subjected to the requirement of Central clearance for inclusion in the national plan. This has been questioned by some State Governments but the clearance requirement remains. There is of course the requirement of Central clearances under the Forest Conservation Act and the Environment Protection Act.

**73rd and 74th Amendments** - Apart from the Union and the States there is now a third tier in the constitutional structure, created by the 73rd and 74th Amendments, namely, local bodies of governance at the village and city level: the village *panchayats* and the city *nagarpalikas* (municipalities/corporations). The Eleventh and Twelfth Schedules to the Constitution lay down lists of subjects to be devolved to the *panchayats* and *nagarpalikas*. The lists include, *inter alia*, drinking water, water management, watershed development, sanitation and so on. It seems likely that in future this third tier will come

to play an important role in relation to water-resource development. However, the processes of decentralisation and devolution are still evolving, and the role of the third tier is yet to emerge fully.

**Deficiencies of the Existing Position** - The Sarkaria Commission said that the present constitutional position in relation to water is satisfactory. The Commission was set up in June 1983 by the Central Government with the objective of examining the relationship and balance of power between Central and State Governments in the country and suggest changes within the framework of Constitution. The Commission was so named as it was headed by Justice Rajinder Singh Sarkaria, a retired judge of the Supreme Court.

Nonetheless, serious doubts in this regard seem warranted, though these are perhaps a matter of hindsight.

- ◆ First, even the most general entry regarding water, namely, Entry 17 in the State List, quickly slips into specific uses of water such as water supply, irrigation, etc.
- ◆ Secondly, irrigation looms large; and the reference to canals, embankments, drainage, water storage, and so on, shows the heavy influence of the engineering point of view.
- ◆ Thirdly, while the word 'water' may doubtless be taken to include groundwater, there is no specific reference to the latter; the Constitution-makers seem to have been thinking mainly of river waters.
- ◆ Fourthly, the Centre has been given a role only in relation to Inter-State Rivers and river valleys, but it is conceivable that even in a river which flows entirely in one State that State's intervention might produce environmental or social consequences in another State; and such interventions in intra-State surface waters may also have an impact on groundwater aquifers cutting across State boundaries. There is no explicit recognition of this in the Constitution.
- ◆ Fifthly, the constitutional provisions do not show any direct evidence of a perception of water as a natural resource much less of water as a part of the larger environment or the ecological system. (Some of the emerging concerns were incorporated into the Constitution at a later stage. Under the 42nd Amendment of 1976, references to the protection of the environment, forests and wildlife were introduced *via* Articles 48A and 51A, and two entries relating to forests and wildlife were added to the Concurrent List.) There is also no explicit evidence of an awareness of traditional community-managed systems of rainwater-harvesting or water management, or of the role of civil society in these matters. Nor is there any *overt* reference to water as a basic essential for life and therefore a basic human and animal right.

Some of these perceptions and concerns are of relatively recent origin, and perhaps the makers of the Constitution cannot be faulted for not having foreseen these developments. Further, a Constitution provides a foundation for the laws of the land, and is essentially a *legal* document; it cannot be expected to spell out sectoral policies in detail.

The management of India's water resources falls under the jurisdiction of a number of government agencies, although the primary responsibility for the development of water belongs to the individual States. The Central Government oversees the implementation of national policy on resource development and exploitation, as well as manages inter-State and international rivers and river valleys. It also provides technical advice to individual States on development, flood control, navigation, coastal erosion, dam safety, navigation and hydropower, if required.

The **Ministry of Water Resources (MoWR)** is the principal agency responsible for water management in India and as such, oversees the planning and development of the resource from policy formulation to infrastructure support. Other central departments working in water are:

- ◆ Ministry of Agriculture: watershed development and irrigation
- ◆ Ministry of Power: hydro-power development
- ◆ Ministry of Environment and Forests: water quality
- ◆ Ministry of Rural Development: watershed development and drinking water provision
- ◆ Ministry of Industry: industrial uses of water
- ◆ Ministry of Urban Development: urban drinking water provision and sanitation
- ◆ Central Pollution Control Board: water quality monitoring
- ◆ Indian Council of Agriculture Research: development of water management techniques

#### **Provisions pertaining to water under the Environmental Protection Act, 1986**

The Environmental Protection Act was ratified in 1986 and is based on decisions made at the United Nations Conference on the Human Environment that was held in Stockholm, Sweden in June of 1972. The Act is concerned with the "protection and improvement of the human environment" and as such, does not focus solely on water resource issues. The principal impact of the Environmental Protection Act on water is in terms of protecting water from environmental pollution. In the Act, the government has the power to:

- ◆ plan and execute programmes related to control and abatement of environmental pollution;
- ◆ establish quality standards and maximum allowable limits for emissions and discharges;
- ◆ develop standards for the handling of hazardous materials and other substances;
- ◆ restrict development in sensitive areas; and
- ◆ conduct inspection of facilities as needed to prevent environmental pollution.

Contravention of the Act can result in imprisonment up to five years or a fine up to one lakh rupees, or both. An additional fine of up to five thousand rupees per day can be levied if the polluter purposely continues to contravene the regulations.

### International Treaties signed by India

A number of international disputes regarding the allocation and management of the water in several large trans-boundary rivers have arisen between India and its neighbours. Fortunately, these differences have been settled through diplomatic channels with the signing of treaties and agreements.

The three principal treaties are:

- ◆ The Indus Waters Treaty - India and Pakistan (1960)
- ◆ The Indo Nepal Treaty on the Integrated Development of Mahakali River (1996)
- ◆ The Ganges Water Sharing Treaty with Bangladesh: Sharing of Lean Season Flow of Ganga at Farakka Barrage in India (1996)

All three disputes arose from disagreements on the allocation of water resources between India and the other countries. In the case of both the Indus and Mahakali Rivers, the equitable distribution of irrigation water was under contention. The Farakka Barrage dispute originated when the water level entering Bangladesh from India was reduced to almost nothing during the lean season (January to May) due to the construction of the Farakka Barrage on the Indian side of the border. In 1996, an agreement was reached between the governments of India and Bangladesh to share the flow during the lean season in the ratio of 60% (Bangladesh) and 40% (India).

Although the treaties have been signed, there are still a number of issues which remain to be resolved. However, in general, the treaties have generated a sense of goodwill between India and its neighbours which bodes well for future collaborations.

### ii) The National Water Policy, 2012

The current National Water Policy (NWP) in India was formulated in the year 2012. Prior to the said policy, the Water Policy in existence was the NWP of 2002.

The National Water Policy 2012 has the objective to assess the existing situation and to propose a framework for a plan of action with a unified national perspective. Implementation of these recommendations contained in the NWP 2012 involves coordinated and continuing efforts on the part of the concerned Ministries and Departments of Central Government and the State Governments.

The salient features<sup>7</sup> of national water policy of 2012 are as follows:

- 1) Emphasis on the need for a national water framework law, comprehensive legislation for optimum development of inter-State rivers and river valleys.
- 2) Water, after meeting the pre-emptive needs for safe drinking water and sanitation, achieving food security, supporting poor people dependent on agriculture for their livelihood and high priority allocation for minimum eco-system needs, be treated as economic good so as to promote its conservation and efficient use.

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<sup>7</sup> National Water Policy, Press Information Bureau dt. 31.07.2014 which can be accessed at <https://pib.gov.in/newsite/PrintRelease.aspx?relid=107734>

- 3) Ecological needs of the river should be determined recognising that river flows are characterised by low or no flows, small floods (freshets), large floods and flow variability and should accommodate development needs. A portion of river flows should be kept aside to meet ecological needs ensuring that the proportional low and high flow releases correspond in time closely to the natural flow regime.
- 4) Adaptation strategies in view of climate change for designing and management of water resources structures and review of acceptability criteria has been emphasized.
- 5) A system to evolve benchmarks for water uses for different purposes, i.e., water footprints, and water auditing be developed to ensure efficient use of water. Project financing has been suggested as a tool to incentivise efficient and economic use of water.
- 6) Setting up of Water Regulatory Authority has been recommended. Incentivisation of recycle and re-use has been recommended.
- 7) Water Users Associations should be given statutory powers to collect and retain a portion of water charges, manage the volumetric quantum of water allotted to them and maintain the distribution system in their jurisdiction.
- 8) Removal of large disparity in stipulations for water supply in urban areas and in rural areas has been recommended.
- 9) Water resources projects and services should be managed with community participation. Wherever the State Governments or local governing bodies so decide, the private sector can be encouraged to become a service provider in public private partnership model to meet agreed terms of service delivery, including penalties for failure.
- 10) Adequate grants to the States to update technology, design practices, planning and management practices, preparation of annual water balances and accounts for the site and basin, preparation of hydrologic balances for water systems, and benchmarking and performance evaluation etc.

### iii) Interlinking of Rivers

‘Water’ is a State subject, with the Union’s role limited to the Inter-State Rivers. The constitutional provisions related to water are contained in the Seventh Schedule under Article 246. Entry 17 of the State List and Article 262 pertaining to the adjudication of disputes relating to waters of Inter-State Rivers or river valleys have already been discussed in detail.

However, other constitutional provisions pertaining to water and Inter-State Rivers contained in the Union List and Concurrent List are mentioned below.

#### ◆ “List I - Union List” (Entry 56)

It provides that, “Regulation and development of Inter-State Rivers and river valleys to the extent to which such regulation and development under the control of the Union declared by law to be expedient in the public interest.”

### ◆ “List III - Concurrent List” (Entry 20)

There is no entry on water but there is an entry on planning, under “Economic and Social Planning”. Since water is a significant input in agricultural development and industrial development, which are indicators of economic development, and since water is a primary need (drinking and sanitation) for social planning, water resource development could be covered under Concurrent List also.

Only Entry 17 of List II has been in operation all along. However, Entry 20 of List III (Concurrent List) could be also said to have operated indirectly in view of the fact that the Central Government, through the Planning Commission, has to clear Water Resources Development projects for investments if these projects are to be eligible for central funds<sup>8</sup>.

By the powers available under Entry 56 of the Union List and Article 262, Parliament enacted two laws, viz. -

#### 1) River Boards Act of 1956

It was the first Act made with the provisions for setting up of river boards or advisory bodies by the Central Government at the request of the interested Parties. These boards were to have two functions:

- ◆ They would help to bring about proper and optimum utilisation of the water resources of Inter-State Rivers.
- ◆ They would promote and operate schemes for irrigation, water supply, drainage, development of hydroelectric power and flood control.

Since the enactment of the said legislation, the Central Government has not been able to set up any River Board under this Act so far. The Act has remained dead even after fifty-eight years.

Moreover, the role of the River Boards under the Act is merely advisory in nature. It is hence felt that the Act needs to be amended so that it can serve the purpose for which it was enacted.

#### 2) Inter-State Water Disputes Act of 2002

The mechanism for settlement of water disputes was available in the form of Inter-State River Water Disputes Act, 1956, which provided for settlement of disputes by negotiations failing which referring such disputes to a tribunal for adjudication.

It was observed that the Tribunals set up for resolving Inter-State issues took considerable time to give decision/awards. The matter received attention of Sarkaria Commission, which provided certain recommendations in its report at Chapter XVII on Inter-State River Water Disputes.

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<sup>8</sup> Iyer, R.R., *Federalism and Water Resources*, Economic and Political Weekly, March 26, 1994, 733-735.

The recommendations were as follows:

- ◆ Once an application under Section 3 of the Inter-State River Water Disputes Act (33 of 1956) is received from a State, it should be mandatory on the Union Government to constitute a Tribunal within a period not exceeding one year from the date of receipt of the application of any disputant State. The Inter-State River Water Disputes Act may be suitably amended for this purpose.
- ◆ The Inter-State Water Disputes Act should be amended to empower the Union Government to appoint a Tribunal, *suo moto*, if necessary, when it is satisfied that such a dispute exists in fact.
- ◆ There should be a Data Bank and information system at the national level and adequate machinery should be set up for this purpose at the earliest. There should also be a provision in the Inter-State Water Disputes Act that States shall be required to give necessary data for which purpose the Tribunal may be vested with powers of a court.
- ◆ The Inter-State Water Disputes Act should be amended to ensure that the award of a Tribunal becomes effective within five years from the date of constitution of a Tribunal. If, however, for some reasons, a Tribunal feels that the five years period has to be extended, the Union Government may on a reference made by the Tribunal extend its term.
- ◆ The Inter-State Water Disputes Act, 1956 should be amended so that a Tribunal's award has the same force and sanction behind it as an order or decree of the Supreme Court to make a Tribunal's award really binding.

These five recommendations were considered by the erstwhile Sub-Committee of the Inter-State Council. The Sub-Committee accepted four out of five recommendations as they were and the remaining one recommendation was accepted with a minor modification, wherein, the time frame specified for constituting a Tribunal by the Union Govt. was increased from one year to two years. The Inter-State Council in its meeting held on 15 October 96 generally endorsed the recommendations. However, in view of the reservations expressed by some of the Chief Ministers, it was decided that they would convey their reservations to the Inter-State Council Secretariat so that their views could be further considered by the Standing committee of the Inter-State Council.

Taking into account the views of the State Governments and that of the Ministry of Water Resources, the Inter-State Council Secretariat prepared a consensus paper on the recommendations of Sarkaria Commission, which was deliberated upon during fifth meeting of the Standing Committee of Inter-State council held on 10 November 97 under the chairmanship of the Union Minister of Home Affairs.

The Standing Committee gave its own recommendations on the five recommendations of the Sarkaria Committee. Based on these recommendations (given by the Inter-State Council on Sarkaria Commission's Recommendation) a bill for amending the Inter-State Water Disputes Act 1956 was introduced in Lok Sabha on 7 March 2001. The Bill was

passed in Lok Sabha on 3 August 2001 and Rajya Sabha on 11 March 2002 and received the assent of the President on 28 March 2002.

This 2002 Act (Inter-State River Water Disputes Act, 2002) is to provide for the adjudication of disputes relating to waters of Inter-State Rivers and River Valleys. Section 14 of the Act provides for the achievement the objectives set forth. It states:

*“When any request is received from the State Government in respect of any water dispute and the Central Government is of the opinion that the water dispute cannot be settled by negotiations, the Central Government is empowered to constitute a water disputes tribunal for the adjudication of the dispute by notifying in the official gazette.*

*The tribunal thus set up then has to investigate the matters referred to it and forward a report setting out the facts found by it and giving its decision on the same within a period of three years.”*

### **Inter-State Rivers disputes - case studies**

Most of the major rivers in India are Inter-State Rivers and there have been some inter-State disputes on sharing of water. Efforts are being made to facilitate resolution of these disputes through negotiations amongst the basin States. Adjudication with the help of water disputes tribunals is also resorted to as and when warranted.

Since the majority of rivers in India are shared between neighbouring States, under the Inter-State Water Disputes Act, the government has the power to constitute Tribunals to serve as intermediaries in the disputes.

To date, five Inter-State Water Tribunals have been established:

- 1) Godavari Water Disputes Tribunal (1969)
- 2) Krishna Water Disputes Tribunal (1969)
- 3) Narmada Water Disputes Tribunal (1969)
- 4) Ravi and Beas Waters Tribunal (1986)
- 5) Cauvery Water Disputes Tribunal (1990)
- 6) The second Krishna Water Dispute Tribunal (2004)
- 7) Mahadayi Water Disputes Tribunal (2010)
- 8) Vansadhara Water Disputes Tribunal (2010)
- 9) Mahanadi Water Disputes Tribunal (2018)

## **26.5 Agriculture Policy and Urban Development Policy**

### **i) National Agriculture Policy, 2000**

Agriculture is the mainstay of the Indian economy. Agriculture and allied sectors contribute nearly 22% of Gross Domestic Product (GDP of India), while about 65-70% of

the population is dependent on agriculture for their livelihood. The agricultural output depends on monsoon as nearly 60% of area sown is dependent on rainfall rather than other sources of water.

Despite a steady decline in its share of the GDP, it remains the largest economic sector in the country. Low and volatile growth rates and the recent escalation of agrarian crisis in several parts of the Indian countryside are a threat not only to national food security, but also to the economic well-being of the nation as a whole.

The first ever National Agriculture Policy was announced on 28 July, 2000. The National Policy on Agriculture seeks to actualise the vast untapped growth potential of Indian agriculture, strengthen rural infrastructure to support faster agricultural development, promote value addition, accelerate the growth of agro business, create employment in rural areas, secure a fair standard of living for the farmers and agricultural workers and their families, discourage migration to urban areas and face the challenges arising out of economic liberalisation and globalisation.

Over the next two decades, it aims to attain:

- 1) Over 4% annual growth rate aimed over next two decades.
- 2) Greater private sector participation through contract farming.
- 3) Price protection for farmers.
- 4) National agricultural insurance scheme to be launched.
- 5) Dismantling of restrictions on movement of agricultural commodities throughout the country.
- 6) Rational utilisation of country's water resources for optimum use of irrigation potential.
- 7) High priority to development of animal husbandry, poultry, dairy and aquaculture.
- 8) Capital inflow and assured markets for crop production.
- 9) Exemption from payment of capital gains tax on compulsory acquisition of agricultural land.
- 10) Minimise fluctuations in commodity prices.
- 11) Continuous monitoring of international prices.
- 12) Plant varieties to be protected through a legislation.
- 13) Adequate and timely supply of quality inputs to farmers.
- 14) High priority to rural electrification.
- 15) Setting up of agro-processing units and creation of off-farm employment in rural areas.

## ii) Urban Development Policy

The Constitution of India has assigned the subjects pertaining to the urban areas to the State Legislates. In so far as the urban issues are concerned, the legislative powers of the Union are limited only to the following subject/areas:

- ◆ Delhi and other Union Territories
- ◆ Property of the Union
- ◆ A subject of the State list which two or more State legislatures authorise Union Parliament to legislate
- ◆ Amendment of the Constitution of India.

In exercise of these legislative powers, the Parliament of India has enacted the following legislations which are administrated by the Ministry of Urban Development.

**a) Constitution (74th Amendment) Act, 1992**

This is a revolutionary piece of legislation by which Constitution of India was amended to incorporate a separate Chapter on urban local bodies, which seeks to redefine their role, power, function and finances. The salient features of this Act are:

- ◆ Urban local bodies, to be known as Municipal Corporations, Municipal Councils and Nagar Panchayat depending on the population shall be constituted through universal adult franchise in each notified urban area of the country.
- ◆ These shall be constituted for a period of five years and if dissolved earlier, an election to reconstitute it shall be completed before the expiration of a period of six months from the date of its dissolution.
- ◆ Not less than one-third of total number of seats in each urban local body shall be reserved for women.
- ◆ The Legislature of a State may by law entrust on these bodies such power and authority as may be necessary to enable them to function as institution of local self-government, including those listed in the Twelfth Schedule.
- ◆ The Twelfth Schedule of the Constitution has listed the following functions of the urban local bodies:
  - Urban Planning including town planning.
  - Regulation of land-use and construction of buildings.
  - Planning for economic and social development.
  - Roads and bridges.
  - Water supply for domestic, industrial and commercial purposes.
  - Public health, sanitation, conservancy and solid waste management.
  - Fire services.
  - Urban forestry, protection of the environment and promotion of ecological aspects.
  - Safeguarding the interests of weaker sections of society, including the handicapped and mentally retarded.

- Slum improvement and upgradation.
  - Urban poverty alleviation.
  - Provision of Urban amenities and facilities such as parks, gardens, playgrounds.
  - Promotion of cultural, educational and aesthetic aspects.
  - Burials and burial grounds; cremations, cremation grounds and electric crematoriums.
  - Cattle pounds; prevention of cruelty to animals.
  - Vital statistics including registration of births and deaths.
  - Public amenities including street lighting, parking lots, bus stops and public conveniences.
  - Regulation of slaughter houses and tanneries.
- ◆ In order for the urban local bodies to perform the functions assigned to them, the Legislature of a State shall assign them specific taxes, duties, tolls and levies and authorise them to impose, collect and appropriate the same.
  - ◆ Each State shall also constitute a Finance Commission which shall review the financial position of the urban local bodies and recommend principles which should govern the devolution of resources, including grant-in-aid from the Consolidated Fund of the State of these bodies.
  - ◆ The superintendence, direction and control of the preparation of electoral rolls for, and the conduct of, all elections to the urban local bodies shall vest in the State Election Commission.
  - ◆ In each District a District Planning Committee shall be constituted to consolidate the plan prepared by the urban and rural local bodies.
  - ◆ Similarly, for each metropolitan area a Metropolitan Planning Committee shall be constituted to prepare a development plan for the metropolitan area as a whole.

All the State Governments have either enacted new Municipal Law or amended the existing laws to conform these to the Constitution (Seventy-fourth Amendment) Act, 1992. All the States (except Jharkhand and Puducherry) have conducted the election to the local bodies.

All the States (except Arunachal Pradesh) have constituted State Finance Commissions and most of the Commissions have submitted their reports to the State Governments, recommending significant devolution of resources to the urban local bodies. The national Eleventh Finance Commission has also recommended devolution of Rs. 2000 crores as grant-in-aid from the Central Government to the urban local bodies.

The Constitution (Seventy-fourth Amendment) Act, 1992 has made the urban local bodies into vibrant self-governing institutions. This has ushered in a new era of urban governance and urban management in India.

The urban legislations passed by the Union Government are:

**b) Delhi Development Act, 1957**

This Act replaces the Control of Building Operations Ordinance 1957 by which the DDA was constituted. The Act defines the constitution, role, powers and functions of Delhi Development Authority. It further defines the development area of Delhi and stipulates that any development of land in this area shall be undertaken or carried out after obtaining the permission from DDA. The DDA shall prepare the Master Plan for Delhi and Zonal Plans which shall regulate the development of Delhi. The Act also authorises DDA to levy betterment charges in respect of the increasing value of the property resulting from the execution of development.

**c) Delhi Urban Art Commission Act, 1973**

By this Act, Delhi Urban Art Commission was constituted with a view to preserving, developing and maintaining the aesthetic quality of urban and environment design in Delhi.

**d) National Capital Region Planning Board Act, 1985**

By this Act, the NCR Planning Board was constituted to regulate the growth and to prepare plans and policies for balanced and harmonised development of National Capital Region.

**e) Delhi Rent Act, 1995**

The Delhi Rent Act was enacted on 22.08.1995 primarily with a view to balance the interests of the landlords and the tenants. However, the Act could not be brought into force due to agitation by various groups. It was then decided to bring the Act into force after effecting amendments to some of its provisions. The Delhi Rent (Amendment) Bill, 1997 was introduced in the Rajya Sabha on 28.07.1997. The Bill was then referred to the Parliamentary Standing Committee on Urban and Rural Development for examination and report. The Parliamentary Standing Committee on Urban and Rural Development of the 13th Lok Sabha submitted its report to the Parliament on 21.12.2000. The Government considered the Report of the Committee and accepted all the recommendations of the Committee. Steps were initiated to move official amendments to the Amendment Bill but it could not be debated till the dissolution of the 13th Lok Sabha. After formation of the 14th Lok Sabha and the new Government, action has been initiated to place the matter before the Cabinet for pursuing the Amendment Bill further.

**f) Delhi Apartment Ownership Act, 1986**

Delhi Apartment Ownership Act, 1986 came into force from 1.12.87. The Act was found to be ineffective as it lacked penal provisions. Suggestions for major amendments and revisions came from various quarters. After examining the matter in detail and considering various factors, it was decided by the Government to repeal the Delhi Apartment Ownership Act, 1986 and introduce the Delhi Apartment Ownership Bill in lieu thereof. The Delhi

Apartment Ownership Bill, 2001 was introduced in the Lok Sabha on 24.7.2001. The Bill was, thereafter, referred to the Standing Committee on Urban and Rural Development for examination and report. The Committee submitted its report to the Parliament on 17.12.2002 suggesting some changes in the Bill. The matter has been considered by the Govt. and steps were taken to finalise the Amendments and then place the matter before the Lok Sabha where the Bill was pending. However, in the meanwhile the 13th Lok Sabha was dissolved. With this, the Delhi Apartment Ownership Bill, 2001 introduced in the Lok Sabha on 24.7.2001 has lapsed. After constitution of the 14th Lok Sabha, action has been initiated for fresh consideration of the matter.

**g) The Urban Land (Ceiling and Regulation) Act, 1976 and Urban Land (Ceiling and Regulation) Repeal Act, 1999**

The Urban Land (Ceiling and Regulation) Act, 1976 came into force on 17.02.1976. Initially States of Andhra Pradesh, Haryana, Gujarat, Himachal Pradesh, Karnataka, Maharashtra, Odisha, Punjab, Tripura, Uttar Pradesh and West Bengal adopted the Act. Thereafter, it was adopted by six more States namely Assam, Bihar, Madhya Pradesh, Manipur, Meghalaya and Rajasthan.

However, after review of the matter in totality, the Urban Land (Ceiling and Regulation) Act, 1976 was repealed through an Ordinance on 11.01.99 which was followed by Urban Land (Ceiling and Regulation) Repeal Act, 1999 in replacement of the Ordinance. The Urban Land (Ceiling and Regulation) Repeal Act, 1999 was notified in the Gazette on 22.3.1999. The Repeal Act is in force in the States of Haryana, Punjab, Uttar Pradesh, Gujarat, Karnataka, Madhya Pradesh, Rajasthan, Odisha and all the Union Territories. The Urban Land (Ceiling and Regulation) Act, 1976 is still in force in the States of Andhra Pradesh, Assam, Bihar, Maharashtra and West Bengal.

**h) The Requisitioning and Acquisition of Immovable Property Act, 1952**

The Competent Authority of the Union likely to need any property for any public purpose can requisition the same by calling the Owner of property giving a fifteen days show-cause notices.

**i) The Public Premises (Eviction of Unauthorised Occupants) Act, 1971**

The Act provides for the eviction of unauthorised occupants from the public premises and for certain incidental matters. The Estate Officer, after making such inquiry as he deems expedient in the circumstances of a case, and for reasons to be recorded in writing, may make an order for the eviction of such person(s) who are in unauthorised occupation of public premises.

**j) Urban Scenario in India**

In India out of the total population of 1027 million as on 1 March, 2001, about 742 million live in rural areas and 285 million in urban areas. The net addition of population in rural areas during 1991-2001 has been to the tune of 113 million while in urban areas it

is 6 million. The percentage decadal growth of population in rural and urban areas during the decade is 17.9 and 31.2% respectively.

The percentage of urban population to the total population of the country stands at 27.8. The percentage of urban population to total population in the 1991 Census (including interpolated population of Jammu & Kashmir where Census could not be conducted in 1991) was 25.7%. Thus, there has been an increase on 2.1 percentage points in the proportion of urban population in the country during 1991-2001.

Among all the States and Union Territories, the National Capital Territory of Delhi is most urbanised with 93% urban population followed by Union Territory of Chandigarh (89.8%) and Puducherry (66.6%).

Among the major States, Tamil Nadu is the most urbanised State with 43.9% of the population living in urban areas followed by Maharashtra (42.4%) and Gujarat (37.4%). The proportion of urban population is the lowest in Himachal Pradesh with 9.8% followed by Bihar with 10.5%, Assam (12.7%) and Odisha (14.9%).

In terms of absolute number of persons living in urban areas, Maharashtra leads with 41 million persons which is 14% of the total population of the country. Uttar Pradesh accounts for about 35 million followed by Tamil Nadu 27 million.

The policies of urban development and housing in India have come a long way since 1950s. The pressure of urban population and lack of housing and basic services were very much evident in the early 1950s. In some cities this was compounded by migration of people from Pakistan. However, the general perception of the policy makers was that India is pre-dominantly an agricultural and rural economy and that there are potent dangers of over urbanisation which will lead to the drain of resources from the countryside to feed the cities. The positive aspects of cities as engines of economic growth in the context of national economic policies were not much appreciated and, therefore, the problems of urban areas were treated more as welfare problems and sectors of residual investment rather than as issues of national economic importance.

In the First Five Year Plan (1951-56), the emphasis was given on institution building and on construction of houses for Government employees and weaker sections. The Ministry of Works and Housing was constituted and National Building Organisation and Town and Country Planning Organisation were set up. A sizeable part of the plan outlay was spent for rehabilitation of the refugees from Pakistan and on building the new city of Chandigarh. An Industrial Housing Scheme was also initiated. The Center subsidised Scheme to the extent of 50% towards the cost of land and construction.

The scope of housing programme for the poor was expanded in the Second Plan (1956-61). The Industrial Housing Scheme was widened to cover all workers. Three new schemes were introduced, namely, Rural Housing, Slum Clearance and Sweepers Housing. Town and Country Planning Legislations were enacted in many States and necessary organisations were also set up for preparation of Master Plans for important towns.

The general directions for housing programmes in the Third Plan (1961-66) were to co-ordinate the efforts of all agencies and to orient the programmes to the needs of the Low Income Groups. A Scheme was introduced in 1959 to give loans to State Governments for a period of 10 years for acquisition and development of land in order to make available building sites in sufficient numbers. Master Plans for major cities were prepared and the State capitals of Gandhi Nagar and Bhubaneswar were developed.

The balanced urban growth was accorded high priority in the Fourth Plan (1969- 74). The Plan stressed the need to prevent further growth of population in large cities and need for decongestion or dispersal of population. This was envisaged to be achieved by creation of smaller towns and by planning the spatial location of economic activity. Housing and Urban Development Corporation (HUDCO) was established to fund the remunerative housing and urban development programmes, promising a quick turnover. A Scheme for Environmental Improvement or Urban Slums was undertaken in the Central Sector from 1972-73 with a view to provide a minimum level of services, like, water supply, sewerage, drainage, street pavements in 11 cities with a population of 8 lakhs and above. The scheme was later extended to 9 more cities.

The Fifth Plan (1974-79) reiterated the policies of the preceding Plans to promote smaller towns in new urban centers, in order to ease the increasing pressure on urbanisation. This was to be supplemented by efforts to augment civic services in urban areas with particular emphasis on a comprehensive and regional approach to problems in metropolitan cities. A Task Force was set up for development of small and medium towns. The Urban Land (Ceiling and Regulation) Act was enacted to prevent concentration of land holding in urban areas and to make available urban land for construction of houses for the middle and low income groups.

The thrust of the planning in the Sixth Plan (1980-85) was on integrated provision of services along with shelter, particularly for the poor. The Integrated Development of Small and Medium Towns (IDSMT) was launched in towns with population below one lakh for provision of roads, pavements, minor civic works, bus stands, markets, shopping complex etc. Positive inducements were proposed for setting up new industries and commercial and professional establishments in small, medium and intermediate towns.

The Seventh Plan (1985-90) stressed on the need to entrust major responsibility of housing construction on the private sector. A three-fold role was assigned to the public sector, namely, mobilisation for resources for housing, provision for subsidised housing for the poor and acquisition and development of land. The National Housing Bank was set up to expand the base of housing finance. NBO was reconstituted and a new organisation called Building Material Technology Promotion Council (BMTPC) was set up for promoting commercial production of innovative building materials. A network of Building Centers was also set up during this Plan period. The Seventh Plan explicitly recognised the problems of the urban poor and for the first time an Urban Poverty Alleviation Scheme known as Urban Basic Services for the Poor (UBSP) was launched.

As a follow-up of the Global Shelter Strategy (GSS), National Housing Policy (NHP) was announced in 1988. The long term goal of the NHP was to eradicate homelessness,

improve the housing conditions of the inadequately housed and provide a minimum level of basic services and amenities to all. The role of Government was conceived, as a provider for the poorest and vulnerable sections and as a facilitator for other income groups and private sector by the removal of constraints and the increased supply of land and services.

The National Commission of Urbanisation submitted its report. The Report eloquently pointed out the reality of continuing and rapid growth of the urban population as well as the scale and intensity of urbanisation, the critical deficiencies in the various items of infrastructure, the concentration of vast number of poor and deprived people, the acute disparities in the access of shelter and basic services, deteriorating environmental quality and the impact of poor governance on the income and the productivity of enterprises.

In the backdrop of this report the Eighth Plan (1992-97) for the first time explicitly recognised the role and importance of urban sector for the national economy. While growth rate of employment in the urban areas averaged around 3.8% per annum, it dropped to about 1.6% in the rural areas. Therefore, the urban areas have to be enabled to absorb larger increments to the labour force. The Plan identified the key issues in the emerging urban scenario:

- ◆ The widening gap between demand and supply of infrastructural services badly hitting the poor, whose access to the basic services like drinking water, sanitation, education and basic health services is shrinking;
- ◆ Unabated growth of urban population aggravating the accumulated backlog of housing shortages, resulting in proliferation of slums and squatter settlement and decay of city environment;
- ◆ High incidence of marginal employment and urban poverty as reflected in NSS 43rd round that 41.8 million urban people lived below the poverty line.

The response of the Plan to this scenario was the launching of Urban Poverty and Alleviation Programme of Nehru Rojgar Yojana (NRY).

#### ◆ **Need of a National Urban Policy**

Despite the Report of National Commission on Urbanisation (1988) and the two successive National Housing Policies within a span of a decade, the country is yet to evolve a National Urban Policy. States Governments have prepared their respective State Urbanisation Strategy Reports taking into account the pattern of urban growth, resources and potentials. At the national level, the Planning Commission has constituted a National Task Force on Urban Perspective and Policy in 1995. Three Technical Groups were also constituted on the subjects of Urban Perspectives and Policy, Urban Infrastructure and Urban Planning. The Technical Group on Urban Planning System under the Chairmanship of Dr. Arcot Ramachandran has submitted its final report. The Reports of other two Technical Groups under the Chairmanship of Shri Vaghul and Prof. Y. K. Alagh are yet to be finalised. After the final reports of the Technical Groups are available the Task Force will finalise its recommendations. These will provide input for the National Urban Policy.

## 26.6 Abatement of Pollution

The Environment related Laws enacted by the Parliament under Articles 252 and 253 of the Constitution of India. These include legislations enacted for Abatement of Pollution.

The Water (Prevention and Control of Pollution) Act, 1974 was promulgated as a Central Legislation under Article 252 of the Constitution. Since, the “water” is listed under the State list, a Resolution from two or more State Assemblies empowering the Parliament to enact the Legislation on the State List was required. The Water (Prevention and Control of Pollution) Act, 1974 became effective at the State level when it was adopted by the concerned State Assemblies. The Air (Prevention and Control of Pollution) Act, 1981 and the Environment (Protection) Act, 1986 were promulgated under Article 253 of the Constitution of India, which empowered the Parliament to enact legislations on such matters as necessary for compliance of International Agreements in which India has been a party.

Since 1974, some of the major environmental enactments which have been passed by the Parliament are as follows:

- ◆ The Water (Prevention and Control of Pollution) Act, 1974: (6 of 1974)
- ◆ The Water (Prevention and Control of Pollution) Cess Act, 1977: (36 of 1977)
- ◆ The Air (Prevention and Control of Pollution) Act, 1981: (14 of 1981)
- ◆ The Environment (Protection) Act, 1986: (29 of 1986)
- ◆ The Public Liability Insurance Act, 1991: (6 of 1991)
- ◆ The National Environment Tribunal Act, 1995: (27 of 1995)
- ◆ The National Environment Appellate Authority Act, 1997: (22 of 1997)

In addition to these Acts, several Rules have also been incorporated under the Environment (Protection) Act, 1986. These Acts and Rules are important guidelines to sort out the environmental problems. Some of the major Rules notified are:

- ◆ The Manufacture, Use, Import, Export and Storage of Hazardous Micro-Organism Genetically Engineered or Cells Rules, 1989
- ◆ The Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989
- ◆ The Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996
- ◆ **The Solid Waste Management Rules (SWM), 2016**
- ◆ The Noise Pollution (Regulation and Control) Rules, 2000
- ◆ The Ozone Depleting Substances (Regulation) Rules, 2000
- ◆ The Batteries (Management and Handling) Rules, 2001
- ◆ The Bio-Medical Waste Management Rules, 2016

- ◆ The Construction and Demolition Waste Management Rules, 2016
- ◆ The Plastic Waste Management Rules 2016
- ◆ The E-Waste (Management) Rules, 2016
- ◆ The Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016

The Constitution of India has basic features in respect of the power of judicial review by the Supreme Court. Under Part III of the Constitution, which guarantees fundamental rights to the people and under Part IV, the State is under obligation to implement the Directive Principles. Article 39-A of the Constitution provides “Right of Access to Courts” to the citizens. In exercise of its powers of judicial review, the Court enforces the constitutional and legal rights of the underprivileged by transforming the right to life under Article 21 of the Constitution and by interpreting the Articles 48-A and 51 A (g) of the Constitution. The Hon’ble Supreme Court of India has given a new dimension to the environmental jurisprudence in India with a view to meeting the problems in the environmental field.

The Supreme Court of India in numerous matters elaborated the scope of Article 21 of the constitution of India, which deals with **protection of life and personal liberty** - *No person shall be deprived of his life or personal liberty except according to procedure established by Law*. In the matter of *Rural Litigation and Entitlement Kendra v. State of U.P.* - the Hon’ble Supreme court held that the right to unpolluted environment and preservation and protection of nature’s gifts has also been conceded under Article 21 of the Constitution of India. The Constitutional provisions provide the bed-rock for the framing of environmental legislations in the country. Article 48-A of the Constitution deals with the **Protection and Improvement of Environment and Safeguarding of Forests and Wildlife** - *The State shall endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country* . On the basis of the said provisions, the Environment (Protection) Act, 1986 and the Wildlife (Protection) Act, 1972 (as amended in 1986) have been enacted by the Parliament.

Under Part IV-A of the Directive Principles of State Policy, Fundamental Duties have been added under Article 51-A by the 42nd Amendment of the Constitution in 1976. Under Article 51-A (g) provides the **Fundamental Duties with respect to the environment which includes** - *To protect and improve the natural environment including forests, lakes, rivers and wildlife and to have compassion for living creatures*.

Some legislations that contain specific provisions for abatement of Pollution are:

**a) The Water (Prevention and Control of Pollution) Act, 1974**

The Water Act was enacted by Parliament Act, 1974 purpose to provide for the prevention of control of water pollution and the maintaining or restoring of wholesomeness of water.

The preamble of the Water Act provides that it is an Act to provide for the prevention and control of water pollution and the maintaining or restoring of wholesomeness of water, for the establishment, with a view to carry out the purposes aforesaid, of Boards for the prevention and control of water pollution, for conferring on and assigning to such Boards Powers and functions relating thereto and for matters connected therewith.

As on day, it is applicable in all the States of India. In this act, unless the context, otherwise requires

- i) Occupier
- ii) Outlet
- iii) Pollution
- iv) Trade effluent

The relevant provisions of this and are given as below:

Under Section 19 - The entire National Capital Territory of Delhi has been declared as water pollution prevention control area.

Under Section 21 - Officials of DPCC can take samples of the water effluent from any industry stream or well or sewage sample for the purpose of analysis.

Under Section 23 - Officials of the State Boards can enter any premises for the purpose of examining any plant, record, register etc. or any of the functions of the Board entrusted to him.

Under Section 24 - No person shall discharge any poisonous, noxious or any polluting matter into any stream, or well or sewer or on land.

Under Section 25 - No person shall without the previous consent to establish shall:

- a) Establish or take any step to establish any industry, operation or process or any treatment and disposal system for any extension or addition thereto, which is likely to discharge sewage or trade effluent into a stream or well or sewer or on land or
- b) Bring into use any new or altered outlet for the discharge of sewage or
- c) Begin to make any new discharge of sewage.

Under this section the State Board may grant consent to the industry after satisfying itself on pollution control measures taken by the unit or refuse such consent for reasons to be recorded in writing.

Under Section 27 - A State Board may from time to time review any condition imposed by it on the person under Section 25 and 26 and may vary or revoke that condition.

Under Section 28 - Any person aggrieved by the order made by the State Board under Section 25, 26 or Section 27 may within thirty days from the date on which the order is communicated to him/her, prefer an appeal to such authority (referred to as the appellate authority) as the State Government may think fit to constitute (in case of NCT of Delhi Appellate authority under this section is Financial Commissioner, Delhi Administration).

Under Section 33 - The State Board can direct any person who is likely to cause or has caused the pollution of water in street or well to desist from taking such action as is likely to cause its pollution or to remove such matters as specified by the Board through court.

Under Section 33A - DPCC can issue any directions to any person, officer or authority, and such person, officer or authority shall be bound to comply with such directions. The directions include the power to direct -

- i) The closure, prohibition of any industry.
- ii) Stoppage or regulations of supply of electricity, water or any other services.

Under Section 43 - Whoever contravenes the provisions of Section 24 shall be punishable with imprisonment for a term which shall not be less than one year and six months but which may extend to six years with fine.

Under Section 45 - If any who has been convicted of any offence under Section 24, or Section 25 or Section 26 is again found guilty of an offence involving a contravention of the same proviso shall be on the second and on every subsequent conviction be punishable with imprisonment for a term which shall not less than two years but which may extend to seven years with fine.

Under Section 45A - Whoever contravenes any of the provisions of this Act or fails to comply with any order or direction given under this Act for which no penalty has been elsewhere provided in this Act, shall be punishable with imprisonment which may extend to three months or with fine which may extend to ten thousand rupees or with both.

As mentioned earlier, the objective of the Act is to prevent and control of water pollution and to maintain or restore wholesome of water. Central and State Governments have constituted Boards for the Act. The Boards composition, terms and conditions of services of members are defined in Sections 3-12. In some States air and water boards are joint boards. The Boards advises the government on any matter concerning the prevention and control of water pollution. It coordinates the activities and provides technical assistance and guidance. It runs national and State programmes through a mass media. It is collecting, compiling and publishing technical and statistical data, lay down the standard of different constituents of water, management of sewage and trade effluents and giving direction to any pollution units, industry, or person to stop such activity.

As per the Act, the Government has the power to restrict any unit, and to take samples of effluents and to get them analysed in Central or State laboratories. Whoever fails to comply with any provision of this Act is punishable with the imprisonment or with fine or with both. Second or third time breaking of the law is further punishable. Under the provision of this Act Central Pollution Control Board was established to fulfil its object.

#### **b) The Water (Prevention and Control of Pollution) Cess Act, 1977**

Parliament adopted the Water (Prevention and Control of Pollution) Cess Act, 1977 to provide funds for the Central and State Pollution Control Boards. The Act empowers the

Central Government to impose a Cess on water consumed by industries listed in Schedule-I of the Act.

The industries as specified Schedule-I in and local authorities are required to pay the water Cess as per the quarterly of water Schedule-I.

Industries specified in Schedule-I are:

- a) Industrial cooling, spraying in mine pits, or boiler feed;
- b) Domestic purposes;
- c) Processing which results in water pollution by biodegradable water pollutants; or
- d) Processing which results in water pollution by water pollutants which are not easily biodegradable or are toxic.

The Act also provides for a Second Schedule. The relevant provisions of the Act are:

Under Section 3 - The Cess shall be calculated at such rate as may be specified by the Government. The rate notified/specified by the Government indicates two rates for Cess calculation - lower one for industries complying with Section 25 of Water Act, 1974 and standards of effluent as prescribed under EPA, 1986 and higher one for those failing to comply with the above mentioned conditions.

Under Section 4 - For the purpose of measuring and recording the quantity of water consumed, every person carrying on any specified industry and every local authority shall affix meters of such standards and at such places as may be prescribed.

Under Section 7 - Where any person or local authority, liable to pay the Cess under this Act, installs any plant for the treatment of sewage or trade effluents, such person or local authority shall be entitled to a rebate of 25% of the Cess payable by such person or local authority, provided that the person/local authority is not contravening section prescribed 25 of the Water Act 1974 and effluent standards prescribed under EPA, 1986 and is not consuming water in excess of the maximum quantity as may be prescribed by the government for any specified industry or local authority.

Under Section 9 - Any officer or authority of the State Government specially empowered in this behalf can enter any premises at any reasonable time for the purpose of carrying out his duties under this Act.

Under Section 10 - If any person carrying on any specified industry or local authority fails to pay any amount of Cess payable under Section 3 within the date specified in the order of assessment made such person or local authority is liable to pay interest on the amount to be paid as laid down.

Under Section 13 - Any person or local authority aggrieved by an order of assessment made under Section 6 or by an order imposing any penalty made under Section 11 may within such time as may be prescribed, appear to such authority in such form and in such manner as may be prescribed.

### c) The Air (Prevention and Control of Pollution) Act, 1981

The Air (Prevention and Control of Pollution) Act was enacted by the Parliament in 1981 with an objective to prevent, control and abatement of air pollution. Under Section 19 of this Act the whole of National Capital Territory of Delhi has been declared as air pollution control area by the Central Government. Under this section the government approved fuels to be used in the air pollution control area.

The preamble to the Act states, “An Act to provide for the prevention, control and abatement of air pollution, for the establishment, with a view to carrying out the aforesaid purposes, of Boards, for conferring on and assigning to such Boards powers and functions relating thereto and for matters connected therewith. Whereas decisions were taken at the United Nations Conference on the Human Environment held in Stockholm in June, 1972, in which India participated, to take appropriate steps for the preservation of the natural resources of the earth which, among other things, include the preservation of the quality of air and control of air pollution; and whereas it is considered necessary to implement the decisions aforesaid in so far as they relate to the preservation of the quality of air and control of air pollution.”

The following are the important provisions of the Air (Prevention and Control of Pollution) Act:

Under Section 21(1) - Person establishes or operates any industrial unit in National Capital Territory of Delhi without obtaining prior consent of the DPCC.

The consent application will be disposed off within 4 months of receipt of the consent application. However, DPCC may either grant consent or reject the application within 4 months for reasons to be recorded in writing. It may also revoke previous, consent to the industry before expiry of the same after giving a reasonable opportunity of being heard.

Any consent requires the compliance with the following conditions -

- i) Control equipment of such specification as the State Board may approve.
- ii) Control equipment referred above shall be kept at all times in good running condition.
- iii) Chimney, wherever necessary, of such specifications as State Boards may approve.
- iv) Any other such conditions as the State Board may specify.

Under Section 22 - No person operating any industrial plant, in any air pollution control area shall discharge or cause or permit to be discharged the emission of any air pollution in excess of the standards laid down by the State Board.

Under Section 22(A) - State Board can also approach the court to stop any person from doing air pollution.

Under Section 24(i), 26(i) - DPCC office have powers to inspect any premises in performance of their duties, take samples, examine records, documents etc. or performing any other duty entrusted to him by the Board. Every person operating any equipment is bound to

provide all assistance to the person who is inspecting. When samples are taken, officials can collect the samples after informing the person of the industry. Any analysis of the samples done in the air lab can be produced as evidence in a court.

Under Section 31 - Any person aggrieved by an order made by the State Board under this Act may, within 30 days from the date on which order is communicated to him, prefer an appeal to the authorised authority who in the case of Delhi is the Joint Secretary, Ministry of Environment and Forest.

Under Section 31(A) - The State Board can give directions to any person or office or authority in writing and such person or officer or authority is bound to comply with such directions which includes:

- i) The closure, prohibition or regulation of any industry, operation or process or
- ii) Stoppage or regulation of electricity, water or any other services.

Under Section 37 - Any person failing to comply with the provisions of Section 21 or Section 22 or directions issued under Section 31(A) can be imprisoned from 1½ years to 6 years, with fine or with a fine up to Rs. 5000/- per day.

If violation continues beyond one-year imprisonment can be increased up to 7 years with fine.

Under Section 39 - Whoever contravenes any of the provisions of this Act or any order or directions issued thereunder, for which no penalty has been elsewhere provided in this Act, shall be punishable with imprisonment for a term which may extend to three months or with fine which may extend to ten thousand rupees or with both, and in case of continuing contravention with an additional fine which may extend to Rs. 5000/- for every day during which such contravention continues after conviction for the first such contravention.

#### **d) The Environment (Protection) Act, 1986: (29 of 1986)**

In the wake of the Bhopal tragedy, the Government of India enacted the Environment (Protection) Act, 1986 (EPA) under Article 253 of the constitution. The purpose of the Act is to act as an “umbrella” legislation designed to provide a framework for Central Government co-ordination of the activities of various Central and State authorities established under previous laws, such as Water Act and Air Act.

The potential scope of the Act is broad, with “environment” defined to include water, air and land and the inter-relationships which exist among water, air and land, and human beings and other living creatures, plants, microorganisms and property.

However, the Delhi Pollution Control Committee has been vested with the powers under the provisions under Section 5 the Central Government may, in exercise of its powers and performance of its function under this Act, issue directions in writing to any person, officer or any authority and such person, officer or authority shall be bound to comply with such directions which includes (a) the closure, prohibition or regulation of any

industry, operation or process; or (b) stoppage or regulation of the supply of electricity or water or any other service. The Central Government has delegated the powers.

The Environment Protection Act, 1986 provides for the Prevention, Control and Abatement of Environmental Pollution. The provisions of the Act provide as follows:

- ◆ No person carrying on any industry, operation or process shall discharge or emit or permit to be discharged or emitted any environmental pollutant in excess of such standards as may be prescribed.
- ◆ No person shall handle or cause to be handled any hazardous substance except in accordance with such procedure and after complying with such safeguards as may be prescribed.
- ◆ Where the discharge of any environmental pollutant in excess of the prescribed standards occurs or is apprehended to occur due to any accident or other unforeseen act or event, the person responsible for such discharge and the person in charge of the place at which the discharge occurs shall be bound to prevent or mitigate the environmental pollution and shall also
  - a) Intimate the fact of such occurrence or apprehension of such occurrence; and
  - b) Be bound, if called upon, to render all assistance.
- ◆ On receipt of such information, the authorities or agencies shall cause such remedial measures to be taken as are necessary to prevent or mitigate the environmental pollution.

The expenses incurred by any authority or agency may be recovered from the person concerned as arrears of land revenue or of public demand.

#### **e) Noise Pollution (Regulation and Control) Rules, 2000**

Noise is measured in decibel (dB). A whisper in ear is about 30 dB. The normal talk is 60 dB. Research shows that noise above 90 dB can cause loss of hearing and irreversible change in the nervous system. World Health Organisation has fixed 45 dB as the safe standard and noise level up to 68 dB is considered tolerable.

Noise is a disturbance to the human environment that is escalating at such a high rate that has become a major threat to the quality of human lives. In the past few decades, noise in all areas, especially in urban areas, have been increasing rapidly. There are numerous effects on the human environment due to the increase in noise pollution.

Governments up till the 1970s viewed noise as a “nuisance” rather than an environmental problem. In the United States there are federal standards for highway and aircraft noise; States and local Governments typically have very specific statutes on building codes, urban planning and roadway development. In Canada and the European Union there are few national, provincial, or State laws that protect against noise.

In India, to control the increasing ambient noise level in public places from various sources, *inter alia*, industrial activity, construction activity, generator sets, loud speakers,

public address system, music systems, vehicular horns, and other mechanical devices, Noise Pollution (Regulation and Control) Rules, 2000 has been enacted by the Central legislature in exercise of its powers conferred under the Environment (Protection) Act, 1986.

## 26.7 Hazardous Wastes and their Disposal / Toxics

The increasing use of chemicals in all sectors of society (including the home) has resulted in many residues that have hazardous properties.

During the past decade, the country has become increasingly aware of the seriousness of one of the major consequences of development, that is, the quantity and diversity of hazardous wastes generated by its industrial activities. Such wastes are usually a by-product of industrial operations which involve heavy metals such as arsenic, cadmium, chromium, lead, mercury, etc; processes which utilise different categories of oil and petrochemicals; products such as PVC and plastics; waste products from photocopiers; chemicals such as PCBs; and finally, by-products such as dioxins and furans which are now recognised as extremely toxic substances, affecting all forms of life. In fact, depending upon their characteristics, nature, and concentration of contaminants, some of these wastes are extremely toxic and hazardous.

The impact of heavy metals on human health is well documented in the scientific literature. Children under six years, for example, are most susceptible to lead, and adverse effects include reduction in I.Q., shortened attention span, hyperactivity, aggressive behaviour and other learning and behavioural problems. Exposure to high concentrations can lead to mental retardation, coma, convulsions and death.

Mercury and tin can get converted into organic forms like methyl mercury and methyl tin which become more injurious to health and environment than the parent compounds. Mercury poisoning can cause severe brain damage. Well documented incidence of mercury poisoning is available from Japan in the form of Minamata disease, a severe and sometimes lethal neurological disorder. Hexavalent chromium in high doses during industrial exposures has been implicated as a cause of digestive tract cancers, nasal mucous membrane ulcers and dermatitis. Certain chromate salts, e.g. calcium chromate, are carcinogenic, at least when inhaled: lung cancer has been reported in workers employed in chromate industries. The toxic effects of cadmium have been documented in Japan (itai-itai disease).

Waste oil is another potent pollutant. When it is dumped in the open environment, into sewers or in landfills, it is capable of migrating into the soil and underground aquifers. It is said that one gallon of used oil can contaminate one million gallons of water, rendering it un-potable. Marine species can be adversely affected if exposed to oil concentrations as low as 1 part per million. Since waste oil contains various hazardous contaminants, the burning of such oil increases air pollution as toxic gases are vented to the atmosphere, affecting not just human beings but plants and birds as well.

As far as heavy metals are concerned, the problem is compounded by the fact that although they are essential for economic development, they are available in small

quantities or (in some countries) not at all. Because extracting and processing them from ores results in significant environmental damage and high energy costs, the global economy has wisely moved in the direction of recovering such metals from industrial wastes to the extent possible. Close to 70% of U.S. iron and steel and 90% of its aluminium, for example, is today recycled from scrap. This is also true of zinc, lead, etc. Recovery or reclamation of metal is a decidedly friendlier option, environmentally speaking, than extraction from ores, and reflects a policy committed to conservation of resources. So, does the re-refining of used oil. But such recovery/reclamation has to be carried out with appropriate care.

The difficulty is that recycling of hazardous wastes itself generates hazardous wastes that are often more toxic in concentration than the material recycled. Such wastes, left unattended or carelessly disposed of, have a seriously detrimental impact on public health and the natural environment, including wildlife.

Concern over the health and environmental impacts of hazardous wastes has been expressed worldwide. Adverse effects on human health have been reported from the landfill sites of “Love Canal”, Niagara Falls, NY, at Hardeman County near Memphis TN, and Lipari Landfill, Mantua town, Gloucester County, New Jersey, USA, in the seventies where solid/liquid wastes were dumped 10 to 20 years earlier. Workers engaged in collecting, processing and disposal of the hazardous wastes are also at risk. Since hazardous wastes can have long-term consequences on the environment and human health, they must be carefully handled and properly regulated.

The problems associated with hazardous wastes start at the conceptual level itself. So far, there is no uniformly accepted international definition for what constitutes hazardous wastes. Different substances are hazardous at different concentrations, at different time scales.

**The Basel Convention on Transboundary Movement of Hazardous Wastes and their disposal** defines wastes in Article 2 as follows:

“Wastes” are substances or objects which are disposed of or are intended to be disposed of or are required to be disposed of by the provisions of national law.

The Convention defines hazardous wastes in Article 1.1 as follows:

- i) Wastes that belong to any category contained in Annex-I, unless they do not possess any of the characteristics contained in Annex-III; and,
- ii) Wastes that are not covered under paragraph (i) but are defined as, or are considered to be, hazardous wastes by the domestic legislation of the Party of export, import or transit.

It will be seen from the foregoing that the Basel Convention does not provide a conceptual definition of hazardous wastes.

In India, Hazardous waste is regulated by the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016. These rules apply to the management of hazardous and other wastes as specified in the Schedules to these rules.

The Rules define “hazardous waste” as any waste which by reason of characteristics such as physical, chemical, biological, reactive, toxic, flammable, explosive or corrosive, causes danger or is likely to cause danger to health or environment, whether alone or in contact with other wastes or substances, and shall include -

- i) waste specified under column (3) of Schedule I of the Rules;
- ii) waste having equal to or more than the concentration limits specified for the constituents in class A and class B of Schedule II or any of the characteristics as specified in class C of Schedule II of the Rules; and
- iii) wastes specified in Part A of Schedule III in respect of import or export of such wastes or the wastes not specified in Part A but exhibit hazardous characteristics specified in Part C of Schedule III of the Rules.

In order to classify any waste as hazardous, it is usually subject to evaluations based on its attributes such as nature, composition and inherent characteristics. Thus, parameters such as flammability, ignitability, toxicity, corrosivity, reactivity, infectiousness, radioactivity, etc. have been proposed and used to designate specific wastes as hazardous. Based on such criteria, various international organisations have defined hazardous waste in different ways.

After careful consideration, the hazardous wastes can be defined as:

“Any substance, whether in solid, liquid or gaseous form, which has no foreseeable use and which by reasons of any physical, chemical, reactive, toxic, flammable, explosive, corrosive, radioactive or infectious characteristics causes danger or is likely to cause danger to health or environment, whether alone or when in contact with other wastes or environment, and should be considered as such when generated, handled, stored, transported, treated and disposed of.” This definition includes any product that releases hazardous substance at the end of its life, if indiscriminately disposed of.

## **Status Report on Management of Hazardous Waste in India<sup>9</sup>**

### **1) Preamble**

India is the second most populous country, which has about 16% of the world population and 25% of the land area. Rapid industrialisation last few decades have led to the depletion of pollution of precious natural resources in India depletes and pollutes resources continuously. Further the rapid industrial developments have, also, led to the generation of huge quantities of hazardous wastes, which have further aggravated the environmental problems in the country by depleting and polluting natural resources. Therefore, rational and sustainable utilisation of natural resources and its protection from toxic releases is vital for sustainable socio- economic development.

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<sup>9</sup> Source: <http://www.envis.neeri.res.in/management.php>, as visited on April 21, 2008.

Hazardous waste management is a new concept for most of the Asian countries including India. The lack of technical and financial resources and the regulatory control for the management of hazardous wastes in the past had led to the unscientific disposal of hazardous wastes in India, which posed serious risks to human, animal and plant life.

## 2) Regulatory Framework

India is the first country that has made constitutional provisions for protection and improvement of the environment. In the Directive Principles of State Policy of the Constitution, Article 48-A of Chapter IV enjoins the State to make an endeavour for protection and improvement of the environment and for safeguarding the forest and wildlife of the Country. In Article 51 A (g) of the Constitution, one of the fundamental duties of every citizen of India is to protect and improve the natural environment including forests, lakes, rivers and wildlife and to have compassion for living creatures.

In order to manage hazardous waste (HW), mainly solids, semi-solid and other Industrial wastes which are not covered by the Water and Air Acts, and also to enable the authorities to control handling, treatment, transport and disposal of waste in an environmentally sound manner, Ministry of Environment and Forests (MoEF). Government of India notified the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 under the provisions of the Environment (Protection) Act, 1986.

With these Rules, all the forms under the rules for permission, import/export, filing of annual returns, transportation, etc. have been revised significantly, indicating the stringent approach for management of such hazardous and other wastes with simultaneous simplification of procedure.

## 3) The Basel Convention on Hazardous Wastes

India is a Party to the Basel Convention on transboundary movement of hazardous wastes. The basic objectives of the Basel Convention are for the control and reduction of transboundary movements of hazardous and other wastes subject to the Convention, prevention and minimisation of their generation, environmentally sound management of such wastes and for active promotion of the transfer and use of cleaner technologies.

As a Party to the Convention, India is obliged to regulate and minimise the import of hazardous waste or other wastes for disposal or re-cycling and also to prohibit export of waste to Parties, which have prohibited the import of such wastes. As a Party, India is also required to minimise generation of hazardous waste in the country taking into account social, technological and economic aspects. Further, hazardous waste generated in the country is also required to be managed in an environmentally sound manner. India, as a Party, can prevent the import of hazardous waste or other waste if it has reason to believe that the waste in question will not be managed in an environmentally sound manner.

#### 4) Present Hazardous Waste Generation Scenario

The hazardous waste generated in the country per annum is estimated to be around 4.4 million tonnes (Table 1) while as per the estimates of Organisation for Economic Co-operation and Development (OECD) derived from correlating hazardous waste generation and economic activities, nearly five million tones of hazardous waste are being produced in the country annually. This estimate of around 4.4 million MTA is based on the 18 categories of wastes which appeared in the HWM Rules first published in 1989. Out of this, 38.3% is recyclable, 4.3% is incinerable and the remaining 57.4% is disposable in secured landfills. Twelve States of the country (Maharashtra, Gujarat, Tamil Nadu, Odisha, Madhya Pradesh, Assam, Uttar Pradesh, West Bengal, Kerala, Andhra Pradesh, Karnataka and Rajasthan) account for 97% of total hazardous waste generation. The top four waste generating States are Maharashtra, Gujarat, Andhra Pradesh and Tamil Nadu. On the other hand, States such as Himachal Pradesh, Jammu & Kashmir, all the North Eastern States excepting Assam generate less than 20,000 MT per annum. Given the wide variations in quantity and nature of waste generated across States and Union Territories (UTs) and also considering the wide variations in climatic as well as hydro-geological conditions in different regions of the country, the approach to waste management has to be essentially State-specific.

Consequent upon amendments made in the year 2000 and subsequently in 2003, the State Pollution Control Boards (SPCBs) and Pollution Control Committees (PCCs) are in the process of re-inventorising hazardous waste generated. The current exercise has brought to light the serious short-comings in the earlier inventorisation.

As a result, the total quantum of waste generated as well as its composition in terms of landfillable, incinerable etc. would undergo substantial changes. Nevertheless, the geographical distribution of waste generated and its distribution amongst the States is unlikely to undergo major changes.

While it is well recognised that inventorisation has to be reviewed and updated periodically to account for growing industrialisation, it is necessary to prepare a reliable inventory as this forms the basis for formulating a suitable hazardous waste management strategy and developing infrastructure (treatment/disposal facilities) for their management. While field verification supplemented by stoichiometric assessments would be the ideal way forward, reasonably reliable estimates can be made based on product-wise waste streams generated and quantities thereof. In India, there are over 13,000 industrial units located in 340 Districts, out of which nearly all units have been granted authorisation for multiple disposal practices encompassing incineration, storage, land disposal and other disposal (mostly recycle and reuse) options.

Small and medium sized enterprises (SMEs), however, are the major hazardous waste generators.

**Table 1: State-wise status of number of units generating hazardous waste, and quantities generated in wastes types (recyclable, incinerable and disposable).**

Sl. No.	State	No. of Districts		No of Units Generating Wastes		Quantity of Waste Generated (Waste Type) in TPA			
		Total	H.W. Units	Autho- rised	Total	Recyc- lable	Incine- rable	Dispos- able	Total
1.	Andhra Pradesh	23	22	478	501	61820	5425	43853	111098
2	Assam	23	8	18	18	-	-	166008	166008
3	Bihar	55	12	31	42	2151	75	24351	26578
4.	Chandigarh	1	1	37	47	-	-	305	305
5	Delhi	9	9	-	403	-	-	-	1000
6.	Goa	2	2	25	25	873	2000	5869	8742
7.	Gujarat	24	24	2984	2984	235840	34790	159400	430030
8.	Haryana	17	15	42	309	-	-	31046	32559
9.	Himachal Pradesh	12	6	71	116	-	63	2096	2159
10.	Karnataka	27	25	413	454	47330	3328	52585	103243
11.	Kerala	14	11	65	133	93912	272	60538	154722
12.	Maharashtra	33	33	3953	3953	847436	5012	1155398	2007846
13.	Madhya Pradesh	61	38	183	183	89593	1309	107767	198669
14.	Odisha	30	17	78	163	2841	-	338303	341144
15.	J & K	14	5	-	57	-	-	-	1221
16.	Puducherry	1	1	15	15	8730	120	43	8893
17.	Punjab	17	15	619	700	9348	1128	12233	22745
18.	Rajasthan	32	27	90	344	52578	6747	95000	140610
19.	Tamil Nadu	29	29	1088	1100	193507	11564	196002	401073
20.	Uttar Pradesh	83	65	768	1036	36819	61395	47572	145786
21.	West Bengal	17	9	234	440	45233	50894	33699	129826
	<b>Total</b>	<b>524</b>	<b>373</b>	<b>11138</b>	<b>13011</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>4434257</b>

Source: Report of the High-Power Committee on Management of Hazardous wastes, 1999.

The amount of hazardous waste generated in this country is quite small in comparison to that of the USA, where as much as 275 million tones of hazardous waste was generated annually. However, considering the fragile ecosystem that India has (The State of India's Environment, Part I, National Overview, The Citizens Fifth Report, Centre for Science and Environment, 1999), even this low quantum of hazardous wastes (around 4.4 million MTA) can cause considerable damage to natural resources if untreated before releases. India's fragile ecosystem could be seen from the following:

- ◆ Air pollution in Indian cities is highest amongst the world
- ◆ Over 70% of the country's surface water sources are polluted and, in large stretches of major rivers, water is not even fit for bathing
- ◆ India has among the lowest per capita availability of forests in the world, which is 0.11 ha as compared to 0.50 ha in Thailand and 0.8 ha in China

The security of Indian fragile ecosystem, therefore, warrants sustainable consumption of natural resources and protection from environmental degradation.

#### **5) Significance of SMEs in Industrial Output and Hazardous Waste Generation**

Nearly 50% of the total industrial output in India is contributed by the SMEs. They also account for 60 to 65% of the total industrial pollution. However, most of these industries generate hazardous wastes, which find their way uncontrolled into the environment. According to the National Productivity Council, New Delhi (India), there are more than 3 million small and medium scale industries, which are spread throughout the country in the form of clusters/industrial estates. SMEs in India cannot afford to adopt and maintain adequate hazardous waste treatment and disposal technologies. In the absence of common disposal facilities, the waste generators have been accorded temporary permission to store waste in their premises except in areas serviced by common facilities that have come up in the States of Gujarat, Maharashtra and Andhra Pradesh (where storage period should not exceed for more than 90 days). The lack of common facilities has been a major factor in mushrooming of illegal dump sites since most of the units in the small and medium sector do not have adequate space within their premises to arrange for storage over several years. Therefore, it is urgently required to make available common hazardous waste treatment and disposal facility in the areas in all the States where SMEs are operating.

There has been considerable delay in notifying sites for hazardous waste disposal. Of the 93 sites identified, only 30 have been notified. The State Governments should not only expedite notification of sites based on environmental impact assessment but play a catalytic role and persuade the industry associations to set up common facilities. Such common facilities would need to be planned based on reliable estimate of current waste generation and projections for the future. As this was not done, hazardous waste dumping was rampant in all the States which prompted in public interest litigations in High Courts and Supreme Court.

## 6) Supreme Court Interventions on non-implementation of HWM Rules

### ◆ Petition complaining the violation of fundamental rights

Though the HWM Rules came into existence in 1989, Rules they were never implemented in letter and spirit. The non-implementation resulted in indiscriminate and illegal dumping of hazardous waste on land. Due to alarming situation created by illegal dumping of hazardous waste, its generation and serious and irreversible damage as a result thereof to the environment, flora and fauna, health of animals and human beings, a petitioner approached the Supreme Court under Article 32 complaining of violation of Article 14 and 21 of the Constitution of India. The petitioner has, *inter-alia*, relied upon the Basel Convention which was signed by India on 15 March 1990 and ratified on 24 June, 1992. The ratification of Basel Convention by India shows the commitment of the country to solve the problem on the principles and basis stated in the said document.

The HWM Rules have been amended twice (2000 and 2003) during pendency of this petition, the latest amendment being on 23 May, 2003.

Considering the magnitude of the problem and the extent of hazardous waste generated, this Court issued notices to all the State Governments, Central Pollution Control Board and State Pollution Control Boards, Pollution Control Committees in the Union Territory, so as to identify the problem, and the extent of such waste, availability of the disposal sites and various other aspects relevant to minimising the generation, its proper handling and disposal with a view to safeguard the environment.

### ◆ Orders of the Supreme Court prior to this petition

Prior to above-mention petition, the Supreme Court had issued the following orders which are listed in a chronological order:

By order dated 5 May 1997, considering the decision that have been taken by 65 conference Parties by consensus to ban all exports of hazardous wastes from Organisation for Economic Co-operation and Development (OECD) to non-OECD countries immediately for disposal, the Court, *inter alia*, directed that no authorisation/permission would be given by any authority for the import of hazardous waste items which have already been banned by the Central Government or by any order made by any Court or any other authority and no import would be made or permitted by any authority or any person, of any hazardous waste which is already banned under the Basel Convention or to be banned hereafter with effect from the dates specified therein. In view of the magnitude of the problem and its impact, the State Governments were directed to show cause why an order be not made directing closure of units utilising hazardous waste where provision is not already made for requisite safe disposal sites. It was further ordered that cause be shown as to why immediate order be not made for closure of all unauthorised hazardous waste handling units.

In the order dated 4 August 1997 it was observed that all State Governments and Union Territories have not taken steps required under the applicable laws as well as earlier

directions of the Court and have not placed before the Court all material facts in spite of considerable time having been given. It has been further observed that all the authorities do not appear to appreciate the gravity of situation and need for prompt measures being taken to prevent serious adverse consequences. Even Central Government was not given full information by all the State Governments about the compliance of the Directions of this Court. Under these circumstances, it was observed that an appropriate Committee deserves to be constituted to ensure that needful is done to arrest further growth of the problem.

◆ **Constitution of the High-Power Committee**

In this background, by order dated 13 October 1997, a High Power Committee (HPC) with Prof. MGK Menon as its Chairman was constituted to examine all matters in depth relating to hazardous waste and to give a report and recommendations at an early date. The fourteen Terms of Reference on which the High Powered Committee was required to give its report and recommendations were:

- 1) Whether and to what extent the hazardous wastes listed in Basel Convention have been banned by the Government and to examine which other hazardous wastes, other than listed in Basel Convention and Hazardous Wastes (Management and Handling) Rules, 1989, required banning.
- 2) To verify the present status of the units handling hazardous wastes imported for recycling or generating/recycling indigenous hazardous wastes on the basis of information provided by respective States/UTs and determine the status of implementation of Hazardous Wastes (Management and Handling) Rules, 1989 by various States/Union Territories and in the light of directions issued by the Supreme Court.
- 3) What safeguards have been put in place to ensure that banned toxic/hazardous wastes are not allowed to be imported?
- 4) What are the changes required in the existing laws to regulate the functioning of units handling hazardous wastes and for protecting the people (including workers in the factory) from environmental hazards?
- 5) To assess the adequacy of the existing facilities for disposal of hazardous wastes in an environmentally sound manner and to make recommendations about the most suitable manner for disposal of hazardous wastes.
- 6) What is further required to be done to effectively prohibit, monitor and regulate the functioning of units handling hazardous wastes keeping in view the existing body of laws?
- 7) To make recommendations as to what should be the prerequisites for issuance of authorisation/permission under Rule 5 and Rule 11 of the Hazardous Wastes (Management and Handling) Rules, 1989.
- 8) To identify the criteria for designation of areas for locating units handling hazardous wastes and waste disposal sites.

- 9) To determine as to whether the authorisation/permissions given by the State Boards for handling hazardous wastes are in accordance with Rule 5(4) and Rule 11 of hazardous waste Rules, 1989 and whether the decision of the State Pollution Control Boards (CPCBs) is based on any prescribed procedure or checklist.
- 10) To recommend a mechanism for publication for inventory at regular intervals giving area-wise information about the level and nature of hazardous wastes.
- 11) What should be the framework for reducing risks to environment and public health by stronger regulation and by promoting production methods and products which are ecologically friendly and thus reduce the production of toxics?
- 12) To consider any other related areas as the Committee may deem fit.
- 13) To examine the quantum and nature of hazardous waste stock lying at the docks/ports/Inland Container Depots (ICDs) and recommend a mechanism for its safe disposal or re-export to the original exporters.
- 14) Decontamination of ships before they are exported to India for breaking.

The High Powered Committee submitted its Report on 20 April 1998. The Report had highlighted the industrial operations (solid, liquid, gaseous waste) which results in generation of the hazardous wastes including industries recycling hazardous waste and others as detailed in the scope of work. The HPC has concluded that the hazardous wastes situation in India is fairly grim.

On the basis of the findings of the High Powered Committee, directions were issued in terms of the order dated 10 December, 1999.

#### ◆ Order of the Supreme Court on October 14, 2003

On the basis of the recommendations of High Powered Committee, Supreme Court had passed an order on 14 October 2003. The legal principles on which the order is based are:

- 1) In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it.
- 2) Environmental concerns have been placed at same pedestal as human rights concerns, both being traced to Article 21 of the Constitution of India. The rights to information and community participation for protection of environment and human health are also rights which flow from Article 21. The Government and authorities have thus to motivate the public participation. These well-shrined principles have been kept in view by the Court while examining and determining various aspect and facets of the problems in issue and the permissible remedies.
- 3) Applicability of the precautionary principle and polluter pays principle, which are part of the concept of sustainable development, is to be ensured in all decision making processes.

At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided.

#### ◆ **Compliances**

Highlights of the order include certain compliances on the part of Ministry of Environment and Forests (MoEF) and other ministries of the Central Government, Central and State Pollution Control Boards and Pollution Control Committees. The highlights and compliances are summarised as under:

- a) Ministry of Environment and Forests (MoEF)
- b) Inter-sectoral co-ordination

The MoEF is the focal point in the Government of India for all matters relating to the environment. The directions sought for by the petitioner to which MoEF has agreed shall be implemented in letter and spirit. The implementation wherever it is to be done by the MoEF, should be done forthwith and wherever it is required to be done by any other Ministry or Authority or Agency, the Nodal Ministry/MoEF shall ensure that it be so implemented. As the Nodal Ministry, its first and foremost responsibility is to ensure co-ordination with all other Ministries that come into the picture. HPC discussions and studies show that there are major roles that have to be played by other Ministries as well.

#### **For example:**

- 1) All imported goods have to pass through Customs, which comes under the Ministry of Finance.
- 2) All matters relating to imports and exports are handled by the Ministry of Commerce under whom the Director General of Foreign Trade (DGFT) and Director General of Commercial Intelligence (DGCIS), both located in Kolkata, operate.
- 3) The need for employment generation, and consequently, matters relating to labour and industrial policy, industrial safety, occupations health hazards, compensation for disability/death are all matters dealt with by the Ministry of Labour.
- 4) A significant part of environmental pollution relates to water (both surface water and, particularly, groundwater); the Ministry of Water Resources is clearly involved.
- 5) Toxicological aspects of hazardous wastes like heavy metals, hormone disrupting chemicals and such other issues have to be dealt with by the Ministry of Health. Major research facility that comes under it is the Indian Council of Medical Research. Council of Scientific and Industrial Research (CSIR) and the Department of Biotechnology, on the other hand, comes under the Ministry of Science and Technology.

- 6) Ministry of Petroleum and Natural Gas is involved in respect of the oil sector while the Ministries of Railways, Defence and Surface Transport deal with matters relating to large scale use of battery systems and their disposal.
- 7) Ministry of Law is to be interacted on matters that relate to legislation, and extensively with the State Government in relation to implementation of laws, rules and regulations, and guidelines at grassroots level.

In case of any doubt or dispute, it would be the responsibility of MoEF to satisfy this Court. Further, the Ministry shall also develop a mechanism to ensure that wherever its directions are not implemented, necessary action shall be taken against those who are responsible for it. If any Inter-Ministerial consultation is required, the lead is to be taken by MoEF to see that such consultation takes place and effective measures are taken. The HPC believes that the principal role and responsibilities of the MoEF should be to inculcate the necessary concern and sense of urgency, and to ensure co-ordination amongst the various Ministries and State Governments on issues as they come up. Such co-ordination can be at the level of meetings taken by the Minister/Secretary who chairs Secretary-level inter-Departmental meetings.

◆ **Consideration for zero import of hazardous waste**

The import of 29 items has been prohibited under Schedule-8 of the HW Rules as amended in May, 2003 while the Basel Convention has banned 76 items. The Ministry of Environment and Forests is required to examine the remaining items. It is implicit that if more items are banned, the corresponding Notification shall be issued by the Central Government under Section 11 of the Customs Act. Section 11 of the Customs Act, 1962 empowers the Central Government to prohibit either absolutely or subject to such conditions as may be specified in Notification the import and export of the goods if satisfied that it is necessary so to do for any of the purposes stated in sub-section (2). The Court directs that, in addition to 29 items, the MoEF will take into consideration what has been stated under heading 'A' (Imported Hazardous Waste which need to be included in the HWM Rules and ban of other Wastes) in the directions sought for by the petitioner on the basis of the recommendation of HPC. Further, the Ministry should also examine the question of banning used edible oil, cow dung, plastic scrap used PVC in any form, pet bottles etc. which, though not covered by Basel Convention, have hazardous impacts in terms of the HPC Report. According to the recommendations of HPC, these items also deserve to be banned. The Ministry shall also examine any other item which may have similar hazardous impact.

Another aspect that has been brought to the notice of the Court is the malpractice arising out of purported import of some permitted items. It appears that unscrupulous traders in the garb of importing used oil or furnace oil, in fact, import waste oil which is a banned item. They also illegally import zinc wastes despite it being not permissible except in case where more than 65% of zinc can be recovered from the wastes. The Court is of the opinion that an enquiry should be conducted and appropriate action taken against concerned officer/officers of department responsible therein and, if necessary, a specific provision to that effect can be incorporated in Rules, wherever needed.

In regard to import of sludge oil under Marpol Convention the Court directed the Central Government to file an affidavit indicating in detail how the said oil is dealt with after import. It shall also be clarified in the affidavit whether such oil can, in the perception of the Central Government, be imported or it is only a technical import at the time of discharge of oil as suggested in the affidavit from MoEF dated 14 February 2003.

#### ◆ Disposal of illegally imported wastes

It has been brought to the notice of the Court that 15 importers, whose names and addresses are known, illegally imported waste oil in 133 containers in the garb of lubricating oil. The HPC in its report (pp. 170-171) had noticed the presence of the consignment of this waste oil. On direction of the Court, the laboratory tests undertaken have shown the same as hazardous waste oil. By order dated 5 May 1997, the Court directed that no import would be made or permitted by any authority or any person of any hazardous waste which is already banned under the Basel Convention or to be banned hereafter with effect from the date specified therein. The importers were directed to show cause why the consignment in question shall not be ordered to be re-exported or destroyed at their cost and why the amount spent on analysis in the laboratory be not recovered from them and why they should not be directed to make payment of compensation of Polluter Pays Principles and other action taken against them. The Ministry would be empowered to have assistance from Police/District Magistrate/Metropolitan Magistrate for affective service of notice on the importers.

#### 7) Awareness creation

Another important role that the MoEF has to play is to create awareness in society and other stakeholders at large, and to ensure educational training programmes. The latter should certainly cover those directly concerned with implementation programmes, e.g. environmental scientist, officials etc.

#### ◆ Research and development initiatives

The MoEF also has a responsibility to ensure that research and development is conducted on scientific and technological aspects relating to this area. By and large, broad ranging and futuristic research has to be conducted with the support of the Central Government. It is unlikely that, in the present financial situation, any significant financial support will come from State Governments for this. The MoEF should also encourage industry and industrial associations to participate in research, particularly related to their specific areas of activity e.g. ETPs, CETPs, disposal facilities, clean and cleaner technologies, etc. There can also be a cess levied on those industries dealing with hazardous material, which should be specifically earmarked for the promotion of research and development.

#### 8) Sustainable development initiatives

The MoEF has to work closely with the Planning Commission in the area of sustainable development. The need for development programmes to increase production, productivity and to create employment is well recognised. GDP growth, industrialisation, energy

production, exports are all part of this. However, this cannot be at the cost of present and the future in terms of quality of life for society as a whole. Industrial policy relating to what industries should be encouraged and permitted, the role of SMEs, issues relating to industrial estates (including their governance, facilities to be provided etc.), land use patterns, urban development and zoning and such other matters are of a general nature which call for an overall national policy. These cannot be dealt with by any individual Ministry Department with concerns only for its limited area of responsibility. MoEF has the responsibility to put forward the environmental implications implicit in various policy options. The MoEF will be the focal point in the Government of India with regard to the international issues that arise in this area.

◆ **Testing facility creation**

The MoEF must be encouraged to make use of the vast technical capabilities that exist in the country. This may be with Central Pollution Control Board (CPCB), suitably strengthened and assigned necessary responsibilities. In addition, the State Pollution Control Boards (SPCB's) must be equipped and staffed properly, as also laboratories coming under various scientific agencies in the country and in the private sector. The MoEF must ensure that adequate facilities are available at the gateway points in the country (e.g. Ports, ICDs, Customs areas) to make the first level measurements to aid decision-making; as also certified laboratories (whether these are in the public or the private sector) which can provide reports that are scientifically valid and credible. Increasingly, exports will have to be environmentally compliant suitably labelled and certified.

◆ **Location of industrial sites and secured landfills**

The MoEF would consider the suggestion of High Power Committee (HPC) regarding development of National Policy for landfills sites. The suggestion is to the following effect:

In industrialised countries, the selection of sites for disposal facilities lies with the Government. In view of this, a national policy needs to be developed for locating such centralised/common Treatment, Storage, and Disposal Facilities (TSDFs). The location of final disposal facilities should be based on the total quantity of hazardous waste generated in the individual State. For effective monitoring and an economically viable facility, it is important to locate a centralised facility within a distance of about 100 km. of the waste-generating units. Those States which generate less than 20,000 tonnes per year of hazardous waste may be permitted to have only temporary storage facilities and then transfer the waste to the final treatment and disposal facilities in the nearby State. It is not necessary and also not advisable to develop a facility in each and every District and/or State as land is a valuable natural resource.

◆ **National policy document on hazardous waste**

MoEF is directed to either itself or through the CPCB or any other agency draft a policy document on hazardous waste generation and its handling within the country. While

examining this aspect, the following recommendations of the HPC would be kept in view:

The policy document should emphasize a commitment to the recycling of wastes and propose incentives for encouraging and supporting recycling. Industries must be given a clear message that they must show concrete and tangible results as far as prevention and reduction of wastes are concerned. If they do not, they should be made to pay a waste generation tax. The policy document should enunciate a doctrine of partnership between SPCBs, entrepreneur and other stakeholders like the community, which will be involved in monitoring, preventing and reducing hazardous waste generation. The policy should review further growth of non-ferrous metallic waste, waste oil and used lead acid battery recycling in the SSI sector.

The MoEF and Health Ministry shall examine and respond to the recommendations of HPC which states that MoEF and Ministry of Health are required to compile an extensive data regarding exposure and epidemiological studies (with special reference to endocrine disruptors). Directions may also be issued for centres of excellence for environmental health science and for existing institutes engaged in related activities. A network of R&D institutions, medical colleges and universities may also be created. The MoEF should encourage the industries and their associations to participate in research activities concerning environmental health. These studies should be made public so that people could know about toxicity and its impact. A cess can be levied on the industries dealing with H.W., which should be specifically earmarked for promotion of R&D.

◆ **Implementation of Plastic Waste Recycling Rules, Battery Waste Recycling Rules, Draft Used Oil (Management and Handling) Rules**

MoEF is directed to ensure compliance of “Recycled Plastics, Plastics Manufacture and Usage Rules, 1999” and the “Batteries Management and Handling Rules, 2001”. The Ministry shall issue directions to all Public Sector Institutions not to openly auction their hazardous wastes but only to those who are registered units having Environmentally Sound Technologies (EST).

MoEF has constituted a Standing Committee on hazardous waste to advise the Ministry on issues pertaining to hazardous waste and other related areas. The Terms of Reference of the said Committee are as follows:

a) Characterisation of hazardous wastes:

Identification of hazardous waste and characterisation of the constituents that would render such wastes hazardous

b) Prohibition/restriction of hazardous wastes -

Identification and listing of hazardous wastes of prohibition/restriction for exports/imports and handling of these wastes

c) Environmentally sound technologies -

Identification and list of environmentally sound technologies for reprocessing and recycling of wastes, treatment and disposal; and MoEF should consider making a provision for bank guarantee being given by importer while seeking permission to import used oil, furnace oil and zinc wastes to be released only on the imported consignment being found to be in conformity with the declared item of import.

◆ **Responsibilities of Ministries of Labour and Industry**

The Court considered the suggestion of HPC under term of reference no. 4 relating to impact of hazardous waste on worker's health and directed the Ministry of Labour and Ministry of Industry to constitute a special committee to examine the matter and enumerate medical benefits which may be provided to the workers having regard to the occupational hazard as also keeping in view the question of health of the workers and the compensation which may have to be paid to them. The Court directed the Ministry of Labour and Ministry of Industry to constitute a special committee to examine the matter and enumerate medical benefits which may be provided to the workers having regard to the occupational hazard as also keeping in view the question of health of the workers and the compensation which may have to be paid to them. The Committee while examining the recommendations, shall also keep in view the judgment of this Court in *Consumer Education and Research Centre v. Union of India* (1995 (3) SCC 42).

◆ **Responsibilities of the Central Government**

The Export and Import Policy (Exim Policy) issued from time to time, under the Foreign Trade (Development and Regulations) Act, 1992, *inter alia*, sets out the goods, import whereof is prohibited. We direct the Central Government that the said policy shall also correspond with the Hazardous Waste Rules, as amended from time to time, which means that if import of any item is prohibited under Hazardous Waste Rules, it shall be reflected in the prevalent Exim Policy.

For design and setting up of disposal facility as provided in Rule 8-A of HW (M&H) Rules, the criteria for Hazardous Waste Landfills published by CPCB in February, 2001 and the Manual for Design, Construction and Quality Control of Liners and Covers for Hazardous Waste Landfills published in December 2002 shall be followed and adhered to. 89 sites were identified out of which 30 were notified. Out of 30, 11 common landfills are ready and operational - one in Maharashtra, one in Andhra Pradesh and nine in Gujarat and that some of these landfills are in accordance with the Criteria and Manual. The steps are being taken to expedite the completion of the remaining landfills. With this development in view, steps should be taken towards shifting of hazardous waste from wherever it is permissible to these landfills. The transport of hazardous waste would be in accordance with Rule 7 and the Guidelines issued by Hazardous Wastes Management, Handling and Transboundary Movement Rules 2008.

Under Article 9 the HPC has recommended that in order to deter any transboundary movement of hazardous wastes or other wastes, i.e. illegal traffic, the national/ domestic

legislation shall be enacted/ amended appropriately to prevent and punish illegal traffic. The Government is directed to examine the aspect and file a report.

◆ **Responsibility of Central Pollution Control Board, SPCBs and PCCs**

All SPCBs /PCCs are required to implement the directions that may be issued by the Ministry of Environment and Forests (MoEF).

The SPCBs are directed to produce a comprehensive report on illegal hazardous waste dump sites in their jurisdiction. Reports should be based on inspection, assessment of the size of the dump site, age, whether the dump site is passive or active and whether precautions have been taken to prevent damage to the environment. The SPCBs will and PCCs also take samples of the groundwater in the vicinity of the dump site at different point and prepare a report on contamination of the groundwater, if any, and if so, to what extent.

The SPCBs and PCCs are directed to draw up a plan with financial estimates for immediate measures that may be required to stop environmental damage. A full scale rehabilitation should also be prepared, together with detailed estimate of costs. All these reports will be sent to the CPCB.

The CPCB shall issue guidelines to be followed by all concerned including SPCBs and PCCs and the operators of disposal sites for the proper functioning and upkeep of the said sites.

SPCBs and PCCs are directed to close forthwith those units which are functioning without valid authorisation issued under the HWM Rules. The authorisation for any unit should not be issued or renewed until the occupier undertakes that they have a programme in place to reduce the volume or quantity and toxicity of hazardous wastes to the degree determined by them to be economically practicable and that the proposed method of treatment, storage and disposal is the most practicable method currently available to them which minimises the present and future threat to human health and environment.

Further, for effective implementation of the directions and to regulate the hazardous waste, it is necessary to strengthen the SPCBs and CPCB's by providing them the requisite infrastructure and manpower so that they can issue the necessary guidelines to monitor the handling of hazardous wastes as suggested under Terms of Reference.

Particular care must be taken to prevent industries that use Indian soil for processing of products and commodities of which production has been banned in other industrial countries. Units which propose to engage in this activity should not be permitted or licensed under any circumstances. The Rules should effectively prevent this. It is not enough to protect the country from the import of hazardous wastes; one should also look carefully at the import of those industries that will generate problematic hazardous wastes. The import of industries or product must be carefully screened in order to avoid dirty technologies and products, and the CPCB should research on this so that the relocation of these industries from industrialised countries to India is effectively thwarted and technology transfer does not turn into hazardous transfer. The research done in this

regard should be communicated by the CPCB to the SPCBs to form part of their decision-making process regarding absence of consents and authorisations. After research, if necessary, CPCB shall take up the matter with the MoEF for requisite regulatory measure.

The HPC has observed that incineration is the most important treatment method for the destruction of all high calorific and highly toxic wastes. High temperature incineration at 1200°C mineralizes (breaks down into basic non-toxic components) all kinds of organic matter. Destruction efficiencies of effectively 99.99% of toxic compounds with no generation of persistent organic pollutants (as products of incomplete combustion) should be prima criteria for design of such disposal systems. It has further observed that in addition, while designing the disposal system, relevant operating parameters for example temperature, residence time and turbulence should be considered. On inspection it was found by HPC that barring a few, most of the incinerators are mere combustion chambers or industrial boilers where the maximum temperature is around 500°C, which is much too low. Often, they are not equipped with adequate air pollution control devices and all types of wastes, including non-chlorinated with chlorinated hydrocarbons, being burnt. There seems to be an urgent need to develop the design criteria for incinerators to safeguard the environments so as to have proper and efficient working of incinerators close to the place of generation of hazardous wastes. The design criteria is required to be set by the CPCB which is now ready in the form of a draft report.

### **Inventory**

The Court directs that toxic inventory prepared by SPCBs regarding the generation of hazardous wastes, after its verification by CPCB shall be filed to this Court so that order for its conversion into National Toxic Inventory can be passed. The inventorisation is in progress and the information is provided in the Action Taken Reports (ATRs) submitted by the SPCBs and PCCs to the CPCB.

### **Dump sites**

The Toxic inventory with regard to hazardous waste dump sites in different States should be prepared by SPCBs and PCCs and after verification by CPCB, shall be filed in this Court so that the orders can be passed on the same being treated as Authenticated National Inventory on hazardous waste dump site.

### **Steps before clearance**

Before clearance of any hazardous wastes imported to India the Port and Customs authorities would ensure that the consignment in question corresponds with the details of authenticated copy of Form 7 sent by the country of export. CPCB, for a period of two year, would be empowered to monitor the import of hazardous waste, which means, it would be empowered to undertake random check from time to time as a safeguard.

### **Testing**

The testing procedure and criteria evolved or which may be evolved by CPCB shall be followed by the concerned laboratories.

### ◆ **Compliances at a glance**

In the order of 14 October 2003, the action shall be taken as per the schedule hereunder:

### ◆ **Public participation and third-Party audit**

It has been recommended that public participation should be secured in the management of environment pollution and hazardous waste to maximum possible extent. Suggestions given in these regards are as under:

Selected local residents should be appointed as wardens for environmental surveillance, particularly to take note of illegal dumping of hazardous wastes.

Access to public records with the environment protection authorities should be freely allowed to the public, as the right to a healthy environment has been defined as part of the Right to Life under Article 21 of the Constitution.

Relevant important information should be displayed on notice boards and newspapers and communicated through radio, television and the Internet. The HPC would like to see all industries, involved in hazardous chemicals and the generating hazardous wastes display on-line date outside the factory gate, on quantity and nature of hazardous chemicals being used in the plant, as well as water and air emissions and solids wastes generated within the factory premises. If such date is not made available, the unit should be asked to show cause or even be asked to close down.

Informers and “whistle-blowers” within industry, who provide information, should be protected and strict confidentiality about them maintained. Third-party audit of hazardous wastes, where the audit team includes members of the community, should be made a routine practice.

### ◆ **Hazardous waste from ship breaking**

Ship breaking activity grew into a full-fledged industry by 1979, when Government of India recognised it as a manufacturing industry. It has been recognised as a manufacturing process as per the Central Excise and Sales Act, as well. The ship braking activities are carried out at various coasts of the county; however, the main centre lies on the West Coast at Alang, Gujarat. The geography of Alang makes it ideal for ship breaking. The beach is low and tides are as high as 10 meters. During low tide, the sea recedes by three km. The industry was set up in Alang in 1982, By 1990, over 100 ships started landing in Alang each year. In 1996-97, the industry scrapped a record 348 ships. The annual turnover of the industry stands at Rs. 6,000 crore. The profit margins in the ship breaking industry are huge and big contractors make vast profits.

On an average 200 ships per year are being cut at the Alang Ship Breaking Yard. The ship breaking industry is generating re-rollable steel scrap, directly used by the re-rolling industries at the down stream. At present, ship-breaking industry is producing around 2 million tones of re-rollable steel per annum. During the process of ship breaking, pollutants like oil, paint-chips, debris, rubber and plastics insulating materials, thermocole, glass wool, asbestos, etc. find their way to marine/terrestrial ecosystem. Many times the

ships contain unidentified matters and toxic chemicals like paints / components, lead, heavy metals, poly-chlorinated byphenyls (PCB), asbestos, tin etc. Water pollutants, generated during ship breaking, result in change in water quality and marine ecosystem especially in inter-tidal zone. The open burning of solid wastes including hazardous wastes, becomes a potential source of air pollution.

The accidental death rate reported at ship breaking yard is high. The reasons of death are gas leakage, explosions; inadequate safety measures during cutting, breaking and other operations.

The Court did not suggest discontinuing of ship breaking activity but noted that it deserves to be strictly and properly regulated. When the ship arrives at a port for breaking, the concerned authorities have to be vigilant about the hazardous waste which may be generated if appropriate timely action by various agencies, in particular, Maritime Board and the SPCB are not taken. The major ship breaking activity in India is at Alang in State of Gujarat and, therefore, Gujarat Maritime Board and Gujarat SPCB have to be responsive to the consequences of the appropriate steps to be taken before the breaking activities start. According to the recommendation of HPC, the Inter Ministerial Committee comprising Ministry of Surface Transport, Ministry of Steel, Ministry of Labour and Ministry of Environment should be constituted with the involvement of Labour and Environmental organisations and representatives of the ship breaking Industries.

The Court has accepted the following recommendations of HPC -

- 1) Before a ship arrives at port, it should have proper consent from the concerned authority or the State Maritime Board, stating that it does not contain any hazardous waste or radioactive substances.
- 2) The ship should be properly decontaminated by the ship owner prior to the breaking. This should be ensured by the SPCBs.
- 3) Disposal of waste material, viz. oil, cotton, dead cargo of inorganic material like hydrated/solidified elements, thermocole pieces, glass wool, rubber, broken tiles, etc. should be done in a proper manner, utilising technologies that meet the criteria of an effective destruction efficiently of 99.9%, with no generation of persistent organic pollutants, and complete containment of all gaseous, liquid and solid residues for analysis and, if needed, reprocessing. Such disposed of material should be kept at a specified place earmarked for this purpose. Special care must be taken in the handling of asbestos wastes, and total quantities of such waste should be made known to the concerned authorities. The Gujarat Pollution Control Board should authorise appropriate final disposal of asbestos waste.
- 4) The ship breaking industries should be given authorisation under Rule 5 of the H.W. Rules, 2003, only if they have provisions for disposal of the waste in environmentally sound manner. All authorisation should be renewed only if an industry has facilities for disposal of waste in an environmentally sound manner.

- 5) The State Maritime Board should insist that all quantities of waste oil, sludge and other similar mineral oils and paints chips are carefully removed from the ship and taken immediately to areas outside the beach, for safe disposal.
- 6) There should be immediate ban of burning of any material whether hazardous or non-hazardous on the beach.
- 7) The concerned State Pollution Control Board(s) be directed to close all units which are not authorised under the HW Rules.

The plots where no activities are being currently conducted should not be allowed to commence any fresh ship breaking activity unless they have necessary authorisation.

The Gujarat PCBs should ensure continuous monitoring of ambient air and noise level as per the standards fixed. The Gujarat PCBs be further directed to install proper equipment and infrastructure for analysis to enable it to conduct first level inspection of hazardous material, radio-active substances (wherever applicable).

The Gujarat SPCB will ensure compliance of the new Gujarat Maritime Board (Prevention of Fire and Accidents for Safety and Welfare of Workers and Protection of the Environment during Ship breaking Activities) Regulations, 2000, and should submit a compliance report to the Court.

The Notification issued by GMB in 2001 on Gas Free for Hot Work, should be made mandatory and no ship should be given a beaching permission unless this certificate is shown. Any explosion irrespective of the possession of certification should be dealt sternly and the license of the plot holder should be cancelled and explosives inspector should be prosecuted accordingly for giving false certificate.

A complete inventory of hazardous waste on board of ship should be made mandatory for the ship owner. Beaching permission should not be granted without such an inventory. This inventory should also be submitted by the GMB to concerned SPCBs to ensure safe disposal of hazardous and toxics wastes.

Gujarat Maritime Board and Gujarat SPCB officers should visit sites at regular intervals so that the plot owners know that these institutions are an Inter-Ministerial Committee comprising Ministry of Surface Transport, Ministry of Steel, Ministry of Labour and Ministry of Environment should be constituted with the involvement of labour and environment organisations and representatives of the ship breaking industry.

The SPCBs along with the State Maritime Board should prepare land fill sites and incinerators as per the CPCB guidelines and only after prior approval of the CPCB. This action should be taken in a time bound manner. The maximum time allowed should be one year.

At the international level, India should participate in international meetings on ship breaking at the level of the International Maritime Organisation and the Basel

Convention's Technical Working Group with a clear mandate for the decontamination of ships of their hazardous substances such as asbestos, waste oil, gas and PCBs prior to exports to India for breaking. Participation should include from Central and State level.

The above conditions also apply to other ship breaking activities in other Coastal States, if practiced.

#### ◆ **Constitution of the Supreme Court Monitoring Committee**

It appears from the HPC Report that about 80% of country's hazardous waste is generated in the State of Maharashtra, Gujarat, Tamil Nadu and Andhra Pradesh. This may also show good industrial growth in those States. In order to ensure that the generation of hazardous waste is minimum and it is properly handled in every state including the aforesaid states, in particular, it is necessary to appoint a Monitoring Committee to oversee the compliance of law, directions of this Court and Rules and Regulations.

The Court, therefore, constituted a Monitoring Committee comprising of the following members as also Dr. Claude Alvares, NGO and Dr. D.B. Boralkar, now the Member Secretary of the Maharashtra Pollution Control Board. This Committee shall oversee that the direction of the Court are implemented timely. It would also oversee that the aspects to which the Ministry has agreed are implemented in letter and spirit and without any laxity or delay in the matter. It would be open to the Monitoring Committee to co-opt a representative of the State Government or State Pollution Control Boards or any other person or authority as the Committee may deem fit and proper. The Monitoring Committee shall also file quarterly reports in this Court.

### **9) Priorities in Hazardous Waste Management**

Ranking of options in Hazardous Wastes Management follows the widely accepted hierarchical preference for waste management in general. Accordingly, waste avoidance and minimisation ranks the highest followed by recycling and safe disposal of waste generated.

#### ◆ **Waste Avoidance and Waste Minimisation**

Given the difficulties in handling of hazardous wastes and the serious adverse impacts that result from improper management of such wastes, waste avoidance and minimisation gather added significance. Unlike other sectors of industrial activity, it is necessary to have a closer look at processes generating hazardous wastes rather than leave technological options entirely to the entrepreneur. Such an assessment of the avenues for waste avoidance/minimisation would naturally be industry-specific and product-specific.

On priority, it would be necessary to identify industry sectors which continue to adopt out-dated and highly polluting technology generating significant quantities of hazardous wastes. For example, the paper and pulp industry continues with elemental chlorine based bleaching whereas there has been a major shift the world over to elemental

chlorine-free bleaching. Similarly, the conversion of mercury cell based caustic soda manufacturing to membrane cell process would need to be expedited. Economic incentives, wherever needed for switch-over to cleaner production processes, would need to be provided to offset additional financial burden and make such switch-over a financially attractive option.

The entire chemical industry would need to be studied through industry specific assessments on cleaner technology options leading to waste avoidance / minimisation and resource recovery. Within the chemical industry group, major segments such as pesticides and pesticide intermediates, dyes and dye intermediates as well as bulk drugs and intermediates would require special focus. In these industry categories, wherever laboratory scale demonstrations have been completed as in the case of H-acid manufacture wherein suitability of catalytic hydrogenation has been well established, pilot plants would need to be set up to enable speedier adoption by the industry. In cases wherein, techno-economic feasibility of cleaner production process has been well established and already adopted by some units such as adoption of cyanide-free electroplating, a dialogue should be started forthwith with the concerned industry associations for switch-over within a specified time period.

In the petrochemicals, pesticides and dyes and dye intermediates sectors, product-wise opportunities available for recovery of resources such as solvents, other reagents and by-products as well as re-generation of spent catalysts have been well documented. This exercise needs to be followed up by setting up dedicated task forces under the guidance of concerned CSIR laboratories and such task forces could serve as an inter-face between industry associations and CSIR laboratories to carry the work forward for actual application in field conditions.

#### ◆ Recycling of Hazardous Waste

Recycling of non-ferrous metallic wastes such as zinc dross, brass dross used lead acid batteries, copper oxide mill scale and used lubricating oil offer attractive options for resource recovery in an environmentally sound and techno-economically feasible manner. The current gap between demand and supply of lead, zinc and copper as well as the projected widening of the gap due to rapid growth in demand arising from the automobiles sector etc. serve as added incentives for re-cycling. As compared to primary production of metals, re-cycling is energy efficient and environment friendly subject to a careful selection processing technology and disposal of wastes generated.

At present, there are about 200 recyclers of non-ferrous metallic wastes/waste oil who are registered under the HWM Rules. Registrations have been granted based on their possessing facilities for environmentally sound re-processing and suitable facilities for disposal of wastes generated. However, but for a few exceptions, almost the entire recycling takes place in the small scale sector. As such, there are serious limitations on technology upgradation which would be necessary to ensure that re-processing is done as per guidelines evolved by the Basel Convention.

In order to promote technology upgradation, it would be necessary to make a distinction between re-processors with state-of-the-art facilities which meet the Basel Convention guidelines and those that do not. The current import regime would need to be re-examined to give access to imports of non-ferrous metallic wastes to only State-of-the-art facilities from a prospective date. In fact, such Units could also be given preferential access to wastes generated within the country. Need for other economic incentives would also need to be considered to offset additional burden arising from enhanced capital investment and recurring expenditure on pollution control and waste disposal.

While the traditional approach to pollution control in India has been to stipulate industry-specific standards and leave the choice of technology to the entrepreneur, a break from convention was made in the case of used oil re-processing and technology upgradation was legally mandated from a prospective date. Such an approach would need to be examined for its usefulness and relevance in re-cycling of non-ferrous metallic wastes as well.

Despite the registration scheme for recyclers, the menace of recycling in the unorganised sector with all its attendant environmental and health hazards still continues. This underscores the importance of channelisation of wastes generated. While the battery Rules, 2000 mandate return of used lead acid batteries, compliance remains unsatisfactory. It would be necessary to look into the causes thereof and devise suitable economic incentives such as advance recycling tax which is suitably structured to provide adequate incentive for the battery users to return used batteries to authorised dealers. Simultaneously, an organised drive would be necessary to break the nexus between scrap dealers, backyard smelters and those engaged in battery re-conditioning.

At present, there are no re-processing facilities in the country to recover toxic metals such as mercury from thermometers, tube-lights and cadmium from batteries, etc. Considering the potential for serious health impacts posed by co-disposal of such hazardous wastes with municipal solid wastes, development of a system for channelisation of such wastes and development of re-processing facilities deserve to be accorded high priority.

#### ◆ **Safe disposal of Hazardous Waste Generated**

The third and the last option is to dispose of the hazardous waste safely. Depending on the waste category, land disposal or incineration could be adopted. Design and operation of such facilities, either captive or common need to strictly adhere to the guidelines. Supervision of such facilities during construction stage is of paramount importance. Common facilities should invariably be equipped with laboratory facilities to verify waste categorisation.

#### ◆ **Setting up of Common Facilities**

At present, there are 3 integrated Hazardous Waste Management facilities in the States of Andhra Pradesh and Maharashtra in addition to 11 common landfill facilities available in Gujarat. States are currently at various stages of planning their common facilities. Common facilities including integrated facilities have to be planned following the polluter-

pays principle although at the initial stages a certain level of assistance from the State Governments could significantly accelerate the process of setting up of these facilities and also ensure their viability in the initial years which is vital. Currently, several State Governments have made available land at concessional rates for setting up of these facilities which are part of the State's industrial infra-structure on the lines of Common Effluent Treatment Plants. For economic viability of common facilities, waste assurance is undoubtedly the single most important factor. Considering the urgency to set up common facilities and also the imperative to make them viable given the dire consequences to human health and environment the absence of such facilities could lead to, setting up of common facilities calls for scientific planning backed by sound economic rationale. Transportation costs could account for a significant portion of total treatment costs particularly in the case of landfillable wastes.

An integrated waste management facility should be designed to handle at least 1 lakh tonne / annum of hazardous wastes; such a facility should comprise of a secured landfill, intractable waste stores, incinerator, reuse/recycling facility, laboratory capable of comprehensive analysis, arrangement for transportation and handling of wastes including supporting infrastructure. Such a facility should be permitted one per State (until interstate movement of hazardous waste comes into place).

- 1) The integrated facility as indicated above should have a Zone of coverage of 200 kms radius from the facility.
- 2) This facility should be located close to the major waste generation area.
- 3) Beyond the Zone of coverage (where transport cost plays a major role), smaller facilities (satellite facility) comprising only of a secured landfill including waste stabilisation/ solidification facility, laboratory capable of Finger Printing Analysis, Mechanised Transportation and Handling of Wastes and a transfer station should be established, where feasible.
- 4) These facilities should be linked with the integrated facility of the State for comprehensive analysis of wastes, storage of intractable wastes, incineration and such other services.
- 5) These transfer stations cum landfill facilities should be at least 300 kms from each other and the integrated facility.
- 6) All liability for these facilities shall also rest with the integrated waste management facility.
- 7) After the first integrated facility reaches satisfactory level of capacity utilisation (50% of estimated waste) further integrated facilities can be planned.
- 8) New bio-medical waste treatment facilities, both common and individual, should not be allowed within 40 kms of an integrated facility since bio- medical wastes can also be handled at the integrated facilities.

## Interstate transportation of Hazardous Wastes

Interstate movement of hazardous wastes would be required when (a) landfillable waste generated by a State is less than the pre-determined level of say 20,000 MTA (b) for a company with units located in several States and wishing to incinerate wastes at one facility and (c) for incineration purposes when incinerable waste generation in a State is not adequate to support 3000 MTA of incineration. Facilities for landfilling / incineration should be set-up within one year.

In some of the States like Delhi, Kerala, Himachal Pradesh, Chandigarh and North East States etc., efforts for development of hazardous waste disposal facilities are still in progress. There are difficulties in identifying sites as the quantity of waste generation is low and is not viable for disposal by landfilling or availability of ground water table close to the surface of the ground or high annual rainfall or high transportation cost. Therefore, it is felt that in case of Delhi, Kerala, Himachal Pradesh, Chandigarh and North Eastern States etc., combined facility with neighbouring State including inter-State movement is required due to various factors such as land availability and the amount of waste generated suitable for landfilling / incineration.

Based on mutual consultations between the State Boards including the system of differential rates to be charged for wastes coming from other States, inter-State movement of hazardous wastes for the interim period (say one year) may be allowed for the Units in States where common facilities are yet to be developed.

For proper tracking of HW disposal in an environmentally sound manner followed the manifest system, 5% of disposal charges may be made available to concerned SPCBs / PCCs where the wastes are proposed to be disposed by the occupier/ operator of a facility satellite facility.

### ◆ Use of Cement Kilns for HW incineration

Incineration of high calorific value hazardous wastes in cement kilns is a safe alternative to conventional disposal in dedicated waste incinerators. Sludges from petrochemical, oil refinery and paint industries as well as spent solvent from pesticide industries are particularly suitable.

In the cement kilns, the high flame temperature of around 20000°C and high material temperature of around 14000°C and large residence time of around 4-5 seconds ensure complete combustion of all organic compounds. Acid gases formed during combustion are neutralised by the alkaline raw material. The non-combustible residue including heavy metals gets incorporated into clinker in an irreversible manner.

The spread of cement industry in India across the States makes this option particularly attractive in the Indian context. That about 250 cement works in Europe utilise about 3 million tons of hazardous wastes indicates the potential that this option holds for India given that in India we have over 200 cement kilns and the incinerable hazardous wastes generated is only about 0.2 MTs. Trial runs need to be taken up under close supervision

to study suitability of this option under Indian conditions in all major HW generating States. A CPCB study reveals the potential of using combustible and high calorific value hazardous waste as fuel in cement kilns. For example, sectors like pesticides, paints, oil refineries, pharmaceuticals generate high calorific value hazardous waste that can be used as fuel in cement industry. Similar potential lies in using waste oil and used tyres. This goes to show that waste of one sector can be used as raw material in another.

### **Illegal Dumpsites and remediation**

In the absence of common facilities, illegal and clandestine dumping of Hazardous Waste has been reported in many States. Even after waste disposal facilities have become operational in some States, the problem persists since illegal dumping helps avoid costs of transportation and disposal. To prevent the problem from growing out of proportions, surveillance, especially during night hours, both by enforcement agencies as well as industry associations should be made effective.

Rehabilitation of dumpsites should be based on scientific assessment of contamination of soil and groundwater and projected future damage based on modelling. The strategy for intervention, whether the focus should be on excavation of waste at site to the nearest TSDF and measures to prevent further spread of contamination through containment measures would suffice or whether site remediation should be taken up and, if so, the approach therefore, would vary from site to site depending on nature of pollutants, future damage potential and remediation costs and benefits thereof. In any case, the 'Polluter Pays' Principle has to be the basis for cost-sharing unless it becomes impossible to identify the culprits through finger printing of contaminants and tracing the wastes back to the producer.

In cases where it becomes impossible to track down the polluters, a dedicated fund needs to be created at the State level to which mandatory contributions from all producers of hazardous wastes could be prescribed.

For removal of HW wastes from premises of units to the nearest TSDF, the individual producers should also be levied a fine for indiscriminate disposal within premises in violation of conditions of authorisation for secured on-site storage for a temporary period.

The problem of hazardous wastes and chemicals lying in units which have been closed should also be tackled strictly based on the 'Polluter-Pays' Principle.

### **10) Custom and Laboratory Strengthening**

Customs play an important role in regulating import of hazardous wastes into the country. Cases of illegal imports of hazardous wastes have clearly indicated the need to plug existing loopholes. Priority areas for action include training of customs staff engaged in inspection as well as sampling and also upgradation of customs labs.

Appraisers carrying out inspection of goods received and having discretion to pick up samples need to be trained to pick up representative samples to achieve the best results.

In addition to sampling techniques, assessors should be made aware of current hazardous wastes regulations, documentation requirements etc. Equally important is the need to upgrade laboratory facilities at all major ports of entry. Difficulties faced recently by customs authorities in distinguishing between used oil and waste oil serves as a case in point to identify the gaps. Lack of laboratory facilities for analysis of trace organics such as PCBs could either result in holding up of supplies for long periods of time merely on grounds of suspicion or lead to illegal imports of waste oil under the garb of used oil. As a first step, a thorough assessment of laboratory facilities available at all the ports, in particular, facilities available both in terms of equipment and trained man-power and equipment for analysis of all-important heavy metals and trace organics, should be taken up and a time-bound plan prepared for their upgradation. Till such time all the ports are upgraded both in terms of equipment and training of laboratory personnel, it would be necessary to consider channelisation of all hazardous wastes through selected ports well equipped to handle them and for this purpose, ports may be categorised suitably. As an interim measure, outsourcing of laboratory related work to laboratories recognised under the EP Act in respect of all relevant parameters may be considered.

Synchronising Customs categorisation of wastes with amendments in the Hazardous Wastes Rules should be made automatic so that the customs lists need not be amended every time there is a change in the lists of various waste categories in the HW Rules. Incidentally, this would also help in eliminating the time gap between amendments in the HW Rules and the Customs waste lists which causes avoidable confusion. Harmonisation of custom codes with the international system as amended from time to time should also be accorded high priority.

### **11) Disposal of Date Expired and Banned Pesticides**

There are significant quantities of date expired pesticides lying in various States and concerned departments are looking for safe disposal. The options available are (i) to reprocess wherever possible by the industry who has supplied earlier; (ii) to appropriately incinerate either through dedicated incinerators of individual industries or through available with common integrated facilities. In order to deal with such hazardous wastes, inter-State transportation should be permitted by the concerned State Governments and also disposal in a facility as per above said options available.

The industry driven economy of India's has resulted in hazardous waste problems, which are difficult to manage in an environmentally friendly manner. The non-enforcement of 'Polluter Pays' principle, continuation of import of hazardous wastes despite the ban, absence of proper infrastructure viz. centralised disposal facilities and lack of technical and financial resources have led to the unscientific disposal of hazardous wastes posing serious threat to human, animal and plant life. A High Power Committee (HPC) on hazardous waste management, constituted by the Hon'ble Supreme Court of India in 1997, made similar observation and conclude that the hazardous wastes situation in India is fairly grim. Thus, there is an urgent need for formulating proper hazardous waste management strategies, implementation of hazardous wastes management regulations and establishment of proper hazardous waste treatment and disposal facilities

(HWTDF) for controlling the unscientific disposal of hazardous wastes This is now being done in accordance with the order of the Supreme Court which was issued on 14 October 2003 under the supervision of the Supreme Court Monitoring Committee.

## 26.8 Municipal Solid Waste Management

Municipal solid waste (MSW) is a waste type that includes predominantly household waste (domestic waste) with sometimes the addition of commercial wastes collected by a municipality within a given area. They are in either solid or semisolid form and generally exclude industrial hazardous wastes. The term *residual waste* relates to waste left from household sources containing materials that have not been separated out or sent for reprocessing.

Solid Waste Management Rules (SWM), 2016, notified by the Ministry of Environment, Forests and Climate Change replaces the previous Municipal Solid Wastes (Management and Handling) Rules, 2000. In the said rule, the jurisdiction of the rules have been extended beyond Municipal area.

The jurisdiction of the rules have been extended beyond Municipal area to cover, outgrowths in urban agglomerations, census towns, notified industrial townships, areas under the control of Indian Railways, airports, airbase, Port and harbour, defence establishments, special economic zones, State and Central government organisations, places of pilgrims, religious and historical importance. These Rules prescribe duty for waste generators and several ministries and departments.

## 26.9 Bio-Medical Waste Management

The hospitals and bio-medical facilities meant to ensure better health have unfortunately become a potential health risk due to mismanagement of the infectious waste. Realising this, Ministry of Environment and Forests, Government of India notified the rules, called the Bio-Medical Waste Management Rules, 2016.

Bio-medical waste from hospitals, nursing home and other health centers composed of variety of wastes like hypodermic needles, scalpels blades, surgical cottons, gloves bandages, clothes, discarded medicine, blood and body fluids, human tissues and organs, radio-active substances and chemicals etc. This area of waste management is grossly neglected.

The situation of bio-medical waste management in the entire north zone is deplorable. In Punjab a common facility has been developed to cater to the cities of Ludhiana, Jalandhur, Patiala and Amritsar. In Haryana clearance has been given for common facilities, which however is yet to be developed. In H.P out of total 10 incinerators installed one each at Shimla and Paonta Sahib is also working as common incinerators for the hospitals in that region. In U.P. only 5 common facilities have been so far developed and few more are in process.

The common facilities at Ludhiana in Punjab and in Kanpur are comprehensive as stipulated in the Act but at other places common facilities are mainly having incinerators as a treatment facility. Segregation is the most neglected aspect and progress on this part paints a dismal picture.

The current scenario shows that there is lack of awareness amongst the hospital staff including doctors towards the segregation of infectious waste which is one of the main reasons for mismanagement of bio-medical waste in the hospital.

The segregation of waste in almost all hospitals is not satisfactory. Colour coding for various categories of waste is not followed. The storage of bio-medical waste is not in isolated area and proper hygiene is not maintained. Personal protective equipment and accessories are not provided. Most of the hospitals do not have proper waste treatment and disposal facilities. In the cities where common treatment facilities have come up, many medical establishments are yet to join the common facility. Mass awareness programmes for management of bio-medical must be taken up.

## 26.10 E-Waste Management

The advance of science and technology has given us a whole new array of electrical and electronic products, and rendered many of them affordable to billions of people known as the “global consumer class” both in developed and developing countries. On the one hand, this advance has revolutionised the world with widely used cheap products; on the other hand, it means that they become rapidly obsolete. The result is a tremendous and ever-increasing quantity of electronics and electrical appliances being discarded, since it is often cheaper to buy new than to repair or to upgrade a broken or obsolete product. This has given rise to a new environmental challenge: waste from electrical and electronic equipment or “e-waste”.

The Organisation for Economic Co-operation and Development has identified e-waste as one of the fastest growing waste streams. UNEP’s expert advisory group meeting on the 10-year Framework on Sustainable Consumption and Production (The Marrakech Process) also identified e-waste as a priority waste stream.

E-waste is a generic term encompassing various forms of electronic and electrical equipment (EEE) which are old, end-of-life electronic appliances and which have ceased to be of any value to their owners. It can be defined as electronic equipment’s / products connect with power plug, batteries which have become obsolete due to: advancement in technology, changes in fashion, style and status nearing the end of their useful life.

E-waste encompasses ever growing range of obsolete electronic devices such as computers, servers, main frames, monitors, TVs and display devices, telecommunication devices such as cellular phones and pagers, calculators, audio and video devices, printers, scanners, copiers and fax machines besides refrigerators, air conditioners, washing machines, and microwave ovens, e-waste also covers recording devices such as DVDs, CDs, floppies, tapes, printing cartridges, military electronic waste, automobile catalytic

converters, electronic components such as chips, processors, mother boards, printed circuit boards, industrial electronics such as sensors, alarms, sirens, security devices, automobile electronic devices.

It is well known that there are toxic substances in e-waste such as lead and cadmium in circuit boards; lead oxide and cadmium in monitor cathode ray tubes (CRTs); mercury in switches and flat screen monitors; cadmium in computer batteries; polychlorinated biphenyls (PCBs) in older capacitors and transformers and brominated flame retardants on printed circuit boards, plastic casings cables and polyvinyl chloride (PVC) cable insulation. However, e-waste can also be valuable since it also contains precious and strategic metals and other high-tech materials. Discarded equipment can also often be repaired, and its components can be refurbished and reused.

In some developing countries, the recycling and separation of electronic waste has become the main source of income for a growing number of people.

In the absence of suitable techniques and protective measures, recycling e-waste can result in toxic emissions to the air, water and soil and pose a serious health and environmental hazard. While the largest generators of e-waste are industrialised economies, the most vulnerable to the hazards of e-waste are informal recyclers in developing and emerging economies.

**Indian Scenario:** There is an estimate that the total amount of obsolete computers originating from government offices, business houses, industries and household is of around 2 million. Manufactures and assemblers in a single calendar year, estimated to produce around 1200 tons of electronic scrap. It should be noted that obsolescence rate of personal computers (PC) is one in every two years. Consumers find it convenient to buy a new computer rather than upgrade the old one due to the changing configuration, technology and the attractive offers of the manufacturers. Computer waste is generated from individual households; the government, public and private sectors; computer retailers; manufacturers; foreign embassies; secondary markets of old PCs. Of these, the biggest source of PC scrap are foreign countries that export huge computer waste in the form of reusable components.

With extensive using of computers and electronic equipment's and people dumping old electronic goods for new ones, the amount of E-Waste generated has been steadily increasing.

Electronic waste or e-waste is one of the rapidly growing environmental problems of the world. In India, the electronic waste management assumes greater significance not only due to the generation of our own waste but also dumping of e-waste particularly computer waste from the developed countries. Regulations for management of E-Waste are contained in E-Waste (Management) Rules, 2016.

## 26.11 Conclusion

Since about the late 1980s, the Supreme Court of India has been pro-actively engaged in India's environmental issues. In most countries, it is the executive and the legislative branches of the government that plan, implement and address environmental issues; the Indian experience is different. The Supreme Court of India has been engaged in interpreting and introducing new changes in the environmental jurisprudence directly. The Court has laid down new principles to protect the environment, re-interpreted environmental laws, created new institutions and structures, and conferred additional powers on the existing ones through a series of directions and judgments.

The Court's directions on environmental issues goes beyond the general questions of law, as is usually expected from the highest Court of a democratic country. The Supreme Court of India, in its order, includes executive actions and technical details of environmental actions to be implemented. India's Supreme Court are pioneering, both in terms of laying down new principles of law, and in delivering environmental justice.

However, there are still some serious question. The reasons for this increasing interjection of India's Supreme Court in governance arenas are, experts claim, complex. A key factor has been the failure of government agencies and the State-owned enterprises in discharging their Constitutional and Statutory duties. This has prompted civil society groups to file public interest complaints with the Courts, particularly the Supreme Court, for suitable remedies. Public interest litigation and judicial activism on environmental issues extends beyond India's Supreme Court. It includes the High Courts of individual States.

India's judicial activism on environmental issues has delivered positive effects to the Indian experience. Proponents claim that the Supreme Court has, through intense judicial activism, become a symbol of hope for the people of India. As a result of judicial activism, India's Supreme Court has delivered a new normative regime of rights and insisted that the Indian State cannot act arbitrarily but must act reasonably and in public interest on pain of its action being invalidated by judicial intervention.

# UNIT 27

## ENVIRONMENT PROTECTION ACT, 1986

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### 27.1 Introduction

India has prepared a pollution abatement strategy, which includes the legal framework and the Environment Authorities. In addition to Pollution Control Boards, 6 Environmental Authorities have been constituted under the Environment (Protection) Act, 1986, including the National Environment Appellate Authority. These are:

- ◆ The Central Ground Water Authority - Aqua Culture Authority
- ◆ Dahanu Taluka Environment (Protection) Authority
- ◆ Environment Pollution (Prevention and Control) Authority for National Capital Region of Delhi
- ◆ Loss of Ecology (Prevention and Payment of Compensation) Authority for State of Tamil Nadu
- ◆ National Environment Appellate Authority, 1997

*Measures for control of different types of pollution:*

#### Noise Pollution

Ambient standards in respect of noise for different categories of areas (residential, commercial, industrial) and silence zones have been notified under the Environment (Protection) Act, 1986. Noise limits have been prescribed for automobiles, domestic appliances and construction equipment at the manufacturing stage. Standards have

been evolved and notified for the gen sets, fire crackers and coal mines. Regulatory agencies have been directed to enforce the standards for control and regulate noise pollution.

In addition, to combat noise pollution from fire crackers, the Government of India has enacted noise standards for fire-crackers vide G.S.R.682(E), dated 5 October 1999, in an effort to control noise pollution due to fire crackers. In March 2001, Central Pollution Control Board in association with National Physical Laboratory (NPL), Delhi initiated a study on measurement of noise levels of fire-crackers available in the market. The study indicates that 95% of the fire-crackers samples exceed the prescribed noise limits. Consequently, CPCB issued notice under Section 5, of the Environment (Protection) Act, 1986 to the Department of Explosives, Nagpur, to take immediate steps to control manufacturing of fire-crackers exceeding the prescribed limits. All the State Pollution Control Boards/Committees were also requested to initiate steps to control sale of fire-crackers exceeding the notified limits, in consultation with their respective local administrations.

To control noise pollution in the country the following steps were taken -

- ◆ Ambient noise standards were notified in 1989, which formed the basis for State Pollution Control Boards to initiate action against violating sources.
- ◆ The vehicular noise standards, notified in 1990, are being implemented by Ministry of Science and Technology, to reduce traffic noise. These standards have been made more stringent vide a notification in September 2000 and will be effective from January, 2003.
- ◆ Noise standards for diesel genset were prescribed in December 1998. Government has been pursuing with State Pollution Control Boards, generator manufacturing and major users, for implementation of these standards. Presently these standards are being revised (the MoEF is in the process of issuing notification) making it mandatory for all generator manufacturers to provide acoustic enclosure at the manufacturing stage itself. This will have a major impact on noise from DG sets.
- ◆ Noise standards for fire-crackers were developed in October, 1999. Central Pollution Control Board had carried out a compliance testing of the fire crackers available in the market and also taken up with the Department of Explosives for compliance with these standards.
- ◆ Noise standards for petrol and kerosene generator sets were notified in September, 2000, and will be effective from September, 2002. The sale of these gensets will be prohibited if not certified by the testing agencies, identified for the purpose.
- ◆ The Noise Rules, 2000, regulates noise due to Public Address System/ Loud speakers and also prescribed procedures for noise complaint handling.
- ◆ Central Pollution Control Board has taken up a study on aircraft noise monitoring in Indira Gandhi International Airport, Delhi. This will be followed by development of guidelines/ standards for aircraft noise.

- ◆ The Noise Pollution (Regulation and Control) Amendment Rules 2017 notified by the Government, have delegated the power to declare silence area / zone to state governments. The term “festive occasion” has been specifically defined in the amended rules. The omission of Note (3) to Schedule to the Principle Rules has broadened the scope of “silence zone” and now only State Governments can notify silence area / zone.

### Vehicular Pollution and Air Quality

- ◆ Establishment of Ambient Air Quality Monitoring throughout India.
- ◆ Notification of Ambient Air Quality Standards under Environment (Protection) Act.
- ◆ Notification of vehicular emission norms for year 1990-91, 1996, 1998, 2000, 2001.
- ◆ Improving fuel quality by phasing out lead from gasoline, reducing diesel sulphur, reducing gasoline benzene, and etc.
- ◆ Introduction of alternate fuelled vehicles like CNG/LPG.
- ◆ Improvement of public transport system.
- ◆ Phasing out of grossly polluting commercial vehicles.
- ◆ Public awareness and campaigns.
- ◆ India has formally joined the Climate and Clean Air Coalition (CCAC), becoming the 65th country to join the partnership. The announcement underlines India’s commitment to combat air pollution with a solutions-oriented approach.
- ◆ India’s launched the National Clean Air Programme (NCAP) in January 2019. The NCAP is a comprehensive strategy with actions to prevent, control and reduce air pollution and improve air quality monitoring across the country. It aims to reduce fine particulate (PM<sub>2.5</sub>) and particulate (PM<sub>10</sub>) air pollution by 20% - 30% by 2024. India has identified 102 non-attainment cities, with city-specific action plans being formulated.
- ◆ India has increased its vehicle emissions standards to BS6, which is similar to Euro 6 standards.
- ◆ In 2017, the Union Government announced that from 2030, all new vehicles sold in the country would be electric.

### Impacts of the steps taken in Delhi:

All regulatory pollutants show a decreasing trend in concentrations in Delhi. CO decreased to 3069 ug/m<sup>3</sup> in 2000-2001 from 5450 ug/m<sup>3</sup> in 1998. NO<sub>2</sub> decreased from 75 ug/m<sup>3</sup> in 1996 to 59 ug/m<sup>3</sup> in 2000. Lead which is harmful especially for children, decreased remarkably due to phasing out of lead from gasoline. Another critical pollutant RSPM also shows a decreasing trend in Delhi.

In 2019, there was such spike in air pollution in Delhi that schools were asked to shut by Delhi Government. In fact, at that time the Supreme Court-appointed Environment

Pollution (Prevention and Control) Authority declared an emergency situation in Delhi and also directed the closure of all construction activities. One of the initiatives of the Delhi Government to curb air pollution was introduction of 'Odd-Even Scheme', a car rationing scheme. This scheme was first introduced in 2016.

A study conducted by IIT Delhi concludes that introduction of 'Odd-Even Scheme' between January 1 and 15 in 2016 reduced PM 2.5 by 4 to 6% with a maximum of up to 10%, primarily at three local hotspots in Delhi.

Delhi also has an emergency measure named, 'Graded Response Action Plan (GRAP)' which is approved the Hon'ble Supreme Court of India in 2016. The measures identified in GRAP are incremental and acts as emergency measure. In addition to checking air pollution, it has been successful in fixing accountability and deadlines. For each action to be taken under a particular air quality category, executing agencies are clearly marked.

## 27.2 Legislative and Constitutional Measures for Protection of Environment

### I) Constitutional Measures

India is the first country in the world which has provided for constitutional safeguards for the protection and preservation of the environment. In the constitution of India, specific provisions for the protection of environment have been incorporated by the Constitution (Forty-second amendment) Act, 1976. Now, it is an obligatory duty of the State and every citizen to protect and improve the environment. The Directive Principles of State Policy contain specific provisions enunciating the State commitment for protecting the environment.

“The State shall endeavour to protect and improve the environment and to safeguard forests and wildlife of the country.”

Furthermore, duties of the citizens towards environment are contained in Article 51-A(g), This Article says -

“It shall be the duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wildlife, and to have compassion for living creatures.”

### II) Legislative Measures

The constitutional provisions are implemented through environmental protection laws of the country. India has a large body of laws and regulations governing the environment. These include laws enacted by Central and State Governments as well as an increasing body of judicial decision's affecting industrial activities that generate pollution. Further, there are more than 200 statutes that have a bearing on environmental matters in India. However, the major legal provisions made in the last twenty years are summarised below.

- The Wild Life (Protection) Act, 1972, amended in 1983, 1986 and 1991.
- The Water (Prevention and Control of Pollution) Act, 1974, amended in 1988.
- The Water Cess Act, 1977, amended in 1991.
- The Forest (Conservation) Act, 1980, amended in 1988.
- The Air (Prevention and Control of Pollution) Act, 1981, amended in 1987.
- The Environment (Protection) Act, 1986.
- The Motor Vehicles Act, 1938, amended in 1988.
- The Hazardous Waste (Management and Handling) Rules, 1989, amended in 2000.
- The Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989, amended in 2000.
- The Manufacture, use, import, export and storage of Hazardous Micro-organisms or Cells Rules, 1989.
- The Public Liability Insurance Act, 1991.
- A notification of Environmental Statement, 1993.
- A notification on Environmental Clearance, 1994.
- A notification on Environmental Clearance, 1994.
- The National Environmental Tribunal Act, 1995.

The existing laws and regulations on environmental pollution which are administered by the Ministry of Environment and Forests are -

- i) The Water (Prevention and Control of Pollution) Act, 1974, (amended in 1978 and 1988).
- ii) The Water (Prevention and Control of Pollution) Cess, Act, 1977.
- iii) The Air (Prevention and Control of Pollution) Act, 1981 amended in 1987.
- iv) The Environment (Protection) Act, 1986.
- v) The Public Liability Insurance Act, 1991.
- vi) The National Environment Tribunal Act, 1995.
- vii) Solid Waste Management Rules, 2016
- viii) Plastic Waste Management Rules, 2016
- ix) E-waste (Management) Rules, 2016
- x) Bio-Medical Waste Management Rules, 2016
- xi) Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016
- xii) Construction and Demolition Waste Management Rules, 2016

The main provisions under these Acts are given here.

- *The Water (Prevention and Control of Pollution) Act, 1974 (As Amended in 1978 and 1988)*

The Water Act is a comprehensive legislation providing for the Prevention and Control of Water Pollution and for maintaining or restoring the purity of water in streams or wells. The Act provides for the establishment of the Central Pollution Control Board at the Centre and State Pollution Control Boards in the respective States.

- A) The functions of the Central Board at the national level are to -
- i) Advise the Central Government on matters relating to prevention and control of water pollution.
  - ii) Co-ordinate the activities of the State Board and resolve disputes among them.
  - iii) Provide technical assistance and guidance to the State Boards.
  - iv) Carry out and sponsor research and investigation in the problems of water pollution.
  - v) Set the standards for streams and wells.
  - vi) Create environmental awareness, and
  - vii) To act as State Board for the Union Territories.
- B) State Board has executive and territorial functions which include -
- i) Planning for prevention, control or abatement of pollution of streams and wells.
  - ii) Advise the State Government on matters relating to water pollution.
  - iii) Inspection of sewage or industrial effluent, including municipal wastewater treatment plants for the treatment of sewage or trade effluents.
  - iv) Setting standards for the sewage and industrial effluents discharge.

There is a provision of joint Boards for two or more contiguous States. In case of dispute between two State Boards, the Central Board has authority to arbitrate.

Important provisions in the Water (Prevention and Control of Pollution) Act, 1974 (As amended in 1978 and 1988) are -

- i) Pollution Control Board (PCB) has the right to -
  - ◆ obtain any information regarding the construction, installation or operation of an industrial establishment or treatment and disposal system.
  - ◆ take samples of trade effluent for the purpose of analysis in the prescribed manner.
  - ◆ enter and inspect any industrial establishment, record, register, document or any other material object.
  - ◆ prohibit use of stream or sewer or land for disposal system without prior consent of the PCB.

- ii) Restriction on establishment and the operation of any industry process or any treatment and disposal system without prior consent of the PCB.
- iii) PCB's right to refuse or withdraw consent, for discharge of effluents.
- iv) Industries to comply with the conditions stipulated in the agreement.
- v) PCB's to grant consent within four months after the date of receipt of the application complete in all respects.
- vi) Industries to appeal to the Appellate Authority, in case of grievances against the order passed by the PCB regarding grant, refusal or withdrawal of the consent within the specified time in the prescribed manner.
- vii) Industries to furnish information to the PCB and other specified agency(ies) in case of discharge of poisonous, noxious or polluting matter into a stream, sewer or land, occurred or likely to occur resulting in pollution due to an accident or any other unforeseen event.
- viii) PCB's right to issue orders restraining or prohibiting an industry from discharging any poisonous, noxious or polluting matter in case of emergencies, warranting immediate action.
- ix) PCB's have the power to make an application to the court for restraining likely disposal of polluting matter in a stream or on land.
- x) Bar of jurisdiction in civil court in respect of any matter under purview of the Appellate Authority constituted under the Act and no grant of injunction in respect of any action taken or proposed in pursuance of the Act.
- xi) Bar on filing of any suit or legal proceedings against the Government or Board officials, for action taken in good faith in pursuance of the Act.
- xii) PCB's to make inquiries, in the prescribed manner, for grant of consent for discharge of effluents.
- xiii) PCB's power to issue directions for -
  - ◆ the closure, prohibition or regulation of any industry, operation or process or,
  - ◆ the stoppage or regulation of supply electricity, water or any other service to industry in the prescribed manner.
- xiv) Industries to comply with the directions of the PCB within the specified time.
- xv) PCB's to maintain a consent register containing particulars of the consent issued and to provide access to industry at all reasonable hours.

- *The Water (Prevention and Control of Pollution) Cess Act, 1977 (Amended in 1991)*

The Water Cess Act provides for the levy of a cess on water consumed by persons carrying on specified industries given in Schedule-I of the Act and also local authorities entrusted with the duty of supplying water under the laws by or under which they are constituted at the rates specified in Schedule-II of the Act.

The Cess is levied and collected by the State Government concerned and credited to the consolidated Fund of India. An industry which installs and operates its effluent treatment plant is entitled to a rebate of 25% on the Cess payable.

The Cess has been introduced mainly to augment the resources of the Central and the State Pollution Control Boards.

- *The Air (Prevention and Control of Pollution) Act, 1981 (Amended in 1987)*

The Act provides for the setting up of Central / State Boards for prevention and control of Air Pollution, however, Section 4 of the Act stipulates that in any State in which the Water (Prevention and Control of Pollution) Act, 1974 is in force and the State Government has constituted a State Pollution Control Board, that State Board shall be deemed to be the State Board for the prevention and control of air pollution. For Union Territories the Central Pollution Control Board is empowered to perform the functions of a State Pollution Control Board under the Act. The State Governments in consultation with their respective State Boards are empowered to declare air pollution control areas. As per the provisions of the Air Act no person can establish or operate any industrial plant in an air pollution control area without obtaining the consent from the concerned State Board.

- *The Environment (Protection) Act, 1986*

The provisions under this Act are -

- ◆ Take all necessary measures for protecting the quality of environment.
- ◆ Plan and execute a nation-wide programme for the prevention, control and abatement of environmental pollution.
- ◆ Lay down standards for discharge of environmental pollutants.
- ◆ Empower any persons to enter, inspect, take samples and test.
- ◆ Establish or recognise environmental laboratories.
- ◆ Appoint or recognise government analysts.
- ◆ Lay down standards for the quality of environment.
- ◆ Restrict areas in which any industries, operations, processes may not be carried out or shall be carried out subject to certain safeguards.
- ◆ Lay down safeguards for prevention of accidents and take remedial measures in case of such accidents.
- ◆ Lay down procedures and safeguards for handling hazardous substances.
- ◆ Constitute an authority or authorities for exercising its powers.
- ◆ Issue directions to any person, officer or authority including the power to direct closure, prohibition or regulation of any industry, operation or process or stoppage or regulation of supply of electricity, water or any other service.

It confers powers on persons to complain to the courts regarding any violation of the provisions of the Act, after a notice of 60 days to the prescribed authorities.

The Central Government is empowered to take action under the provision of the Environment (Protection) Act, 1986. Powers under Section 5 of the Environment (Protection) Act, 1986 have been delegated by the Central Government to States and Union Territories.

Rules have been framed and agencies / authorities have been notified under specific sections for carrying out specific functions. These include:

### ***Environmental Statement***

All those running an industry, operation or process requiring consent under Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974) and/or under Air (Prevention and Control of Pollution) Act, 1981 (84 of 1981) and or authorisation under the Hazardous Waste (Management and Handling) Rules, 1989, are required to submit the Environmental Statement in prescribed 'Form-V', for the Financial Year ending 31st March to the concerned State Pollution Control Boards / Pollution Control Committees in the Union Territories on or before 30th September every year.

#### ***- Hazardous Waste (Management and Handling) Rules, 1989***

The Hazardous Wastes (Management and Handling) Rules, 1989, provide for an effective inventory and controlled handling and disposal of hazardous wastes. Under the rules 18, categories of hazardous waste are identified along with their regulatory quantity Industries generating any of these waste beyond the regulatory quantity are required to seek authorisation from the concerned State Pollution Control Board for its temporary storage in the premises and their disposal.

The possibility of common treatment facilities including landfills are envisaged. The operator of such a facility is also required to obtain authorisation from the Board. The Boards are expected to specify conditions on safe handling and disposal of the waste in the authorisation. Treatment of the waste at the premises before disposal could also be specified. Import of hazardous waste for processing has to be first approved by the Central Government.

#### ***- Manufacture, Storage and Import of Hazardous Chemical Rules, 1989***

The principal objective of the regulation is the prevention of major accidents arising from industrial activity, the limitation of the effects of such accidents both on humans and the environment and the harmonisation of the various control measures and the agencies to prevent and limit major accidents. The industrial activities covered by the regulation are defined in terms of process and storage methods involving specified hazardous chemicals.

An important feature of the regulation is that the storage of hazardous chemicals not associated with the process is treated differently from those coming under process use for which a different list of hazardous chemicals and their manufacture and storage procedures applies. Under the provisions isolated storage / cover sites are to be separate tank farms or warehouses. The Central Pollution Control Board and the State Pollution Control Board as the case may be, are the enforcement agency for these storages.

## Safety Report

A safety report is required to be prepared as per Rule 10 in this Act. It involves identification of the nature and use of hazardous chemicals at the installation. The report will also give account of arrangements for safe operation of an installation including control of any serious deviation that could lead to a major accident and for emergency preparedness at the site. The report will identify the type, and the relative likelihood of consequences for any major accident that might occur. It will also demonstrate that the manufacturer or the occupier has identified the major potential accidents from the activity and has provided appropriate controls.

### - *The Public Liability Insurance Act, 1991*

This is an Act to provide for Liability Insurance for the purpose of providing immediate relief to the persons affected by accidents occurring while handling hazardous substances. The Act casts on the person, who has control over handling any hazardous substance, the liability to give the reliefs specified in the Act to all the victims of any accident which occurs while handling such substance. It would be the duty of every owner to take necessary insurance policies to discharge his liabilities.

### - *National Environmental Tribunal Act, 1995*

This is an Act to provide for strict liability for damages arising out of any accident occurring while handling any hazardous substance and for the establishment of a National Environment Tribunal for effective and expeditious disposal of cases arising from such accident. This was enacted with a view to giving relief and compensation for damages to persons, property and the environment and for matters connected therewith or incidental thereto.

## Regulatory Standards

Standards for effluent and emissions from industries have been notified and the industries have been directed to adopt action programmes leading to compliance with these standards on a time bound basis. The Central and the State Government are playing a more active role in enforcing these environmental standards. Many polluting units in the country face shifting / closure orders from the courts. It is to be noted that with increasing awareness on environment related issues in the country, the public is becoming more active in highlighting polluting industries and there is an increasing number of Public Interest Litigations in the court.

The coming into force of the National Green Tribunal Act implied an automatic repeal of two existing laws: the National Environment Tribunal Act, 1995, and the National Environment Appellate Authority Act, 1997, and, therefore, the closure of the National Environment Appellate Authority (NEAA) - a quasi-judicial body empowered to hear appeals against the environmental approvals granted (or not) to projects. All the cases pending before the NEAA were to be heard by the NGT.

- *National Green Tribunal Act (NGT), 2010*

NGT is a federal legislation enacted by the Parliament of India, under India's constitutional provision of Article 21, which assures the citizens of India the right to a healthy environment. The tribunal itself is a special fast-track court to handle the expeditious disposal of the cases pertaining to environmental issues.

The legislature Act of Parliament defines the National Green Tribunal Act, 2010 as follows:

“An Act to provide for the establishment of a National Green Tribunal for the effective and expeditious disposal of cases relating to environmental protection and conservation of forests and other natural resources including enforcement of any legal right relating to environment and giving relief and compensation for damages to persons and property and for matters connected therewith or incidental thereto.”

The Tribunal's dedicated jurisdiction in environmental matters shall provide speedy environmental justice and help reduce the burden of litigation in the higher courts. The Tribunal shall not be bound by the procedure laid down under the Code of Civil Procedure, 1908, but shall be guided by principles of natural justice. The Tribunal is mandated to make and endeavour for disposal of applications or appeals finally within 6 months of filing of the same. Initially, the NGT is proposed to be set up at five places of sittings and will follow circuit procedure for making itself more accessible; New Delhi is the Principal Place of Sitting of the Tribunal and Bhopal, Pune, Kolkata and Chennai shall be the other 4 place of sitting of the Tribunal.

- *Solid Waste Management Rules, 2016*

Solid Waste Management Rules (SWM), 2016 replace the Municipal Solid Wastes (Management and Handling) Rules, 2000. The new rules have mandated the source segregation of waste in order to channelise the waste to wealth by recovery, reuse and recycle. Waste generators would now have to now segregate waste into three streams- Biodegradables, Dry (Plastic, Paper, metal, Wood, etc.) and Domestic Hazardous waste (diapers, napkins, mosquito repellents, cleaning agents etc.) before handing it over to the collector.

- *Plastic Waste Management Rules, 2016*

The Plastic Waste Management Rules, 2016 has expanded the jurisdiction of applicability from the municipal area to rural areas. It has increased minimum thickness of plastic carry bags from 40 to 50 microns and has specified the responsibilities of producers and generators, both in plastic waste management system and to introduce collect back system of plastic waste by the producers/brand owners, as per extended producers responsibility.

- *E-waste (Management) Rules, 2016*

The E-waste rules will now include Compact Fluorescent Lamp (CFL) and other mercury containing lamps, as well as other such equipment. The Rules bring the producers under

Extended Producer Responsibility (EPR), along with targets. The producers have been made responsible for collection of E-waste and for its exchange. A provision of penalty for violation of rules has been introduced.

- Bio-Medical Waste Management Rules, 2016

The Bio-Medical Waste Management Rules, 2016 expands the ambit to include vaccination camps, blood donation camps, surgical camps or any other healthcare activity. It specifies phase-out the use of chlorinated plastic bags, gloves and blood bags within two years. Bio-Medical Waste Management Rules, 2016 Rules have been amended to improve compliance and strengthen the implementation of environmentally sound management of biomedical waste in India. The amended rules stipulate that generators of bio-medical waste such as hospitals, nursing homes, clinics, and dispensaries etc will not use chlorinated plastic bags and gloves beyond March 27, 2019 in medical applications to save the environment. Blood bags have been exempted for phase-out, as per the amended BMW rules, 2018.

- Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016

With these Rules, ambit has been expanded by including 'Other Waste'. The Rules provide for a waste management hierarchy in the sequence of priority of prevention, minimisation, reuse, recycling, recovery, co-processing; and safe disposal. All the forms under the rules for permission, import/export, filing of annual returns, transportation, etc. have been revised significantly, indicating the stringent approach for management of such hazardous and other wastes with simultaneous simplification of procedure.

- Construction and Demolition Waste Management Rules, 2016

Construction and Demolition Waste Management Rules, 2016 Applies to everyone who generates construction and demolition waste. The Rules specify the duties of waste generators, service providers and contractors, state governments and local authorities, Central Pollution Control Board, State Pollution Control Board or Pollution Control Committee and Central Ministries. The Rules further discuss standards for products of construction and demolition waste.

## 27.3 Premise of the Environment (Protection) Act, 1986

The Environment (Protection) Act was enacted in the year 1986. It was enacted with the main objective to provide the protection and improvement of environment and for matters connected therewith. The Act is one of the most comprehensive legislations with pretext to protection and improvement of environment.

The Constitution of India also provides for the protection of the environment. Article 48 A of the Constitution specifies that the State shall endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country. Article 51 A further provides that every citizen shall protect the environment.

It is now generally accepted that environment is threatened by a wide variety of human activities ranging from the instinctive drive to reproduce its kind to the restless urge of improving the standards of living, development of technological solutions to this end, the vast amount of waste, both natural and chemical, that these advances produce. Paradoxically, this urge to grow and develop, which was initially uncontrolled is now widely perceived to be threatening as it results in the depletion of both living and non-living natural resources and life support systems. The air, water, land, living creatures as well as the environment in general is becoming polluted at an alarming rate that needs to be controlled and curbed as soon as possible.

The 1986 Act was enacted in this spirit. From time to time various legislations have been enacted in India for this purpose. However, all legislations prior to the 1986 Act have been specific relating to precise aspects of environmental pollution. However, the 1986 Act was a general legislation enacted under Article 253.

**Legislation for giving effect to international agreements** - Notwithstanding anything in the foregoing provisions of this Chapter, Parliament has power to make any law for the whole or any part of the territory of India for implementing any treaty, agreement or convention with any other country or countries or any decision made at any international conference, association or other body of the Constitution, pursuant to the international obligations of India. India was a signatory to the Stockholm Conference of 1972 where the world community had resolved to protect and enhance the environment.

The United Nations conference on human environment, held in Stockholm in June 1972, proclaimed that “Man is both creator and moulder of his environment, which gives him physical sustenance and affords him the opportunity for intellectual, moral, social and spiritual growth. In the long and tortuous evolution of the human race on this planet a stage has reached when through the rapid acceleration of science and technology man has acquired the power to transform his environment in countless ways and on unprecedented scale. Both aspects of man’s environment, the natural and manmade are essential to his well-being and to the enjoyment of basic human rights even the right to life itself.”

While several legislations such as The Water (Prevention and Control of Pollution) Act, 1974 and The Air (Prevention and Control of Pollution) Act, 1981 were enacted after the Conference, the need for a general legislation had become increasingly evident. The EPA was enacted so as to overcome this deficiency.

## 27.4 Objectives of the Act

As mentioned earlier, the main objective of the Act was to provide the protection and improvement of environment and for matters connected therewith. Other objectives of implementation of the EPA are to -

- ◆ Implement the decisions made at the UN Conference on Human Environment held at Stockholm in June, 1972.

- ◆ Enact a general law on the areas of environmental protection which were left uncovered by existing laws. The existing laws were more specific in nature and concentrated on a more specific type of pollution and specific categories of hazardous substances rather than on general problems that chiefly caused major environmental hazards.
- ◆ Co-ordinate activities of the various regulatory agencies under the existing laws.
- ◆ Provide for the creation of an authority or authorities for environmental protection.
- ◆ Provide a deterrent punishment to those who endanger human environment, safety and health.

#### - **Scope and Applicability**

The Environment (Protection) Act is applicable to whole of India. It came into force on November 19, 1986.

#### - **Definitions**

Section 2 of the EPA deals with definitions. Some important definitions provided in the Section are:

Section 2 (a) “**Environment**” includes water, air and land and the interrelationship that exists among and between water, air and land and human beings, other living creatures, plants, microorganism and property. This definition is not exhaustive but an inclusive one.

Section 2 (b) “**Environmental Pollutant**” means any solid, liquid or gaseous substance present in such concentration as may be, or tend to be injurious to environment.

Section 2 (c) “**Environmental Pollution**” means the presence in the environment of any environmental pollutant. This implies the imbalance in environment. The materials or substances when after mixing in air, water or land alters their properties in such manner, that the very use of all or any of the air water and land by man and any other living organism becomes lethal and dangerous for health.

Section 2 (e) “**Hazardous Substance**” means any substance or preparation which, by reasons of its chemical or physico-chemical properties or handling, is liable to cause harm to human beings, other living creatures, plants, microorganism, property or environment.

#### - **Powers of Central Government to take measures to Protect and Improve Environment**

According to the provisions of the Act, the Central Government shall have the power to take all such measures as it deems necessary or expedient for the purpose of protecting and improving the quality of the environment and preventing controlling and abating environmental pollution.

**Environment Protection Act, 1986**

Such measures may include measures with respect to all or any of the following matters, namely -

- a) co-ordination of actions by the State Governments, officers and other authorities - under this Act, or the rules made thereunder, or
- b) under any other law for the time being in force which is relatable to the objects of this Act;  
planning and execution of a nation-wide programme for the prevention, control and abatement of environmental pollution;
- c) laying down standards for the quality of environment in its various aspects;
- d) laying down standards for emission or discharge of environmental pollutants from various sources whatsoever:  
Provided that different standards for emission or discharge may be laid down under this clause from different sources having regard to the quality or composition of the emission or discharge of environmental pollutants from such sources;
- e) restriction of areas in which any industries, operations or processes or class of industries, operations or processes shall not be carried out or shall be carried out subject to certain safeguards;
- f) laying down procedures and safeguards for the prevention of accidents which may cause environmental pollution and remedial measures for such accidents;
- g) laying down procedures and safeguards for the handling of hazardous substances;
- h) examination of such manufacturing processes, materials and substances as are likely to cause environmental pollution;
- i) carrying out and sponsoring investigations and research relating to problems of environmental pollution;
- j) inspection of any premises, plant, equipment, machinery, manufacturing or other processes, materials or substances and giving, by order, of such directions to such authorities, officers or persons as it may consider necessary to take steps for the prevention, control and abatement of environmental pollution;
- k) establishment or recognition of environmental laboratories and institutes to carry out the functions entrusted to such environmental laboratories and institutes under this Act;
- l) collection and dissemination of information in respect of matters relating to environmental pollution;
- m) preparation of manuals, codes or guides relating to the prevention, control and abatement of environmental pollution;
- n) such other matters as the Central Government deems necessary or expedient for the purpose of securing the effective implementation of the provisions of this Act.

The Central Government may, if it considers it necessary or expedient so to do for the purpose of this Act, by order, published in the Official Gazette, constitute an authority or authorities by such name or names as may be specified in the order for the purpose of exercising and performing such of the powers and functions (including the power to issue directions under Section (5) of the Central Government under this Act and for taking measures with respect to such of the matters referred to in sub-section (2) as may be mentioned in the order and subject to the supervision and control of the Central Government and the provisions of such order, such authority or authorities may exercise and powers or perform the functions or take the measures so mentioned in the order as if such authority or authorities had been empowered by this Act to exercise those powers or perform those functions or take such measures.

As considerable adverse environment impact has been caused due to degradation of the environment with excessive soil erosion and water and air pollution due to certain development activities therefore it is necessary to protect the environment. This can be achieved only by careful assessment of a project proposed to be located in any area, on the basis of an environment impact assessment and environment management plan for the prevention, elimination or mitigation of the adverse impacts, right from the inception stage of the project.

The Central Government has passed certain notifications laying that the expansion or modernisation of any existing industry or new projects listed shall not be undertaken in any part of India, unless it gets environmental clearance by the Central Government, or the State Government.

#### - Powers of the Court

The Act does not curtail the powers of the Supreme Court. It has from time to time in various matters issued directions and orders to control pollution. Some such important cases pertaining to protection of environment are:

#### - Directions issued to control vehicular pollution

In *Mehta v. Union of India* (WPNo.13029/1985), in order to control the chaotic traffic conditions and vehicular pollution, the Supreme Court issued the following directions -

- a) All commercial/transport vehicles which are more than 20 years old should be phased out and not permitted to ply in Delhi after October 1998.
- b) All such commercial/transport vehicles which are 17 to 19 years old (3200) shall not be permitted to ply in the National Capital Territory, Delhi after 1998;
- c) Such of the commercial /transport vehicles which are 15 and 16 years old (4962) shall not be permitted to ply after 31 December 1998.

The Supreme Court made this order applicable to all commercial/transport vehicles whether registered in the National Capital Territory of Delhi or outside (but ply in Delhi) which are of more than stipulated age and which do not have any authority to ply in Delhi.

### - Protection of Coastline of India

In *Indian Council for Enviro-Legal Action v. Union of India*<sup>1</sup> the Supreme Court in regard to the 600 kms long coast line emphasized that that it would be the duty and responsibility of the coastal States and Union Territories in which the stretch exists, to see that the notifications issued, declaring the coastal stretches should be properly and duly implemented. Further the various restrictions on the setting up and expansion of industries, operation or process, etc. in the regulation Zone should be strictly enforced.

In the same case the court further enunciated the “polluter pays principle”. Once the activity carried on is hazardous or inherently dangerous, the person carrying on such activity is liable to make good the loss caused to any other person irrespective of the fact whether he took reasonable care while carrying on this activity. Under this principle it is not the role of the Government to meet the costs involved in either prevention of such damage or in carrying out remedial action, because the effect of this would be to shift the financial burden of the pollution incident on the taxpayer. The responsibility of repairing the damage is that of the offending industry.

### - Other cases

In *Vellore Citizen Welfare Forum v. Union of India & others*<sup>2</sup> the polluter principle as interpreted by the Supreme Court means that absolute liability for harm to the environment extends not only to compensate the victims of pollution, but also the cost of restoring the environmental degradation. Remediation of the damaged environment is part of the process of “Sustainable Development” and as such polluter is liable to pay the cost to the individual sufferer as well as the cost of reversing the damaged ecology.

In *Goa Foundation v. Diksha Holdings Pvt. Ltd*<sup>3</sup> the court observed that with a view to protect the ecological balance in the coastal areas, notifications having been issued by the Central Government, there ought not to be any violation and prohibited activities should not be allowed to come up within the area declared as CRZ notification. The court also emphasized that no activities which would ultimately lead to unscientific and unsustainable development and ecological destruction should be allowed.

### - Prevention, Control and Abatement of Environment Pollution

Chapter III of the EPA deals with prevention, Control and abatement of Environmental Pollution. Some important provisions of this chapter provide that, no person carrying on any industry, operation or process shall discharge or emit or permit to be discharged or emitted any environmental pollutant in excess of such standards as may be prescribed.

No person shall handle or cause to be handled any hazardous substance except in accordance with such procedure and after complying with such safeguards as may be

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<sup>1</sup> (1996) 5 SCC 281.

<sup>2</sup> (1996) 5 SCC 647.

<sup>3</sup> (2001) 2 SCC 97.

prescribed. Where the discharge of any environmental pollutant in excess of the prescribed standards occurs or is apprehended to occur due to any accident or other unforeseen act or event, the person responsible for such discharge and the person in charge of the place at which the discharge occurs shall be bound to prevent or mitigate the environmental pollution, and shall also:

- a) intimate the fact of such occurrence or apprehension of such occurrence; and
- b) be bound, if called upon, to render all assistance.

On receipt of such information, the authorities or agencies shall cause such remedial measures to be taken as are necessary to prevent or mitigate the environmental pollution.

The expenses incurred by any authority or agency may be recovered from the person concerned as arrears of land revenue or of public demand.

#### ◆ Penalties

Section 15 provides for Penalties for contravention of the provisions of the Act as well as the Rules, Orders and Directions. Whoever fails to comply with or contravenes any of the provisions, rules, orders or directions of this Act shall be punishable with imprisonment for a term which may extend to five years or with fine which may extend to one lakh rupees, or with both. In case the failure or contravention continues, with additional fine which may extend to five thousand rupees for every day during which such failure or contravention continues.

If the failure or contravention continues beyond a period of one year after the date of conviction, the offender shall be punishable with imprisonment for a term which, may extend to seven years.

#### ◆ Offences by Companies

Offences by Companies are dealt with under Section 16. Where any offence is committed by a company, every person who, at the time the offence was committed, was directly in charge of, and was responsible to, the company for the conduct of the business of the company shall be deemed to be guilty of the offence.

If he proves that the offence was committed without his knowledge or that he exercised due diligence to prevent the commission of such offence he shall not be liable to any punishment.

Where the offence has been committed with the consent or connivance of or is attributable to any neglect on part of, any director, manager, secretary or other officer of the company, such person shall be deemed to be guilty of the offence.

#### ◆ Cognizance of Offences and Bar of Jurisdiction of Civil Courts

As per the provisions of Section 19 of the EPA, no court shall take cognizance of any offence under this Act except on a complaint made by:

- a) the Central Government or any authority or officer authorised in this behalf by that Government; or
- b) any person who has given notice of not less than 60 days, of the alleged offence and his intention to make a complaint, to the Central Government or the authority or officer authorised.

Section 22 provides that no civil court shall have jurisdiction to entertain any suit or proceeding in respect of anything done, action taken or order or direction issued by the Central Government or any other authority or officer in pursuance of any power conferred under the Act.

## 27.5 The National Environment Appellate Authority

The National Environment Appellate Authority (NEAA) was set up as an independent body to address cases in which environmental clearances granted by the ministry of environment are challenged by civil society. On 30 January 1997, the President of India, in exercise of the powers conferred under Article 123 (123. Power of President to promulgate Ordinances during recess of Parliament. -

If at any time, except when both Houses of Parliament are in session, the President is satisfied that circumstances exist which render it necessary for him to take immediate action, he may promulgate such Ordinances as the circumstances appear to him to require of the Constitution, promulgated an Ordinance to provide for the establishment of the NEAA to hear appeals with respect to restriction of areas in which any industries, operations and processes shall not be carried out or shall be carried out subject to the safeguards as provided under the EPA. The Ordinance was later on repealed with the enactment of the National Environment Appellate Authority (NEAA) Act, 1997. Note: Although the NEAA Act is now repealed in view of the passage of the National Green Tribunal Act, 2010, the several years of its functioning has important lessons so far as the access to justice in environmental issues are concerned.

The NEAA Act, which was granted presidential assent on 26 March 1997 came into force from 9.4.97. This Act provides for the establishment of a NEAA. The Act was enacted with the following object:

To hear appeals with respect to restriction of areas in which any industry, operations or processes or class of industries, operations or processes shall not be carried out or shall be carried out subject to certain safeguards under the EPA and for matters connected therewith or incidental thereto.

This is to bring in transparency in the process, accountability and to ensure smooth and expeditious implementation of developmental schemes and projects.

### Jurisdiction of the Act

Any aggrieved person may file an appeal within thirty days of passing of an order granting environmental clearance in the areas in which any industries, operations or processes

shall not be carried out or shall be carried out subject to certain safeguards under the EPA. It is further provided that the Authority may entertain an appeal even after the expiry of the said term if a sufficient cause for delay in filing such an appeal exists. The Authority is required to dispose off the appeal within ninety days from the date of filing of the same. However, the Authority may, for reasons that are to be recorded in writing, dispose off the appeal within a further period of thirty days.

- 2) An Ordinance promulgated under this Article shall have the same force and effect as an Act of Parliament, but every such Ordinance -
  - a) shall be laid before both Houses of Parliament and shall cease to operate at the expiration of six weeks from the reassembly of Parliament, or, if before the expiration of that period resolutions disapproving it are passed by both Houses, upon the passing of the second of those resolutions; and
  - b) may be withdrawn at any time by the President.

*Explanation* - Where the Houses of Parliament are summoned to reassemble on different dates, the period of six weeks shall be reckoned from the later of those dates for the purposes of this clause.

- 3) If and so far as an Ordinance under this Article makes any provision which Parliament would not under this Constitution be competent to enact, it shall be void.

## 27.6 National Environmental Policy, 2006

The National Environment Policy, 2006 is the outcome of extensive consultations with experts in different disciplines, Central Ministries, Members of Parliament, State Governments, Industry Associations, Academic and Research Institutions, Civil Society, NGOs and the Public. The National Environment Policy seeks to extend the coverage, and fill in gaps that still exist, in light of present knowledge and accumulated experience. It does not displace, but builds on the earlier policies.

The “Environment” comprises all entities, natural or manmade, external to oneself, and their interrelationships, which provide value, now or perhaps in the future, to humankind. Environmental concerns relate to their degradation through actions of humans.

The Articles are reproduced as follows:

**48A. Protection and improvement of environment and safeguarding of forests and wild life** - The State shall endeavour to protect and improve the environment and to safeguard the forests and wild life of the country.

**51A. Fundamental duties** - It shall be the duty of every citizen of India -

- a) to abide by the Constitution and respect its ideals and institutions, the National Flag and the National Anthem;
- b) to cherish and follow the noble ideals which inspired our national struggle for freedom;
- c) to uphold and protect the sovereignty, unity and integrity of India;

- d) to defend the country and render national service when called upon to do so;
- e) to promote harmony and the spirit of common brotherhood amongst all the people of India transcending religious, linguistic and regional or sectional diversities; to renounce practices derogatory to the dignity of women;
- f) to value and preserve the rich heritage of our composite culture;
- g) to protect and improve the natural environment including forests, lakes, rivers and wildlife, and to have compassion for living creatures;
- h) to develop the scientific temper, humanism and the spirit of inquiry and reform;
- i) to safeguard public property and to abjure violence;
- j) to strive towards excellence in all spheres of individual and collective activity so that the nation constantly rises to higher levels of endeavour and achievement.

The National Environmental Policy (NEP) was drafted as a result of the obligations imposed under Article 48 A and Article 51 A. These Articles of the Constitution of India call for a national commitment to provide for a clean environment.

The NEP was drafted keeping in mind all the shortcomings that were a part of the previous national environmental policies, especially the draft NEP, 2004. The task of drafting the Draft NEP, 2004 was assigned to TERI, formerly known as the Tata Energy Research Institute, renamed as The Energy and Resources Institute (TERI).

However, this draft was a highly controversial document, the reason being that it was preferred by MoEF over the draft report of the National Biodiversity Strategy and Action Plan (NBSAP), which was conceived much earlier than the NEP.

The main issue was that even though the process for drafting the NEP was an infant as compared to the process of drafting the NBSAP, the ministry was keen to make the NBSAP in tune with the NEP. The other issue was that it was highly felt by the persons involved in the process of NBSAP that the process of NEP was kept a secret and was not at all transparent, unlike the process of NBSAP.

#### ➤ **National Environmental Policy, 2006**

The NEP identifies all the previous failed policies as well as attempts to search for a solution to the problems that arise in effectively protecting and improving the environment. The NEP, 2006 is the outcome of extensive consultations with experts in different disciplines, Central Ministries, Members of Parliament, State Governments, Industry Associations, Academic and Research Institutions, Civil Society, NGOs and the Public. While drafting the NEP the earlier drafts of this were also considered.

Previously, a draft NEP was drafted in the year 2004 which was made available to the public for their inputs and comments. The draft was posted on the MoEF website after which, recommendations and feedback from the general public was called for. The NEP, 2006 was drafted keeping in mind all such previous efforts.

## Objectives of NEP

The intention of formulating the NEP has been to draft an overarching policy that encompasses provisions of all previous legislations, even if it's at the cost of duplicating the previous efforts. A diverse developing society such as ours provides numerous challenges in the economic, social, political, cultural and environmental arenas. All of these coalesce in the dominant imperative of alleviation of mass poverty, reckoned in the multiple dimensions of livelihood security, health care, education, empowerment of the disadvantaged, and elimination of gender disparities.

The pre-existing national policies for environmental management are contained in the National Forest Policy, 1988, National Conservation Strategy and Policy Statement on Environment and Development, 1992, The Policy Statement on Abatement of Pollution, 1992, etc. Some sector policies such as the National Agriculture Policy, 2000, National Population Policy, 2000 and National Water Policy, 2002 have also contributed towards environmental management. All of these policies have recognised the need for sustainable development in their specific contexts and formulated necessary strategies to give effect to such recognition. However, the NEP is a more general and comprehensive policy covering a more general policy covering the environmental problems at large. The National Environment Policy seeks to extend the coverage and fill in gaps that still exist, in light of present knowledge and accumulated experience. It does not displace, but builds on the earlier policies.

The NEP proposes economic efficiency criterion in environmental conservation. It stresses on the polluter pays principle as well as cost-benefit optimisation. These concepts are vital in order to solve environmental problems effectively. It also talks about dealing with environmentally damaging behaviour on the basis of civil suits, as opposed to the current reliance on criminal suits. Civil cases are flexible, with sanctions customised on a case-by-case basis. The burden of proof is reduced, and the cases dealt with relatively speedily. The policy further explains the failure of command-and-control instruments used for environmental compliance and enforcement, and proposes the idea of market-based instruments relying on price incentives. This is a very encouraging step. However, it needs to be explored further.

The National Environment Policy (NEP) is intended to guide the Government in bringing about regulatory reforms, implementation of programmes and projects for environmental conservation, besides reviewing and enacting legislation. The dominant theme of the policy is to ensure that the livelihood of people dependent on forest products is secured from conservation than from degradation of the resources. It focuses on conservation of critical environmental resources, livelihood security for the poor, integration of environmental concerns in economic and social development and judicious use of the resources. To achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it.

Environmental Impact Assessment continues to be the principal methodology for appraisal and review of new projects. Under the new arrangement, there will be significant devolution of powers to the State/Union Territory level.

It also seeks to revisit the Coastal Regulation Zone notifications to make the approach to coastal environmental regulation more holistic and, thereby, ensure protection to coastal ecological systems, waters and the vulnerability of some coastal areas to extreme natural events and potential sea level rise.

Involvement of Panchayati Raj Institutions and urban local bodies has been highlighted in the NEP that will include capacity development initiatives. A large-scale exercise has been completed for providing inputs towards a national biodiversity strategy and action plan.

### Criticisms

The NEP 2006 is not free of its shortcomings. Critics have criticised the policy stating that it falls short in carrying the logic forward in its search for solutions. Its recommendations are a contradictory mixture of the new and old ideas, lacking the clarity and consistency necessary to address the serious problems in our natural resource management.

Outcome of any policy depends on the institutional structure within which the policy operates. Institutions and the incentives and disincentives they generate are solely responsible for the success or failure of a policy. Decisions are optimal when decision makers bear the full costs as well as the benefits of their decisions. The fundamental problem in environmental management is that the costs and benefits are shouldered generally by different Parties.

Thus, ownership or stewardship of natural resources by the communities that are affected directly by these resources creates a framework that is able to resolve the perceived conflict between humans and the ecology.

However, despite all shortcomings, the NEP 2006 is on the right path with its emphasis on the 'wise-use' approach instead of the western approach of wilderness. Its overarching goal is to find ways to manage the environment so that humans can co-exist and prosper with it and not against it - the right to economic growth and social development.

## 27.7 Conclusion

From time to time various legislations relating to protection of environment from specific types of pollution have been passed by the Indian legislature. However, the Environment (Protection) Act, 1986 is the most comprehensive Act on the Indian statute book relating to environment protection. It is a general legislation for the protection of environment. It was enacted under Article 253 of the Constitution.

The Environment (Protection) Act was enacted in 1986 with the objective of providing for the protection and improvement of the environment. It empowers the Central

Government to establish authorities [under Section 3(3)] charged with the mandate of preventing environmental pollution in all its forms and to tackle specific environmental problems that are peculiar to different parts of the country.

A very wide power has been conferred under Section 3(3) of the EPA, on the Central Government to constitute any “authority” to exercise powers and perform functions mentioned in the Act. The Central Government under this section can implement the suggestion of the SC for establishment of “environment courts” which alone should be empowered to deal with all the matters, civil and criminal relating to environment.

The SC in various cases has directed the Central Government to constitute “authority” under Section 3(3) of the EPA. In *Vellore Citizens’ Welfare Forum v. Union of India*, the SC observed:

*“The main purpose of the EPA is to create an authority or authorities under Section 3(3) of the Act with adequate power to control pollution and protect the environment. It is pity that till date no authority has been constituted by the Central Government.”*

Thus, the Court directed the Central Government to constitute an authority and confer on this authority all the powers necessary to deal with the situation created by tanneries and other polluting industries in the State of Tamil Nadu.

The Central Government accordingly constituted the **“Loss of Ecology (Prevention and Payment of Compensation) Authority”** for the State of Tamil Nadu which was also conferred with the power to implement the “polluter pays principle”.

While explaining the scope of Sections 3, 4 and 5 of the EPA, the Bombay HC in *Sneha Mandal Co-op Housing Society Ltd. v. Union of India*, observed that Sections 3,4 and 5 of the EPA authorise the Central Government plenary powers to take all steps and measures as it deems necessary or expedient for the purposes of protecting and improving the quality of environment and for the purposes of preventing, controlling and abating environmental pollution. Section 5 gives specific powers to the Central Government for issuing directions in writing time to time to any person, officer or any other authority in connection with the Act which such person is bound to comply with.

However, the Central Government while issuing the notifications has to balance various interests including economic, ecological, social and cultural. While economic development should not be allowed to take place at the cost of ecology or by causing widespread environment destruction and violation, at the same time, the necessity to preserve ecology and environment should not hamper economic and other development. Both development and environment must go hand in hand. In other words, there should not be development at the cost of environment and vice versa.

In *M.C. Mehta v. UOI*, it was brought to the notice of the court that Ministry of Environment and Forests, GOI under Section 3(3) of the EPA has constituted the Environment Pollution (Prevention and Control) Authority for National Capital Region. The court observed that the step taken by the government is appropriate and timely and the above authority will deal with entire matters relating to environmental pollution in the National Capital

Territory Region. It was further pointed out that except for the Chairman, Central Pollution Board being an ex-officio member of the authority, the remaining members would be in the Committee not merely by virtue of their office but because of the personal qualifications on account of which they were included in the committee.

In *S. Jagannath v. UOI*, the SC directed the Central Government to constitute an “authority” under Section 3(3) of the EPA and confer all powers necessary to protect the ecologically fragile coastal area, sea-shore, waterfront and other coastal areas specially to deal with the situation created by shrimp culture industry in those areas.

In *M.C. Mehta v. UOI*, the SC held that the directions given by the Environment Pollution (Prevention and Control) Authority constituted under Section 3 of the EPA are final and binding on all persons and organisations concerned and they are bound to follow the same.

The object and purpose of the Act is “to provide for the protection and improvement of environment”, could only be achieved by ensuring strict compliance with its directions. Therefore, the directions or conditions put forward by the Act need be strictly complied with.

The Central Government has also the power to make rules to regulate environment pollution. The government in exercise of this power has already enacted “**The Environment (Protection) Rules, 1986**” which also came into effect on 19 November 1986”.

In conclusion, environment pollution is affecting not only individual but also entire countries all over the world. The awareness towards improving the quality of environment has increased substantially and all efforts are being made at different levels to minimise environmental pollution and thus help in improving the quality of life.

Management of environment means proper utilisation, conservation, preservation, control and recycling of the resources for maintaining a balanced ecosystems. The main focus of environment management is, thus, to avoid the over-use, misuse and abuse of the natural resources.

The effective environmental management is the optimum allocation of finite resources among the various possible uses and it has to be based on scientific and technological approach which takes full note of socio-economic parameters and compulsions.

Environmental management is an interdisciplinary approach to resource conservation and it acts as a regulatory force on human wantonness in resource wasting.

In India the Twelfth Five Year Plan has emphasized the need for sound environmental management which includes environmental planning, protection, monitoring, assessment, research, education, and conservation as major guiding factors for national development.

Environmental pollution is a world-wide phenomenon; therefore, there is a need to have a co-ordinated administrative structure from international level to national levels so that the environmental problems may be tackled in a co-ordinated and co-operative way.

# THE SCHEDULED TRIBES AND OTHER TRADITIONAL FOREST DWELLERS (RECOGNITION OF FOREST RIGHTS) ACT, 2006 AND FOREST CONSERVATION ACT, 1980

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### 28.1 Introduction

A forest is a terrestrial ecosystem, a community of plants and animals interacting with one another and with the physical environment. They are natural renewable resources. Depending on the potential of climate and land area, all countries differ in their forest resources.

In recent times, there has been a considerable reduction in the forest cover throughout the world. Today, forests cover only nearly 30 to 40% of the world's land<sup>1</sup>. India is the seventh largest country in the world occupying 2.5% of the world area. However, only 2.85% of the world's forest covers lies in India. Despite recent efforts to increase forest cover through reforestation, India's forests are in a devastated condition since as per State of Forest Report 2017, India's very dense forest cover is just 2.99%<sup>2</sup>.

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<sup>1</sup> State of India's Environment: The Citizen's Fifth Report, Centre for Science and Environment, 1999.

<sup>2</sup> State of Forest Report, 2017.

## 28.2 Threats to Forests

Forests are a precious resource of economic development and environmental stability. However, forests today are under immense threat of deforestation. They are reducing at an alarming rate. This process of deforestation is a serious threat to the economy, quality of life and the future of environment in our country. Some of the major reasons for degradation and decline of forests are -

- ◆ Rapid explosion of human and livestock population
- ◆ Over utilisation of forest resources by local communities
- ◆ Conversion of land to non-forestry use
- ◆ Expansion of agricultural cropland for farming
- ◆ Practice of slash and burn agriculture on invaded lands
- ◆ Enhanced grazing by cattle
- ◆ Increased demand in fuel-wood, timber, wooden crates, paper, medicines, and other forest dependent products
- ◆ Impact of other commercial activity
- ◆ Impact of developmental activity
- ◆ Impact of chemicals and other hazardous substances
- ◆ Illegal forest activities

Illegal forest activities are one of the major contributors of deforestation. Such activities are varied and include, *inter alia*, the unauthorised occupation of public and private lands, illegal logging in protected or environmentally sensitive areas, logging of protected species, poaching, woodland arson, illegal transport of wood and other forest products, smuggling, transfer pricing and other fraudulent accounting practices, illegal forest industrial processing such as discharging pollutants, etc. Virtually all illegal acts can be associated with corruption. Furthermore, corrupt acts are perpetrated for private gain and are intentional as distinguished from negligent acts, and are surreptitious in nature.

## 28.3 The Forest Conservation Act, 1980

In 1980, the Parliament, in response to the rapid decline in the forest covers in India, and also to fulfil the Constitutional obligation under Article 48-A, enacted a new legislation called the Forest Conservation Act, 1980. The **Forest Conservation Act, 1980** was enacted to help conserve the country's forests. It strictly restricts and regulates the de-reservation of forests or use of forest land for non-forest purposes without the prior approval of Central Government. To this end the Act lays down the pre-requisites for the diversion of forest land for non-forest purposes.

Deforestation causes ecological imbalance and leads to environmental deterioration. With a view to check further deforestation, the President promulgated the Forest

(Conservation) Ordinance, 1980 on the 25 October 1980. The Ordinance made the prior approval of the Central Government necessary for de-reservation of reserved forest and for use of forest land for non-forest purposes. The Ordinance also provided for the constitution of an advisory Committee to advise the Central Government with regard to grant of such approval.

The Ordinance was later on replaced with the enactment of the Forest Conservation Act, 1980 that came into force on 25 October 1980, which is the date on which the Forest Conservation Ordinance was promulgated. The Act too was passed with a view to check deforestation. The basic aim of the Act was to provide for the conservation of forests and for matters connected therewith or ancillary or incidental thereto.

Under the provisions of this Act, prior approval of the Central Government is essential for diversion of forest lands for the non-forestry purposes. In the national interest and in the interest of future generations, this Act, therefore, regulates the diversion of forest lands to non-forestry purposes. The basic objective of the Act is, to regulate the indiscriminate diversion of forest lands for non-forestry uses and to maintain a logical balance between the developmental needs of the country and the conservation of natural heritage. The, guidelines have been issued under the Act from time to time, to simplify the procedures, to cut down delays and to make the Act more user friendly.

Prior to 1980, the rate of diversion of forest lands for non-forestry purposes was about 1.43 lakh hectare per annum. However, with the advent of the Forest (Conservation) Act, 1980, the rate of diversion of forest lands were controlled to a certain extent.

The Act allows the diversion of forest land only for certain purposes such as to meet the developmental needs for drinking water projects, irrigation projects, transmission lines, railway lines, roads, power projects, defence related projects, mining etc. For such diversions of forest lands for non-forestry purposes, compensatory afforestation is stipulated and catchment area treatment plan, wildlife habitat improvement plan, rehabilitation plan etc. are implemented, to mitigate the ill effects of diversion of such vast area of green forests.

To monitor the effective implementation of the compensatory afforestation in the country, an authority named as “Compensatory Afforestation Management and Planning Authority (CAMPA)” is being constituted at the national level. A monitoring cell is also being set up in the Ministry of Environment and Forests to monitor the movement of proposals at various stages and the compliance of the conditions stipulated in the forestry clearances by the user agencies.

Clearance from Central Government for de-reservation of Reserve Forests, for use of forestland for non-forest purpose and for assignment of leases has been made mandatory under The Forest Conservation Act, 1980. Under Section 2 of the Act, prior approval of Central Government has to be obtained by the State Government or other authority for undertaking any of the above mentioned activities. For this purpose, the proposal has to be sent to the Central Government in the form specified in The Forest Conservation Rules, 1982.

In case the proposal for clearances are rejected, a person aggrieved by an order granting environmental clearance can appeal to National Environmental Appellate Authority set up under National Environmental Appellate Authority Act, 1997 within thirty days from the rejection of the proposal.

## 28.4 The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006

The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 was passed almost unanimously by the Lok Sabha as well as the Rajya Sabha on December 18, 2006. The Act recognises the rights of forest-dwelling Scheduled Tribes and other traditional forest dwellers over the forest areas inhabited by them and provides a framework for according the same.

This legislation, aimed at giving ownership rights over forestland to traditional forest dwellers. The law concerns the rights of forest dwelling communities to land and other resources, denied to them over decades as a result of the continuance of colonial forest laws in India.

A little over one year after it was passed, the Act was notified into force on December 31, 2007. On January 1, 2008, this was followed by the notification of the “Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Rules, 2007 framed by the Ministry of Tribal Affairs to supplement the procedural aspects of the Act.”

The Ministry of Tribal Affairs (MTA) was established as an independent ministry in 1999 to deal specifically with scheduled tribes. Though native tribes are respectable self-sustaining units, essential for forest conservation, having a rich culture and historical connection to the land, the criteria for designating a tribe as “scheduled” as per MTA includes stereotypical categorising traits such as being ‘primitive’, dwelling in geographical isolation, having a distinct culture, being shy of contact with the outside world and being economically ‘backward’. Currently there are 705 individual ethnic groups that are notified as scheduled tribes in the country, constituting 8.6% of the total population with 89.97% of them living in rural areas and 10.03% living in urban areas.

The list of rights as provided under the Act includes -

- ◆ Right to live in the forest under the individual or common occupation for habitation or for self-cultivation for livelihood
- ◆ Right to access, use or dispose of minor forest produce
- ◆ Rights of entitlement such as grazing and traditional seasonal resource access
- ◆ Rights for conversion of leases or grants issued by any local authority or any State Government on forest lands to titles
- ◆ Right to protect, regenerate or conserve or manage any community forest resource which the scheduled tribes and other traditional forest dwellers have been traditionally protecting and conserving.

The Act grants four types of rights. Section 3(1) of the Act grants Title rights, that is, ownership to land that is being farmed by tribals or forest dwellers as on 13 December 2005, subject to a maximum of 4 hectares. Ownership is only for land that is actually being cultivated by the concerned family as on that date, meaning that no new lands are granted. Section 3(1) also grants Use Rights over minor forest produce, including the ownership, to grazing areas, to pastoralist routes, etc.

Relief and development rights are granted under Sections 3(1) and 3(2) of the Act. It includes the right to rehabilitation in case of illegal eviction or forced displacement and to basic amenities, subject to restrictions for forest protection. Forest management rights are granted under Section 3(1) and Section 5 of the Act with the view to protect forests and wildlife.

### Opposition to the Act

The Act is one of the most controversial and strongly opposed legislations right from the very beginning. Since the bill was drafted and introduced in the parliament, it has generated a lot of debate. It is perhaps the first and only Act in the history of India to have been opposed through a TV campaign. In October 2003, Vanshakti, a group based in Mumbai, ran TV advertisements against the Act<sup>3</sup>.

The Act was vehemently opposed by the wildlife conservation lobby and the Ministry of Environment and Forests who termed it as the ideal recipe to ensure the destruction of India's forests and wildlife by "legalising encroachments". The forest department, together with the timber mafia, too had been blocking it, since it would severely erode their stranglehold over forest products. Corporates are also against it, since the illegal status of tribals and other forest dwellers makes the process of eviction and land acquisition for industrial projects easier<sup>4</sup>.

Some of this opposition has been motivated by those who see the law as a land distribution scheme that will lead to the handing over of forests to tribals and forest dwellers. However, the strongest opposition to the Act has come from wildlife conservationists who fear that the law will make it impossible to create "inviolable spaces", or areas free of human presence, for the purposes of wildlife conservation. Tiger conservation in particular has been an object of concern<sup>5</sup>. Many conservationists have also given recommendations for the amendment of the Act.

Parliamentarians supporting the Act have been accused by some as pursuing vote-bank politics to appease tribals. There is a view that the Act itself is capable of providing the basis for the extension of the rights to other forest dwellers.

On the other hand, the supporters of the Act argue that it is large developmental projects, such as large dams, power plants and mining activities, etc., that need to be checked,

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<sup>3</sup> Sethi, Nitin, Activists come out with Ads to Slam Forest Act, Times of India, October 23, 2007.

<sup>4</sup> Krishnan, Radhika, Forest Rights Act, 2006 - Misplaced Euphoria, Liberation, January 2007.

<sup>5</sup> Thapar, Valmik, Conflict will go up by 10000 percent, Daily News and Analysis, December 23, 2007.

rather than the forceful eviction of traditional forest-dependent communities to save the forests. Several groups contend that it is not tribals who are bringing in commercial activities into forests, but external commercial pressures that are degrading the forest resources and thereby eroding the traditional lifestyles of tribal communities. Meanwhile the more radical green groups warn against the land mafia misusing the provisions of the proposed law into conning unsuspecting tribals vested with land rights to part with their land in prime forest areas. They also fear that the proposed legal provision allowing for the “sale of forest-based products for their household needs”, would translate into large-scale commercialisation of forest resources.

However, supporters of the Act take the position that the Act is not a land distribution measure, and further that the Act is more transparent than existing law and so can help stop land grabbing. Regarding wildlife conservation, they have argued that the Act actually provides a clear and explicit procedure for resettling people where necessary for wildlife protection, but also provides safeguards to prevent this being done arbitrarily.

Supporters of the Act and others also argue that the provisions in the Act for community conservation will in fact strengthen forest protection in the country. This is said to be because it will provide a legal right for communities themselves to protect the forest, as thousands of villages are already doing in the face of official opposition.

- ◆ Kalpavriksh Position and Recommendations to the Scheduled Tribe and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006<sup>6</sup>:

#### **Critical Amendments, Clear Rules and Assessment Period Needed**

Kalpavriksh would like to stress that the prime functions of forests as a habitat for wildlife, as providers of ecological security, and as a source of basic survival and livelihood for millions of people, need to be protected. It also recognises the need for ensuring social justice and welfare of forest-dependent communities, and their central role in forest governance.

Adequate legislation to secure the rights of traditional forest-dwellers in India has long been overdue. We believe that appropriately defined rights, along with clear responsibilities and roles in the management of forests, are a pre-requisite to the long-term conservation and sustainable use of forests, including the conservation of wildlife within and outside protected areas.

The Scheduled Tribes and Other Forest Dwellers (Recognition of Forest Rights) Act 2006, is a mixed bag. While a number of provisions will lead to better conservation and enhanced livelihood security in certain situations, other provisions have a strong potential for damage to forests, wildlife and protected areas and increased livelihood insecurity. These would require appropriate amendments. Key examples of the positive elements of the Act are:

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<sup>6</sup> Kalpavriksh Position and Recommendations March, 2007 reproduced.

- ◆ Greater role and empowerment of Gram Sabha in determining claims, managing forests it has traditionally conserved, checking processes destructive of forest-dwellers' habitats, and protecting Traditional Knowledge.
- ◆ Site-specific and knowledge-based determination of critical wildlife habitats, and prohibition on their diversion for any other purpose.
- ◆ Greater livelihood security for traditional forest-dwellers who have been unjustly denied tenure.
- ◆ Displacement and relocation only by consent.

Key issues of concern which need either amendments in the Act or clarification through the Rules are:

- ◆ Cut-off date for eligibility of land claims as December 2005 instead of 1980.
- ◆ Exclusion of certain development projects and activities (e.g. construction of roads) from the purview of forest clearances.
- ◆ Unclear relationship with existing forest/wildlife laws and institutional arrangements for enforcement.
- ◆ No assignment of conservation responsibilities of right-holders and Gram Sabhas, and lack of monitoring bodies/institutions to ensure that rights are not damaging to forests.
- ◆ Regressive cut-off date for non-ST forest-dwellers, to a period even prior to what the Forest Conservation Act allowed for.

### Overall Recommendations

Though the Act has been preceded by considerable public debate, we also view with concern the process by which it was pushed through Parliament without a proper debate and time for MPs to even assess the changes made by the government. We strongly urge that the process of implementation of and changes in the Act, including the drafting of Rules under it, be fully open to public inputs.

In particular, we feel it is critical that there be a 6-month preparation period, during which the following be undertaken through the aegis of an empowered committee (set up by the relevant ministries and including publicly known conservationists, social scientists, and representatives of forest-dwelling communities), through an open and transparent process of public consultation and perusal of all available documentation and evidence -

- ◆ Consolidate all available mapping of 'encroachments', consolidate the available information 'encroachments' into a single database.
- ◆ Draft through an open and participatory process, Rules/Guidelines to operationalise the Act as appropriately amended, and to clarify a number of provisions that are subject to varying interpretations, including the precise relationship with previous forest/wildlife laws.

On no account should this preparatory period exceed 6 months, as both social justice and conservation requires implementation of the Act, appropriately modified. This should also be a period in which to discuss and bring in the necessary amendments to the Act to enable it to be ecologically more sensitive and fairer to non-ST forest-dwellers, and especially amendments related to the cut-off period and the impact assessment of development facilities.

We also strongly feel that in principle, no further large-scale diversion of forests should be permitted for any development project. This would require an amendment in the Forest Conservation Act also.

Given below is our assessment of the implications of various clauses of the Act, along with recommendations on what needs to be done to strengthen the Act's positive aspects and undo the negative aspects.

While we believe that the amendments indicated are crucial, we will also engage with the process of implementation as soon as it starts, to put our points across, raise alerts if the Act is having negative impacts, and help in taking the positive provisions forward.

#### **Recommendations for Specific Provisions**

- 1) Eligibility of claimants Scheduled Tribes, and other forest-dwellers (of at least 3 generations), with bona fide dependence
  - i) Definition of 'other forest dwellers' is unfair; eligibility should be, as per the Forest Conservation Act, for 'encroachments' up to 1980, provided such recognition is not in contradiction to any tribal land alienation related legislation/provisions in the specific area (this is to avoid the alienation of adivasi/tribal lands to non-adivasis/tribals where the latter have encroached on them).
  - ii) The term "bona fide livelihood needs" needs to be defined such that it includes resources essential for survival, and resources essential for basic economic livelihood (including individual or family level sale), but not large-scale commercial enterprises. A key element of the dividing line between these two kinds of livelihood activities must be sustainability (the term "sustainable" as defined in Section 2(n), referring to the Biological Diversity Act).
  - iii) The term "primarily reside in and who depend on the forests or forest lands" needs to be clarified. Are both these conditions ("residing in" as also "dependent on") to be satisfied to be eligible, or could either be adequate? Secondly, what does "residing in" mean, does it mean surrounded by forest, or could it also mean having forests adjacent to one's village/fields? This needs careful thought, as there are merits and demerits of both: a very broad definition could bring in various people who really have no strong traditional links with forests, but a very narrow one could leave out many traditionally dependent people who may not today be surrounded by forest but continue to be dependent on it. In all cases, a traditional link with the forest as also a heavy dependence on it for survival and basic livelihood, should be part of determining who should get priority in eligibility.

## 2) Process of determining claims

Initial enquiry and process by Gram Sabha, final decision by district committee (i) This is acceptable, except see below recommendation on composition of sub-divisional and district committees; it should also be mandatory for sub-divisional and district committees to provide transparent and prompt feedback with adequate justification, to Gram Sabhas, on the decisions taken regarding their claims.

## 3) Cut-off date

Dec. 2005 for ST; unclear for “other forest-dwellers”, since there is a possible contradiction between Sections 2(o) which specifies that they have to be at least 75 years in occupation, and 4(3) which specifies December 2005 as the date for both STs and other forest -

- i) Given the serious implications of the 2005 cut-off date for forests, especially in that it might become an easy cover for continued encroachments, 1980 should be reverted to as the cut-off date for regularisation of land, in consonance with Forest Conservation Act. This should be the cut-off date for both ST and other traditional forest-dwellers.
- ii) For post-1980 ‘encroachers’ who have been displaced by projects without rehabilitation till 2001, or have for other reasons of sheer necessity had to encroach, provide *in situ* afforestation or ecological restoration-based livelihoods (as recommended by MoEF in its 1990 circulars on ‘encroachment’) or option to move to revenue land elsewhere for which the projects responsible for their displacement should be made to pay. The relocation option should be exercised for such encroachers inside protected areas or other critical wildlife habitats that are identified through a transparent participatory process.
- iii) For post-2001 ‘encroachers’ who have been displaced by projects without rehabilitation, relocate and provide adequate rehabilitation with full costs being borne by the relevant projects.

Note: the 2001 cut-off date for the second category is to ensure that the Act does not encourage fresh encroachments; with 2005, this is possible since even encroachers after December 2005 would find it easy to claim having occupied land before this date.

- iv) In principle, prohibit any further large-scale diversion of forests for any kind of projects or processes (an amendment is needed in the Forest Conservation Act for this), since it would be inconsistent to not allow agriculture on forest lands but continue to allow mining, dams, industries and so on.

## 4) Kind of rights extended

To individual and community land occupied before 1980; to forest resources; to conserve ‘community’ forests; to protect Traditional Knowledge; to development facilities with a limit of 1 ha of maximum 75 trees density per project (in case of which, Forest Conservation Act will not apply).

i) Given the serious possibility of misuse of this provision in the absence of any impact assessment requirements, developmental facilities should continue to require clearances as per existing forest and environment laws; however, further decentralisation of the clearance process should be considered to reduce delays in responding to claims.

#### 5) Rights in important wildlife habitats

Relocation with consent, from critical wildlife habitats (to be):

- i) Urgently set up an independent group of credible scientists (natural and social, with modern and Traditional Knowledge) to identify critical wildlife habitats (within and outside current PAs). In identifying such habitats, the list should be based and build on:
  - a) Existing or already proposed core areas of protected areas, defined by independent scientists and others), where harmonious co-existence is not possible biosphere reserves, tiger reserves, and other conservation categories.
  - b) Other areas outside core areas, already identified in scientific or wildlife literature as being important for conservation of representative ecosystems, representative wildlife populations, or threatened/endemic species.
- ii) The term “irreversible damage” should be defined as damage that could cause permanent or irreversible changes in or loss of biodiversity, damage that could further threaten a threatened or endemic species, or damage that could further threaten a threatened or unique ecosystem. Additionally, it should include not only ongoing or existing damage, but also, using the precautionary principle, “potential” damage, where this is based on sufficient evidence to believe that given existing trends, irreversible damage can occur soon. The establishment of whether “irreversible damage” is taking place or could take place, should be made possible through rapid assessment techniques, and not have to wait for exhaustive long-term studies. Finally, the determination of “irreversible damage” should be done by committee set up by the State Government with representation of reputed ecologists/wildlife scientists, Traditional Knowledge experts from local communities, and other relevant persons, and should use the best available modern and Traditional Knowledge on the subject.
- iii) The term “co-existence” should be defined as the cohabitation or simultaneous use of an area by both humans and wildlife (in general or in terms of a defined species), in which wildlife conservation (including the continuation of viable wildlife populations) continues to be achieved even as humans are able to sustain their livelihoods and lives as they want. It should be clear that there are no universal formulae for co-existence, with several site-specific factors (ecosystem type and fragility, species composition and sensitivity, resource use intensity and type, management and cultural practices, etc) being important to consider while assessing its possibility.

- iv) In the context of relocation, the term “free informed consent” should be defined as including the provision of adequate information in local languages sufficiently in advance (at least 6 months), a decision by at least 51% of the Gram Sabha or whatever other local process of decision-making that the Gram Sabha decides, and the absence of any form of coercion or misleading/false promises.
  - v) An option of relocation with consent for forest dwellers in areas other than “critical wildlife habitats”, with verifiable rehabilitation package satisfactory to the dwellers, should also be provided for.
  - vi) Where relocation from PAs with the consent of local people is already ongoing or scheduled, it should be allowed to proceed as per schedule, with provision for additional compensation and/or alternatives based on the process of determination of rights as per the Act.
  - vii) In zones within protected areas that are outside of “critical wildlife habitats”, there needs to be a provision for regulation of activities linked to forest rights in order to secure the conservation objectives of each protected area; such regulation could be carried out by the relevant rights-holders and Gram Sabhas in association with the PA authorities.
- 6) Limit to land claims 4 hectares. This is acceptable.
- 7) Responsibilities for conservation and sustainability.

Gram Sabha “empowered” to conserve forests and wildlife, and community habitat.

- i) Define the term “empowered” to include “responsible for”, and provide for clear conservation responsibilities for all rights-holders and for communities (Gram Sabhas or other relevant institutions); re-instate need for rights to be sustainable (with clear definition of sustainability based on the Biological Diversity Act); provide for a function of relevant government agencies and NGOs to build the capacity of communities, local officials, and others, to assess and monitor this; provide also for restriction on extending rights where this may cause serious forest fragmentation, and/or provide conditional rights (finalised through a consultative process between the Gram Sabha and forest and revenue officials) to ensure sustainable land use from an ecological perspective; finally, provide for some kind of redressal in cases where the Gram Sabha fails to fulfil its responsibility, provided reasonable opportunity is given to it to explain any circumstances beyond its control that forced upon it such a failure.
- ii) The legal means of “empowerment” needs to be clarified. An appropriate sharing of powers between the Gram Sabha and the relevant government department, under each of the relevant laws (Forest Act, Forest Conservation Act, Wild Life Act, and Biological Diversity Act) needs to be worked out. The Gram Sabha should have powers to proceed against its own members, and the relevant department against those from outside the village, in case of violation of (a) to (d); with a mandated forum for regularly reporting to each other, and being able to get redressal if either

has failed to act on a violation. Such a sharing of powers and mutual reporting mechanism should help build collaboration between communities and government officials, to strengthen conservation and sustainability.

- 8) Composition of sub-divisional, District, and State committees Representatives of government departments and panchayat raj institutions
  - i) Include conservation and social action NGOs on all committees; explicitly provide for all committees to become forums for collaboration amongst government, communities, NGOs, and individual experts.
- 9) Use of critical wildlife habitats
 

Prohibition on diversion of such area for any other purpose.

  - i) This provision needs strong support, as it is the only legal measure so far that does not at all allow governments to give clearance to diversions of wildlife habitats.
- 10) Diversion of forest lands for non-forest purposes

General provision on Gram Sabhas being empowered to safeguard their habitats

- i) The provision in the JPC report, for the “free, prior informed consent” of Gram Sabhas before diversion of forest land for development or other non-forest projects, should be re-inserted.
  - ii) Additionally, the provision for ‘empowerment’ should include the need for community consent for any diversion of forest land for development purpose.
  - iii) These provisions will be an additional check against destructive ‘development’ projects, while not over-riding the power of other authorities to also stop/ regulate such projects.
- 11) Right to conserve forests

Community has right to conserve any forest it has traditionally conserved

- i) This provision needs strong support, in case of forests that communities have shown the ability or potential to conserve. Rules should specify how to operationalise this. This should include the right to be consulted by any person/ agency outside the community, that wants to take up any activity in the relevant community forest, as also the right to refuse such a proposal if the community feels it is detrimental to conservation or to its own livelihood security. It should also include the right to consultation and refusal relating to any new programme/policy/scheme of the government that could undermine the ability of the community to continue conserving and managing the forest.

- 12) Right to protect Traditional Knowledge

Community has right to protect traditional (i) This provision needs strong support; rules should provide clear operational guidelines on how communities will use it. This should

include the right to freely use and exchange genetic resources and their associated knowledge as has been done by communities knowledge traditionally, but also the right to use measures to protect traditional or community knowledge as they feel appropriate, and to expect the government to give full support in such measures. This right should include the right to withhold sensitive information if the community feels that its disclosure could constitute a public threat or a threat to the community's own livelihood security.

### 13) Relationship with existing laws

Is not in derogation of any other law except where they may contradict provisions of this Act; in the case of developmental facilities for villages, over-rides the Forest Conservation Act

- i) Further clarity in relationship with other laws is needed; the committee we propose be set up to map encroachments and draft Rules/Guidelines, should systematically look at each provision of this Act and other relevant laws including wildlife, forest, and biodiversity laws, and suggest clarifications.
- ii) The spirit of conservation as embodied in these laws, must prevail in all situations of forest/wildlife/biodiversity damage caused by the establishment and enjoyment of rights granted under the Forest Rights Act. In the case of protected areas, it should be specified that the Wild Life Act will apply in all situations of wildlife/habitat related violations.

### 14) Monitoring

By State level committee.

State committees need to be empowered, and national committee created, to monitor the impact of extension of rights, to frame guidelines on monitoring ecological and social impacts, to regularly update maps and databases on status of encroachments, and to help prevent all further encroachment including through the use of GIS and on ground tools. For this reason, such committees must have representation from ecological/wildlife experts and social scientists (apart from government department officials and representatives of local forest-dwelling communities as already provided for).

## 28.5 Conclusion

Forestry in India is a significant rural industry and a major environmental issue. Dense forests once covered India. As per State of Forest Report 2017, the total forest cover of India is 21.54% of the geographic area of the country. However, as per FAO, the per capita forest area in India is only 0.064 ha against the world average of 0.64 ha. Forest degradation is a matter of serious concern. The contribution of forest sector to the GDP is considered as an underestimate as it does not take into account several important items such as head loads of fire wood, wood used for power generation, eco-tourism, etc. Forest sector contribution to GDP from 2002 to 2010 dropped from 1.7% to 0.9%, largely because of rapid growth of the economy in other sectors and the government's decision to reform

and reduce import tariffs to let imports satisfy the growing Indian demand for wood products.

India produces a range of processed forest (wood and non-wood) products ranging from wood panel products and wood pulp to make bronze, and resin. India's paper industry produces over 3,000 metric tonnes annually from more than 400 mills. The furniture and craft industry is another consumer of wood. India's wood-based processing industries consumed about 30 million cubic meters of industrial wood in 2002. An additional 270 million cubic meters of small timber and fuel-wood was consumed in India. An important cause for suboptimal wood use is its relatively low price because of subsidies on wood raw materials and free fuel-wood supply.

India is the world's largest consumer of fuel-wood. India's consumption of fuel-wood is about five times higher than what can be sustainably removed from forests. However, a large percentage of this fuel-wood is grown as biomass remaining from agriculture, and is managed outside forests. Unless India makes major, rapid and sustained effort to expand electricity generation and power plants, the rural and urban poor in India will continue to meet their energy needs through unsustainable destruction of forests and fuel wood consumption.

Forestry in India is more than just about wood and fuel. India has a thriving non-wood forest products industry, which produces latex, gums, resins, essential oils, flavours, fragrances and aroma chemicals, incense sticks, handicrafts, thatching materials and medicinal plants. About 60% of non-wood forest products production is consumed locally. About 50% of the total revenue from the forestry industry in India is in non-wood forest products category. In 2002, non-wood forest products were a source of significant supplemental income to over 400 million people in India, mostly rural. In 1969, forestry in India underwent a major change with the passage of the Forest Rights Act, a new legislation that seeks to reverse the "historical injustice" to forest dwelling communities that resulted from the failure to record their rights over forest land and resources. It also sought to bring in new forms of community conservation. The Forest Conservation Act, 1980, and The Scheduled Tribe and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 have followed in strengthening this conservational effect.

# UNIT 29

## PANCHAYATS EXTENSION TO SCHEDULED AREAS (PESA) ACT, 1996

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### 29.1 Introduction

Panchayati Raj Institutions have been in existence for a long time. The philosophy of Panchayat Raj is deeply steeped in tradition and the culture of rural India. It provides a system of self-governance at the village level; however, till the early 90s it did not have a constitutional status. The Constitution (73rd Amendment) Act, 1992 provides a framework on which to build the third level of governance panchayats.

The Constitution (73rd Amendment) Act, 1992 mandates provisions for -

- ◆ Establishment of a three-tier structure (Village Panchayat, Panchayat Samiti or intermediate level Panchayat and Zilla Parishad or District level Panchayat).
- ◆ Establishment of Gram Sabhas at the village level.
- ◆ Regular elections to Panchayats every five years.
- ◆ Proportionate seat reservation for SCs/STs.
- ◆ Reservation of not less than 1/3 seats for women.
- ◆ Constitution of State Finance Commissions to recommend measures to improve the finances of Panchayats.
- ◆ Constitution of State Election Commission.

The said amendment also vests power in the State Government to endow Panchayats with such powers and authority as may be necessary to enable them to function as institutions of self-government such as:

- ◆ Preparation of plans and their execution for economic development and social justice in relation to 29 subjects listed in the XI schedule of the Constitution.
- ◆ Authority to Panchayat to levy, collect and appropriate taxes, duties, tolls and fees.
- ◆ Transfer of taxes, duties, tolls and fees collected by the States to Panchayats.

### Gram Sabha

Gram Sabha is a body consisting of persons registered in the electoral rolls of a village or a group of villages which elect a Panchayat. A vibrant and enlightened Gram Sabha is central to the success of the Panchayati Raj system.

The year 1999-2000 was declared as the “Year of the Gram Sabha”. State Governments were urged to -

- ◆ vest in the Gram Sabha, powers on the lines envisaged in the Provisions of the Panchayats (Extension to the Scheduled Areas) Act, 1996.
- ◆ make a mandatory provision in the Panchayati Raj Act for holding Gram Sabha meetings throughout the country on the occasion of the Republic Day, Labour Day, Independence Day and Gandhi Jayanti.
- ◆ make a mandatory provision in the Panchayati Raj Act specifying separately, the quorum for Gram Sabha meetings, for ordinary meetings, meetings convened for special purposes and re-convened meetings due to cancellation of an earlier meeting for want of quorum.
- ◆ make members of the Gram Sabhas aware of their powers and responsibilities with a view to ensuring mass participation, particularly of the hitherto marginalised, groups, such as women and SCs/STs.
- ◆ lay down procedures for the Gram Sabha to effectively carry out social audit of beneficiary-oriented development programmes of the Ministry or Rural Development, particularly the legal powers of the Gram Sabha to order recovery or punishment for financial mismanagement.
- ◆ evolve a plan of action for generating wide publicity for Gram Sabha meetings.
- ◆ To evolve guidelines/procedures for holding Gram Sabha meetings and a model list of business for such meetings.
- ◆ To generate awareness as to the rights of the Gram Sabha with respect to control over natural resources, land records and conflict resolution.

The Constitution (73rd Amendment) Act, 1992 envisages empowered Panchayats as institutions of self-government at the village level capable of -

- ◆ Planning and executing village level public works and their maintenance.

- ◆ Ensuring welfare of the people at the village level including health, education, communal harmony, social justice particularly gender and caste based discrimination, dispute resolution, welfare of children, especially the girl child.

The amendment also envisages empowered Gram Sabhas as the Parliament of the People at the grassroots level to whom the Gram Panchayats are solely accountable.

## 29.2 Premise of the Act

The Parliament extended the 73rd Amendment Act to the Scheduled Areas in ten States by legislating the Provisions of Panchayats (Extension to the Scheduled Areas) Act, 1996. (hereinafter PESA). The PESA along with its State Adaptations has to be seen as one more definitive indicator of increasing attempts at carving out the role of the PRIs in Natural Resource Management.

The PESA endows special powers and authority to the Panchayat at appropriate level and the Gram Sabha in order that they function as institution of self-government. It has been mandated that State Legislature shall ensure these powers to the Panchayat at appropriate level as well as to the Gram Sabha. The PESA is especially remarkable for the vast and wide-ranging powers that it vests with the Gram Sabhas in Scheduled Areas. These include, *inter alia* approval of the Gram Sabha of the plans, programmes and projects for social and economic development before such plans, programmes and projects are taken up for implementation by the Panchayat at the village level; Gram Sabha would be responsible for the identification or selection of persons as beneficiaries under the poverty alleviation and other programmes. Further, State-Legislature shall ensure that the Panchayats at the appropriate level and the Gram Sabha are endowed specially with the ownership of minor forest produce. This has direct implications for the extent of empowerment of the Gram Sabha vis-à-vis its right relating to forest and forest produces. Although the PESA is restricted in its application to the Scheduled Areas alone, its logic of conferring “ownership of Minor Forest Produce” to the Panchayat Raj Institutions cannot be missed. Generally speaking, in most of the States this power seems to be restricted to the local areas of the Panchayat of the respective Gram Sabhas.

### Other Constitutional and Central Legal Provisions for Forest Conservation

#### a) Constitution of India

The Constitution of India has significant provisions for environmental protection and environmental rights and duties of the people. Under the Directive Principle of State Policy, Article 48-A of the Constitution, enjoins that the State shall endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country, and Article 51-A (g) which proclaims it to be the fundamental duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wildlife and to have compassion for living creatures. Thus, by raising environmental concerns to the constitutional level, India has provided its citizens with a powerful legal

tool to protect wildlife, maintain health standards and curtail government and private sectors including trans-nationals corporations, from degradation of natural resources. The constitutional mandate can certainly be invoked in case of threats to ecosystems or any rich biodiverse region.

#### **b) The Environment Protection Act, 1986**

Another important general framework of environment protection is provided under the umbrella legislation of the Environment Protection Act, 1986 and this law can be of a great value in sustaining legal action for forest conservation. The Environment Protection Act, 1986 was the response to a widely felt need for a general legislation for environment protection. Under the Act, the Central Government is vested with power to take all such measures, as it deems necessary or expedient for the purpose of protecting and improving the quality of environment and preventing, controlling and abating environmental pollution. (Section 3) The Central Government has been empowered to issue directions including the power to direct closure, prohibition and regulation of any industry, operation or process or stoppage or regulation of the supply of electricity or water or any service. (Section 5) Subsequent to the enactment of the Environment Protection Act, the Water and Air Acts were also amended and the Pollution Control Boards were clothed with powers to direct closure, prohibition or restraining of any industry operation or process. (Section 33 Water Act, 1974 and Section 31-A Air Act, 1981) Though these Acts do not have specific action points on biodiversity, their liberal interpretation and use can have wide implications for biodiversity conservation. This is particularly true in case of areas of biodiversity importance that are not protected under the existing legal regime. For example, the corridors of protected areas that are vital to genetic continuity in PAs are not covered under any law may be protected zones under the Environment Protection Act.

#### **c) Wildlife Protection Act, 1972**

The Wildlife Protection Act, 1972 (WLPA) is the single most significant statute on wildlife conservation in India. Under it, over five hundred National Parks and Sanctuaries termed protected areas (PAs) in common parlance (though this is not a legal term), have been created or given legal protection. Though there were several laws relating to wildlife prior to 1972, as discussed above, the WLPA was India's first comprehensive legislation, covering the whole country. This law has been explained in detail in another module of the Course.

### **29.3 Panchayat Extension to Scheduled Areas Act, 1996**

Panchayat Extension to Scheduled Areas Act (PESA) was passed on 24 December in the year 1996. It was passed with a view to provide for the extension of the provisions of Part IX of the Constitution relating to the Panchayats to the Scheduled Areas. It was enacted by the Government of India to cover the "Scheduled areas", which are not covered in the 73rd Amendment or Panchayati Raj Act of the Indian Constitution. It was enacted to enable Gram Sabhas to self-govern their natural resources. It is an Act to provide for the

extension of the provisions of Part IX of the Constitution relating to the Panchayats to the Scheduled Areas.

Village level democracy became a real prospect for India in 1992 with the 73rd amendment to the Constitution, which mandated that resources, responsibility and decision making be passed on from Central Government to the lowest unit of the governance, the Gram Sabha or the Village Assembly. A three tier structure of local self-government was envisaged under this amendment.

Since the laws do not automatically cover the scheduled areas, the PESA Act was enacted in 1996 in these areas.

The Act extended the provisions of Panchayats to the tribal areas of nine States that have Fifth Schedule Areas.

The PESA Act gives radical governance powers to the tribal community and recognises its traditional community rights over local natural resources. It not only accepts the validity of “customary law, social and religious practices, and traditional management practices of community resources”, but also directs the State Governments not to make any law which is inconsistent with these. Accepting a clear-cut role for the community, it gives wide-ranging powers to Gram Sabhas, which had hitherto been denied to them by the lawmakers of the country.

This Act gave the tribal communities and tribal Gram Sabha the power to oversee development within their jurisdiction and to act as a watchdog over possible government projects. Not only were the tribal Gram Sabhas given the power to preserve the local culture and traditions but they were also granted the power to prevent land alienation. They were also granted ownership over certain natural resources such as minor water bodies and forest produce. Hence, under the Act, every Gram Sabha became the owner of natural resources. There could be no acquisition of land for development projects and for resettling or rehabilitating persons affected by such projects without prior consultation of the Parishad.

## 29.4 Highlights of Important Provisions of the Act

Local self-governance, interpreted as devolution of powers and functions of the government departments by the creation of Panchayat Raj Institutions (PRIs) as a national framework of governance commenced with the passage of 73rd Amendment to the Constitution. The States made suitable amendments to existing Panchayat laws where they existed or enacted legislations in accordance with the 73rd Amendment where they did not exist. The devolution of the powers and responsibilities to the PRIs were neither uniform nor at the same pace, but progressed steadily. The Scheduled Areas were exempted from the application of the 73rd Amendment for which the Parliament enacted a separate law, Panchayat (Extension to the Scheduled Areas) Act, 1996 (PESA). PESA provisions were incorporated through amendments to the State Panchayat laws and amendments to the subject laws. Some highlights of the Act are as follows:

- ◆ A State legislation on panchayats in the scheduled area should take care of the customs, religious practices and traditional management practices of community resources
- ◆ Every village shall contain a Gram Sabha whose members are included in the electoral list for the panchayats at village level
- ◆ The recommendation of the Gram Sabha is mandatory for granting mining licenses in the scheduled areas
- ◆ Planning and management of minor water bodies are entrusted to the panchayats.

Gram Sabha are endowed specifically with the following powers -

- i) the power to enforce prohibition or to regulate or restrict the sale and consumption of any intoxicant;
- ii) the ownership of minor forest produce;
- iii) the power to prevent alienation of land in the Scheduled Areas and to take appropriate action to restore any unlawfully alienated land of a Scheduled Tribes;
- iv) the power to manage village markets by whatever name called;
- v) the power to exercise control over money lending to the Scheduled Tribes;
- vi) the power to exercise control over institutions and functionaries in all social sectors;
- vii) the power to control over local plans and resources for such plans including tribal sub-plans.

## 29.5 Problems in Implementation of PESA

The two decades of PESA in the 9 States with Scheduled Areas has been dismal and failed to usher in the expected far-reaching turn around in what was seen as governance deficit and mis governance in the Scheduled Areas. PESA continued to be hailed as a fundamental departure to local self-governance that would usher in participatory democracy and genuine empowerment of the people. The reasons why PESA failed to deliver has been a result of lack of clarity, legal infirmity, bureaucratic apathy, lack of political will, resistance to change in power hierarchy and non-realisation of its real long term worth.

The basic premises of the provisions of the PESA were to facilitate participative democracy in tribal areas by empowering Gram Sabha, restore the power to community to manage natural resources including land, water, forest and minerals and evolve an effective deliver-IN, system for development in the Scheduled Areas. The State Governments followed the suit by amending their Panchayats Acts. However, the amendments made by the States carried only the letter of the Central Act, not its spirit. For instance, the intent of the Central Act was to make Gram Sabha in Scheduled Areas a living organisation wielding full powers to manage the affairs of the community within its territorial jurisdiction. But several States diluted the intent of the Act by assigning more powers to

the Gram Panchayat over the Gram Sabha. Even in some matters the States completely overlooked the authority of the Gram Sabha.

It is also noted that in the absence of proper definition of certain subjects, the State Governments though followed the provisions of the Central Act; it was without defining the subject suitably. For instance, following the provisions of the Central Act, the State Governments entrusted to Panchayats at the appropriate level the responsibilities relating to planning and management of minor water bodies in the Scheduled Areas but did not define the term minor water bodies.

The State Governments also do not appear to have clear idea about the term 'local self-government'. To what extent the Panchayats in Scheduled Areas are to be given administrative and financial autonomy needs to be clarified to the States.

## 29.6 Conclusion

The various conformity legislations of the various tribal States in India supposedly giving effect to the most radical legislation in Indian legal history have proved that the spirit of a social welfare legislation can be totally marred by carefully selecting words and phrases in law that kills the soul while maintaining the body of a legislation. The law on tribal self-rule which recognised for the first time the competence of a village assembly to manage its community resources, that a village where one resides is not always a homogeneous, population based entity but a social cohesive unit with its own self-identity where people who have been ordinarily and traditionally residing for centuries with a common belief system and cultural traits apart from the manner in which they manage their natural resources.

Despite such laudable objectives the States having scheduled areas have proved that it is too difficult to relinquish power in a bureaucratic power structure. Slight twist of words, maintaining ambiguity in legislative framework, and brazen omissions of fundamental principles on which a social, empowering legislation is based can override the basic intent of any well-meaning law due to States' whim. But it may be too late for States to undermine the significance of communities living close to natural resources on which they depend. It is only a matter of time when the nation-State would come about in their approach to realise that for any effective governance including managing our common pool resources they have to integrate communities closest to natural resources by a near total paradigm shift in their approach and not merely by some ineffective sop in the garb of any social welfare legislation.

# UNIT 30

## WILDLIFE PROTECTION ACT, 1972

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### 30.1 Introduction

The term 'Wildlife' was coined by William Hornady in 1913 in his book "Our vanishing Wildlife". Wildlife implies all the biotic elements on the Earth including all species of plants, animals, birds and microbes of the world excluding man, domestic animals and cultivated plants. Therefore, the wildlife means the total natural biodiversity ranging from tiny microbes to mighty mammals. Wildlife is considered as a renewable resource.

Fluctuation in the population of wildlife is a natural phenomenon. However, when the decline in the wildlife population occurs due to unnatural or artificial reasons, one can be sure that the future of not only such species that are affected by the decline, but also of the entire human race is in danger. Habitat degradation and other disturbances can have adverse effect on the natural population of wildlife.

The rapid rate of extinction of many species of animals and plants is an increasing concern. Habitat preservation and enhancement are critical to existence of wildlife in an area. Animals cannot live in an area that does not provide proper food, cover, water and special needs to which the creatures are suited for. People's activities alter many habitats, which acts as a detriment to Wildlife.

Humans and wildlife have led intermingled lives for centuries. Forests have been viewed as the primary sources of wildlife, both for direct use as live animals as well as for use

as food and trophies. However, people often forget that forests are not to be understood as sources of wildlife but must be envisioned as the home of numerous species of animals, birds and plants.

The term 'Wildlife' is a part of the much larger term - Biodiversity. The term Biodiversity refers to the variety of life forms, from genes to species to broader scale of ecosystems. In other words, it means variety and variability among living organisms, their genetic differences and the ecosystems in which they live. This living wealth of earth is the outcome of millions of years of evolutionary history.

The distribution of wildlife is uneven on the earth because of the different environmental conditions. Warm humid tropical areas (lying between tropic of Cancer and Capricorn) are rich in biodiversity compared to temperate and polar areas. The countries like Brazil, Columbia, Mexico, Indonesia, Peru, Malaysia, Ecuador, India, Zaire, Madagascar and Australia are known as **Megadiversity countries** because of their rich biodiversity.

#### ◆ Levels of Diversity

Biodiversity is often considered at three fundamental levels - genetic, species and ecosystem level.

- 1) **Genetic diversity:** It refers to genetic differences within each species i.e. differences at the level of genes. For example, varieties of crops, strains of microbes or breeds of livestock. According to an estimate there are 10 billion different genes distributed across the world's living organisms. More genetic diversity within a species means greater variability and adaptability of individuals to environmental conditions. Lesser genetic diversity on the other hand leads to uniformity and thus greater susceptibility to environmental changes. Monocultures (genetically similar crops or trees) are known to be more susceptible to environmental changes compared to mix-cultures (genetically different crops or trees) because of little genetic diversity in them. The genetic variations can be measured using a variety of DNA-based and other techniques.
- 2) **Species diversity:** It refers to the variety of species of animals, plants or micro-organisms found on the earth. Biodiversity term is mostly considered as a synonym to species diversity. It is a very important level of biodiversity since it is easier to work with and the species can be seen with the naked eye unlike genetic diversity that can be worked out only in the laboratories. There is a wide difference in the various estimates for the total number of species found on this earth (this varies from 5 to 100 million). However, so far nearly 1.7 million species have been described. Species diversity can be measured in a number of ways. Most of these ways can be classified into three groups of measurements - species richness, species abundance and taxonomic diversity. Wildlife is contained mostly in species diversity.
- 3) **Ecosystem diversity:** It includes various types of ecosystems and the diversity of habitats and ecological processes occurring therein. Examples of various ecosystems are coral reefs, tropical rain forests or temperate rain forests and these are based on the major communities. The measurement of biodiversity within an ecosystem is a difficult task because of their complex nature.

### ◆ Importance of Wildlife

Wildlife is important due to numerous reasons, four of which are listed below:

- 1) **Beauty** - By their unique way of existence, wild creatures exaggerate the natural beauty of the earth.
- 2) **Economic value** - The financial value of wild species is important to the economies of several nations, as it provides many valuable substances like wood and other plant products, fibbers, meat and other kinds of products.
- 3) **Scientific value** - By studying wildlife, scientists have gained valuable knowledge about various life processes and discovered important medical products. Wildlife conservation is necessary because it controls the ecological balance, maintains food chains/webs, bio-geo-chemical cycles, and it is the principal source of gene bank.
- 4) **Survival value** - Wildlife helps in maintaining the balanced living systems of earth, sustaining the food chain etc., which consequently ensures survival of life. Wildlife is a source of food, medicines as well as our basic survival.
- 5) **Ecological Services** - Wildlife provides us various ecosystem services that sustain our life. Some of these services include conservation of water, soil and other natural resources.

During the recent times major focus is to assign the value to wildlife. However, there exists conflict whether to assess it in terms of monetary value or ecological services.

### Key threats to Wildlife

Rapid loss in wildlife world-wide can be attributed to the following reasons -

- 1) **Loss of Habitat** - Owing to the population explosion in humans and lack of space, fewer natural wildlife habitat areas are left each year. The habitats that remains are often further degraded to bear little resemblance to the natural wild areas which existed in the past. In many areas, only islands of habitat remain, isolated in the middle of large agricultural or urban developments, thus preventing normal interactions, healthy breeding or safe travel for many species. Some wildlife species are adaptable to many conditions, but other creatures have very specific plant, moisture and temperature requirements. These are endangered species which we risk losing if we do not preserve an adequate amount of habitat for their survival.

A number of species have lost their habitat because of increased human interference like construction of dams, roads, railway tracts or bridges across natural ecosystems, mining activity or industries. Habitat fragmentation due to deforestation or any other biotic stress has caused much harm to precious biodiversity. Deforestation rate is increasing due to burgeoning population and this has destroyed the natural homes of species. In fresh water ecosystems, construction of dams has destroyed large habitat of hundreds of aquatic flora and fauna. Likewise, in marine ecosystems, the coastal development has affected the communities, particularly species rich ecosystems like coral reefs.

- 2) **Climate Change** - Since various types of plants and animals have specific habitat requirements, climate change causes disastrous losses of wildlife species. It is feared that a one or two degree change in the average annual temperature will translate into large changes affecting drastic change in the climatic conditions further resulting in ecological imbalances.
- 3) **Pesticides and Toxic Chemicals** - Pesticides are deliberately spread to make the environment toxic to certain plants, insects or rodents, so it should not be surprising that other plants and wildlife are often harmed at the same time. While many of the worst pesticides have been outlawed in the past thirty years, scientists have found numerous worries with several pesticides which are still legal and commonly used. In addition, many chemical pollutants are toxic to wildlife, such as polychlorinated biphenyls (PCBs), mercury, petroleum by-products, solvents, anti-freeze, etc.

Excessive use of synthetic chemicals as herbicides, pesticides and insecticides has polluted the soil and water environment and greatly threatens the diversity and richness of the species. Due to increased industrialisation, the intensity of the acid rain has increased and greatly affected the natural vegetation and the forests in different regions of the world.

- 4) **Non-native Species** - Non-native species are those class of organisms that are not traditionally found in the local area. These “aliens” are often aggressive competitors with native wildlife, or predatory, especially after they have left their own natural environments and controls. They are responsible for spreading diseases, acting as parasites or at times even causing the extinction of the native species.

They are also termed as “exotic species”. Exotic species are those which have been introduced either purposely or entered accidentally in some environmentally distinct zone from the other geographically different areas. They have caused much harm to native plant communities than expected and enhanced the extinction (loss of species) rate. The phenomenon is more common on the islands or isolated ecosystems. A number of example exist world over when an introduced species has become a serious pest or problem. For example, *Lantana camera* introduced as an ornamental hedge in India has now become a serious invader of forests. The example of accidental entry is the Congress grass (*Parthenium hysterophorus*) that is now a major problematic weed in India, Australia and other parts of the world. A number of reasons such as fast growth, rapid colonisation, better and efficient resource utilisation, wider adaptability and the absence of natural enemies in the invaded areas.

- 5) **Environmental Pollution** - Air, water and soil pollution is one of the major reasons for wildlife loss in the modern era. Modernisation, urbanisation, increasing population, and changing life style are some of the prime reasons for the increased levels of pollution in the natural environment. It has not only affected the number of existing species but has also caused the loss of a variety of species that could not tolerate the increased pollutant levels in the atmosphere and have gone extinct.

6) **Over exploitation** - Some species have become threatened and even gone extinct due to their over exploitation by the humans for their food, feed or some other beneficial purpose. In fact, a number of ecosystems have got damaged both in terms of number and variety of species that these are beyond repair in the near future.

### 7) Other Factors

- ◆ Poaching by man for meat, skin, sport etc. This picture was worsened when modern hunting instruments, guns were invented.
- ◆ Overgrazing by domestic animals.
- ◆ Change of migratory route.
- ◆ Introduction of exotic species and export of some species.
- ◆ Overexploitation of natural products.
- ◆ Mismanagement.

The precious wealth of wildlife is at risk as a number of species of animal, plants or microbes are shrinking and becoming rare and threatened with extinction (complete loss of species from natural habitats). The extinction rate has substantially increased over the past few decades (currently 1,000 and 10,000 times greater than the natural one). As a result, a number of valuable species are at risk of extinction.

Looking at the grave situation of world biodiversity, IUCN (International Union for Conservation of Nature and Natural Resources) now known as The World Conservation Union prepared a list of species (plants or animals) showing various categories of extinction risk. These documents are known as **Red Lists**. In these documents, IUCN has assessed status of world taxa threatened with extinction with a view to promote their conservation. The red lists on animals and plants threatened with extinction were first published in 1988. Since then, a number of species have been evaluated with this motive and given ranks as per their categories and criteria. It has prepared a publication entitled “**2004 IUCN Red List of Threatened Species**” that has complete information on threatened and endangered species of the world with risk of extinction.

The species have been divided into various categories based on their taxonomy, distribution and conservation status. These categories are:

- ◆ **Extinct (EX):** A species is said to be extinct when none of its individual exists either in wild or in cultivation or captivity.
- ◆ **Extinct in Wild (EW):** A species is assigned this category when it is known to survive only in cultivation, or in captivity or as a naturalised population well outside its natural range. None of its individual exists under natural condition.
- ◆ **Critically Endangered (CR):** When there is 80% reduction in the population of a given species over the last 10 years or three generations, whichever is longer, it is said to be critically endangered.

- ◆ **Endangered (EN):** A species is said to be endangered when there is a reduction of about 70% in its population over the last 10 years or three generation, whichever is longer.
- ◆ **Vulnerable (VU):** A species is known to be vulnerable when a reduction of 50% of its population is noticed over the last 10 years or the three generations, whichever is longer.

Besides, there are a few more categories identified by IUCN. These are:

- ◆ **Near Threatened (NT):** Species that are neither CR, EN or VU but the reduction in its population is quite high and close to the above categories, it is said to be *near threatened*.
- ◆ **Least Concern (LC):** A species that is widespread and abundant (not categorised in either of the above categories)
- ◆ **Data Deficient (DD):** Species for which available information is not complete but it is not under extinction risk.
- ◆ **Not Evaluated (NE):** Not yet evaluated species are placed in this category.

## 30.2 Wildlife Conservation

Wildlife is vital for our existence. Its depletion at a faster rate is a cause of concern for everyone. It is thus very important to conserve it. Steps have been taken at the local, regional, national and even at the international levels in this direction

Conservation means protection that is maintained from outside the natural habitat. Conservation of wildlife not only includes the preservation of all species but also the enhancement of wildlife habitat and the control of wildlife problems. Certain issues like consumption and exploitation of wildlife and wildlife products for commercial purposes are also tackled within the ambit of conservation.

Continuous efforts are being made by anxious wildlife lovers to protect the endangered species of wildlife as well as those that are on the verge of extinction and thus save the world from running out its green heritage.

There are two ways in which conservation techniques can be applied to preserve and sustain the wildlife. They are:

- 1) **In situ conservation** - *In situ* is a Latin phrase that literally means “in place”. While talking in terms of wildlife conservation, *in situ* means to examine the phenomenon exactly in place where it occurs, without the interference of any special medium. In terms of genetic resources like wildlife, *in situ* conservation is also known as ‘on site conservation’. It involves the process of protecting an endangered species of a plant or animal in its natural habitat either by protecting or cleaning up the habitat itself, or by defending the species from being hunted.

Wildlife conservation is mostly based on *in situ* conservation. The benefit to *in situ* conservation is that it maintains recovering populations in the surrounding where they have developed their distinctive properties since in such type of a conservation, the protection is maintained inside the natural habitat. That is, it involves the protection of wildlife habitats. The establishment and working of different protected areas like Sanctuary, National park, Biosphere reserve etc. are the different aspects of *in situ* conservation.

Also, sufficiently large reserves are maintained to enable the target species to exist in large numbers. The population size must be sufficient to enable the necessary genetic diversity to survive within the population, so that it has a good chance of continuing to adapt and evolve over time. This reserve size can be calculated for target species by examining the population density in naturally occurring situations. The reserves must then be protected from intrusion, or destruction by man, and against other catastrophes.

- 2) ***Ex situ* conservation** - *Ex situ* is also a Latin phrase meaning “outside the place” and *ex situ* conservation means “off-site conservation”. It is the process of protecting an endangered species of plant or animal by removing part of the population from a threatened habitat and placing it in a new location, which may be a wild area or within the care of humans. While *ex situ* conservation comprises some of the oldest and best known conservation methods, it also involves newer, sometimes controversial laboratory methods.

This type of conservation was initially applied to cultivated plants and domestic animals but nowadays it is used in wildlife conservation as well. Some common examples of *ex situ* conservation are botanical gardens, arboreta and zoological gardens. However, these are the traditional methods of *ex situ* conservation. Here species of plants and animals are conserved by providing the congenial conditions.

Some other aspects of *ex situ* conservation that are a bit controversial are seed bank or germplasm bank, sperm bank, gene pool bank, captive breeding programme, tissue culture, genetic engineering specially cloning etc.

Storing the germplasm in seed banks helps in conserving rare and endangered species in order to restore genetic diversity. Seeds have a natural tendency to undergo dormancy and hence can be preserved for a longer time. Orthodox seeds that can be dried at low humidity or temperature can be stored for a longer time whereas Recalcitrant seeds that cannot be dried at low humidity and temperature are, difficult to be stored for a longer time. The plants whose seeds cannot be conserved in seed banks their vegetative propagating parts such as corms, cuttings, bulbs, tubers and plants or propagules raised through *in vitro* conditions are stored in the gene banks using cryogenic conditions. Likewise, the important animal germplasm like eggs, sperms or embryos can be preserved in the gene banks.

Several international organisations like CGIAR (Consultative Group on International Agricultural Research), IBPGR (International Board for Plant Genetic Resource) IPGRI

(International Plant Genetic Resources Institute), and CIFOR (Centre for International Forestry Research) are linked with the *ex situ* conservation through establishment of gene banks and gene libraries.

During the 1.5-million-year history of the *Homo erectus* or 250 000 years of the *Homo sapiens*, other species were either consumable or antagonistic. However, the urge to conserve species other than himself is an atavistic anachronism for the contemporary man.

Safeguarding the habitat is integral to the conservation of any species. As mentioned earlier, safeguarding the habitat forms a part of the *in situ* conservation. It has been estimated that Indian forests supply timber, firewood, bamboo, medicinal plants, and other produce to the tune of 400 billion rupees a year. This amount does not include the value of ecological services provided by forests, including the vital water catchments of our country. Natural forests deserve to be respected and treasured. The needs of people dependent upon forests have to be met, but the bulk of this can be achieved by afforesting the vast amount of degraded land that currently lies barren.

The extension of care to other species has two facets. The first is, in fact, not driven by compassion. Rather it is driven by self-interest of the entire human race. The human race should conserve species so that it can continue to 'use' and 'be benefited' by them. The second proposition is a much nobler facet, driven by the realisation that all species were created equal and have intrinsic rights to survival and man cannot abrogate the right to cause their extinction. This realisation is a significant evolutionary step for humankind.

### 30.3 The Wildlife in India

India being home to 16% of the world's population is a well-known fact. However, it is a lesser known fact that 411 species of mammals, 1,232 birds, 456 reptiles, 219 amphibians, 2,546 fish, 83,436 kinds of invertebrates and over 50,000 plant species also call this sub-continent home.

A few countries in the world can match India's astonishing geographical diversity that ranges from rainforests to sand dunes to mangroves to temperate coniferous forests, all harbouring some of the biggest concentrations of endangered wildlife on earth.

The country is the last refuge for a number of highly endangered and threatened species such as the Asiatic lion, lion tailed macaque, pygmy hog, hispid hare and the Gangetic river dolphin.

It is also host to two of the world's 25 biodiversity hotspots, the Himalayas and the Western Ghats, 16 of the world's most important wetlands as defined by the Ramsar convention, including the renowned saltwater Chilika lake in eastern Odisha, and five natural world heritage sites in the UNESCO list that include Keoladeo National Park, Kaziranga National Park, Manas Wildlife Sanctuary, Sundarbans National Park and the Nanda Devi National Park.

While five of the most magnificent parks in India, are covered under the UNESCO list, other sanctuaries are famed as well for their wildlife and glimpses into jungle life.

The Jim Corbett National Park, the oldest park in the country, just a six-hour drive from the national capital New Delhi, is famed for its Bengal tiger and Asiatic elephant. The 520 sq. km. park, which forms the north-western limit of the Asian elephant's current range, is home to 215 tigers, the highest density of the wild cat in the world.

The data was compiled by the Wildlife Institute of India with the help of satellite imagery, camera trapping and recording pugmarks. Corbett's famed Dikhala grasslands offer unparalleled elephant viewing and tiger sightings.

The grasslands of western India are as famous for their hunting animals as they are for their grazing herds. The Indian cheetah is now extinct in its range but the other big cats - lions and leopards still prowl the plains.

The Gir Sanctuary in western Gujarat State with its thorny scrub forests and grasslands was once a favourite hunting preserve. The last Asiatic lions still eke out a precarious existence in their thorny scrubland kingdom in Saurashtra, where some 523 odd still exist.

In the eastern Indian State of West Bengal, over 70% of the nearly 1,300 species of Indian birds are to be found.

The Manas National Park, designated a World Heritage site in 1985, in the eastern State of Assam is situated on the foothills of the Himalayas and named after the mighty Manas River.

Not far from Manas is the Kaziranga National Park with its elephant grasslands and tropical deciduous forests, situated on the banks of the mighty River Brahmaputra. Also, a World Heritage site in Assam, Manas swamps and tall thickets of elephant grass make it an ideal home for the greater one horned rhinoceros - and also tells a remarkable tale of the comeback of the endangered animal.

From five rhinos a century ago, the 430 sq. km. park today boasts of nearly 70% of the world's estimated 2,700 such herbivorous beasts.

There are many others, Sariska in Rajasthan, the Bandhavgarh park in Madhya Pradesh and Periyar in southern Kerala being just some of them.

Much like all over the world, efforts are on in India to conserve its wild world threatened by the demands of development, disasters and destruction.

Wildlife conservation NGOs and the government have been working at different levels to conserve India's vanishing wildernesses. The Wildlife Trust of India (WTI) and the International Fund for Animal Welfare (IFAW), for instance, got together with the Assam Forest Department to set up the Centre for Wildlife Rehabilitation and Conservation (CWRC) in Kaziranga in 2002.

“Each year, CWRC handles nearly 200 cases of animals which are injured, distressed or abandoned in various circumstances and would have died if left alone in the wild”, said Dr. Anjan Talukdar, the wildlife veterinarian at the center.

In February this year, six elephant calves reared at the centre were set free in Manas National Park, making it the first ever attempt in the country to release hand-raised elephant calves back to the wild.

“Besides elephants and other mammals, reptiles, amphibians and avian species are also rehabilitated and hand-raised in the center”, said Talukdar.

The judiciary has also stepped in to save India’s wildlife. The interest in conservation has led the Supreme Court to pass a number of significant orders and judgments to save the endangered wildlife.

The Supreme Court, for instance, asked the Jammu and Kashmir government to ban the sale and the manufacture of shahtoosh shawls and stole, made from the wool of the endangered Tibetan antelope chiru.

Hope lies where there is a will and effort to make a change. There was hope for wildlife when children across the world contributed the \$1 million, which formed the seed trust for Project Tiger, launched in 1973 by India to save the tiger from extinction.

And there is hope when the apex court adds muscle to the fledgling conservation movement in India.

#### ◆ Flora of India

Plant biodiversity as a national and global resource is extremely valuable but is poorly understood, inadequately documented and often wasted. The preservation of biodiversity is both a matter of investment and insurance to -

- a) Sustain and improve agricultural, forestry and fisheries production,
- b) Act as a buffer against harmful environmental changes,
- c) Provide raw materials for scientific and industrial innovations, and
- d) Safeguard transferring biological richness to future generations.

Biodiversity the world over is in peril because the habitats are threatened due to such development programmes as creation of reservoirs, mining, forest clearing, laying of transport and communication networks etc. It is estimated that in the world-wide perspective 20,000 flowering plants are threatened with an extinction rate of one per year.

India has an estimated 16,000 vascular plants, 5,000 endemic species and 140 endemic genera. Among plants, species endemism is estimated at 33% (with 140 endemic genera but no endemic families)<sup>1</sup>.

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<sup>1</sup> Botanical Survey of India, 1983.

Areas rich in endemism are north-eastern India, the southern parts of peninsular India, the Western Ghats and the north-western and eastern Himalaya. A small pocket of local endemism also occurs in the Eastern Ghats. The Gangetic plains are generally poor in endemics, while the Andaman and Nicobar Islands contribute at least 220 species to the endemic flora of India<sup>2</sup>.

Most of India's natural vegetation has been greatly modified by agriculture, forestry and urbanisation. Over 50% of the land area is cultivated and all forests, particularly moist forest types, are rapidly being degraded as a result of population pressure and shifting cultivation.

A workshop held in 1982 indicated that as many as 3,000-4,000 higher plants may be under a degree of threat in India. Since then, the Project on Study, Survey and Conservation of Endangered species of Flora (POSSCEP) has documented these plants, and published its findings in Red Data Books.

*Hubbardia heptaneuron*, a species of grass that grew in the spray zone of the Jog Falls prior to the construction of the Linganamakki reservoir, was thought to be extinct but a few were rediscovered near Kolhapur.

The Indian region is an important centre of origin and diversity for nearly 160 domesticated plant species of economic importance, more than 350 species of their wild relatives, and over 800 species of ethno-botanical interest. A National Gene Bank has been constructed at the National Bureau of Plant Genetic Resources (NBPGR) in New Delhi, having the capacity to house 600,000 seed samples under safe, long-term storage, *in vitro* conservation and cryo-preservation.

The potential for extensive new biodiversity programmes in India is enormous. New initiatives to strengthen networks of botanic gardens in India are being established for the purpose of plant conservation.

#### ◆ Fauna of India

India is home to several well-known large mammals including the Asian Elephant, Bengal Tiger, Asiatic Lion, Leopard and Indian Rhinoceros. Other well-known large Indian mammals include ungulates such as the Water Buffalo, Nilgai, Gaur and several species of deer and antelope. Some members of the dog family such as the Indian Wolf, Bengal Fox, Golden Jackal and the Dhole or Wild Dogs are also widely distributed. It is also home to the Striped Hyaena, Macaques, Langurs and Mongoose species.

The exploitation of land and forest resources by humans along with hunting and trapping for food and sport has led to the extinction of many species in India in recent times. These species include mammals such as the Indian Cheetah. While some large mammal species are confirmed extinct, there have been many smaller animal and plant species whose status is harder to determine. Many species have not been seen since their description.

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<sup>2</sup> *Ibid.*

Some species of birds have gone extinct in recent times, including the Pink-headed Duck (*Rhodonessa caryophyllacea*) and the Himalayan Quail (*Ophrysia superciliosa*). A species of warbler, *Acrocephalus orinus*, known earlier from a single specimen collected from near Rampur in Himachal Pradesh was rediscovered after 139 years in Thailand. Some of the wildlife species on the brink of extinction include the Bengal Tiger, Asiatic Lion, Leopard, Snow Leopard, Asiatic Elephant, Indian Rhinoceros, Ganges River Dolphin and Red Panda.

India has many rare and unique animals, birds and reptiles. Many of these are protected in National Parks and wildlife sanctuaries in India. Conservation movements and awareness about preserving the environment and the rare and threatened species of animals, birds and reptiles that live in India is slowly increasing.

### 30.4 Wildlife Conservation and Constitutional Mandate

There are various provisions pertaining to wildlife under the Constitution of India. List II (State List) of the Seventh Schedule provides for entries pertaining to conservation of wildlife wherein the State can make laws on fisheries as well as to protect, preserve and improve the livestock and prevent animal diseases. The entries are listed as follows:

- 1) Entry 15: Preservation, protection and improvement of stock and prevention of animal diseases; veterinary training and practice
- 2) Entry 21: Fisheries

Initially, 'protection of wild animals and birds' was also covered under Entry 20 in the State List. However, after the Constitution (42nd Amendment) Act, 1976, the entry was repealed and placed under List III (Concurrent List) as Entry 17-B. Further, List III of the Seventh Schedule also contains the following Entries under which both Centre and State can make laws:

- 1) Entry 17: Prevention of cruelty to animals
- 2) Entry 17-A: Forests
- 3) Entry 17-B: Protection of wild animals and birds
- 4) Entry 29: Prevention of the extension from one State to another of infectious or contagious diseases or pests affecting men, animals or plants

The Constitution (42nd Amendment) Act of 1976 led to the introduction of a new Directive Principle of State Policy [Article 48-A] under Part IV, which imposes a fundamental duty on the State to protect and improve the environment including the wildlife. The said Article provides as under:

**Article 48-A - Protection and improvement of environment and safeguarding of forests and wildlife.** The State shall endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country.

On the basis of the said provision, the Environment (Protection) Act, 1986 and the Wild Life (Protection) Act, 1972 have been enacted by the Parliament.

The same amendment also introduced a Fundamental Duty upon every citizen of India [51 (A) (g)] under Part IV A which provides as follows:

**Article 51(A) (g)** - It shall be the duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wildlife, and to have compassion for living creatures.

#### ◆ Other Provisions

The Constitution of India has basic features in respect of the power of judicial review by the Supreme Court. Under Part III of the Constitution, which guarantees fundamental rights to the people and under Part IV, the State is under obligation to implement the Directive Principles. Article 39-A of the Constitution provides “Right of Access to Courts” to the citizens. In exercise of its powers of judicial review, the Court enforces the constitutional and legal rights of the underprivileged by transforming the right to life under Article 21 of the Constitution and by interpreting the Articles 48-A and 51 A (g) of the Constitution. The Supreme Court of India has given a new dimension to the environmental jurisprudence in India with a view to meeting the problems in the environmental field.

The Public Interest Litigations (PIL) in India initiated by the Supreme Court emerged through human rights jurisprudence and environmental jurisprudence. PIL in Indian Law has been introduced by the judges. The traditional concept of *Locus Standii* is no longer a bar for the community oriented Public Interest Litigations. Not only an aggrieved party, but any environmentally conscious individual, groups or NGOs may have access to the Supreme Court/High Courts by way of PIL. The Supreme Court while taking cognizance on the petitions has further relaxed the requirement of a formal writ to seek redressal before the Court. Any citizen can invoke the jurisdiction of the Court, especially in human rights and environmental matters even by writing a simple postcard.

## 30.5 History of Wildlife Conservation in India

The great paradox of ecological India is how a country so densely populated with humans continues to support such a plethora of large wildlife. But it does, with Indian populations of tigers, elephants, Asian lions, and other large wildlife being some of the best in all of Asia.

Displaying trophies of the hunt is an integral part of many human cultures. Hunting was a part of statecraft in India even before the arrival of the British, which involved displaying power, gathering intelligence, and receiving tribute, as well as, of course, killing many tigers, lions, antelope and birds. The royal hunt became an essential part of every ruler’s repertoire and was embraced wholeheartedly by the British when they arrived.

However, India also has a long history of Wildlife Conservation. The ancient Hindu scriptures directed people to protect the wildlife as well as the environment in general. Buddhism and Jainism also propagate non-violence towards not only humans but also

animals, birds and plants. In about 242 B.C., emperor Ashoka's Fifth pillar edict gave protection to fish, animals and forests. Even before that, the Arthashastra by Kautilya provides a clear reference to the establishment of *abhayaranyas* or forest sanctuaries. The Mughal rulers in the medieval period too helped in keeping such traditions alive.

At the same time, the other face of reality shows that a sense of conservation was many a times missing in royal hunts, even though in some places, at some times, hunting areas were established to limit off-take. The land set aside for such hunts, which often became incorporated into areas set aside as forest reserves, became the national parks declared with pride by the new Indian State. These parks, with their legacy of British-instituted draconian resource control rules, set the stage for ongoing controversies concerning parks, wildlife and local peoples.

The philosophy behind the conserved areas in ancient, medieval and pre-independent era is different from the modern concept of conserved areas. The former philosophy was primarily based on recreation and entertainment for the ruling class or the rich and wealthy. Whereas, the latter is proclaimed to be much wider and advocates comprehensive development of the human society through natural resources and sustainable development. This modern concept of conservation is backed by State laws.

#### ◆ The British era

British arrived in India in around the 1600's with the mission of trading goods from India in the form of East India Company. After seeing the immense amount of natural resources and plunders of opportunity to exploit the resources present here, they changed their game plan and started applying coercion so as to complete their aim of exploiting natural resources in India. At the time when British arrived in India, India was divided into several princely States ruled by different rulers. It was quite an easy task for the British to establish itself gradually and astutely.

The early days of British rule in India were days of plunder of natural resources. They started exploiting the rich resources present India by employing the policy of imperialism. By around 1860, Britain had emerged as the world leader in deforestation, devastation its own woods and the forests in Ireland, South Africa and north-eastern United States to draw timber for shipbuilding, iron-smelting and farming.

There was total indifference to the needs of forest conservancy in the British Period. They caused a fierce onslaught on Indian Forests. The onslaught on the forests was primarily because of the increasing demand for military purposes, for British navy, for local construction (such as roads and railways), supply of teak and sandalwood for export trade an extension of agriculture in order to supplement revenue.

This process greatly intensified in the early years of the building of the railways network after about 1853. While great chunks of forests were destroyed to meet the demand for railway sleepers, no supervision was exercised over the felling operation in which a large number of trees was felled and lay rotting on the road. The sub-Himalayan forests of Garhwal and Kumaon, for example were felled to desolation and thousands of trees were felled which were never removed, nor was their removal possible.

The first step of the British Government to assert State monopoly right over the forest was the enactment of the Forest Act, 1865. Hastily drafted, the 1865 Act was passed to facilitate the acquisition of those forest areas that were earmarked for railway supplies. It merely sought to establish the claims of the State to the forests in immediately required, subject to the proviso that existing rights would not be abridged. The Act was revised after about thirteen years later in 1878 and extended to most of the territories under the British rule. It also expanded the powers of the State by providing for reserved forest, which were closed to the people and by empowering the forest administration to impose penalties for any transgression of the provision of the Act.

With respect to wildlife protection, legislations were specific to areas and species. The first wildlife legislation of modern India was the Madras Wild Elephant Preservation Act, 1873. The Act, applicable to the State of Madras (now Tamil Nadu) was for the protection of wild elephants. The law introduced a general prohibition on destruction of wild elephants and imposed penalty on those who violated the embargo.

The first effort by the Central Government came after six years later by the passing of the Elephant Preservation Act in 1879. This was the first central legislation enacted in India with respect to wildlife. In 1887, the centre enacted the Wild Birds Protection Act prohibiting the possession or sale of wild birds. In 1912, the Central Government enacted a broader Wild Birds and Animals Protection Act, which specified closed hunting seasons and regulated the hunting of designated species through licensing. The Indian Forest Act, 1927, was evolved during the pre-independence era but still remains in force. The Act consolidates the provisions of the Indian Forest Act of 1878 and its amending Acts. The 1927 Act deals with an additional category, namely non-government (private) forests, along with the three listed in the 1878 Act. This Act deals with, for categories of forests, namely, reserved forests, village forests, protected forests, and non-government (private) forests. Any unauthorised felling of trees, quarrying, grazing and hunting in reserved forests is punishable with a fine or imprisonment. Yet another law, for the protection of the wildlife and habitat was the Hailey National Park Act of 1936 (which is now called the Corbett National Park).

Hence, to summarise, the central legislations enacted during the British era for the protection of wildlife were as follows:

- 1) Elephant Preservation Act, 1879
- 2) Wild Birds Protection Act, 1887
- 3) Wild Birds and Animal Protection Act, 1912
- 4) Indian Forest Act, 1927
- 5) Hailey National Park Act, 1936

Indeed, all the statutes related primarily to the regulation of hunting and did not regulate trade in wildlife and wildlife products - both major factors in the decline of Indian Wildlife. As a consequence, wildlife depredation continued and many species became extinct.

This was because, even though it seemed on paper that some very strong steps were taken by the British in order to protect environment from degrading and to preserve it for the future generations, but most of these laws showed their capability on paper and not on the practical grounds. Many laws and acts enacted by the British in our country proved out to be more useful for British as compared to Indians. They made several laws so as to make their task easy as by that they were able to make use of the resources and degrade environment comfortably and lawfully. Some of the laws were enacted so as to protect the resources from the natives itself, so that the British can utilise them for their own needs which were to gain as much capital from India as possible.

The introduction of Railways in India is indeed a very valuable benefit given by the British to the Indians. However, at the time of its introduction, the intention of the British was never that of benefiting India but for their own benefit. They introduced rail in India so that the resources present in India, especially environmental resources, could be easily reached. They made laws for conserving the forest and in the process marked much of the area as the property of the government so that no one could object as to the use of these forests by the British. Even if some laws were enacted for the benefit of the environment, they were never implemented properly. The punishments prescribed under the laws were not very strict and so the offender was very easily allowed to escape.

Most of the time, the British themselves depleted the resources. The theories like Sovereign Immunity always saved the government from being sued under public offence. The maxims like “King can do no wrong” were applied to its full extent. However, there were still certain laws like Indian Penal Code, 1860, and Criminal Procedure Code, 1893 that were indeed very effective. The laws made by the British paved a way for the Indians to think and implement new laws for the protection of the environment in the times to come.

#### ◆ **Wildlife Conservation and the present Legislative Action**

India is one of the twelve mega diversity countries. Though India contains only 2.4% of the global space, but it has 7.31% of global biodiversity. It is rich in its wild life. There are about 13,000 species of flowering plants and 65,000 species of fauna including fish, birds and mammals in India. India is the only country to have all the five major vertebrates - the tiger, lion, panther, elephant and the rhino.

In recent times, the wildlife in India is in danger due to poaching and trade in animal articles. Threats vary from poaching and illegal trade to dwindling forest cover and habitat thanks to development and population pressures. The ever-increasing demand for wildlife products in the international markets, particularly in South-East Asia, Europe and North America, poses a greater challenge to the Government and conservationists. Several species, including the tiger, rhino and the elephant are being slaughtered to feed the lucrative illegal trade in wildlife.

For *in situ* conservation of biological diversity, India has developed a protected area network comprising of National Parks, Wildlife Sanctuaries, and Biosphere Reserves.

There are 104 existing national parks in India covering an area of 40501.13 km<sup>2</sup>, which is 1.23% of the geographical area of the country (National Wildlife Database, May, 2019). In addition to the above 104 national parks covering an area of 16,630.08 km<sup>2</sup> are proposed in the Protected Area Network Report. The network of parks will go up 171 after full implementation of the above report. There are also 551 existing wildlife sanctuaries in India covering an area of 119775.8 km<sup>2</sup>, which is 3.64% of the geographical area of the country (National Wildlife Database, May, 2019). Another 217 sanctuaries are proposed in the Protected Area Network Report covering an area of 16,669.44 km<sup>2</sup>. India has also set up 18 Biosphere Reserves to protect representative ecosystems and to serve as laboratories to evolve alternate models of development. The programme of Biosphere Reserve was initiated under the 'Man and Biosphere' (MAB) programme by UNESCO in 1971. The purpose of the formation of the biosphere reserve is to conserve *in situ* all forms of life, along with its support system, in its totality, so that it could serve as a referral system for monitoring and evaluating changes in natural ecosystems.

◆ **The Wild Life Protection Act, 1972 (as amended in 2006)**

To protect the wildlife of the country the parliament of India passed Wild Life (Protection) Act, 1972 (WPA) on the request made by eleven States. The Act was necessitated as some wild animals and birds had become already extinct while some others were on the verge of extinction. Further, the then existing State legislations were felt inadequate in order to protect the wildlife of the country. The Act provides for the establishment of Wildlife Advisory boards and the appointment of wildlife wardens and other staff to implement the Act. In several States, the office of the Chief Wildlife Warden and the Chief Conservator of Forests is united in a single post. The Act prohibits hunting of animals listed in Schedule I, II, III and IV. Under the Act, the State Government may declare any area of adequate ecological, faunal, floral, natural or zoological importance as a sanctuary or a national park. In both national parks and sanctuaries, public entry is restricted and the destruction of any wildlife or habitat is prohibited.

Domestic animals like cats, dogs, horses, donkeys or birds like blue rock pigeons etc do not come under the purview of WPA. They fall under the purview of Prevention of Cruelty to Animals Act, and the punishment here has been 1 months or 2 months of imprisonment.

However, the working of 1972 Act was not satisfactory and hence, in 1986 the Act was suitably amended. Under the 1972 Act, trade and commerce in wild animals, animal articles and trophies were permissible within the country. But many traders smuggled the animal skins, animal articles and trophies to foreign countries for getting huge profit. Hence, it became necessary to prohibit trade in certain specified wild animals. Accordingly, by 1986 Amendment Act it was provided that no one will be allowed to carry on trade in wild animals specified in Schedules I and II of the Act. Further the then existing licenses for internal trade of animals and animal articles were revoked. Further total ban was imposed on trade in Indian ivory.

In 1991 the WPA was further amended. This amendment was made on the basis of recommendations of Indian Wildlife Board and Ministry of Environment and Forest. It

was felt that due to continuous poaching and illegal trade in animal articles, the wildlife population in India has rapidly declined. Hence, in 1991 Amendment Act, hunting of all wild animals except vermin was prohibited. But in certain exceptional circumstances such as for protection of life and property, education, research, scientific management and captive breeding, hunting of wild animals was permitted. Further to control the death rate of animals on account of communicable diseases, compulsory immunisation was provided for in national parks and sanctuaries. The provisions of national park and sanctuary were extended to territorial waters without seriously affecting the interests of local fishermen. Further, it was provided that without settling the rights of tribal people, no area can be declared as a national park or a sanctuary.

The 1991 Amendment Act recognised the importance of zoos in protection of wild animals in the country and hence it was provided that the management of zoos will be monitored by the Central Zoo Authority established under the Amendment Act. Further on the basis of Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) collection of endangered species of animals and plants had been prohibited. Nevertheless, it did not affect the collection of traditionally used plants for *bona fide* personal use of tribals.

Correspondingly, the Parties to CITES were worried about the declining population of African elephants and hence, the import and export of African ivory for commercial purposes was prohibited. On the same lines, the 1991 Amendment Act prohibited ivory trade for protecting Indian elephants. Further, the Act prohibited the collection of snake venom for producing lifesaving drugs from snakes like Cobra and Russell's Viper.

The Wild Life (Protection) Act, 1972 was further amended by Wild Life (Protection) Amendment Act, 2002. The said amendment was notified in 2003. The WPA is an important statute that provides a powerful legal framework for protection of wildlife, establishment of protected areas, management of habitats, regulation and control of hunting and trade in parts and products derived from wildlife. The Amendment Act was notified in the official gazette on 31 March 2003.

The amended WPA is stronger with several new clauses and important amendments making it the bulwark and guardian of wildlife and its habitat.

Penalties for hunting wild animals have been increased in the amendment to a minimum of three years in order to ensure that killing of endangered animals including the tiger and elephant, now qualify as non-bailable offenses. A new clause empowers enforcement authorities to effect forfeiture of property derived from illegal hunting or trade of wildlife. To ensure better protection of wildlife habitats, illegal encroaches within national parks or wildlife sanctuaries can now be evicted and structures removed; no construction of commercial tourist lodges, hotels and zoos can be allowed without the prior approval of the National Board for Wildlife. The commercial exploitation of forest produce has now been made illegal.

The judiciary too has joined hands towards conservation of forests and wildlife. To assist and effectively monitor the implementation and compliance of several landmark orders,

the Supreme Court directed the Union Government to constitute the Central Empowered Committee (CEC). Since then the CEC has gone on to make several important recommendations on critical matters concerning wildlife that include winding up of mining in Kudremukh, complete ban on logging including removal of dead and wind fallen trees in protected areas and ban on regularisation of encroached forest land.

However, the ongoing cases of violation, before the amendment of the WPA continue to be governed by the unamended Act. This implies that any violations committed on March 31, 2003 and earlier will also be governed by the unamended Act.

The existing legal provision for wildlife protection, in the form of the WPA, 1972, is amended relatively frequently in order to enable it to cope with the increasing rate of crimes. As mentioned earlier, the Act extends to animals, birds, plants and anything else that has a role in conserving the ecology and environment of the country. It covers animals that are listed according to their status in the wild and prohibits their trade in any form.

The Act has been amended further in 2006 by the Wild Life Protection (Amendment) Act, 2006. Through the amendment, the scope of the Act has widened, and it has become stronger with the incorporation of stricter penal provisions and the constitution of a National Board for Wildlife. Under the Act, convicted offenders are liable to a maximum sentence of three years, extendable to seven, and a fine of Rs.10,000, which is increased to Rs. 25,000 if there is a second conviction. Bail terms have been made stringent and the accused can be released only after the public prosecutor has been heard and even then, only if the court is convinced that the accused is blameless.

### **Wildlife Crime Control Bureau**

The 2006 amendment to the Act resulted in the formation of the Wildlife Crime Control Bureau, established in 2007. The bureau was set up on the recommendations of the Tiger Task Force. The Cabinet had approved the constitution of the Tiger and Other Endangered Species Crime Control Bureau (Wildlife Crime Control Bureau) on June 31, 2007, based on the enabling provisions made in the Wild Life (Protection) Act, 1972.

On the cards since 1994, the bureau is meant to collate intelligence relating to wildlife crime, ensure co-ordination with the State Governments and other authorities and develop infrastructure for scientific and professional investigation. It is also meant to assist the State Governments in the prosecution. The bureau was set up as a part of a strategy to take universal action in fighting organised crime, strengthening and ensuring the proper implementation of laws at international exit points for preventing smuggling of wildlife and its products. The bureau has the power to investigate wildlife crimes in much the same way as the Narcotics Control Bureau investigates drug-related crimes. The bureau is headed by an Inspector General of Police.

The bureau, a multi-disciplinary agency consisting of officials from forests, police and revenue (customs, excise) functions from the Ministry of Environment and Forests. The Bureau has its headquarter in New Delhi and five regional offices at Delhi, Kolkata,

Mumbai, Chennai and Jabalpur; three sub-regional offices at Guwahati, Amritsar and Cochin; and five border units at Ramanathapuram, Gorakhpur, Motihari, Nathula and Moreh. One of its mandates is to work for increased awareness among international tourists to reduce demand for wildlife and its products. As part of the strategy for a co-ordinated universal action in combating organised crime, strengthening of the enforcement at the international trade exit points would get emphasis as the major demand for the wildlife and its products lies in overseas markets. It is also mandated to advise policy changes, if any, based on the information/data on crime and criminality.

The formation of the bureau indicates that the administration has finally accepted the vital difference between field enforcement, which needs patrolling and observation of the area under the charge of a forest guard, and intelligence gathering regarding poaching at the forest level. In this direction, training of various central enforcement agencies at exit points - CISF, BSF, ITBP, SSB, DRI, etc has been being organised at Wild Life Institute of India. Besides this, Training Workshop with National Tiger Conservation Authority and TRAFFIC was also organised for three days at Bandhavagrh from 23 January 2008. A programme to educate international tourists to decrease demand for wildlife and its products is being finalised with Ministry of Tourism.

Creation of a bureau was essential to regulate and monitor poaching activities. Poaching is done at the local level for local use, selling game meat in the local market or for supply to small-town traders who sell the goods to a bigger trader. Finally, the goods reach a carrier who takes them out of the country. Thus, there was the need for a separate and distinct level of control of wildlife crime at the city and international border requiring a completely different set of skills. Officials who have dealt with wildlife crimes are of the opinion that trade should be treated as a police subject and not a forest one as it is a matter of investigation rather than conservation. They also feel that forest officers do not understand investigation and the police do not know forest conservation. Hence the need for a Wildlife Crime Bureau arises.

Section 38 (Z) of the Wild Life (Protection) Act, 1972, mandates the Bureau to collect and collate intelligence related to organised wildlife crime activities and to disseminate the same to State and other enforcement agencies for immediate action so as to apprehend the criminals; to establish a centralised wildlife crime data bank; co-ordinate actions by various agencies in connection with the enforcement of the provisions of the Act; assist foreign authorities and international organisation concerned to facilitate co-ordination and universal action for wildlife crime control; capacity building of the wildlife crime enforcement agencies for scientific and professional investigation into wildlife crimes and assist State Governments to ensure success in prosecutions related to wildlife crimes; and advise the Government of India on issues relating to wildlife crimes having national and international ramifications, relevant policy and laws. It also assists and advises the Customs authorities in inspection of the consignments of flora and fauna as per the provisions of Wild Life Protection Act, CITES and EXIM Policy governing such an item.

**The First Meeting of the Wildlife Crime Control Bureau** took place in Jaipur on Thursday, September 18, 2008, at the State forest department. The meeting was chaired by the

Additional Director of the bureau, Ms. Reena Mitra many officials from the directorate of revenue intelligence, State police, the CISF, airport security, the BSF and forest officials were present on the occasion. The Deputy Director of the bureau Mr. Ramesh Pandey was also present.

Various presentations were tabled during the meeting on the weak links and measures that could be taken up to prevent organised poaching and smuggling of animal parts. It was also decided to develop a data base of criminal records of persons who have a past in wildlife crime so as to establish a network of intelligence gathering. Each department that forms a part of the bureau would have a nodal officer and information would be shared for the purpose of control of wildlife crime. The idea is to prevent the commission of crime.

The meeting also decided that the bureau would meet once every three months under the Principle Chief Conservator of Forest and the Chief Wildlife warden and once every six months with the National Crime Control Bureau.

The meeting of the Wildlife Crime Control bureau assumed significance specially after renewed efforts in the State for re-establishing the tiger populace at the Sariska Tiger reserve. A pair of tigers was recently translocated to the reserve and three more are to follow soon from the Ranthambore National Park.

- **Other Central Legislations and Rules pertaining to Wildlife and their Protection**

- ◆ Indian Forest Act, 1927
- ◆ The Wildlife (Transactions and Taxidermy) Rules, 1973
- ◆ Wildlife (Stock Declaration) Rules, 1973
- ◆ Forest Conservation Act, 1980, the rules and amendments thereunder
- ◆ Wildlife (Protection) Licensing (Additional Matters for Consideration) Rules, 1983
- ◆ The Environment Protection Act, 1986 and Rules thereunder
- ◆ Recognition of Zoo Rules, 1992
- ◆ Wildlife (Protection), Rules, 1995
- ◆ Wildlife (Specified Plants - Conditions for Possession by Licensee) Rules, 1995
- ◆ Wildlife (Specified Plant Stock Declaration) Central Rules, 1995
- ◆ The Recognition of Zoo Rules, 1992
- ◆ The Biological Diversity Act, 2002 and Rules thereunder
- ◆ Guidelines for Appointment of Honorary Wildlife Wardens
- ◆ **National Zoo Policy, 1998**

The Central Zoo Authority was created by the Government of India in the year 1992 through an amendment of the Wildlife (Protection) (Amendment 1991) Act, 1972. The main objective was to enforce minimum standards and norms for upkeep and health

care of animals in Indian Zoos so that the Zoos of the country come up to a standard where they can complement and strengthen the national efforts in conservation of wild fauna of the country.

The need for *ex situ* conservation of wild fauna as one of the main objectives for management of Zoos was realised by the Government of India soon after independence and the then Indian Board for Wildlife (now the National Board for Wildlife) made important recommendations in this regard. An Expert Committee on Management of Zoos was set up in November, 1972 and its recommendations were accepted in June, 1973, which still have relevance in the current period. The National Wildlife Action Plan of 1983 again emphasized the role of *ex situ* conservation in national conservation efforts.

To give proper direction and thrust to the management of Zoos in the country, the National Zoo Policy was framed and adopted by the Government of India in the year 1998. The main objective of the Zoos under the National Zoo Policy is to complement and strengthen the national efforts in conservation of rich bio-diversity of the country, particularly the wild fauna. This objective can be achieved by supporting the conservation of endangered species by giving species, which have no chance of survival in the wild, a last chance through co-ordinated breeding under *ex situ* conditions and raise stocks for rehabilitating them in wild, as and when, it is appropriate and desirable. Conservation education and research for conservation of wildlife are other objectives of Zoos enshrined in the National Zoo Policy.

#### ◆ National Wildlife Action Plan, 2002-2016

The Action Plan replaces the earlier Plan adopted in 1983 and was introduced in response to the need for a change in priorities given increased commercial use of natural resources, continued growth of human and livestock populations, and changes in consumption patterns. The Plan most closely represents an actual policy on protection of wildlife. It focuses on strengthening and enhancing the protected area network, on the conservation of endangered wildlife and their habitats, on controlling trade in wildlife products and on research, education, and training. The Plan endorses two new protected area categories: “conservation reserves”, referring to corridors connecting protected areas, and “community reserves”, which will allow greater participation of local communities in protected area management through traditional or cultural conservation practices. These new categories of protected areas are likely to bring in corridor areas under protection. The Plan contains various recommendations to address the needs of local communities living outside protected areas and outlines the need for voluntary relocation and rehabilitation of villages within protected areas. The Plan recognises the need to reduce human-wildlife conflict and emphasizes the establishment of effective compensation mechanisms. It includes the restoration of degraded habitats outside protected areas as a key objective.

The National Wildlife Action Plan (2002-2016) also lays emphasis on the role of Zoos for *ex situ* breeding of endangered species of wild fauna and their rehabilitation in the wild as per the IUCN guidelines for reintroduction. The Central Zoo Authority has been identified under the Plan, as one of the organisations for developing capabilities in this field.

### ◆ **Wildlife Conservation Strategy, 2002**

Apart from the various national policies, a Wildlife Conservation Strategy was also adopted by the Central Government in 2002. With the release of the National Wildlife Action Plan 2002-2016 which has been drawn up taking into account the close linkages between conservation of forest, wildlife and the national food and water security, the same meeting also witnessed the adoption a resolution on Wildlife Conservation Strategy 2002. The objective of the strategy was basically to call for declaring wildlife and forests as priority, sector at the national level and earmarking of funds for the purpose.

## 30.6 Protected Areas

The term ‘protected area’ was not previously defined under the WPA. The definition that existed was the one as provided by the Supreme Court in the case of *Tarun Bharat Singh v. Union of India*<sup>3</sup>. The court clarified in the case that the expression Protected area “was intended to and does refer to all the areas which have had legal protection against non-forest activities that devastated the environment including poaching, mining, felling of trees etc.” The WPA prior to the 2002 amendment provided for three categories of protected areas - The National Parks, the Sanctuaries and the Closed Areas.

However, the 2002 amendment has inserted a new definition of protected areas in the WPA under Section 24 A. a Protected area is now defined as, “protected area means a National Park, a sanctuary, a conservation reserve or a community reserve notified under Sections 18, 35, 36A and 36C of the Act.”

It is clear that the WPA now provides for four categories of **protected areas**:

- ◆ **National Parks** - National parks have higher legal status than sanctuaries. They are by law more strictly protected, allowing virtually no human activity except that which is in the interest of wildlife conservation. Grazing, private tenurial rights, etc are disallowed in parks. They are habitat oriented protected areas and are set up to conserve the habitat of one or more threatened species. Size of a national park is bigger compared to wildlife sanctuaries. Boundary of a National Park is fixed and follows strictly. Any kind of external activity including grazing is not allowed and tourism is permitted only in the Buffer zone.
- ◆ **Wildlife Sanctuaries** - Sanctuaries have a lower legal status. They are species oriented protected areas set up to conserve one or more threatened species. Size of a sanctuary is smallest compared to other protected areas (except for the Great Indian Bustard Sanctuary). The boundary of a wildlife sanctuary is not fixed and may be altered and limited activity such as regulated grazing, tenure rights, etc. may be allowed at the discretion of the Chief Wildlife Warden. Tourism is also permitted overall the sanctuary.
- ◆ **Conservation Reserves** - Conservation reserves are new categories of protected areas introduced after the 2002 Amendment to the WPA. They were conceived with

<sup>3</sup> 1993 Supp (3) SCC 115.

the objective of promoting community participation in preservation of wildlife. They are to be managed by a committee, comprising representatives of the public, the Forest Department, non-governmental organisations, scientists, the MLA and the panchayat president.

- ◆ **Community Reserves** - Community Reserves were also introduced subsequent to the 2002 amendment to WPA. The idea of developing 'community reserves' was to protect wildlife on private or community owned land or trees in a village area. While the 'community reserve' deals with the conservation of the wildlife on private or community land, the 'conservation reserve' will help to protect birds and animals living in trees or forests close to villages. The 'community reserve' is to be managed by land owners with the guidance of Forest Department officials.

The total area under Pas in India has witnessed an increase from 146665.60 km<sup>2</sup> in 2000 to 162099.47 km<sup>2</sup> in 2018. In addition to PAs, India is home to eight World Natural heritage Sites by UNESCO, of which seven are national parks and wildlife sanctuaries. Details of PAs in India are in Table below.

Table 1: Details of PAs of India

Type of PAs	Number	Area (in km <sup>2</sup> )
National Parks	104	40501.13
Wildlife Sanctuaries	551	119775.80
Conservation reserves	88	4356.49
Community reserves	127	525.22
Total	870	165158.54

Source: National Wildlife Database, Wildlife Institute of India

The amended WPA does not allow for any commercial exploitation of forest produce in both national parks and wildlife sanctuaries and local communities can collect forest produce only for their *bona fide* needs. No wild mammal, bird, amphibian, reptile, fish, crustacean, insects, or coelenterates listed in four schedules of the WPA can be hunted either within or outside protected areas. On conviction, the penalty for hunting in a sanctuary or a National Park or altering the boundaries of a sanctuary or a National Park is imprisonment for a term which shall not be less than three years but may extend to seven years and also with fine which shall not be less than ten thousand rupees.

Under the WPA no person can destroy, exploit or remove any wildlife or habitat of any wild animal from a National Park or a Sanctuary. However, this can be done only under exceptional circumstances on permit being granted by the Chief Wildlife Warden. Besides, this, there is also a prohibition of entry into a National Park and Sanctuary with any weapon, intended for causing fire and on use of injurious substances. Further in case of National Parks, entry of livestock for grazing is also strictly prohibited. Subject to the grant of permits by the Chief Wildlife Warden, investigation for study, photography, scientific research, tourism and transaction of lawful business with any person residing

in a Sanctuary is permissible in a Sanctuary. Additionally, the Chief Wildlife Warden is allowed to undertake construction and other activities necessary for the purposes of the Sanctuary and the wildlife therein. These provisions apply to the National Park too.

Community reserves and conservation reserves are two new categories of protected areas that have been included under the WPA. These two categories provide a greater role for local communities, stakeholders and civil society as well as the opportunity to protect many areas of conservation value that cannot be designated under the strict categories wildlife sanctuaries or national parks.

The statute further prohibits the destruction or diversion of wildlife and its habitat by any method unless it is for improvement or better management and this is decided by the State Government in consultation the national and State Boards for wildlife for parks and sanctuaries respectively. The WPA contains elaborate procedures for dealing with legal rights in proposed protected areas and acquisition of any land or interest under this law is deemed as an acquisition for a public purpose.

Apart from protected area establishment, other important aspects of the WPA include procedures for the appointment of State Wildlife Authorities and Wildlife Advisory Boards, the regulation of trade in wildlife products and the prevention, detection and punishment of violations of the WPA. The procedure for all complaints filed under the WPA is governed by the Code of Criminal Procedure which is a general procedure common to all criminal trials and which provides for investigation, inquiry and trial of cases by criminal courts of various designations.

### **Biosphere Reserves**

A biosphere reserve is an international conservation designation given by UNESCO under its Programme on Man and the Biosphere (MAB). For the purpose of setting up biosphere reserves, The World Network of Biosphere Reserves was established at the International Conference on Biosphere Reserves in Seville in 1995. As on 20019, The World Network of Biosphere Reserves has reached 686 biosphere reserves in 112 different countries.

These are the areas of terrestrial and coastal ecosystems that conserve biodiversity in a sustainable way. These are also known as living laboratories for demonstrating integrated management of land, water and biodiversity. The objectives of the biosphere reserves are to conserve biodiversity, to facilitate human and economic development and to provide logistic support to the people to undertake research and education activities and information exchange at international level. These are recognised internationally but are nominated by national Government and remain under sovereign jurisdiction of the country where they are located.

Biosphere reserves have highest legal status. They are ecosystem oriented protected area and set up to conserve the ecosystem of one or more threatened species. According to “The Statutory Framework of the World Network of Biosphere Reserves,” biosphere reserves are created “to promote and demonstrate a balanced relationship between humans and the biosphere”.

The size of a biosphere reserve is largest compared to other protected areas. The boundary is strictly followed in a biosphere reserve. The First biosphere reserve of India was established at Nigiri in 1986.

A biosphere reserve is basically divided into following zones, namely, the Core Zone, Buffer Zone, Manipulative Zone and Restoration Zone. The Core Zone is a legally protected core area. No human activity is permitted in the core zone and always needs a proper permission. A buffer zone is an area where non-conservation activities are prohibited. The Manipulative Zone and Restoration Zone are the transition areas where approved practices may be permitted.

In India, there are eleven internationally recognised Biosphere Reserves, whereas there are in total eighteen biosphere reserves notified by the Indian Government in India. The eleven internationally recognised biosphere reserves are: Nigiri, Gulf of Mannar in 2001, Sundarbans in 2001, Nanda Devi in 2004, Nokrek Biosphere Reserve in 2009, Pachmarhi Biosphere Reserve in 2009, Simlipal Biosphere Reserve in 2009, Great Nicobar Biosphere Reserve in 2013, Achanakmar-Amarkantak Biosphere Reserve in 2012, Agasthyamalai Biosphere Reserve in 2016 and Khangchendzonga National Park in 2018. Besides, Sundarbans is also a National Park and a World Heritage Site.

#### ◆ Biodiversity Hotspot Zones

In order to identify areas having rich biodiversity and endemic species (those found only in a particular area and not anywhere else), British ecologist Norman Myers gave the concept of 'biodiversity hotspots' in 1988 and identified 10 such regions in the tropical forests. Later, the concept of hotspots was adopted by Conservation International (CI) and at present this concept has been extended to 34 such areas present world-wide. For an area to be qualified as Hotspot region, it should have at least 1500 species of endemic vascular plants and should have lost about 70% of its original habitat.

In India, four three hotspot regions have been recognised. These are: **the Himalayas, Western Ghats (extending up to Sri Lanka), Indo-Burma region and the Sundaland (Includes Nicobar group of Islands).**

- ◆ **The Himalayan Hotspot** has over 10,000 plant species of which 31.65 are endemic. These include pines, firs, spruces, rhododendrons and variety of orchids, mosses and ferns. Besides, a number of birds and mammals including vultures, tigers, elephants, rhinos and wild water buffaloes exist in the Himalayas.
- ◆ **Western Ghats and Sri Lanka** is one of the richest biodiversity areas with a high rate (52%) of endemism of plants species. A number of unique and rare plants and ferns are present in this hotspot. However, the forests in this region are under tremendous logging pressure. Besides, the region is also home to some of the rare animals like the endangered Asian elephant. Unfortunately, there has been excessive human interference in this region resulting in great loss of habitat and biodiversity.

- ◆ **The Indo-Burma** hotspot region extends from North-east India to Burma and has a rich treasure of biological resources. The region has a remarkable diversity of fresh water turtles and bird species (over 1300 species). A number of dipterocarps, orchids and ginger species are present in this region. However, due to various political and social reasons, the knowledge about the plant diversity of this region is incomplete.

## 30.7 International Norms for the Protection of Wildlife

Wildlife has received the attention of the global community as a resource with international stakes in conservation and sustainable utilisation. India is party to a number of wildlife conventions and treaties and participates in international meetings related to a large number of conservation subjects.

There are various International Norms available for wildlife protection. Some such Conventions, to which India is a Party, are listed below:

- 1) International Convention for Regulation of Whaling - Signed in 1946
  - 2) Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES) - Signed 1973, Ratified 1976
  - 3) Convention on Wetlands of International Importance especially as Waterfowl Habitat, Ramsar - Signed in 1971
  - 4) Convention on Conservation of Migratory Species of Animals, Bonn, 1979
  - 5) Convention on Biological Diversity (CBD) - Signed in 1992, Ratified in 1994
  - 6) International Tropical Timber Agreement, 1994
- **The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)**

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is one of the largest conservation agreements in existence. It is an international agreement between governments, drafted as a result of a resolution adopted in 1973 at a meeting of members of the World Conservation Union (IUCN). Its aim is to ensure that international trade in specimens of wild animals and plants does not threaten their survival and it accords varying degrees of protection to more than 30,000 species of animals and plants, whether they are traded as live specimens, fur coats or dried herbs.

At the time when the ideas for CITES were first formed, in the 1960s, international discussion of the regulation of wildlife trade for conservation purposes was something relatively new. However, now there is an increase in the trade of wildlife that poses great threat to their very existence. Annually, international wildlife trade is estimated to be worth billions of dollars and to include hundreds of millions of plant and animal specimens. The trade is diverse, ranging from live animals and plants to a vast array of wildlife products derived from them, including food products, exotic leather goods, wooden musical instruments, timber, tourist curios and medicines. Levels of exploitation of some animal and plant species are high and the trade in them, together with other

factors, such as habitat loss, is capable of heavily depleting their populations and even bringing some species close to extinction. Many wildlife species in trade are not endangered, but the existence of an agreement to ensure the sustainability of the trade is important in order to safeguard these resources for the future.

Participation in CITES is voluntary, and countries that have agreed to be bound by the Convention are known as Parties. Although CITES is legally binding on the Parties, it does not take precedence or share equal status as compared to that of national laws. Rather it provides a framework to be respected by each Party, which has to adopt its own domestic legislation to make sure that CITES is implemented at the national level. Often, domestic legislation is either non-existent (especially in Parties that have not ratified it), or with penalties incommensurate with the gravity of the crime and insufficient deterrents to wildlife traders.

The text of the Convention was concluded at a meeting of representatives of 80 countries in Washington, D.C., United States, on 3 March 1973. It was then open for signatures until 31 December, 1974. It entered into force after the 10th ratification by a signatory State, on 1 July 1975. States that signed the Convention become Parties by ratifying, accepting or approving it. By the end of 2003, all signatory States had become Parties. States that were not signatories may become Parties by acceding to the Convention. As of September 2007, 172 States had become Parties to the Convention.

The CITES works by subjecting international trade in specimens of selected species to certain controls. All import, export, re-export and introduction from the sea of species covered by the Convention has to be authorised through a licensing system. Each Party to the Convention must designate one or more Management Authorities in charge of administering that licensing system and one or more Scientific Authorities to advise them on the effects of trade on the status of the species.

The species covered by CITES are listed in Appendices I, II and III of the Convention, according to the degree of protection they need.

Around 25,000 plant species and 5,000 animal species are covered by the provisions of the Convention. The estimated figure is provided in the following proportions -

- 1) Appendix I: about 600 animal species and 300 plant species;
- 2) Appendix II: about 1,400 animal species and 25,000 plant species; and
- 3) Appendix III: about 270 animal species and 30 plant species.

The CITES Secretariat is administered by UNEP and is located at Geneva, Switzerland. It has a pivotal role, fundamental to the Convention and its functions are laid down in Article XII of the text of the Convention. This includes -

- ◆ playing a co-ordinating, advisory and servicing role in the working of the Convention;
- ◆ assisting with communication and monitoring the implementation of the Convention to ensure that its provisions are respected;

- ◆ arranging meetings of the Conference of the Parties and of the permanent Committees at regular intervals and servicing those meetings (i.e. organising them, preparing and circulating meeting documents, making necessary arrangements for delegates to attend the meetings, providing advice and support, etc.);
- ◆ providing assistance in the fields of legislation, enforcement, science and training;
- ◆ undertaking, under agreed programmes, occasional scientific and technical studies into issues affecting the implementation of the Convention;
- ◆ making recommendations regarding the implementation of the Convention;
- ◆ acting as the repository for the reports, sample permits and other information submitted by the Parties;
- ◆ distributing information relevant to several or all Parties, for example, proposals to amend the Appendices, sample permits, information about enforcement problems, national legislation, reference material or news of a new Party;
- ◆ issuing new editions of Appendices I, II and III, whenever there is a change, as well as of the Resolutions and Decisions adopted by the Conference of the Parties (COPs) at its meetings, and information to assist identification of species listed in the Appendices; and
- ◆ preparing annual reports to the Parties on its own work and on the implementation of the Convention.

Every 3 years the Parties to CITES meet to discuss a variety of issues. This meeting is called a meeting of the Conference of the Parties (COPs).

The CITES to this date has had eighteen meetings of the Conference of Parties (COPs). The Eighteenth meeting was held in Geneva , from August 17 to 28, 2019. The list of COPs has been provided as under:

- 1) First meeting of the Conference of the Parties Bern (Switzerland), 2-6 November 1976
- 2) Second meeting of the Conference of the Parties San José (Costa Rica), 19-30 March 1979
- 3) Third meeting of the Conference of the Parties New Delhi (India), 25 February-8 March 1981
- 4) Fourth meeting of the Conference of the Parties Gaborone (Botswana), 19-30 April 1983
- 5) Fifth meeting of the Conference of the Parties Buenos Aires (Argentina), 22 April-3 May 1985
- 6) Sixth meeting of the Conference of the Parties Ottawa (Canada), 12-24 July 1987
- 7) Seventh meeting of the Conference of the Parties Lausanne (Switzerland), 9-20 October 1989

- 8) Eighth meeting of the Conference of the Parties Kyoto (Japan), 2-13 March 1992
- 9) Ninth meeting of the Conference of the Parties  
Fort Lauderdale (United States of America), 7-18 November 1994
- 10) Tenth meeting of the Conference of the Parties Harare (Zimbabwe), 9-20 June 1997
- 11) Eleventh meeting of the Conference of the Parties Gigiri (Kenya), 10-20 April 2000
- 12) Twelfth meeting of the Conference of the Parties Santiago (Chile), 3-15 November 2002
- 13) Thirteenth meeting of the Conference of the Parties Bangkok (Thailand), 2-14 October 2004
- 14) Fourteenth meeting of the Conference of the Parties The Hague (Netherlands), 3-15 June 2007
- 15) Fifteenth meeting of the Conference of the Parties, Doha (Qatar), 16-28 January 2010
- 16) Sixteenth meeting of the Conference of the Parties, Bangkok (Thailand), 03-14 March 2013
- 17) Seventeenth meeting of the Conference of the Parties, Johannesburg (South Africa), 24 September-04 October 2016
- 18) Eighteenth meeting of the Conference of the Parties, Geneva (Switzerland), 17-28 August 2019.

At each Conference of Parties COP, CITES Parties discuss proposals to amend the Appendices. Parties vote on each proposal. Two thirds of the Parties that are present and voting must vote in favour of a proposal for it to be accepted. Parties also discuss and come to agreement on a range of Resolutions and Decisions that may relate to, for instance, the interpretation of the Convention, its operation for particular taxa or specimens, or specific trade-related conservation measures. Only Parties (country governments) can vote.

Funding for the activities of the Secretariat and COP meetings comes from a Trust Fund derived from Party contributions. Trust Fund money is not available to Parties to improve implementation or compliance. These activities, and all those outside Secretariat activities (training, species specific programmes such as Monitoring the Illegal Killing of Elephants - MIKE) must find external funding, for instance, from NGOs and bilateral aid.

Although the Convention itself does not provide for arbitration of dispute in the case of noncompliance, in practice the CITES functioning has resulted in several strategies to deal with infractions by Parties. The Secretariat, when informed of an infraction by a Party, will notify all other Parties. The Secretariat gives the Party time to respond to the allegations and may also provide technical assistance to prevent further infractions. Other actions (not provided for in the Convention itself, but derived from subsequent COP 11 resolutions) which may be taken against the offending Party include:

- ◆ mandatory confirmation of all permits by the Secretariat;
- ◆ suspension of co-operation from the Secretariat;
- ◆ a formal warning;
- ◆ a visit by the Secretariat to verify capacity;
- ◆ recommendations to all Parties to suspend CITES related trade with offending party;
- ◆ the dictation of corrective measures to be taken by offending Party before Secretariat resumes co-operation/recommend resumption of trade.

Infractions may include negligence with respect to permit issuing, excessive trade, lax enforcement, and failing to produce annual reports.

CITES works by subjecting international trade in specimens of selected species to certain controls. These require that all import, export, re-export and introduction of species covered by the Convention has to be authorised through a permitting system.

Each Party to the Convention must designate one or more Management Authorities in charge of administering the licensing system and one or more Scientific Authorities to make judgments about the effects of trade on the status of the species. Species are proposed for listing at Conferences of the Parties (COPs). Species may be proposed for listing by Parties other than range States and may be listed despite objections by range State nations if there is sufficient (2/3 majority) support for the listing. These discussions are usually among the most contentious at COP meetings.

Since CITES came into force, the convention has banned international trade in rhino horn and helped to ensure that rhinos continue to survive in the wild. CITES also banned international trade in ivory in 1989 to combat a massive illegal trade in ivory which caused dramatic declines in elephant populations throughout most of Africa in the 1970s and 1980s. The ban was successful in eliminating some of the major ivory markets, leading to reduced poaching and allowing some populations to recover.

Other measures adopted by CITES have led to improvements in the management and regulation of trade in a myriad of other species such as sturgeon caviar, some species of sharks, seahorses, crocodiles.

### **Outcomes of the Eighteenth meeting of the Conference of the Parties in 2019**

At COP18 (August 17-28, 2019 ), held at Geneva, member countries delegates considered 57 proposals (relating to more than 500 species) to increase or decrease controls on international trade in wildlife and wildlife products, as well as 140 documents proposing new measures and policies relating to international wildlife trade.

The COP at its 18th meeting adopted eight new Resolutions, revised 28 Resolutions and repealed four Resolutions, one of which is Resolution Conf. 17.2 on Financing and the costed programme of work for the Secretariat for the triennium 2017-2019. Nonetheless, this Resolution remains in the official record to indicate the scale of contributions agreed by the Conference of the Parties for the triennium 2017-2019.

The Conference of the Parties adopted 332 new Decisions, maintained six Decisions, revised a further 19 Decisions and deleted 327 Decisions.

Some major outcomes of COP 18 are as follows:

- 1) **Establishment of Committees:** The CoP adopted the resolution and decisions (CoP18 Doc.13) directing the SC to consider the finance and budget subcommittee should be annexed to the new resolution on establishment of committees.
- 2) **CITES Strategic Vision 2021-2030:** Delegates adopted the CITES Strategic Vision Post 2020, thereby, positioning CITES as a leader in promoting transformative change; environmental, economic and social sustainability; and the achievement of the 2030 Agenda for Sustainable Development. Further, in a landmark decision, the critical role of local and indigenous communities that live on the frontlines of wildlife conservation and sustainable management, and their need for adequate incomes and livelihoods, was widely recognised.
- 3) **Cooperation with the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES):** The COP recognises the findings in the IPBES 2019 Global Assessment Report on Biodiversity and Ecosystem Services.
- 4) **Cooperation and synergy with the World Heritage Convention:** The COP directs the Secretariat to enter into dialogue with the UNESCO World Heritage Centre with a view to agreement on a Memorandum of Understanding and, if considered appropriate, a joint programme of work.
- 5) **Legal acquisition findings:** The COP noted that the export of hunting trophies of species listed in Appendix I or II should only be authorised when a Management Authority of the state of export is satisfied that the specimen was not obtained in contravention of the laws of that country for the protection of fauna (among other requirements).
- 6) **Conservation of vicuña (*Vicugna vicugna*) and trade in its fibre and products:** The amended resolution included text inviting parties trading in vicuña fibre to take appropriate measures against illegal trade in the fibre, and to dispose of illegally traded and confiscated specimens, in accordance with Resolution Conf. 17.8.

### **India's compliance with CITES**

The international community possesses a powerful tool to control wildlife trade, that is the CITES. For years it has used trade sanctions as the cornerstone of a unique compliance system that has evolved through practice and secondary rules. There are various mechanisms of operation of CITES, one of which is through sanctions that are imposed over the participatory countries. The CITES compliance system has evolved largely in isolation from other environmental treaties, yet there are lessons that could be learned by other trade-related agreements that are in the process of developing their mechanisms to address non-compliance. CITES is particularly dependent on a sanctions-based approach because of the lack of funds to support capacity building.

Sanctions are used to back-up technical assistance and can indirectly build capacity to implement the treaty. They can be made applicable through their incorporation in national legislations and policies.

India is a signatory to the Convention on International Trade in Endangered Species of Wild Fauna and Flora that regulates international trade in wildlife and its derivatives as well as India has bilateral arrangements with China and Nepal on combating wildlife crime. CITES was ratified by India on 20 July 1976. It came into force in India on 18 October 1976.

During the COP 14 to CITES, India introduced a resolution along with China, Nepal and the Russian Federation, with direction to Parties with operations breeding tigers on a commercial scale, for restricting such captive populations to a level supportive only to conserving wild tigers. The resolution was adopted as a decision with minor amendments.

As mentioned earlier, CITES convention and its Appendices are legally binding on the Parties. However, a national legislation is required to apply these provisions.

This national legislation enacted with a view to implement the provisions of the convention must, at the very least, include -

- ◆ Provisions to designate a Management Authority and a Scientific Authority
- ◆ Provisions to prohibit trade in specimens that are in violation of the convention
- ◆ Provisions to penalise such trade
- ◆ Provisions to allow for the confiscation of such specimens that are illegally possessed or traded

India, from time to time, has made amendments in the WPA as well as in various other legislations to make it in tune with this international obligation.

With the objective of preservation and conservation of various species of flora and fauna, the Indian Government has also, from time to time adopted various conservation projects. To promote wildlife awareness among the people, the Indian government has started various natural projects and programmes such as Project Tiger, Nature Camps and Jungle Lodges. These projects not only help to preserve our natural heritage, but encourage ecotourism as well.

Project Tiger was formed in 1972 and launched on the 1 April 1973 at Corbett National Park. It was later on expanded to preserve the tiger population at various other Tiger Reserves in Bandhavgarh, Corbett, Pench, Ranthambhore, Kanha, Bandipur, Panna, Dudhwa, Sundarbans, Manas and Sariska. All these reserves act as Conservation Centres for tigers in India.

Besides, there is the Gir National Park, the only habitat for Asiatic lions in India. The Kaziranga Wildlife Sanctuary in Assam is renowned for protecting the endangered one-horned Rhinoceros. There's also Dachigam National Park, which conserves the Hangul or Kashmiri Stag.

Project Elephant, a centrally sponsored scheme, was launched in February 1992 to provide financial and technical support to major elephant bearing States in India for protection of elephants, their habitats and corridors. The Project, involving 25 Elephant Reserves across the country, is being implemented in 13 States and Union Territories in India, namely, Andhra Pradesh, Arunachal Pradesh, Assam, Jharkhand, Karnataka, Kerala, Meghalaya, Nagaland, Odisha, Tamil Nadu, Uttarakhand, Uttar Pradesh and West Bengal.

India has constituted a sub-group on tiger and leopard conservation for cooperation with the Russian Federation. Indo-Russia bilateral took place wherein tripartite MOU between the National Tiger Conservation Authority, Wildlife Institute of India and A.N. Severstov Institute of Ecology and Evaluation has been agreed upon and signed on 4.12.2018. India again, during the meeting of the COP, CITES held at Geneva in 2019 introduced a proposal for implementation of all previous resolutions on illegal trade / smuggling of tiger body parts and farming of tigers in a time bound manner which was adopted with little amendment.

In addition, the State/Union Territory Governments have also taken the following measures to protect wild animals:

- 1) Intensive patrolling in sensitive areas.
- 2) Co-ordination with other law enforcement agencies.
- 3) Provision for arms and ammunition, and communication facilities.
- 4) Conducting nature awareness campaigns for the public.
- 5) Soliciting co-operation from the local communities in wildlife conservation.

There are also various NGOs working on wildlife conservation in India. They provide voluntary and technical assistance to these State sponsored projects as well as adopt certain conservation projects of their own. Other conservation projects include turtle conservation; alligator conservation; vulture conservation; conservation of medicinal plants, herbs, etc.

## 30.8 Conclusion

As stated above, there are a number of conservation projects taken up in India. Many of these projects are adopted by the Central Government. This section provides a brief of the centrally adopted and fully operational conservation projects in India.

### a) Project Tiger

In the beginning of the 1970s, once tiger hunting had officially been banned in India, a tiger count was done across the entire country. This led to the shocking discovery that only 1,200 specimens of this magnificent animal were left. This jolted the concerned authorities and some serious thought went into devising plans to save the tiger. The result was the launch of "Project Tiger" in 1972 at the Dhikala Forest Rest House in Corbett National Park. The main idea behind the project was to provide safe havens for

tigers where they could flourish as a species and hopefully reverse the startling decline in their population. The project begun in association with and still receives its main funding from the WWF.

Project Tiger was implemented to put the tiger on an assured course of recovery from the brink of extinction. It also aimed at resurrecting the floral and faunal genetic diversity in some of India's unique and endangered wilderness ecosystem.

Project Tiger Scheme has been under implementation since 1973 as a Centrally Sponsored Scheme of Government of India. It was launched on 1 April 1973 and is believed to be one of the most successful wildlife conservation ventures.

The main objective of Project Tiger is to ensure a viable population of tiger in India for scientific, economic, aesthetic, cultural and ecological values and to preserve for all time, areas of biological importance as a natural heritage for the benefit, education and enjoyment of the people. Main objectives under the scheme include wildlife management, protection measures and site specific eco-development to reduce the dependency of local communities on tiger reserve resources.

Initially, the Project started with 9 tiger reserves, covering an area of 16,339 sq.km., with a population of 268 tigers. At present there are 50 tiger reserves spread out in 18 States

Tiger Reserves are constituted on a 'core-buffer' strategy. The core area is kept free of biotic disturbances and forestry operations, where collection of minor forest produce, grazing, human disturbances are not allowed within. However, the buffer zone is managed as a 'multiple use area' with twin objectives of providing habitat supplement to the spill over population of wild animals from the core conservation unit, and to provide site specific eco-developmental inputs to surrounding villages for relieving their impact on the core. Except for the National Parks portion if contained within, normally no relocation of villages is visualised in the buffer area, and forestry operations, NTFP collection and other rights and concessions to the local people are permitted in a regulated manner to complement the initiatives in the core unit.

The basic approach of this strategy is:

- ◆ Elimination of all forms of human exploitation and disturbance from the core and rationalisation of such activities in the buffer.
- ◆ Limitation of the habitat management to repair damage done by man.
- ◆ Researching facts about habitat and wild animals and carefully monitoring changes in flora and fauna.

There are several critics of the Project who say that the project has its shortcomings. Though there was an increase the population of these tigers from 1,200 in the 1970s to 3,500 in 1990s. Now the total count of tigers has risen to 2,967 from 2,226 in 2014 - an increase of 741 individuals (aged more than one year), or 33%.

Many experts had predicted that the tiger would be extinct by the turn of the century as the tiger population is still not in thrilling numbers. Naturalist Valmik Thapar has said that for several years, Project Tiger officials have inflated India's wild tiger numbers so as to save their jobs. Project Tiger itself is now being threatened by government activities like the newly passed Tribal Rights Act, 2006, which allows tribal population to reside inside designated tiger sanctuaries. Furthermore, all the tigers in Sariska Tiger Reserve have been poached, showing the ineffectiveness of Project Tiger.

Poaching and other illegal activities are still quite rampant and a lot more effort needs to be put into saving this beautiful animal.

Comprehensive guidelines under Section 38-O 1 (c) of the Wildlife (Protection) Act, 1972 issued for Project Tiger and Tourism in Tiger Reserves on 15th October, 2012. Owing to its long history of conserving the species through Project Tiger, India has around 75% of tiger population and its source areas amongst the 13 tiger range countries in the world.

#### **b) Project Elephant**

Project Elephant is a centrally sponsored scheme launched in February 1992 to provide financial and technical support to major elephant bearing States in the country for protection of elephants, their habitats and corridors. It also seeks to address the issues of human-elephant conflict and welfare of domesticated elephants.

The Project is being implemented in 13 States/Union Territories, viz. Andhra Pradesh, Arunachal Pradesh, Assam, Jharkhand, Karnataka, Kerala, Meghalaya, Nagaland, Odisha, Tamil Nadu, Uttarakhand, Uttar Pradesh and West Bengal. Main activities of the Project are as follows -

- ◆ Ecological restoration of existing natural habitats and migratory routes of elephants;
- ◆ Development of scientific and planned management for conservation of elephant habitats and viable population of Wild Asiatic elephants in India;
- ◆ Promotion of measures for mitigation of man elephant conflict in crucial habitats and moderating pressures of human and domestic stock activities in crucial elephant habitats;
- ◆ Strengthening of measures for protection of wild elephants from poachers and unnatural causes of death;
- ◆ Research on elephant management related issues;
- ◆ Public education and awareness programmes;
- ◆ Eco-development
- ◆ Veterinary care

Starting with a modest Plan Outlay of Rs. 23 crores in the 8th Plan , it was enhanced to was Rs. 60 crores in the 10th Plan.

Elephant Reserves: 25 Elephant Reserves (ERs) extending over about 58,000 sq. km. have been formally notified by various State Governments till now and consent for

establishment of Baitarini ER and South Odisha in Odisha and Ganga-Jamuna (Shivalik) ER in U.P (now Uttarakhand) has been accorded by MoEF. The concerned State Governments are yet to notify these ERs.

For the first time an exclusive exercise for enumeration of wild elephants in the ERs was done during Feb-May 2005. This exercise also sought to experiment with two sampling methods, viz. Block Sampling; and Line Transact-Dung Count (with Retrospective Method of Calculating Dung Decay Rate). Project Elephant arranged Training of Trainers and also issued detailed guidelines to the CWLWs and the Field Co-ordinators. Next All India Enumeration of Elephants was carried out in 2007. An ER-specific enumeration will be repeated in 2010.

Project Elephant has been formally implementing MIKE (Monitoring of Illegal Killing of Elephants) programme of CITES in 10 ERs since 1 April 2004. These include Shivalik Uttaranchal (now Uttarakhand); Eastern Dooars (West Bengal); Mayurbhanj (Odisha); Ripu-Chirang and Dehing-Patkai (Assam); Garo Hills (Meghalaya); Deomali (Arunchal Pradesh; Wayanad (Kerala), Mysore (Karnataka) and Nigiri (Tamil Nadu).

### c) Conservation Centres in India

There are a number of conservation centres developed by the government, to maintain the biodiversity in nature and in turn look after the interest of the wildlife. Some of these government centres are:

- ◆ **Green Foundation Conservation Centre** - Spread across 3 acres of dry land at Thally in Tamil Nadu-Karnataka border, this conservation centre in India has been working towards conservation of agricultural biodiversity closely with the farmers.
- ◆ **The Wildlife Conservation Society, India** - It focuses on saving the endangered mega fauna in the protected reserves, in an effort to save the biodiversity.
- ◆ **Snake Park-Chennai** - This snake park preserves more than 40 varieties of snakes and other animals such as crocodiles, tortoises, chameleons, monitor lizards in their natural habitats. It is an important Indian conservation centre for the protection of Crocodiles.
- ◆ **Crocodile Bank** - 42 kms from Chennai, the crocodile bank at Mamallapuram is another conservation centre in India, for the conservation of the breeding of crocodiles and alligators.
- ◆ **The Wildlife Protection Society of India** - Founded in 1994 by Belinda Wright, the award winning wildlife photographer, the WPSI aims to bring tackle the growing wildlife crisis in India. They do so by providing information and support to those fighting against poaching and illegal wildlife trade.
- ◆ **The Asian Nature Conservation Foundation (ANCF)** - The ANCF is another conservation centre in India, based in Bangalore, dedicated to help prevent the declining natural landscape and biological diversity in India as well as other tropical Asian Countries.

- ◆ **‘Operation Kachhapa’ Conservation Centre** - This is a centre for conservation of Olive Ridley Sea Turtles in Odisha, in the Eastern Coast of India.

Apart from these specific government conservation centres in India, there are a number of non-governmental organisations, like WWF, Greenpeace, etc. working towards conservation of the natural world. Conservation of wildlife is also carried out in many natural parks, sanctuaries and reserves all throughout India.

#### **d) Creation of Special Tiger Protection Force (STPF)**

The Special Tiger Protection Force (STPF) has been made operational in the States of Karnataka (Bandipur), Maharashtra (Pench, Tadoba-Andhari, Nawegaon-Nagzira, Melghat), Rajasthan (Ranthambhore), Odisha (Similipal) and Assam (Kaziranga) out of 18 selected tiger reserves, with 60% central assistance under the ongoing Centrally Sponsored Scheme of Project Tiger, Assam (Kaziranga) with 90% central assistance.

#### **e) Other Efforts**

‘Project Snow Leopard’ is an ambitious project to protect one of the Himalayas’ big cats, still in the stages of its planning. It is the Union Environment Ministry’s innovative conservation project for the high altitude Himalayan landscape, particularly aimed at saving the rare Snow Leopard and its habitat.

The Environment Ministry has set up a steering committee, including senior officials from the Centre as well as the five States, to give impetus to the Project.

The Project, which is yet to see the light of the day, envisages conserving the elusive and endangered high-altitude cat, of which 200-600 specimens are estimated remaining in the wild in India, as a flagship species to work with communities on conservation of the habitat in the higher ranges of five States - Sikkim, Jammu and Kashmir, Himachal Pradesh, Uttarakhand and Arunachal Pradesh. The Project is expected to take off as soon as adequate funds are allocated for flagging it off.

Other conservation projects such as Project Rhino (that includes the Indian Rhino Vision 2020), Gir Lion Project, Ganges River Dolphin Project, etc. are highly ambitious State adopted conservation projects.

The Government of India has launched a Crocodile Conservation Project one of the most successful conservation initiatives in the world. This project has been successful in pulling back the once threatened crocodilians from the brink of extinction and placed them on a good path of recovery. The broad objectives of activities under crocodile project were:

- ◆ to protect the remaining population of crocodilians in their natural habitat by creating sanctuaries;
- ◆ to rebuild natural population quickly through ‘grow and release’ or ‘rear and release’ technique to promote captive breeding;
- ◆ to take-up research to improve management; and
- ◆ to involve the local people in the project intimately.

# UNIT 31

## COASTAL REGULATION ZONE AND COASTAL REGULATION MANAGEMENT

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### 31.1 Introduction

The coast is defined as where the land meets the sea. A precise line that can be called a coastline cannot be determined due to the dynamic nature of tides. The term “coastal zone” can be used instead, which is a spatial zone where interaction of the sea and land processes occurs. Both the terms coast and coastal are often used to describe a geographic location or region.

A pelagic coast refers to a coast which fronts the open ocean, as opposed to a more sheltered coast in a gulf or bay. A shore, on the other hand, can refer to parts of the land which adjoin any large body of water, including oceans (sea shore) and lakes (lake shore). Similarly, the somewhat related term “bank” refers to the land along side or sloping down to a river (river bank) or to a body of water smaller than a lake. “Bank” is also used in some parts of the world to refer to an artificial ridge of earth intended to retain the water of a river or pond. In other places this may be called a levee.

The definition and the extent of the coast also depends on the jurisdiction of the country.

### a) Formation of Coast

The main agents responsible for deposition and erosion along coastlines are waves, tides and currents. The formation of coasts is also heavily influenced by their lithology. The harder the material the less likely it is to erode or suffer the effects of erosion. Variants in the rock create different-shaped coastlines.

Tides often determine the range over which sediment is deposited or eroded. Areas with high tidal ranges allow waves to reach farther up the shore, and areas with lower tidal ranges produce deposition at a smaller elevation interval. The tidal range is influenced by the size and shape of the coastline. Tides do not typically cause erosion by themselves; however tidal bores can erode as the waves surge up river estuaries from the ocean.

Waves erode coastline as they break on shore releasing their energy; the larger the wave the more energy it releases and the more sediment it moves. Coastlines with longer shores have more room for the waves to disperse their energy, while coasts with cliffs and short shore faces give little room for the wave energy to be dispersed. In these areas the wave energy breaking against the cliffs is higher, and air and water are compressed into cracks in the rock, forcing the rock apart, breaking it down. Sediment deposited by waves comes from eroded cliff faces and is moved along the coastline by the waves.

Sediment deposited by rivers is the dominant influence on the amount of sediment located on a coastline. Today river line deposition at the coast is often blocked by dams and other human regulatory devices, which remove the sediment from the stream by causing it to be deposited inland.

Like the ocean which shapes them, coasts are dynamic environment with constant change. The Earth's natural processes, particularly sea level rise waves and various weather phenomena have resulted in the erosion, accretion and reshaping of coasts as well as flooding and creation of continental shelves and drowned river valleys.

### b) Environmental Importance

The coast and its adjacent areas on and off shore is an important part of a local ecosystem as the mixture of fresh water and salt water in estuaries provides many nutrients for marine life. Salt marshes and beaches also support a diversity of plants, animals, and insects crucial to the food chain.

The high level of biodiversity creates a high level of biological activity, which has attracted human activity for thousands of years.

An increasing part the global population inhabits coastal regions. Many of the world's major cities have been built on or near good harbours and have port facilities. Jurisdictions that are landlocked have achieved port status by such measures such as building canals.

The coast is a crucial frontier and must be defended against military invaders, smugglers and illegal migrants. Fixed Coastal defences have long been erected in many nations and coastal countries also require a navy and some form of coast guard.

### c) Threats to Coast

Coasts also face many environmental challenges relating to human-induced impacts. The human influence on climate change is thought to be a contributing factor of an accelerated trend in sea level rise which threatens coastal habitat.

Pollution can occur from a number of sources : garbage and industrial debris, the transportation of petroleum in tankers, increasing the probability of large oil spills small oil spills created by large and small vessels, which flush bilge water into the ocean.

### d) Indian Coast

'Coastline' is the line that forms the boundary between the 'coast' and the 'beach'. It is the boundary between the land and the water. India has coastline of 6000 kms. Out of this, Kerala State is having a coastline of 560 kms.

## 31.2 Coastal Regulation Zone (CRZ)

The term coastal zone means the coastal water, wetland and shore land strongly influenced by marine waters. In other words, this is the area of interaction between land and sea, which is influenced by both terrestrial and marine environment.

Coastal regulation zone is the land area from the High Tide Line (HTL) to 500 meters on the landward side along the sea front. the HTL means the line on the land up to which the highest water line reaches during the spring tide, as demarcated by the National Centre for Sustainable Coastal Management (NCSCM) in accordance with the laid down procedures and made available to various coastal States and Union Territories.

There are four types of categories in the coastal regulation zone:

### a) Category - I (CRZ-I)

Areas are environmentally most critical and are further classified as under:

#### CRZ-I A:

- a) CRZ-I A shall constitute the following ecologically sensitive areas (ESAs) and the geomorphological features which play a role in maintaining the integrity of the coast viz.:
  - i) Mangroves (in case mangrove area is more than 1000 sq. meters, a buffer of 50 meters along the mangroves shall be provided and such area shall also constitute CRZ-I A);
  - ii) Corals and coral reefs;
  - iii) Sand dunes;
  - iv) Biologically active mudflats;
  - v) National parks, marine parks, sanctuaries, reserve forests, wildlife habitats and other protected areas under the provisions of Wild Life (Protection) Act,

1972 (53 of 1972), Forest (Conservation) Act, 1980 (69 of 1980) or Environment (Protection) Act, 1986 (29 Of 1986), including Biosphere Reserves;

- vi) Salt marshes;
  - vii) Turtle nesting grounds;
  - viii) Horse shoe crabs' habitats;
  - ix) Sea grass beds;
  - x) Nesting grounds of birds;
  - xi) Areas or structures of archaeological importance and heritage sites.
- b) A detailed environment management plan shall be formulated by the States and Union Territories for such ecologically sensitive areas in respective territories, as mapped out by the National Centre for Sustainable Coastal Management (NCSCM), Chennai based on guidelines as contained in Annexure-I to this notification and integrated with the CZMP.

**CRZ-I B:** The intertidal zone i.e. the area between Low Tide Line and High Tide Line shall constitute the CRZ-I B.

**b) Category - II (CRZ-II)**

CRZ-II shall constitute the developed land areas up to or close to the shoreline, within the existing municipal limits or in other existing legally designated urban areas, which are substantially built-up with a ratio of built-up plots to that of total plots being more than 50 per cent and have been provided with drainage and approach roads and other infrastructural facilities, such as water supply, sewerage mains, etc.

**c) Category - III (CRZ-III)**

Land areas that are relatively undisturbed (viz. rural areas, etc.) and those which do not fall under CRZ-II, shall constitute CRZ-III, and CRZ-III shall be further classified into following categories: -

**CRZ-III A:** Such densely populated CRZ-III areas, where the population density is more than 2161 per square kilometer as per 2011 census base, shall be designated as CRZ-III A and in CRZ-III A, area up to 50 meters from the HTL on the landward side shall be earmarked as the 'No Development Zone (NDZ)', provided the CZMP as per this notification, framed with due consultative process, have been approved, failing which, a NDZ of 200 meters shall continue to apply.

**CRZ-III B:** All other CRZ-III areas with population density of less than 2161 per square kilometer, as per 2011 census base, shall be designated as CRZ-III B and in CRZ-III B, the area up to 200 meters from the HTL on the landward side shall be earmarked as the 'No Development Zone (NDZ)'.

Land area up to 50 meters from the HTL, or width of the creek whichever is less, along the tidal influenced water bodies in the CRZ III, shall also be earmarked as the NDZ in CRZ III.

*Note: The NDZ shall not be applicable in the areas falling within notified Port limits.*

**d) Category - IV (CRZ-IV)**

The CRZ- IV shall constitute the water area and shall be further classified as under:

**CRZ- IVA:** The water area and the sea bed area between the Low Tide Line up to twelve nautical miles on the seaward side shall constitute CRZ-IV A.

**CRZ- IVB:** CRZ-IV B areas shall include the water area and the bed area between LTL at the bank of the tidal influenced water body to the LTL on the opposite side of the bank, extending from the mouth of the water body at the sea up to the influence of tide, i.e., salinity of five parts per thousand (ppt) during the driest season of the year.

### 31.3 CRZ Notification and its Objectives

The Ministry of Environment, Forests & Climate Change (MoEF&CC), Government of India, has created a statutory innovation in the form of a legal notification for the protection and planned development of coastal areas, including the reservation of areas in coastal zones set aside as No-Development Zones. The notification actually crystallises a fairly firm policy that had extended over a decade to protect coastal areas from unplanned and indiscriminate human activities.

The objective of the CRZ Notification is to protect the coastal areas from becoming degraded due to unplanned and/or excessive development which results in pollution and the eventual destruction of this highly prized, fragile and irreplaceable natural resource. The notification is a unique piece of statutory regulation and other countries that seek to also regulate activities in their coastal areas for environmental reasons may benefit from studying India's experiences. The need for establishing a programme in Coastal Regulation Zone in a particular nation may arise for a number of reasons. Depletion of coastal and ocean resources (for example, through overfishing or exploitation of corals for building materials) may typically be a powerful trigger. Another important trigger may be increase in pollution which endanger public health, or pose threats to water-based industries such as aquaculture, fishing and tourism. A desire to increase the economic benefits flowing from coast and ocean may also bring the realisation that coastal management and planning are needed. A related trigger may be the desire to develop new uses of the coastal marine area previously not exploited in a particular country - such as offshore oil or other minerals, marine aqua culture, or new forms of fishing for underexploited stocks or in different areas.

On 19 February 1991, the Ministry of Environment and Forests issued an elaborate notification called the Coastal Regulation Zone (CRZ) Notification which regulates human

activities in the area of 500 m from the High Tide Line (HTL) along the coastal stretches of the country. The Coastal Regulation Zone Notification came into immediate effect on the same day and was made applicable to the entire 6,000 km coastal belt of India and, in addition, to river line stretches affected by tidal action. The Ministry of Environment, Forest and Climate Change had received representations from various coastal States and Union Territories, besides other stakeholders, regarding certain provisions in the Coastal Regulation Zone Notification, 2011 related to management and conservation of marine and coastal ecosystems, development in coastal areas, eco-tourism, livelihood options and sustainable development of coastal communities etc. Also, various State Governments and Union Territory administrations and stakeholders had requested the Ministry of Environment, Forest and Climate Change to address the concerns related to coastal environment and sustainable development with respect to the Coastal Regulation Zone Notification, 2011.

Subsequently, the Ministry of Environment, Forest and Climate Change had constituted a Committee under the Chairmanship of Dr. Shailesh Nayak to examine various issues and concerns of coastal States and Union Territories and various stakeholders, relating to the Coastal Regulation Zone Notification 2011 and to recommend appropriate changes in the said Notification. The report submitted by Dr. Shailesh Nayak Committee was examined in the Ministry and consultations were held with various stakeholders in this regard. Thereafter, draft Coastal Regulation Zone Notification, 2018 was issued and hosted in the website of the Ministry of Environment, Forest and Climate Change on the 18 April 2018 for seeking comments and suggestions from all concerned. As such, after considering the objections and suggestions received in response to the above mentioned draft Coastal Regulation Zone Notification, 2018 the Central Government has notified the Coastal Regulation Zone (CRZ) Notification 2018.

## 31.4 Brief Overview of CRZ Notification

### a) Prohibited Activities

The following activities shall be prohibited, in general, within the entire CRZ and exceptions to these and other permissible and regulated activities in specific CRZ categories viz. CRZ-I, II, III and IV, shall be governed by the provisions of paragraph 5 of the CRZ Notification:-

- i) Setting up of new industries and expansion of existing industries, operations or processes.
- ii) Manufacture or handling of oil, storage or disposal of hazardous substances as specified in the notification of the Ministry of Environment, Forest and Climate Change number G.S.R.395 (E), dated the 4 April 2016.
- iii) Setting up of new fish processing units.
- iv) Land reclamation, bunding or disturbing the natural course of seawater except for the activities permissible under this notification and executed with prior permission from the competent authority.

- v) Discharge of untreated waste and effluents from industries, cities or towns and other human settlements.
- vi) Dumping of city or town wastes including construction debris, industrial solid wastes, fly ash for the purpose of land filling.
- vii) Port and harbour projects in high eroding stretches of the coast.
- viii) Mining of sand, rocks and other sub-strata materials.
- ix) Dressing or altering of active sand dunes.
- x) In order to safeguard the aquatic system and marine life, disposal of plastic into the coastal waters shall be prohibited and adequate measures for management and disposal of plastic materials shall be undertaken in the CRZ.
- xi) Drawl of ground water.

#### **b) Regulations of Permissible Activities**

##### **CRZ-I:**

**CRZ-IA:** These areas are ecologically most sensitive and generally no activities shall be permitted to be carried out in the CRZ-I A area, with following exceptions:

- i) Eco-tourism activities such as mangrove walks, tree huts, nature trails, etc., in identified stretches areas subject to such eco-tourism plan featuring in the approved CZMP as per this notification, framed with due consultative process, public hearing, etc. and further subject to environmental safeguards and precautions related to the Ecologically Sensitive Areas, as enlisted in the CZMP.
- ii) In the mangrove buffer, only such activities shall be permitted like laying of pipelines, transmission lines, conveyance systems or mechanisms and construction of road on stilts, etc. that are required for public utilities.
- iii) Construction of roads and roads on stilts, by way of reclamation in CRZ-I areas, shall be permitted only in exceptional cases for defence, strategic purposes and public utilities, subject to a detailed marine or terrestrial or both environment impact assessment, to be recommended by the Coastal Zone Management Authority and approved by the Ministry of Environment, Forest and Climate Change; and in case construction of such roads passes through mangrove areas or is likely to damage the mangroves, a minimum three times the mangrove area affected or destroyed or cut during the construction process shall be taken up for compensatory plantation of mangroves.

##### **CRZ-I B - The inter tidal areas:**

Activities shall be regulated or permissible in the CRZ-I B areas as under:

- i) Land reclamation, bunding, etc. shall be permitted only for activities such as,
  - a) foreshore facilities like ports, harbours, Jetties, wharves, quays, slipway, bridges, hover ports for coast guard, sea links, etc;

- b) projects for defence, strategic and security purposes;
  - c) road on stilts, provided that such roads shall not be authorised for permitting development on the landward side of such roads, till the existing High Tide Line: Provided that the use of reclaimed land may be permitted only for public utilities such as mass rapid or multimodal transit system, construction and installation of all necessary associated public utilities and infrastructure to operate such transit or transport system including those for electrical or electronic signalling system, transit stopover of permitted designs; except for any industrial operation, repair or maintenance;
  - d) measures for control of erosion;
  - e) maintenance and clearing of waterways, channels, ports and hover ports for coast guard;
  - f) measures to prevent sand bars, installation of tidal regulators, laying of storm water drains or for structure for prevention of salinity ingress and freshwater recharge.
- ii) Activities related to waterfront or directly needing foreshore facilities such as ports and harbours, jetties, quays, wharves, erosion control measures, breakwaters, pipelines, lighthouses, navigational safety facilities, coastal police stations, Indian coast guard stations and the like.
  - iii) Power by non-conventional energy sources and associated facilities.
  - iv) Transfer of hazardous substances from ships to Ports, terminals and refineries and vice versa.
  - v) Facilities for receipt and storage of petroleum products and liquefied natural gas as specified in Annexure-II to this notification, subject to implementation of safety regulations including guidelines issued by the Oil Industry Safety Directorate in the Ministry of Petroleum and Natural Gas and guidelines issued by the Ministry of Environment, Forest and Climate Change, provided that such facilities are for receipt and storage of fertilizers and raw materials required for fertilizers, like ammonia, phosphoric acid, sulphur, sulphuric acid, nitric acid, etc.
  - vi) Storage of non-hazardous cargo i.e. edible oil, fertilizers and food grains in notified Ports.
  - vii) Hatchery and natural fish drying.
  - viii) Existing fish processing units may utilise 25% additional plinth area for modernisation purposes (only for additional equipment and pollution control measures) subject to the following:
    - a) Floor Space Index of such reconstruction not exceeding the permissible Floor Space Index as per prevalent town and country planning regulations;
    - b) additional plinth area is constructed only to the landward side.
    - c) approval of the concerned State Pollution Control Board or Pollution Control Committee.

- ix) Treatment facilities for waste and effluents and conveyance of treated effluents.
- x) Storm water drains.
- xi) Projects classified as strategic, defence related projects and projects of the Department of Atomic Energy, Government of India.
- xii) Manual mining of atomic mineral(s) notified under Part-B of the First Schedule to the Mining and Minerals (Development and Regulation) Act, 1957(67 of 1957) occurring as such or in association with one or other minerals in the intertidal zone by such agencies as authorised by the Department of Atomic Energy, Government of India as per mining plan approved by the Atomic Mineral Directorate for Exploration and Research:

Provided that the manual mining operations shall be carried out only by deploying persons using baskets and hand spades for collection of ore or mineral within the intertidal zone and as per approved mining plan, without deploying or using drilling and blasting or Heavy Earth Moving Machinery in the intertidal zone.

- xiii) Exploration and extraction of oil and natural gas and all associated activities and facilities thereto;
- xiv) Foreshore requiring facilities for transport of raw materials, facilities for intake of cooling water, intake water for desalination plants, etc, and outfall for discharge of treated wastewater or cooling water from thermal power plants in conformity with the environmental standards notified by Ministry of Environment, Forest and Climate Change and relevant directions of Central Pollution Control Board (CPCB) or State Pollution Control Board (SPCB) or Pollution Control Committee (PCC), as the case may be.
- xv) Pipelines, conveying systems including transmission lines.
- xvi) Weather radar for monitoring of cyclones prediction, ocean observation platforms, movement and associated activities.
- xvii) Salt harvesting and associated facilities.
- xviii) Desalination plants and associated facilities.

#### **CRZ-II:**

- i) Activities as permitted in CRZ-I B, shall also be permissible in CRZ-II, in so far as applicable.
- ii) Construction of buildings for residential purposes, schools, hospitals, institutions, offices, public places, etc. shall be permitted only on the landward side of the existing road, or on the landward side of existing authorised fixed structures:  

Provided that no permission for construction of buildings shall be given on landward side of any new roads which are constructed on the seaward side of an existing road.
- iii) Buildings permitted as in (ii) above, shall be subject to the local town and country planning regulations as applicable from time to time, and the norms for the Floor

Space Index (FSI) or Floor Area Ratio (FAR) prevailing as on the date of this Notification, and in the event that there is a need for amendment of the FSI after the date of publication of this notification in the official Gazette, the Urban Local Body or State Government or Union Territory Administration shall approach the Ministry of Environment, Forest and Climate Change through the concerned State Coastal Zone Management Authority (SCZMA) or Union Territory Coastal Zone Management Authority, as the case may be and the SCZMA shall forward the proposal to the National Coastal Zone Management Authority (NCZMA) with its views in the matter, and the NCZMA shall thereafter examine various aspects like availability of public amenities, environmental protection measures, etc., and take a suitable decision on the proposal and it shall be the responsibility of the concerned Town Planning Authority to ensure that the Solid Wastes are handled as per respective Solid Waste Management Rules and no untreated sewage is discharged on to the coast or coastal waters.

- iv) Reconstruction of authorised buildings shall be permitted, without change in present land use, subject to the local town and country planning regulations as applicable from time to time, and the norms for the Floor Space Index or Floor Area Ratio, prevailing as on the date of publication of this notification in the official Gazette and in the event that there is a need for amendment of the FSI after the said date of this notification, the Urban Local Body or State Government or Union territory Administration shall approach the Ministry of Environment, Forest and Climate Change through the concerned State Coastal Zone Management Authority (SCZMA) or Union Territory Coastal Zone Management Authority, as the case may be and the CZMA shall forward the proposal to the National Coastal Zone Management Authority (NCZMA) with its views in the matter, and the NCZMA shall thereafter examine various aspects like availability of public amenities, environmental protection measures etc., and take a suitable decision on the proposal and it shall be the responsibility of the concerned Town Planning Authority to ensure that the Solid Wastes are handled as per respective Solid Waste Management Rules and no untreated sewage is discharged on to the coast or coastal waters.
- v) Development of vacant plots in designated areas for construction of beach resorts or hotels or tourism development projects subject to the conditions or guidelines at Annexure-III to this notification.
- vi) Temporary tourism facilities shall be permissible in the beaches which shall only include shacks, toilets or washrooms, change rooms, shower panels; walk ways constructed using interlocking paver blocks, etc, drinking water facilities, seating arrangements, etc. and such facilities shall however be permitted only subject to the tourism plan featuring in the approved CZMP as per this notification, framed with due consultative process or public hearing, etc. and further subject to environmental safeguards enlisted in the CZMP, however, a minimum distance of 10 meter from HTL shall be maintained for setting up of such facilities.

**CRZ-III:**

- i) Activities as permitted in CRZ-I B, shall also be permissible in CRZ-III, in so far as applicable.
- ii) Regulation of activities in NDZ:

Following shall be permissible and regulated in the NDZ:

- a) No construction shall be permitted within NDZ in CRZ III, except for repairs or reconstruction of existing authorised structure not exceeding existing Floor Space Index, existing plinth area and existing density and for permissible activities under this notification including facilities essential for activities and construction or reconstruction of dwelling units of traditional coastal communities including fisher folk, incorporating necessary disaster management provisions and proper sanitation arrangements.
- b) Agriculture, horticulture, gardens, pastures, parks, playfields and forestry.
- c) Construction of dispensaries, schools, public rain shelter, community toilets, bridges, roads, provision of facilities for water supply, drainage, sewerage, crematoria, cemeteries and electric sub-station which are required for the local inhabitants may be permitted on a case to case basis by Coastal Zone Management Authority (CZMA).
- d) Construction of units or auxiliary thereto for domestic sewage, treatment and disposal with the prior approval of the concerned Pollution Control Board or Committee.
- e) Facilities required for local fishing communities such as fish drying yards, auction halls, net mending yards, traditional boat building yards, ice plant, ice crushing units, fish curing facilities and the like.
- f) Wherever there is a national or State highway passing through the NDZ of CRZ-III areas, temporary tourism facilities such as toilets, change rooms, drinking water facility and temporary shacks can be taken up on the seaward side of the road.

On landward side of such roads in the NDZ, resorts or hotels and associated tourism facilities shall be permitted and such facilities shall, however, be permitted only subject to the incorporation of tourism plan in the approved CZMP as per this notification and the conditions or guidelines at Annexure-III, to this notification as applicable.

- g) Temporary tourism facilities shall be permissible in the NDZ and beaches in the CRZ-III areas and such temporary facilities shall only include shacks, toilets or washrooms, change rooms, shower panels, walk ways constructed using interlocking paver blocks, etc, drinking water facilities, seating arrangements etc., and such facilities shall, however, be permitted only subject to the tourism plan featuring in the approved CZMP as per this notification subject to maintaining a minimum distance of 10 meters from HTL for setting up of such facilities.

- h) Mining of atomic minerals notified under Part-B of the First Schedule to Mining and Minerals (Development and Regulation) Act, 1957 (67 of 1957) occurring as such or in association with one or other minerals by such agencies as authorised by the Department of Atomic Energy, Government of India, as per mining plan by the Atomic Mineral Directorate for Exploration and Research.
- iii) Regulation of activities for CRZ-III areas beyond NDZ:
- a) Development of vacant plots in designated areas for construction of beach resorts or hotels or tourism development projects subject to the conditions or guidelines at Annexure-III to this notification.
  - b) Construction or reconstruction of dwelling units, so long it is within the ambit of traditional rights and customary uses such as existing fishing villages, etc. and building permission for such construction or reconstruction will be subject to local town and country planning rules, with an overall height of construction not exceeding 9 meters and with only two floors (ground + one floor).
  - c) The local communities including fishermen may be permitted to facilitate tourism through 'home stay' without changing the plinth area or design or facade of the existing houses.
  - d) Construction of public rain shelters, community toilets, water supply drainage, sewerage, roads, bridges, etc.
  - e) Limestone mining: Selective mining of limestone minerals may be permitted in specific identified areas under the mining plans, which are adequately above the height of HTL, based on the recommendations of reputed National Institutes in the mining field such as Council of Scientific and Industrial Research (CSIR), Central Mining Research Institute etc., provided that the extraction of minerals shall be carried out not below a height of 1 meter above the HTL and an adequate barrier shall be created so as to safeguard against saline water incursion and subject to appropriate safeguards related to pollution of coastal waters and prevention of coastal erosion.
  - f) Mining of atomic minerals notified under Part-B of the First Schedule of Mining and Minerals (Development and Regulation) Act, 1957 (67 of 1957) occurring as such or in association with one or other minerals by such agencies as authorised by Department of Atomic Energy, Government of India, as per mining plan by the Atomic Mineral Directorate for Exploration and Research.
- iv) Drawing of groundwater and construction related thereto shall be prohibited within 200 meters of HTL except for the use of local communities in areas inhabited by them and in the areas between 200 to 500 meters of the HTL, groundwater withdrawal may be permitted only through manual means from ordinary wells for drinking, horticulture, agriculture and fisheries, etc. where no other source of water is available and restrictions for such drawl may be imposed by the designated Authority by State Government or Union territory Administration in the areas affected by sea water intrusion, however, for horticulture and agriculture purpose, micro irrigation promoted by Government welfare schemes shall be permitted.

- v) Development of airports in wastelands and non-arable lands in CRZ-III areas with adequate environmental safeguards.

#### CRZ-IV:

Activities shall be permitted and regulated in the CRZ IV areas as under:

- i) Traditional fishing and allied activities undertaken by local communities.
- ii) Land reclamation, bunding, etc to be permitted only for activities such as-
  - a) foreshore facilities like ports, harbours, Jetties, wharves, quays, slipway, bridges, sea links and hover ports for coast guard ,etc;
  - b) projects for defence, strategic and security purpose including coast guard;
  - c) measures for control of erosion;
  - d. maintenance and clearing of waterways, channels and ports;
  - e) measures to prevent sand bars, installation of tidal regulators, laying of storm water drains or for structure for prevention of salinity ingress and freshwater recharge.
- iii) Activities related to waterfront or directly needing foreshore facilities, such as ports and harbours, jetties, quays, wharves, erosion control measures, breakwaters, pipelines, navigational safety facilities and the like.
- iv) Power by non-conventional energy sources and associated facilities such as offshore wind, wave energy, ocean thermal energy conversion, etc.
- v) Transfer of hazardous substances from ships to Ports.
- vi) Storage of non-hazardous cargo like edible oil, fertilizers and food grains in notified Ports.
- vii) Facilities for discharging treated effluents into the water course.
- viii) Projects classified as strategic and defence related projects including coast guard coastal security network.
- ix) Projects of department of Atomic Energy.
- x) Exploration and extraction of oil and natural gas and all associated activities and facilities thereto.
- xi) Exploration and mining of atomic minerals notified under Part-B of the First Schedule of the Mining and Minerals (Development and Regulation) Act, 1957 (67 of 1957), occurring as such or in association with other mineral(s) and of such associated mineral(s).
- xii) Foreshore requiring facilities for transport of raw materials, facilities for intake of cooling water and outfall for discharge of treated wastewater or cooling water from thermal power plants, and foreshore requiring facilities for transport of raw materials, facilities for intake of cooling water and outfall for discharge of treated wastewater

or cooling water from thermal power plants, in conformity with the environmental standards notified by Ministry of Environment, Forest and Climate Change and relevant directions of the Central Pollution Control Board or State Pollution Control Board or Pollution Control Committee.

- xiii) Pipelines, conveying systems including transmission lines.
- xiv) Weather radar for monitoring of cyclone prediction, ocean observation platforms, movement and associated activities.
- xv) Construction of memorials or monuments and allied facilities by the concerned State Government in CRZ-IV (A) areas, in exceptional cases, with adequate environmental safeguards, subject to the following, namely: -
  - a) the concerned State Government shall submit justification for locating the project in CRZ-IVA area along with details of alternate sites considered and weightage matrix on various parameters including environmental parameters, to State Coastal Zone Management Authority who will examine the project and make recommendation to the Central Government (Ministry of Environment, Forest and Climate Change) for grant of Terms of Reference (ToRs) for preparation of an environmental impact assessment report by the State Government;
  - b) On grant of ToRs by the Central Government, the concerned State Government shall submit the draft Environmental Impact Assessment report (EIA) with Environmental Management Plan (EMP), draft Risk Assessment Report with Disaster Management Plan (DMP) including on-site and off-site emergency plan and evacuation plan during emergency, to the State Pollution Control Board for conduct of public hearing for the proposed project in accordance with the procedure laid down under the Environment Impact Assessment (EIA) notification number S.O. 1533(E), dated the 14 September 2006;
  - c) The concerned State Government shall, after addressing the relevant issues raised by the public during the public hearing referred to in sub-item (b), submit the final EIA, EMP, Risk Assessment and DMP, to the State CZMA for their examination and recommendation to MoEF&CC;
  - d) The Central Government may, if it considers necessary so to do, dispense with the requirement of public hearing referred to in sub-clause (b), if it is satisfied that the project will not involve rehabilitation and resettlement of the public or the project site is located away from human habitation.
- c) **Procedure for Monitoring and Enforcement**
  - i) For the purposes of implementation and enforcement of the provisions of this notification and compliance with conditions stipulated thereunder, the powers either original or delegated are available under Environment (Protection) Act, 1986 (29 of 1986) with the Ministry of Environment, Forest and Climate Change, State Government or the Union Territory Administration, National Coastal Zone Management Authority and the State or Union Territory Coastal Zone Management Authority;

- ii) The composition, tenure and mandate of National Coastal Zone Management Authority and State Government or the Union Territory Coastal Zone Management Authority have already been notified by the Ministry of Environment, Forest and Climate Change in terms of Orders of Hon'ble Supreme Court in Writ Petition 664 of 1993;
- iii) The State Government or the Union Territory Coastal Zone Management Authority shall primarily be responsible for enforcing and monitoring of this notification and to assist in this task, the State Government and the Union Territory shall constitute district level Committees under the Chairmanship of the District Magistrate concerned comprising at least three representatives of local traditional coastal communities including from fishermen, and the State Government may consider the enforcement of this notification to the level of respective District Magistrates.
- iv) The dwelling units of the traditional coastal communities including fishermen, tribals as were permissible under the provisions of the Coastal Regulation Zone notification, 2011 number S.O. 19(E), dated the 6th January, 2011, but which have not obtained formal approval from concerned authorities under the said Notification shall be considered by the respective Coastal Zone Management Authority and the dwelling units shall be regularised subject to the following condition, namely:
  - a) these are not used for any commercial activity;
  - b) these are not sold or transferred to non-traditional coastal community.

### 31.5 Salient Features of Coastal Regulation Zone (CRZ) Notification, 2018

- 1) Allowing Floor Space Index (FSI) as per current norms in CRZ areas: As per CRZ, 2011 Notification, for CRZ-II (Urban) areas, FSI or the Floor Area Ratio (FAR) had been frozen as per 1991 Development Control Regulation (DCR) levels. In the CRZ, 2018 Notification, it had been decided to de-freeze the same and permit FSI for construction projects, as prevailing on the date of the new Notification. This will enable redevelopment of these areas to meet the emerging needs.
- 2) Densely populated rural areas were to be afforded greater opportunity for development: For CRZ-III (Rural) areas, two separate categories have now been stipulated as below:
  - a) CRZ-III A - These are densely populated rural areas with a population density of 2161 per square kilometer as per 2011 Census. Such areas shall have a No Development Zone (NDZ) of 50 meters from the HTL as against 200 meters from the High Tide Line stipulated in the CRZ Notification, 2011 since such areas have similar characteristics as urban areas.
  - b) CRZ-III B - Rural areas with population density of below 2161 per square kilometer as per 2011 Census. Such areas shall continue to have an NDZ of 200 meters from the HTL.

- 3) Tourism infrastructure for basic amenities to be promoted: Temporary tourism facilities such as shacks, toilet blocks, change rooms, drinking water facilities etc. have now been permitted in Beaches. Such temporary tourism facilities are also now permissible in the “No Development Zone” (NDZ) of the CRZ-III areas as per the Notification. However, a minimum distance of 10 m from HTL should be maintained for setting up of such facilities.
- 4) CRZ Clearances streamlined: The procedure for CRZ clearances has been streamlined. Only such projects/activities, which are located in the CRZ-I (Ecologically Sensitive Areas) and CRZ IV (area covered between Low Tide Line and 12 Nautical Miles seaward) shall be dealt with for CRZ clearance by the Ministry of Environment, Forest and Climate Change. The powers for clearances with respect to CRZ-II and III have been delegated at the State level with necessary guidance.
- 5) A No Development Zone (NDZ) of 20 meters has been stipulated for all Islands: For islands close to the mainland coast and for all Backwater Islands in the mainland, in wake of space limitations and unique geography of such regions, bringing uniformity in treatment of such regions, NDZ of 20 m has been stipulated.
- 6) All Ecologically Sensitive Areas have been accorded special importance: Specific guidelines related to their conservation and management plans have been drawn up as a part of the CRZ Notification.
- 7) Pollution abatement has been accorded special focus: In order to address pollution in Coastal areas treatment facilities have been made permissible activities in CRZ-I B area subject to necessary safeguards.
- 8) Defence and strategic projects have been accorded necessary dispensation.

### 31.6 Merits and De-merits of CRZ Notification, 2018

According to the government, the proposed CRZ Notification, 2018 will lead to enhanced activities in the coastal regions thereby promoting economic growth while also respecting the conservation principles of coastal regions. It will not only result in significant employment generation but also to better life and add value to the economy of India. The new notification is expected to rejuvenate the coastal areas while reducing their vulnerabilities<sup>1</sup>.

#### a) Merits

CRZ Notification 2018 will:

- 1) Lead to increased activities leading to economic growth and generation of coastal livelihoods along with respecting conservation principles of coastal regions;
- 2) Meet developmental needs of CRZ II(Urban) area by allowing construction projects through removal of fixed Floor Area Ratio norms;

<sup>1</sup> <https://pib.gov.in/newsite/PrintRelease.aspx?relid=186875>

- 3) Provide greater development opportunities for densely populated rural areas under CRZ III A through relaxation of NDZ from 200 m to 50 m from HTL;
- 4) It will provide similar treatments for all islands thereby protecting islands unique geography and biodiversity; and
- 5) It would take into account conservation and management plan for Ecologically Sensitive Areas and provides facilities for pollution treatment in coastal areas.

**b) De-merits**

- 1) Non-inclusion of effect of climate change on coastal areas would make coastal ecology vulnerable to raising sea levels and enhances cyclone intensity;
- 2) Demarcated hazard line act as buffer for relaxed provisions for economic development;
- 3) Allowing construction and tourism facilities may result enhancement to employment and local economy which may result in damage to fragile coastal ecology in absence of strong environmental safeguards;
- 4) Excessive beach lighting is confusing and harmful to some marine species, including migrating turtles;
- 5) Reduction of CRZ to 50 m from hazard lines may result in imminent floods;
- 6) Local communities including fisherman could face displacement challenge on account of commercial pressure; and
- 7) There is apprehension that this notification could affect customary land use and traditional land rights.

**Regulatory responsibility**

All development activities or projects in CRZ-I and CRZ-IV areas, which are regulated or permissible as per this notification, shall be dealt with by Ministry of Environment, Forest and Climate Change for CRZ clearance, based on the recommendation of the concerned Coastal Zone Management Authority. For all other permissible and regulated activities as per this notification, which fall purely in CRZ-II and CRZ-III areas, the CRZ clearance shall be considered by the concerned Coastal Zone Management Authority and such projects in CRZ -II and III, which also happen to be traversing through CRZ-I or CRZ-IV areas or both, CRZ clearance shall, however be considered only by the Ministry of Environment, Forest and Climate Change, based on recommendations of the concerned Coastal Zone Management Authority.

## 31.7 Supreme Court Cases Guiding Coastal Regulation

The *Indian Council for Enviro-legal Action v. Union of India*<sup>2</sup> case before the Hon'ble Supreme Court of India highlighted that Coastal Zone Management Plans (CZMPs) which were to be prepared by State Governments had not been finalised despite the passage

<sup>2</sup> [(1996) 5 SCC 281]

of the statutory period of one year. It also challenged the amendments made to the law by the Central Government in 1994 to relax certain prohibitions. The Court found that the two of the 1994 amendments that reduced the no-development zone (NDZ) to be illegal. It asked the Central Government to consider constituting State and National Coastal Zone Management Authorities (CZMAs) for the effective implementation of the 1991 Notification. The Court in this case directed the Central and State Governments to finalise the CZMPs. The Court observed, *‘[e]nactment of a law, but tolerating its infringement, is worse than not enacting a law at all. ... Continued tolerance of such violations of law not only renders legal provisions nugatory but such tolerance by the enforcement authorities encourages lawlessness and adoption of means which cannot, or ought not to, be tolerated in any civilized society.’*

In a landmark judgment in *S. Jagannath v. Union of India*<sup>3</sup>, the Hon’ble Supreme Court of India referred to expert reports to identify the adverse impacts of coastal pollution caused by non-traditional and unregulated prawn farming. The Court in this case decided that prawn farming industries were prohibited in the coastal regulation zones under the CRZ Notification 1991 and their functioning was in violation of various other laws. It, however, excluded traditional systems of aquaculture from this prohibition. The Court held, *‘[t]he purpose of the CRZ Notification is to protect the ecologically fragile coastal areas and to safeguard the aesthetic qualities and uses of the sea coast. The setting up of modern shrimp aquaculture farms right on the sea coast ... is per se hazardous and is bound to degrade the marine ecology, coastal environment and the aesthetic uses of the sea coast’*.

In *Vaamika Island v. Union of India and Ors.*<sup>4</sup>, the issue before the Hon’ble Supreme Court of India was whether certain properties on an island in the Vembanad Backwaters of Kerala should have been categorised as CRZ 1, which restricts its rebuilding or expansion, in Kerala’s CZMP. The Court held that the properties had been correctly categorised, and that the owner had violated the law by constructing on these properties. The Court upheld the High Court’s direction to demolish the illegal structures.

## 31.8 Some Violations of CRZ

### Gujarat

#### West Mangrove Reserve Forests: Gujarat

Ever since the Government of India liberalised its economic policies to compete with the western model of developments, the country’s poor have found their livelihood under threat. The worst affected is the coastal environment and coastal communities. The protected area like the sanctuaries are in the process of de-regularising - the most recent case is the de-reservation of the Western Mangrove Reserve forest of Gujarat - it extends to India-Pakistan border (Figure 1) which supports a diverse marine ecosystem

<sup>3</sup> (1997) 2 SCC 87

<sup>4</sup> (2013) 8 SCC 760

and in-turn supporting the entire fishery of North-West coast of India. The move to de-reserve this area came after the recent de-reservation of a large part of Narayana Sarovar Chinkara Sanctuary in order to facilitate the cement industries.

1) Kerala

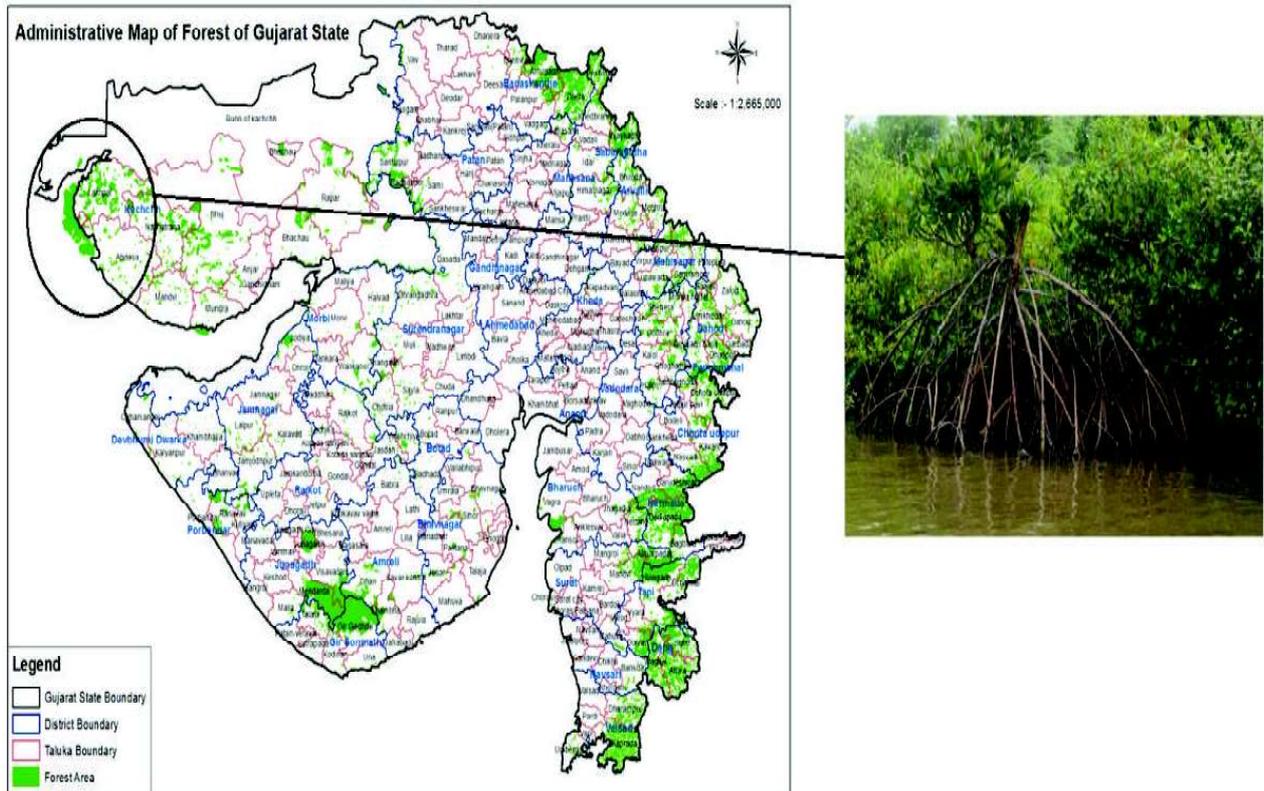


Figure 1: West mangrove reserve forest, Gujarat

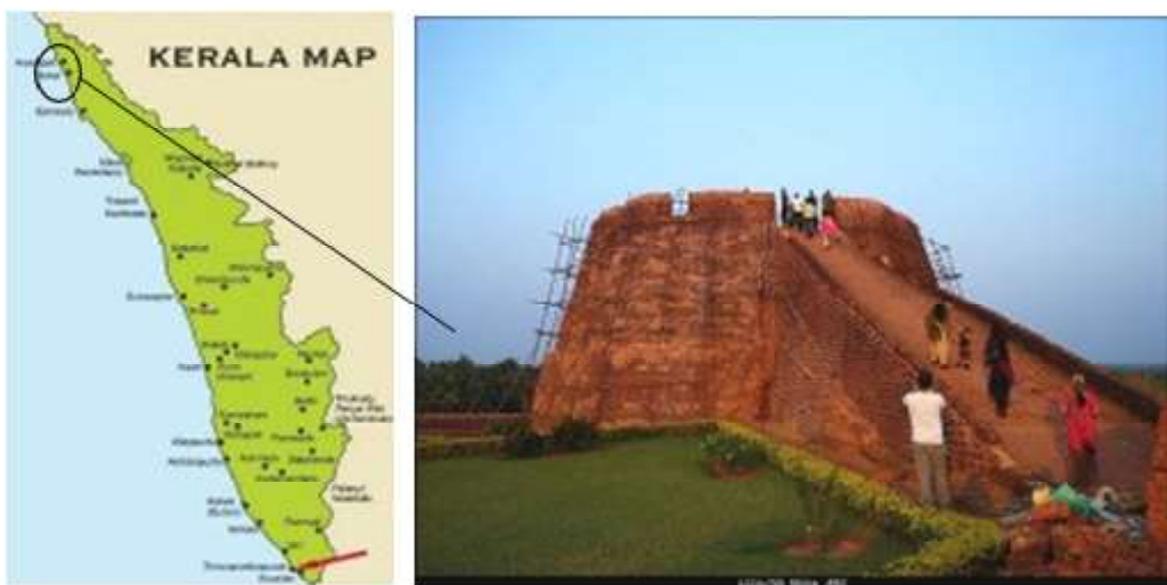


Figure 2: Bekal Fort, Kasargod, Kerala

### a) Bekal Tourism Project: Kerala

Bekal Fort is one of the oldest forts located in promontory of Kasargod district (Figure 2). This ancient fort was constructed as a watchtower on the coastline. The location has a high panoramic view and the design of the fort is quite unique and the construction still retains its elegance.

Bekal tourism project comes under the Special Tourism Area Programme. The work was proposed to start in 1994 and to be completed by 2002. But this project has not taken into consideration the Coastal Regulation Zone notification and the public protests, forcing the authorities to make modifications in the original project. Bakel fort and its surrounding villages of Ajannur, Uduma, Chemmanad and Paliikara in Kasargod have been declared as a Special Tourism Area (STA) by the National Action Council for Tourism Development. The Government of Kerala constituted Bakel Resort Development Corporation Ltd. to carry out this project.

In the coastal stretches of Kerala, traditional fishing communities still enjoy their customary rights and practices. The coastal stretches are also the only areas in Kerala where Tobacco cultivation is practised. With increasing tourism projects, the landscape and the lifestyles of the local inhabitants are under threat. According to the CRZ notification, protection of Gothans assumes special emphasize.

### b) Goshree Island Development Project: Kerala



*Figure 3: Construction of Railway Bridge along the Cochin backwater*

The Goshree Island Development project proposes a series of bridges (Figure 3) connecting these islands to the mainland by reclaiming parts of Vembanad Kayal, the biggest backwater system of the State. The project envisages medical, educational, communication and recreational facilities for the island dwellers. A regulatory control of the land use system of the island and to control the illegal reclamation of the Kayal

land is also envisaged. The authority plans to raise money to construct the bridges through selling the reclaimed Kayal lands.

## 2) Tamil Nadu East Coast Road

The east coast road as conceived by the Tamil Nadu government Highway departments is to link Chennai with Kanyakumari, a distance of 700 kms. During the first face of it there was never an attempt to conduct any proper EIA or to get the clearance from the Ministry of Environment and Forest. The planners claimed that the project is merely widening the existing road and therefore does not need the clearance or any EIA. Major parts of this project falls within the 500 meters of Coastal Regulation Zone.

## 31.9 Conclusion

The coast and its adjacent areas on and off shore are an important part of the local ecosystem as the mixture of fresh water and salt water in estuaries provides many nutrients for marine life. The high level of biodiversity creates a high level of biological activity, which has attracted human activity for thousands of years. An increasing part of global population inhabits coastal region, many of the world's major cities have been built on or near good harbours and have port facilities. The coast is a crucial frontier and must be defended against military invaders, smugglers and illegal migrants. Thus, protection of coasts and adjacent areas is all the more important to countries like India, which itself has a coast line of 6000 km.

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**COURSE 5:  
NATIONAL ENVIRONMENTAL  
LAW AND POLICY-II**

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# UNIT 32

## LAND ACQUISITION ACT, 1894

### Contents

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### 32.1 Introduction

Land acquisition refers to the process by which the government acquires private property for public purpose without the consent of the land owner, which is different from a market purchase of land. “Land Acquisition” literally means the acquisition of land for some public purpose by a government agency from individual landowners, as authorised by the law, after paying a government-fixed compensation to cover losses incurred by landowners from surrendering their land to the concerned government agency. In India, a new Act, The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 was passed by the Parliament in 2013 to repeal the Land Acquisition Act. The 2013 Act is a legislation that regulates land acquisition and provides laid down rules for granting compensation, rehabilitation and resettlement to the affected persons in India. The Act has provisions to provide fair compensation to those whose land is taken away, brings transparency to the process of acquisition of land to set up factories or buildings, infrastructural projects and assures rehabilitation of those affected. The Act establishes regulations for land acquisition as a part of India’s massive industrialisation drive driven by public-private partnership. The Act came into force from 1 January 2014.

However, before we go into details of the new Act, let us examine the history and nuances of Land Acquisition Act in India. The Land Acquisition Act was enacted in the year 1894. This Act was passed by the British Government, continued with some amendments in 1967 and 1984. The Act sought to set out the circumstances and the

purposes for which private land can be acquired by the Central/State Government. The procedure to be followed in making an acquisition under the Act is briefly as follows:

#### STAGE-I

- ◆ Publication of a preliminary notification by the Government and in a particular locality is needed or may be needed for a public purpose or for a company. S. 4(1).
- ◆ Entry of authorised officers on such land for the purpose of survey and ascertaining whether it is suitable for the purpose in view S. 4 (2).
- ◆ Filing of objections to the acquisition by persons interested and enquiry by Collector. S. 5-A.

#### STAGE-II

- ◆ Declaration of intended acquisition by Government. S 6(1).
- ◆ Publication of declaration as required by the Act. S.6(2).
- ◆ Collector to take order from the Government for acquisition and land to be marked out, measured and planned. Sections 7 and 8.

#### STAGE-III

- ◆ Public notice and individual notices to persons interested to file their claims for compensation. S. 9.
- ◆ Enquiry into claims by Collector. S. 11.
- ◆ Award of Collector. S. 11-15.
- ◆ Reference to Court. S. 18-28.

#### STAGE-IV

- ◆ Taking of possession of the land by the Collector. S.16. A property designates to those things commonly recognised as an entity over which a person or a group has exclusive rights. In the strict legal sense, property is an aggregate of rights which are guaranteed and protected by the law of the land.
- ◆ Payment of Compensation. S. 31-34.

Prior to 1984, the Land Acquisition Act, 1894 was not applicable to the States of Jammu and Kashmir, Rajasthan, Kerala and Nagaland which had their own self-contained Land Acquisition Acts. These Acts differed in some respects from the Act of 1894 but the broad scheme was generally the same. In 1984 the Land Acquisition (Amendment) Act was passed which repealed the Land Acquisition Act, 1894.

Apart from the Land Acquisition Act, 1894, which is directly and exclusively concerned with the acquisition of land by the Government there are a large number of other laws (Central as well as States) which permit the Government to acquire land for specific purposes such as planned development of industries, slum clearance, town planning/improvements, implementation of municipal housing schemes etc. Instances of such Acts are:

- ◆ The Forest Act, 1927;
- ◆ The Coal Bearing Areas (Acquisition and Development) Act, 1957;
- ◆ The Slum Areas (Improvement and Clearance) Act, 1956;
- ◆ The Delhi Development Act, 1957;
- ◆ The Maharashtra Industrial Development Act, 1961.

### State Amendments

This Act has been enacted by the Central Government. However, the state Governments have the power to amend its provisions. (Article 246 of the Constitution read with item 42 of List III in the Seventh Schedule to the Constitution). This means that within the territory of each State the Act will be applicable in the amended form.

The State Government can make any amendments they want as long as such changes are not opposed to the provisions as they stand in the Act. For example, the Act requires that the award of the Collector must be made within a specified time limit. Now, suppose a State Government amended this provision so that there was no such time limit and the Collector could take as long as he liked, such an amendment would be ineffective because it would be opposed to and defeat the object that the Central Government had in mind, viz. to ensure that each stage of the acquisition proceedings is completed within a reasonable time-frame. Therefore, the Central provision would continue to be operative. (Article 254(1) of the Constitution).

Under certain circumstances an amendment which is inconsistent with the provisions of the Central Act may still be a valid one (Article 254 (2) of the Constitution). However, the Central Government has the power to modify such an amendment or to declare it as invalid (provision to Article 254 (2) of the Constitution). Though the procedure for acquiring property in each stage is broadly that prescribed by the Act, there are regional variations with regard to matters such as:

The authority who has the power to set in motion the acquisition proceedings, the manner in which notices must be publicised, persons on whom notices must be served, etc.

## 32.2 The Land Acquisition (Amendment) Act, 1984

After amendment of 1967, the Act was drastically amended in 1984 by the Central Government with the objective of minimising the undue delays that characterise acquisition proceedings and to provide for payment of compensation on a realistic scale. The Amendment Act of 1984 has resulted in:

- ◆ The setting down of a time limit for the completion of all formalities between the issue of the preliminary notices u/s 4(1) and the issues the declaration of acquisition u/s 6(1). First proviso to S. 6(1).
- ◆ The setting down of a time limit within which the Collector must declare an award. S. 11-A.

- ◆ Payment of 12 p.a. interest for the period commencing from the date (of the notice u/s 4(1) and ending with the date of the Collector's award S 23(1-A).
- ◆ Payment of solatium (i.e. compensation for loss, suffering or injured feelings) at an increased rate of 30 of the market value of the acquired land, S. 23(2). Prior to this amendment solatium was payable at the rate of 15 of the market value awarded.
- ◆ The provision of an opportunity to those dissatisfied with the Collector' award to apply to him for a redetermination of the compensation payable to them on the basis of an order for higher compensation obtained by any one of them from the Reference Court S. 28-A.

However, this Amendment Act has created far more disadvantage for the people; it has conferred greater discretionary powers on the Government for acquiring land under S.17.

### 32.3 Proposed Amendments to the Act Post 1984

The Land Acquisition Act was sought to be amended in the year 1999. The Bill was scheduled to be introduced in Lok Sabha in 1999 itself. However, due to severe opposition the Act could not see the light of the day. Later on, in 2007, another attempt was made to amend the said Act.

A new amendment bill was drafted by the Rural Development Ministry in the year 2007. The Land Acquisition (Amendment) Bill, 2007, was introduced in the Lok Sabha and was later on referred to the Parliamentary Standing Committee on Rural Development, headed by Lok Sabha Member of Parliament - Mr. Kalyan Singh. The Standing Committee reviewed the bill as well as invited suggestions on the proposed amendments in the land acquisition bill. The main feature of the bill is that it seeks to broaden the definition of 'public purpose' to balance the concerns of land-losers with what "is useful for the general public." In the proposed Land Acquisition Amendment Bill, 2007, "public purpose" has been classified into three categories:

- ◆ Strategic purposes, relating to the defence forces or work "vital to the state"
- ◆ Public infrastructure: Electricity, communication, water supply, mining, "public facilities"
- ◆ Projects "useful for the general public".

While the draft of the Bill did away with the earlier clause that put restrictions on the government from acquiring land for companies, it has introduced a new element in the definition of "public purpose" to cover cases of "persons" that will include "any company or association or body of individuals whether incorporated or not where land is required for purposes useful for the general public." The Rural Development Ministry had suggested that this be restricted to those cases where at least 90% of the land has already been purchased.

On the issue of compensation, the draft Bill said that the rate should not be less than the price fixed by the state government or average of higher prices paid in 50% of land sale

cases during the previous three years, whichever is higher. The draft also provides that conversion of land to intended category of use should be factored in while fixing the prices. The Land Acquisition (Amendment) Bill, 2007 provided for a fair compensation at a market value as well as the alternative mechanisms for disposal of land compensation disputes in a time-bound manner.

This bill has also attracted a lot of opposition. Those who were against the bill said that though the bill seeks to omit compulsory land acquisition for projects such as those of Special Economic Zones (SEZs), and enhance compensation for the land, the bill would make it difficult for those who acquire land for a particular purpose and use it for something else making huge commercial gains in the bargain.

The Land Acquisition (Amendment) Bill, 2007, was introduced in the Lok Sabha and was later on referred to the Parliamentary Standing Committee on Rural Development, headed by Lok Sabha Member of Parliament Mr. Kalyan Singh. The Standing Committee on Commerce had also submitted its report on *The Functioning of Special Economic Zones in June 2007*. The report includes recommendations related to both land acquisition and compensation.

Table 1 provides a “Comparison of Standing Committee Recommendations and the Land Acquisition (Amendment) Bill, 2007”.

Table 1

Issue	SEZ Standing Committee Recommendations	Land Acquisition Bill
Verification of land	State government and gram panchayat should verify type of land and hold a public notice for objections to the stated type of land to prevent manipulation of land records	No specific public process stated; Collector is responsible for ‘updating of land records, classification of land and its tenure, survey and standardisation of land and property values’
Type of land	Use only waste and barren lands for SEZs; only in unavoidable situations use single-crop, rain-fed land; ban use of double or multi-crop irrigated land	No mention
Limitations on land	Prevent developers from acquiring more land than necessary by prescribing maximum area for various types of SEZs and 50% of area should be used as “processing area”	No specific limitations stated; land unused for 5 years shall return to the appropriate government
Consent of landholders	With the exception of land acquisition for national security, the affected parties should give their consent	Owners of notified land may file an objection with the Collector within 30 days of notification; the appropriate government shall decide on all

Contd...

		objections; rehabilitation plans shall be discussed in the gram sabhas
Inform affected persons	Land acquisition law should inform affected persons of the purpose for acquisition, its implications, and resettlement provisions	Land acquisition proceedings and compensation details shall be available publicly; rehabilitation plan shall be created in consultation with affected families and circulated publicly
Unused land or failed projects	Lease the land so land owners receive a lump sum and periodic rent. If SEZ fails or dissolves, land goes back to the original owner	No provision for leasing of land; land unused for 5 years shall return to the appropriate government
Land ownership	Land should be leased to the developer, even if the state government acquires the land	If 70% of land is already purchased, company can acquire 30% if project is for 'public purpose'
Calculation of compensation	Compensation should be calculated on prevailing market rates	Compensation based on market rates, intended use of the land, standing crops, and the higher average of either neighbouring property, land purchased for the project, or minimum value from sale deeds
Market rates	State governments should devise a system of periodic market surveys to determine periodic market rates	Collector to determine market value based on minimum land value in the Indian Stamp Act, average sale price for similar type of land in the vicinity, and any land acquired for the same project
Shares in company	Offer equity shares in the developer's company	Acquiring companies can offer land owners 20-50% of compensation amount in shares or debentures

### 32.4 Land Acquisition (Amendment) Act, 2007: An Analysis

Note: This section is for discretionary reading as the Land Acquisition (Amendment) Act 2007 is repealed by the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013, which is discussed.

The Land Acquisition Act, 1894 addressed the process of land acquisition in India and was last amended by the Land Acquisition Amendment Act, 1984. The Act took a broad definition of 'public purpose' permitting a diverse range of projects. A number of Supreme Court cases have highlighted concerns related to fair compensation, valuation of land, definition of 'public purpose' and other issues related to land acquisition. Citing problems with the principal Act, the government introduced the Land Acquisition (Amendment) Bill, 2007. The said bill passed on 11 April 2007 and enforced as an Act.

The Land Acquisition (Amendment) Act 2007 (the 'Act') came into force on 7 May 2007. This Act amended the Land Acquisition Act to abolish the use of a statutory date in

determining the basic compensation for land that is compulsorily acquired on or after 12 February 2007 and to provide that the basic compensation will instead be the market value of the land as at the date of its acquisition.

However, the market value of the acquired land cannot exceed the price which a bona fide purchaser might reasonably be willing to pay for the land. The market value of the land is to be arrived having regard (but not only) to the zoning and density requirements and any other restrictions imposed by or under the Planning Act at the date of acquisition, and any restrictive covenants in the title of the acquired land. However, no account is to be taken of any potential value of the land for any other use more intensive than what is permissible by or under the Planning Act as at the date of its acquisition.

The Land Acquisition Act was also amended so that when accessing the market value of acquired land, it will no longer be prohibited to take into account any increase in value arising from any improvement to the land within two years before the date the land is declared to be required for a public purpose, or from development in the neighbourhood by the provision of roads, drains, electricity, water, gas or sewerage or social, education or recreational facilities within seven years preceding that date.

The special compensation provisions were for acquired land which is used as a burial ground and acquired land that is devastated or affected, directly or indirectly, by fire, explosion, thunderbolt, earthquake, storm, tempest, flood or any act of God, have also been abolished. Such land, if acquired, would have to be assessed no differently from other acquired land.

The compensation for land acquired before 12 February 2007 continued to be governed by the existing law at that time.

The Act also makes improvements and establishes new procedures for the compulsory acquisition of land to simplify the acquisition process.

**Analysis of Act of 2007** - Land acquisitions have raised a number of concerns related to fair compensation, valuation of land, definition of 'public purpose' and other issues. The Land Acquisition (Amendment) Act, 2007 amends The Land Acquisition Act, 1894. The Act redefines 'public purpose' as land acquired for defence purposes, infrastructure projects, or for any project useful to the general public where 70% of the land has already been purchased. It bars acquisition for companies except under the 70% condition.

The Act expands the rights of those displaced by land acquisition, and limits the ability to acquire land for public purpose. It also establishes the Land Acquisition Compensation Disputes Settlement Authority at the state and national levels to arbitrate all disputes resulting from land acquisition proceedings. This Act was introduced in conjunction with the Rehabilitation and Resettlement Bill, 2007 to address land acquisition, compensation, and resettlement of displaced persons.

## Key features

### Public Purpose

- ◆ The principal Act permits land acquisition if the land is to be used for a ‘public purpose’ project. ‘Acquisition’ refers to forcibly obtaining land without consent of the land owner. ‘Public purpose’ includes land needed for village-sites, town or rural planning, land for residential purposes for poor or displaced due to natural calamities, land for planned development (including education, housing, health and slum clearance), or land needed by a state corporation. The new amendment Act changes ‘public purpose’ to allow land acquisition only for (i) strategic naval, military, or air force purposes, (ii) public infrastructure projects, or (iii) for any purpose useful to the general public where 70% of the land has already been purchased from willing sellers through the free market.
- ◆ The new amendment Act defines ‘infrastructure’ as any project relating to electricity, construction of roads, highways, bridges, airports, rail, mining activities, water supply, sanitation and sewerage, and any other notified public facility.
- ◆ Currently, private land may be acquired on behalf of a company for a ‘public purpose’ project. The Act prohibits land acquisition for companies unless they have already purchased 70% of the land needed.

Table 2: Definition of Public Purpose in other Countries

Country	Act and Year	Definition / Some Circumstances
China	Land Administration Law, Article 21 (1988)	Economic, cultural, national defence construction projects, public works projects
Brazil	The Constitution, Article 5, 182 & 184(1988)	Public use, social interest, or for purposes of agrarian reform of rural property which is not performing its social function
Mexico	The Expropriations Law (1936)	Infrastructure development, conservation of history or culture, national security, public benefit, equitable distribution of wealth preservation ecological balance and natural resources
South Africa	Expropriation Act, No 63, Definitions Article 2(1975)	Public purpose and certain other purposes if the purpose is connected with the administration of the provisions of any law by an organ of State
US	The Constitution, 5 <sup>th</sup> Amendment, existing case law including <i>Kelo v City of New London</i> , 2005	Private property can be taken for public use; has been interpreted to include property development
UK	Town and Country Planning Act (1990)	Planning and public purposes if it is suitable for and required for development, redevelopment or improvement; or is required for a purpose which it is necessary to achieve in the interest of proper planning of an area
Singapore	The Land Acquisition Act, Section 5 (1966)	Public purpose, by any person, corporation, or statutory board for public benefit or public interest projects, or for any residential, commercial or industrial purposes

### ***Social Impact Assessment Study***

- ◆ If land acquisition results in the displacement of 400 families in the plains or 200 families in the hills or tribal areas, the government must conduct a social impact assessment. The study will include the effects of displacement, a Tribal Development Plan, and provisions for infrastructure development in resettlement areas.

### ***Process for Land Acquisition***

- ◆ ‘Appropriate government’ was determined by the location of the acquired land and the intended project. The principal Act gave jurisdiction over land acquired for Union purposes to the central government and for any other projects to the state government. This Act included multi-state land acquisition projects as central government jurisdiction.
- ◆ To identify land needed for a public project, the government must issue a notification. The notification must be published in the Official Gazette and in two daily newspapers circulating in that locality. After a notification is published, the government is authorised to conduct work on the land to determine its suitability for an intended project. Any objections must be registered with the Collector’s office.
- ◆ If the land is suitable, the government must issue a declaration stating the land will be used for public purpose. The declaration must be issued within one year of notification; otherwise a fresh notification cannot be made for an additional year. If this time expires again, notification cannot be issued for five years. No individual shall make transactions or encumbrances on notified land until the final declaration is made or compensation is paid.
- ◆ The Act states acquisition costs will include suffering or loss, payment for damages to the land during acquisition, cost of land needed for displaced residents, cost of infrastructure development at resettlement sites, and administrative costs of acquisition and resettlement. These costs must be borne by the entity acquiring the land.
- ◆ The Collector must make details of the land acquisition process, including compensation amounts, publicly available.

### ***Assessing Market Value of the Land***

- ◆ In the principal Act, the Collector only needs to determine the current price value of the land for compensation amounts. The new amendment Act requires the Collector to take the highest value of: (i) the minimum land value for the area as specified in the Indian Stamp Act, 1899; (ii) the average sale price of at least 50% of the higher priced sales of similar land in the village or vicinity; or (iii) the average sale price of at least 50% of the higher priced land purchased for the project. The value of trees, plants, or standing crops damaged must also be included.
- ◆ In the event that a price is not available or the land is in an area where land sales have been previously restricted, the state government shall set the floor price per unit of land. This price will be determined by average prices of at least 50% of the higher priced land in the vicinity.

- ◆ While determining compensation, the Collector must also factor in the intended use of the land and the value of such land in the current market.

### ***Compensation***

- ◆ In 1984 Act, the term 'person interested' includes those who are claiming land compensation and those interested in an easement (limited right of use of the land) on the land. The Act proposes to expand the definition to include tribal and other traditional forest dwellers who have lost any traditional rights as well as individuals with tenancy rights under state law.
- ◆ In addition, if any damages are incurred on land excluded from acquisition proceedings, the appropriate owner must be compensated within six months.
- ◆ Payment for acquired land must be made within one year from the date of the declaration. The Collector can extend this time limit by six months with a penalty of 5% per month. If payment has not been made within one year nor has the Collector granted an extension, the land acquisition proceedings shall lapse.
- ◆ After the compensation amount is determined, the Collector must ensure that payment occurs within 60 days. Possession of land shall not be taken unless full compensation is paid or tendered to the land owner.
- ◆ Land owners whose property has been acquired under urgency shall be compensated an additional 75% of the market value of the land.
- ◆ If the acquisition is for a company, shares or debentures of 20-50% of the compensation amount must be offered through these options. The interested person may either accept this offer or opt for a full cash settlement.

### ***Restrictions on Acquired Land***

- ◆ Land acquired can be transferred only for a public purpose and with prior approval from the appropriate government.
- ◆ Acquired land that is unused for 5 years from the date of possession shall be returned to the appropriate government.
- ◆ Whenever acquired land is transferred to another individual, 80% of the difference between the consideration received and the original acquisition cost shall be shared among the original land owners and their heirs.

### ***Land Acquisition Compensation Disputes Settlement Authorities***

- ◆ Currently, all land acquisition cases are referred to civil courts for a decision. The Act establishes the Land Acquisition Compensation Disputes Settlement Authority at both the state and national levels to adjudicate all land acquisition disputes within six months. The Act gives these Authorities the same powers as a civil court and deems all proceedings of the Authorities as judicial proceedings. The government may form more Authorities or benches.

- ◆ In the event of a dispute, the land owner must file a written complaint with the Collector. The Collector shall refer any dispute cases to the Authority within 15 days from the receipt of the complaint. If the Collector fails to act, the land owner may petition the Authority directly to request the Collector to file the reference within 30 days.
- ◆ If the Authority decides in favour of the land owner, they shall award compensation for: (i) market value of the land, (ii) property damages, (iii) damages to the land owner, (iv) damages to the land owner's salary, movable, or immovable property, (v) expenses incurred by the owner for change of residence or business, and (vi) any damages resulting in a loss of profits from the time of declaration to possession of the land. In the Act, the Authority awards a sum of 12% of market value from the publication of notification to the date of possession or compensation paid. Furthermore, the land owner receives an additional sum of 30% of the market value. The Act increases this sum to 60% of market value.

**Civil Jurisdiction** - The Act granted the Land Acquisition Compensation Disputes Settlement Authority the powers of a civil court. The Authority consists of 2-3 persons with the qualification of either a district court judge, an officer of at least District Collector rank, or an officer of at least Director rank in the state government's law department. Three issues arise from this composition.

First, this Authority is a judicial body but could be entirely staffed by members without judicial qualifications or experience. Second, this could also lead to a situation where a state government official decides on a case in which the state government (as acquirer) is the defendant. Third, this provision may be unconstitutional as the Constitution separates the executive and the judiciary. The Competition Commission of India was formed in 2002 but not operationalised due to a writ petition filed in the Supreme Court. The petition challenged the Commission's powers, which were both judicial and regulatory. In response to the writ petition, the central government introduced an amendment to the Competition Act, 2002 establishing separate regulatory and adjudicatory bodies.

Civil courts are barred from entertaining any disputes or issuing any injunctions relating to land acquisition. With the barring of civil jurisdiction, it is unclear whether there is a mechanism by which a party may challenge the qualification of a project as 'public purpose'.

### Compensation

- ◆ **Percentage of Sale Deeds used to compute market value:** The Act prescribes three criteria to determine the market value of the land and requires the Collector to adopt the highest of the three computed values. The criteria refer to recently concluded sale prices for similar land, ascertained from "not less than 50%" of the transactions, "where higher price has been paid". This clause is ambiguous. If the intention is that the average should be taken from the highest priced 50% transactions, taking a larger proportion of transactions would include lower priced ones, and would reduce the average value.

- ◆ **Compensation as shares or debentures:** The Act required the company to offer shares 'or debentures.' By accepting shares, the land owner may be able to participate in any significant benefit to the company from the project. However, if the land owner accepts debentures, he receives only a fixed return; he is effectively lending money to the company to purchase his own land.

### Land Resold by Acquiring Body

Under the Act, if the acquired land is resold, the acquiring entity must calculate the difference between the new sale price and the original acquiring price. The entity is required to distribute 80% of this difference to the original land owners or their heirs. There could be three distinct issues while implementing this clause.

First, the Act does not set a specific time limit for the application of this clause after the original acquisition. Therefore, the acquirer must keep track of the original owners and their heirs in perpetuity so that they can be paid in case of a future sale. Second, the new sale price of the land may be difficult to calculate if it is part of a larger deal. For example, if the original purchase was for a project undertaken by a corporate entity and this entire corporate is taken over by new owners, it may not be feasible to calculate the price paid for this particular piece of land. Third, in cases in which the company has invested in developing the land it is not clear whether the original acquisition price would be adjusted upwards for the cost of development.

### Urgency

The Act made special provisions for land taken in the case of 'urgency'. However, neither the new amendment Act nor the principal Act defines the term 'urgency'. A Karnataka government circular in 1967 noted, "Government have observed that, of late, there is a steady increase in the number of proposals that are being received from the Deputy Commissioners recommending for invoking the urgency clause for land acquisition, on the ground that a particular irrigation project, formation of a road, construction of tank, etc., has to be executed according to the time schedule fixed."

### Unused Land

Acquired land that is unused for 5 years shall be returned to the appropriate government. This clause helps deter acquisition of land unless it is required in the immediate term. However, it may not provide such disincentive for cases in which the land is being acquired for a government project.

### Easement

Both the principal Act and the amendment Act stated that a 'person interested in an easement affecting the land' shall be considered a 'person interested'. The term 'easement' is not defined in this Act or in the Act. It is defined in the Indian Easement Act, 1882 and the Limitation Act, 1963 but the definitions are significantly different in these two Acts. This could lead to ambiguity during implementation.

## Financial Estimates

The Act required the establishment of authorities at the central and state levels to settle compensation disputes. The financial memorandum does not provide estimates of the funding requirement for these authorities.

### 32.5 The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013

This Act replaced the nearly 120-year-old Land Acquisition Act, 1894, enacted during British rule. The bill was introduced in Lok Sabha in India on 7 September 2011. Out of the 235 members who voted on the bill, 216 backed it while 19 voted against it. The Act was passed on 29 August 2013 in the Lok Sabha (lower house of the Indian parliament) and on 4 September 2013 in Rajya Sabha (upper house of the Indian parliament). The bill received the assent of the Mr. Pranab Mukherjee, the President of India, on 27 September 2013. The Act came into force from 1 January 2014.

#### Background and Rationale of the Act

Before having passed, the present Act was drafted to basically repeal and replace the Land Acquisition Act, 1894. The Act provides for land acquisition as well as rehabilitation and resettlement. The aims and objectives of the Act include:

- ◆ To ensure, in consultation with institutions of local self-government and Gram Sabhas established under the Indian Constitution, a humane, participative, informed and transparent process for land acquisition for industrialisation, development of essential infrastructural facilities and urbanisation with the least disturbance to the owners of the land and other affected families.
- ◆ Provide just and fair compensation to the affected families whose land has been acquired or proposed to be acquired or are affected by such acquisition.
- ◆ Make adequate provisions for such affected persons for their rehabilitation and resettlement.
- ◆ Ensure that the cumulative outcome of compulsory acquisition should be that affected persons become partners in development leading to an improvement in their post-acquisition social and economic status and for matters connected therewith or incidental thereto.

The process for land acquisition involves a Social Impact Assessment survey, preliminary notification stating the intent for acquisition, a declaration of acquisition, and compensation to be given by a certain time. All acquisitions require rehabilitation and resettlement to be provided to the people affected by the acquisition. The nuances of granting compensation are as follows:

- ◆ Compensation for the owners of the acquired land shall be four times the market value in case of rural areas and twice in case of urban areas.

- ◆ In case of acquisition of land for use by private companies or public private partnerships, consent of 80 per cent of the displaced people will be required.
- ◆ Purchase of large pieces of land by private companies will require provision of rehabilitation and resettlement.
- ◆ The provisions of this Act do not apply to acquisitions under 16 existing legislations including the Special Economic Zones Act, 2005, the Atomic Energy Act, 1962, the Railways Act, 1989, etc.

The rationale of enacting this legislation was that the Government of India believed there was a heightened public concern on land acquisition issues in India. A particular concern was that despite many amendments, over the years, to India's Land Acquisition Act of 1894, there was an absence of a cohesive national law that addressed fair compensation when private land is acquired for public use, and fair rehabilitation of land owners and those directly affected from loss of livelihoods. The Government of India believed that a combined law was necessary, one that legally requires rehabilitation and resettlement necessarily and simultaneously follow government acquisition of land for public purposes.

Forty-Fourth Amendment Act of 1978 omitted/repealed Art 19(1) (f) with the net result being:

The right not to be deprived of one's property save by authority of law has since been no longer a fundamental right. Thus, if government issues a fiat to take away the property of a person, that person has no right to move the Supreme Court under Art. 32.

Moreover, no one can challenge the reasonableness of the restriction imposed by any law the legislature made to deprive the person of his property.

**Some of the major highlights of the Act are as follows:**

**a) Public purpose**

- ◆ Land may be acquired only for public purpose. The Act defines public purpose to include: defence and national security; roads, railways, highways, and ports built by government and public sector enterprises; land for the project affected people; planned development; and improvement of village or urban sites and residential purposes for the poor and landless, government administered schemes or institutions, etc. This is broadly similar to the provisions of the 1894 Act.
- ◆ In certain cases, consent of 80% of the project affected people is required to be obtained. These include acquisition of land for (i) use by the government for purposes other than those mentioned above, and (ii) use by public-private partnerships, and (iii) use by private companies.

**b) Process of land acquisition**

- ◆ The government shall conduct a Social Impact Assessment (SIA) study, in consultation with the Gram Sabha in rural areas (and with equivalent bodies in case of urban areas). After this, the SIA report shall be evaluated by an expert group. The expert

group shall comprise two non-official social scientists, two experts on rehabilitation, and a technical expert on the subject relating to the project. The SIA report will be examined further by a committee to ensure that the proposal for land acquisition meets certain specified conditions.

- ◆ A preliminary notification indicating the intent to acquire land must be issued within 12 months from the date of evaluation of the SIA Report. Subsequently, the government shall conduct a survey to determine the extent of land to be acquired. Any objections to this process shall be heard by the Collector. Following this, if the government is satisfied that a particular piece of land must be acquired for public purpose, a declaration to acquire the land is made. Once this declaration is published, the government shall acquire the land. No transactions shall be permitted for the specified land from the date of the preliminary notification until the process of acquisition is completed.
- ◆ In case of urgency, the above provisions are not mandatory. The urgency clause may be used only for defence, national security, and in the event of a natural calamity. Before taking possession of land in such cases, 80% of the compensation must be paid.

### **c) Compensation to the land owners**

The compensation for land acquisition is determined by the Collector and awarded by him to the land owner within two years from the date of publication of the declaration of acquisition. The process of determination of compensation is given below.

- ◆ First, the market value of the acquired land is computed as the higher of (i) the land value specified in the Indian Stamp Act, 1899 for the registration of sale deeds; or (ii) the average of the top 50% of all sale deeds in the previous three years for similar type of land situated in the vicinity.
- ◆ Once the market value is calculated, it is doubled for land in rural areas. There is no doubling of value in urban areas. Then, the value of all assets attached to the land (trees, buildings, etc.) is added to this amount. On this amount, a 100 per cent solatium, (i.e., extra compensation for the forcible nature of acquisition), shall be given to arrive at the final compensation figure.
- ◆ Land owners whose property is acquired using the urgency provisions shall be given an additional 75% of the market value of the land.

### **d) Process of Rehabilitation and Resettlement**

- ◆ The Act requires Rehabilitation and Resettlement to be undertaken in case of every acquisition. Once the preliminary notification for acquisition is published, an Administrator shall be appointed. The Administrator shall conduct a survey and prepare the Rehabilitation and Resettlement scheme. This scheme shall then be discussed in the Gram Sabha in rural areas (equivalent bodies in case of urban areas). Any objections to the Rehabilitation and Resettlement scheme shall be heard by the Administrator. Subsequently, the Administrator shall prepare a report and

submit it to the Collector. The Collector shall review the scheme and submit it to the Commissioner appointed for Rehabilitation and Resettlement. Once the Commissioner approves the Rehabilitation and Resettlement scheme, the government shall issue a declaration identifying the areas required for the purpose of Rehabilitation and Resettlement. The Administrator shall then be responsible for the execution of the scheme. The Commissioner shall supervise the implementation of the scheme.

- ◆ In case of acquisition of more than 100 acres, a Rehabilitation and Resettlement Committee shall be established to monitor the implementation of the scheme at the project level. In addition, a National Monitoring Committee is appointed at the central level to oversee the implementation of the Rehabilitation and Resettlement scheme for all projects.
- ◆ In case the land is being privately purchased (100 acres in rural areas and 50 acres in urban areas), an application must be filed with the Collector who shall forward this to the Commissioner for approval. After the application has been approved, the Collector shall issue awards as per the R&R scheme.

#### **Rehabilitation and Resettlement entitlements**

- ◆ Every resettled area is to be provided with certain infrastructural facilities. These facilities include roads, drainage, provision for drinking water, grazing land, banks, post offices, public distribution outlets, etc.
- ◆ The Act also provides the displaced families with certain Rehabilitation and Resettlement entitlements. These include, among other things, (i) land for a house as per the Indira Awas Yojana in rural areas or a constructed house of at least 50 square metres plinth area in urban areas; (ii) a one-time allowance of Rs. 50,000 for affected families; and (iii) the option of choosing either mandatory employment in projects where jobs are being created or a one-time payment of Rs. 5 lakh or an inflation adjusted annuity of Rs. 2,000 per month per family for 20 years.

#### **Other provisions**

- ◆ A Land Acquisition and Rehabilitation and Resettlement Authority shall be established for settling any disputes relating to the process of acquisition, compensation, and Rehabilitation and Resettlement.
- ◆ There shall be no change of ownership of acquired land without prior permission from the government. Land may not be used for any purpose other than for which it is acquired.
- ◆ Acquired land which has been unused for 10 years from the date of possession shall be returned to the Land Bank of the government. If any unused acquired land is transferred to another individual, 20% of the appreciated land value shall have to be shared amongst the original land owners.
- ◆ The government may temporarily occupy and use any piece of waste or arable land for a public purpose. This occupation may be for a period of not more than three years. The compensation of such land may be decided mutually by the owner of the

land and the Collector. Any disagreement on matters relating to compensation or the condition of the land on being returned shall be referred to the Land Acquisition and R&R Authority.

- ◆ In any district, land acquisition will be restricted to a maximum of five percent of irrigated multi-crop land.
- ◆ The provisions of this Act shall not apply to land acquisition under 16 existing laws. These include: the SEZ Act, 2005, Atomic Energy Act, 1962 and the National Highways Act, 1956.

## 32.6 Conclusion

The new Act aims to balance the need for land for development with fair compensation to the land owners and Rehabilitation and Resettlement for the affected families. The table below highlights some of the significant changes from the 1894 Act.

**Table 3: Comparison of some key features between the 1894 Act and the 2013 Act<sup>1</sup>**

Issue	1894 Act	2013 Act
Public Purpose	Includes several uses such as infrastructure, development and housing projects. Also includes use by companies under certain conditions.	No significant change.
Consent from affected people	No requirement.	Consent of 80% of displaced people required in case of acquisition for private companies and public-private partnerships.
SIA	No provision.	SIA has to be undertaken in case of every acquisition.
Compensation	Based on the market value.	Market value doubled in rural areas and not in urban area.
Market Value	Based on the current use of land. Explicitly prohibits using the intended use of land while computing market value.	Higher of: (a) value specified for stamp duty, and (b) average of the top 50% by recorded price of sale of land in the vicinity.
Solatum	30%	100%
Resale of land	No provision.	Prior permission of the government required.
Sharing of profit	No provision.	If the acquired land is unused and is transferred, 20% of the profits shall be shared with the original land owners.
R&R	No provision for R&R.	Rehabilitation and Resettlement necessary for all affected families. Minimum Rehabilitation and Resettlement entitlements to be provided to each affected family specified.

<sup>1</sup> Sources: Land Acquisition Act, 1894 and Land Acquisition and Rehabilitation and Resettlement Bill, 2011; PRS.

Some key issues with the Act are:

- ◆ It is not clear whether Parliament has jurisdiction to impose rehabilitation and resettlement requirements on private purchase of agricultural land.
- ◆ The requirement of a Social Impact Assessment for every acquisition without a minimum threshold may delay the implementation of certain government programmes.
- ◆ Projects involving land acquisition and undertaken by private companies or public private partnerships require the consent of 80% of the people affected. However, no such consent is required in case of PSUs.
- ◆ The market value is based on recent reported transactions. This value is doubled in rural areas to arrive at the compensation amount. This method may not lead to an accurate adjustment for the possible underreporting of prices in land transactions.

The Land Acquisition (Amendment) Bill, 2007 and the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Bill, 2007 (before the enactment of 2013) were referred to the Standing Committee on Rural Development. The Committee made recommendations, some of which were not included or have been incorporated with certain modifications in the 2013 enactment.

**Table 4: Some recommendations of the Standing Committee not fully incorporated in the 2013 Act<sup>2</sup>**

Issue	Standing Committee Recommendations	2013 Act	Comments
Benefits for the displaced people	Benefits should be doubled at every subsequent displacement.	No such provision.	Not incorporated.
SIA	There should be discretion in deciding whether an SIA is necessary below a specified threshold.	SIA has to be undertaken in case of every acquisition.	Incorporated with some modifications.
Compensation by way of issuing shares and debentures	The issue of shares and debentures is not practical and should be over and above the admissible compensation.	Shares can be issued as part compensation. It cannot exceed 25% of the market value of the land.	Not incorporated.
Dispute Settlement Authority	The Authority should consist of at least three persons, including the chairperson.	The Authority consists of only one person.	Not incorporated.
Rate of interest (if compensation not paid before taking possession)	Rate of interest should be increased from nine percent to 15%.	If compensation is not paid before taking possession, a nine percent interest shall be levied. In case of any default, the interest is 15%.	Incorporated with some modifications.

# TENURE AND PROPERTY RIGHTS AND COMMUNITY RIGHTS

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### 33.1 Introduction

Secure land tenure and resource rights are key drivers of biodiversity and sustainable natural resource management. Where these rights are poorly defined and/or poorly enforced, natural resources and ecosystems can be quickly degraded because incentives to protect resources are weak or absent. This insecurity can lead to overgrazing of pastureland, poaching of wildlife, deforestation, ineffective watershed management, and poorly planned extractive industry investments, among other outcomes. Degradation and misuse of resources limit prospects for long-run economic growth and the diversified livelihood options that come from more effective natural resource management, particularly in the tourism sector and in fisheries and forestry.

On the other hand, recognising and securing rights over land and natural resources fosters stewardship. When individuals, communities and other groups, and legal entities have secure rights to land and resources, incentives shift in positive directions. Rather than poach or overuse, secure land and resource rights provide people with incentives

to conserve resources because they are better able to capture future investment returns. Strengthening land and resource rights and improving enforcement capacity can help conserve biodiversity and natural resources as well as improve livelihoods and local governance.

A property designates to those things commonly recognised as an entity over which a person or a group has exclusive rights. In the strict legal sense, property is an aggregate of rights which are guaranteed and protected by the law of the land.

The question now lies that what all are the entities that may constitute a property. The term property “includes not only ownership and possession but also the right of use and enjoyment for lawful purposes.”<sup>1</sup>

Property may be classified into movable property that is, goods, articles, etc., and immovable property, that comprises of land and/or building. Another kind of property is the Intellectual Property, which reflects the idea that its subject matter is the product of the mind or the intellect. These could be in the form of Patents, Trademarks, Geographical Indications, Industrial Designs, Layout-Designs (Topographies) of Integrated Circuits, Plant Variety Protection and Copyright.

A distinction is often made between “real property” or “immovable property” on the one hand, and “personal property” or “movable property” on the other hand. In the first case, property would include land and fixtures (buildings, trees, etc.) that would be regarded as immovable. In the second case, property would include objects not considered fixed to the land, such as cattle, etc.

Tenure is a term normally associated to, but not limited to, an immovable property, i.e. land and building. It is the act, right, manner or term of holding something. In terms of property it refers to the way in which a property is owned. It is not just ownership but a collection of rights and responsibilities to a range of renewable and non-renewable resources. Tenure systems pertaining to a property may range from a farmland, forest, grazing land, river, wildlife, fishery, or any other resource. Each resource has a particular physical quality and a technical constraint on its use.

## 33.2 Property Rights

Property Rights are defined as the rights that pertain to the permissible use of resources, goods and services in relation to a property. A property right is the exclusive authority to determine how a property is to be used, whether that property is owned by government or by individuals.

In simple terms, property rights nothing more than different degrees of legitimized control over the property. These degrees of legitimised control are reflected by three different types of property rights, namely,

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<sup>1</sup> Black's Law Dictionary, 5th edition, 1979.

- 1) Ownership rights - Ownership is a bundle of rights. It usually consists of right to use the property, right to change its form or substance, right to transfer all or partial rights over the property in favour of another person and the right to dispose of the property. It includes the right to sell or mortgage the land, to convey the land to others through intra-community reallocations, to transmit the land to heirs through inheritance, and to reallocate use and control rights.
- 2) Usage rights - Right to usage of a property may arise due to an absolute right over the property or because of a partial right. It includes right to possess or use the property.
- 3) Developmental rights - Right alter, change or modify the property is included in the developmental rights over the property.

Ownership right is the most effective right. A property ownership is said to be most effective in three cases:

- 1) Where the concept of private ownership is politically and socially acceptable.
- 2) Where the resource to be conserved is easy to demarcate and defend, such as in case of local level conservation of land, soil, forests, marine resources or water.
- 3) Where the use of resource within the demarcated boundary does not generate significant spill over effects on others.<sup>2</sup>

A resource is a component that can be used for subsistence, sustenance or help. It acts as a reserve of supply or support. However, it is difficult to divide a resource as in the case of wildlife, critical watershed and ecologically significant habitats. In such cases it would be appropriate to use communal property rights instead of ownership.

With respect to the degree of ownership, a property may be further subdivided into three types, common, government and private.

Common property belongs to all people in common; it is that which all have an equal right to use and enjoy.

Government property belongs to the state and is subject to the direction of the government.

Private property is that which a person or group of persons, natural or artificial, have the exclusive right to own, profit from and dispose of as they see fit. However, private property is also subject to limitations imposed by the government.

In practice, multiple rights can be held by several different persons or groups. This has given rise to the concept of “a bundle of rights”. Different rights to the same parcel of land, such as the right to sell the land, the right to use the land through a lease, or the right to travel across the land, may be pictured as “sticks in the bundle”. Each right may be held by a different party. The bundle of rights, for example, may be shared between

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<sup>2</sup> Wants, Needs and Rights: Economic Instruments and Biodiversity Conservation - A dialogue, WWF, 2000, p. 32.

the owner and a tenant to create a leasing or sharecropping arrangement allowing the tenant or sharecropper the right to use the land on specified terms and conditions. Tenancies may range from formal leaseholds of 999 years to informal seasonal agreements. If the farm is mortgaged, the creditor may hold a right from the “bundle” to recover the unpaid loan through a sale of the mortgaged property in the case of default. A neighbouring farmer may have the right from the “bundle” to drive cattle across the land to obtain water at the river.

### Box 1: Examples of Property Rights

- ◆ A right to use the land.
- ◆ A right to exclude unauthorised people from using the land.
- ◆ A right to control how land will be used.
- ◆ A right to derive income from the land.
- ◆ A right to protection from illegal expropriation of the land.
- ◆ A right to transmit the rights to the land to one’s successors, (i.e., a right held by descendants to inherit the land).
- ◆ A right to alienate all rights to the entire holding (e.g., through sale), or to a portion of the holding (e.g., by subdividing it).
- ◆ A right to alienate only a portion of the rights, e.g., through a lease.
- ◆ A residuary right to the land, i.e., when partially alienated rights lapse (such as when a lease expires), those rights revert to the person who alienated them.
- ◆ A right to enjoy the property rights for an indeterminate length of time, i.e., rights might not terminate at a specific date but can last in perpetuity.
- ◆ A duty not to use the land in a way that is harmful to other members of society, (i.e., the right is held by those who do not hold the right to use the land).
- ◆ A duty to surrender the rights to the land when they are taken away through a lawful action, (e.g., in a case of insolvency where the right is held by the creditors, or in the case of default on tax payments where the right is held by the state).

Modern property rights are based on conceptions of ownership and possession as belonging to legal persons, even if the legal person is not a natural person. In most countries, corporations, for example, have legal rights similar to those of citizens. Therefore, the corporation is a juristic person or artificial legal entity, under a concept that some refer to as “corporate personhood”.

Since land is a limited resource and property rights include the right to exclude others, land rights are a form of monopoly. Those without land rights must enter into legal agreements known as land use agreements with the owners of the land. If a person enters or makes use of a land not belonging to him, or without a proper land use agreement, it would amount to trespassing.

Property rights are protected in the current laws of most states, usually by their constitution or by a legislation. Property rights are defined as a bundle of entitlements defining the owner's rights, privileges and limitations for use of a resource. A land can be identified under two broad property types, namely, Public property and Private property. A public property is a property owned by legal persons or business entities whereas, a private property is a state owned or publicly owned and available possession.

Protection on right to property is also prescribed under Article 17 of the United Nations' Universal Declaration of Human Rights as well as in the European Convention on Human Rights (ECHR), Protocol 1.

For a long time, Private property in India was looked upon with the utmost disdain and was considered the root cause of disharmony among fellow citizens. However, for countries that have astutely embraced capitalism, property rights form one of the three most important pillars for running the system successfully, the other two being free trade and liberty.

If we observe carefully, we will find that the numerous disputes we encounter relating to resources arise from the fact that no one owns them or perhaps because everyone owns them, as in the case of public property. It is not difficult to see that people care for their own property much more than they care for the public property. Many of the environmental problems we face today, ranging from pollution, the depletion of rainwater forest or animal species becoming extinct, are largely due to the absence of formal property rights.

Take India, for example. The Indian Constitution does not recognise property right as a fundamental right. In the year 1977, the 44th amendment eliminated the right to "acquire, hold and dispose of property" as a fundamental right. However, in another part of the Constitution, Article 300 (A) was inserted to affirm that "no person shall be deprived of his property save by authority of law." The result is that the right to property as a fundamental right is now substituted as a statutory right. The amendment expanded the power of the state to appropriate property for "social welfare purposes".

### 33.3 Tenure Rights

Tenure is the act, right, manner or term of holding something. In terms of immovable property such as land, tenure refers to the relationship, whether legally or customarily defined, among people, as individuals or groups, with respect to land. It is a body of rules invented by societies to regulate and manage how property rights to land are to be allocated within societies.

Land tenure is one of the tools used by the government to allocate and regulate property rights. It defines how access is granted to rights to use, control, and transfer land, as well as associated responsibilities and restraints. In simple terms, land tenure systems determine who can use what resources for how long, and under what condition. However, it is very essential to note that when we talk about land here, it includes other natural resources such as water and trees as well.

Let us now a few tools of land regulations used by the government to regulate property rights.

### 1) Land Tenure

Land Tenure is a political, economic social and legal institutional structure that determines:

- ◆ How individuals and groups secure access to land and associated manage land resources. The resources include trees, minerals, pasture, and water.
- ◆ Who can hold and use these resources, for how long and under what conditions? Land tenure may also have both spatial and temporal dimensions and are typically defined through statutory or customary law.

Normally, the sovereign holds the land in its own right. All private owners are either its tenants or sub-tenants, but their rights are as good as ownership rights. This system is prevalent in India as well. The term “tenure” is used to signify the relationship between tenant and lord, not the relationship between tenant and land.

Land tenure is often categorised as:

- ◆ **Private:** the assignment of rights to a private party who may be an individual, a married couple, a group of people, or a corporate body such as a commercial entity or non-profit organisation. For example, within a community, individual families may have exclusive rights to residential parcels, agricultural parcels and certain trees. Other members of the community can be excluded from using these resources without the consent of those who hold the rights.
- ◆ **Communal:** a right of commons may exist within a community where each member has a right to use independently the holdings of the community. For example, members of a community may have the right to graze cattle on a common pasture.
- ◆ **Open access:** specific rights are not assigned to anyone and no-one can be excluded. This typically includes marine tenure where access to the high seas is generally open to anyone; it may include rangelands, forests, etc., where there may be free access to the resources for all. (An important difference between open access and communal systems is that under a communal system, non-members of the community are excluded from using the common areas.)
- ◆ **State:** property rights are assigned to some authority in the public sector. For example, in some countries, forest lands may fall under the mandate of the state, whether at a central or decentralised level of government.

### 2) Land policy

Land policy is the tool employed to outline a set of goals and measures for meeting objectives related to land: tenure, use, management, property rights and administration, and administrative structures.

Land policy is formulated keeping in mind the development goals. It is linked to various other policies such as agriculture policy, housing policy, urban policy, rural policy, forest policy, etc. It concerns itself with sustainable and optimum use of resources.

### 3) Land management

Land Management is the process of managing the use and development of land resources in a sustainable way, in urban, suburban, rural as well as other lands. Land resources are used for a variety of purposes which interact and may compete with one another; therefore, it is desirable to plan and manage all uses in an integrated manner.

## 33.4 Land Rights and Resource Tenure System

In India, more than one and a half billion people amounting to about 70% of the population depend directly on the land and environment for survival. Land is the life resource of the majority of people whose subsistence directly depends on the water, forests and the soil. The urban poor on the other hand, live in communities that have been settled for a substantial period of time. Development of the community includes access to a means of livelihood, to education, to health care, all of which stand to be disrupted in cases of eviction. Certain land and resource tenure systems have been identified so as to secure land rights of the underprivileged sections of the society. Some rights have been recognised for the sustainable and optimum use of the limited resources such as land. They are:

### 1) Customary and recorded rights

Customary rights are the traditional rights that have been exercised by a local community for subsistence, cultural and religious purposes. These rights may not formally be recognised by any statute or legislation but may have been exercised for generations by the members of a local community.

An example of a customary property right is the rights vested in tribals to carry out forest activities such as grazing, native cultivation, vegetation, etc. The National Forest Policy of 1988 recognises certain customary rights of local communities and proposes that holders of the customary rights must be motivated to identify themselves with the protection and development of forests from which they derive benefits.

Recorded rights, on the other hand, are formally recognised statutory rights vested in individuals or communities over a property. They are formally recorded rights documented in statutory instruments and have a legal backing.

### 2) Individual and community rights

Individual rights pertain to a situation where rights over a property are vested exclusively over an individual or a group of individuals who have come together voluntarily. When an individual or a group of individuals hold absolute rights over a property (if such absolute right is recognised by the law of the land) or if such right is not recognised ( e.g.

in India where the sovereign holds absolute rights over land) then, limited rights that are exclusive in nature and vested only upon such an individual or group of individuals.

In case of community rights, the members of a community collectively own a local resource. The decisions of the use of the resource are made through a community institution. Though individual members do have their own private rights, but such rights are regulated by a community institution for the well-being of the community as a whole.

Private Property right regimes are believed to create incentives for the management of resources. However, they could also encourage erosion of the resources. Many times, if property regimes are flawed or are not implemented properly, they may fail miserably to provide solutions to preserve resource erosion. Some experts also argue that if property laws are more favourable towards the State or individuals, neglecting the community ownership rights, then erosion of natural resources is inevitable.

### 3) Easements and Concessions

Easement is a right to access a property for a specific use. Common forms of easement are for utilities and similar required access. Easement is defined under Section 4 of the Indian Easement Act, 1882. Section 4 of the Act provides as follows:

Section 4. 'Easement' defined. – An easement is a right which the owner or occupier of certain land possesses, as such, for the beneficial enjoyment of that, to do and continue to do something, or to prevent and continue to prevent something being done, in or upon, or in respect of certain other land not his own.

Dominant and servient heritages and owners. – The land for the beneficial enjoyment of which the right exists is called the dominant heritage, and the owner or occupier thereof the dominant owner; the land on which the liability is imposed is called the servient heritage, and the owner or occupier thereof the servient owner.

Explanation. – In the first and second clauses of this section the, expression “land” includes also things permanently attached to the earth; the expression “beneficial enjoyment” includes also possible convenience, remote advantage, and even a mere amenity; and the expression “to do something” includes removal and appropriation by the dominant owner, for the beneficial enjoyment of the dominant heritage, or any part of the soil of the servant heritage, or anything growing or subsisting thereon.

#### Illustrations

- a) A, as the owner of a certain house, has a right of way thither over his neighbour B's land for purposes connected with the beneficial enjoyment of the house. This is an easement.
- b) A, as the owner of a certain house, has the right to go on his neighbour B's land, and to take water for the purposes of his household, out of a spring therein. This is an easement.

- c) A, as the owner of a certain house, has the right to conduct water from B's stream to supply the fountain in the garden attached to the house. This is an easement.
- d) A, as the owner of a certain house and farm, has the right to graze a certain number of his own cattle on B's field, or to take, for the purpose of being used in the house, by himself, his family, guests, lodgers and servants, water or fish out of C's tank, or timber out of D's wood, or to use, for the purpose of manuring his land, the leaves which have fallen from the trees in E's land. These are easements.
- e) A dedicates to the public the right to occupy the surface of certain land for the purpose of passing and re-passing. This right is not an easement.
- f) A is bound to cleanse a watercourse running through his land and keep it free from obstruction for the benefit of B, a lower riparian owner. This is not easement.

Concession is a contractual right to carry out a certain activity in an area, not being one's own, such as to explore or develop its natural resources. They are different from easements since in easements the right to use or access a property is not a contractual right.

How is a land tenure system made applicable?

A land tenure system is made applicable through effective land administration. Land administration, whether formal or informal, comprises an extensive range of systems and processes to administer:

- ◆ **Land rights:** the allocation of rights in land; the delimitation of boundaries of parcels for which the rights are allocated; the transfer from one party to another through sale, lease, loan, gift or inheritance; and the adjudication of doubts and disputes regarding rights and parcel boundaries.
- ◆ **Land-use regulation:** land-use planning and enforcement and the adjudication of land use conflicts.
- ◆ **Land valuation and taxation:** the gathering of revenues through forms of land valuation and taxation, and the adjudication of land valuation and taxation disputes.

Information on land, people, and their rights is fundamental to effective land administration since rights to land do not exist in a physical form and they have to be represented in some way. In a formal legal setting, information on rights, whether held by individuals, families, communities, the state, or commercial and other organisations, is often recorded in some form of land registration and cadastre system. In a customary tenure environment, information may be held, unwritten, within a community through collective memory and the use of witnesses. In a number of communities, those holding informal rights may have "informal proofs" of rights, i.e., documents accepted by the community but not by the formal state administration.

An enforcement or protection component is essential to effective land administration since rights to land are valuable when claims to them can be enforced. Such a component

allows a person's recognised rights to be protected against the acts of others. This protection may come from the state or the community through social consensus. A stable land tenure regime is one in which the results of protective actions are relatively easy to forecast. In a formal legal setting, rights may be enforced through the system of courts, tribunals, etc. In a customary tenure environment, rights may be enforced through customary leaders. In both cases, people may be induced to recognise the rights of others through informal mechanisms such as community pressures. People who know their rights, and know what to do if those rights are infringed, are more able to protect their rights than those who are less knowledgeable.

Land administration is implemented through set of rules or procedures to manage information on rights and their protection, such as:

- ◆ Procedures for land rights include defining how rights can be transferred from one party to another through sale, lease, loan, gift and inheritance.
- ◆ Procedures for land use regulation include defining the way in which land use controls are to be planned and enforced.
- ◆ Procedures for land valuation and taxation include defining methodologies for valuing and taxing land.

Efficient procedures allow transactions to be completed quickly, inexpensively, and transparently. However, in many parts of the world, formal land administration procedures are time-consuming, bureaucratically cumbersome and expensive, and are frequently non-transparent, inaccessible to much of the rural population, and are handled in languages and forms that people do not understand. In such cases, high transaction costs may result in transfers and other dealings taking place off-the-record or informally.

Finally, land administration requires actors to implement the procedures. In customary tenure regimes, the customary leaders may play the principal role in land administration, for example in allocating rights and resolving disputes. In a more formal setting, land administration agencies may include land registries, land surveying, urban and rural planning, and land valuation and taxation, as well as the court systems. Where customary tenure has been recognised by the State, functional linkages are being developed between government and customary land administration bodies.

### 33.5 What are Customary Rights and Community Rights?

Modern property rights are based on conceptions of ownership and possession as belonging to legal persons, even if the legal person is not a natural person. In most countries, corporations, for example, have legal rights similar to those of citizens. Therefore, the corporation is a juristic person or artificial legal entity, under a concept that some refer to as "corporate personhood".

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enters or makes use of a land not belonging to him, or without a proper land use agreement, it would amount to trespassing.

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If we observe carefully, we will find that the numerous disputes we encounter relating to resources arise from the fact that no one owns them or perhaps because everyone owns them, as in the case of public property. It is not difficult to see that people care for their own property much more than they care for the public property. Many of the environmental problems we face today, ranging from pollution, the depletion of rainwater forest or animal species becoming extinct, are largely due to the absence of formal property rights.

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Common properties are resources, which are accessible to the whole community or village to which no individual has exclusive ownership or properties right. The common properties resources are very much subjected to individual use but no individual can own position over this, rather it is used by a number of stake holders who have independent right to use.

The significance of common properties resources lies in their capacity to meet the basic needs of the villagers. If utilised properly, the common properties resources could generate substantial income for the villagers. However, the main hurdle in this is the absence of ownership feeling among the villager. Every one's property becomes no one's property

and to break this feeling the ownership of the common property should be handed over to a people's institution, which has social acceptance and legal reorganisation. The success of common property management through people's institution is reflected through Haldikundi village committee.

Land rights and related resource rights are of fundamental importance to the world's indigenous people for a range of reasons, including: the religious significance of the land, self-determination, identity and economics.

Common-pool resource (CPR), also called a common property resource, is a type of good consisting of a natural or man-made resource system (e.g. an irrigation system or fishing grounds), whose size or characteristics makes it costly, but not impossible, to exclude potential beneficiaries from obtaining benefits from its use. Unlike pure public goods, common pool resources face problems of congestion or overuse, because they are subtractable. A common-pool resource typically consists of a core resource (e.g. water or fish), which defines the stock variable, while providing a limited quantity of extractable fringe units, which defines the flow variable. While the core resource is to be protected or entertained in order to allow for its continuous exploitation, the fringe units can be harvested or consumed.

A common property regime is a particular social arrangement regulating the preservation, maintenance, and consumption of a common-pool resource. The use of the term "common property resource" to designate a type of good has been criticised, because common-pool resources are not necessarily governed by common property regimes.

Examples of common-pool resources include irrigation systems, fishing grounds, pastures, forests, water and the atmosphere. A pasture, for instance, allows for a certain amount of grazing to occur each year without the core resource being harmed. In the case of excessive grazing, however, the pasture may become more prone to erosion and eventually yield less benefit to its users. Because their core resources are vulnerable, common-pool resources are generally subject to the problems of congestion, overuse, pollution and potential destruction unless harvesting or use limits are devised and enforced.

The use of many common-pool resources, if managed carefully, can be extended because the resource system forms a positive feedback loop, where the stock variable continually regenerates the fringe variable as long as the stock variable is not compromised, providing an optimum amount of consumption. However, wanton consumption leads to deterioration of the stock variable, thus disrupting the flow variable for good.

Common-pool resources may be owned by national, regional or local governments as public goods, by communal groups as common property resources, or by private individuals or corporations as private goods. When they are owned by no one, they are used as open access resources. Having observed a number of common pool resources throughout the world, Elinor Ostrom noticed that a number of them are governed by common property regimes - arrangements different from private property or state administration - based on self-management by a local community. Her observations contradict claims that

common-pool resources should be privatised or else face destruction in the long run due to collective action problems leading to the overuse of the core resource<sup>3</sup>.

**Common property resource management:** Pastoral resources are predominantly common property resources that are by nature difficult to partition. While in some cases community institutions and conventions govern such resources, in others “open access” can lead to overuse and degradation. Governments face the choice of individualising the resources or strengthening community institutions to better govern them. Though simpler, individualisation excludes many - especially the poor. Community management systems traditionally protect access rights for the poor, women, pastoralists, and others. Because common property management is more complex, it is important that the state empower communities through legal provisions, institutional arrangements, and capacity building for decision-making and enforcement. Also important is ensuring that indigenous systems - including customary tenure - that contribute to sustainable use of resources are recognised.

**Gender relations:** Not only do women produce and prepare food, they also transmit knowledge and skills relating to food, agriculture, and natural resource management. While often regarded as the keepers of the environment, under many land tenure systems women do not hold primary rights to land but instead gain access through male relatives. Security of tenure in private, communal, and other forms of land ownership can encourage women to invest in the land, adopt sustainable farming practices, and better take care of other resources.

**Natural resource conflicts:** Activity- and actor-led land and natural resource conflicts are a cause for concern.

## 33.6 Property Rights and Resource Governance

Both statutory and customary tenure systems are under stress in the face of global demographic growth, growing food scarcity, and environmental degradation of land, fisheries, and forest resources - compounded by the forces of global climate change. When resource tenure and property rights are insecure, the potential for sustainable resource management is undermined. However, when the rules and institutions governing the use, transfer, and ownership of resources are secure, then the foundations are in place for sustainable resource management. The empirical evidence by various researchers in the past has proved that the causal relations between tenure security and sound resource management complements the principles and best practices for responsible governance of natural resources.

In May 2012, a committee constituted by Food and Agriculture Organisation of the United Nations (FAO) on World Food Security endorsed the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries, and Forests in the Context of National Food Security. The Voluntary Guidelines on the Responsible Governance of Tenure of Land,

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<sup>3</sup> Tragedy of Commons.

Fisheries and Forests in the Context of National Food Security promote secure tenure rights and equitable access to land, fisheries and forests as a means of eradicating hunger and poverty, supporting sustainable development and enhancing the environment. They were officially endorsed on 11 May 2012, and since then, implementation has been encouraged by G20, Rio+ 20, United Nations General Assembly and Francophone Assembly of Parliamentarians. Consistent with the Millennium Development Goals, these voluntary guidelines articulate the principles and practices that can improve governance of tenure and sustainable use of land and other natural resources within the overarching goal of fostering food security - a core USAID objective articulated in the USAID Policy Framework 2011-2015.

Building upon these voluntary guidelines, we can analyse the interface between tenure, governance, and resource management and ways in which various agencies around the world including USAID can incorporate good tenure governance into natural resource management policies and programmes. In looking at the linkages between tenure security and the resource assets of forests, arid and semi-arid grasslands, wildlife, and freshwater and marine resources, this brief shows how formal recognition and protection of legitimate rights to the natural resource base are critically important incentives for conservation and sustainable use, management, and governance of resources.

#### a) Forests

The Food and Agriculture Organisation (FAO) estimates that over 80% of the world's forests are publicly owned with the remaining held by local communities and municipalities. Mexico and Papua New Guinea are important exceptions because local communities and indigenous groups own the vast majority of the forests. FAO data also show that the overall rate of deforestation remains alarmingly high. Approximately 5.2 million hectares per year were lost (an area about the size of Costa Rica) between 2001 and 2010, with most public forests suffering from large-scale illegal logging and other extractive activities<sup>4</sup>. The Global Forest Resources Assessment (FRA), coordinated by FAO, identified that the world's forest area decreased from 31.6% of global land area to 30.6% between 1990 and 2015, but that the pace of loss has slowed in recent years. Primary forests are under severe threat from rising global demand for timber and other forest resources. In the face of threats of forest loss, many countries are taking measures to improve governance of their remaining forest assets. In some cases, national policies favour decentralised forest governance by devolving management responsibilities to regional and local governments. Other countries *promote co-management of forests between government and local communities*. Some African and Asian countries take a more radical approach by simply devolving authority for forest management to indigenous user groups. Devolution to user groups themselves may be reducing illegal extraction while improving forest conditions and conservation of biodiversity, but numerous challenges remain<sup>5</sup>.

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<sup>4</sup> FAO, 2011, p. 3

<sup>5</sup> White and Martin, 2002.

In Mexico, communities (called ejidos) own 60 to 70% of the forests<sup>6</sup>. Ejidos enjoy inalienable rights to their communal forests, but may choose to transfer common land title to commercial or civil corporations for economic ventures<sup>7</sup>. There are no restrictions on subsistence use, and ejidos may develop forestry enterprises to generate income. Communities are required to submit federally approved 10-year forest management plans before commercialising timber production. According to the 2002 Revenue Law, communities are not taxed if engaged in extractive industry, but they are charged 50 percent of profits when producing finished products<sup>8</sup>. Since these reforms, many ejidos have developed community forest enterprises. As a result of greater security over commercial forest rights, hundreds of ejidos have organised themselves into forest companies with their own processing capacity. Some ejidos invest timber profits to establish sawmills, furniture factories, spring water bottling plants, and pine resin distilleries. Several ejidos are choosing to engage in production of certified timber to ensure sustainability<sup>9</sup>.

Devolution of resource management authority to local communities may be leading to improved forest conditions. In Mexico, successful community forestry enterprises are showing positive natural resource impacts and are contributing to local development. A national study of 733 municipalities in eight states found that municipalities with higher percentages of community forests reduce the gross and net rates of deforestation, and increase the rate of forest recovery<sup>10</sup>. Other regional and national-level studies show that communities with forestry enterprises perform similarly to protected areas with respect to forest cover, and that long-inhabited extractive communities perform as well as uninhabited strict protected areas under low colonization pressure<sup>11</sup>. Through a comparison of land use and land cover change maps derived from satellite images, researchers studying deforestation in 19 community forests and 11 protected areas in Mexico and Guatemala found that deforestation rates were higher in protected areas than in community forests between 1988 and 2005, although the differences were not significant.

In Nepal, forest management has devolved to user groups through the community forestry initiative. Community forestry user groups (CFUGs) can use and manage forest resources, but the state retains ownership over the land. Communities have the right to sell some non-timber forest products (NTFPs), but in several areas, they do not have rights to sell timber or other high-value resources. As of April 2012, about 17,700 CFUGs had been formed nationwide (over 1,000 exclusively by women), governing nearly 30 percent of Nepal's total forest area, and engaging 38% of all households in Nepal<sup>12</sup>. CFUGs are involved in local value-added processing and marketing of multiple forest products. These include community- based wood depots and sawmills, small furniture workshops,

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<sup>6</sup> Bray, 2010, p. 3.

<sup>7</sup> Resource and Rights Initiative, 2012, p. 4.

<sup>8</sup> Forster et al., 2004, p. 37.

<sup>9</sup> Rainforest Alliance, 2011.

<sup>10</sup> Bray, 2010, p. 3.

<sup>11</sup> Bray et al., 2008.

<sup>12</sup> Kanel, 2012, p. 7.

large numbers of handicraft producers (which in the Kathmandu Valley alone produce in excess of US \$1.0 million per year), medicinal and aromatic plant producers estimated to produce US \$8.6 million per year, and numerous other small paper, resin, and dye producers<sup>13</sup>. Recently, under the Forest Stewardship Council (FSC) certification scheme, 21 community forests of the Dolakha and Bhajhang districts have certified about 14,086 hectares.

While comprehensive and detailed ecological research is limited, Landsat imagery and field studies show improved governance of community forests and improved livelihoods. In particular, in the Kabhre and Sindhupalchok districts of central Nepal, research shows that shrub and grass lands have been converted into productive forests, and forest area increased from 7,677 to 9,678 hectares (37.5%) between 1978 and 1992<sup>14</sup>. In a mountain watershed of Kabhre district, a study showed reduction in the number of forest patches from 395 to 175, and an increase in net forest area by 794 hectares between 1976 and 2000 (Gautam et al., 2003, p. 93). Another analysis of five community forests over a 10-year period (1993- 2003) found that tree and sapling density increased. Similarly, a four-year study conducted in four districts of the Koshi Hills engaged in community forestry shows a 20% decline in grazing in community forests compared to that within public forests, a 29% increase in basal area, and 51% increase in number of tree stems. Devolution of forest rights has also had numerous other livelihood and development benefits. Communities are meeting many subsistence needs for timber, firewood, and fodder for livestock; generating income through NTFP enterprises; providing employment; strengthening social capital; and enhancing their leadership capacity as CFUG members take on positions in various political and civil society organisations. However, continuing government restrictions against selling high-value forest products have prevented communities from engaging in income-generating opportunities as in the case of the Mexican ejidos.

The success of community forestry in Nepal is well recognised, but evidence of exclusion of poor households from the benefits of the scheme has been noted repeatedly. As a result of the critique, government revised the Forest Act in 1993 to allow for a leasehold forestry provision, allocating land to households below the poverty line. Leaseholders are granted long-term exclusive use rights to degraded forestlands under a 40-year lease free of charge; these leases can be renewed for an additional 40 years. All benefits from forest enterprises go directly to the leaseholders. As of August 2011, about 6,700 leasehold forest groups had been formed, covering an area of 62,745 hectares<sup>15</sup>. Unlike community forests, leasehold forest groups do not have rights over existing forests, but they do have rights over the forest or agricultural products they produce. Evaluation of leasehold forestry is showing mixed results. Some have experienced increases in ground cover, species diversity, and tree density; in others, overgrazing has diminished forest cover. Many leasehold groups are experiencing an improvement in their economic status and food security due to free access to fuel wood, fodder, and other products derived from

<sup>13</sup> Asia Network for Sustainable Agriculture and Bioresources, 2009, pp. 22-23

<sup>14</sup> Kanel, 2006, p. 30

<sup>15</sup> USAID, 2012, p. 45

forests. However, enforcement remains a major challenge, as many leasehold forests are located on lands historically considered as open access community spaces. Poor households are finding it difficult to exclude external users, a problem exacerbated by the leaseholders' lower social status.

Despite these successes, the statutory requirements of forest devolution impose overly demanding rules on forest user groups involved in preparing management plans, monitoring forest health, or setting up the organisational framework of the management committee. Community forestry groups confront high costs and delays in obtaining approval from government for permits. Government policies and administrative practices continue to give preference to large-scale producers and processors, establish market rules that burden small-scale producers (such as various requirements for legal permits, high taxes on extraction, and value-added forest products), or set prices that undervalue forest resources. Unfortunately, local communities lack access to technical and financial support needed to establish forest enterprises.

#### **b) Semi-arid and Arid Grasslands**

The world's dry lands occupy 40 percent of the entire land area<sup>16</sup>, and 100-200 million people make their living on these arid and semi-arid regions through pastoralism (the practice of extensive grazing on dry lands for livestock production). Customary land tenure systems operate in many dry land areas, and communal tenure is a common feature with overall authority for land vested in traditional leaders. Resource rights are generally identified with group membership (e.g., clan or tribe). Many pastoralist groups move seasonally from home areas to dry season territories while accessing buffer zones bordering competing groups. Carefully negotiated rules ensure access to seasonal rivers, wooded areas, and dry season grazing areas reserved for times of drought. Areas utilised by pastoral communities tend to change with the seasons and over the years, depending on climatological variations and the nature of negotiations between competing communities. Control over livestock water points like seasonal ponds, wells, and boreholes is a prime determinant of access to semi-arid and arid pastures. Ownership of water sources is usually vested in the collective rather than in individual households. Today, approximately 10 to 20 percent of dry lands are degraded due to conversion to other land uses such as agriculture. With climate change and an increasing frequency of droughts, the vast expanses of dry lands will continue to grow. Some countries are strengthening customary tenure and systems of governance by granting individual (Botswana) or collective leaseholds to rangelands (Mongolia, some Sahelian West African countries), granting individual ownership to rangelands (Tunisia), and allocating collective ownership rights (Kenya). These initiatives illustrate how the voluntary guideline principles of recognising and safeguarding legitimate rights to resources help improve pasture management and reduce poverty, food insecurity, vulnerability, and conflict.

In Mongolia, the government has initiated leasing of pastures and hayfields ("possession certificates") to recognise customary tenure. Leases are given out to herder groups, rather than to individuals. District governors are responsible for allocating winter-spring

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<sup>16</sup> Global Dryland Initiative [GDI], 2003a, p. 2

pastures to herder groups, based on proposals received from lower administration levels. The district-level representative assembly can set herd size limits for winter pastures, and can set and impose grazing fees<sup>17</sup>. Local governments are now able to set and enforce the rules governing seasonal movements of livestock and reduce unsanctioned or out-of-season grazing. With long-term group contracts, possession certificates, and co-management arrangements, governance of pastures has improved. Studies by the FAO suggest that these tenure arrangements are protecting grazing lands against overstocking and the underlying free-for-all competition for grasslands-factors contributing to the degradation of pastures. Moreover, the leasing arrangements have provided herders with incentives to settle in underused and unused pastures. Granting of 15 to 60 years possession rights over winter and spring shelters, vegetable plots, and hayfields has encouraged herder groups to implement simple and efficient pasture management measures such as pasture rotation, restoration of abandoned crop fields, involvement in participatory pasture monitoring and research, and establishment of sustainable financing mechanisms to pasture improvement. Mongolia pasture reforms are showing many benefits. In some cases, growth in income was higher among middle- and low-income households. The government scheme has helped improve women's participation in governance and income-generating activities. Additionally, the development of herder group, microcredit and diversification of revenue sources through processing livestock products or other activities (vegetable gardening, ecotourism) allowed women to accrue significant profit and diversify their food supply.

In West Africa, several governments over the past two decades have created legal frameworks to recognise and protect pastoralists' rights of access to natural resources: Niger in its Rural Code (1993), Burkina Faso (2002), Guinea (1995), Mauritania (2000), and Mali (2001)<sup>18</sup>. These codes and laws on pastoralism recognise mobility as the key strategy for pastoralist resource management. Mali's Pastoralist Charter protects grazing lands and cattle corridors from agricultural encroachment and secures herders' access to strategic seasonal resources. Pastoralist laws also enable and regulate multiple and sequential use of resources by different stakeholders (e.g., herders' access to cultivated fields after harvest), and define the role that pastoralists can play in local conflict resolution. Some problems remain however.

Pastoralist laws have not been accompanied by implementing regulations (Mali), nor have the necessary governance institutions been put in place (Niger). The legislation on pastoralism is linked to policies and administrative structures favouring decentralisation. Because communes - often dominated by the interests of sedentary populations - have the responsibility for natural resource management, pastoralists are sometimes excluded from decision-making on land uses. The new pastoralist codes still fail to protect the flexible, collective property regimes of customary rangeland management practices. The concept of "productive land use" continues to emphasize agricultural land uses to the detriment of rangelands, despite the fact that pastoralist livelihoods generate six

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<sup>17</sup> FAO, 2007, p. 9

<sup>18</sup> Cotula et al., 2004, p. 25

times more revenue than agriculture practiced in the same ecological zones. Nevertheless, some innovations are promising. For instance, in many Sahelian West African countries, “local conventions” and “land charters” consist of community-based agreements validated by local authorities on the management of shared natural resources. These conventions take into account interests of pastoralist communities. However, how effective these agreements are in practice remains unclear. Empirical research is needed on the impact of these conventions on rangelands in arid and semi-arid West Africa.

Pastoralism continues to be viewed as archaic, ecologically unsustainable, and of little economic value. Negative perceptions are deepened as pastoralists are linked to images of drought, famine, and conflict. Yet, research shows that pastoralism in dry land areas is more economically profitable than farming or ranching. Pastoralism can contribute ecological benefits like maintaining species diversity, maintaining ecosystem structures, and reducing impact of disasters such as fires, drought, and flooding through active management of vegetation. Pastoralists tend to have built-in capacities to adapt to climate change, based on long histories of adaptation to erratic weather patterns<sup>19</sup>. If pastoralists’ contributions to local livelihoods and regional and national economies were better known, perhaps tenure reform strengthening the rights of these people would be better accepted by policy and legislation.

### c) Wildlife

In most countries, ownership over wildlife is vested in the state. The state may grant rights to hunt and cull wildlife through permits or licensing schemes; however, government often retains control over the revenue streams. States commonly protect wildlife and wildlife habitat by designating protected areas on public lands or through community-based natural resource management (CBNRM) schemes with responsibilities of governance shared with resident communities. Despite these government measures to protect wildlife and associated ecosystems, species exploitation and habitat destruction continue. Today, nearly 20,000 species of plants and animals worldwide face extinction - including 13% of birds, 25% of mammals, and 41% of amphibians - largely due to shrinking habitats, but also to poaching and illegal trade of wildlife<sup>20</sup>. Over the past two decades, Botswana, Namibia, Zambia, and Zimbabwe have devolved control and management of wildlife to local communities, including benefits derived from it, to reduce incentive for poaching. In South Africa, privately managed wildlife reserves abutting national parks have played an important part in creating buffer zones around these protected areas. Devolution of wildlife management to communities and private enterprises are generating enormous benefits to local communities and businesses. Community-based wildlife programmes have benefitted significantly from USAID support through the Living in a Finite Environment (LIFE) and CBNRM programs in Namibia and Botswana, respectively.

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<sup>19</sup> Secretariat of the Convention on Biological Diversity, 2010, p. 10

<sup>20</sup> Global Wildlife Conservation, 2012.

In Namibia, the 1996 revisions in wildlife policy and legislation gave rural communities ownership over certain species of wildlife, exclusive use rights to other species, and exclusive concessionary rights over tourism. Communities organised as conservancies can retain 100% of income from contracts with the private sector for trophy hunting and photographic tourism. To participate in the program, conservancies must be legally constituted with a defined membership and a management committee formed to develop a strategy for wildlife management and equitable distribution of benefits. Management committees write game management plans and establish mechanisms to resolve disputes among the members.

Devolution has led to a marked reduction in poaching, while the introduction of local wildlife management practices (e.g., development and maintenance of water points and wildlife production zones, reintroduction of game to facilitate faster recovery rates, reduced cattle grazing areas) has contributed to the recovery of populations of some species. For example, there has been a doubling of mountain zebra, near doubling of gemsbok, and sharp increases in oryx and spring box in northwest Namibia<sup>21</sup>. Populations of rare species (notably black rhino) more than doubled in these conservancies; elephant numbers increased from 13,000 in 1996 to 20,000 in 2005. The conservancies have led to the creation of thousands of jobs in the tourism industry. Today, the country's 74 conservancies are earning more than US \$4.8 million. Some conservancies use funds to create water points for game or install water points for community use. Other conservancies have invested in schools and programmes to support vulnerable families such as those affected by HIV/AIDS. Women fill more than half of the jobs generated by conservancy businesses. Yet, problems remain. While conservancies have exclusive rights to manage wildlife and set up tourism ventures on their land, they have no right to exclude those engaged in livestock grazing and other economic activities. Lacking exclusionary powers, conservancies are encountering difficulties in managing wildlife and associated habitats.

Furthermore, governance of conservancies is split between traditional authorities concerned about using the land for subsistence purposes, and the communal land boards (a co-management entity) managing land for uses by external economic interests. Inevitably, conflicts erupt over competing land use demands.

In Botswana, community trusts are set up to lease land from land boards for community-designated controlled wildlife viewing and trophy hunting areas. Land is leased for an initial 15-year period, which includes limited rights of wildlife management; communities do not have exclusive control over all land uses. However, as in Namibia, fiscal devolution allows communities to retain 100% of income from trophy hunting and game viewing. Some community trusts have developed joint venture agreements with safari and tourism enterprises. They accrue financial benefits by subleasing hunting areas, selling meat and wildlife quotas to venture partners, and participating in tourism enterprises.

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<sup>21</sup> Namibian Association of CBNRM Support Organisations, 2011, p. 11

As a result, some species are more abundant. In particular, elephant populations in Botswana doubled between 1994 and 2006<sup>22</sup>. However, population dynamics of other wildlife vary dramatically across species. Many other species, though not increasing, have maintained their numbers, but several species have also shown declines in numbers. Rural communities are beginning to realize a significant income from wildlife, tourism, and commercialisation of secondary forest products. Several community trusts in the Okavango Delta are generating US \$2 million annually from a variety of ventures. Employment generated by community trusts and tourism companies has more than doubled in some areas. Communities are beginning to develop their own businesses and are engaged actively in all elements of resource management. However, use rights to community-designated controlled hunting areas are derived from policy; they are not entrenched in law. Community control is therefore insecure and of limited duration. Longer-term leases over land would go a long way toward creating the right incentives for management.

The devolution of wildlife management to local communities, coupled with trophy hunting and ecotourism, has yielded many benefits ranging from increase in wildlife numbers, to expanding habitats and significant economic growth. Not only has devolved wildlife management worked on private lands, but also on communal lands with people of initially limited business skills. However, lack of control over the full range of resource assets on the land limits the ability of local communities to manage habitats for multiple uses. Secure and longer-term land and governance rights may help communities manage these areas more effectively. While the causal linkages between devolution and improved resource management appear quite strong, there is still a need for more rigorous monitoring of trends in wildlife and habitat.

#### **d) Freshwater, Marine, and Wetland Resources**

In most countries of the world, marine and freshwater resources are considered state property and under the management of various governmental bodies. In most developing countries, local communities possess rights to use, but not own, water for irrigation and home consumption, often free of charge. However, this practice is changing. User fees are increasingly applied for the provision of potable water and for small-scale irrigation. Commercial water use typically requires a permit and the payment of water fees. Many countries follow the same rules for fisheries. As is now so well reported, major water crises are cropping up around the world due to the scarcity of freshwater. The diversion of water for industry, damming and diversion of rivers, draining of wetlands, and climate change-induced droughts are inciting water-related conflicts. Groundwater - 90% of the world's readily available freshwater - is being depleted rapidly; this in turn is contributing to increasing water prices, rising cost of irrigation, rising food prices, and reduced access to potable water and sanitation. Furthermore, half of the world's wetlands have disappeared over the last century. Nearly 80% of the world's fish stocks are overexploited or have collapsed due to poor governance and the de facto open access of marine

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<sup>22</sup> Vision 2016 Council, 2010, p. 8

fisheries<sup>23</sup>. Subsistence and small-scale fisher folk are losing ground due to growing competition from commercial vessels; this in turn has implications for food security and poverty alleviation.

National governments are now engaging in a variety of legislative and institutional reforms to improve governance of freshwater, marine, and fisheries resources. These reforms include community-based or co-management of watersheds, integrated water resources management between various sectors, and recently, more privatisation of freshwater resources. Yet, governments work within structures like the Law of the Seas and other international conventions governing access to coastal fisheries. Co-management and customary marine tenure arrangements are particularly advanced in several of the Pacific Island states. New studies suggest that these initiatives can help sustain much of world's declining fisheries.

In the Philippines, the Apo Island Marine Reserve, an early community-based marine protected area, is a classic example of a highly successful community-based coral reef fishery and marine biodiversity conservation initiative operating under the policy and legal framework of the Local Government Code of 1991 and the Fisheries Code of 1998. On the southeast side of Apo Island, the communities established "no-take" marine reserves where all forms of fishing are prohibited; these reserves were designated by municipal ordinance<sup>24</sup>. A system of collaborative management of the reserve was put in place involving an organised fisher community, local government, and an academic institution as facilitator and adviser. The Apo fishing community retained its rights to fish outside of the reserve. The community developed rules to reduce fishing pressures, such as using gear restrictions to reduce damage to coral and non-target species of fish.

Research conducted since the beginning of the initiative has provided some of the most compelling evidence available for community-managed fisheries. Research shows that the biomass of target fish (four families accounting for 75.6% of the fisheries yield at Apo) increased inside the no-take reserves 4.5 times over 18 years of no-take protection. The biomass of large predatory fish and highly favoured targets of reef fisheries increased 17.3 times during this period. The results suggest that marine reserves can help enhance local fishery yields in the long term, enhancing the living standard of the island community. The overall benefits have generated strong local support for no-take reserves. Following Apo's lead, more than 400 other villages have started community or co-managed marine sanctuaries in the Philippines.

In the Pacific, customary marine tenure exists in some form on most islands. In some cases, customary tenure systems are recognised in national law, while in others their recognition is informal. Island states such as Vanuatu combine statutory and customary tenure regimes in marine fisheries. Under customary marine tenure, local communities are able to claim exclusive rights to fishing areas, and have the right to regulate activities and exclude outsiders from these areas. Most traditional management involves the

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<sup>23</sup> World Business Council for Sustainable Development, 2006, p. 8

<sup>24</sup> Alcala et al., 2005, p. 1

implementation of taboos. Traditional knowledge regarding seasonality of fish is typically used to determine taboos and enforce community fishing practices. If taboos are violated, the village court (though not legally recognised) imposes sanctions. Infractions at the community level are dealt with in the “custom courts” that emphasize consensus and compromise, avoiding a win/lose situation. National fisheries regulations are also adopted and enforced by traditional leaders, provided the regulations support the community’s management objectives. Legislation allowing devolved management of fisheries has created a strong partnership between government and communities.

The case of voluntary village-based trochus management in Vanuatu is particularly instructive. Trochus is a large marine snail, and the country’s largest commercial export. In a survey conducted by the fisheries department, trochus stocks were found to be rapidly declining. The fisheries department advised villages on the benefits of regular multiple year closures of trochus fisheries, followed by brief lifting of fishing bans. Communities are left to decide whether or not to act on this advice. A 1993 study revealed that many villages followed the technical advice of the government fisheries department and found the new management scheme so profitable that other villages soon followed the experiment<sup>25</sup>. To the surprise of observers, many villages decided to protect other marine animals as well, and banned or restricted harmful fishing practices such as night spearfishing and the use of gillnets. One village even set up a marine protected area, stocking it with giant clams. By 2001, community-based marine resource management measures had more than doubled, supporting the finding that customary marine tenure (the right of villagers to control activities on their traditional fishing grounds and to exclude outsiders) provides an essential tool for near-shore marine resource management in Vanuatu. Challenges remain, nevertheless, as enforcement is not always effective, particularly when it involves outsiders not bound by local rules who poach on a community’s marine resources. Legal recognition of traditional management systems and customary law can empower traditional authority and help enforce rules. Further, the task of enforcement can be delegated to communities under formal legal frameworks (e.g., fisheries wardens appointed by communities) - supporting rather than undermining traditional authority.

In Bangladesh, inland fisheries and wetlands have been gradually encroached upon and the remaining wetlands are overused. The wetland fisheries are in decline due to short-term leasing of public water bodies - the jalmohals (typically permanent water bodies leased out by the state) - by the government to maximise revenue. To address this issue, the Government of Bangladesh and USAID developed the Management of Aquatic Ecosystems through Community Husbandry (MACH) programme to strengthen access of local communities to wetland fisheries, and hence alleviate poverty and improve wetland management. With field operations in more than 110 fishing villages, the programme regulated access to wetlands through short-term leases. Within the three wetlands covering 21,000 acres, 16 resource management organisations were given lease rights over a distinct area of one of the wetlands, thus securing rights over the resource.

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<sup>25</sup> Johannes and Hickey, 2004, p. 4

Through these efforts, villages improved fisheries productivity in the three degraded wetlands, resulting in increased fish catch as well as improved food security, incomes, and nutrition for 184,000 of the poorest citizens. Fish catches in project villages rose by 140%, consumption increased by 52 percent, and average daily household incomes increased by 33%. Due to the restoration of wetland habitats and fish stocks, the communities earned US \$4.7 million more from local fisheries sales in 2004 than in 1999. Due to its success, the programme was scaled up by securing lease rights and promoting co-management of additional wetlands.

Co-management initiatives have been successful, but they reveal the difficulty of attributing roles, rights, and responsibilities, especially where the groups involved have highly divergent interests. Many co-management efforts rely on outside agents to facilitate collective action, but sustaining that action has proved difficult. Devolution can be an effective means to grant local users' greater control, provided that real authority is indeed transferred to local communities and that adequate safeguards are established. Reforms in legal frameworks governing water increasingly take the route of privatising the resource and devolving management control to local entities. While these efforts try to take into account equity issues, privatisation of potable water and water used for irrigation and industrial purposes is increasing the cost of water as state subsidies are removed. For those poor who have few means to purchase water, their health and welfare are at risk.

### 33.7 Access Tenure Regime

In many parts of the developing world, the rural poor increasingly depend on shared resources for their livelihoods. In such a scenario, there is an increase tenure systems and access to land and resources via common property regimes. The common property regimes are the most desirable of the land tenure systems so as to govern the Forest Areas, Protected Areas and Sanctuaries.

The common property regimes are defined primarily in terms of collective rights. They may also represent a range of different rights for both individuals and groups such as access, withdrawal, management, exclusion, alienation. These multiple rights to the same resource may also be exercised differently at different times.

A Common-pool resources (CPRs) refer to natural resources where one person's use subtracts from another's use and where it is often necessary, but difficult and costly, to exclude other users outside the group from using the resource. CPRs refer to the attributes or characteristics of a resource. Common property is a formal or informal property regime that allocates a bundle of rights to a group. Such rights may include ownership, management, use, exclusion, access of a shared resource. The term common property regime represents a set of institutions, regulations and management practices subject to collective decision-making. In this sense, the term refers to the kind of tenure institutions that exist, not the resources themselves. Common property regimes also contribute to more environmentally sustainable use of natural resources. Environmental

degradation, such as deforestation, may take place where common pool resources are not adequately managed. Collective action, and supportive legal or policy frameworks, may contribute to more sustainable use of the resources from the commons.

Customary law and practice forms the basis of group tenure and collective resource management in many parts of the world. Customary systems generally have a collective element to resource management, e.g., forms of group decision-making that determine access and use, or joint use and management of resources in common areas. These are the most widely applicable tenure regimes in the forest areas, protected areas and the Sanctuaries.

In practice, most forms of holdings may be found within a given society, for example, common grazing rights, private residential and agricultural holdings, and state ownership of forests. Customary tenure typically includes communal rights to pastures and exclusive private rights to agricultural and residential parcels. In some countries, formally recognised rights to such customary lands are vested in the nation state or the President “in trust” for the citizens.

In broad terms, land tenure rights are often classified according to whether they are “formal” or “informal”. There can be perceptual problems with this approach because, for example, some so-called informal rights may, in practice, be quite formal and secure in their own context. Despite these perceptual problems, the classification of formal and informal tenure can sometimes provide the basis for useful analysis.

Formal property rights may be regarded as those that are explicitly acknowledged by the state and which may be protected using legal means. Informal property rights are those that lack official recognition and protection. In some cases, informal property rights are illegal, i.e., held in direct violation of the law. An extreme case is when squatters occupy a site in contravention of an eviction notice. In many countries, illegal property holdings arise because of inappropriate laws. For example, the minimum size of a farm may be defined by law whereas in practice farms may be much smaller as a result of informal subdivisions among heirs. Property rights may also be illegal because of their use, e.g., the illegal conversion of agricultural land for urban purposes.

In other cases, property may be “extra-legal”, i.e., not against the law, but not recognised by the law. In some countries, customary property held in rural indigenous communities falls into this category. A distinction often made is between statutory rights or “formally recognised rights” on the one hand and customary rights or “traditional rights” on the other hand. This distinction is now becoming blurred in a number of countries, particularly in Africa, which provide formal legal recognition to customary rights. Formal and informal rights may exist in the same holding. For example, in a country that forbids leasing or sharecropping, a person who holds legally recognised ownership rights to a parcel may illegally lease out the land to someone who is landless. These various forms of tenure can create a complex pattern of rights and other interests. A particularly complex situation arises when statutory rights are granted in a way that does not take into account existing customary rights (e.g., for agriculture and grazing). This clash of de jure rights (existing

because of the formal law) and de facto rights (existing in reality) often occurs in already stressed marginal rainfed agriculture and pasture lands. Likewise, in conflict and post-conflict areas, encounters between settled and displaced populations lead to great uncertainties as to who has, or should have, the control over which rights. The layers of complexity and potential conflict are likely to be compounded, particularly where, for example, state ownership is statutorily declared and state grants or leases have been made without consultation with customary owners (who are not considered illegal), and where squatters move illegally onto the land.

### Access to land

Access to land for the rural poor is often based on custom. Customary rights to land in indigenous societies, for example, are usually created following their traditions and through the ways in which community leaders assign land use rights to the community members. These rights of access may have their origin in the use of the land over a long period. They are often rights developed by ancestral occupation and by the use of land by ancestral societies. In such cases, it is through the act of original clearance of the land and settlement by ancestors that rights are claimed.

People also use a wide range of strategies to gain access to land. These include:

- ◆ Purchase, often using capital accumulated while working as migrants in urban areas.
- ◆ Adverse possession or prescription (the acquisition of rights through possession for a prescribed period of time). In some countries, this may be the only method for small farmers to gain formal access to vacant or abandoned land and to bring it into productive use.
- ◆ Leasing, or gaining access to land by paying rent to the owner.
- ◆ Sharecropping, or gaining access to land in return for paying the owner a percentage of the production.
- ◆ Inheritance, or gaining access to land as an heir.
- ◆ Squatting illegally on land.

In addition to such individual strategies, access to land can be provided systematically through land reform interventions by national governments, often as a result of policies to correct historic injustices and to distribute land more equitably. Such land reforms usually occur in situations where much of the land is owned by a relatively small number of land owners and the land is idle or under-utilised (although it should be noted that determining whether land is under-utilised depends on the criteria selected for the assessment). In some countries, land restitution has been an important type of land reform. Other land reform interventions include land redistribution programmes which aim at providing the rural poor with access to land and promoting efficiency and investment in agriculture. These programmes are often, but not always, accompanied by provision of subsidised agricultural services such as extension and credit. In some cases, the state has provided access to idle or under-utilised public land but most often private land holdings have been the source of land for resettlement purposes.

In imposed redistributive land reforms, land is taken from large land holders by the State and transferred to landless and land-poor farmers. Compensation has been paid to the original owners in some reforms but not in others. In some cases, the reforms have benefitted the tenants who worked the land. Such reforms change the structure of land ownership by transforming tenants into owners but do not change the operational holdings. In other cases, the reforms have involved the resettlement of beneficiaries on the expropriated lands and the creation of new farming operations.

Some recent land reform initiatives have been designed so that beneficiaries negotiate with land owners to purchase land using funds provided by the State in the form of grants and/or loans. Beneficiaries are usually required to form a group which identifies suitable land, negotiates the purchase from the seller, formulates a project eligible for state grants and/or credit, and determines how the land will be allocated among the members of the group and what their corresponding payment obligations will be.

While there is broad consensus that land reform plays an important role in rural development where land concentration is high, great controversy surrounds the choice of mechanisms to transfer land from large land owners to the landless and land poor. However, this debate is well beyond the scope of this guide to address.

Traditional principles of property rights include:

- 1) Control and use of the property
  - 2) Right to any benefit from the property (e.g.: mining rights and rent)
  - 3) Right to transfer or sell the property
  - 4) Right to exclude others from the property
- Traditional property rights do not include:
- ◆ uses that unreasonably interfere with the property rights of another private party (the right of quiet enjoyment) [See instance Nuisance]
  - ◆ uses that unreasonably interfere with public property rights, including uses that interfere with public health, safety, peace or convenience. [See Public Nuisance, Police Power]

Not every person or entity with an interest in a given piece of property may be able to exercise all possible property rights. For example, as a lessee of a particular piece of property, you may not sell the property, because a tenant is only in possession and does not have title to transfer. Similarly, while you are a lessee, the owner cannot use their right to exclude to keep you from the property, or, if they do, you may be entitled to stop paying rent or sue for access.

Further, property may be held in a number of forms, such as through joint ownership, community property, sole ownership or lease. These different types of ownership may complicate an owner's ability to exercise property rights unilaterally. For example, if two people own a single piece of land as joint tenants then, depending on the law in the jurisdiction, each may have limited recourse for the actions of the other. For example, one of the owners might sell their interest in the property to a stranger whom the other owner does not particularly like.

Legal systems have evolved to cover transactions and disputes that arise over the possession, use, transfer, and disposal of property, most particularly involving contracts. Positive law defines such rights, and the judiciary is used to adjudicate and to enforce property rights.

According to Adam Smith, the expectation of profit from “improving one’s stock of capital” rests on private property rights. It is an assumption central to capitalism that property rights encourage their holders to develop the property, generate wealth and efficiently allocate resources based on the operation of markets. From this has evolved the modern conception of property as a right enforced by positive law, in the expectation that this will produce more wealth and better standards of living.

In his text *The Common Law*, Oliver Wendell Holmes describes property as having two fundamental aspects. The first is possession, which can be defined as control over a resource based on the practical inability of another to contradict the ends of the possessor. The second is title, which is the expectation that others will recognise rights to control resource, even when it is not in possession. He elaborates the differences between these two concepts, and proposes a history of how they came to be attached to persons, as opposed to families or entities such as the church.

Classical liberals, Objectivists, and related traditions:

Most thinkers from these traditions subscribe to the labour theory of property. They hold that you own your own life, and it follows that you must own the products of that life, and that those products can be traded in free exchange with others.

“Every man has a property in his own person. This nobody has a right to, but himself.” (John Locke, *Second Treatise on Civil Government*)

“The reason why men enter into society is the preservation of their property.” (John Locke, *Second Treatise on Civil Government*)

“Life, liberty, and property do not exist because men have made laws. On the contrary, it was the fact that life, liberty, and property existed beforehand that caused men to make laws in the first place.” (Frederic Bastiat, *The Law*)

“Just as man can’t exist without his body, so no rights can exist without the right to translate one’s rights into reality, to think, to work and keep the results, which means: the right of property.” (Ayn Rand, *Atlas Shrugged*)

- ◆ Socialism’s fundamental principles are centered on a critique of this concept, stating, among other things, that the cost of defending property is higher than the returns from private property ownership, and that, even when property rights encourage their holders to develop their property or generate wealth, they do so only for their own benefit, which may not coincide with benefit to other people or to society at large.
- ◆ Libertarian socialism generally accepts property rights, but with a short abandonment period. In other words, a person must make (more or less) continuous use of the item

or else lose ownership rights. This is usually referred to as “possession property” or “usufruct”. Thus, in this usufruct system, absentee ownership is illegitimate and workers own the machines or other equipment that they work with.

- ◆ Communism argues that only collective ownership of the means of production through a polity (though not necessarily a state) will assure the minimisation of unequal or unjust outcomes and the maximisation of benefits, and that therefore private property (which in communist theory is limited to capital) should be abolished.

Both communism and some kinds of socialism have also upheld the notion that private property is inherently illegitimate. This argument centres mainly on the idea that creation of private property always benefits one class over another, giving rise to domination through the use of this private property. Communists are not opposed to personal property that is “hard-won, self-acquired, self-earned” (Communist Manifesto) by members of the proletariat.

Community-based natural resource management (CBNRM) needs to be institutionalised to be effective. While the structure of each situation will be different, involving different sets of actors and interests, there is a need for an institutional framework that builds upon the shared values of communities while providing positive incentives for individual action. Four related elements of any institutional framework include:

- 1) Effective community-based groups, both at the local level and scaled up to the regional level;
- 2) Effective operational linkages between the public sector, the private sector, and community-based groups in management of natural resources;
- 3) Effective approaches to conflict management with regard to use of natural resources, at all levels; and,
- 4) An enabling policy and institutional environment, at macro and micro levels, that fosters support of existing community-based institutions, or the emergence of new institutions, to manage natural resources locally.

Successful reform in each of these areas is also dependent on the ability to develop legitimate fora and process for addressing these issues - processes which have the highest level of political commitment, which involves all legitimate stakeholders, and which is transparent and accountable. Such institutional reform processes also need to be supplemented by concerted efforts to build human capacity at all levels - from community-based organisations to central government agencies - both to realise the above institutional arrangements as well as administer them over time.

### 33.8 Land Tenure as an Effective Tool for Development

In accordance with the existing conditions, many different land tenure systems have developed throughout the world, whereby both natural conditions (climate, soil conditions, topography) as well as social factors (sociocultural values, political ideology, level of technological development, population trend, changes in the cost price relationships, etc.) played a role.

It is submitted that out of the 17 Sustainable Development Goals (SDGs) endorsed by the world's governments, five directly address the role of land in securing humankind's future, and three specifically call for securing community land rights. Sustainable land use especially in the context of providing a cost-effective way to sequester carbon dioxide, also offer huge climate benefits. As such, achieving both SDG 13 on climate action and national commitments under the Paris Agreement of the UN Framework Convention on Climate Change calls for a better land stewardship.

The land tenure system must be subjected to a continual process of change. This is because land tenure system should aim for development and hence must be free of stagnation. However, due to the fact that land tenure systems are institutionally established they are sometimes difficult to alter. Political power structures; cooperative ties and class, cultural, and ethnic interests and motives all work towards maintaining the established forms.

Changes in the natural growing conditions and economic factors, technological innovations, changes in the size of the population, and influences emanating from the political power structures bring about the changes in the land tenure system. As in recent times, these factors have been changing more and more rapidly, the system of land tenure frequently lags behind the new situation and does not adjust to it on time. As a result of the continual changes in the factors that govern and form the land tenure system, an ideal land tenure system cannot exist. A specific land tenure system is therefore such an institutional framework that is interrelated with the natural, economic, social, and political conditions. As these change, the land tenure system has to continually adapt itself to the changing situation.

Land tenure is multi-dimensional, bringing into play social, technical, economic, institutional, legal and political aspects. Land tenure relationships may be well-defined and enforceable in a formal court of law or through customary structures in a community. However, there may exist a lot of loopholes in legislations due to poorly defined concepts with ambiguities that are open to exploitation. These ambiguities may include:

- ◆ Overriding interests: when a sovereign power (e.g., a nation or community) has the powers to allocate or reallocate land through expropriation, etc.;
- ◆ Overlapping interests: when several parties are allocated different rights to the same parcel of land (e.g., one party may have lease rights, another may have a right of way, etc.);
- ◆ Complementary interests: when different parties share the same interest in the same parcel of land (e.g., when members of a community share common rights to grazing land, etc.); and
- ◆ Competing interests: when different parties contest the same interests in the same parcel (e.g., when two parties independently claim rights to exclusive use of a parcel of agricultural land. Land disputes arise from competing claims.)

**Box 2**

With the aim of exploring new development opportunities to revitalise rural communities worldwide, The International Conference on Agrarian Reform and Rural Development (ICARRD) was organised jointly by the Food and Agriculture Organisation of the United Nations and the Government of Brazil in Porto Alegre from 7-10 March 2006.

Participants from more than 100 countries reviewed different experiences of agrarian reform around the world, analysing processes, impacts, mechanisms and participation schemes, and made proposals for future action. The primary objective of the conference was to assist the poor people of rural areas of the world by increasing their access to land and other necessary resources.

The discussion in the world conference on agrarian reform and rural development 2006 was primarily based on five issues. These are as follows:

- ◆ Adoption of policies and practices for easy access to land, that can eventually promote agrarian reform.
- ◆ Development of local capacities with an intention to enhance the agricultural inputs and agricultural services, that will ultimately boost rural development.
- ◆ Creation of new opportunities for the rural cultivators and communities of the world.

The thematic areas of concern covered in the conference were:

- 1) Basic Elements of a Programme of Action
- 2) Access to Land, Water, and Other Resources
- 3) Participation of the Population
- 4) Integrating Women in Rural Development
- 5) Access to Inputs, Markets, and Services
- 6) Development of Non-agricultural Activities
- 7) Education, Training, and Extension
- 8) International Trade
- 9) Other Measures

**Resolution**

In world conference on agrarian reform and rural development 2006, the participating countries primarily agreed upon the following matters:

- ◆ Establishing a common platform of understanding for discussing agrarian reform and rural development.
- ◆ Provision for discussing policy matters and practices on agrarian reform and rural development to boost partnership and global cooperation among different countries of the world.

### 33.9 Agrarian Reforms

Land reform is concerned with rights in land, and their character, strength and distribution, while agrarian reform focuses not only on these but also a broader set of issues that are: the class character of the relations of production and distribution in farming and related enterprises, and how these connect to the wider class structure. It is thus concerned economic and political power and the relations between them<sup>26</sup>.

An Agrarian society is one that is based on agriculture as its prime means for support and sustenance. The society acknowledges other means of livelihood and work habits but stresses on agriculture and farming. India has traditionally been an agrarian society. Even today agriculture is the predominant occupation in India, accounting for about 52% of employment.

Agrarian reforms are the redistribution of the agricultural resources of a country. Traditionally, agrarian, or land, reform is confined to the redistribution of land; in a broader sense it includes related changes in agricultural institutions, including credit, taxation, rents, and cooperatives. Although agrarian reform can result in lower agricultural productivity, especially if it includes collectivisation, it may increase productivity when land is redistributed to the tiller. Pressure for modern land reform is most powerful in the underdeveloped nations.

The concept of agrarian reform refers to changes implemented in the agricultural economy, changes designed broadly to improve agricultural performance and notably to contribute to the process of economic growth and economic development. It implies to the changes to an existing system or policies, though the interpretation of change and the precise boundaries of the agricultural sector are general and broad. Thus characterised, agrarian reform has been a continuing and important component of the Russian economic experience. Moreover, the nature of agrarian reform has been closely associated with the differing stages of Russian economic development and with the role envisioned for the agrarian economy in the process of industrialisation well social life of the rural people.

#### **Agrarian reforms in Developing Countries**

The problems related to agrarian reform vary according to the social, economic and political structures of developing countries.

- ◆ One of the major problems of agrarian reform in developing countries is the lack of improvement in credit measures, marketing and community development. The technical experts in these fields also need to function efficiently.
- ◆ The research and training programme is a vital part of agrarian reform. Lack of proper training and research limits the prosperity of agrarian reform in developing

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<sup>26</sup> Ben Cousins, Agrarian reform and the two 'economies': transforming South Africa's countryside, Ch. 9, *The Land Question in South Africa: The Challenge of Transformation and Redistribution*, HSRC Press, Cape Town, South Africa (2007).

countries. Developing regional training and research institutes can be the best solution for this specific problem. The existing training and research institutes can take the assistance from FAO (Food and Agriculture Organisation) of the United Nations.

- ◆ One of the major problems taking place in developing countries is the lack of proper implementation of agrarian policies. Despite having a common objective to provide enough incentives to the cultivators with modern facilities and technologies, these policies differ according to the physical, historical, climatic and cultural conditions of a country. A proper implementation of agrarian policies can enhance the social and economic life of rural people. A universally accepted policy can facilitate land reforms in developing countries. The techniques and procedures should be suitably implemented while adopting land acquisition and redistribution of a particular area.

Sometimes due to lack of sufficient marketing and credit facilities, agrarian reform fails to prosper. Development of co-operatives can be treated as one of the effective solutions of this specific problem.

The problems of industrialised countries have impeded the proper implementation of agrarian reforms. The problems are discussed in detail in the following sections.

#### Agrarian Reform: Problems and Present Scenario in Industrial Countries

Agrarian structural variances exist in many industrial countries of the world that limit the growth of agrarian system as well as the socioeconomic development of those countries. The major problems of the industrial countries relating to the implementation of agrarian reforms are as follows:

- ◆ **Negligence:** The significance of agrarian reforms in industrial countries is less than other developing countries of the world. This is because of the fact that in industrial countries, industries get more importance than other sectors. Industrial countries have enough necessary technologies, instruments and institutions to implement agrarian reforms. Despite having these advantages of implementing agrarian reform step by step, industrial countries neglect this idea of initiating agrarian reform primarily because of political pressures.
- ◆ **Mechanisation:** Rapid growth of mechanisation impede the growth of agrarian reforms in industrial countries.
- ◆ **Inter-dependence:** With the introduction of new technologies, industrial countries started to use fertilizers, pesticides and high-quality seeds. All these farm inputs are the products of industries. The agricultural sector required to purchase these firm inputs from industrial sectors and eventually promoted interdependence. Interdependence restricted the agrarian system to reform independently.
- ◆ **Urbanisation** also impeded the growth of agrarian reform in industrial countries.

In most of the industrial countries, industrialisation started to develop much before the implementation of agrarian system. This was because at the beginning of industrialisation, the population density was poor leading to low dependence on the agricultural sector for food or other items.

Common properties are resources, which are accessible to the whole community or village to which no individual has exclusive ownership or property right. The common property resources very much subjected to individual use but no individual can own position over this, rather it is used by a number of stake holders who have independent right to use.

The significance of common property resources lies in their capacity to meet the basic needs of the villagers. If utilised properly, the common properties resources could generate substantial income for the villagers. However, the main hurdle in this is the absence of ownership feeling among the villager. Every one's property becomes no one's property and to break this feeling the ownership of the common property should be handed over to a people's institution which have social acceptance and legal reorganisation. The success of common property management through people's institution is reflected through Haldikundi village committee.

Land rights and related resource rights are of fundamental importance to the world's indigenous people for a range of reasons, including: the religious significance of the land, self-determination, identity and economics.

### 33.10 Access/Tenure Regimes Governing Forest Areas, Protected Areas and Sanctuaries

A common-pool resource (CPR), also called a common property resource, is a type of good consisting of a natural or human-made resource system (e.g. an irrigation system or fishing grounds), whose size or characteristics makes it costly, but not impossible, to exclude potential beneficiaries from obtaining benefits from its use. Unlike pure public goods, common pool resources face problems of congestion or overuse, because they are subtractable. A common-pool resource typically consists of a core resource (e.g. water or fish), which defines the stock variable, while providing a limited quantity of extractable fringe units, which defines the flow variable. While the core resource is to be protected or entertained in order to allow for its continuous exploitation, the fringe units can be harvested or consumed.

A common property regime is a particular social arrangement regulating the preservation, maintenance, and consumption of a common-pool resource. The use of the term "common property resource" to designate a type of good has been criticised, because common-pool resources are not necessarily governed by common property regimes. Examples of common-pool resources include irrigation systems, fishing grounds, pastures, forests, water and the atmosphere. A pasture, for instance, allows for a certain amount of grazing to occur each year without the core resource being harmed. In the case of excessive grazing, however, the pasture may become more prone to erosion and eventually yield less benefit to its users. Because their core resources are vulnerable, common-pool resources are generally subject to the problems of congestion, overuse, pollution, and potential destruction unless harvesting or use limits are devised and enforced.

The use of many common-pool resources, if managed carefully, can be extended because the resource system forms a positive feedback loop, where the stock variable continually

regenerates the fringe variable as long as the stock variable is not compromised, providing an optimum amount of consumption. However, wanton consumption leads to deterioration of the stock variable, thus disrupting the flow variable for good.

Common-pool resources may be owned by national, regional or local governments as public goods, by communal groups as common property resources, or by private individuals or corporations as private goods. When they are owned by no one, they are used as open access resources.

### 33.11 Conclusion

Tenure is the act, right, manner or term of holding something. In terms of property it refers to the way in which a property is owned. It is not just ownership but a collection of rights and responsibilities to a range of renewable and non-renewable resources. Tenure systems pertaining to a property may range from a farmland, forest, grazing land, river, wildlife, fishery, or any other resource. Each resource has a particular physical quality and a technical constraint on its use.

#### Land Tenure

Land Tenure is a political, economic social and legal institutional structure that determines:

- ◆ How individuals and groups secure access to land and manage land resources. The resources include trees, minerals, pasture, and water.
- ◆ Who can hold and use these resources, for how long and under what conditions. Land tenure may also have both spatial and temporal dimensions and are typically defined through statutory or customary law. Normally, the sovereign holds the land in its own right. All private owners are either its tenants or sub-tenants, but their rights are as good as ownership rights. This system is prevalent in India as well. The term “tenure” is used to signify the relationship between tenant and lord, not the relationship between tenant and land.

#### Land policy

Land Policy is the tool employed to outline a set of goals and measures for meeting objectives related to land: tenure, use, management, property rights and administration, and administrative structures. Land policy is formulated keeping in mind the development goals. It is linked to various other policies such as agriculture policy, housing policy, urban policy, rural policy, forest policy, etc. It concerns itself with sustainable and optimum use of resources.

#### Land management

Land Management is the process of managing the use and development of land resources in a sustainable way, in urban, suburban, rural as well as other lands. Land resources are used for a variety of purposes, which interact, and may compete with one another. Therefore, it is desirable to plan and manage all uses in an integrated manner.

# INTRODUCTION OF ENVIRONMENT IMPACT ASSESSMENT (EIA)

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### 34.1 Introduction

Environmental Impact Assessment (EIA) is the process by which the anticipated effects on the environment of a proposed development or project are measured. If the likely effects are unacceptable, design measures or other relevant mitigation measures can be taken to reduce or avoid those effects. EIA is used to identify and assess the environmental and social impacts of any proposed major activity (project, plan, programme or policy)<sup>1</sup> prior to its implementation. It aims to predict environmental impacts at an early stage in project planning and design, find ways and means to reduce adverse impacts, shape projects to suit the local environment and present the predictions and options to decision-makers. The document from this process is called an Environmental Impact Statement (EIS).

As we begin the introduction of EIA it is important to understand how do we define and perceive the word environment. Essentially the word environment is meant to include the following:

- ◆ Land, water and air, including all layers of the atmosphere;
- ◆ All organic and inorganic matter and living organisms;
- ◆ The interacting natural systems that include these components; and

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<sup>1</sup> For the sake of brevity, hereafter, the term 'project' will be used in place of 'any major activity'. The term must be deemed to include 'any project, plan, programme or policy'.

- ◆ The social economic and cultural conditions that influence the lives of people and communities.

An impact on environment is any change in the biophysical and social environment caused by or directly related to a former, on-going or proposed activity. The biophysical component addresses all living organisms and the natural physical environment that sustains them, which shall include terrestrial, aquatic and atmospheric elements. The social component deals with human health, safety and their general well-being.

EIA is anticipatory, participatory, and systematic in nature and relies on multidisciplinary input. It is a means to assess the present state of health of ecosystem where project would be executed and to work out the possible impact it could bring in course of the time. By using EIA, both environmental and economic benefits can be achieved, such as reduced cost and time of project implementation and design, avoiding treatment/clean-up costs and impacts of laws and regulations.

The phrase EIA is taken from Sec. 102 (2) of the National Environmental Policy Act (NEPA), 1969, USA. In many European countries, it came into vogue with the introduction of the concept of sustainable development after the World Commission of Environment in 1987. EIA has now become a requirement in many countries. In India, EIA came into existence around 1978-79; though, it was made mandatory only in 1994.

EIA has two roles, namely, legal and educational. The legal role of EIA ensures that development projects such as a housing estate, a road/bridge or some such construction project has a minimal impact on the environment in its entire 'lifecycle', i.e. during design, construction, use, maintenance, and demolition. Many countries now have laws stipulating that unless an EIA study is carried out (particularly for large infrastructure projects); permission for construction will not be granted by the local authority. The educational role of EIA is equally important. EIA facilitates in educating everyone involved - professionals and users included, of the potential environmental impacts of a project.

Various guidelines are available on EIA. The main steps are as follows:

- ◆ Preliminary activities include the selection of a coordinator for the EIA and the collection of background information. This should be undertaken as soon as a project has been identified.
- ◆ Impact identification involves a broad analysis of the impacts of project activities with a view to identifying those which are worthy of a detailed study.
- ◆ Baseline study entails the collection of detailed information and data on the condition of the project area prior to the project's implementation.
- ◆ Impact evaluation should be done whenever possible in quantitative terms and should include the working-out of potential mitigation measures. Impact evaluation cannot proceed until project alternative has been defined, but should be completed early enough to permit decisions to be made in a timely fashion.

- ◆ Assessment involves combining environmental losses and gains with economic costs and benefits to procedure a complete account of each project alternative. Cost-benefit analysis should include environmental impacts where these can be evaluated in monetary terms.
- ◆ Documentation is prepared to describe the work done in the EIA. A working document is prepared to provide clearly stated and argued recommendations for immediate action. The working document should contain a list of project alternative with comments on the environmental and economic impacts of each.
- ◆ Decision-making begins when the working document reaches the decision maker, who will either accept one of the project alternatives, request further study or reject the proposed action altogether.
- ◆ Post audits are made to determine how close to reality the EIA predictions were.

## 34.2 Need of EIA

Every anthropogenic activity has some impact on the environment. More often it is harmful to the environment than benign. However, mankind as it is developed today cannot live without taking up these activities for his food, security and other needs. Consequently, there is a need to harmonise developmental activities with the environmental concerns. EIA is one of the tools available with the planners to achieve the above-mentioned goal.

It is desirable to ensure that the development options under consideration are sustainable. In doing so, environmental consequences must be characterised early in the project cycle and accounted for in the project design.

The objective of EIA is to foresee the potential environmental problems that would arise out of a proposed development and address them in the project's planning and design stage. The EIA process should then allow for the communication of this information to:

- a) The project proponent;
- b) The regulatory agencies; and,
- c) All stakeholders and interest groups.

EIA integrates the environmental concerns in the developmental activities right at the time of initiating for preparing the feasibility report. In doing so, it can enable the integration of environmental concerns and mitigation measures in project development. EIA can often prevent future liabilities or expensive alterations in project design.

EIA is integral part of environmental planning and management. It starts from the planning stage of the project and is carried out throughout its implementation, operation and final closure. For example, establishment of an industry requires proper choice of location and technology at the planning stage to keep the environmental damage well within the acceptable limit like minimum deforestation, displacement of people and pollution.

Similarly, care has to be taken to abate any environmental damages like air and noise pollution, insanitation and social problems due to migrant labour during the construction phase. When the factory operates, all steps are required to be taken for prevention and control of air, water and soil pollution by technology control and installation of appropriate effluent or emission treatment plant. Finally, the unavoidable solid waste generated from the industry (e.g. mine over burden and fly ash) has to be disposed of in an environmentally benign manner like properly rehabilitating the disposal site. Similar land rehabilitation is required when the industry is finally closed and dismantled after completion of its useful life (e.g. mine closure).

Any development project is taken up with the aim of providing net economic and social benefits to the people. Economic benefits like increased production of goods and services, increased per capita income, foreign exchange earnings etc., are tangible ones. There are also some negative socio-economic costs of the project, at least on some section of population, like loss of livelihood of the project effected people and increased disparity of incomes which are not easily noticed and not taken into consideration in the decision-making process. Simultaneously the project can have both beneficial and adverse environmental impacts. The negative impact includes- pollution, deforestation, soil erosion etc. The losses incurred on the account of the adverse environmental and social impacts are intangible ones. A project should be decided on the basis of cost benefit analysis, taking into consideration both tangible and intangible losses and gains.

A few decades ago, environmental impacts were not taken into consideration while deciding upon a project; only the techno-economic feasibility was considered relevant. Today it is felt that the techno economic feasibility should be integrated with the environmental compatibility to make the developmental project sustainable. An EIA serves the purpose of the above notion. EIA is a part of the decision-making process. It must be therefore, carried out before the final decision is taken about any project. Hence it cannot be considered as a post decision activity. If it is considered merely as only a regulatory requirement by the project proponents, such an attitude most definitely defeats the very purpose of EIA.

Economic, social and environmental change is inherent to development. While development aims to bring about positive change it can lead to conflicts. In the past, the promotion of economic growth as the motor for increased well-being was the main development thrust with little sensitivity to adverse social or environmental impacts. The need to avoid adverse impacts and to ensure long term benefits led to the concept of sustainability. This has become accepted as an essential feature of development if the aim of increased well-being and greater equity in fulfilling basic needs is to be met for this and future generations.

In order to predict environmental impacts of any development activity and to provide an opportunity to mitigate against negative impacts and enhance positive impacts, the environmental impact assessment (EIA) procedure was developed in the 1970s. An EIA may be defined as:

a formal process to predict the environmental consequences of human development activities and to plan appropriate measures to eliminate or reduce adverse effects and to augment positive effects.

EIA based on the definition above has three main roles:

- a) to predict problems,
- b) to find ways to avoid them, and
- c) to enhance positive effects.

The third function is of particular importance. The EIA provides a unique opportunity to demonstrate ways in which the environment may be improved as part of the development process. The EIA also predicts the conflicts and constraints between the proposed project, program or sector plan and its environment. It provides an opportunity for mitigation measures to be incorporated to minimise problems. It enables monitoring programmes to be established to assess future impacts and provide data on which managers can take informed decisions to avoid environmental damage.

EIA is a management tool for planners and decision-makers and complements other project studies on engineering and economics. Environmental assessment is now accepted as an essential part of development planning and management. It should become as familiar and important as economic analysis in project evaluation.

The aim of any EIA should be to facilitate sustainable development. Beneficial environmental effects are maximised while adverse effects are ameliorated or avoided to the greatest extent possible. EIA will help select and design projects, programmes or plans with long term viability and therefore improve cost effectiveness.

It is important that an EIA is not just considered as part of the approval process. Volumes of reports produced for such a purpose, which are neither read nor acted upon, will devalue the process. A key output of the EIA should be an action plan to be followed during implementation and after implementation during the monitoring phase. To enable the action plan to be effective the EIA may also recommend changes to laws and institutional structures.

### 34.3 Definition of EIA

Environmental Impact Assessment (EIA) is a policy and management tool for both planning and decision making. EIA assists to identify, predict and evaluate the foreseeable environmental consequences of proposed development projects, plans and policies. The outcome of an EIA study assists the decision-maker and the general public to determine whether a project should be implemented and in what form. EIA does not make decisions, but it is essential for those who do.

Environmental Impact Assessment (EIA) refers to understanding of the present status of the environmental impacts and a study of how to manage the same. It is often an opinion that an EIA should customarily examine or look into only the possible negative

consequences of the developmental project on the environment. Any positive issues emerging from the development are taken as stated by the project proponent or the developer. The EIA is however not restricted or biased to the examination and mitigation of negative impacts alone. The EIA can also look into the possible positive issues due to the developmental projects and explore or suggest ways of enhancing them further by carrying out modifications in the project.

There are many definitions of EIA. The following are the sample of some of these definitions which indicate the nature of the process, including;

*“an assessment of impacts of a planned activity on the environment” (United Nations)*

*“EIA is the systematic process of identifying the future consequences of a current or proposed action” (IAIA)*

Examples of different definitions of EIA:

- ◆ “an assessment of impacts of a planned activity on the environment” (United Nations)
- ◆ “the process by which information about the environmental effects of a proposed activity is collected, analysed and presented to decision-makers” (Institute of Chemical Engineering, UK, 1994)
- ◆ “a technique and a process by which information about environmental effects of a project is collected, both by the developer and from other sources, and taken into account by the planning authority in forming the judgment on whether the development should proceed” (Department of Environment, UK, 1989)
- ◆ “EIA is the systematic, reproducible and interdisciplinary evaluation of the potential effects of a proposed action and its practical alternatives on the physical, biological, cultural and socio-economic attributes of a particular geographical area” (USEPA, 1993)
- ◆ “a procedure for assessing the potential environmental impacts of a project before it is built, so that these impacts can be properly considered during the decision-making process and so that mitigative measures for detrimental impacts can be defined”
- ◆ “a tool to use in integrated planning of development proposals, policies and programmes” (Sadar et al., 1994)
- ◆ “an activity which identifies, predicts, interprets and communicates information, and proposes ameliorative measures, about impacts of a proposed action or development proposal on human health and the well-being of the ecosystem upon which human survival depends” (Sadar et al., 1994)
- ◆ “EIA is the systematic process of identifying the future consequences of a current or proposed action” (IAIA).

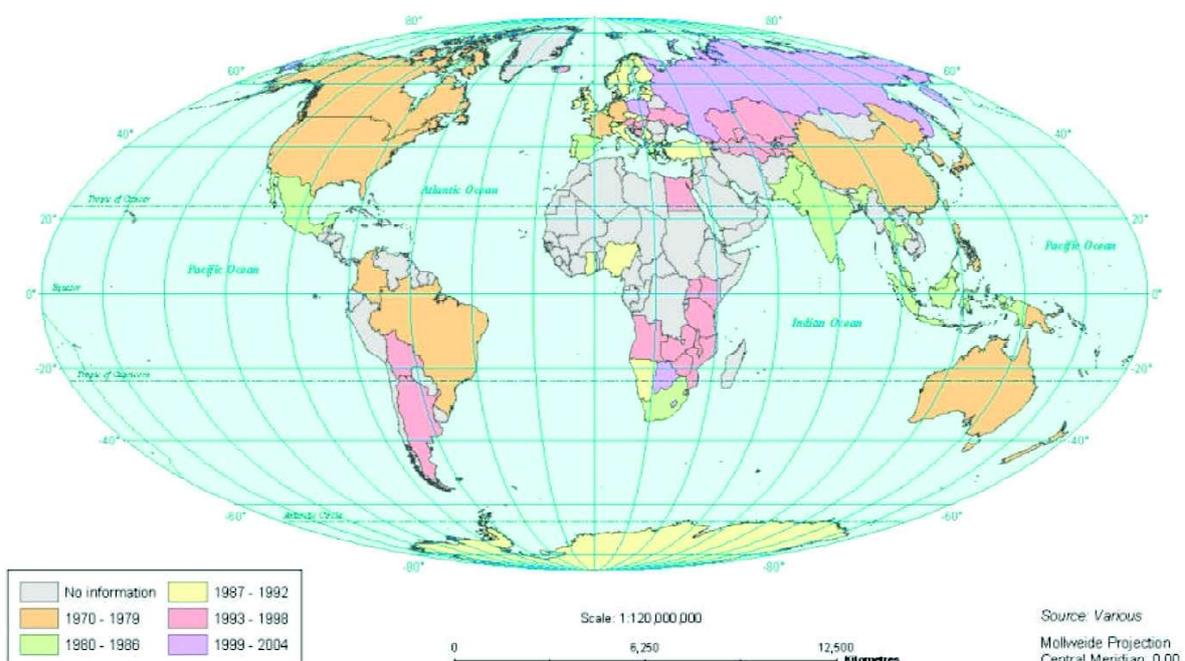
From all the above definitions a more holistic definition can be drawn which is:

A technical exercise conducted to evaluate the environmental implications of projects, policies, and programmes along with operational procedures and the communication of the results of such an exercise at a stage when it can materially affect the decision of those responsible for sanctioning of proposals.

## 34.4 History of EIA

Following the Stockholm conference in 1972 there was a general move globally towards policy making in the developed economies. In 1970's environmental legislation was introduced in many countries. The most landmark environmental legislation was the National Environmental policy Act (1969) enacted by USA which took its lead from the famous book- 'Silent Spring' by Rachel Carson, published in 1962, regarding the use of pesticides. NEPA is being considered as a milestone and watershed in the environmental legislation for the reason that it cuts across cross sectoral issues and made EIA known to the rest of the world.

Following that many countries in the world started implementing the Environmental legislation and project level EIA. In India the first comprehensive Act of environment was put in place only in year 1986 after we were hit by Bhopal Gas tragedy that took thousands of human lives. Figure 1 below shows the world cover of EIA legislation.



**Figure 1: World cover of project level EIA legislation**

An EIA is primarily an early warning system. The very purpose of conducting EIA is to ensure that important and significant environmental, ecological and social problems are foreseen and appropriate measures are taken at an early stage in the project's planning and design. To achieve this, the assessment should provide information on the

environmental, social and economic benefits of proposed activities which should then be presented clearly and systematically to decision makers. After reading an EIA report, the project proponents, project designers can bring in desired changes in the project planning and design process without causing inadvertent environmental impacts and at the same time bringing in positive impacts on environment and society. An EIA process can greatly influence the size of the project, the site and technology to be employed.

So, the EIA must help the project proponent in identifying the core sources of impacts from the project activities and recognising the environmental components which are critical to the change or the impacts.

It must help the concerned stake holders to predict the likely environmental impacts of projects on the identified environmental components either using quantitative or qualitative or semi-quantitative methods.

It must also help the concerned stakeholders to find measures to minimise the severe impacts and at the same time create more and more positive contribution to the project by bringing in changes in design, capacity, technology or simply looking at alternative sites.

The EIA must present the important findings in terms of impact identification, prediction and mitigation plans and measures to the decision makers and other stake holders.

Despite differences in individual EIA systems throughout the world, the EIA process shares certain common aims:

- ◆ **to provide decision-makers with analysis of the total environment** so that decisions can be made based on as nearly complete and balanced information as possible;
- ◆ **to assess and present intangible/unquantifiable effects** that are not adequately addressed by cost/benefit analysis and other technical reports;
- ◆ **to provide information to the public** on a proposal;
- ◆ **to formalise the consideration of alternatives to a proposal** being considered, in order that the least environmentally harmful means of achieving the given objective can be chosen;
- ◆ **to improve the design of new developments and safeguard the environment** through the application of mitigation and avoidance measures.

**Reasons for Using EIA** - EIA has been developed as a result of the failure of traditional project appraisal techniques to account for environmental impacts. Many development projects in the past were designed and constructed in isolation from any consideration of their impacts on the environment, resulting in:

- ◆ higher costs,
- ◆ failure of projects,
- ◆ significant environmental change, and
- ◆ negative social effects.

## 34.5 Misconceptions about EIA and Counter Arguments

The introduction of EIA has encountered resistance on the part of many planners and engineers, who have seen it as an unneeded change to traditional practices, in spite of its intended role in improving the project planning process. EIA has been severely criticised in some parts of the developing world as being inappropriate for application there. Some of these criticisms include:

**a) “EIA is too expensive”**

This is not true. Costs of EIA are commonly around 1%, sometimes up to 5% in complex cases of project costs, often within normal variability of project costs. In contrast, EIA often results in cost saving through reduced changes to the project at later stages, or through identification of easier and more efficient ways to meet project goals. EIA should be carried out efficiently, just like any other part of the planning process.

**b) “EIA is just an add-on and occurs too late to do any good”**

EIA certainly has less value if done too late in the project cycle; it must be done early enough so that results can be incorporated into the detailed design. If EIA is done too late, costs for redesign of the project can be high, or the EIA is ignored.

**c) “EIA delays projects”**

If properly phased, EIA should no more delay projects than any part of the planning process. It should be done in parallel with other activities.

**d) “EIA is too complex”**

This is not true. EIA is a simple process. Sometimes, however, the potential impacts can be complex and therefore difficult to quantify. The degree to which you must investigate these questions as part of the planning process must be relative to the overall significance of the impacts.

**e) “EIA doesn’t produce useful results”**

Often this has been true. This can be due to lack of a practical focus, and/or poor training of practitioners. When carried out properly, EIA is a valuable part of project planning.

**f) “EIA will be misused to stop development”**

There have been cases where EIA has been misused to stop development. However, this does not invalidate the use of EIA; it indicates a problem with how it is being coordinated. A properly carried out EIA process is much more likely to generate support for development.

**g) “We’re too poor to afford EIA”**

This is never true. No country is “too poor” to do its planning properly. Bad planning means failing projects, and these are often projects paid for by the country through

development loans. Bad planning means lack of sustainability. Bad planning means extra costs to society. Poor countries cannot afford such costs. May be wealthy, developed countries can arguably afford to waste and destroy resources, but poor ones definitely cannot. EIA is therefore even more important for developing countries than for developed ones.

### EIA Core Values

#### ◆ Sustainability

The important thing that one needs to keep in mind is that the EIA must lead to sustainable development. The options generated in any EIA in form of mitigation strategies must be sustainable in nature.

#### ◆ Integrity

Integrity means the integrity of the EIA report in terms of the finding and validity of data that has been collected. It is of paramount significance that the information is collected from the site where project is being developed and appropriate field studies are conducted to generate the environmental, ecological and social baselines.

#### ◆ Utility

The entire exercise of EIA must have the practical utility in the sense that it can be effectively used by the decision makers.

Basic Principles of EIA should be:

**Purposive** - the process should include informed decision making and result in appropriate levels of environmental protection and community well-being. EIAs conducted without well-defined purposes usually lead to poor and ill-informed decision making.

**Rigorous** - the process should apply “best practicable” science, employing methodologies and techniques appropriate to address the problems being investigated. If improper methodologies are being used it will result in faulty data which will be of no use as mitigation planning will not be possible with the improper data.

**Practical** - the process should result in information and outputs which assist with problem solving and are acceptable to and able to be implemented by proponents. The alternatives suggested as a part of environment management plan and mitigation plans must be doable and achievable by the proponent and the progress of the same should also be measurable.

**Relevant** - the process should provide sufficient, reliable and usable information for development planning and decision making.

**Cost-effective** - the process should achieve the objectives of EIA within the limits of available information, time, resources and methodology.

**Efficient** - the process should impose the minimum cost burdens in terms of time and finance on proponents and participants consistent with meeting accepted requirements and objectives of EIA.

**Focused** - the process should concentrate on significant environmental effects and key issues; i.e., the matters that need to be taken into account in making decisions.

**Adaptive** - the process should be adjusted to the realities, issues and circumstances of the proposals under review without compromising the integrity of the process. Iterative and incorporating lessons should be learned throughout the proposal's life cycle.

**Participative** - the process should provide appropriate opportunities to inform and involve the interested and affected publics, and their inputs and concerns should be addressed explicitly in the documentation and decision making.

**Interdisciplinary** - the process should ensure that the appropriate techniques and experts in the relevant bio-physical and socio-economic disciplines are employed, including use of traditional knowledge as relevant.

**Credible** - the process should be carried out with professionalism, rigor, fairness, objectivity, impartiality and balance, and be subject to independent checks and verification.

**Integrated** - the process should address the interrelationships of social, economic and biophysical aspects.

**Transparent** - the process should have clear, easily understood requirements for EIA content; ensure public access to information; identify the factors that are to be taken into account in decision making; and acknowledge limitations and difficulties.

**Systematic** - the process should result in full consideration of all relevant information on the affected environment, of proposed alternatives and their impacts, and of the measures necessary to monitor and investigate residual effects.

There are eight guiding principles that govern the entire process of EIA and they are as follows:

- ◆ **Participation:** An appropriate and timely access to the process for all interested parties.
- ◆ **Transparency:** All assessment decisions and their basis should be open and accessible.
- ◆ **Certainty:** The process and timing of the assessment should be agreed in advanced and followed by all participants.
- ◆ **Accountability:** The decision-makers are responsible to all parties for their action and decisions under the assessment process.
- ◆ **Credibility:** Assessment is undertaken with professionalism and objectivity.
- ◆ **Cost-effectiveness:** The assessment process and its outcomes will ensure environmental protection at the least cost to the society.

- ◆ **Flexibility:** The assessment process should be able to adapt to deal efficiently with any proposal and decision-making situation.
- ◆ **Practicality:** The information and outputs provided by the assessment process are readily usable in decision making and planning.

## 34.6 EIA Benefits and Flaws

EIA is considered as a project management tool for collecting and analysing information on the environmental effects of a project. As such, it is used to:

- ◆ identify potential environmental impacts,
- ◆ examine the significance of environmental implications,
- ◆ assess whether impacts can be mitigated,
- ◆ recommend preventive and corrective mitigating measures,
- ◆ inform decision makers and concerned parties about the environmental implications, and
- ◆ advise whether development should go ahead.

EIA generates huge benefits in selection of project location, process, design, development actions, and decision-making. However, in the current practice of EIA there are a number of flaws, shortcomings and deficiencies. Table 1, below, summarises apparent benefits and flaws of the EIA.

**Table 1: EIA benefits and flaws**

Benefits	Flaws
Provides systematic methods of impact assessment	Time-consuming
Estimates the cost/benefit trade-off of alternative actions	Costly
Facilitates the public participation	Little public participation in actual implementation
Provides an effective mechanism for <ul style="list-style-type: none"> <li>◆ coordination</li> <li>◆ environmental integration</li> <li>◆ negotiations</li> <li>◆ feed back</li> </ul>	Unavailability for reliable data <i>(mostly in developing countries)</i>
Top-level decision making	Too focused on scientific analysis <i>(sometimes)</i>
Triggers an institutional building	Poor presentation of EIA report <i>(bulky volumes, scientific explanation, difficult to understand)</i>
Achieve a balance between the impact of developmental and environmental concern	Compliance monitoring after EIA is seldom carried out

### **Who is responsible for conducting EIA?**

EIAs are generally the primary responsibility of the project proponent and are prepared with the help of external consultants or institutions i.e., the EIA practitioners. The institutions can be educational and research institutions having prerequisite capability to conduct EIA with the help of inter-disciplinary experts. In certain specific cases, an independent commission is responsible for ensuring quality control throughout the implementation of the impact assessment, for setting appropriate terms of reference and / or for the external review as decided by the government. The EIA study should be carried out by a multidisciplinary team comprising of experts from all streams of specialisation relevant to the concerned EIA and Terms of reference. This may constitute civil engineers, water supply and sanitation engineers, planners, chemists, life scientists (Botanist, Zoologist, Wildlife experts, Geologist to name a few), socio-economists and health practitioners.

The agency responsible for receiving the impact assessment report and taking any subsequent action i.e., the government, will decide how the study is to be carried out and how the results should be used in the decision-making process. The institutional structures and agencies responsible for the management and implementation of EIA vary amongst different countries, reflecting different political, economic and social priorities. Mostly, they include local government agencies, NGOs, research institutions and affected groups feeding into a specialist environmental unit within the implementing agency.

Apart from all these agencies, the general public is also involved in the process of EIA. Ideally, public opinion should be obtained through public hearings as provisioned in the EIA laws for the purpose of discussing the impacts of the project and as project is perceived by the local people. Public participation, as a component of EIA, is mandatorily practiced in only a few countries. In India, there is a well-defined norm for the conduct of public hearing for almost all categories of the project. Public hearing in India has been in practice since 1997 after the first public hearing notification was issued by the Government of India.

### **When should the EIA be conducted?**

The EIA needs to be carried out in way so that it provides clear information to those responsible for decision making at every stage of the project planning. It is of paramount significance to plan the EIA so that it covers all the important elements that would be affected by seasonality. For example, if the impact of a pollutant has to be studied in a given area, it is important to know the wind condition in terms of wind direction and wind velocity. It is also important to know which the windward and leeward areas are and how across various seasons the impact can vary. So, if the EIA is conducted only in one season it will probably give a biased picture of impacts. EIA can be done in some sequence i.e., it may be conducted after the engineering / economic planning stage in the project cycle. Thus, the EIA report would provide the required mitigation measures in order to implement the project in an environmentally responsible manner. The other

way could be to parallel conduct environmental planning (which includes the EIA study) and engineering/ economic planning to emerge with a suitable project design and alternative together with required mitigation measures. The goal however, is to integrate the environmental aspects in the project cycle considering EIA as a management tool. Such an integration of EIA into the Project planning Cycle would help maximise its effectiveness and minimise delays in implementation of project.

The major benefit of using EIA in project planning is to prevent avoidable losses of environmental resources and time. A well prepared EIA incorporated into planning and design can save the developer and regulatory agency, valuable time and expense. If the EIA is performed early enough to be considered during the decision-making phase, then delays in construction and operation owing to government regulatory procedures can be minimised. Improper planning or design that will lead to unacceptable levels of environmental deterioration may require costly rectification, remediation or replacement.

Operating Principles of EIA - There are certain operating principles on which the EIA is based, and to get a comprehensive picture of impacts, it is important that EIA is conducted in accordance with these principles.

EIA should be applied:

- ◆ to all proposals likely to cause potentially significant adverse impacts or add to actual or potentially foreseeable cumulative effects;
- ◆ so that the scope of review is consistent with the size of the proposal and commensurate with the likely issues and impacts;
- ◆ to provide timely and appropriate opportunities for public and stakeholder involvement, with particular attention given to indigenous peoples and other vulnerable minorities whose cultural traditions and way of life may be at risk; and
- ◆ in accordance with the legislation, procedure and guidance in force and with reference to international standards of EIA good practice.

EIA should be undertaken:

- ◆ throughout the project cycle, beginning as early as possible in the pre-feasibility stage;
- ◆ with explicit reference to the requirements for decision-making and project approval and authorisation consistent with the application of 'best practicable' science and mitigation techniques;
- ◆ in accordance with proposal-specific terms of reference, which should include clearly defined tasks, responsibilities, requirements for information and agreed timelines for their completion; and
- ◆ to gain the inputs and views of all those affected by or interested in the proposal and/or its environmental impacts.

EIA should address, as necessary and appropriate:

- ◆ all relevant environmental impacts, including land use, social, cultural, economic, health and safety effects;
- ◆ cumulative effects and area-wide, ecosystem-level and global changes that may occur as a result of the interaction of the proposal with other past, current or foreseeable activities;
- ◆ alternatives to the proposal, including design, location, demand and activity alternatives;
- ◆ mitigation measures for each of the main impacts identified; and
- ◆ sustainability considerations, including the effects of depletion of non-renewable resources, of exceeding the regenerative and assimilative capacity of renewable resources and of reduction of biological diversity, taking account of relevant international agreements and commitments.

EIA should result in:

- ◆ Systematic identification of the views and inputs of those consulted, including the balance of opinion on major issues and areas of agreement and disagreement;
- ◆ Comparison of the impacts of the main alternatives considered with an environmental justification for the preferred option;
- ◆ Best estimate prediction and evaluation of the potentially significant residual effects that cannot be mitigated;
- ◆ Feasible, cost-effective measures to mitigate the main impacts identified (often called an environmental management plan);
- ◆ Preparation of an EIA report that presents this information in form that is clear, understandable and relevant for decision-making, noting any important qualifications for the predictions made and mitigation measures proposed; and
- ◆ Resolution of problems and conflicts during the EIA process to the extent this is possible.

EIA should provide the basis for:

- ◆ Informed decision-making and project approvals, in which the terms and conditions are clearly specified and implemented;
- ◆ Design of environmentally sound and acceptable projects that meet health and environmental standards and resource management objectives;
- ◆ Appropriate follow-up, including monitoring, management and auditing, to check for unforeseen impacts or mitigation measures that do not work as intended; and
- ◆ Future improvements in EIA process and practice, drawing on the information from follow up activities.

### What is environmental impact?

After discussing the fundamentals of EIA, presuming that you have a thorough understanding of the issues, let us now try and define what the environmental impacts are. This will help you in developing a robust understanding of impacts and how they should be classified as EIA is being conducted.

An impact or effect can be described as the change in an environmental parameter, which results from a particular activity or intervention. The change is the difference between the environmental parameter with the project compared to that without the project. It is predicted or measured over a specified period and within a defined area.

The characteristics of environmental impacts vary. Typical parameters to be taken into account in impact prediction and decision-making include:

- ◆ Nature (positive, negative, direct, indirect, cumulative);
- ◆ Magnitude (severe, moderate, low);
- ◆ Extent/location (area/volume covered, distribution);
- ◆ Timing (during construction, operation, decommissioning, immediate, delayed, rate of change);
- ◆ Duration (short term, long term, intermittent, continuous);
- ◆ Reversibility/irreversibility;
- ◆ Likelihood (probability, uncertainty or confidence in the prediction); and
- ◆ Significance (local, regional, global).

**Nature of impact** - The most obvious impacts are those that are directly related to the proposal, and can be connected (in space and time) to the action that caused them. Typical examples of direct impacts are: loss of wetlands caused by agricultural drainage; destruction of habitat caused by forest clearance; relocation of households caused by reservoir impoundment; increased air particulate emissions caused by operation of a new power station, etc. Indirect or secondary impacts are changes that are usually less obvious, occurring later in time or further away from the impact source. Examples of these types of impacts are: the spread of malaria as a result of drainage schemes that increase standing water and thereby create new vector habitat; bio-accumulation and bio-magnification of contaminants in the food chain through take up of agricultural pesticides; and anxiety, stress and community disruption associated with increased traffic volumes and noise caused by road development.

Cumulative effects, typically, result from the incremental impact of an action when combined with impacts from projects and actions that have been undertaken recently or will be carried out in the near or foreseeable future. These impacts may be individually minor but collectively significant because of their spatial concentration or frequency in time. Cumulative effects can accumulate either incrementally (or additively) or interactively (synergistically), such that the overall effect is larger than the sum of the parts.

**Magnitude of impact**

Estimating the magnitude of the impact is of primary importance. Typically, it is expressed in terms of relative severity, such as major, moderate or low. Severity, as opposed to size, also takes account of other aspects of impact magnitude, notably whether or not an impact is reversible and the likely rate of recovery.

**Extent/location of impact**

The spatial extent or zone of impact influence can be predicted for site-specific versus regional occurrences. Depending on the type of impact, the variation in magnitude will need to be estimated; for example, alterations to range or pattern of species or dispersion of air and water pollution plumes. This is much easier for direct impacts but can be attempted for other types of impacts.

**Timing of impact**

Impacts arising from all of the stages of the life cycle of the project should be considered (i.e. during construction, operation and decommissioning). Some impacts will occur immediately, while others may be delayed, sometimes by many years. These impact characteristics should be noted in the EIA report.

**Duration of impact**

Some impacts may be short-term, such as the noise arising from the operation of equipment during construction. Others may be long-term, such as the inundation of land during the building of a reservoir. Certain impacts such as blasting may be intermittent, whereas others, such as electromagnetic fields caused by power lines, may be continuous. Impact magnitude and duration classifications can be cross-referenced; for example, major but short term (less than one year), low but persistent (more than 20 years).

**Significance of Impact**

The evaluation of significance at this stage of EIA will depend on the characteristics of the predicted impact and its potential importance for decision-making. Significance is usually attributed in terms of an existing standard or criteria of permissible change, for example as specified in a standard, policy objective or plan.

## 34.7 Conclusion

Let us sum up by re-examining the key features of EIA:

**◆ Screening**

Screening is done to decide whether an EIA is required for the proposed project or not.

**◆ Scoping**

Scoping helps to identify key issues and concerns of interested parties. It helps in identifying all the areas of ecological, environmental, health and social concerns that will probably get impacted by the project.

#### ◆ Identifying and evaluating impacts

This process helps in quantifying various impacts and also explores alternatives. In this section, as described earlier, the impacts must be identified in terms of which particular component of environment or ecosystem is impacted and how it is impacted. If water is getting polluted then which contaminants and how far the impact is going to travel; and how long the impact is going to last; and which are the receptor populations (including humans and other living organisms - animals and plant). It will be important to assess what part of the life cycle is impacted.

#### ◆ Mitigation

This is one of the most important part of EIA. It helps in developing and reviewing proposed action to prevent or minimise the potential adverse effects of the project.

#### ◆ Issuing environmental statements

EIA reports must include an Environmental Management Plan (EMP) or Action Plan to monitor the implementation phase of the project, plan, or program and provide for corrective actions - such action plans must have assured funding and be legally enforceable.

So, in the end we conclude with the following points:

#### ◆ A good EIA can

- 1) Modify and improve design of the project.
- 2) Ensure efficient resource use for a given project.
- 3) Enhance social aspects and thereby provide more benefits to the local people.
- 4) Identify measures for monitoring and managing environmental impacts.
- 5) Informed decision making by providing meaningful information.
- 6) Provide justification for a proposal of the project.

#### ◆ Benefits of an EIA

- 1) More environmentally sustainable design.
- 2) Better compliance with standards.
- 3) Savings in capital and operation costs.
- 4) Reduced time and costs for approval.
- 5) Avoids later plant adaptations.
- 6) Reduced health costs.
- 7) Increased project acceptance.

#### ◆ Delays are caused during EIA for the following reason

- 1) EIA is commenced too late.
- 2) TOR is poorly drafted.
- 3) EIA not managed to schedule.
- 4) EIA report not adequate.
- 5) Lack of technical data.

# EIA-INFRASTRUCTURE PROJECTS AND ENVIRONMENT

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### 35.1 The EIA Process

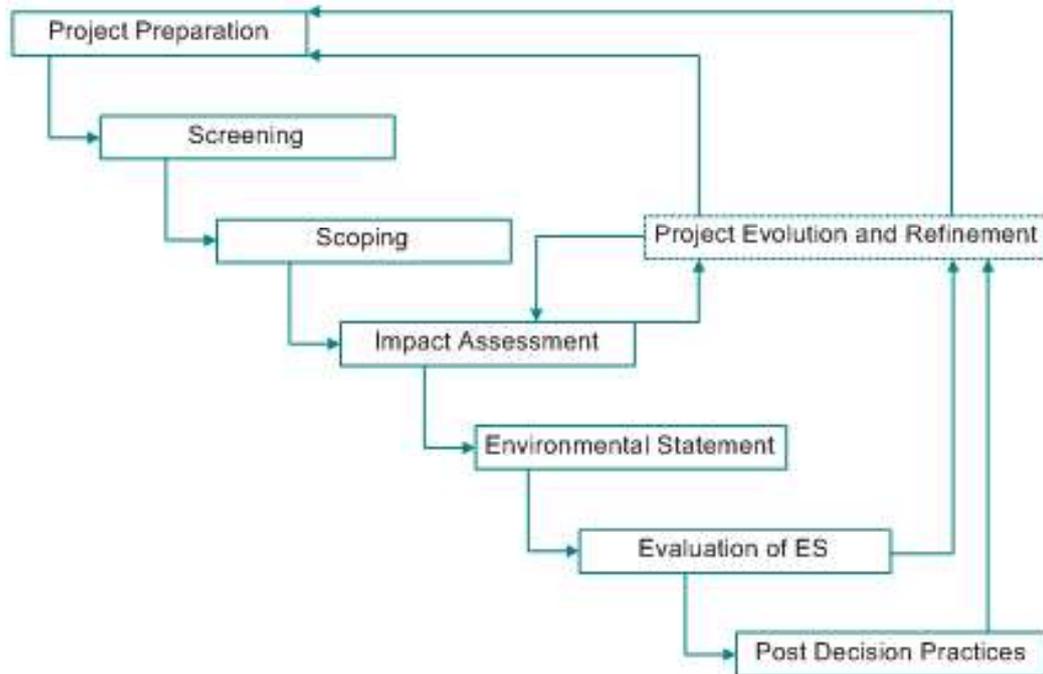
The EIA process is an iterative one containing many feedback loops to allow the development proposal to be continually refined. So, whilst the process of EIA follows a number of commonly accepted steps, it does not observe a linear pattern. In India the EIA processes is governed by the EIA notification 2006 issued by the Ministry of Environment and Forest, Government of India. The EIA process enables environmental factors to be given due weight, along with economic and/or social factors, when planning applications are being considered. The process should be an iterative one containing several feedback loops to allow the development proposal to be refined as a result of the findings of the process. Therefore, whilst the process of EIA follows a number of commonly accepted steps, it does not observe a strictly linear pattern. The following 7 main practical stages of the EIA process have been identified although it should be noted that these do not directly reflect the legal requirements of the regulations. The generalised EIA process as followed in most of the countries is summarised in the Figure 1.

There is a multitude of good practice and guidance on the EIA process and carrying out project specific EIA as part of an application for planning permission.

#### Proposal Identification

A large number of decisions are made at the project identification and proposal development stage. Decisions are made regarding:

- ◆ The location of the development,
- ◆ The land uses development will cater for, and
- ◆ The scale, layout and design of the development.



*Figure 1*

If environmental issues are considered at this point in the development process, impacts can be significantly reduced, and in some cases, removed altogether. This can benefit the developer by reducing the need for costly mitigation measures at a later stage.

### The Need for EIA

Every anthropogenic activity has some impact on the environment. More often it is harmful to the environment than benign. However, mankind as it is developed today cannot live without taking up these activities for his food, security and other needs. Consequently, there is a need to harmonise developmental activities with the environmental concerns. Environmental impact assessment (EIA) is one of the tools available with the planners to achieve the above-mentioned goal.

It is desirable to ensure that the development options under consideration are sustainable. In doing so, environmental consequences must be characterised early in the project cycle and accounted for in the project design.

The objective of EIA is to foresee the potential environmental problems that would arise out of a proposed development and address them in the project's planning and design stage. The EIA process should then allow for the communication of this information to:

- a) the project proponent;
- b) the regulatory agencies; and,
- c) all stakeholders and interest groups.

EIA integrates the environmental concerns in the developmental activities right at the time of initiating for preparing the feasibility report. In doing so it can enable the

integration of environmental concerns and mitigation measures in project development. EIA can often prevent future liabilities or expensive alterations in project design. MoEF passed Environment Impact Assessment (EIA) Notification on 14 September 2006.

- ◆ Screening
- ◆ Scoping
- ◆ Impact analysis
- ◆ Mitigation
- ◆ Reporting
- ◆ Review of EIA
- ◆ Decision-making
- ◆ Post monitoring

## 35.2 Indian Policies Requiring EIA

The environmental impact assessment in India was started in 1976-77 when the Planning Commission asked the then Department of Science and Technology to examine the river-valley projects from environmental angle. This was subsequently extended to cover those projects, which required approval of the Public Investment Board. These were administrative decisions, and lacked the legislative support. The Government of India enacted the Environment (Protection) Act on 23 May 1986. To achieve the objectives of the Act, one of the decisions that were taken is to make environmental impact assessment statutory. After following the legal procedure, a notification was issued on 27 January 1994 and subsequently amended on 4 May 1994, 10 April 1997 and 27 January 2000 making environmental impact assessment statutory for 30 activities. Further in year 2006 a major revision took place in the EIA notification and a new notification EIA notification 2006 was issued by Government of India. This is the principal piece of legislation governing environmental impact assessment in India.

### Requirements of prior Environmental Clearance (EC)

The projects or activities shall require prior environmental clearance from the concerned regulatory authority, which shall be either Central Government in the Ministry of Environment and Forests for matters falling under Category 'A' in the Schedule and at State level the State Environment Impact Assessment Authority (SEIAA) for matters falling under Category 'B', before any construction work, or preparation of land by the project management except for securing the land, is started on the project or activity:

- i) All new projects or activities listed in the Schedule to this notification.
- ii) Expansion and modernisation of existing projects or activities listed in the Schedule to this notification with addition of capacity beyond the limits specified for the concerned sector, that is, projects or activities which cross the threshold limits given in the Schedule, after expansion or modernisation.

iii) Any change in product-mix in an existing manufacturing unit included in Schedule beyond the specified range.

Under the new EIA notification, the Projects have been categorised in two categories namely A and B. All A category projects will be submitted to Central government for clearance and all B category projects will be submitted to respective state governments for clearance.

Note: The Government has released a new categorisation of industries based on their pollution load in year 2016. As per new categorisation, white industries, which are practically non-polluting will not require Environmental Clearance (EC) and Consent.

The new categories remove the lacuna of non-reflection of pollution of the industries and will give a clearer picture to everyone as 25 industrial sectors, which were not critically polluting were also, earlier, categorised as Red and creating wrong impression on everyone.

The Ministry of Environment, Forest and Climate Change (MoEF&CC) has developed the criteria of categorisation of industrial sectors based on the Pollution Index which is a function of the emissions (air pollutants), effluents (water pollutants), hazardous wastes generated and consumption of resources. For this purpose the references are taken from the Water (Prevention and Control of Pollution) Cess (Amendment) Act, 2003, Standards so far prescribed for various pollutants under Environment (Protection) Act, 1986 and Doon Valley Notification, 1989 issued by MoEF&CC. The Pollution Index, PI, of any industrial sector is a number from 0 to 100 and the increasing value of PI denotes the increasing degree of pollution load from the industrial sector. Based on the series of brain storming sessions among CPCB, SPCBs and MoEF&CC, the following criteria on 'Range of Pollution Index' for the purpose of categorisation of industrial sectors was finalised.

- ◆ Industrial Sectors having Pollution Index score of 60 and above - Red category
- ◆ Industrial Sectors having Pollution Index score of 41 to 59 - Orange category
- ◆ Industrial Sectors having Pollution Index score of 21 to 40 - Green category
- ◆ Industrial Sectors having Pollution Index score incl.& up to 20 - White category

The salient features of the 'Re-categorisation' exercise are as follows:

- ◆ Due importance has been given to relative pollution potential of the industrial sectors based on scientific criteria. Further, wherever possible, splitting of the industrial sectors is also considered based on the use of raw materials, manufacturing process adopted and in-turn pollutants expected to be generated.
- ◆ The Red category of industrial sectors would be 60.
- ◆ The Orange category of industrial sectors would be 83.
- ◆ The Green category of industrial sectors would be 63.
- ◆ Newly-introduced White category contains 36 industrial sectors, which are practically non-polluting.

- ◆ There shall be no necessity of obtaining the Consent to Operate for White category of industries. An intimation to concerned SPCB / PCC shall suffice.
- ◆ No Red category of industries shall normally be permitted in the ecologically fragile area / protected area.

The newly introduced White category of industries pertains to those industrial sectors which are practically non-polluting, such as biscuit trays, etc., from rolled PVC sheet (using automatic vacuum forming machines), cotton and woollen hosiers making (dry process only without any dyeing/washing operation), Electric lamp (bulb) and CFL manufacturing by assembling only, Scientific and mathematical instrument manufacturing, solar power generation through photovoltaic cell, wind power and mini hydel power (less than 25 MW).

The purpose of the categorisation is to ensure that the industry is established in a manner which is consistent with the environmental objectives. The new criteria will prompt industrial sectors willing to adopt cleaner technologies, ultimately resulting in generation of fewer pollutants. Another feature of the new categorisation system lies in facilitating self-assessment by industries as the subjectivity of earlier assessment has been eliminated.

#### State Level Environment Impact Assessment Authority

A State Level Environment Impact Assessment Authority called as the SEIAA is being constituted by the Central Government under the Environment (Protection) Act, 1986 comprising of three Members including a Chairman and a Member-Secretary to be nominated by the State Government or the Union territory Administration concerned.

The Member-Secretary shall be a serving officer of the concerned State Government or Union territory administration familiar with environmental laws.

The other two Members shall be either a professional or experts.

All decisions of the SEIAA shall be unanimous and taken in a meeting.

**Table 1: Difference between 1994 and 2006 EIA Notification**

EIA Notification 2006	EIA Notification 1994 (including amendments)
<p>Projects in Schedule-1 have been divided into two categories, Category A and B.</p> <p>Category A project will require clearance from Central Government (MEF). Category B will require clearance from State Government. However, the state government will first classify if the B project falls under B1 or B2 category. B1 projects will require preparation of EIA reports while remaining projects will be termed as B2 projects and will not require EIA report.</p>	<p>Proponent desiring to undertake any project listed in Schedule-1 had to obtain clearance from the Central Government.</p>

*Contd...*

<p>This has the potential of being a good move as decentralisation of power may speed up the project clearance process. However, it may be misused and there is an urgent need to build the capacity of the state regulators to deal with their new responsibilities.</p>	
<p>Well defined screening process with projects divided into two categories:</p> <p><b>Category A:</b> All projects and activities require EIA study and clearance from central government.</p> <p><b>Category B:</b> Application reviewed by the State Level Expert Appraisal Committee into two categories - B1 (which will require EIA study) and B2, which does not require EIA study.</p>	<p>In screening, the project proponent assesses if the proposed activity/ project falls under the purview of environmental clearance, then the proponent conducts an EIA study either directly or through a consultant</p>
<p>Scoping has been defined in the new Notification. However, the entire responsibility of determining the terms of reference (ToR) will depend on the Expert Appraisal Committee. This will be done in case of Category A and Category B1 projects. However, the finalisation of ToR by the EACs will depend on the information provided by the project proponent. There is however a provision that the EACs may visit the site and hold public consultation and meet experts to decide the ToR. However, if the EACs do not specify the ToR within 60 days, the proponent can go ahead with their own ToR.</p> <p>The final ToR shall be displayed on the website of the Ministry of Environment and Forests and concerned State / Union Territory Environment Impact Assessment Authority (SEIAA).</p>	<p>Scoping was not applicable. The terms of reference were completely decided by the proponent without any public consultation.</p>
<p>Public Consultation- All Category A and Category B1 projects or activities have to undertake public consultation except for 6 activities for which public consultation has been exempted. Some of the projects exempted include expansion of roads and highways, modernisation of irrigation projects, etc. Some of these may have potential social and environmental impact.</p> <p>The responsibility for conducting the public hearing still lies with the state PCBs. Member-Secretary of the concerned State Pollution Control Board or Union Territory Pollution Control Committee has to finalise the date, time and exact venue for the conduct of public hearing within 30 days of the date of receipt of the draft Environmental Impact Assessment report, and advertise the same in one major National Daily and one Regional vernacular Daily. A minimum notice period of 30 days will be given to the public for furnishing their responses. The public consultation will</p>	<p><b>The project proponent has to write to State Pollution Control Board to conduct public hearing.</b></p> <p>It was the responsibility of the State Boards to publish notice for environmental public hearing in at least two newspaper widely circulated in the region around the project, one of which shall be in the vernacular language of the locality concerned.</p>

<p>essentially consist of two components - a public hearing to ascertain the views of local people and obtaining written responses of interested parties.</p> <p>There are no clear guidelines like in earlier Notification who all can attend the public hearing. The use of “local people” for public hearing raises doubt if the hearing can be attended by interested parties like NGOs, experts, etc., or is restricted to only locals. Is the role of NGOs/ experts limited to the sending written letters/feedback to the PCB?</p> <p>The Notification makes provision that Ministry of Environment and Forest shall promptly display the Summary of the draft Environment Impact Assessment report on its website, and also make the full draft EIA available in Ministry’s Library at New Delhi for reference.</p> <p>No postponement of the time, venue of the public hearing shall be undertaken, unless some untoward emergence situation occurs and only on the recommendation of the concerned District Magistrate. This was not a part of the earlier Notification.</p> <p>The SPCBs or Union Territory Pollution Control Committee shall arrange to video film the entire proceedings. This was also absent in the earlier notification and may be considered as a good move to ensure that public hearing is proper.</p> <p>Unlike the earlier notification, no quorum is required for attendance for starting the proceedings. This may be misused.</p>	
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Schedule of 2006 EIA Notification provides two categories of projects/activities:

**Category A** - Appraisal done by the Central Level Expert Appraisal Committee (EAC) and Clearance will be given by MoEF, Gol. EIA is mandatory.

**Category B** - Appraisal will be done by the State Level Expert Appraisal Committee (SEAC) and Clearance will be given by State Environmental Impact Assessment Agency (SEIAA), except in case of special conditions and general conditions. Sub-grouped as Category B1 (EIA necessary) and Category B2 (EIA not necessary).

Clearances required for 39 types of activities. Industrial Project categories-

- ◆ Religious and historic places
- ◆ Archaeological monuments
- ◆ Scenic areas
- ◆ Hill resorts
- ◆ Beach resorts
- ◆ Coastal areas rich in mangroves, corals, breeding grounds of specific species

- ◆ Estuaries
- ◆ Gulf areas
- ◆ Biosphere reserves
- ◆ National parks and sanctuaries
- ◆ National lakes and swamps
- ◆ Seismic zones
- ◆ Tribal settlements
- ◆ Areas of scientific and geological interest
- ◆ Defence installations, especially those of security importance and sensitive to pollution
- ◆ Border areas (international)
- ◆ Airports

### 35.3 Categorisation of Projects and Activities

Let us examine the stages of Environmental Clearance (EC) -

- ◆ **Application for EC** - to be made by the Project Proponent (PP) to the concerned authority with FORM 1 (and FORM 1A with conceptual plan for construction projects only), Pre-feasibility Report (PFR) and Terms of Reference (optional) for conducting EIA Study.
- ◆ **Screening** - to be done by SEAC for Category B projects only, to further classify as Category B1 and B2. EIA will be necessary if classified as Category B1.
- ◆ **Scoping** - Determination of Terms of Reference (ToR) for EIA study for Category A and Category B1 projects. To be done by EAC (for Category A) or SEAC (for Category B1).
- ◆ **EIA Study** - Based on the ToR, the Project Proponent (PP) will prepare draft EIA & EMP.
- ◆ **Public Consultation** - With Draft EIA and EMP public consultation will be organised. Issues raised will be addressed in final EIA and EMP report.
- ◆ **Appraisal** - EIA and EMP will be appraised by EAC (for Category A) and SEAC (for Category B1). For Category B2, EIA is not required, appraisal will be done by SEAC on the basis of FORM 1 and PFR only.
- ◆ **Decision** - On the basis of recommendations by EAC / SEAC clearance will be finally granted or rejected by the MoEF (for Category A) / SEIAA (for Category B).

All projects and activities are broadly categorized in to two categories - Category A and Category B, based on the spatial extent of potential impacts and potential impacts on human health and natural and man-made resources.

All projects or activities included as Category 'A' in the Schedule, including expansion and modernisation of existing projects or activities and change in product mix, shall

require prior environmental clearance from the Central Government in the Ministry of Environment and Forests (MoEF) on the recommendations of an Expert Appraisal Committee (EAC) to be constituted by the Central Government for the purposes of this notification.

All projects or activities included as Category 'B' in the notification, including expansion and modernisation of existing projects or activities or change in product mix, but excluding those which fulfil the General Conditions (GC) stipulated in the Schedule (Table 1.), will require prior environmental clearance from the State/ Union Territory Environment Impact Assessment Authority (SEIAA). The SEIAA shall base its decision on the recommendations of a State or Union Territory level Expert Appraisal Committee (SEAC) as to be constituted for in this notification. In the absence of a duly constituted SEIAA or SEAC, a Category 'B' project shall be treated as a Category 'A' project.

### **Screening, Scoping and Appraisal Committees**

The same Expert Appraisal Committees (EACs) at the Central Government and SEACs at the State or the Union Territory level shall screen, scope and appraise projects or activities in Category 'A' and Category 'B' respectively. EAC and SEAC's shall meet at least once every month.

The Central Government may, with the prior concurrence of the concerned State Governments or the Union Territory Administrations, constitute one SEAC for more than one State or Union Territory for reasons of administrative convenience and cost. The EAC and SEAC shall be reconstituted after every three years.

The authorised members of the EAC and SEAC, concerned, may inspect any site(s) connected with the project or activity in respect of which the prior environmental clearance is sought, for the purposes of screening or scoping or appraisal, with prior notice of at least seven days to the applicant, who shall provide necessary facilities for the inspection.

The EAC and SEACs shall function on the principle of collective responsibility. The Chairperson shall endeavour to reach a consensus in each case, and if consensus cannot be reached, the view of the majority shall prevail.

### **Application for Prior Environmental Clearance (EC)**

An application seeking prior environmental clearance in all cases shall be made in the Form 1 and Supplementary Form 1A, after the identification of prospective site(s) for the project and/or activities to which the application relates, before commencing any construction activity, or preparation of land, at the site by the applicant. The applicant shall furnish, along with the application, a copy of the pre-feasibility project report except that, in case of construction projects or activities in addition to Form 1 and the Supplementary Form 1A, a copy of the conceptual plan shall be provided, instead of the pre-feasibility report.

### Stages in the Prior Environmental Clearance (EC) Process for New Projects

The environmental clearance process for new projects will comprise of a maximum of four stages, all of which may not apply to particular cases as set forth below in this notification. These four stages in sequential order are:-

- ◆ Stage (1) Screening (Only for Category 'B' projects and activities)
- ◆ Stage (2) Scoping
- ◆ Stage (3) Public Consultation
- ◆ Stage (4) Appraisal

#### Screening

In case of Category 'B' projects or activities, this stage will require the scrutiny of an application seeking prior environmental clearance made in Form 1 by the concerned State level Expert Appraisal Committee (SEAC) for determining whether or not the project or activity requires further environmental studies for preparation of an Environmental Impact Assessment (EIA) for its appraisal prior to the grant of environmental clearance depending upon the nature and location specificity of the project. The projects requiring an Environmental Impact Assessment report shall be termed Category 'B1' and remaining projects shall be termed Category 'B2' and will not require an Environment Impact Assessment report. For categorisation of projects into B1 or B2 except Townships and Area Development projects, the Ministry of Environment and Forests shall issue appropriate guidelines from time to time.

#### Scoping

Scoping is the process by which the Expert Appraisal Committee in the case of Category 'A' projects or activities, and State level Expert Appraisal Committee in the case of Category 'B1' projects or activities, including applications for expansion and/or modernisation and/or change in product mix of existing projects or activities, determine detailed and comprehensive Terms of Reference (TOR) addressing all relevant environmental concerns for the preparation of an Environment Impact Assessment (EIA) Report in respect of the project or activity for which prior environmental clearance is sought. The Expert Appraisal Committee or State level Expert Appraisal Committee concerned shall determine the Terms of Reference on the basis of the information furnished by the proponent in the application Form1/ Form 1A including Terms of Reference proposed by the applicant. All projects and activities listed as Category 'B' in Item 8 of the Schedule (Construction/Township/ Commercial Complexes /Housing) shall not require Scoping and will be appraised on the basis of Form 1/ Form 1A and the conceptual plan.

The Terms of Reference (TOR) shall be conveyed to the applicant by the Expert Appraisal Committee or State Level Expert Appraisal Committee as concerned within sixty days of the receipt of Form 1. If the Terms of Reference are not finalised and conveyed to the applicant within sixty days of the receipt of Form 1, the Terms of Reference suggested by the applicant shall be considered as the final Terms of Reference approved for the EIA

studies. The approved Terms of Reference shall be displayed on the website of the Ministry of Environment and Forests and the concerned State Level Environment Impact Assessment Authority.

Applications for prior environmental clearance may be rejected by the regulatory authority concerned on the recommendation of the EAC or SEAC concerned at this stage itself. In case of such rejection, the decision together with reasons for the same shall be communicated to the applicant in writing within sixty days of the receipt of the application.

Scoping is one of the most important stages in the EIA process cycle. This is the time when the fate of the EIA exercise is being decided. A lot of care and sound understanding of issues is needed by the expert committee to not miss out any significant environmental issue to be addressed in the EIA. If the need be, the EAC or SEAC should visit the site to understand the site-specific characteristics to draw out an elaborate and robust TOR.

### **Public Consultation**

Public Consultation is the process by which the concerns of local affected people and others who have a practical stake in the environmental impacts of the project or activity are ascertained with a view to taking into account all the material concerns in the project or activity design as appropriate. All Category 'A' and Category B1 projects or activities shall undertake Public Consultation, except the following.

- ◆ Modernisation of irrigation projects.
- ◆ All projects or activities located within industrial estates or parks approved by the concerned authorities, and which are not disallowed in such approvals.
- ◆ Expansion of Roads and Highways which do not involve any further acquisition of land.
- ◆ All Building /Construction projects/Area Development projects and Townships.
- ◆ All Category 'B2' projects and activities.
- ◆ All projects or activities concerning national defence and security or involving other strategic considerations as determined by the Central Government.

The Public Consultation shall ordinarily have two components comprising of:

- ◆ Public hearing at the site or in its close proximity- district wise, to be carried out, for ascertaining concerns of local affected persons.
- ◆ Obtain responses in writing from other concerned persons having a stake in the environmental aspects of the project or activity.

The public hearing at, or in close proximity to, the site(s) in all cases shall be conducted by the State Pollution Control Board (SPCB) or the Union Territory Pollution Control Committee (UTPCC) concerned in the specified manner and forward the proceedings to the regulatory authority concerned within 45 (forty-five days) of a request to the effect from the applicant.

In case the State Pollution Control Board or the Union Territory Pollution Control Committee concerned does not undertake and complete the public hearing within the specified period, and/or does not convey the proceedings of the public hearing within the prescribed period directly to the regulatory authority concerned as above, the regulatory authority shall engage another public agency or authority which is not subordinate to the regulatory authority, to complete the process within a further period of forty five days.

If the public agency or authority nominated above reports to the regulatory authority concerned that owing to the local situation, it is not possible to conduct the public hearing in a manner which will enable the views of the concerned local persons to be freely expressed, it shall report the facts in detail to the concerned regulatory authority, which may, after due consideration of the report and other reliable information that it may have, decide that the public consultation in the case need not include the public hearing.

For obtaining responses in writing from other concerned persons having a plausible stake in the environmental aspects of the project or activity, the concerned regulatory authority and the State Pollution Control Board (SPCB) or the Union Territory Pollution Control Committee (UTPCC) shall invite responses from such concerned persons by placing on their website the Summary EIA report prepared by the applicant along with a copy of the application in the prescribed form, within seven days of the receipt of a written request for arranging the public hearing. Confidential information or legally privileged information involving Intellectual Property Right, should be specified in the application but shall not be placed on the web site. The regulatory authority concerned may also use other appropriate media for ensuring wide publicity about the project or activity. The regulatory authority shall, however, make available on a written request from any concerned person the Draft EIA report for inspection at a notified place during normal office hours until the date of the public hearing. All the responses received as part of this public consultation process shall be forwarded to the applicant through the quickest available means.

After completion of the public consultation, the applicant shall address all the material environmental concerns expressed during this process, and make appropriate changes in the draft EIA and EMP. The final EIA report, so prepared, shall be submitted by the applicant to the concerned regulatory authority for appraisal. The applicant may alternatively submit a supplementary report to draft EIA and EMP addressing all the concerns expressed during the public consultation.

### **Appraisal**

Appraisal is the detailed scrutiny by the Expert Appraisal Committee or State Level Expert Appraisal Committee of the application and other documents like the Final EIA report, outcome of the public consultations including public hearing proceedings, submitted by the applicant to the regulatory authority concerned for grant of environmental clearance. This appraisal shall be made by Expert Appraisal Committee

or State Level Expert Appraisal Committee concerned in a transparent manner in a proceeding to which the applicant shall be invited for furnishing necessary clarifications in person or through an authorised representative. On conclusion of this proceeding, the Expert Appraisal Committee or State Level Expert Appraisal Committee concerned shall make categorical recommendations to the regulatory authority concerned either for grant of prior environmental clearance on stipulated terms and conditions, or rejection of the application for prior environmental clearance, together with reasons for the same.

The project proponent at the time of the appraisal shall make a detailed presentation on the project, EIA and any other supportive study conducted as a part of the TOR given by the appraisal committee. During the presentation all the consultants who were part of EIA must be present over there to reply to queries and question raised by the committee members.

The appraisal of all projects or activities which are not required to undergo public consultation, or submit an Environment Impact Assessment report, shall be carried out on the basis of the prescribed application Form 1 and Form 1A as applicable, any other relevant validated information available and the site visit wherever the same is considered as necessary by the Expert Appraisal Committee or State Level Expert Appraisal Committee concerned.

### 35.4 Grant or Rejection of Prior Environmental Clearance (EC)

The regulatory authority shall consider the recommendations of the EAC or SEAC concerned and convey its decision to the applicant within forty five days of the receipt of the recommendations of the Expert Appraisal Committee or State Level Expert Appraisal Committee concerned or in other words within one hundred and five days of the receipt of the final Environment Impact Assessment Report, and where Environment Impact Assessment is not required, within one hundred and five days of the receipt of the complete application with requisite documents, except as provided below.

The regulatory authority shall normally accept the recommendations of the Expert Appraisal Committee or State Level Expert Appraisal Committee concerned. In cases where it disagrees with the recommendations of the Expert Appraisal Committee or State Level Expert Appraisal Committee concerned, the regulatory authority shall request reconsideration by the Expert Appraisal Committee or State Level Expert Appraisal Committee concerned within forty five days of the receipt of the recommendations of the Expert Appraisal Committee or State Level Expert Appraisal Committee concerned while stating the reasons for the disagreement.

An intimation of this decision shall be simultaneously conveyed to the applicant. The Expert Appraisal Committee or State Level Expert Appraisal Committee concerned, in turn, shall consider the observations of the regulatory authority and furnish its views on the same within a further period of sixty days. The decision of the regulatory authority

after considering the views of the Expert Appraisal Committee or State Level Expert Appraisal Committee concerned shall be final and conveyed to the applicant by the regulatory authority concerned within the next thirty days.

In the event that the decision of the regulatory authority is not communicated to the applicant within the period specified, the applicant may proceed as if the environment clearance sought for has been granted or denied by the regulatory authority in terms of the final recommendations of the Expert Appraisal Committee or State Level Expert Appraisal Committee concerned.

Clearances from other regulatory bodies or authorities shall not be required prior to receipt of applications for prior environmental clearance of projects or activities, or screening, or scoping, or appraisal, or decision by the regulatory authority concerned, unless any of these is sequentially dependent on such clearance either due to a requirement of law, or for necessary technical reasons.

Deliberate concealment and/or submission of false or misleading information or data which is material to screening or scoping or appraisal or decision on the application shall make the application liable for rejection, and cancellation of prior environmental clearance granted on that basis. Rejection of an application or cancellation of a prior environmental clearance already granted, on such ground, shall be decided by the regulatory authority, after giving a personal hearing to the applicant, and following the principles of natural justice.

### **Validity of Environmental Clearance (EC)**

The “Validity of Environmental Clearance” means the period from which a prior environmental clearance is granted by the regulatory authority, or may be presumed by the applicant to have been granted, to the start of production operations by the project or activity, or completion of all construction operations in case of construction projects, to which the application for prior environmental clearance refers. The prior environmental clearance granted for a project or activity shall be valid for a period of ten years in the case of River Valley projects, project life as estimated by Expert Appraisal Committee or State Level Expert Appraisal Committee subject to a maximum of thirty years for mining projects and five years in the case of all other projects and activities. However, in the case of Area Development projects and Townships, the period of validity may be extended by the regulatory authority concerned by a maximum period of five years provided an application is made to the regulatory authority by the applicant within the validity period, together with an updated Form 1, and Supplementary Form 1A, for Construction projects or activities. In this regard the regulatory authority may also consult the Expert Appraisal Committee or State Level Expert Appraisal Committee as the case may be.

### **Post Environmental Clearance Monitoring**

It shall be mandatory for the project management to submit half-yearly compliance reports in respect of the stipulated prior environmental clearance terms and conditions

in hard and soft copies to the regulatory authority concerned, on 1<sup>st</sup> June and 1<sup>st</sup> December of each calendar year.

All such compliance reports submitted by the project management shall be public documents. Copies of the same shall be given to any person on application to the concerned regulatory authority. The compliance report shall also be displayed on the web site of the concerned regulatory authority.

### **Transferability of Environmental Clearance (EC)**

A prior environmental clearance granted for a specific project or activity to an applicant may be transferred during its validity to another legal person entitled to undertake the project or activity on application by the transferor, or by the transferee with a written “no objection” by the transferor, to, and by the regulatory authority concerned, on the same terms and conditions under which the prior environmental clearance was initially granted, and for the same validity period. No reference to the Expert Appraisal Committee or State Level Expert Appraisal Committee concerned is necessary in such cases.

### **Infrastructure projects and EIA in India**

Almost all the infrastructure projects bring with them a large number of undesirable ecological and environmental impacts. The list of projects is given in Table 1. By going through the list itself you will realise the impacts that these projects have on the environment. It is of paramount significance to understand that each and every component of the environment should be studied as these large projects bring in permanent and irreversible changes to the natural systems. There is already lot of hue and cry with respect to global warming and climate change. Almost all the infrastructure projects have heavily come under the scanners of environmental NGO's for the extremely negative environmental impacts and some of them have also resulted in mass protest. Narmada Bachao Andolan, Silent valley project, Sethu Samudran project, Mumbai Pune expressway are just to name a few.

In all infrastructure projects it is important that a comprehensive EIA be carried out and some of the important issues, as listed below, are appropriately addressed.

#### **Air Environment**

- ◆ Determination of impact zone (through a screening model) and developing a monitoring network.
- ◆ Monitoring the existing status of ambient air quality within the impacted region (7-10 km from the periphery) of the proposed project site.
- ◆ Monitoring the site-specific meteorological data, viz. wind speed and direction, humidity, ambient temperature and environmental lapse rate.
- ◆ Estimation of quantities of air emissions including fugitive emissions from the proposed project.

- ◆ Identification, quantification and evaluation of other potential emissions (including those of vehicular traffic) within the impact zone and estimation of cumulative of all the emissions/impacts.
- ◆ Prediction of changes in the ambient air quality due to point, line and areas source emissions through appropriate air quality models.
- ◆ Evaluation of the adequacy of the proposed pollution control devices to meet gaseous emission and ambient air quality standards.
- ◆ Delineation of mitigation measures at source, path ways and receptor.

### **Noise Environment**

- ◆ Monitoring the present status of noise levels within the impact zone, and prediction of future noise levels resulting from the proposed project and related activities including increase in vehicular movement.
- ◆ Identification of impacts due to any anticipated rise in noise levels on the surrounding environment.
- ◆ Recommendations on mitigation measures for noise pollution.

### **Water Environment**

- ◆ Study of existing ground and surface water resources with respect to quantity and quality within the impact zone of the proposed project.
- ◆ Prediction of impacts on water resources due to the proposed water use/ pumping on account of the project.
- ◆ Quantification and characterisation of waste water including toxic organic, from the proposed activity.
- ◆ Evaluation of the proposed pollution prevention and wastewater treatment system and suggestions on modification, if required.
- ◆ Prediction of impacts of effluent discharge on the quality of the receiving water body using appropriate mathematical/simulation models.
- ◆ Assessment of the feasibility of water recycling and reuse and delineation of detailed plan in this regard.

### **Biological Environment**

- ◆ Survey of flora and fauna clearly delineating season and duration.
- ◆ Assessment of flora and fauna present within the impact zone of the project.
- ◆ Recognition of active wildlife corridors for wildlife species protected under the wildlife protection Act (1972).
- ◆ Assessment of potential damage to terrestrial and aquatic flora and fauna due to discharge of effluents and gaseous emissions from the project.
- ◆ Assessment of damage to terrestrial flora and fauna due to air pollution, and land use and landscape changes.

- ◆ Assessment of damage to aquatic and marine flora and fauna (including commercial fishing) due to physical disturbances and alterations.
- ◆ Prediction of biological stresses within the impact zone of the proposed project.
- ◆ Delineation of mitigation measures to prevent and / or reduce the damage.

#### **Land Environment**

- ◆ Studies on soil characteristics, existing land use and topography, landscape and drainage patterns within the impact zone.
- ◆ Estimation of impacts of project on land use, landscape, topography, drainage and hydrology.
- ◆ Identification of potential utility of treated effluent in land application and subsequent impacts.
- ◆ Estimation and characterisation of solid wastes and delineation of management options for minimisation of waste and environmentally compatible disposal.

#### **Socio-economic and Health Environment**

- ◆ Collection of demographic and related socio-economic data.
- ◆ Collection of epidemiological data, including studies on prominent endemic diseases (e.g. fluorosis, malaria, filaria, malnutrition) and morbidity rates among the population within the impact zone.
- ◆ Projection of anticipated changes in the socio-economic and health due to the project and related activities including traffic congestion and delineation of measures to minimise adverse impacts.
- ◆ Assessment of impact on significant historical, cultural and archaeological sites/ places in the area.
- ◆ Assessment of economic benefits arising out of the project.
- ◆ Assessment of rehabilitation requirements with special emphasis on scheduled areas, if any.

#### **Risk Assessment**

- ◆ Hazard identification taking recourse to hazard indices, inventory analysis, dam break probability, Natural Hazard Probability, etc.
- ◆ Maximum Credible Accident (MCA) analysis to identify potential hazardous scenarios.
- ◆ Consequence analysis of failures and accidents resulting in fire, explosion, hazardous releases and dam breaks, etc.
- ◆ Hazard and Operability (HAZOP) studies.
- ◆ Assessment of risk on the basis of the above evaluations.
- ◆ Preparation of an onsite and off-site (project affected area) Disaster Management Plan.

**Environment Management Plan**

- ◆ Delineation of mitigation measures including prevention and control for each environmental component and rehabilitation and resettlement plan.
- ◆ Delineation of monitoring scheme for compliance of conditions.
- ◆ Delineation of implementation plan including scheduling and resource allocation.

**Table 2: List of Projects or Activities requiring prior Environmental Clearance under EIA Notification 2006**

Project or Activity		Category with threshold Limit		Conditions if any
		A	B	
1		Mining, extraction of natural resources and power generation (for a specified production capacity)		
(1)	(2)	(3)	(4)	(5)
1(a)	i) Mining of minerals ii) Slurry pipelines (coal lignite & other ores) passing through national parks/ sanctuaries/ coral reefs, ecologically sensitive areas.	≥ 50 ha. of mining lease area Asbestos mining irrespective of mining area >150 ha. of mining lease area in respect of coal mine lease. Asbestos mining irrespective of mining area. All projects.	<50 ha. ≥ 5 ha. of mining lease area in respect of non-coal mine lease. ≤ 150 ha. ≥ 5 ha. of mining lease areas in respect of coal mine lease.	General Condition shall apply Note Mineral prospecting is exempted
1(b)	Offshore and onshore oil and gas exploration, development & production	All projects		Note: Exploration Surveys (not involving drilling) are exempted provided the concession areas have got previous clearance for physical survey
1(c)	River Valley projects	i) ≥ 50 MW hydroelectric power generation; ii) ≥ 10,000 ha. of culturable command area	i) ≥ 50 MW hydroelectric power generation; ii) ≥ 10,000 ha. of culturable command area	General Condition shall apply. Note: Irrigation projects not involving submergence or interstate domain shall be appraised by the SEIAA as Category 'B' Projects.;

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1(d)	Thermal Power Plants	<p>“≥ 500 MW (coal/ lignite/naphtha &amp; gas based);</p> <p>≥ 50 MW (Pet coke diesel and all other fuels including refinery residual oil waste except biomass);</p> <p>≥ 20 MW (based on biomass or non-hazardous municipal waste as fuel).”;</p>	<p>“&lt; 500 MW(coal/ lignite/ naphtha &amp; gas based);</p> <p>&lt;50 MW</p> <p>≥ 5MW (Pet coke, diesel and all other fuels including refinery residual oil waste except biomass);</p> <p>≥ 20 MW &gt; 15 MW (based on biomass or non-hazardous municipal waste as fuel)”;</p>	<p>“General Condition shall apply.</p> <p>Note:</p> <p>i) Power plant up to 15 MW, based on biomass and using auxiliary fuel such as coal / lignite / petroleum products up to 15% are exempt.</p> <p>ii) Power plant up to 15 MW, based on non-hazardous municipal waste and using auxiliary fuel such as coal / lignite / petroleum products up to 15% are exempt.</p> <p>iii) Power plants using waste heat boiler without any auxiliary fuel are exempt.”;</p>
1(e)	Nuclear power projects and processing of nuclear fuel	All projects		
<b>2</b>		<b>Primary Processing</b>		
2(a)	Coal washeries	≥ 1 million ton/ annum throughput of coal	<1million ton/annum throughput of coal	General Condition shall apply (If located within mining area the proposal shall be appraised together with the mining proposal)
2(b)	Mineral beneficiation	≥ 0.1million ton/ annum mineral throughput	< 0.1million ton/ annum mineral throughput	General Condition shall apply (Mining proposal with Mineral beneficiation shall be appraised together for grant of clearance).
<b>3</b>		<b>Materials Production</b>		
3(a)	Metallurgical industries (ferrous & nonferrous)	a) Primary metallurgical industryAll projects	Sponge iron manufacturing ≥ 200TPDc)	General Condition shall apply

Contd...

		<p>b) Sponge iron manufacturing 200TPD</p> <p>c) Secondary metallurgical processing industry All toxic and heavy metal producing units 20,000 tonnes/ annum</p>	<p>Secondary metallurgical processing industry</p> <p>i) All toxic and heavy metal producing units <math>\geq 20,000</math> tonnes/ annum-</p> <p>ii) All other non-toxic secondary metallurgical processing industries <math>&gt;5000</math> tonnes/ annum</p>	<p>Note: i) The recycling industrial units registered under the HSM Rules, are exempted.</p> <p>ii) In case of secondary metallurgical processing industrial units, those projects involving operation of furnaces only such as induction and electrical arc furnace, submerged arc furnace, and cupola with capacity more than 30,000 tonnes per annum (TPA) would require environmental clearance.</p> <p>iii) Plant / units other than power plants (given against entry no. 1(d) of the schedule), based on municipal solid waste (non-hazardous) are exempted.</p>
3(b)	Cement plants	$\geq 1.0$ million tonnes/ annum production capacity.	$< 1.0$ million tonnes/ annum production capacity. All Stand-alone grinding units.	General Condition shall apply.
<b>4</b>		<b>Materials Processing</b>		
4(a)	Petroleum refining industry	All projects	-	-
4(b)	Coke oven plants	$\geq 2,50,000$ tonnes/ annum	$< 2,50,000$ & $\geq 25,000$ tonnes/ annum	General Conditions shall apply
4(c)	Asbestos milling and asbestos based products	All projects	-	-
4(d)	Chlor-alkali industry	$\geq 300$ TPD production capacity or a unit located outside the notified industrial area/estate	<p>i) All projects irrespective of the size, if located in a Notified Industrial Area/ Estate.</p> <p>ii) <math>&lt; 300</math> TPD production capacity and located outside a notified industrial area/ estate.</p>	<p>General, as well as, Specific Condition shall apply. No new Mercury Cell based plants will be permitted and existing units converting to membrane cell technology are exempted from this Notification.</p> <p>-</p>

Contd...

4(e)	Soda ash Industry	All projects	-	
4(f)	Leather/skin/hide processing industry	New projects outside the industrial area or expansion of existing units outside the industrial area	All new or expansion of projects located within a notified industrial area/ estate	General as well as Specific condition shall apply
<b>5</b>		<b>Manufacturing/Fabrication</b>		
5(a)	Chemical fertilizers	All projects, except Single Super Phosphate.	“Single Super Phosphate”	-
5(b)	Pesticides industry and pesticide specific intermediates (excluding formulations)	All units producing technical grade pesticides	-	-
5(c)	Petro-chemical complexes (industries based on processing of petroleum fractions & natural gas and/or reforming to aromatics)	All projects	-	-
5(d)	Manmade fibres manufacturing	Rayon	Others	General Condition shall apply
5(e)	Petrochemical based processing (processes other than cracking & reformation and not covered under the complexes)	Located outside the notified industrial area/ estate	Located in a notified industrial area/ estate	General as well as, Specific Condition shall apply

Contd...

5(f)	Synthetic organic chemicals industry (dyes & dye intermediates; bulk drugs and intermediates excluding drug formulations; synthetic rubbers; basic organic chemicals, other synthetic organic chemicals and chemical intermediates)	Located outside the notified industrial area/ estate	Located in a notified industrial area/ estate	General as well as, Specific Condition shall apply
5(g)	Distilleries	i) All Molasses based distilleries ii) All Cane juice/ non-molasses-based distilleries $\geq 30$ KLD	All Cane juice/ non-molasses-based distilleries $\geq 30$ KLD	General Condition shall apply
5(h)	Integrated paint industry	-	All projects	General Condition shall apply
5(i)	Pulp & paper industry excluding manufacturing of paper from waste paper and manufacture of paper from ready pulp without bleaching	Pulp manufacturing and Pulp & Paper manufacturing industry-	Paper manufacturing industry without pulp manufacturing	General Condition shall apply
5(j)	Sugar Industry		$\geq 5000$ tcd cane crushing capacity	General Condition shall apply
5(k)	Omitted	-	-	-

Contd...

6		Service Sectors		
6(a)	Oil & gas transportation pipe line (crude and refinery/ petrochemical products), passing through national parks / sanctuaries/ coral reefs / ecologically sensitive areas including LNG Terminal	All projects	-	-
6(b)	Isolated storage & handling of hazardous chemicals (As per threshold planning quantity indicated in column 3 of schedule 2 & 3 of MSIHC Rules 1989 amended 2000)	-	All projects	General Condition shall apply
7		Physical Infrastructure including Environmental Services		
7(a)	Air ports	All projects including airstrips which are for commercial news.	-	Note:- Air strips, do not involve bunkering/ refuelling facility and/or Air Traffic Control, as exempted.
7(b)	All ship breaking yards including ship breaking units	All projects	-	-
7(c)	Industrial estates/ parks/ complexes/ areas, export	If at least one industry in the proposed industrial estate falls under	Industrial estates housing at least one Category B industry and area <500 ha.	General, as well as, Special condition shall apply.

Contd...

	processing Zones (EPZs), Special Economic Zones (SEZs), Biotech Parks, Leather Complexes.	the Category A, entire industrial area shall be treated as Category A, irrespective of the area.  Industrial estates with area greater than 500 ha. and housing at least one Category B industry.	Industrial estates of area > 500 ha. and not housing any industry belonging to Category A or B.	Note: 1. Industrial Estate of area below 500 ha. and not housing any industry of category A or B does not require clearance.  2. If the area is less than 500 ha. but contains building and construction projects > 20,000 sq. mts. And or development area more than 50 ha. it will be treated as activity listed at serial no. 8(a) or 8(b) in the Schedule, as the case may be.
7(d)	Common hazardous waste treatment, storage and disposal facilities (TSDFs)	All integrated facilities having incineration & landfill or incineration alone	All facilities having land fill only	General Condition shall apply.
7(e)	Ports, Harbours, break waters & dredging	≥ 5 million TPA of cargo handling capacity (excluding fishing harbours)	< 5 million TPA of cargo handling capacity and/or ports/ harbours ≥ 10,000 TPA of fish handling capacity	General Condition shall apply. Note: 1. Capital dredging inside and outside the ports or harbours and channels are included; 2. Maintenance dredging is exempt provided it formed part of the original proposal for which Environment Management Plan (EMP) was prepared and environmental clearance obtained.
7(f)	Highways	i) New National High ways; and ii) Expansion of National High ways greater than 30 KM, involving additional	i) All State High ways projects; and ii) State Highway expansion projects in hilly terrain (above 1,000 m	General Condition shall apply.  Note: Highways include expressways.

Contd...

		right of way greater than 20 m involving land acquisition and passing through more than one State.	AMSL) and/or ecologically sensitive areas.	
7(g)	Aerial ropeways	(i) All projects located at altitude of 1,000 mtr. And above. (ii) All projects located in notified ecologically sensitive areas.	All projects except those covered in column (3).	General Condition shall apply
7(h)	Common Effluent Treatment Plants (CETPs)		All projects	General Condition shall apply
7(i)	Common Municipal Solid Waste Management Facility (CMSWMF)		All projects	General Condition shall apply
<b>8</b>		<b>Building /Construction projects/Area Development Projects and Townships</b>		
8(a)	Building and Construction projects		≥20000 sq.mtrs and <1,50,000 sq.mtrs. of built-up area#	#(built up area for covered construction; in the case of facilities open to the sky, it will be the activity area )
8(b)	Townships and Area Development projects.		Covering an area ≥ 50 ha and or built up area <sup>3</sup> 1,50,000 sq. mtrs ++	++All projects under Item 8(b) shall be appraised as Category B1

Note:

### General Condition (GC):

Any project or activity specified in Category 'B' will be treated as Category A, if located in whole or in part within 10 km from the boundary of: (i) Protected Areas notified under the Wild Life (Protection) Act, 1972, (ii) Critically Polluted areas as identified by the Central Pollution Control Board from time to time, (iii) Eco-sensitive areas as notified under Section 3 of the Environment (Protection) Act, 1986, such as, Mahabaleshwar, Panchgani, Matheran, Pachmarhi, Dahanu, Doon Valley, and (iv) inter-State boundaries and international boundaries:

Provided that the requirement regarding distance of 10 km of the inter-State boundaries can be reduced or completely done away with by an agreement between the respective States or U.Ts sharing the common boundary in case the activity does not fall within 10 kilometers of the areas mentioned at item (i), (ii) and (iii) above.

#### **Specific Condition (SC):**

If any Industrial Estate/Complex / Export processing Zones /Special Economic Zones/ Biotech Parks / Leather Complex with homogeneous type of industries such as Items 4(d), 4(f), 5(e), 5(f), or those Industrial estates with pre-defined set of activities (not necessarily homogeneous), obtains prior environmental clearance, individual industries including proposed industrial housing within such estates /complexes will not be required to take prior environmental clearance, so long as the Terms and Conditions for the industrial estate/complex are complied with (such estates/complexes must have a clearly identified management with the legal responsibility of ensuring adherence to the Terms and Conditions of prior environmental clearance, who may be held responsible for violation of the same throughout the life of the complex/estate).

The Hon'ble Supreme Court of India in the case of *Deepak Kumar v. State of Haryana and Others* vide an order dated 27 February 2012 directed all Union Territories and State Governments to seek Environmental Clearances (EC) from Ministry of Environment, Forest and Climate Change (MoEF&CC) for mining minor minerals even in less than 5 ha or renew the same after prior approval from the MoEF&CC. It is important to mention that, before this order, mining areas of less than 5 ha were exempted from EC enacted under Environmental Impact Assessment (EIA) Notification 2006.

The National Green Tribunal (NGT) in the case of *National Green Tribunal Bar Association v. Ministry of Environment & Forests & Ors.* vide an order dated 5 Aug 2013 ordered a ban on sand excavation across the country without permission from State Environment Impact Assessment Authority (SEIAA) and MoEF&CC. Further in November 2013, interpreting environment as Central Government subject and directing MoEF&CC to frame uniform sand extraction rules, the NGT prohibited State Governments to form mining rules separately.

#### **Some selected amendments to EIA Notification 2006**

**Amendment vide OM dated 06.09.2018:** In order to streamline the process for environmental clearances to the pipeline projects in the context of the statutory provisions, following clarified was issued:

- ◆ Only those projects, where the pipeline is passing through national parks/sanctuaries/ coral reefs/ecologically sensitive areas, shall be required to obtain the prior environmental clearance.
- ◆ In case of the existing ECs covered under the condition as mentioned in para 3 above, there shall be no requirement of environmental clearance or the amendment therein for the projects not covered under the ambit of the EIA Notification, 2006.

- ◆ In case of change of scope of the project (for which the EC was granted earlier) involving extension of pipeline if not passing through national parks/sanctuaries/coral reefs/ecologically sensitive areas, capacity augmentation, modernization/upgradation of pumping arrangements and associated facilities including separator plant, etc., there shall be no requirement of the prior environmental clearance.

**Ministry of Environment, Forest and Climate Change Notification New Delhi, the 17 January 2019 Notification:** The Notification for expediting production of Ethanol for its limited purpose of blending with petrol exclusively for its usage as bio-fuel, made the following special provision,

“All expansion projects of sugar manufacturing or distilleries, having environmental clearances for their present industrial operations and intended to produce Ethanol for blending with petrol under the Ethanol Blended with Petrol (EBP) Programme, shall make an application in Form-1 given in Appendix-I of the EIA Notification, 2006 along with the Environmental Management Plan, certificate from the Government of India, the Ministry of Petroleum and Natural Gas stating that the proposal is for the purpose of blending the bio-ethanol with the petrol, for grant of environmental clearance under the provisions of the EIA Notification, 2006, and all such applications shall be considered by the concerned sectoral Expert Appraisal Committee or State Expert Appraisal Committee, who shall appraise the proposal as per the procedure applicable to category B2 projects specified in the EIA Notification, 2006 based on certificate from the Central Ground Water Board regarding adequate availability of water and adherence to standard conditions related to distilleries.”

**Amendment vide OM dated 23.01.2019:** Setting up new or expansion of captive power plants employing waste heat recovery boilers (WHRB) without using any auxiliary fuel, in the existing Cement Plants, Integrated Steel Plants, Metallurgical Industries (Ferrous and Non-Ferrous) and other industries having potential for heat recovery does not attract provisions of EIA Notification 2006.

**Amendment vide OM dated 25.03.2019:** (a) In case of projects/distilleries involving installation of incineration boilers for spent wash treatment and thus to achieve zero liquid discharge, there shall be no requirement for amendment in the existing EC to increase number of working days or otherwise, subject to meeting the prescribed emission standards for boilers, minimum solid content in the slop, ZLD condition and installation/connectivity of online continuous emissions monitoring systems (OCEMS). The same may be ensured by the concerned SPCBs/PCCs before issuing Consent to Establish/Operate under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974. (b) In case of projects/distilleries involving installation of incineration boilers and/or having covered bio-composting operations for the end treatment of spent wash to achieve zero liquid discharge, there shall be no requirement for amendment in the existing EC to increase number of working days, subject to compliance of the conditions mentioned in (a) above, and Standard Operating Procedure formulated by CPCB for bio-composting operations, and the same is ensured by the

concerned SPCBs/PCCs before issuing Consent to Establish/Operate under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974. (c) Distilleries complying with the norms/requirements as per (a) or (b) above, may be permitted to operate throughout the year without any change in the production capacity as per the environmental clearances issued to such projects.

## 35.5 Conclusion

All industrial projects can use an EIA as a management tool to know their impacts on the environment. More specifically, EU legislation makes it mandatory to make an EIA for the following projects (with a few exceptions): crude-oil refineries, thermal power stations, storage facilities for radioactive waste, asbestos treatment facilities, integrated chemicals installations, motorways, railways and airports, trading ports, waste disposal installation (incineration, chemical treatment, or landfill of toxic and dangerous waste), and a number of industrial facilities in agriculture, the extractive industry, energy, metals, glass, chemicals, food, leather and textiles and rubber sectors, as well as large infrastructure projects. All industrial sectors are concerned with the environmental impact assessment, including the automotive, construction, electronics and photovoltaics sectors.

The EIA procedure ensures that environmental consequences of projects are identified and assessed before authorisation is given. The public can give its opinion and all results are taken into account in the authorisation procedure of the project. The public is informed of the decision afterwards. The EIA Directive outlines which project categories shall be made subject to an EIA, which procedure shall be followed and the required content of the assessment.

The Ministry of Environment and Forests (MoEF) of India has been putting in a great effort in Environmental Impact Assessment in India. The main laws in action are the Water Act (1974), the Indian Wildlife (Protection) Act (1972), the Air (Prevention and Control of Pollution) Act (1981) and the Environment (Protection) Act (1986), Biological Diversity Act (2002). The responsible body for this is the Central Pollution Control Board. Environmental Impact Assessment (EIA) studies need a significant amount of primary and secondary environmental data. Primary data are those collected in the field to define the status of the environment (like air quality data, water quality data, etc.). Secondary data are those collected over the years that can be used to understand the existing environmental scenario of the study area. The environmental impact assessment (EIA) studies are conducted over a short period of time and therefore the understanding of the environmental trends, based on a few months of primary data, has limitations. Ideally, the primary data must be considered along with the secondary data for complete understanding of the existing environmental status of the area. In many EIA studies, the secondary data needs could be as high as 80% of the total data requirement. EIC is the repository of one stop secondary data source for environmental impact assessment in India.

The Environmental Impact Assessment (EIA) experience in India indicates that the lack of timely availability of reliable and authentic environmental data has been a major bottleneck in achieving the full benefits of EIA. The environment being a multi-disciplinary subject, a multitude of agencies are involved in collection of environmental data. However, no single organisation in India tracks available data from these agencies and makes it available in one place in a form required by environmental impact assessment practitioners. Further, environmental data is not available in enhanced forms that improve the quality of the EIA. This makes it harder and more time-consuming to generate environmental impact assessments and receive timely environmental clearances from regulators. With this background, the Environmental Information Centre (EIC) has been set up to serve as a professionally managed clearing house of environmental information that can be used by MoEF, project proponents, consultants, NGOs and other stakeholders involved in the process of environmental impact assessment in India. EIC caters to the need of creating and disseminating of organised environmental data for various developmental initiatives all over the country.

EIC stores data in GIS format and makes it available to all environmental impact assessment studies and to EIA stakeholders in a cost effective and timely manner.

# UNIT 36

## INTRODUCTION TO ENVIRONMENTAL PUBLIC HEARING (EPH) AND PROCESSES

### Contents

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### 36.1 Introduction

In the contemporary scenario, citizen participation is one of the fundamentals of public management in all its fields. The laws of our country establish citizen participation as an integral right and a principle of organisation of the State in order to guarantee the rights of the people. We must not forget that development requires of the contribution and inclusion of all the social sectors.

In environmental processes, citizen participation enhances the interaction spaces of the various communities, the organisations of the civil society, and other interested actors, with the government - both national and local, in decision making processes in relation to the environment. Nevertheless, in order to achieve efficiency, effectiveness and a suitable end, citizen participation must be made possible.

The integration of public participation/involvement of stakeholders in Environmental Impact Statement (EIS) Review is very important in terms of its implication for sound decision making and the sustainability of development activities. In this regard, most country's EIA Procedures provide for the involvement of stake holders in the assessment and review of proposed undertakings. This is achieved through a number of mechanisms,

particularly the holding of public hearings. In public hearings, the shareholders and proponents are brought together in a forum to express their opinions and offer suggestions on a proposed undertaking in order to influence the decision-making process.

## 36.2 Environmental Clearance Process

Before any industrial project is set up for the so-called development of our country, there is a mandatory process to be followed known as the process of Environmental Clearance. This is done to make sure and be certain about the estimated adverse impacts held out to the environment and to limit it in case it exceeds the prescribed minimum. The main purpose of this step is to assess the impact of the planned project on the environment and people and try to minimise the same.

EIA is used to identify and assess the environmental and social impacts of any proposed major activity (project, plan, programme or policy)<sup>1</sup> prior to its implementation. It aims to predict environmental impacts at an early stage in project planning and design, find ways and means to reduce adverse impacts, shape projects to suit the local environment and present the predictions and options to decision-makers.

### *The Procedure*

For the purpose of environmental clearance, there is a proper procedure. It covers varied aspects like screening, scoping, public consultation and appraisal. The process of environmental clearance consists of the following steps:

#### ◆ *Identification of the location*

The investor first identifies the location of proposed project after ensuring compliance with existing rules and guidelines. If project site does not permit the execution of his plan to set up the project, the proponent has to identify another alternative site for the same.

#### ◆ *Falling under Schedule-1 of Environmental Impact Assessment Notification*

The project proponent then assesses if the proposed activity falls under the purview of environmental clearance. If it is mentioned in Schedule-1 of the Environmental Impact Assessment Notification, the proponent conducts an EIA study either directly or through a consultant. This then leads to a situation where the project may either fall in category A or B.

#### ◆ *Screening*

If the project falls in B category, the project goes to State Government for clearance which further categorises it into B1 and B2 projects. B2 projects do not require preparation of EIA reports. After the EIA report is ready, the investor approaches the concerned State

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<sup>1</sup> For the sake of brevity, hereafter, the term 'project' will be used in place of 'any major activity'. The term must be deemed to include 'any project, plan, program or policy'.

Pollution Control Board (SPCB) and the State Forest Department (if the location involves use of forestland). The SPCB evaluates and assesses the quantity and quality of effluents likely to be generated by the proposed unit as well as the efficacy of the control measures proposed by the investor to meet the prescribed standards. If the SPCB is satisfied that the proposed unit will meet all the prescribed effluent and emissions standards, it issues consent to establish (popularly known as No Objection Certificate), which is valid for 15 years.

◆ *Public Hearing*

It is at this point that the public is brought into play. There is a process known as the public hearing which is a mandatory step in the process of environmental clearance for certain developmental projects. This provides a legal space for people of an area to come face-to-face with the project proponent and the government and express their concerns. The District Collector is the chairperson of the public hearing committee. Other members of the committee include the official from the district development body, SPCB, Department of Environment and Forest, Taluka and Gram Panchayat representative, and senior citizen of the district, etc. The hearing committee hears the objections/suggestions from the public and after inserting certain clauses it is passed on to the next stage of approval (Ministry of Forest and Environment).

◆ *Application for Environmental Clearance*

The project proponent submits an application for environmental clearance with the Ministry of Environment and Forests (MoEF) if it falls under Project 'A' category or the State Government if it falls under project 'B' category. The application form is submitted with EIA report, details of public hearing and No Objection Certificate (NOC) granted by the State Regulators.

◆ *Environmental Appraisal*

The documents submitted by an investor are first scrutinised by a multi-disciplinary Staff functioning in the Ministry of Environment and Forests who may also undertake site-visits wherever required, interact with the investors and hold consultations with experts on specific issues as and when necessary. After this preliminary scrutiny, the proposals are placed before specially constituted committees of experts whose composition is specified in the EIA Notification. Such committees, known as Environmental Appraisal Committees have been constituted for each sector such as River Valley, Industries, Mining, etc., and these committees meet regularly to appraise the proposals received in the Ministry.

In case of certain very special/controversial projects, which have aroused considerable public interest, the committee may also decide to arrange for public hearings on those projects to ensure public participation in developmental decisions. Announcements for such public hearing shall be made at least 30 days before through newspapers. On the basis of the exercise described in the foregoing paragraphs, the Appraisal Committees make their recommendations for approval or rejection of particular projects. The

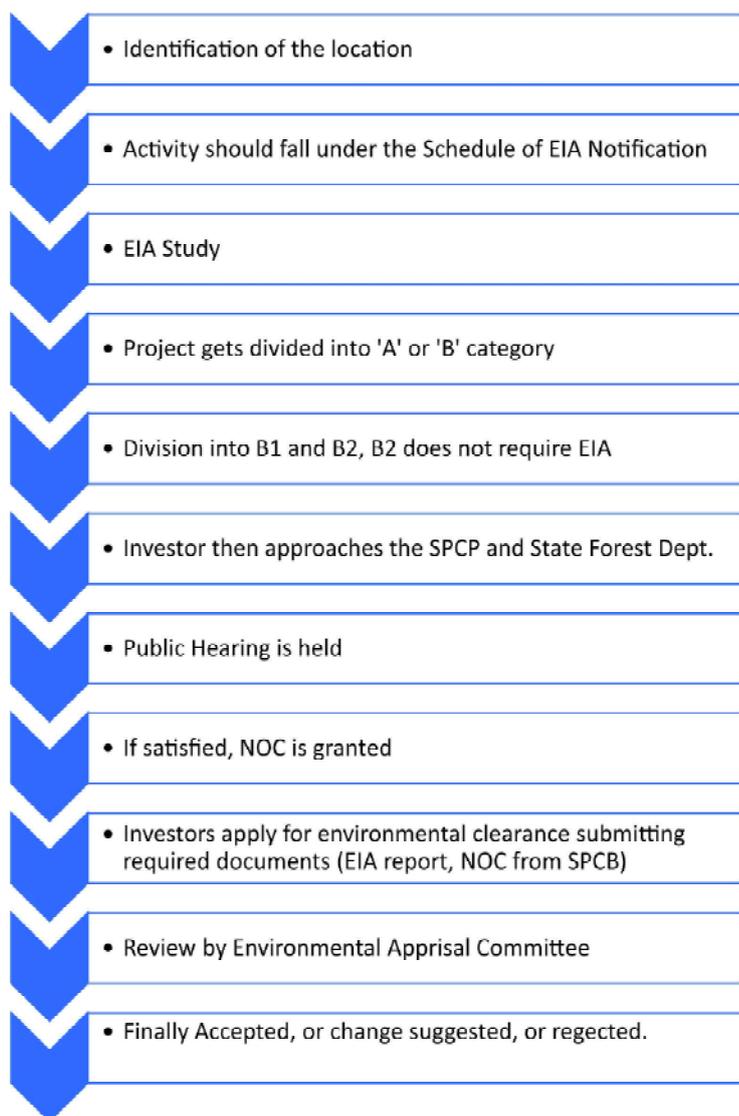
recommendations of the Committees are then processed in the Ministry of Environment and Forests for approval or rejection.

◆ *Issues of clearance or rejection letter*

In a situation where a project requires both environmental clearance as well as approval under the Forest (Conservation) Act, 1980, proposals for both are required to be given simultaneously to the concerned divisions of the ministry. The processing is done simultaneously for clearance/rejection, although separate letters may be issued. If the project does not involve diversion of forest land, the case is processed only for environmental clearance.

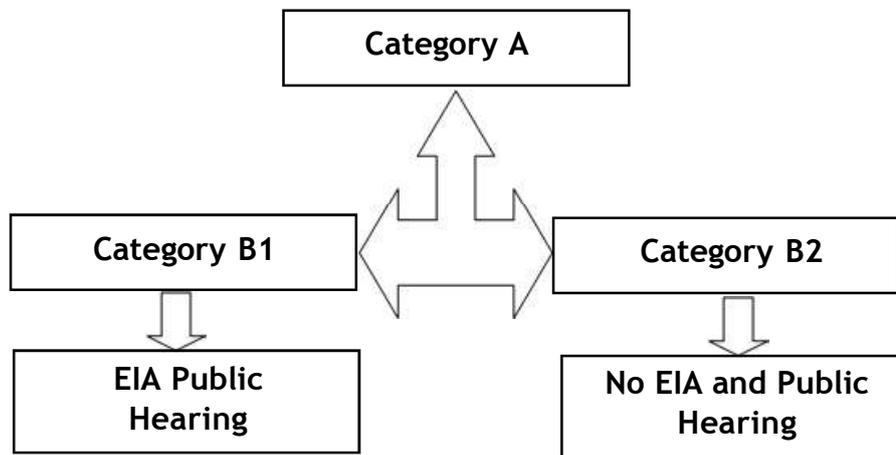
◆ *Final Steps*

Once all the requisite documents and data from the project authorities are received and public hearings (where required) have been held, assessment and evaluation of the



**Figure 1: A figure to show Environmental Clearance Process in India**

project from the environment angle is completed within 90 days and the decision of the ministry shall be conveyed within 30 days thereafter. The clearance granted shall be valid for a period of five years for commencements of the construction or operation of the project.



*Figure 2: Figure showing the process of Screening*

- ◆ No screening required for Category A projects
- ◆ Category B projects will be further screened at the state level for categorisation into either B1 or B2. Specific guidelines to be evolved by Ministry of Environment and Forests.

***Industrial Projects in any of these areas would necessarily require Environmental Clearance***

- ◆ Religious and historic places
- ◆ Archaeological monuments
- ◆ Scenic areas
- ◆ Hill resorts
- ◆ Beach resorts
- ◆ Coastal areas rich in mangroves, corals, breeding grounds of specific species
- ◆ Estuaries
- ◆ Gulf areas
- ◆ Biosphere reserves
- ◆ National parks and sanctuaries
- ◆ National lakes and swamps
- ◆ Seismic zones
- ◆ Tribal settlements
- ◆ Areas of scientific and geological interest

- ◆ Defence installations, especially those of security importance and sensitive to pollution
- ◆ Border areas (international)
- ◆ Airports

### ***Environmental Clearance for Mining Projects (Schedule 1A)***

Major changes have been proposed in mining projects due to the amendment of EIA Notification, 2006, which are likely to have far reaching implications on the environment and on local communities. Firstly, it is proposed that coal mining projects with lease area of up to 150 hectares will be appraised by the SEIAA as Category 'B' Project (against the previous limit of 50 hectares). No such relaxation has been made for non-coal mining projects. This is completely unscientific and illogical as it is not clear, why coal should be given such an exemption.

In fact, it is quite clear that coal-mining projects have the most adverse environmental impact, as compared to other mining projects. From mine fires to land subsidence; from water pollution to air pollution and solid waste generation, coal mining comes out worse on all environmental parameters. Today, all major coal mining areas of the country have been declared as "critically polluted areas". It is also a fact that of all mining projects, coal mining has displaced the largest number of people and has destroyed the largest amount of forest land. With these facts in background, putting coal mining projects of up to 150 hectare in Category 'B' would be most unwise and destructive for the environment.

The other damaging proposal is that all mineral prospecting is being exempted from the EIA notification. This again shows the limited view that the notification has taken on the scope of environmental impact. It is well known, that large mineral prospecting with the use of invasive technologies like drilling, etc. have significant environmental impacts. They can destroy forest, pollute water bodies with chemicals and oil and even fracture geological structures. By exempting all mineral prospecting from the EIA notification, the ministry is actually losing the chance to direct the prospectors to undertake even the basic safeguards and mitigation measures.

### ***Environmental Clearance for River Valley Projects - Schedule 1(c)***

It is being proposed that "Irrigation projects not involving submergence or inter-state domain shall be appraised by the State Environmental Impact Assessment Authority (SEIAA) as Category 'B' projects." In EIA 2006 notification, there is no separate category for irrigation projects. It is important to realise that a river valley project, may or may not be an irrigation project. This amendment would add to confusion and transaction costs. However, it is clear that even if a river valley project does not involve submergence, it could have environmental impact because of the lack of flow in the river. In other words, it should not be exempt.

### ***Environmental Clearance for Airports - Schedule 7(a)***

In the 2006 notification, all airport projects were put under Category 'A'. In the proposed amendment, modernisation of airport is exempted provided 'there is no increase in

pollution load'. The very reason for modernisation is to allow more aeroplanes to operate and to increase the traffic flow. This will consequently increase the air and noise pollution. So, there cannot be any modernisation project with 'no increase in pollution load'. If this proposal is allowed then it will invariably lead to situation wherein developers will use fudged data and self-certification to show that there is no increase in pollution load. Therefore, it should be noted that such an amendment would certainly be of no use.

EIA is anticipatory, participatory, and systematic in nature and relies on multidisciplinary input. It is a means to assessing the present state of health of ecosystem where project would be executed and to work out the possible impact it could bring in course of the time. By using EIA both environmental and economic benefits can be achieved, such as reduced cost and time of project implementation and design, avoided treatment/clean-up costs and impacts of laws and regulations.

Various guidelines are available on EIA. The main steps are as follows:

- ◆ Preliminary activities include the selection of a coordinator for the EIA and the collection of background information. This should be undertaken as soon as a project has been identified.
- ◆ Impact identification involves a broad analysis of the impacts of project activities with a view to identifying those which are worthy of a detailed study.
- ◆ Baseline study entails the collection of detailed information and data on the condition of the project area prior to the project's implementation.
- ◆ Impact evaluation should be done whenever possible in quantitative terms and should include the working-out of potential mitigation measures. Impact evaluation cannot proceed until project alternative has been defined, but should be completed early enough to permit decisions to be made in a timely fashion.
- ◆ Assessment involves combining environmental losses and gains with economic costs and benefits to procedure a complete account to each project alternative. Cost-benefit analysis should include environmental impacts where these can be evaluated in monetary terms.
- ◆ Documentation is prepared to describe the work done in the EIA. A working document is prepared to provide clearly stated and argued recommendations for immediate action. The working document should contain a list of project alternative with comments on the environmental and economic impacts of each.
- ◆ Decision-making begins when the working document reaches the decision maker, who will either accept one of the project alternatives, request further study or reject the proposed action altogether.
- ◆ Post audits are made to determine how close to reality the EIA predictions were.

### 36.3 Environmental Impact Assessment and Public Hearing

The stages of an EIA process generally depend on the requirements of the country. However, most EIA processes have a common structure, whose application is a basic standard of good practice.

EIA process usually consists of eight steps with each step equally important in determining the overall performance of the project. Typically, the EIA process begins with screening to ensure that the time and resources are directed at the proposals which matter environmentally and ends with some form of follow up on the implementation of the decisions and actions taken as a result of an EIA report. The eight steps of the EIA process are presented in brief below:

- ◆ **Screening:** First stage of EIA, which determines whether the proposed project, requires an EIA and if it does, then the level of assessment required.
- ◆ **Scoping:** This stage identifies the key issues and impacts that should be further investigated. This stage also defines the boundary and time limit of the study.
- ◆ **Impact analysis:** This stage of EIA identifies and predicts the likely environmental and social impact of the proposed project and evaluates the significance.
- ◆ **Mitigation:** This step in EIA recommends the actions to reduce and avoid the potential adverse environmental consequences of development activities.
- ◆ **Reporting:** This stage presents the result of EIA in a form of a report to the decision-making body and other interested parties.
- ◆ **Review of EIA:** It examines the adequacy and effectiveness of the EIA report and provides the information necessary for decision-making.
- ◆ **Decision-making:** It decides whether the project is rejected, approved or needs further change.
- ◆ **Post monitoring:** This stage comes into play once the project is commissioned. It checks to ensure that the impacts of the project do not exceed the legal standards and implementation of the mitigation measures are in the manner as described in the EIA report.

EIA has more of a legal role to play in Indian context rather than the educational one. It is backed by the Environmental Protection Act 1986. The MoEF has prepared Environmental Guidelines, to help the project proponents of a developmental project to work out an EIA. Guidelines have been prepared to bring out specific information on the environment required for environmental clearance. The agencies, which are primarily responsible for the respective sectors are closely involved in preparing the guidelines. River valley projects, thermal power projects, mining projects and industries, ports and harbours, development of beaches, highway/ railroad projects are the sectors for which guidelines have already been prepared. These guidelines basically consist of aspects regarding

planning and implementation of development projects. The majority of projects in India, which require EIA's, are large developmental projects like nuclear power, river valley, thermal power plants, etc., where government plays an important role.

MoEF has developed guidelines for the preparation of EIA reports along with questionnaires and check lists for the different sectors like industry and mining projects, thermal power projects, river valley projects, road, highways and railway projects port and harbours, airports, communication projects and new towns. The critical issues focused in all these guidelines are:

- ◆ Can the local environment cope with the additional waste and pollution that the project will produce?
- ◆ Will the project location conflict with the nearby land use or preclude later developments in surrounding areas?
- ◆ Can the project operate safely without serious risk of accidents or long-term health hazards?
- ◆ How will the project affect economic activities that are based on natural resources?
- ◆ Is there sufficient infrastructure to support the project?
- ◆ How much of the resources (such as water, energy, etc.) will the project consume, and are adequate supplies of these resources available?
- ◆ What kind of human resources will it require or replace and what will be its social impacts in the short/long-run?
- ◆ What damages will it inadvertently cause to the national/regional assets such as natural resources, tourist areas, or historic or cultural sites, etc.? (UNEP 1988).

### 1) Public hearing

Law requires that the public must be informed and consulted on a proposed development after the completion of EIA report.

Any one likely to be affected by the proposed project is entitled to have access to the Executive Summary of the EIA. The affected persons may include:

- ◆ *bona fide* local residents;
- ◆ local associations;
- ◆ environmental groups: active in the area
- ◆ any other person located at the project site / sites of displacement

They are to be given an opportunity to make oral/written suggestions to the State Pollution Control Board.

Involvement of the public is one of the fundamental principles of a successful EIA process. It not only provides an opportunity to those directly affected by a project to express their views on the environmental and social impacts of the proposal but also brings

about transparency in the environmental clearance system. Nearly all EIA systems make some sort of provision for public involvement. This could be in the form of public consultation (or dialogue) or public participation (which is a more interactive and intensive process of stakeholder engagement).

Most EIA processes are undertaken through public consultation rather than participation. Public consultation refers to the process by which the concerns of the local people regarding the adverse impacts of a project are ascertained and taken into account in the EIA study. This concept was legally introduced in India in the form of 'public hearing' in 1997. Since then the public hearing process has been conducted as a mandatory step of environmental clearance for most projects and activities.

The public consultation process ensures an equitable and fair decision-making process resulting in better environmental outcomes. The type of consultation, whom to consult during EIA activities, when and how to do so and who should do it all vary significantly from project to project. This depends on the needs of the project. However, it is an important component for all kinds of project. This is because public consultations help allay the concerns of the local community, and reduce inaccurate information in the EIA report. Some argue that it is better not to include the public in EIA as it will be quicker and most cost-effective to exclude the public in EIA. Project proponents eager to implement their project may fear that citizen involvement will delay their schedule or force them to revise the project. Public participation may also be sometimes regarded as unnecessary because citizens lack project-specific expertise and it is just necessary to educate citizens about the merits of the project. To the project proponent, it may look more prudent to push the project through quietly rather than run the risk of a public process. However, excluding the public does not ensure expediency either. Alienated citizens tend to delay the implementation of the project through time consuming legal action if they feel that their rights are curbed through project implementation (example Silent Valley, Tehri Dam, Dahanu). Therefore, the project proponent needs to consider not only the risks but also not refrain from including citizen input so as to reap the potential benefits of establishing a long-term co-operative relationship with citizens.

Ideally public consultation should start from when the idea of the project is conceived and continue throughout the course of the EIA. The five main stages when public involvement can take place in the EIA process are screening, scoping, impact analysis and mitigation, review of EIA quality, and implementation and follow up.

In India, the role of the public in the entire environment clearance process is quite limited. Public consultation happens at a very late stage when the EIA report is already prepared and the proponent is about to present it to the review committee for clearance. This means that the EIA study is unable to take into account the concerns and issues important to public. Even if the members of the community raise certain issues in the public hearing process, they have no means of knowing if it actually gets addressed in the final EIA report as they have no access to it. There are several weaknesses in the public hearing process as it exists now. Instead of becoming a participatory forum it has become a mere procedure.

The EIA Notification, 2006 contains very less about the entire public hearing process. It has even added a provision which makes it possible to completely forego the public hearing process if the situation is not conducive for conducting hearing as felt by the local administration. This provision can be misused to further limit the role of the public in the entire process.

There have been several cases in the past that have shown that the public hearing process has failed to meet its objective of effectively involving people in the clearance process. Several means have been devised to keep the public away such as poor circulation of notice, politics, etc. Some cases of poor public hearing proceedings are the Teesta Low Dam Project III and IV, the Sethusamudram ship canal project, the Subansiri Hydroelectric Project, etc.

## **2) Environment Management Plan**

The Environment Management Plan (EMP) is prepared by the Impact assessment authority after all the above provisions have been complied with.

## **3) Decision making**

Decision making process involve consultation between the project proponent (assisted by a consultant) and the impact assessment authority (assisted by an expert group if necessary).

The decision on environmental clearance is arrived at through a number of steps including evaluation of EIA and EMP.

### **◆ Monitoring the clearance conditions**

Monitoring should be done during both construction and operation phases of a project. This is not only to ensure that the commitments made are complied with but also to observe whether the predictions made in the EIA reports were correct or not. Where the impacts exceed the predicted levels, corrective action should be taken. Monitoring will enable the regulatory agency to review the validity of predictions and the conditions of implementation of the Environmental Management Plan (EMP).

### **Industrial projects in any of these areas would require Environmental Clearance:**

- ◆ Religious and historic places
- ◆ Archaeological monuments
- ◆ Scenic areas
- ◆ Hill resorts
- ◆ Beach resorts
- ◆ Coastal areas rich in mangroves, corals, breeding grounds of specific species
- ◆ Estuaries
- ◆ Gulf areas

- ◆ Biosphere reserves
- ◆ National parks and sanctuaries
- ◆ National lakes and swamps
- ◆ Seismic zones
- ◆ Tribal settlements
- ◆ Areas of scientific and geological interest
- ◆ Defence installations, especially those of security importance and sensitive to pollution
- ◆ Border areas (international)
- ◆ Airports

## 36.4 Roles of Different Actors in EIA Process

EIA process involves many parties, grouped by their role definition within the process. The following section outlines the basic responsibilities of various bodies:

- ◆ The Project Proponent
- ◆ The Environmental Consultants
- ◆ The State Pollution Control Board / Pollution Control Committees (PCCs)
- ◆ The Public
- ◆ The Impact Assessment Agency

### The Role of the Project Proponent

The project proponent during the project planning stage decides the type of projects i.e. new establishment, expansion or modernisation. Later the project proponent needs to prepare the Detailed Project Report/Feasibility Report and submit the Executive Summary, which shall incorporate the project details, and findings of EIA study, which is to be made available to concerned public.

The proponent has to approach the concerned SPCB for NOC and holding the public hearing. After the public hearing the proponent submits application to IAA for environmental clearance.

### Role of Environment Consultant

Environmental consultant should be conversant with the existing legal and procedural requirements of obtaining environmental clearance for proposed project. The consultant should guide the proponent through initial screening of the project and establish whether EIA studies are required to be conducted and if so, finalise the scope of such study. The consultant should also be fully equipped with required instruments and infrastructure for conducting EIA studies. The environmental consultant is responsible for supplying all the environment-related information required by the SPCB and IAA through the proponent.

The consultant is also required to justify the findings in the EIA and EMP during the meeting with the expert groups at IAA.

### **The Role of the State Pollution Control Board (PCB) / Pollution Control Committee (PCC)**

The State PCBs/PCCs are responsible for assessing the compatibility of a proposed development with current operational and prescribed standards. If the development is in compliance, the PCB will then issue its NOC. They shall also hold the public hearing as per the provisions of EIA notification. The details of public hearing shall be forwarded to IAA.

### **The Role of the Public**

The public also has an important role to play in EIA. The concerned persons will be invited through press advertisement to review information and provide their views on the proposed development requiring environmental clearance.

### **The Role of the Impact Assessment Agency (IAA)**

Where a proponent is required to obtain environmental clearance, the IAA will evaluate and assess the EIA report. In this process the project proponent will be given a chance to present his proposal. If a project is accepted the IAA will also prepare a set of recommendations and conditions for its implementation based on this assessment. Environmental clearance conditions and recommendations of IAA are made available to the public on request through SPCB and through web site at <http://envfor.nic.in>. During the implementation and operation of the project, the IAA will also be responsible for the environmental monitoring process.

## **36.5 Importance of Public Participation In EIA**

Before analysing the role of public in the process of Environmental clearance, let us again examine the concept of EIA briefly. Environment Impact Assessment or EIA is the study to predict the effect of a proposed activity/project on the environment. EIA systematically examines both beneficial and adverse consequences of the project and ensures that these effects are taken into account during project design. It helps to identify possible environmental effects of the proposed project, proposes measures to mitigate adverse effects and predicts whether there will be significant adverse environmental effects, even after the mitigation is implemented. By considering the environmental effects of the project and their mitigation early in the project planning cycle, environmental assessment has many benefits, such as protection of environment, optimum utilisation of resources and saving of time and cost of the project. Properly conducted EIA also lessens conflicts by promoting community participation, informing decision makers, and helping lay the base for environmentally sound projects. Benefits of integrating EIA have been observed in all stages of a project, from exploration and planning, through construction, operations, decommissioning, and beyond site closure. Some of the advantages of EIA are:

- ◆ First, Public participation is regarded as proper, fair conduct of democratic government in public decision-making activities.
- ◆ Second, public participation is widely accepted as a way to ensure that projects meet citizens' needs and are suitable to the affected public.
- ◆ Third, the project carries more legitimacy, and less hostility, if potentially affected parties can influence the decision-making process.
- ◆ Finally, the final decision is 'better' when local knowledge and values are included and when expert knowledge is publicly examined.

It is a mandatory step in the process of environmental clearance for Category "A" and "B1" listed projects in the Schedule of the EIA Notification, 2006. This provides a legal space for people of an area to come face-to-face with the project proponent in the presence of regulatory bodies and express their concerns. The process of public hearing is conducted once the Draft EIA report is completed by the project proponent. The Member-Secretary of the concerned Pollution Control Board (PCB) shall finalise the date, time and exact venue of public hearing within 7(seven) days of the date of receipt of the draft environmental impact assessment report. The District Collector is the Chairperson of the EPH committee. The committee hears the objections/suggestions from the public and concerns expressed shall be recorded by the representative of the PCB, the minutes of hearing shall be signed by the district magistrate or his or her representative on the same day and forwarded to the PCB concerned.

### History of EIA

EIA is one of the successful policy innovations of the 20th Century for environmental conservation. Forty years ago, there was no EIA but today, it is a formal process in many countries and is currently practiced in more than 100 countries. EIA as a mandatory regulatory procedure originated in the early 1970s, with the implementation of the National Environment Policy Act (NEPA) 1969 in the US. A large part of the initial development took place in a few high-income countries, like Canada, Australia, and New Zealand (1973-74). However, there were some developing countries as well, which introduced EIA relatively early-Columbia (1974) and Philippines (1978). The EIA process really took off after the mid-1980s. In 1989, the World Bank adopted EIA for major development projects, in which a borrower country had to undertake an EIA under the Bank's supervision

The World Summit on Sustainable Development in Johannesburg (South Africa, 2002) further developed these provisions. The principles promoted by these conferences are fully integrated into the provisions of the UNECE Convention on Environmental Impact Assessment.

#### ◆ EIA prior to 1994

In India, the assessment of projects for environmental impacts, though not known in the exact manner as it is today, dates back a few decades.

The first major instance of incorporating provisions for the assessment of environmental impact of a project in any legal instrument was seen in the case of Central Water Commission (CWC). In the guidelines issued by CWC in 1975, the Commission provided for conducting investigations regarding major irrigation and hydroelectric projects. It was stated in the legal instrument of CWC under the chapter on environment that the planning, construction and operation of projects have impacts on ecology, some of which are irreversible. Therefore, it would be necessary to carefully evaluate these impacts.

The actual EIA process in India was started in 1976-77 when the Planning Commission asked the then Department of Science and Technology to examine the river-valley projects from environmental angle. This was subsequently extended to cover those projects, which required approval of the Public Investment Board. These were administrative decisions, and lacked the legislative support.

Initially, up till 1994, in India, EIA clearances existed in form of 'Environmental Clearances' and appraisals which were an administrative requirement only for big projects undertaken by the Government or public sector undertakings. The Environmental Clearances for these projects were carried out under administrative guidelines, which required the project proponents of major irrigation projects, river valley projects, power projects, ports and harbours, *etc.*, to secure a clearance from the Union Ministry of Environment and Forests (MoEF). The procedure required the authority to submit environmental information to the MoEF by filling out questionnaires or checklists. The ministry's Environmental Appraisal Committees carried out the Environmental Clearances and appraisals.

#### ◆ EIA Notification 1994

The Government of India enacted the Environment (Protection) Act on 23 May 1986. To achieve the objectives of the Act, one of the decisions that were taken is to make environmental impact assessment statutory.

On 27 January 1994, the MoEF notified mandatory EIA's under Rule 5 of the Environment (Protection) Rules, 1986 for 29 designated projects. This is the principal piece of legislation governing environmental impact assessment.

The notification made it obligatory to prepare and submit an EIA, an Environment Management Plan (EMP), and a project report to an Impact Assessment Agency (Agency) and was required to consult a multi-disciplinary committee of experts. The EIA provision was hence made a mandatory requirement under the Environment Protection Act, 1986 with the following four objectives:

- 1) Predict the environmental impact of projects;
- 2) Find ways and means to reduce adverse impacts;
- 3) Shape the projects to suit local environment;
- 4) Present the predictions and options to the decision-makers.

The Notification legislated under the Environment Protection Act, 1986 was responsible for ensuring that developmental projects (industries and infrastructure like dams, mines, refineries, large commercial complexes, highways, power projects, etc.) account for their environmental impacts as part of their planning and design processes.

The notification specified the process of obtaining Environmental Clearance (EC) for such projects, and also provided for the only element of public participation that there is in the entire process, as such public input is critical, among other things, for example, in ensuring that the sustenance of communities that live in the project area are not threatened.

According to Schedule II of the notification, the EIA is expected to cover at least the following matters:

- 1) Description of the proposed activities;
- 2) Description of the base environmental and climatic conditions and potential affected environment including specific information necessary to identify and assess the environmental effect of the proposed activities;
- 3) Analysis of the land use and land use change, waste generation, water consumption (and the existing balance), power consumption, etc. along with the social and health impacts (in terms of number of people displaced, etc.);
- 4) Description of the practical activities as appropriate;
- 5) An assessment of the likely or potential environmental impacts of the proposed activity (like air pollution, noise generation) and the alternatives, including the direct or indirect, cumulative, short-term and long-term effects;
- 6) A risk assessment report and disaster management plan to mitigate adverse environmental impacts of proposed activity and assessment of those measures;
- 7) An indication of the likely area to be affected by the proposed activity or its alternatives;
- 8) A detailed environmental feasibility report of all the information provided.

The EIA report is prepared and submitted to the agency for approval. The report is required to include proposed measures to be undertaken by a proponent to mitigate or ameliorate the negative environment effects. If approved, an environmental agency statement and certificate of approval shall be issued by the agency.

The Notification also mandates a **public hearing**, with further review by a committee of experts in certain cases. Any member of the public can have access to a summary of the Project Report and the detailed EMPs. Public hearings are statutory / mandatory. This is the only piece of legislation that actually provides affected communities and the wide public some scope in influencing the final outcome of the decision.

In a move, the MoEF also took a step in decentralising the responsibilities of conducting EIA (notification date 10 April 1997, No. S.O. 319 E).

The EIA Notification, 1994 was subsequently amended time and again. Amendments of 4 May 1994, 10 April 1997 and 27 January 2000 led to making EIA mandatory for 30 activities.

#### ◆ Amendments to EIA Notification, 1994

Since its inception in 1994, the mechanism of EIA has come a long way before it was re-engineered in the year 2006 to overcome its limitation experienced over the years. This journey has proved to be a bumpy ride for this administrative mechanism with as many as 13 amendments in 11 years to re-engineering the whole process in 2006. The mechanism of EIA was devised to ensure that projects like dams, mines, industries, highways bridges, etc. do not cause irreversible and repairable damage to the environment. Despite the start of a noble cause, experiences over the years have revealed that many projects that should have stopped or at least modified have slipped through the cracks. Over the years of its existence, there is much more to be done when it comes to implementing the EIA notification.

Several changes were made to the original notification. The first amendment came within a few months of the notification on 4 May 1994. Many more were to follow. The EIA notification 1994 was amended almost 13 times in 11 years. While most of the amendments diluted the process of environmental clearance process, there were some, which also strengthened the process. Some of the key amendments are discussed as follows:

- ◆ **Amendment on 10 April, 1997:** The process of environmental public hearing (EPH) was introduced in the environmental clearance process. The SPCBs were entrusted to conduct public hearing to get the views and concerns of the affected community and interested parties for the proposed project. It was also entrusted with forming an EPH committee to ensure fair representation in the public hearing process. This amendment also made some changes with reference to the environmental clearance required for power plants.
- ◆ **Amendment on 13 June, 2002:** This amendment diluted the purpose of the notification exempting many industries from the EIA process or from the entire environment clearance process on the basis of level of investment.
  - It exempted pipeline and highway projects from preparing the EIA report, but these projects would have to conduct public hearings in all the districts through which the pipeline or highway passes.
  - A number of projects were totally exempted from the Notification if the investment was less than Rs. 100 crore for new projects and less than Rs. 50 crore for expansion/modernisation projects.
  - Most of the industries exempted from the clearance process had a very high social and environmental impact even if the investment was less than Rs. 100 crore. For example, in case of Hydel power projects, irrespective of the investment, there would be social impacts due to displacement.

- No EIA was required for modernisation projects in irrigation sector if additional command area was less than 10,000 hectares or project cost was less than Rs. 100 crore.
- ◆ **Amendment on 28 February, 2003:** This amendment added a little tooth to the notification. It took into consideration location-sensitivity into the environment clearance process. This amendment prohibited certain processes and operations in specified areas of the Aravalli range.
- ◆ **Amendment on 7 May 2003:** The notification was amended to expand the lists of activities involving risk or hazard. In this list, river valley projects including hydel power projects, major irrigation projects and their combination including flood control project except projects relating to improvement work including widening and strengthening of existing canals with land acquisition up to a maximum of 20 meters, (both sides put together) along the existing alignments, provided such canals did not pass through ecologically sensitive areas such as national parks, sanctuaries, tiger reserves and reserve forests.
- ◆ **Amendment on 4 August 2003:** This amendment was similar to the one in February 2003 that tried bringing in location-sensitivity in the entire environmental clearance process. Any project located in a critically polluted area, within a radius of 15 kilometers of the boundary of reserved forests, ecologically sensitive areas, which include national parks, sanctuaries, biosphere reserves; of any State, had to obtain environmental clearance from the Central Government.
- ◆ **Amendment on September 2003:** Site clearance was made mandatory for green field airport, petrochemical complexes and refineries. Moreover, the amendment added that no public hearing was required for offshore exploration activities, beyond 10 km from the nearest habitation, village boundary, goothans and ecologically sensitive areas such as, mangroves (with a minimum area of 1,000 sq.m.), corals, coral reefs, national parks, marine parks, sanctuaries, reserve forests and breeding and spawning grounds of fish and other marine life.
- ◆ **Amendment on 7 July, 2004:** It made EIA mandatory for construction and industrial estate.
- ◆ **13 Amendment on 4 July 2005:** The amendment provided that projects related to expansion or modernisation of nuclear power and related project, river valley project, ports, harbours and airports, thermal power plants and mining projects with a lease area of more than 5 hectares could be taken up without prior environmental clearance. The Central Government in the Ministry of Environment and Forests may, on case to case basis, in public interest, relax the requirement of obtaining prior environmental clearance and may, after satisfying itself, grant temporary working permission on receipt of application in the prescribed format for a period not exceeding two years, during which the proponent shall obtain the requisite environmental clearance as per the procedure laid down in the notification. The grant of temporary working permission would not necessarily imply that the environmental clearance would be granted for the said project.

The amendments have passed biased notion of MoEF towards industrial chambers. These amendments brought about on the basis of investment limits had proved to be an escape-gate for various projects for which there was a need for a proper check for their impacts on environment. For instance, until 2002, projects above Rs. 50 crores needed clearance but this was amended to Rs. 100 crores. Take the Mahadayi Diversion Scheme in the ecologically sensitive Western Ghats region as an example. The Karnataka State Government proposed to build two earthen dams on the Bhandura and the Kalasa Nalas (streams) of the Mahadai to divert water to the east flowing Malaprabha. Both these projects, parts of the overall Mahadai Diversion Scheme, were estimated to cost Rs. 49.2 crores and Rs. 44.78 crores respectively. The combined cost would be over Rs. 90 crores, which would have made it necessary to obtain environment clearance had the amendment not occurred. However, the dams were shown as two independent projects and able to bypass the environment clearance procedure merely on the basis of an investment limit.

Similarly, an amendment in August 2001 excluded Mining projects with lease area upto 25 hectares from public hearing. Leases below 25 hectares can cause tremendous damage in ecologically and culturally sensitive areas and under no circumstances can anyone make assumptions that these have “minimal” impacts and that public hearings are therefore not required. There are umpteen examples of leases under 25 hectare for both minor and major minerals from around the country which have caused or will cause significant social and ecological impacts. We have the marble mines in the Alwar district of Rajasthan, the iron ore mines in Sundur in Bellary district of Karnataka, the bauxite mines in the tribal areas of the Anantgiri in the Eastern Ghats of Andhra Pradesh, the coal mines in Jaintia Hills of Meghalaya, etc. We also have the example of both the Doon Valley and the Aravallis where smaller leases have caused extensive environment damage and mining activities have subsequently been regulated by both the judiciary and the MoEF (vide Amendment dated 28 Feb 2003).

By an amendment in December 2000, defence related road construction projects in border areas were excluded. All over North-East India, the defence roads are largest developmental projects. The Sikkim State Biodiversity Strategy and Action Plan states road construction as a major cause of deforestation in the state and presents certain action points to reduce the damage due to developmental activities. Such construction has caused fragmentation of wildlife habitats and brought in huge number of people for labour, creating pressure on the local natural resources like firewood.

Due to reasons like these, there was a wide spread opinion that the EIA notification was not able to address all the concerns and had several weaknesses which was making the entire clearance process, weak. The EIA movement in India has been severely marred by the consistent amendments over the years. It has been reduced to a formality rather than an obligatory measure to safeguard the environment and make the project sustainable. The experience with these assessments has been far from satisfactory. EIA reports have been done in an extremely shoddy, incomplete and inadequate manner. Yet year after year, projects have been cleared, despite criticism and protests.

In September 2006, the MoEF re-engineered the EIA process with a view to bring about some significant modifications. A draft notification was prepared with special consultations with the industry associations at the behest of the Prime Minister's Office and was published on 15 September, 2005. This was put up for public comment for a year and was then notified on 14 September 2006.

#### ◆ EIA Notification 2006

The currently applicable EIA notification was introduced by the MoEF on 14 September, 2006. This was a year after the draft notification was placed on the MoEF website, in response to which, comments were sent by several groups and organisations. Since objective of EIA Notification 2006 was to address the limitations in the old EIA Notification (1994), various modifications have been incorporated, which the Ministry claims to have done after taking into account the feedback from the different stakeholders.

Though, there have been some improvements in the new notification over the previous one, it has certainly failed to meet the expectations of the various stakeholders, especially members of the civil society, NGOs and local community.

The EIA-2006 is an outcome of the recommendations made by the Govindarajan Committee. It was constituted to examine the procedures for investment approvals and project implementation. It found that the environment clearance causes maximum delay to projects and recommended that some of the cumbersome procedures be modified. Consultations on the draft notification were held only with representatives from industry and central government agencies (Asscom, FICCI, CII and MoEF).

The 2006 Notification has tried bringing in a greater number of projects within the purview of the environmental clearance process. As a result, a revised list of projects and activities has been redrawn that requires prior environmental clearance. Most importantly, there is no categorisation of projects requiring EIA based on investment, rather size or capacity of the project determines whether it is cleared by the central or state government.

The major difference in the EIA Notification 2006 from the earlier one (1994) is its attempt to decentralise power to the State Government. Earlier all the projects under schedule 1 went to the Central Government for environmental clearance. However, as per the 2006 notification, significant number of projects will go to the state for clearance depending on its size/capacity/area. For this, the notification has made a provision to form an expert panel, the Environment Appraisal Committees (SEAC) at the State level. Though this is a good attempt to reduce the burden on the central government, however, this provision can be misused as in many cases state government is actively pursuing industrialisation for their respective state. The notification has also failed to mention if there would be some sort of monitoring of state level projects by the central government.

The notification also talks about 'Scoping', which was completely missing earlier. The terms of reference (ToR) of the project will now be decided by the SEAC at the state-

level and by Environment Appraisal Committees (EAC) at the Central level. This will be decided on the basis of the information provided by the proponent. If needed the SEACs and EACs would visit the site, hold public consultation and meet experts to decide the ToR. The final ToR has to be posted in the website for public viewing. Though this seems good on paper, however, the proponent itself is providing the information for finalisation of ToR and moreover there is no compulsory provision for public consultation. Further, if the EAC does not decide the ToR within the stipulated time, the project proponents can go ahead with their own ToR.

Though there is clear mention of appraisal in the EIA process, there is no mention of post monitoring, a very important part of the entire EIA process.

The area where there could have been major improvements in environment clearance process, i.e. public consultation, the 2006 EIA notification is a major disappointment. The public consultation as was earlier done, will still be conducted at the end of the environment clearance process where there is very little scope for the public to play any active role.

Moreover, the 2006 Notification has made few changes that weaken the public consultation process. There is a provision in the notification where a public consultation can totally be foregone if the authorities feel the situation is not conducive for holding public hearing. This can limit the involvement of people. Further, the consultation process has been divided into public hearing for local people and submission in writing from other interested parties. If this is the case, then NGOs/civil society organisation will not be able to take part in the public hearing process, which will significantly affect the efficiency of the consultation process.

The focus of the 2006 Notification has been to reduce the time required for the entire environment clearance process. The earlier process took around 14-19 months for Rapid EIA and 21 to 28 months for comprehensive EIA. As per the notification, the category A project will be completed only in 10.5 to 12 months. There seems to be no justification for this and may result in compromising on the efficiency and transparency of the clearance process, which was quite evident from the earlier notification even though the process had more time.

## 36.6 Concept of Environmental Public Hearing

State statues require that public hearings be held regarding the application for a variance or a subdivision approval public hearing regarding site plan application and draft environmental impact statements may be required as a matter of local practice.

### What is Public Hearing?

Public Hearing (also known as Jan Sunwai) is a meeting of a house committee or subcommittee during which public problems may be heard and formal action may be taken on any measure or matter before the committee or sub- committee. It is a formal meeting designed to provide the public with the fullest opportunity to express support

or opposition to any major/minor project in an open forum where the oral interaction is recorded.

In a public hearing issues relating to environment, related to displacement, eviction of persons or families and their rehabilitation. It is a way of giving powers to the public to ask any questions in effect, making the government or the authority answerable in such hearings. Such hearings are especially useful for people living in the rural areas who do not have easy access to courts. These people can avail the opportunity of being heard through the mechanism of public hearing, which definitely provides for speedy justice and instant resolution of problems. Public hearing becomes a useful tool in providing a voice to the voiceless who have faced injustice and who do not have the necessary resources to approach courts. These hearings are organised by the government and as well as by various Non-Governmental Organisations.

They give the people the right to participate, which is something that is rare. This mechanism not only gives the poor the chance of being heard but also gives them the right to inspect records, which might be necessary for the dispensation of justice. The Government in 2005 passed the Right to Information Act, 2005 which gives all persons the right to access documents and the mechanism of public hearing recognises this as an important right by making it an integral part of the process. Thus, it can be said that the mechanism of public hearing is an important tool as it provides an opportunity of being heard to those who have been oppressed since ages and also those who don't have access to courts due to economic reasons.

#### **Social Audit as a Method of Public Hearing:**

India is a democratic country. People are masters and Government exists to serve the people. It is the primary duty of any master to take a look at the accounts of the servant at regular intervals and hold the servant accountable. Social audit or public audit is a step in that direction. People use right to information to obtain details of the works carried out by a Government Department or the manner in which that Department spent the money. This information contained in records is compared with field reality. This is public audit or social audit and is a very important tool in the hands of the people to hold the Government accountable. Social audit assumes greater importance in the context of democratic decentralisation since 1992-93. Structures for accountability are the weakest in panchayats and municipal bodies who are implementing anti-poverty programmes and providing basic social services. The people have gained unprecedented access to information about, for instance, whose names were listed as workers in the muster rolls, the amount of money stated to have been paid to them as wages, the details of various materials claimed to have used in the contribution and so on.

During the audit of the documents large number of persons who were dead or migrated or non-existent, were listed as workers and shown to be paid wages. By such audits in the document innumerable stunning facts of the duplicity and fraud of the local official and elected representatives is visible.

It is not as if they were unaware in the past that the muster rolls are forged that the records misused and misappropriated. But they didn't say anything as they were under the influence of fear and doubts, and in the absence of the hard facts and evidence they were unable to take any preventive or any other action against them. So, they let it carry on without even speaking about it. Public Hearing changed it and ordinary people spoke out fearlessly and gave evidence against corruption and public officials are invited in such hearings to defend themselves. The social audit is not merely a platform for rooting out corruption; it is also an opportunity to have citizens participate in all aspects of self-governance.

### **Public Hearing Related to Right to Information Act, 2005**

Right to Information Act, 2005 has been made in order to help the people get their right, which is not possible otherwise. As their being political apathy and lack of awareness on the part of citizens such right had to be implemented. The effectiveness of this act depends on how it has been used over time by the people and response by officials and government who are bound by it.

Under the Right to Information Act (hereinafter referred to as the Act), there is a statutory forum available for the public to demand information and there is also a Public Grievance Commission where they can further take up the matter, in the absence of receiving a satisfactory response. With the help of this act various public hearing could be taken up very easily as it forms the main crust of the arguments of the public. By Right to Information Act, the public could ask the authority to show them the records if they are dissatisfied with them. Public hearing itself is a mode that works when it is ensured that people- in particular the weaker sections of the society are given an opportunity to be heard, and are encouraged and supported in their efforts to speak out. Access to information is essential, for justice, as it is for survival. This helps the public to know what is happening behind their backs that could be named as corruption, also some other names could also be given to it rather than calling it as corruption.

### **Public Hearing as A Solution for Corruption**

Public hearing could be a solution one of the solutions against corruption. For years, the people have been, in their daily lives, victims of the unending tradition of corruption by the state authorities. Many individuals like political leaders, officials, social activists have tried to fight against it and bring relief to the people. However, the efforts made by them have gone waste, as the victims are not ready to participate in it. There have been various temporary campaigns against corruption, however, but nothing permanent. The fundamental right of people to information has helped a lot to bring down corruption. By such right given to the people they could easily access the documents like muster roll, which tells about the attendance of the workers and wages due and paid, and bills and various vouchers which relate to the purchase of materials which has taken place.

It is not that the people were not aware of the muster rolls being forged and that the documents are also forged. They were not able to take any preventive measures due to

fear and absence of evidence. When public hearing was done, the people spoke out without fear and gave evidence against corruption that is very much prevalent these days. The people must be empowered to control and fight against corruption directly. By such hearings, concrete evidence of corruption has to come into light. Armed with such evidence in their hands, the people should be able to fight corruption and get their due back without any fear and live their life more easily. Every time the workers made a demand for minimum wages, they were told that they had not done the work, as proved in the records.

The right to information is expected to improve the quality of decision making by public authorities. It would enable groups and individuals to be kept informed about the functioning of the decision-making process as it affects them, and to know the kinds of criteria that are to be applied by government agencies in making these decisions. By securing access to relevant information and knowledge, the citizens would be enabled to assess government performance and to participate in and influence the process of government decision-making and policy formulation on any issue of concern to them.

### **Drawbacks of Public Hearing Arranged by Government**

The Public Hearings arranged by the government has many drawbacks in the manner in which they are conducted. There is insufficient notice about social audit and no information about its function. Many times, the information is not even circulated before the meeting is to take place. The people need time to read the information and take their time to understand it and frame up their arguments against the authorities. However, when the officials only do not provide the information how can the community take part in the hearing that is going to take place?

The officials of the government, during the hearings, only read out the total amount of money sanctioned for that work and the total expenditure, which is being incurred on it. The labour, material components and its breakup are not mentioned at all. Bills, vouchers, muster rolls, and other documents are not displayed for the public to look into them. In the case of muster rolls, the entire documents are read out and shown to the public. It is through these documents anyone could know how many people worked at the particular site, how many days did they work and lastly how much did they get paid working there. In many cases it was found that names of dead people were also written in the muster rolls and wages were given so the deceased as well.

The names of various people who had migrated and various other government officials were also given wages. However, the people who had worked day and night were not given sufficient wages. The process of social audit initiated by the state government failed in its main purpose and was nothing more than a face-saving device.

### **Environmental Public Hearing**

Environmental Public Hearing is one of the fundamental principles of a successful Environmental Impact Assessment process. It basically means that the involvement of

public is an essential ingredient for a proper process of environmental clearance. It not only provides an opportunity to those directly affected by a project to express their views on the environmental and social impacts of the proposal but also brings about transparency in the environmental clearance system. This could be in the form of public consultation or public participation (which is a more interactive and intensive process of stakeholder engagement). Ideally public consultation should start from when the idea of the project is conceived and continue throughout the course of the EIA. The five main stages when public involvement can take place in the EIA process are screening, scoping, impact analysis and mitigation, review of EIA quality, and implementation and follow up.

◆ *Need for participation*

There is a need to increase public sensitivity to environment and development problems to find out solutions and foster a sense of personal environmental responsibility and greater motivation and commitment towards sustainable development. Public consultation refers to the process by which the concerns of the local people regarding the adverse impacts of a project are ascertained and taken into account in the EIA study. This concept was legally introduced in India in the form of 'public hearing' in 1997. Since then the public hearing process has been conducted as a mandatory step of environmental clearance for most projects and activities.

The public consultation process ensures an equitable and fair decision-making process resulting in better environmental outcomes. The type of consultation, whom to consult during EIA activities, when and how to do so and who should do it all varies significantly from project to project. This depends on the needs of the project. However, it is an important component for all kinds of project. This is because public consultations help allay the concerns of the local community, and reduce inaccurate information in the EIA report.

◆ *Public Participation may lead to unwanted situations*

Some argue that it is better not to include the public in EIA as it will be quicker and most cost-effective to exclude the public. Project proponents eager to implement their project may fear that citizen involvement will delay their schedule or force them to revise the project. Public participation may be regarded as unnecessary because citizens lack project-specific expertise and it is just necessary to educate citizens about the merits of the project. To the project proponent, it may look more prudent to push the project through quietly rather than run the risk of a public process. However, excluding the public does not ensure expediency either. Alienated citizens tend to delay the implementation of the project through time consuming legal action if they feel that their rights are curbed through project implementation. Therefore, the project proponent needs to consider not only the risks of including citizen input, but also the potential benefits of establishing a long- term co-operative relationship with citizens.

## Basic Objectives of Public Hearing

The basic purpose served by Environmental Public Hearing is:

- ◆ It provides ample opportunity to the local communities living in and around the project site to express their views regarding such a set-up. They are expected to let know if this set-up is going to affect them adversely and if so, to what extent.
- ◆ Public consultation, through an equitable and fair decision-making process widens the scope of research and leads to an optimum result and better environmental outcomes.
- ◆ It brings about transparency in the environmental clearance system.

## The Procedure for conduct of Public Hearing

As discussed before, environmental public hearing is an integral part of environmental clearance process. *It is an integral part of Stage 3 of EIA process called 'Public Consultation'. This stage of the EIA process is a comprise of two aspects; a public hearing process in which only local affected people can participate and a process for obtaining written comments from others who are concerned citizens.*

The Public Hearing is to be arranged in a systematic, time bound and transparent manner ensuring widest possible public participation at the project site or in its close proximity. District-wise, by the concerned State Pollution Control Board (SPCB) or the Union Territory Pollution Control Committee (UTPCC).

### 1) The Process

- ◆ The applicant shall make a request through a simple letter to the Member Secretary of the SPCB or Union Territory Pollution Control Committee, in whose jurisdiction the project is located, to arrange the public hearing within the prescribed statutory period. In case the project site is covering more than one District or State or Union Territory, the public hearing is mandated in each District, State or Union Territory in which the project is located and the applicant shall make separate requests to each concerned SPCB or UTPCC for holding the public hearing as per this procedure.
- ◆ The applicant shall enclose with the letter of request, at least 10 hard copies and an equivalent number of soft (electronic) copies of the draft EIA Report including the Summary Environment Impact Assessment report in English and in the local language, prepared strictly in accordance with the Terms of Reference communicated after Scoping. Simultaneously the applicant shall arrange to forward copies, one hard and one soft, of the above draft EIA Report along with the Summary EIA report to the following authorities or offices, within whose jurisdiction the project will be located:
  - a) District Magistrate/s
  - b) Zila Parishad or Municipal Corporation
  - c) District Industries Office
  - d) Urban Local Bodies (ULBs) / PRIs Concerned
  - e) Concerned Regional Office of the Ministry of Environment and Forests

- ◆ On receiving the draft Environmental Impact Assessment report, the above-mentioned authorities except the Regional Office of MoEF, shall arrange to widely publicise it within their respective jurisdictions requesting the interested persons to send their comments to the concerned regulatory authorities. They shall also make available the draft EIA Report for inspection electronically or otherwise to the public during normal office hours till the Public Hearing is over.
- ◆ The SPCB or UTPCC concerned shall also make similar arrangements for giving publicity about the project within the State/Union Territory and make available the Summary of the draft Environmental Impact Assessment report for inspection in select offices or public libraries or any other suitable location etc. They shall also additionally make available a copy of the draft Environmental Impact Assessment report to the above five authorities/offices mentioned above.

## 2) Notice of Public Hearing

- ◆ The Member-Secretary of the concerned SPCB or UTPCC shall finalize the date, time and exact venue for the conduct of public hearing within 7 days of the date of receipt of the draft Environmental Impact Assessment report from the project proponent, and advertise the same in one major National Daily and one Regional Vernacular Daily / Official State Language. A minimum notice period of 30 days shall be provided to the public for furnishing their responses.
- ◆ The advertisement shall also inform the public about the places or offices where the public could access the draft Environmental Impact Assessment report and the Summary Environmental Impact Assessment report before the public hearing. In places where the newspapers do not reach, the Competent Authority should arrange to inform the local public about the public hearing by other means such as by way of beating of drums as well as advertisement or announcement on radio and television.
- ◆ No postponement of the date, time, venue of the public hearing shall be undertaken, unless some untoward emergency situation occurs and then only on the recommendation of the concerned District Magistrate, the postponement shall be notified to the public through the same National and Regional vernacular dailies and also prominently displayed at all the identified offices by the concerned SPCB or Union Territory Pollution Control Committee.
- ◆ In the above exceptional circumstances, fresh date, time and venue for the public consultation shall be decided by the Member Secretary of the concerned SPCB or UTPCC only in consultation with the District Magistrate and notified afresh as per the original procedure mentioned above.

## 3) The Panel

The District Magistrate / District Collector / Deputy Commissioner or his or her representative not below the rank of an Additional District Magistrate assisted by a representative of SPCB or UTPCC, shall supervise and preside over the entire public hearing process.

#### 4) Videography

The SPCB or UTPCC shall arrange to video film the entire proceedings. A copy of the videotape or a CD shall be enclosed with the public hearing proceedings while forwarding it to the Regulatory Authority concerned.

#### 5) Proceedings

- ◆ The attendance of all those who are present at the venue shall be noted and annexed with the final proceedings.
- ◆ There shall be no quorum required for attendance for starting the proceedings.
- ◆ A representative of the applicant shall initiate the proceedings with a presentation on the project and the Summary EIA report.
- ◆ Persons present at the venue shall be granted the opportunity to seek information or clarifications on the project from the applicant. The summary of the public hearing proceedings accurately reflecting all the views and concerns expressed shall be recorded by the representative of the SPCB or UTPCC and read over to the audience at the end of the proceedings explaining the contents in the vernacular language and the agreed minutes shall be signed by the District Magistrate or his or her representative on the same day and forwarded to the SPCB/UTPCC concerned.
- ◆ A Statement of the issues raised by the public and the comments of the applicant shall also be prepared in the local language or the Official State language, as the case may be, and in English and annexed to the proceedings.
- ◆ The proceedings of the public hearing shall be conspicuously displayed at the office of the Panchayats within whose jurisdiction the project is located, office of the concerned Zila Parishad, District Magistrate, and the SPCB or UTPCC. The SPCB or UTPCC shall also display the proceedings on its website for general information. Comments, if any, on the proceedings, may be sent directly to the concerned regulatory authorities and the applicant concerned.

#### 6) Time period for completion of public hearing

- ◆ The public hearing shall be completed within a period of forty- five days from date of receipt of the request letter from the applicant. Thereafter the SPCB or UTPCC concerned shall send the public hearing proceedings to the concerned regulatory authority within eight days of the completion of the public hearing. The applicant may also directly forward a copy of the approved public hearing proceedings to the regulatory authority concerned along with the final Environmental Impact Assessment report or supplementary report to the draft EIA report prepared after the public hearing and public consultations incorporating the concerns expressed in the public hearing along with action plan and financial allocation, item-wise, to address those concerns.
- ◆ If the SPCB or UTPCC fails to hold the public hearing within the stipulated forty-five days, the Central Government in Ministry of Environment and Forests for Category

'A' project or activity and the State Government or Union Territory Administration for Category 'B' project or activity at the request of the SEIAA or project proponent, shall engage any other agency or authority to complete the process, as per procedure laid down in the EIA Notification.

## 36.7 Deficiencies on Process of Public Hearing

### Procedural Deficiencies

- ◆ Communication of information about Public Hearing
- ◆ Changes in Public Hearing Schedule without prior notice
- ◆ Uncertainty of venue of Public Hearing
- ◆ Control of Public Hearing by State Pollution Control Board (SPCB)
- ◆ Composition of Public Hearing Panel
- ◆ Role of Panel members
- ◆ Documentation of Public Hearing Proceedings

### Operational Deficiencies

- ◆ Lack of sufficient information about the project and its impact
- ◆ Non-user friendly nature of information in executive summaries
- ◆ Remoteness of hearing venue
- ◆ lack of financial support for participation
- ◆ Under representation of stake-holders
- ◆ Stage management of the process

In India, the role of the public in the entire environment clearance process is quite limited. Public consultation happens at a very late stage when the EIA report is already prepared and the proponent is about to present it to the review committee for clearance. This means that the EIA study is unable to take into account the concerns and issues important to public. Even if the members of the community raise certain issues in the public hearing process, they have no means of knowing if it actually gets addressed in the final EIA report as they have no access to it. There are several weaknesses in the public hearing process as it exists now. Instead of becoming a participatory forum it has become a mere procedure.

### Public Hearing as a part of Stage 3 'Public Consultation process', Few Criticisms:

Public Consultation process as laid out in the EIA notification, 2006 is severely criticized as being flawed and clearly limiting public participation. First and foremost criticism is that there are certain sets of activities which have been exempted from the process of public consultation completely. Other grounds attracting sharp condemnation are as follows:

- 1) *Availability of Draft EIA report:* Only a draft EIA report will be available to the locally affected persons at the time of the public hearing. Citizens will not get to see the final EIA document on the basis of which the decision on the project will be made. There are enough examples in the last few years of the existence of the EIA notification when project proponents have sought clearance on incomplete and misleading data. The Ministry has not only failed to take punitive action against erring agencies but has gone ahead and cleared projects based on these reports. This practice will only grow if the final EIA report is not open to public scrutiny. The appendix IV (of notification) states that the “draft EIA report with the generic structure...” is to be made available to the public prior to the hearing. This does not ensure that the draft report will have an adequate description of environmental impacts of the project, such that they can be understood by readers. If the draft is very rudimentary, the public hearing will be a waste of public time and money. The notification should have either laid down details of the degree of information that the draft report should contain or should have introduced clauses of punitive action if the draft allows only an ineffective public hearing due to being uninformative or less informative.

Further, the public will have no control over whether or not their inputs and concerns get incorporated in the EIA report and influence the decision making process.

The time period for which the draft EIA report will be available prior to the hearing is not mentioned in the notification. The 1994 notification mandated that it be made available for a period of 30 days prior to the hearing.

- 2) *Cancellation of Public Hearing:* This clause which requires the public hearing to be cancelled if the local conditions are not conducive is subject to severe misuse by the project proponents and regulatory authorities. This point was also raised in the comments sent by several civil society organisations to the MoEF, which have not been taken on board. The inclusion of this clause is a severe setback to the notification as it has in effect made the public hearing procedure a discretionary procedure when it was mandatory before.
- 3) *No Postponement of Public hearing except in exceptional circumstances and unless there is some untoward emergency:* Can the non-availability of the EIA report for enough time or inadequate draft EIA be reason for the cancellation or postponement of the public hearing? In various places, these have been the reasons why local communities have demanded the same. Detailed documentation of the conduct of public hearings at the local level in various places indicates severe lacunae in the implementation of the public hearing process. Some of the issues that public hearings have thrown up until now, and that remain unaddressed in the 2006 public consultation process as well are;
  - ◆ *No quorum required for attendance to start the proceedings:* Does this imply that the public hearing can start with the public hearing panel being incomplete?

*Who can attend public hearings?* The notification states that the public hearing will be primarily for the purpose of ascertaining concerns of local affected persons. Other

concerned persons who have plausible stake in the environmental impacts can make submissions in writing. This clearly limits the participation of people's groups, and civil society organisations. Further, if the SEAC, or EAC feels that a certain person or organisation does not have a plausible stake in the environmental impacts, then they have the discretion of not accepting even a written submission from them.

A review of the judicial decisions on the EC process reveals that "public hearing" has been a subject of many legal disputes and also a ground for the suspension of many ECs. The Hon'ble Supreme Court of India in case of *Odisha Mining Corporation Ltd v. Ministry of Environment and Forests* observed that the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 and Panchayats (Extension to Scheduled Areas) Act, 1996 safeguards the public's right to protect their customs, traditions and thereby, mandate that their opinion be considered before forestlands are diverted for any non-forest purposes.

## 36.8 Conclusion

Public Hearings for Environmental Clearance of various Developmental Projects was made mandatory under the EIA notification in 1997. Public Hearings allow people's participation in the decision making of developmental projects and is the only opportunity for people to raise their concerns about the proposed project. It is the responsibility of the concerned State Pollution Control Board (SPCB) or the Union Territory Pollution Control Committee (UTPCC) to call for a public hearing when a project is proposed in an area.

For conducting a public hearing, any project proponent has to follow procedure established by law which is prescribed in the EIA notification issued under the provisions of the Environment (Protection) Act, 1986 and rulings of the courts on the same. The procedure that has to be followed is:

- ◆ The project proponent has to make a request through a simple letter to the Member Secretary of the SPCB or Union Territory Pollution Control Committee along with at least 10 hard copies and an equivalent number of soft (electronic) copies of the draft EIA Report with the generic structure including the Summary Environment Impact Assessment report in English and in the official language of the state/local language, prepared strictly in accordance with the Terms of Reference communicated after Scoping.
- b) The notice of public hearing regarding any projects has to be published by the Member-Secretary of the concerned SPCB or UTPCC in one major National Daily and one Regional Vernacular Daily / Official State Language.
- c) SPCB or UTPCC shall finalise the date, time and exact venue for the conduct of public hearing within 7(seven) days of the date of receipt of the draft Environmental Impact Assessment report from the project proponent.
- d) A minimum notice period of 30(thirty) days shall be provided to the public for furnishing their responses.

- e) The District Magistrate/District Collector/Deputy Commissioner or his or her representative not below the rank of an Additional District Magistrate assisted by a representative of SPCB or UTPCC, shall Supervise and preside over the entire public hearing process.
- f) The SPCB or UTPCC shall arrange to video film the entire proceedings. A copy of the videotape or a CD shall be enclosed with the public hearing proceedings while forwarding it to the Regulatory Authority concerned.
- g) The attendance of all those who are present at the venue shall be noted and annexed with the final proceedings.
- h) The public hearing shall be completed within a period of 45 (forty five) days from date of receipt of the request letter from the Applicant. If the SPCB or UTPCC fails to hold the public hearing within the stipulated 45(forty five) days, the Central Government in Ministry of Environment and Forests for Category 'A' project or activity and the State Government or Union Territory Administration for Category 'B' project or activity at the request of the SEIAA, shall engage any other agency or authority to complete the process, as per procedure laid down in the notification.
- i) The persons who can participate in the public hearing are:
- ◆ Bonafide residents at the project site;
  - ◆ Environmental groups; and
  - ◆ Other persons located at the project site.
- j) The Public hearing panel must consist of:
- ◆ Representative of State Pollution Control Board;
  - ◆ District Collector or his nominee;
  - ◆ Representative of Department of the State Government dealing with Environment;
  - ◆ Not more than three representatives of the local bodies such as Municipalities or panchayats;
  - ◆ Not more than three senior citizens of the area nominated by the District Collector.
- k) The concerned persons shall be provided access to the **Executive Summary** and **Environmental Impact Assessment report** of the project at the following places, namely:-
- i) District Collector Office;
  - ii) District Industry Centre;
  - iii) In the Office of the Chief Executive Officers of Zila Praishad or Commissioner of the Municipal Corporation/Local body as the case may be;
  - iv) In the head office of the concerned State Pollution Control Board and its concerned Regional Office;

- v) In the concerned Department of the State Government dealing with the subject of environment.

### Projects exempted from public hearing

Public hearing is not required for the following projects:

- ◆ Small scale industrial undertakings located in:
  - a) Notified or designed industrial areas/ industrial estates.
  - b) Areas marked for industries under the jurisdiction of industrial development authorities.
- ◆ Widening and strengthening of highways;
- ◆ Mining projects (major minerals) with lease areas up to 25 hectares;
- ◆ Units located in export processing zones and special economic zones; and
- ◆ Modernisation of existing irrigation projects.

*Note:* Off shore exploration activities beyond 10 km from the nearest inhabited village boundaries, Gothans, and ecologically sensitive areas, such as mangroves (minimum of 1000 sq.m.), corals, coral reefs, national parks, marine parks, sanctuaries, reserve forests and breeding and spawning grounds of fish and other marine life have been proposed by the MoEF to be exempted from the public hearing.

### Points to examine that any public hearing is proper or not:

- ◆ The first and foremost thing is whether the notice to the public hearing has been given properly or not. The information of the public hearing and availability of the related documents to the villagers of the affected area is prime and foremost requirement of conducting the public hearing.
- ◆ Whether the notice of hearing is published in newspaper widely circulated in the area.
- ◆ It has been held by the Gujarat High Court that even publication in newspaper of the notice will not suffice the basic purpose for which the public hearing has been contemplated. The Gujarat High Court has held in case of *Centre for Social Justice v. Union of India and others*, that in addition to publication the people of the project affected village should be notified about the public hearing by informing them through concerned Gram Panchayat as the members of the Gram Panchayat would bring it to the notice of local people as normally rural population in India is illiterate and does not read newspaper.

Thus, only publishing the notice in newspaper was not sufficient to cause notice to the affected people.

- ◆ Access to the Executive Summary and Environmental Impact Assessment report of the project to the people is important. If the concerned persons have no knowledge of the report then it is not possible for them to effectively place their submission at the public hearing.

- ◆ Whether the place fixed for the public hearing is easily accessible to the villagers and the affected persons.
- ◆ The High Court of Delhi in the case of *Utkarsh Mandal v. Union of India* (2009), explained the objectives of public hearings and stated that the reason for furnishing a notice at least 30 days in advance of such hearings is to ensure “maximum participation” from local people. The court further observed that such participation would be meaningless if those present are not aware of the contents of the project, or its impact on their life and environment, or if the EIA reports are not available to them until the date of the public hearing.
- ◆ That NGT in the case of *Ossie Fernandes v. Ministry of Environment and Forests* while dealing with the validity of the EC granted to a thermal power plant in Tamil Nadu issued supplemental guidelines to improve the procedure:
  - The draft EIA must be presented by the project proponent in the presence of all the people assembled for the public hearing, item-wise.
  - The leaders of the local institutions like gram panchayats and samitis, the members of legislative assembly (MLAs) and members of Parliament (MPs) may be requested to be present at the public hearing and they may also speak as to the viability or otherwise of the project and submit their written representations.
  - No person shall be allowed to enter the pandal/hall where the public hearing is being conducted holding party flags and they shall not be allowed to raise party slogans. The public hearing should be strictly confined to the issues that arise from the draft EIA report and ancillary thereto, and nothing more.
  - The persons who want to speak in the public hearing may be asked to give their names in a prescribed form indicating details such as name, father/husband’s name, name of the village, taluk/tehsil, the extent of land, if any, affected and the subject on which he or she wants to speak, etc.
  - Those who do not want to speak may be asked to stand/sit behind the persons intending to speak, in a separate enclosure. However, those who gave their names are to be called to the dais one after the other and may be allowed to speak on the subject indicated, allotting about five minutes’ time to speak.
  - If the project involves presentation/clarification requiring intrinsic science and technical knowledge, the environmentalist/ scientist may be invited to speak on the occasion in the presence of the public and submit views, in writing, on the subject.
  - At the end, all the views, whether for or against the project, may be addressed subject-wise/issue-wise and be responded to by the project proponent or his/her representative.
  - The authority conducting the public hearing may be asked to take an active part in following each and every minute procedure required for conducting the public

hearing. It shall prepare minutes of the proceedings in accordance with the EIA notification, 2006 and show it to the public.

- Further, the public hearing proceedings shall be drawn in a tabular form addressing each and every issue raised in the public hearing and the reply offered by the project proponent.
- EAC minutes should incorporate detailed reasons, in writing, for acceptance, or otherwise, against each issue arising out of the public hearing and brought before it.

Purpose of Public Hearing is to create awareness regarding environmental legislation among people,

- ◆ Networking with organisations working on environmental issues and
- ◆ Strengthening public participation in decision-making process along with the local self-government.

Public participation in Environmental Public Hearings is largely based on following the three conditions:

- ◆ Lack of awareness in the area where the environmental issues have or may have arisen, in the vicinity of the upcoming project or,
- ◆ Absence of NGOs or other groups active in the area, who can raise the issue, protest and pursue the case or,
- ◆ Where the issue is complex and serious and demands planned strategic intervention, despite the presence of active NGOs or other groups.

# INTRODUCTION TO DISPLACEMENT AND REHABILITATION

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### 37.1 Introduction

Displacement or the involuntary and forced relocation of people has come to be acknowledged as among the most significant negative impacts of large water resources development projects such as dams. It is estimated that by 1995, nearly 60 million people would have been displaced worldwide due to the reservoirs created by large dams<sup>1</sup>. A World Bank review of 192 projects worldwide for the period 1986 and 1993 estimated that 4 million people were displaced annually by the 300 large dams (on an average) that entered into construction every year. All these figures are at best only careful estimations and certainly do not include the hundreds of thousands and millions who may have been displaced due to several others aspects of the projects such as canals, powerhouses, associated compensatory measures such as bio-reserves, etc.

Displacement and resettlement is however more than a question of sheer numbers (or the lack thereof), though this is one very critical issue in itself. There are several issues involved, such as human rights, governance and accountability, participation and self-determination in development, the complexities of resettlement goals, options and strategies, and relevant legal and policy instruments.

Generally, displacement as a result of acquisition is legally sanctioned, while there is no legal framework that governs the process of displacement itself; the land acquisition law protects the sanctity of what causes displacement (i.e., the dam) but not the displaced.

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<sup>1</sup> McCully, P. 1996.

In the absence of legal safeguards to ensure accountability on the part of the State, resettlement and rehabilitation (R&R) entitlements promised often by executive order have rarely been implemented in their entirety covering all affected people.

For the dams funded by multilateral development institutions, the nature and extent of compliance of 'mutually' agreed criteria and guidelines have been mixed. Frequently, monitoring missions were either inconsistent in their appraisal of compliance standards or accepted undue delays and deviations.

A theme common in almost all countries is that funds for R&R programme were inadequate. Underfinancing or outright abandonment have been the most common problems in most R&R programmes. There is evidence to show that organisations with legislative sanction provided with adequate funds and human resources have done well in implementing a well-defined and clearly operationalised resettlement and rehabilitation programmes.

The concept of programming resettlement as development programme mode is gaining currency though practice is limited. Good practices in this respect are those that:

- i) focus on means of livelihood rather than on assets;
- ii) assume an inclusive relationship between people and assets; and
- iii) admit of a negotiated definition of just compensation.

The record indicates that in those cases in which compensation packages were negotiated with PAPs and other stakeholders, the process has resulted in better outcomes for the resettlement process as a whole. Even when, for whatever reason, the negotiated form of compensation proves not to be the most appropriate or effective option, PAPs tend to feel more satisfied, as a result of the negotiation process, as attested by the Zimapan resettlement programme in Mexico.

There is an inverse relationship between scale of displacement and extent of achieving successful resettlement outcomes even in countries with best policy, institutional capacity and political commitment to do proper resettlement. There are a few good examples of minimising displacement.

Generally, participation of the affected people has been superficial or treated as unimportant by those responsible for the project. Real participation implies the capacity to influence or even modify decisions. Good practices from Brazil, Canada, and other countries, which offer significant learning value for the WCD have emerged from the case studies and submissions to the WCD.

In several countries, the indigenous and tribal people displaced by large dams seem to have experienced higher levels of landlessness, unemployment, indebtedness, and hunger. The studies have also documented the adverse impact of displacement on women and children. Only situations where loss of land and access to natural resources were replaced with sustainable resources women had opportunities to recover their social and economic worth and respect.

The National Rehabilitation and Resettlement Policy, 2007 that has come into force grows out of the experience of the earlier National Policy on Resettlement and Rehabilitation for Project Affected Families that was formulated in 2003. The new policy records in its preamble that the “Experience of implementation of this (2003) policy indicates that there are many issues addressed by the policy which need to be reviewed. There should be a clear perception, through a careful quantification of the costs and benefits that will accrue to society at large, of the desirability and justifiability of each project. The adverse impact on affected families - economic, environmental, social and cultural - needs to be assessed in a participatory and transparent manner”. The additional reasons in principle behind the new Policy can be culled out of the preamble of the Policy itself and these are reproduced in the sections below.

### 37.2 The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013

Vacant land is always required both by private as well as public sector in rural and urban areas. However, what about the compensation for acquiring the land? This main concern of the government resulted in the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 that was passed by the Parliament. It is a new land acquisition Act that looks very difficult but beneficial. The Act replaced the Land Acquisition Act of 1894. The new Act is all about the way the land is to be acquired and compensation to be made in India. Objective of the new Act is fair compensation which can be through resettlement and rehabilitation and transparency in the entire process of acquiring a land. Earlier Act was meant just to acquire the land not rehabilitation. The new Act was the need of the day to stop the forceful acquisition of the land, to safeguard the interest of the affected families and to redefine the rates of compensation. Public and private partnership resulted in more demand for land and thus the regulations of acquiring it. The new Act was passed because the Land Acquisition Act 1894 had many flaws. According to the previous law, the land could be acquired forcefully regardless of the affected person, the law was silent as far as rehabilitation and resettlement of the affected persons was concerned, urgency clause was not defined properly so almost all the cases of acquiring land were under this clause, and compensation rates were too low.

The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 is a legislation that regulates land acquisition and provides laid down rules for granting compensation, rehabilitation and resettlement to the affected persons in India. The Act has provisions to provide fair compensation to those whose land is taken away, brings transparency to the process of acquisition of land to set up factories or buildings, infrastructural projects and assures rehabilitation of those affected. The Act establishes regulations for land acquisition as a part of India’s massive industrialisation drive driven by public-private partnership. The Act replaces the Land Acquisition Act, 1894, a nearly 120-year-old law enacted during British rule.

The aims and objectives of the Act include:

- ◆ To ensure, in consultation with institutions of local self-government and Gram Sabhas established under the Constitution of India, a humane, participative, informed and transparent process for land acquisition for industrialisation, development of essential infrastructural facilities and urbanisation with the least disturbance to the owners of the land and other affected families;
- ◆ Provide just and fair compensation to the affected families whose land has been acquired or proposed to be acquired or are affected by such acquisition;
- ◆ Make adequate provisions for such affected persons for their rehabilitation and resettlement; and
- ◆ Ensure that the cumulative outcome of compulsory acquisition should be that affected persons become partners in development leading to an improvement in their post-acquisition social and economic status and for matters connected therewith or incidental thereto.

The Act aims to establish the law on land acquisition, as well as the rehabilitation and resettlement of those directly affected by the land acquisition in India. The scope of the Act includes all land acquisition whether it is done by the Central Government of India, or any State Government of India, except the state of Jammu & Kashmir.

The Act is applicable when:

- ◆ Government acquires land for its own use, hold and control, including land for Public sector undertakings.
- ◆ Government acquires land with the ultimate purpose to transfer it for the use of private companies for stated public purpose. The purpose of LARR 2011 includes public-private-partnership projects, but excludes land acquired for state or national highway projects.
- ◆ Government acquires land for immediate and declared use by private companies for public purpose.

The provisions of the Act do not apply to acquisitions under 16 existing legislations including the Special Economic Zones Act, 2005, the Atomic Energy Act, 1962, the Railways Act, 1989, etc.

Highlights of the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 - This is the first law that deals with both acquisition and rehabilitation. The Act will make sure of the rehabilitation of the family whose land is being acquired for making factories or other infrastructural projects. Affected families must be rehabilitated and resettled.

The Act is retrospective in nature. This means it will be applicable to the cases where land was acquired earlier and no compensation had been paid. The entire land acquisition process will take place according to the new provisions if the land acquisition has taken place five years ago without compensation or land possession.

It is a known fact that circle rates are often miscalculated or inaccurate at times. To balance this, if the land is acquired in rural areas then the compensation will be four times more than the circle rate and if acquired in urban areas then it will be two times more than that. For circle rate, average sale price for the last three years or last three months (whichever so ever will be higher) will be considered.

For land acquisition, local Panchayati Raj institutions and monitoring committee at the national and state levels will play their roles. They will make sure that all the obligations are met according to the said clause and provisions. The Gram Sabhas will provide sanction in case the land is in scheduled areas. This has been provided to safeguard the rights of tribal communities and disadvantaged groups. Without providing proper alternative sites for rehabilitation and resettlement no one can be evicted.

In case the project is for public private partnership then minimum of 70% consent and in case the land acquisition is for private companies then 80% consent of affected people is required. This is to stop the forcible acquisition of the land.

State must impose the limits on the area under agricultural cultivation.

In case the land is not utilised then it must be returned back either to the original owner or to the State Land Bank.

In case the land is sold at higher price to the third party, then 40% of the profit must be shared with the original land owner.

**How farmers are benefitted?** - Certain provisions such as retrospective effect, consent of the majority, return of unutilised land, share in profit if the land is sold to the third party at higher price, income tax exemption, protecting fair price, any damage to the crop to be included in the price and acquisition only if required are the associated benefits.

**Rehabilitation and resettlement provisions in the Act** - In case the affected families have been living on the land to be acquired for the past five years then they are entitled to a house. They can also have one-time financial grant instead of a house. Affected family can either accept a job or annuity. In case there is no employment then they are entitled to receive Rs. 5 lakh per family. Apart from this they are benefitted with the subsistence allowance, training and skill development, one-time financial assistance, etc.

**How it is beneficial for schedule caste and schedule tribes?** - For tribal people as well as for the people belonging to schedule caste, separate chapter in the Bill has been written. It is said that if acquisition is required then their land should be the last resort. First of all, no acquisition should be made in the Scheduled Areas and if at all it is required then it needs approval/ consent of the local institutions of self-governance. It must be accompanied by a complete development plan. One third of the compensation must be paid as first instalment to the affected families. If possible then these families must be rehabilitated in the same area, may be in a compact block, so that their originality can be retained.

### 37.3 Rehabilitation and Resettlement Policy and Associated Legislative Measures Relating to Land Acquisition

Provision of public facilities or infrastructure often requires the exercise of legal powers by the state under the principle of *eminent domain* for acquisition of private property, leading to involuntary displacement of people, depriving them of their land, livelihood and shelter, restricting their access to traditional resource base, and uprooting them from their socio-cultural environment. These have traumatic, psychological and socio-cultural consequences on the affected population which call for protecting their rights, in particular of the weaker sections of the society including members of the Scheduled Castes, Scheduled Tribes, marginal farmers and women. Involuntary displacement of people may be caused by other factors also.

There is imperative need to recognise rehabilitation and resettlement issues as intrinsic to the development process formulated with the active participation of the affected persons, rather than as externally-imposed requirements. Additional benefits beyond monetary compensation have to be provided to the families affected adversely by involuntary displacement. The plight of those who do not have legal or recognised rights over the land on which they are critically dependent for their subsistence is even worse. This calls for a broader concerted effort on the part of the planners to include in the displacement, rehabilitation and resettlement process framework not only those who directly lose land and other assets but also those who are affected by such acquisition of assets. The displacement process often poses problems that make it difficult for the affected persons to continue their earlier livelihood activities after resettlement. This requires a careful assessment of the economic disadvantages and social impact of displacement. There must also be a holistic effort aimed at improving the all-round living standards of the affected people.

#### Applicability and Mechanism of the Policy

The Preamble of The National Rehabilitation and Resettlement Policy, 2007 states that: “A national policy must apply to all projects where involuntary displacement takes place.” However, the appropriate Government shall declare area of villages or localities as an “affected area” only if there is likely to be “involuntary displacement of four hundred or more families en masse in plain areas, or two hundred or more families en masse in tribal or hilly areas, DDP blocks or areas mentioned in the Schedule v or Schedule VI to the Constitution due to acquisition of land for any project or due to any other reason.”

After the declaration of an area as “affected area”, the Administrator for Rehabilitation and Resettlement undertakes a baseline survey and census for identification of the persons and families likely to be affected by the proposed project. The 2007 Policy also provides that the appropriate Government may appoint an Administrator for Rehabilitation and Resettlement (hereafter called “Administrator”), who is an officer not below the rank of District Collector, to oversee the resettlement and rehabilitation plan. But the Administrator can delegate his/her powers and duties to any officer not below the rank

of Tehsildar or equivalent. The Administrator is vested with the power of “overall control and superintendence of the formulation, execution and monitoring of the rehabilitation and resettlement plan” However, the Administrator can only exercise his powers and functions “subject to the superintendence, directions and control of the appropriate Government and Commissioner for Rehabilitation and Resettlement” and “subject to any general or special order of the appropriate Government”.

### **Introduction of Social Impact Assessment of Projects**

The new Policy introduces for the first time in India the need for Social Impact Assessment (SIA) of Projects by laying down that “the appropriate Government shall ensure that a Social Impact Assessment (SIA) study is carried out in the affected areas in such manner as may be prescribed.” According to the policy, while undertaking a social impact assessment, the appropriate Government shall, *inter alia*, take into consideration the impact that the project will have on public and community properties, assets and infrastructure; particularly, roads, public transport, drainage, sanitation, sources of safe drinking water, sources of drinking water for cattle, community ponds, grazing land, plantations; public utilities, such as post offices, fair price shops, etc., food storage go downs, electricity supply, health care facilities, schools and educational/training facilities, places of worship, land for traditional tribal institutions, burial and cremation grounds, etc. The Policy makes clear that “Where it is required as per the provisions of any law, rules, regulations or guidelines to undertake environmental impact assessment also, the SIA study shall be carried out simultaneously with the Environmental Impact Assessment (EIA) study.”

### **Rehabilitation and Resettlement Benefits for the Affected Families**

Rehabilitation and Resettlement Benefits for the Affected Families are provided under Chapter VII of the new Policy. Some of the main provisions in this regard include:

- ◆ Any affected family owning house and whose house has been acquired or lost, may be allotted free of cost house site to the extent of actual loss of area of the acquired house but subject to a cap in rural and urban areas.
- ◆ Each below poverty line family that is affected without homestead land, and residing in the affected area continuously for a period of not less than three years preceding the date of declaration of the affected area and which has been involuntarily displaced from such area, shall be entitled to a house of minimum one hundred square metre carpet area in rural areas, or fifty square metre carpet area in urban areas.
- ◆ Each affected family owning agricultural land in the affected area and whose entire land has been acquired or lost, may be allotted in the name of the *khatedar(s)* in the affected family, agricultural land or cultivable wasteland to the extent of actual land loss by the *khatedar(s)* in the affected family subject to a maximum of one hectare of irrigated land or two hectares of un-irrigated land or cultivable wasteland, if Government land is available in the resettlement area.

- ◆ In the case of irrigation or hydel projects, the affected families shall be given preference in allotment of land-for-land in the command area of the project, to the extent possible.
- ◆ In case of allotment of wasteland or degraded land in lieu of the acquired land, each *khatedar* in the affected family shall get a one-time “financial assistance of such amount as the appropriate Government may decide but not less than fifteen thousand rupees per hectare for land development.”
- ◆ The ‘requiring body’ shall give preference to the affected families - at least one person per nuclear family - in providing employment in the project, subject to the availability of vacancies and suitability of the affected person for the employment.

The list of the benefits as above shows that the Policy while planning for ‘land for land’ to the extent possible, does not guarantee land-for-land compensation to the displaced families. Civil society organisations also feel that under the Policy the affected persons are denied the rights to take any kind of informed decision regarding the usage of their lands with regard to development projects.

### Rehabilitation and Resettlement Enactments by the State Governments

The three legislations namely *The Maharashtra Rehabilitation Act, 1989*, *Madhya Pradesh Pariyojna ke Karan Visthapit Vyakti (Punsttapan) Adhiniyam, 1985 (Madhya Pradesh Resettlement Act)* and *the Karnataka Resettlement of Project-Displaced Persons Act, 1987* were considered progressive legislations and were aimed at resettlement and rehabilitation of the project affected person at the state level. However, there were major lacunae which limited the effect of these progressive legislations. All of the state enactments were either project specific or their applicability was dependent on the discretion of the government. The Madhya Pradesh Act, for example, basically revolves around affected persons of irrigation projects and hence has a limited focus. The package of rehabilitation in most of these acts is again as provided under Land Acquisition Act, which means that money is the basic criteria for compensation. The question whether the “land for land” should be affected as premise for rehabilitation has not been answered by all the existing laws.

## 37.4 Protecting and Restoring the Tribal Lands: A Policy and Legal Perspective

A bevy of national and state laws have been passed from time to time in independent India with the objective of protecting the interest of tribals in their lands. In particular, the prohibition of transfer of land from tribals to non-tribals has been included in various Land Revenue Codes and Land Regulations and Acts passed by different states. For a typical example let us see the provisions under the *Land Revenue Code of Madhya Pradesh*.

The M.P. land Revenue Codes provides restriction over transfer of land held by any person who is designated as aboriginal by a notification of the State Government (Section

168). The law provides that any transfer of land held by a tribal to a non-tribal shall not be without prior permission of the Collector in charge of the area and this permission shall be in writing and with recorded reasons of granting such permission. The Code taking a pro-active approach provides that the Collector before granting such permission should ascertain that the person acquiring the land has been a resident of the area, shows purpose of the transfer, proves adequacy of the consideration and such other matters as may be prescribed. The collector has also been provided with the power to initiate *suo moto* inquiry within five years of the transfer.

However, despite this categorical legal imperative, land alienation of the tribals persists, and in large areas of the country it is now endemic. Official figures show that every year the number of landless in the country increases by two million. A well-known study, relied upon by the a Steering Committee of the Planning Commission for the Tenth Five Year Plan, points out that in four districts: Dhenkanal, Ganjam, Koraput and Phulbani in Orissa about 56% of the total tribal land was lost to non-tribals over a 25-30 year period.

With the mandate of finding a lasting solution to the vexed problem of tribal land alienation and consequent indebtedness, various Commissions and Committees were appointed in the past. Indeed, some of the legislative and judicial measures suggested were radical and far-reaching. These include, among others: ousting the jurisdiction of civil courts in cases of eviction of Scheduled Tribes, suspending the operation of the Limitation Act in cases of dispute relating to the tribal land, separate legislation for the conferment of the ownership rights, provisions in all civil suits involving tribal land for making the government a party and empowering it to give and rebut evidence, banning transfers of tribal land to non-tribals in all states and Union Territories, amending the law of evidence to place oral evidence on a higher pedestal, and establishing special courts for prompt disposal of land alienation cases.

However, one feels that the continuance of the problem is a reflection of the fact that the recommendations of the various committees address only the symptoms of the problem and not their roots.

### **Draft National Development, Displacement and Rehabilitation Policy, 2006**

Displacement due to 'Development' in India is not new, though resettlement and rehabilitation as a policy measure certainly is. The colonial period has produced a vast segment of displaced people. The forest resources, river systems and mineral base that attract the 'developmental projects' have displaced a large segment of people in the Indian society. In the Indian context, it is of interest to note that most of the developmental projects are located in the most backward areas and populated by various small communities, otherwise called tribals. These segments, with the enactment of land settlement laws, forest laws and commercialisation of forest products and minerals, have undergone a metamorphosis, where legally the access to the various natural resources are denied and these segments are treated as hostages within their environment. Another productive segment was also a part of displacement due to the process of de-

industrialisation and forced commercialisation of agriculture. Any resistance to the displacement was treated as a 'law and order' problem, so there was no question of Rehabilitation and Resettlement policy. Land was acquired by the draconian provisions of Land Acquisition Act 1894 to be a weapon in hand of independent Indian state for acquiring land from its citizens. The situation just after independence was not much different. It was only during mid-eighties that the policies for rehabilitation were drafted for the first time.

In 2006, a draft policy for National Development, Displacement and Rehabilitation was prepared with the following objectives:

- 1) To minimise development induced displacement of people by promoting non displacing or least displacing alternatives for meeting development objectives.
- 2) To minimise the direct and indirect adverse social impacts of land use changes due to development and commercial projects, activities or policy changes (on land, shelter, livelihood, access).
- 3) In those rare cases where non-displacing alternatives are not available, to shift from the earlier practice of forced displacement to displacement after prior informed consent.
- 4) Where displacement is inevitable, to ensure a fair and humane compensation package and process, and timely implementation of rehabilitation.
- 5) To ensure full transparency and justice in the processes of displacement and land acquisition.
- 6) To ensure that all those who are displaced are brought above the poverty line and made significantly better off than they were prior to displacement, not just in economic terms, but also in terms of human development and security, in a reasonable time frame, and in accordance with their aspirations.
- 7) To ensure that benefits to the displaced people are not less, as a ratio to the costs being paid by them, than those that accrue to the people benefiting from that specific project or from the developmental process in general.
- 8) To integrate rehabilitation concerns into the development planning and implementation process.
- 9) To ensure that special care is taken for protecting the rights of, and ensuring affirmative state action for, the weaker segments of society, especially members of scheduled castes and scheduled tribes, and to create legal obligations on the state to ensure that they are treated with special concern and sensitivity.

### **National Rehabilitation and Resettlement Policy, 2007**

The National Rehabilitation and Resettlement Policy of 2007 was notified in the Gazette on 31 October 2007. It replaced the National Policy on Rehabilitation and Resettlement, 2003.

The policy aimed at striking a balance between the need for land for developmental activities and, at the same time, protecting the interests of the land owners, and others, such as the tenants, the landless, the agricultural and non-agricultural labourers, artisans, and others whose livelihood depends on the land involved.

The benefits of the policy were aimed to be available to all affected persons and families whose land, property or livelihood is adversely affected by land acquisition or by involuntary displacement of a permanent nature due to any other reason, such as natural calamities. The benefits are available to all affected persons and families whose land, property or livelihood is adversely affected by land acquisition or by involuntary displacement of a permanent nature due to any other reason, such as natural calamities.

The benefits under the new policy to the affected families include; land-for-land, preference for employment in the project to at least one person from each nuclear family, subject to the availability of vacancies and suitability of the affected person; training and capacity building for taking up suitable jobs and for self-employment; scholarships for education of the eligible persons from the affected families; preference to groups of cooperatives of the affected persons in the allotment of contracts and other economic opportunities in or around the project site; wage employment to the willing affected persons in the construction work in the project; housing benefits including houses to the landless affected families in both rural and urban areas; and other benefits.

Adequate provisions have also been made for financial support to the affected families for construction of cattle sheds, shops, and working sheds; transportation costs, temporary and transitional accommodation, and comprehensive infrastructural facilities and amenities in the resettlement area including education, health care, drinking water, roads, electricity, sanitation, religious activities, cattle grazing, and other community resources.

A special provision has been made for providing lifetime monthly pension to the vulnerable persons, such as the disabled, destitute, orphans, widows, unmarried girls, abandoned women, or persons above 50 years of age.

Special provision for the Scheduled Tribes (ST) and Scheduled Castes (SC) include preference in land-for-land for STs followed by SCs; a Tribal Development Plan which will also include a programme for development for alternate fuel and non-timber forest produce resources, consultations with the Gram Sabhas and the Tribal Advisory Councils, protection of fishing rights, land free-of-cost for community and religious gatherings, and continuation of reservation benefits in resettlement areas, among others.

A strong grievance redressal mechanism has been prescribed, which includes standing rehabilitation and resettlement (R&R) Committees at the district level, R&R Committees at the project level, and an Ombudsman duly empowered in this regard. The R&R Committees shall have representatives from the affected families including women, voluntary organisations, Panchayats, local elected representatives and others. Provision has also been made for post-implementation social audits of the rehabilitation and

resettlement schemes and plans. For effective monitoring of the progress of implementation of R&R plans, provisions have been made for a National Monitoring Committee, a National Monitoring Cell, mandatory information sharing by the States and Union Territories (UT) with the National Monitoring Cell, and Oversight Committees in the Ministries and Departments concerned for each major project.

Under the Policy, no project involving displacement of families beyond defined thresholds can be undertaken without a detailed Social Impact Assessment (SIA), which among other things, shall also take into account the impact that the project will have on public and community properties, assets and infrastructure; and the concerned Government shall have to specify that the ameliorative measures for addressing the said impact, may not be less than what is provided under any scheme or programme of the Central or State Government in operation in the area.

The SIA report shall be examined by an independent multi-disciplinary expert group, which will also include social science and rehabilitation experts. Following the conditions of the SIA clearance shall be mandatory for all projects displacing people beyond the defined thresholds.

However, some experts who have reviewed the policy state that it fails to address the key issues relating to the booming of conflicts, i.e. forcible acquisition of lands. It is said that the 2007 Policy was supposed to be an improvement of the Draft National Rehabilitation Policy of 2006, which was drafted to address the admitted failures of the National Policy on Resettlement and Rehabilitation for Project Affected Families of 2004. However, the Policy fails to effectively overcome the shortcoming of the 2004 Policy.

Following the decision of implementation of the policy, the Government of India has also announced that it will be setting up a National Rehabilitation Commission duly empowered to exercise independent oversight over the rehabilitation and resettlement of the affected families. However, even after a year, the commission is yet to see the light of the day. The Requiring Bodies shall be responsible for development of designated areas on the periphery of the project site, and shall earmark funds for the purpose of such periphery development activities.

### **National Rehabilitation and Resettlement Policy Bill, 2007**

India has a history of development-induced displacement, and the persistence of the colonial Land Acquisition Act, 1894 has stood testimony to the reluctance and the helplessness of the establishment in dealing with the problem. For more than three decades, people's movement across the country have demanded the repeal, or at least the amendment of this legislation, referring to rampant misinterpretation of the term public purpose, and the abuse of the power of eminent domain. The introduction of this Bill was preceded by Cabinet approval for the National Resettlement and Rehabilitation Policy in October, 2007 a response to the popular opposition to the takeover of agricultural land for the creation of Special Economic Zones.

The Bill provides for benefits and compensation to people displaced by land acquisition purchases or any other involuntary displacement. For large scale displacement, the government shall conduct a social impact assessment, and appoint an Administrator for Rehabilitation and Resettlement to formulate and execute the rehabilitation and resettlement plan. While outlining the minimum benefits for displaced families, a post of Ombudsman has also been created to address the grievances in the process. The bill is yet to be passed.

## 37.5 Conclusion

Sometime during the 1980s, thinking began in the government of India on the formulation of a policy to govern all future cases of displacement of people relating to developmental projects of all kinds, such as dams, industrial or mining projects, highways, and so on. The subject was discussed many times at inter-ministerial meetings at the level of secretaries, and at meetings of groups of ministers. However, two decades of intermittent debates over repeated redrafts failed to produce an outcome. Eventually, in October 2006, a draft National Rehabilitation Policy 2006, was posted in the public domain for comments. Taking note of the comments received, and in the light of further inter-ministerial consultations, an attempt is now being made by the ministry of rural development to draft a national act on the subject<sup>2</sup>.

There is a triad of terms: displacement, resettlement and rehabilitation. Displacement may not always be followed by resettlement; and resettlement does not necessarily imply the full rehabilitation of displaced persons. In recent years in India, it has come to be accepted that displacement of people must be followed by resettlement and rehabilitation, but this was not always the case. Incidentally, in ordinary English usage, “rehabilitation” could be of dilapidated structures, sick industries, dysfunctional systems or institutions, declining traditions and customs, damaged reputations, or persons addicted to alcohol or drugs. In India, however, the word rehabilitation is almost always understood to mean the rehabilitation of displaced people (whether they have been displaced by “developmental” activities or by natural phenomena such as earthquakes or tsunamis).

The forced displacement of people for the purposes of various “developmental projects” such as big dams, large industrial or mining projects, highways and flyovers, and so on, has been going on in India for a very long time. Some dams, barrages and canals were built in British times, but after independence and with the commencement of centralised economic planning there was an explosion of such projects. They were formulated, designed and executed by engineers, and concerns about environmental impacts or about the displacement of people did not enter into the processes of planning and decision making.

If we think of projects undertaken in the 19th century or in the early decades of the 20th century, it is evident that they were essentially engineering undertakings: there were no

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<sup>2</sup> Ramaswamy R Iyer, *Economic and Political Weekly* July 28, 2007, 3103

environmental impact assessments or rehabilitation policies then, and the precise environmental, social and human impacts of those projects were undocumented and unknown, though retrospectively some studies have been attempted in some cases.

Displacements, however, took place, because land was needed for the construction of dams and reservoirs. There are different estimates of the total number of persons that have been displaced by developmental projects in general and by big dams in particular. The numbers vary from 10 million to 40 million. The latter figure has been dismissed by some as an exaggeration; the former is clearly an under-estimate.

While a figure that commands widespread acceptance is not available, it seems unlikely to be much lower than 20 million. The instrument of displacement was the Land Acquisition Act 1894 under which private land could be acquired by the state for a “public purpose”. Compensation had to be paid for the land or property taken over, based on historical cost plus a solatium, but the concept of replacement cost was unknown. The compensation amount was not a negotiated sum, but a figure fixed by the government officials under certain rules. The figure could be contested under the Act, and many cases did go to the courts, leading to some enhancement of the valuation in some cases, but this was nowhere near replacement cost. The Act did provide for the issue of notifications giving the persons whose land or property was proposed to be acquired an opportunity to raise objections, but the objections could be procedural or about valuation; the “public purpose” for which the state proposed to take over private property was not open to contestation.

There was a great deal of dissatisfaction with the Act:

- a) on the part of the people on the grounds of the quantum of compensation, the delays in payments, and so on (including corruption amongst the officials dealing with the matter); and
- b) on the part of the government because of the delays in land acquisition due to challenges and litigation and the delays that these caused to the implementation of the projects in question.

It must be noted that we are talking only about compensation for land and property acquired, and not about the resettlement or rehabilitation of the displaced people: the concept was unknown in the early years.

Over a period of time, it began to be recognised that something more than compensation for the land and property acquired was needed, and ideas of resettlement and rehabilitation began to emerge. These got elaborated and formulated into policies and packages in the context of certain projects. Separately, the drafting of a national rehabilitation policy to be applicable to all future dam projects as well as industrial, mining and other projects, i.e., development-related displacements of all kinds, was mooted in the mid-1980s, and was “under consideration” and undergoing repeated revisions for many years. It is that process that is still going on and seems now to be approaching finality. Regrettably, right from the beginning there was a resistance to good ideas, and drafts were progressively diluted.

The question is ‘Has the preoccupation with “development” overshadowed everything else’? We tend to assume that there are deep human and social concerns behind the official efforts to draft a national rehabilitation policy. Too much development means dams, highways, flyovers, high-rise buildings, huge apartment blocks, grand shopping malls, and so on: our cities must become as resplendent as Singapore and Beijing. Let us summarise a few points that we examined in this unit:

- 1) It is wrong to talk about a rehabilitation policy or even a resettlement and rehabilitation policy, as both formulations take displacement for granted. We need a displacement and rehabilitation policy (D&R, not R&R).
- 2) The first thing to be said about displacement is that it is ordinarily unacceptable. Being uprooted (displacement is a bland term for this) is a traumatic experience under the best of circumstances, and should be avoided if possible. A clear recognition of this, and an explicit statement to this effect should be the starting point for any D&R policy or law.
- 3) It follows from the above (and from the more general “precautionary principle”) that it is for the person or organisation or authority proposing displacement to establish that it is unavoidable (i.e., that no non-displacing alternative is available for the objective in question); that the objective itself is well-conceived, necessary and unavoidable; that displacement is minimal (i.e., that a less-displacing alternative is not available); and that the hardship involved in the displacement can be minimised and adequately compensated for.
- 4) The theory that development entails costs and that some must make “sacrifices” in order that others might benefit, is a disingenuous and sanctimonious one that needs to be abandoned; pain and hardship imposed by some on others cannot be described as a sacrifice by the latter.
- 5) Where displacement seems unavoidable, it ought not to be forced displacement, but should be voluntary. The principle of “free, informed prior consent” put forward by the World Commission on Dams should be enshrined in the policy statement or law.
- 6) If consent is to be “informed”, the necessary information must be provided. The people likely to be affected must be taken into confidence and provided with the fullest information about the contemplated project from the earliest stages, so that they can satisfy themselves about the desirability of the project, the non-availability of alternatives, and the rationale of the proposed displacement.
- 7) There is widespread agreement that the Land Acquisition Act, 1894 (LAA) needs to be radically overhauled, but that may be a difficult and long-drawn process. A quicker and easier course would be to decide that the LAA route will be used for getting the needed land only for governmental purposes such as building a school or hospital or a government office; that “public purpose” will be redefined to cover only such cases, and will not include private sector or public sector (or even governmental) projects or programmes or activities, whether industrial or commercial or other (e.g., irrigation); and that in all such cases, land will be purchased through negotiation.

- 8) Such a decision needs to be accompanied by special measures to protect rural (or urban) communities, particularly poor and disadvantaged groups (“weaker sections of society”), from being exploited by rich and/or politically and economically powerful project-managers and industrialists in unequal negotiations.
- 9) Where the LAA 1894 is used for acquiring land, the acquisition needs to be made (a) contestable (not merely in regard to compensation, but also in relation to the public purpose which is the justification for displacement), (b) procedurally more humane and equitable, and (c) just in terms of compensation, with due regard to the amount needed for buying land or property (house, shop) in the resettlement area.
- 10) In tribal areas, the requirement of consultation with the gram sabha under the Panchayats (Extension to Scheduled Areas) Act, 1996 or PESA must be scrupulously observed.
- 11) Project-affected people (PAPs) should be granted through legislation the first claim on the benefits of the project for which they were displaced, and preferably resettled in the command area of the project. The political difficulties involved in this need to be overcome.
- 12) Rehabilitation should leave the PAPs better off than before, or at least as well off. There is general acceptance of that proposition, but no unanimity about the elements of the policy and package. Based on the rehabilitation policies and packages of some recent projects, it should be possible to work out a normative package for future projects.
- 13) We need a National Displacement and Rehabilitation Act, not merely a policy. If statutory clearances are needed for felling trees and for interference with the environment, there should also be a statutory clearance for displacing people and a statutory backing for the resettlement and rehabilitation package to be offered to them.
- 14) Finally, for giving the necessary clearances under such an Act, and for monitoring the actual implementation, there should be a national displacement and rehabilitation commission.

# UNIT 38

## DISPLACEMENT AND ENVIRONMENT CONCERNS

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### 38.1 Introduction

Migration is one of the oldest coping strategies for dealing with degradation of environmental conditions. Globally, the increase in the magnitude and geographical scale of environmental change caused or exacerbated by climate change and human activities have led many agencies including government and international organisations to refer to environmentally induced migration as a new type of phenomenon, and a new challenge for the 21st century. In this module we shall examine population displacements related to environmental events, addressing conceptual, legal and policy issues.

The UNHCR in the 1993 State of the World's Refugees, has identified four root causes of refugee flows. These were: political instability; economic tensions; ethnic conflict; and environmental degradation. The claim that environmental degradation was a root cause of refugee flows was a direct response to a growing number of articles positing a link between environmental degradation and population movement, and recognition that the numbers of displaced persons internationally was much larger than indicated by the statistics on refugee flows. Concerns about the consequences of climate change for human populations, the recognition that migration may be one of the most viable adaptation strategies, and the view that such population movements would present security challenges fuel this increasing interest, which has materialised in a number of recent conferences (IOM & UNFPA, 2008; UNEP, 2008). Many writers argue that the number of people who have been displaced by environmental degradation is immense. For instance, Jacobson (1988) notes that, 'environmental refugees have become the single largest class of displaced persons in the world.' Homer-Dixon (1991) further notes that

environmental degradation is likely to produce ‘waves of environmental refugees that spill across borders with destabilising effects’ on domestic order and international relations. Speaking of displaced persons unaccounted for in official refugee figures, the Executive Director of UNEP at the time, Mustafa Tolba (1985), stated that ‘these people are the millions fleeing the droughts of northern Africa, the victims of Bhopal and the thousands made homeless by the Mexico earthquake. They are environmental refugees.’ However still, the debate on what constitutes an environmentally induced move continues, and the general agreement that environmental factors contribute to population mobility translates into a modest consensus about the mechanisms, character and extent of that contribution (IOM 1992; Suhrke 1993), a topic we shall discuss later.

## 38.2 Environmental Refugee: A Growing Phenomenon of 21st Century

Environmentally induced population displacement is a hot topic. There is now a new phenomenon in the global arena: environmental refugees. These are people who can no longer gain a secured livelihood in their homelands because of drought, soil erosion, desertification, deforestation and other environmental problems, together with associated problems of population pressures and profound poverty. Current trend shows that impacts of climate change on environment and human mobility are becoming increasingly worrying, with the number of natural disasters doubling over the past two decades (EU, 2008). In many cases these displacement-related environmental issues are widespread and often highly visible in major camps, settlements, urban slums and return areas. It is estimated that every year 30 million people worldwide are forced to move because of serious degradation of environmental conditions, natural disasters and depletion of natural resources. However, since governments generally take little official account of this unconventional category the estimates are a best guess in all cases. This figure is expected to soar by the middle of this century, as growing numbers of impoverished people press ever harder on over-loaded environments. For instance, scientists predict, when global warming takes hold, there could be as many as 200 million people overtaken by disruptions of monsoon systems and other rainfall regimes, droughts of unprecedented severity and duration, and by sea-level rise and coastal flooding (Myers, 1995). The International Organisation for Migration (IOM, 1992) goes farther, noting that by the turn of the century there may be one billion persons who have been ‘environmentally displaced from their original habitat’. Another estimate suggested that environmental refugees scattered throughout the developing world number over 250 million people whose lives are threatened by severe desertification, and 800 million people subject to chronic water shortages. The Intergovernmental Panel on Climate Change (IPCC, 1990) noted that the greatest effect of climate change may be on human migration as millions of people will be displaced due to shoreline erosion, coastal flooding and agricultural disruption.

While Sub-Saharan remains the prime focus of environmental refugees, there are sizeable numbers in other regions and countries. In China with its 120 million internal migrants, at least six million deserve to be regarded as environmental refugees, having been

obliged to abandon their farmlands due to shortages of agricultural plots in the wake of decades of population growth. Estimates suggest that in Mexico there are one million new environmental refugees each year. Some become assimilated in cities, and a few return home, leaving a cumulative total, as a bare minimum in 1995, of two million. Finally, there are those people displaced involuntarily by public works projects, notably large dams, and increasing by ten million every year (with a cumulative total of 50 million in just China and India).

In most cases, poverty serves as an additional 'push' factor associated with the environmental problems that displace people. Most in danger are vulnerable groups in the least developed countries whose capacity to adapt to the effects of climate change is extremely poor, people residing in low-lying coastal areas and areas of considerable over-population. Broadly the suite of factors include population pressures, malnutrition, landlessness, unemployment, over-rapid urbanisation, pandemic diseases and faulty government policies, together with ethnic strife and conventional conflicts. Those people who migrate because they suffer outright poverty are frequently driven also by root factors of environmental destitution. Further to this, it is their environmental plight as much as any other factor that makes them economically impoverished. This generally applies to those refugees who migrate to areas where economic conditions are little, if any, better than back home, as is the case with many people who migrate within Sub-Saharan Africa and the Indian subcontinent. In this instance, with poverty and 'life on the environmental limits' as the main motivating force, it matters little to the migrants whether they view themselves primarily as environmental or economic refugees. In fact, the consideration for people who may have been displaced by environmental degradation has reached far beyond a humanitarian concern for a disenfranchised population; in some quarters, it is being considered a 'threat to security'. Betterton (1992, as cited in Honebrink, 1993) noted that the U.S. military might be needed 'to guard the border with Mexico, as it is expected that problems may result from environmental refugees fleeing the Third World'. Indeed, the anti-immigration literature in the United States and Europe often claims that immigration is a cause of environmental degradation, thereby bringing the links full circle (see, for example, Beck, 1996). Quotes like the ones below are becoming increasingly prevalent in the popular literature.

It is not antihuman or antisocial to say that too many people can be a problem.... People pollute, and too many people living in an area can degrade that area irrevocably. Immigration at high levels exacerbates our resource and environmental problems. It will leave a poorer, more crowded, more divided country for our children.

Lamm and Imhoff (1985)

...Immigration has been a substantial cause of the negative environmental news that must be mixed among all the good.... Thus, to what extent environmental problems can be blamed on U.S. population growth, the preponderance of that blame rests on U.S. immigration policy. Only a reduction in numbers will deal with the environmental problem.

Beck (1996)

For a specific instance of the problem's scope to expand, consider the prospect for Sub-Saharan Africa- a region with half the world's traditional refugees and at least a similar proportion of environmental refugees. Despite some advances in soil conservation (Kenya, Ethiopia), small-scale agriculture (Nigeria, Zimbabwe), reforestation (Tanzania, Malawi), anti-desertification (South Africa), and population planning (Kenya, Zimbabwe, Botswana), the outlook is unpromising. Severe desertification may well affect more than 100 million people. Ten countries are expected to be experiencing chronic water shortages or even acute water scarcity, with collective populations totalling well over 400 million people. Without greatly expanded efforts to tackle the region's lack of development, per-capita GNP will probably stagnate in real terms at around \$400, or little higher than in 1970. Most important of all will be the region's incapacity to feed itself. Some 20 countries with a projected population of 440 million are expected to experience up to 25 percent shortfall in food supplies, and a further eight countries with a projected 75 million people face more severe deficits. The total of malnourished people will continue to grow, with at least 100 million destitute people obliged to live for the most part off imported food. The food deficit could well rise to as high as 30 million tonnes. Because of its exceptional poverty the region will be increasingly unable to compete in the global grain market. In addition, there will be problems of global warming. Largely due to sea-level rise and flooding of coastal-zone communities, but also to increased droughts and disruptions of rainfall regimes such as monsoonal systems, global warming could threaten large numbers of people with displacement by 2050 or earlier. Preliminary estimates indicate the total of people at risk of sea-level rise in Bangladesh could be 26 million, in Egypt 12 million, in China 73 million, in India 20 million, and elsewhere, including small island states, 31 million, making a total of 162 million. At the same time, at least 50 million people could be at severe risk through increased droughts and other climate dislocations. Most in danger are vulnerable groups in the least developed countries whose capacity to adapt to the effects of climate change is extremely poor, those residing in low-lying coastal areas and areas of considerable over-population.

Despite all this, the debate on what constitutes environmentally induced move continues, and the general agreement that environmental factors contribute to population mobility translates into a modest consensus about the mechanisms, character and extent of that contribution (IOM 1992; Suhrke 1993; Swain, 1996). Some international organisation have proposed a working definition of environmental migrants, which identifies trigger events, types of movement and also hints at the mechanisms linking environmental change and population mobility. To capture the several possible combinations, particularly for policymaking and development planning, the IOM (2007) has also suggested different scenarios as shown in Table 1.

Of particular interest in this table are columns 1 and 3. Column 1 highlights the heterogeneity of trigger events in terms of intensity, predictability, and scale or magnitude, which results in critical differences in terms of people displaced, area affected and duration of the event (UNHCR, 1996). Column 3 characterises the interactions of environmentally induced displacement with human security and conflict, topics that have also been on the rise. Depending on the intensity of the hazard, the vulnerability

of the exposed population, and the availability of assistance, environmentally induced mobility may be arranged in a continuum ranging from forced to compelled to voluntary (Hugo 1996), a point discussed in detail in the next section.

**Table 1: IOM's Migration-Environment Scenarios, IOM, 2007**

The propensity to migrate in relation to environmental change	The impact of migration on the environment	Interactions between migration, environmental change, human security and conflict
Migration at less advanced stages of gradual environmental change	Migration's impact on the environment in areas of destination	Human security challenges of environmental change and migration
Migration at advanced stages of gradual environmental change	Migration's impact on the environment in areas of origin	Conflict potential of environmental change and migration
Migration due to extreme environmental events		
Migration due to large scale development and land conservation		

### 38.3 Explaining Environment in Migration Movements

Migration is described as 'an extremely varied and complex manifestation and component of equally complex economic, social, cultural, demographic, and political processes operating at the local, regional, national, and international levels' (Castles and Miller, 1993). Moreover, it is similarly problematic to remove environmental processes from the social, economic, political and institutional structures of which they are a part. Therefore, drawing a linear, deterministic relationship between environmental degradation and migration (and security) is not only inappropriate, but also impossible. Nevertheless, we can try to identify certain cases where environment plays an important role as a contributor to population movement and attempt to design interventions to minimize the negative impacts associated with such cases.

While there are various estimates on the number of environmental refugees, UNHCR (1995) acknowledges that collecting accurate statistical data on refugees and asylum-seekers is 'one of the most problematic issues' confronting the agency, and these figures, indeed all figures cited in this article, must be treated with suspicion. Nevertheless, these rough estimates of the total number of displaced persons are often presented with abandon, either for shock value or for political reasons. Estimates as made by International Organisation for Migration (IOM, 1992), as discussed in the previous section lead to much confusion and fear on the part of many, and provide ample 'evidence' for those wishing to promote anti-immigration rhetoric in the North. To explain this, various theories are proposed by academicians world over. Broadly, theories on the causes of migration flows

can generally be categorised into two broad perspectives. The first is a 'neo-classical economics equilibrium approach', which suggests that population movement is a 'natural' response to interregional differences in social and economic opportunities, and people generally move from where labour is plentiful and capital is scarce to labour-deficit and capital-rich areas. Thus, the level of development in various regions of the globe is seen as determining the magnitude and direction of migratory streams. Extensions to the neo-classical approach explain population movements based on a combination of 'push' and 'pull' factors; existing conditions at the place of origin may motivate an individual to leave, or qualities of the area of destination may attract a potential migrant. Demographic pressures, political instability, lack of economic opportunities and, more recently, environmental degradation have been posed as possible 'push' factors. The second approach criticises the neo-classical economic perspective for placing too much emphasis on the free choice of individuals, and for neglecting the macro-structural forces which lie at the base of the regional disparities to which people respond. Population movements are not unique or isolated events, but are related to the international power structure and institutional organisation. According to this 'structuralist' approach, the explanation for population movements lies in the deeper, underlying forces, which structure the unequal distribution of opportunities between regions. Population movements, then, are a response to broader structural forces in society, in particular those associated with the uneven penetration of capitalism which has created substantial spatial inequalities.

The difference between neo-classical economic theories of population movements and the structuralist approach influences all aspects of any discussion regarding the issue. Not only do the theories offer opposing views of the causes of refugee movements, but they also imply very different outcomes. The neo-classical approach, arguing that population displacements are natural occurrences, suggests that they are positive events and that policy development should reflect and reinforce the beneficial aspects of these movements. The structuralist approach, however, emphasizes that population movements are a response to unnatural imbalances in power and opportunities. Consequently, the negative aspects of population displacements are a function of inequities in development, and policy should be developed to address these imbalances and attempt to stem what must be viewed as a consequence of the inequitable distribution of resources in society.

### ***Advocates***

Although there is growing awareness of, and interest in, the relationship between environmental change and population movement, the traditional literature on migration has largely ignored the connection. Rogers (1992) in his discussion on migration presents four key indicators of 'migration potential': population growth; economic restructuring; increasing economic disparities; and increased refugee flows.

However, environment is not mentioned. Other recent reviews on the causes of migration which fail to include environmental degradation or resource depletion as factors include Appleyard, 1991; and Massey, et al, 1993). This stands in stark contrast to the statements

in *The State of the World's Refugees* (UNHCR, 1993), which clearly identify environmental degradation as a root cause of population displacement, as mentioned above (it is worth noting, however, that the 1995 volume by UNHCR does not make a similar claim).

Countering the traditional perspective on migration is a growing literature which claims that traditional theories fail to recognise the true extent and complexity of migratory responses to environmental degradation (cf. Hall and Hanson, 1992). Most attention has focused on the plight of 'ecological refugees' or 'environmental Refugees' (UNHCR, 1993). While the World Commission on Environment and Development (WCED) identified environmentally induced population displacement as a 'recent phenomenon' (WCED, 1987), there is little doubt that throughout history people have had to move from their land because it has become degraded through natural disasters, warfare or over-exploitation. The concern that environmental degradation will produce 'waves of refugees,' however, is more recent, based largely on the writings of El-Hinnawi (1985), Jacobson (1988) and Myers (1993; 1995). Suhrke (1992) labels this group the 'maximalists'. Supporting their arguments is the fact that environmental disasters such as floods, droughts and earthquakes are displacing ever larger numbers of people, not necessarily because the severity of these events is becoming greater, but because population density, especially in regions which are prone to disaster, is increasing rapidly. Land and resource scarcity elsewhere may also be a strong contributor to this increase in density within vulnerable areas.

Since its first official use in 1985 by El-Hinnawi in his United Nations Environment Programme (UNEP) report, the phrase 'environmental refugee' has appeared with increasing frequency in the literature on environment and development. 'Environmental refugees' are defined by El-Hinnawi as:

...those people who have been forced to leave their traditional habitat, temporarily or permanently, because of a marked environmental disruption (natural and/or triggered by people) that jeopardised their existence and/or seriously affected the quality of their life (El-Hinnawi, 1985, p.4). And the conclusion by the UNHCR is unequivocal: 'There are, nevertheless, clear links between environmental degradation and refugee flows' (UNHCR, 1993, p. 18). While the UNHCR claim may be true, it does not necessarily follow that environmental degradation has been the cause of a majority of 'refugee' flows.

### ***Contrarians***

Despite these claims, it remains that there has been little substantive research directed at the question of the role of environmental change in population movement. Considerable confusion has arisen over definitions, the size of these 'refugee' flows and whether one, indeed, can isolate environmental causes from the complex set of variables affecting population movement. While there is a sense that drastic environmental change may affect the structural forces which, in turn, link to population movement, the environment is seen as little more than a 'contextual factor' which is taken into consideration in decision-making (Suhrke, 1992, labels this perspective the 'minimalist'). The arguments presented by the 'maximalists' (it is claimed) are ill-founded, and based on anecdotal

information. For instance, Myers (1993) estimates that that for every person who moves across an international boundary to escape environmental pressures there may be two or three similarly displaced people who move within their territory of nationhood - so-called 'internally displaced persons'. Myers adds these two categories of population movement together and estimates the total number of 'environmentally displaced' persons to be as high as 25 million (he further predicts, as a worst case scenario, that this figure may increase to 150 million by the year 2050 as a result of the 'greenhouse effect' and rising sea-levels). Westing (1992) speculates that the growth in the world's refugee and internally displaced population from 26.4 million in 1986 to 41.5 million in 1990 may have been attributable to environmental degradation, which has forced people from their land.

The writings noted above which have popularised the phenomenon of 'environmental refugees' are problematic for reasons which are both definitional and substantive. First, the words 'estimate' and 'speculate' above are used advisedly: in most cases these figures are little more than educated guesswork- there is little empirical evidence with which to authenticate these authors' claims (Mougeot, 1992). Second, there is too often an uncritical acceptance of a direct causal link between environmental degradation and population displacement. Implicit in these writings is the belief that environmental degradation - as a possible cause of population displacement - can be separated from other social, economic or political causes. It must be recognised that the degradation of the environment is socially and spatially constructed; only through a structural understanding of the environment in the broader political and cultural context of a region or country can one begin to understand the 'role' it plays as a factor in population movement. Third, not only are the definitions offered for environmental refugees ambiguous and inconsistent, the projections of future numbers do not take into consideration adaptation. There is no discussion of the role of public policy - or other factors - in the increase in the numbers of displaced people, and the analyses are, in most cases, quite superficial. Why do people continue to move into Mexico City and Chongqing, China, two of the most polluted places on Earth? Why does severe environmental degradation not generate large outmigration in many cases? Last, some authors are concerned that there is no legal basis for the definition of 'environmental refugee'. Not only does this conflict with the standard definition of refugees which was codified in the 1951 Convention and 1967 Protocol relating to the Status of Refugees, but it may undermine current work towards using broader human rights criteria to determine refugee status (McGregor, 1993). Despite these criticisms, it is important not to trivialise the potential role environmental change may play in population movement. It is entirely possible that the impact of environmental degradation and resource depletion on population movement may be even more important than these authors suggest.

## 38.4 Situating Environment in Migration

Part of the difficulty in determining what role the 'environment' plays as a cause of, or contributor to, population movement is that authors interpret 'environment' quite broadly, or keep it ill-defined. El-Hinnawi (1985), for example, notes three categories of 'environmental refugees':

- i) Those temporarily displaced because of an environmental stress such as an earthquake, or cyclone, and who will likely return to their original habitat;
- ii) Those permanently displaced because of permanent changes to their habitat, such as dams or lakes; and
- iii) Those who are permanently displaced desiring an improved quality of life because their original habitat can no longer provide for their basic needs.

In these three categories, El-Hinnawi has incorporated three very different groups of migrants. In the first case, there is a temporary movement from physical danger; the second category involves development projects where individuals are forced to resettle within a region (and there is a question how many 'internal' refugees are generated by these processes); and the third reflects a voluntary movement based on the 'push-pull' model noted above. It is useful to categorise environmental stress, as follows (Lonergan, 1994):

### **Natural Disasters**

Natural disasters include floods, volcanoes and earthquakes. They are usually characterised by a rapid onset, and their impact (destructiveness) is a function of the number of vulnerable people in the region rather than the severity of the disaster, per se. Poor people in developing countries are the most affected because they are the most vulnerable. (Droughts, despite a slower onset, are also included in this category.) Recent earthquakes in Pakistan and flooding in many regions of the world indicates not only the destructiveness of disasters, but also their ability to displace large numbers of people.

### ***Cumulative Changes or 'Slow-Onset Changes'***

Cumulative changes are generally natural processes occurring at a slower rate which interact with - and are advanced by - human activities. The processes include deforestation, land degradation, erosion, salinity, siltation, waterlogging, desertification and climate warming. Human-induced soil degradation is one factor which directly affects economic sufficiency in rural areas. Water availability is another factor which may affect sustainable livelihoods. Do factors such as water scarcity and human-induced soil degradation in and of themselves cause population displacement? The linkage is much more indirect; in most cases, one or more of rapid population growth, economic decline, inequitable distribution of resources, lack of institutional support and political repression are also present.

### ***Accidental Disruptions or Industrial Accidents***

This category includes chemical manufacture and transport and nuclear reactor accidents. The two most obvious examples are the nuclear accident at Chernobyl, in the former USSR in 1986, and the Union Carbide accident in Bhopal, India, in 1987. Between 1986 and 1992, there were over 75 major chemical accidents which killed almost 4000 persons worldwide, injured another 62,000, and displaced over 2 million (UNEP, 1993). Most of these displacements, however, were temporary. In the case of the accident at Bhopal, despite the death of 2,800 people and illnesses to 200,000 more, there was virtually no mass movement of population out of the region.

### ***Development Projects***

Development projects which involve forced resettlement include dams and irrigation projects. In India, for example, it has been estimated that over 20 million persons have been uprooted by development projects in the past three decades (Fornos, 1992). The Three Gorges Dam project in China - expected to displace over 1 million persons - and the Sardar Sarovar Dam project in India are the most notable present examples. Rapid urbanisation in some regions of the world is also forcing people from their land; conversion of agricultural land to urban uses has long been a phenomenon in the North, and increasingly this is the case in the South as well.

### ***Conflict and Warfare***

Environmental degradation is considered by many to be both a cause and effect of armed conflict. Although the evidence of wars being fought over the environment is weak (except, of course, over land), there is an increasing use of the environment as a 'weapon' of war or, as Gleick (1990) notes, as a 'strategic tool.' One obvious example in this category was the threat by then President Ozal of Turkey to restrict the flow of the Euphrates to Syria and Iraq in order to pressure Syria to discontinue its support of Kurdish separatists in Turkey. Other examples include the purposeful discharge of oil into the Persian Gulf during the Gulf War and the destruction of irrigation systems during conflicts in Somalia. Such activities have similar - and, indeed, more immediate - consequences as the slow-onset changes noted above. But in these cases, it seems clear that the 'environment' is merely a symptom of a larger conflict, and the root cause of any population movement is the conflict itself, and the reasons behind it. Collectively, it is claimed that these 'environmental' changes have resulted in millions of displaced persons. The global deterioration of the environment, continued population growth, and increasing resource scarcity will likely play an increasing role in population movement in the future. But are these factors all 'environmental?' And what are the links to migration?

To understand causal relationships, and to better design policy interventions, it is imperative that these five categories be treated separately, and not considered collectively as 'environmental degradation'. In some cases, there is minimal impact on population movement, while in others, the role of 'environment' is extremely difficult to ascertain. It is clear, for example, that industrial accidents have had relatively little impact on migration, with the exception of Chernobyl. Most accidents have resulted in a short-term relocation, but very few (of the more than 2 million cited above) have been displaced permanently from their homes. In the context of other changes, this is a relatively minor concern. Development projects, while there is little question that they displace large populations, should also be treated separately from other categories. The magnitude of some of the projects is, indeed, daunting, and it has caused the World Bank to avoid any projects which involve major resettlement programmes (such as Sardar Sarovar in India). In theory, these projects include a resettlement component, and are unlikely to produce the 'waves of environmental refugees' that Homer-Dixon cautions about. The links between natural disasters and population displacement are also

problematic. Sadako Ogata, the UN High Commissioner on Refugees, stated in 1992 that the 'majority of refugees are found in arid and semi-arid areas of the poorest countries of the world.' Examples of the devastating impact of natural disasters, however, generally come from Bangladesh, Central America, Haiti and South Korea. There is little question that the number of people affected by natural disasters have increased markedly over the past three decades (from 28 million in the 1960s to 64 million in the 1980s). Population growth - particularly in vulnerable areas - and poverty have combined to make larger numbers of people susceptible to environmental disasters. Moreover, while the number of homeless is significant, it does not imply that these people migrated to different regions or countries. Indeed, some authors claim that sudden-onset disasters have resulted more in increased death rather than increased flight (Lee, 1996).

The category of cumulative, or slow-onset, change, may well be the most important in terms of being a force in population migration, but it is also the most difficult to measure. Environmental changes such as increased water scarcity and soil degradation may be one factor among many facing a potential migrant. As was noted before, removing environmental processes from the social, economic and political processes in which they are embedded is virtually impossible.

Numerous examples are presented to substantiate the link between environmental change and population movement, but the most common are the Sahel in Africa, El Salvador, Haiti, and Bangladesh (El Hinnawi, 1985; Hall and Hanson, 1992; Surhke, 1992; Myers, 1995). There is little doubt that each of these regions/ countries has experienced significant environmental stress: droughts, deforestation, soil degradation, and flooding are the most notable. But it is also clear that there is a myriad of other social, economic and institutional processes which are present. Rapid population growth, inequitable land distribution, civil war, extreme poverty, and so on. For example, the Kissinger Report of 1984 attributed the conflict in El Salvador to poverty and inequality; the conflict in the country has resulted in over a million people displaced. But what role did the environment play? Deforestation, exploitation of coastal resources, and the civil war have resulted in substantial environmental damage in the country (Hall and Hanson, 1992). In turn, as Leonard (1989) notes, if deterioration of these natural resource systems continues, political and social instability will be exacerbated as will economic stagnation and rural poverty. This phenomenon in turn will constrain future economic and social development in all seven countries of greater Central America. Is environmental degradation a root cause of population movement in El Salvador? It likely played a role, but it was certainly not a root cause. Another often used example is the Sahel, where droughts and famine have severely impacted people in almost every country in the region. But poverty, marginal agricultural land, institutional constraints, war, inflation and landlessness not only increased the vulnerability of the population to climate variation, but affected the ability of individuals and communities to adapt to a changing environment. The people became more vulnerable, not because of environmental degradation, per se, but because of a host of other social, economic and institutional factors. The same is true in all cases which are used as 'evidence' of environmental refugees. The key factor is that certain populations are becoming more vulnerable to

environmental change because of other factors; primary among these are poverty and resource inequality, coupled with population growth, institutional constraints, and economic insufficiency.

### 38.5 Concerns for Environmental Security

Environmentally induced migration is rarely mono-causal. The cause-consequence relations are increasingly complex and multi-factorial. A growing number of people flee because of multiple causes of injustice, exclusion, environmental degradation, competition for scarce resources and economic hardship caused by dysfunctional states. Some leave voluntarily, some flee because there is no other choice; and some may make the decision to move before they have no other choice but to flee. The different degrees of force and the complex set of influencing factors blurs the traditional concepts of migration and displacement, sometimes creating confusion among the international community about whether to talk about migration or displacement in the case of people fleeing disasters and environmental degradation. All in all, the issue of environmental refugees promises to rank as one of the foremost human crises of our times. To date, however, it has been viewed as a peripheral concern, a kind of aberration from the normal order of things - even though it is an outward manifestation of profound deprivation and despair. While it derives primarily from environmental problems, it generates myriad problems of political, social and economic sorts. As such, it could readily become a cause of turmoil and confrontation, leading to conflict and violence. Yet as the problem becomes more pressing, our policy responses fall further short of measuring up to the challenge.

### 38.6 Conclusion

The four general conclusions below (some of which are adapted from Lonergan and Parnwell, forthcoming), reflect the answers to the questions above. Generalisations about the relationship between environmental degradation and population movement mask a great deal of the complexity which characterises migration decision-making. Much of the literature suggests a deterministic cause and effect model where a set of environmental stresses will result in a similar response - migration - from individuals and communities. This may occur with certain forms of environmental catastrophe, where there is no option but to move. But in general, such a model is very misleading. Levels of internal differentiation within communities are typically high, and thus people will have different levels of ability to cope with environmental stresses. Furthermore, people's 'tolerance thresholds' are highly variable, being surpassed very readily in some (perhaps the more footloose members of a rural community), and being almost insurmountable in others (for instance, older residents who have a strong attachment to the home area and thus a built-in inertia). A proper appreciation and understanding of the complexity and diversity of human responses to environmental degradation is essential if we are to identify the full extent of the phenomenon and plan accordingly. It is extremely difficult to isolate the specific contribution of environmental change in many forms of population movement, especially those that are more 'voluntary' in nature. It

may be relatively easy to identify the parallel occurrence of environmental degradation and population movement, but assuming a causal link may be misleading and dangerous. In reality, movement takes place in response to a combination of environmental, economic, social and political (including armed conflict) stimuli. Thus, separating environmental processes from the structures within which they are embedded is both difficult and a distortion of reality. There is also an implicit assumption in the literature that movement is an assured means of obtaining relief from environmental pressures. Despite the ancient Chinese proverb that states 'Of thirty ways to escape danger, running away is the best' (from El-Hinnawi, 1985), it is not necessarily the case that movement always reduces environmental - or other - stress. In reality, movement may lead to the substitution of one set of stresses (environmental) for another (economic, social, political and/ or further environmental stresses). Movers may have to accept whatever opportunities come their way in the new location.

An important question - often overlooked where the central preoccupation is with identifying the volume of the migratory movement - concerns the future intentions of environmentally-displaced persons, not least with regard to the duration of their sojourn. Do migrants intend to return to their home area, if that option is available, or remain in their new location? The answer to this question will have a significant bearing upon their actions and behaviour in their place of refuge, and is also crucial to the planning process. Reaching any one of these stages will be a function of the severity of the environmental crisis and the opportunities which become available to the displace through movement.

### **Policy Options**

These four general conclusions underscore the difficulty in developing policy prescriptions to deal with the issue of environmental degradation and population movement. Migration is a complex phenomenon, and it is not clear what role environmental degradation plays in influencing a person's decision to migrate. It is also difficult, if not impossible, to isolate environment from other social, economic, and political factors. Moreover, there has been a dearth of research that focuses on individual or collective human perceptions and evaluations of actual and expected conditions of the environment as a source of insecurity and migration stress. Developing policy prescriptions in this context, therefore, is a risky enterprise, at best. However, accepting these difficulties, two sets of recommendations are presented below. The first set presents general policy recommendations for assisting communities and regions under environmental stress, particularly where that stress may contribute to population movement. The second set provides specific policy recommendations for agencies involved in setting refugee policy.

Despite the complex nature of migration flows, and the ongoing debate on the role of environmental degradation as a cause of, or contributor to, migration, there is little doubt that we need to give greater consideration to environmental deterioration and resource scarcity in our development assistance activities. This implies a major emphasis on promoting sustainable development and its ecological, economic and social manifestations, and ensuring human security. More specific recommendations include:

- i) Develop a system to help anticipate migrations which might be triggered by environmental disruptions;
- ii) Focus efforts on identifying adaptation mechanisms, and how these mechanisms might be reinforced in vulnerable communities and regions;
- iii) Develop case studies of how environmental degradation influences migration, with specific consideration of developing procedures to assist those affected by environmental disruptions;
- iv) Develop better working relationships among human rights, environment, population and migration organisations;
- v) Involve migrants and refugees directly in the development of programmes to assist those affected by environmental deterioration;
- vi) Recognise the cumulative causality of environmental degradation and population movement, and assist receiving regions to ensure minimal environmental impacts of the migration flows;
- vii) Provide assistance to countries most vulnerable to future environmental change; and
- viii) Recognise that human rights and the environment - indeed, human security and all its components - should be the cornerstone of any assistance policies.

Can we make more specific policy recommendations that are relevant to government agencies? As noted above, environmental degradation and resource depletion are only two of many factors that may contribute to insecurity and, as a response, population movement. Other key factors surely include population growth and an inequitable distribution of income and/or resources (often linked to impoverishment). This implies that policy prescriptions should focus on promoting sustainability in resource use, reducing rates of population growth, and addressing the inequitable distribution of income and access to resources between and within countries. Such policies should also incorporate activities which will assist in reducing both the biophysical and social vulnerability of individuals and communities to environmental change.

Examples include:

- i) An increase in support for family planning in developing countries. Since population growth is a threat to the environment and to the economic livelihood of many people, it is imperative that birth rates are brought down.
- ii) There must be greater focus on agricultural activities in developing countries. This should focus on reducing erosion and deforestation, and increasing the sustainability of small farms in marginal areas.
- iii) Greater effort should be made to improve education and awareness with respect to the environment. This includes care for the environment and sustainable resource use.

- iv) In this context, an adequate supply of freshwater is crucial. It is also imperative that treated water be recycled to agricultural uses. Inefficient use of water, water loss in urban areas, and the lack of systems to use recycled water greatly affect social welfare.
- v) There must be greater capacity building in the administration of environmental programs. This ranges from increased support for NGOs in the environmental field to the development of government agencies that can participate in international environmental work.

The complex nature of environment- population linkages makes it difficult to develop policy recommendations that are as concrete as many would like. However, it is apparent that environmental degradation and resource depletion may play a contributing role in affecting population movement, often filtered through contexts of poverty and inequity. In turn, it is clear that some population movements - particularly large scale, mass movements - have a negative impact on the natural environment of receiving regions. In order to develop a more concise policy agenda, it is imperative that further attention be given to the links among environment, population and poverty; to which groups are most vulnerable to environmental change; and to identifying vulnerable regions and future 'hot spots' of insecurity and potential migration/refugee pressure.

# UNIT 39

## ENVIRONMENT MANAGEMENT |

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### 39.1 Introduction

Environment primarily refers to the ecological dimension (ecosystems), but can also take account of social dimension (quality of life) and an economic dimension (resource management). As the principal user of nature, humanity is responsible for ensuring that its environmental impacts are benign rather than catastrophic. **Environmental management (EM)** is the tool by which humanity can ensure the optimum use of our resources with minimal impact to the environment. It is the regulation of interaction between the modern human societies and the environment with the basic aim of reduction of adverse impact upon the latter. Environmental management involves the management of all components of the bio-physical environment, both living (biotic) and non-living (abiotic). This is due to the interconnected and network of relationships amongst all living species and their habitats. The environment also involves the relationships of the human environment, such as the social, cultural and economic environment with the bio-physical environment.

The need for EM can be viewed from a variety of perspectives. The scope of EM ranges from the use and conservation of natural resources, to protection of habitats and control of hazards as well as spanning up to the field of applied ecology. The development of EM as a subject owes to the contributions drawn from biology, botany, climatology, ecology, ecological economics, environmental engineering, fisheries, environmental law, forest sciences, geology, information science, public affairs, zoology and more. It is an evolving body of work containing inputs from not just academic researchers and environmental professionals but also professionals outside the traditional streams including those in business, government, research establishments, and public interest groups, etc. presenting a wide spectrum of viewpoints and approaches.

### EM in theory and practice

Since the end of the 1980s the concept of sustainable development has gained general acceptance, but much uncertainty still exists on how to operationalise this concept. With global warming and environment protection major areas of concern across nations, environmental management has emerged as focus area by government departments, and social organisations. Indiscriminate deforestation, industrial pollution, rampant construction, and unprecedented increase in fossil fuel run vehicles all have contributed to the alarming levels of pollution worldwide. Carbon di-oxide generated has resulted in an increase in atmospheric temperature which in turn contributed to melting of ice caps and diminishing of ice fields. Environmental scientists are seeking avenues to prevent further damage to the earth's atmosphere and surroundings thereby making our earth a healthier place to live.

A more common philosophy and impetus behind environmental management is the concept of carrying capacity. Simply put, carrying capacity refers to the maximum number of organisms a particular resource can sustain. EM is therefore not the conservation of the environment solely for the environment's sake, but rather the conservation of the environment for humankind's sake.

Practitioners and stakeholders involved in environmental and risk assessment and decision-making efforts have access to a growing list of policies and guidance for implementing good process. The advice is often general. There is little understanding of how situation specific features are relevant in new circumstances.

The three main issues that affect environmental managers are those involving politics (networking), programmes (projects), and resources (money, facilities, etc.). As with all management functions, effective management tools, standards and systems are required. An environmental management standard or system or protocol attempts to reduce environmental impact as measured by some objective criteria. The ISO 14001 standard is the most widely used standard for environmental risk management and is closely aligned to the European Eco-Management and Audit Scheme (EMAS). As a common auditing standard, the ISO 19011 standard explains how to combine this with quality management.

## 39.2 Environmental Policy and Management

Policy can be defined as a “course of action or principle adopted or proposed by a government, party, business or individual”. Thus, environmental policy focuses on problems arising from human impact on the environment, which retroacts onto human society by having a (negative) impact on human values such as good health or the ‘clean and green’ environment.

Environmental policy generally addresses environmental issues that include, but are not limited to air, water, land pollution, etc., waste management, conservation of wildlife and endangered species as well as natural resources, biodiversity protection, ecosystems management and so on. Relatively recently, environmental policy has also attended to the communication of environmental issues.

Environmental policy instruments are tools used by governments to implement their environmental policies. Governments may use a number of different types of instruments. Recently, policy makers have started to actively explore new tools for environmental protection, notably market-based instruments (e.g. environmental taxes and tradable permits) and voluntary agreements. Such instruments are typically regarded as being more flexible and efficient than traditional ('command and control') regulation. Although the idea of using such tools is not new, the political demand for and use of 'New Environmental Policy Instruments' (NEPIs) has grown considerably in recent years. However, relatively little is known about the politics surrounding their adoption and implementation.

Voluntary measures, such as bilateral agreements negotiated between the government and private firms and commitments made by firms independent of government pressure, are other instruments used in environmental policy. Another instrument is the implementation of greener public purchasing programmes.

Often, several instruments are combined in an instrument mix formulated to address a certain environmental problem. Since environmental issues often have many different aspects, several policy instruments may be needed to adequately address each one. Furthermore, instrument mixes may allow companies and firms greater flexibility in finding ways to comply with government policy while reducing the uncertainty in the cost of doing so. However, instrument mixes must be carefully formulated so that the individual measures within them do not undermine each other or create a rigid and cost-ineffective compliance framework. Also, overlapping instruments lead to unnecessary administrative costs, making implementation of environmental policies more costly than necessary.

**National Environment Policy in India:** At the national level, the Ministry of Environment and Forests had prepared a draft Environment Policy (NEP). The NEP 2006 has since been approved by the Union Cabinet in May 2006. The National Environment Policy builds on the existing policies (e.g. National Forest Policy, 1988; National Conservation Strategy and Policy Statement on Environment and Development, 1992; and the Policy Statement on Abatement of Pollution, 1992; National Agriculture Policy, 2000; National Population Policy, 2000; National Water Policy, 2002, etc.). It is intended to be a guide to action: in regulatory reform; programmes and projects for environmental conservation; review and enactment of legislations by Central, State and Local Government.

The National Environment Policy, 2006 includes in its Objectives "vi. Environmental Governance: To apply the principles of good governance (transparency, rationality, accountability, reduction in time and costs, participation, and regulatory independence) to the management and regulation of use of environmental resources."

The dominant theme of this policy is that while conservation of environmental resources is necessary to secure livelihoods and well-being of all, the most secure basis for conservation is to ensure that people dependent on particular resources obtain better livelihoods from the fact of conservation, than from degradation of the resource. The

policy also seeks to stimulate partnerships of different stakeholders, i.e. public agencies, local communities, academic and scientific institutions, the investment community, and international development partners, in harnessing their respective resources and strengths for environmental management.

### 39.3 Legal Framework for Environmental Management in India

As mentioned before, India has prepared pollution abatement strategy, which includes the legal framework and the Environment Authorities.

**Environment Authorities:** In addition to Pollution Control Boards, 6 Environmental Authorities have been constituted under the Environment (Protection) Act 1986, including the National Environment Appellate Authority. These are:

- ◆ The Central Ground Water Authority - Aqua Culture Authority
- ◆ Dahanu Taluka Environment (Protection) Authority
- ◆ Environment Pollution (Prevention and Control) Authority for National Capital Region of Delhi
- ◆ Loss of Ecology (Prevention and Payment of Compensation) Authority for State of Tamil Nadu.
- ◆ National Environment Appellate Authority, 1997
- ◆ Aquaculture Authority, 1997
- ◆ Water Quality Assessment Authority
- ◆ The Loss of Ecology (Prevention and Payments of Compensation) Authority, 1996
- ◆ National Ganga River Basin Authority, 2009

Measures for control of different types of pollution:

#### Noise Pollution

Ambient standards in respect of noise for different categories of areas (residential, commercial, industrial) and silence zones have been notified under the Environment (Protection) Act, 1986. Noise limits have been prescribed for automobiles, domestic appliances and construction equipment at the manufacturing stage. Standards have been evolved and notified for the gen sets, fire crackers and coal mines. Regulatory agencies have been directed to enforce the standards for control and regulate noise pollution.

In addition, to combat noise pollution from fire crackers, the Govt. of India has enacted noise standards for fire-crackers vide G.S.R.682(E), dated 5 October 1999, in an effort to control noise pollution due to fire crackers. In March 2001, Central Pollution Control Board in association with National Physical Laboratory (NPL), Delhi initiated a study on measurement of noise levels of fire-crackers available in the market. The study indicates

that 95% of the fire-crackers samples exceed the prescribed noise limits. Consequently, CPCB issued notice under Section 5, of the Environment (Protection) Act, 1986 to the Department of Explosives, Nagpur, to take immediate steps to control manufacturing of fire-crackers exceeding the prescribed limits. All the State Pollution Control Boards/ Committees were also requested to initiate steps to control sale of fire-crackers exceeding the notified limits, in consultation with their respective local administrations.

To control noise pollution in the country the following steps were taken:

- ◆ The Union Government on 14 February 2000 enacted the Noise Pollution (Regulation and Control) Rules, 2000 in exercise of its power conferred under the Environment (Protection) Act, 1986 to control the increasing ambient noise level in public places from various sources. These Rules were amended vide Noise Pollution (Regulation and Control) (Amendment) Rules, 2010 to include the words “fire crackers and sound polluting instruments.
- ◆ Ambient noise standards were notified in 1989, which formed the basis for State Pollution Control Boards to initiate action against violating sources.
- ◆ The vehicular noise standards, notified in 1990, are being implemented by Ministry of Science and Technology, to reduce traffic noise. These standards have been made more stringent vide a notification in September 2000 and will be effective from January, 2003.
- ◆ Noise standards for diesel genset were prescribed in December 1998. Govt. has been pursuing, with State Pollution Control Boards, generator manufacturing and major users, for implementation of these standards. Presently these standards are being revised (the MoEF is in the process of issuing notification) making it mandatory for all generator manufacturers to provide acoustic enclosure at the manufacturing stage itself. This will have a major impact on noise from DG sets.
- ◆ Noise standards for fire-crackers were developed in October, 1999. Central Pollution Control Board had carried out a compliance testing of the fire crackers available in the market and also taken up with the Department of Explosives for compliance with these standards.
- ◆ Noise standards for petrol and kerosene generator sets were notified in September, 2000, and will be effective from September, 2002. The sale of these gensets will be prohibited if not certified by the testing agencies, identified for the purpose.
- ◆ The Noise Rules, 2000, regulates noise due to Public Address System/ Loud speakers and also prescribed procedures for noise complaint handling.
- ◆ Central Pollution Control Board has taken up a study on aircraft noise monitoring in Indira Gandhi International Airport, Delhi. This will be followed by development of guidelines/ standards for aircraft noise.
- ◆ The Noise Pollution (Regulation and Control) Amendment Rules, 2017 notified by the Government. These rules have given the power to State Governments to declare silence area / zone which is less than 100 meters around hospitals, educational

institutions and courts. The term “festive occasion” has been specifically defined in the amended rules. The omission of Note (3) to Schedule to the Principle Rules has broadened the scope of “silence zone” and now only State Governments can notify silence area / zone.

### ***Vehicular Pollution and Air Quality***

- ◆ Establishment of Ambient Air Quality Monitoring throughout India.
- ◆ Notification of Ambient Air Quality Standards under Environment (Protection) Act.
- ◆ Notification of vehicular emission norms for year 1990-91, 1996, 1998, 2000, 2001, and the recent shift to BS 6.
- ◆ Improving fuel quality by phasing out lead from gasoline, reducing diesel sulphur, reducing gasoline benzene, etc.
- ◆ Introduction of alternate fuelled vehicles like CNG/LPG.
- ◆ Improvement of public transport system.
- ◆ Phasing out of grossly polluting commercial vehicles.
- ◆ Public awareness and campaigns.
- ◆ India has formally joined the Climate & Clean Air Coalition (CCAC), becoming the 65th country to join the partnership. The announcement underlines India’s commitment to combat air pollution with a solutions-oriented approach.
- ◆ India’s launched the National Clean Air Programme (NCAP) in January 2019. The NCAP is a comprehensive strategy with actions to prevent, control and reduce air pollution and improve air quality monitoring across the country. It aims to reduce fine particulate (PM<sub>2.5</sub>) and particulate (PM<sub>10</sub>) air pollution by 20%-30% by 2024. India has identified 102 non-attainment cities, with city-specific action plans being formulated.
- ◆ India has increased its vehicle emissions standards to BS6, which is similar to Euro 6 standards.
- ◆ In 2017, the Union Government announced that from 2030, all new vehicles sold in the country would be electric.

Impacts of the steps taken in Delhi: All regulatory pollutants show a decreasing trend in concentrations in Delhi. CO decreased to 3069 ug/m<sup>3</sup> in 2000-2001 from 5450 ug/m<sup>3</sup> in 1998. NO<sub>2</sub> decreased from 75 ug/m<sup>3</sup> in 1996 to 59 ug/m<sup>3</sup> in 2000. Lead which is harmful especially for children, decreased remarkably due to phasing out of lead from gasoline. Another critical pollutant RSPM also shows a decreasing trend in Delhi.

### ***Constitutional Measures***

India is the first country in the world which has provided for constitutional safeguards for the protection and preservation of the environment. In the constitution of India, specific provisions for the protection of environment have been incorporated by the

Constitution (42 amendment) Act, 1976. Now, it is an obligatory duty of the State and every citizen to protect and improve the environment. The Directive Principles of State Policy contain specific provisions enunciating the State commitment for protecting the environment.

“The State shall endeavour to protect and improve the environment and to safeguard forests and wildlife of the country.”

Furthermore, duties of the citizens towards environment are contained in Article 51 - A(g), This Article says: -

“It shall be the duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wildlife, and to have compassion for living creatures.”

### ***Legislative Measures***

The constitutional provisions are implemented through environmental protection laws of the country. India has a large body of laws and regulations governing the environment. These include laws enacted by Central and State Governments as well as an increasing body of judicial decisions affecting industrial activities that generate pollution. Further, there are more than 200 statutes that have a bearing on environmental matters in India. However, the major legal provisions made in the last twenty years are summarised below.

- ◆ The Wildlife (Protection) Act, 1972, amended in 1983, 1986 and 1991.
- ◆ The Water (Prevention and Control of Pollution) Act, 1974, amended in 1988.
- ◆ The Water Cess Act, 1977, amended in 1991.
- ◆ The Forest (Conservation) Act, 1980, amended in 1988.
- ◆ The Air (Prevention and Control of Pollution) Act, 1981, amended in 1987.
- ◆ The Environment (Protection) Act, 1986.
- ◆ The Motor Vehicles Act, 1938, amended in 1988.
- ◆ The Hazardous Waste (Management and Handling) Rules, 1989, amended in 2000.
- ◆ The Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989, amended in 2000.
- ◆ The Manufacture, use, import, export and storage of Hazardous Micro-organisms or Cells Rules, 1989.
- ◆ The Public Liability Insurance Act, 1991.
- ◆ A notification of Environmental Statement, 1993.
- ◆ A notification on Environmental Clearance, 1994.
- ◆ A notification on Environmental Clearance, 1994.
- ◆ The National Environmental Tribunal Act, 1995.
- ◆ Biological Diversity Act, 2002

The existing laws and regulations on environmental pollution which are administered by the Ministry of Environment and Forests are:

- i) The Water (Prevention and Control of Pollution) Act, 1974, (amended in 1978 and 1988).
- ii) The Water (Prevention and Control of Pollution) Cess Act, 1977.
- iii) The Air (Prevention and Control of Pollution) Act, 1981, (amended in 1987)
- iv) The Environment (Protection) Act, 1986.
- v) The Public Liability Insurance Act, 1991.
- vi) The National Environment Tribunal Act, 1995 The main provisions under these Acts are given here.

The Water (Prevention and Control of Pollution) Act, 1974 (As amended in 1978 and 1988).

The Water Act is a comprehensive legislation providing for the Prevention and Control of Water Pollution and for maintaining or restoring the wholesomeness of water in streams or wells. The Act provides for the establishment of the Central Pollution Control Board at the Center and State Pollution Control Boards in the respective States.

A) The functions of the Central Board at the national level are to:

- i) Advise the Central Govt. on matters relating to prevention and control of water pollution.
- ii) Coordinate the activities of the State Board and resolve disputes among them.
- iii) Provide technical assistance and guidance to the State Boards.
- iv) Carry out and sponsor research and investigation in the problems of water pollution.
- v) Set the standards for streams and wells.
- vi) Create environmental awareness
- vii) To act as State Board for the Union Territories.

B) State Board has executive and territorial functions which include:

- i) Planning for prevention, control or abatement of pollution of streams and wells.
- ii) Advise the State Govt. on matters relating to water pollution.
- iii) Inspection of sewage or industrial effluent, including municipal wastewater treatment plants for the treatment of sewage or trade effluents.
- iv) Setting standards for the sewage and industrial effluents discharge.

There is a provision of joint boards for two or more contiguous States. In case of dispute between two State Boards, the Central Board has authority to arbitrate.

Important provisions in the Water (Prevention and Control of Pollution) Act, 1974 (As amended in 1978 and 1988) are:

- i) Pollution Control Board (PCB) has the right to:
  - obtain any information regarding the construction, installation or operation of an industrial establishment or treatment and disposal system.
  - take samples of trade effluent for the purpose of analysis in the prescribed manner.
  - enter and inspect any industrial establishment, record, register, document or any other material object.
  - prohibit use of stream or sewer or land for disposal system without prior consent of the PCB.
- ii) Restriction on establishment and the operation of any industry process or any treatment and disposal system without prior consent of the PCB.
- iii) PCB's right to refuse or withdraw consent, for discharge of effluents.
- iv) Industry to comply with the conditions stipulated in the consent.
- v) PCB's to grant consent within four months after the date of receipt of the application complete in all respects.
- vi) Industry to appeal to the Appellate Authority, in case of grievances against the order passed by the PCB regarding grant, refusal or withdrawal of the consent within the specified time in the prescribed manner.
- vii) Industry to furnish information to the PCB and other specified agency (ies) in case of discharge of poisonous, noxious or polluting matter into a stream, sewer or land, occurred or likely to occur resulting in pollution due to an accident or any other unforeseen event.
- viii) PCB's right to issue orders restraining or prohibiting an industry from discharging any poisonous, noxious or polluting matter in case of emergencies, warranting immediate action.
- ix) PCB's have power to make an application to the court for restraining likely disposal of polluting matter in a stream or on land.
- x) Bar of jurisdiction in civil court in respect of any matter under purview of the Appellate Authority constituted under the Act and no grant of injunction in respect of any action taken or proposed in pursuance of the Act.
- xi) Bar on filing of any suit or legal proceedings against the Government or Board officials, for action taken in good faith in pursuance of the Act.
- xii) PCB's to make inquiries, in the prescribed manner, for grant of consent for discharge of effluents.
- xiii) PCB's power to issue directions for
  - the closure, prohibition or regulation of any industry, operation or process or,
  - the stoppage or regulation of supply of electricity, water or any other service to industry in the prescribed manner.

- xiv) Industry to comply with the directions of the PCB within the specified time.
- xv) PCB's to maintain a consent register containing particulars of the consent issued and to provide access to industry at all reasonable hours.

The Water (Prevention and Control of Pollution) Cess Act, 1977 (Amended in 1991)

The Water Cess Act provides for the levy of a cess on water consumed by persons carrying on specified industries given in Schedule-I of the Act and also local authorities entrusted with the duty of supplying water under the laws by or under which they are constituted at the rates specified in Schedule-II of the Act.

The Cess is levied and collected by the State Government concerned and credited to the consolidated Fund of India. An industry which installs and operates its effluent treatment plant is entitled to a rebate of 25% on the cess payable.

The cess has been introduced mainly to augment the resources of the Central and the State Pollution Control Boards.

The Air (Prevention and Control of Pollution) Act, 1981 (Amended in 1987).

The Act provides for the setting up of Central / State Boards for prevention and control of Air Pollution, however, Section 4 of the Act stipulates that in any State in which the Water (Prevention and Control of Pollution) Act, 1974 is in force and the State Government has constituted a State Pollution Control Board, that State Board shall be deemed to be the State Board for the prevention and control of air pollution. For Union Territories the Central Pollution Control Board is empowered to perform the functions of a State Pollution Control Board under the Act. The State Governments, in consultation with their respective State Boards are empowered to declare air pollution control areas. As per the provisions of the Air Act, no person can establish or operate any industrial plant in an air pollution control area without obtaining the consent from the concerned State Board.

The Environment (Protection) Act, 1986 The provisions under this Act are:

- ◆ Take all necessary measures for protecting the quality of environment.
- ◆ Plan and execute a nationwide programme for the prevention, control and abatement of environmental pollution.
- ◆ Lay down standards for discharge of environmental pollutants.
- ◆ Empower any persons to enter, inspect, take samples and test.
- ◆ Establish or recognise environmental laboratories.
- ◆ Appoint or recognise government analysts.
- ◆ Lay down standards for the quality of environment.
- ◆ Restrict areas in which any industries, operations, processes may not be carried out or shall be carried out subject to certain safeguards.
- ◆ Lay down safeguards for prevention of accidents and take remedial measures in case of such accidents.
- ◆ Lay down procedures and safeguards for handling hazardous substances.

- ◆ Constitute an authority or authorities for exercising its powers.
- ◆ Issue directions to any person, officer or authority including the power to direct closure, prohibition or regulation of any industry, operation or process or stoppage or regulation of supply of electricity, water or any other service.

It confers powers on persons to complain to the courts regarding any violation of the provisions of the Act, after a notice of 60 days to the prescribed authorities.

The Central Government is empowered to take action under the provision of the Environment (Protection) Act, 1986. Powers under Section 5 of the Environment (Protection) Act, 1986 have been delegated by the Central Government to States and Union Territories.

Rules have been framed and agencies / authorities have been notified under specific sections for carrying out specific functions. These include:

### **Environmental Statement**

All those carrying on an industry, operation or process requiring consent under Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974) and/or under Air (Prevention and Control of Pollution) Act, 1981 (84 of 1981) and or authorisation under the Hazardous Waste (Management and Handling) Rules, 1989, are required to submit the Environmental Statement prescribed in 'Form-V', for the Financial Year ending 31st March to the concerned State Pollution Control Boards / Pollution Control Committees in the Union Territories on or before 30th September every year.

### ***Hazardous Waste (Management and Handling) Rules, 1989***

The Hazardous Wastes (Management and Handling) Rules, 1989, provide for an effective inventory and controlled handling and disposal of hazardous wastes. Under Rule 18, categories of hazardous waste are identified along with their regulatory quantity. Industries generating any of these waste beyond the regulatory quantity are required to seek authorisation from the concerned State Pollution Control Board for its temporary storage in the premises and their disposal. Possibility, of common treatment facilities including landfill are envisaged. The operator of such facility is also required to obtain authorisation from the Board. The Boards are expected to specify conditions on safe handling and disposal of the waste in the authorisation. Treatment of the waste at the premises before disposal could also be specified. Import of hazardous waste for processing has to be got approved by the Central Government.

### ***Manufacture, Storage and Import of Hazardous Chemical Rules, 1989***

The principal objective of the regulation is the prevention of major accidents arising from industrial activity, the limitation of the effects of such accidents both on humans and the environment and the harmonisation of the various control measures and the agencies to prevent and limit major accidents. The industrial activities covered by the regulation are defined in terms of process and storage methods involving specified hazardous chemicals.

An important feature of the regulation is that the storage of hazardous chemicals not associated with the process is treated differently from those coming under process use for which a different list of hazardous chemicals and their manufacture and storage procedures applies. Under the provisions isolated storage / cover sites are to be separate tank farms or warehouses. The Central Pollution Control Board and the State Pollution Control Board, as the case may be, are the enforcement agency for these storages.

### ***Safety Report***

A safety report is required to be prepared as per Rule 10 in this Act. It involves identification of the nature and use of hazardous chemicals at the installation. The report will also give account of arrangements for safe operation of an installation including control of any serious deviation that could lead to a major accident and for emergency preparedness at the site. The report will identify the type, and the relative likelihood of consequences for any major accident that might occur. It will also demonstrate that the manufacturer or the occupier has identified the major potential accidents from the activity and has provided appropriate controls.

### ***The Public Liability Insurance Act, 1991***

This is an Act to provide for Liability Insurance for the purpose of providing immediate relief to the persons affected by accidents occurring while handling hazardous substances. The Act casts on the person, who has control over handling any hazardous substance, the liability to give the reliefs specified in the Act to all the victims of any accident which occurs while handling such substance. It would be the duty of every owner to take necessary insurance policies to discharge his liabilities.

### ***National Environmental Tribunal Act, 1995***

This is an Act to provide for strict liability for damages arising out of any accident occurring while handling any hazardous substance and for the establishment of a National Environment Tribunal for effective and expeditious disposal of cases arising from such accident. This was enacted with a view to giving relief and compensation for damages to persons, property and the environment and for matters connected therewith or incidental thereto.

### **Regulatory Standards**

Standards for effluent and emissions from industries have been notified and the industries have been directed to adopt action programmes leading to compliance with these standards on a time bound basis. The Central and the state government are playing a more active role in enforcing these environmental standards. Many polluting units in the country face shifting / closure orders from the courts. It is to be noted that with increasing awareness on environment related issues in the country, the public is becoming more active in highlighting polluting industries and there is an increasing number of Public Interest Litigations in the court.

## 39.4 Environmental Management Systems (EMS)

Environmental management system (EMS) refers to the management of an organisation's environmental programmes in a comprehensive, systematic, planned and documented manner. It includes the organisational structure, planning and resources for developing, implementing and maintaining policy for environmental protection.

EMS is similar to other management systems, such as those that manage quality or safety. It assesses your business' strengths and weaknesses, helps you identify and manage significant impacts, saves you money by increasing efficiency, ensures you comply with environmental legislation and provides benchmarks for improvements. An EMS can also help you manage your resources, and improves the reliability and credibility of your environmental policy. You can prove to customers that you are committed to meeting your environmental responsibilities by getting your EMS certified, such as through ISO 14001, BS 8555, Green Dragon or the Eco-Management and Audit Scheme.

### An Environmental Management System (EMS):

- ◆ Serves as a tool to improve environmental performance;
- ◆ Provides a systematic way of managing an organisation's environmental affairs;
- ◆ Is the aspect of the organisation's overall management structure that addresses immediate and long-term impacts of its products, services and processes on the environment;
- ◆ Gives order and consistency for organisations to address environmental concerns through the allocation of resources, assignment of responsibility and ongoing evaluation of practices, procedures and processes; and
- ◆ Focuses on continual improvement of the system.

### Box 1: Basics of EMS

What is the EMS Model?

An EMS follows a process that includes checking the system and acting on it. An EMS model presents a process of continual improvement in which an organisation is constantly reviewing and revising the system.

This is a model that can be used by a wide range of organisations - from manufacturing facilities to service industries to government agencies.

What are some key elements of an EMS?

- ◆ Policy Statement - a statement of the organisation's commitment to the environment
- ◆ Identification of Significant Environmental Impacts - environmental attributes of products, activities and services and their effects on the environment
- ◆ Development of Objectives and Targets - environmental goals for the organisation

*Contd...*

- ◆ Implementation - plans to meet objectives and targets
- ◆ Training - instruction to ensure employees are aware and capable of fulfilling their environmental responsibilities
- ◆ Management Review

Can existing environmental management activities be integrated into the EMS?

Yes. An EMS is flexible and does not require organisations to necessarily “retool” their existing activities. An EMS establishes a management framework by which an organisation’s impacts on the environment can be systematically identified and reduced. For example, many organisations, including counties and municipalities, have active and effective pollution prevention activities underway. These could be incorporated into the overall EMS.

Can EMS be used to assist with maintaining compliance?

Yes. As an example, the Massachusetts DEP has opted to assist with the use of EMS in compliance cases. The EPA also produces a Guidance on the Use of EMS in Enforcement.

What are ISO, ISO 14000, and ISO 14001?

ISO stands for the International Organisation for Standardisation, located in Geneva, Switzerland. ISO is a non-governmental organisation established in 1947. The organisation mainly functions to develop voluntary technical standards that aim at making the development, manufacture and supply of goods and services more efficient, safe and clean.

ISO 14000 refers to a family of voluntary standards and guidance documents to help organisations address environmental issues. Included in the family are standards for Environmental Management Systems, environmental and EMS auditing, environmental labeling, performance evaluation and life-cycle assessment.

In September 1996, the International Organisation for Standardisation published the first edition of ISO 14001, the Environmental Management Systems standard. This is an international voluntary standard describing specific requirements for an EMS. ISO 14001 is a specification standard to which an organisation may receive certification or registration. ISO 14001 is considered the foundation document of the entire series. A second edition of ISO 14001 was published in 2004, updating the standard.

The ISO 14000 standards reflect different aspects of environmental management. The following list outlines the broad coverage of each:

- ◆ Environmental Management Systems:  
14001-2004, 14002, 14004
- ◆ Environmental Auditing:  
19011

- ◆ Environmental Labelling:  
14020, 14021, 14022, 14023, 14024, 14025
- ◆ Life Cycle Assessment:  
14040, 14041, 14042, 14043

The benefits of an EMS

Setting up and running an environmental management system (EMS) can provide significant benefits across a number of areas of your business.

### Key benefits

Running an effective EMS will help you with:

- ◆ better regulatory compliance - running an EMS will help ensure your legal responsibilities are met and more easily managed on a day-to-day basis;
- ◆ more effective use of resources - you will have policies and procedures in place that help you manage waste and resources more effectively and reduce costs;
- ◆ marketing - running an EMS will help you prove your business' credentials as an environmentally aware operation that has made a commitment to continual environmental improvement;
- ◆ finance - you may find it easier to raise investment from banks and other financial institutions, which are increasingly keen to see businesses controlling their environmental impact;
- ◆ increased sales opportunities - large businesses and government departments may only deal with businesses that have an EMS; and
- ◆ lighter regulation - even if an EMS is not a regulatory requirement, by showing your commitment to environmental management, you may benefit through reduced fees and charges from environmental regulators.

There are a range of benefits associated with operating an effective Environmental Management Systems (EMS):

### Financial

- ◆ Cost savings through the reduction of waste and more efficient use of natural resources (electricity, water, gas and fuels.)
- ◆ Avoiding fines and penalties from not meeting environmental legislation by identifying environmental risks and addressing weaknesses.
- ◆ Reduction in insurance costs by demonstrating better risk management.

### Operational and Internal

- ◆ Improved overall performance and efficiency.
- ◆ Able to monitor and reflect (audit) your business and see which areas need intervention.

## External

- ◆ Better public perception of the organisation, leading to improved sales.
- ◆ Reduction of the impact (e.g. noises, smells, dust) of your activities on the local residents, leading to more community support.

This guide provides an introduction to EMS. It describes the main elements of an EMS using the information in the British Standard BS 8555, which breaks the process down into clear stages.

## 39.5 Conclusion

The goal of sustainable development, which is now integrated into the European Union objectives, calls for the use of a wider range of tools for environmental policy. The 6th Community Environmental Action Programme, “Environment 2010: Our Future, Our Choice”, recognises this and aims to be a programme that “...completes and reinforces our body of environmental legislation where there are gaps and takes forward the implementation of our directives...does more in terms of mobilising stakeholders for the environment and ‘greening’ the market.” European Commissioner for the Environment at the time, Margot Wallström said:

“...we will not solve environmental problems by simply adding a few new directives every year to our existing 270 or so pieces of European environmental law, especially if we discover later on that these directives are not implemented by the Member States...we need a broader range of instruments to tackle ever more diffuse sources of environmental pressures...We need instruments which:

Promote information, awareness and commitment with citizens and in the business community; Give the right incentives for environmental improvements in the market place; and ensure the integration of the environment into other policies.”

At the level of the European Commission such an instrument is already evident in EMAS, the Eco-Management and Audit Scheme.

An **Environmental Management System (EMS)** is a problem identification and problem solving tool that provides organisations with a method to systematically manage their environmental activities, products and services and helps to achieve their environmental obligations and performance goals. ISO defines an EMS as “the part of the overall management system that includes organisational structure, planning activities, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving, reviewing and maintaining the environmental policy.”

The EMS provides a systematic way of addressing and managing immediate and long-term impacts of an organisation’s products, services and processes on the environment and gives order and consistency to address environmental concerns through the allocation of resources, assignment of responsibility and ongoing evaluation of practices, procedures and processes.

An EMS can be implemented in many different ways depending on the precise sector or activity and the needs perceived by management, but several common core elements should be present: environmental policy, environmental programme or action plan, organisational structure, integration into operations, a documentation system in order to collect, analyse, monitor and retrieve information, corrective and preventive action, EMS audits, management review, training and external communications.

These systems are different from **eco-labelling schemes** - here the focus is on environmental performance of an organisation's production processes, activities and sites while eco-labels apply more specifically to the environmental characteristics of single products and services for which a set of criteria are elaborated which need to be met. The life-cycle approach which is applied to both schemes is therefore used in a broader way in the EMS. In a simple way, one could say that eco-labels consider the life-cycle of products or services whereas the EMS looks at the life-cycle of the entire organisation.

These systems also go beyond mere environmental reporting, which is the main way for organisations to inform stakeholders of their activities, progress and future and can also include "green accounts". The environmental performance of an organisation is of increasing interest to investors, creditors, governments and the public at large, however, although mandatory reporting to authorities is more widespread, mandatory public reporting of environmental information is currently limited to very few countries. One of the main challenges in this sector is the development of an agreed set of indicators which is necessary if environmental reporting is to be integrated into strategic and budgetary planning and if comparability and benchmarking is to be guaranteed.

# UNIT 40

## AIR, WATER AND LAND MANAGEMENT

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### 40.1 Introduction

Mahatma Gandhi had said - “The Earth has enough for everybody’s need but not for everybody’s greed.”

Environment is our surroundings which include all forms of life including plants, animals, human beings, as well as non-living external physical matter like air, water, land, buildings, parks, vehicles, etc. Our environment is in a dynamic state. It keeps changing every now and then. You would have observed many changes around you, like floods or drought in certain years, new industries, multi-storey buildings, new means of transport, etc. If these changes are favourable to life, then the environment is not harmed. However, unfavourable changes lead to degradation of the environment.

As the use of these natural resources increases, waste and pollution also increases. This is because waste is a by-product of the use of natural resources. Wastes damage the environment after an extent, and turn into pollutants. Thus, we can say that overuse of natural resources leads to pollution. Moderation, industry, machines and transport have speeded up the consumption of all natural resources. The resultant pollution has affected air, water, soil and life on the earth, chemically, physically and as far as human beings is concerned, even psychologically. Our day to day work is affected by different kinds of pollution. Air, water, soil, noise, waste and heat radiation are a result of speedy consumption of natural resources.

Management of air, water and land is a broadly distributed function at all levels of municipal, state, and central government.

In India some of the important Environmental Laws are:

- ◆ Water (Prevention and Control of Pollution) Act, 1974,
- ◆ Air (Prevention and Control of Pollution) Act, 1981,
- ◆ Cess Act, 1977, - Environment (Protection) Act, 1986 and Rules thereunder,
- ◆ Public Liability Insurance Act, 1981,
- ◆ National Environmental Tribunal Act, 1995,
- ◆ National Environment Appellate Authority Act, 1997.

State Boards are implementing following programmes:

- ◆ Pollution control in 17 categories of highly polluting industries,
- ◆ Pollution control from industries discharging waste water into rivers and lakes,
- ◆ Inventorisation of pollution industries in the State and ensuring their compliance to the Pollution control norms,
- ◆ Restoration of environmental quality in critically polluted areas,
- ◆ Monitoring of water and ambient air quality in the States,
- ◆ Hazardous waste,
- ◆ Bio-medical and Management of Municipal Solid Wastes.

## 40.2 Air Policies and Management

Air pollution is a problem for all of us. The average adult breathes over 3,000 gallons of air every day. Children breathe even more air per pound of body weight and are more susceptible to air pollution. Many air pollutants, such as those that form urban smog and toxic compounds, remain in the environment for long periods of time and are carried by the winds hundreds of miles from their origin. Millions of people live in areas where urban smog, very small particles, and toxic pollutants pose serious health concerns. People exposed to high enough levels of certain air pollutants may experience burning in their eyes, an irritated throat, or breathing difficulties. Long-term exposure to air pollution can cause cancer and long-term damage to the immune, neurological, reproductive, and respiratory systems. In extreme cases, it can even cause death.

In this day and age, there is an urgent need to not just protect but also manage our natural resources, especially air. The atmosphere is a complex dynamic natural gaseous system that is essential to support life on our planet. Stratospheric ozone depletion due to air pollution has long been recognised as a threat to human health as well as to the Earth's ecosystems.

Air pollution can be defined as “the presence in the external atmosphere of one or more contaminants (pollutants) or combinations thereof, in such quantities and of such duration as may be or may cause injury to human health, plant or animal life, or property (materials), or which unreasonably interfere with the comfortable enjoyment of life, or property, or the conduct of business” (Canter, 1996). The principal sources of air pollutants, particularly

in the industrialised countries, are human activities. Some of the most important air pollutants are “secondary air pollutants” (formed in the atmosphere from primary pollutants), e.g. ozone, aldehydes, peroxyacyl nitrates, etc. formed by photochemical reactions from nitrogen oxides and hydrocarbons and sunlight. Recently, public interest in air pollution problem has continued to increase dramatically and has remained high.

In general, air pollution problems can be solved by reducing pollutant emissions. It is unlikely that a cheap and simple solution to these problems can be found. Instead, many small steps have to be made in order to achieve the air quality goal. Therefore, air pollution management plays an important role in reaching the air quality goal efficiently and effectively.

Air management includes not just conserving the air by decreasing the pollution levels in air but also management of air quality, increasing awareness of the impacts of air quality and climate change and increasing government policy towards sustainable futures. Air management broadly includes knowledge and application of air laws and climate change legislations, air quality management, forecasting and regulation, industrial emission monitoring and control, environmental and human health impact assessment, the transport, energy, waste and chemical industrial sectors and the related national and state policies.

In factories and industrial plants, the main culprit is the process adopted to manufacture chemicals. Manufacturing an item is required, but equally necessary is the necessity to control the pollutants created during this manufacturing process as by-products. If a system is well designed, chances of pollution are remote. However, many of the plant designers do not have the concept of pollution control in their minds while designing plants. They normally have the objective to design to manufacture the right product at low capital and power costs.

Pollution control/ reduction is considered optional. Due to this approach, most of the industrial plants generate large quantities of pollutants in air, mostly in form of gases. Another reason of this is the dearth of pollution control consultants. Each and every unit has to be doubly checked with in-house consultants to ensure that problems do not arise later.

The main products polluting air are acid vapours, sulphur-dioxide, chlorine, carbon monoxide, hydrogen sulphide, ammonia, particulates, benzene by-products, etc. These products are not supposed to be released in the atmosphere. Also, as these products are expensive, prevention of these products also provides the owner some gains. Faulty pipes, duct joint openings are the main source from which these products escape.

There are various air pollution control technologies and land use planning strategies available to reduce air pollution. At its most basic level, land use planning is likely to involve zoning and transport infrastructure planning. In most developed countries, land use planning is an important part of social policy, ensuring that land is used efficiently for the benefit of the wider economy and population as well as to protect the environment.

There is a growing interest among various groups, including the general public, media, international organisations and policy-makers, for an understanding of the air quality management status and trends of different nations of the world, especially at the city-level. While there are tools available that measure environmental performance in general, there is limited methodology specifically for assessment of air quality management for cities. Air quality management in cities have been traditionally evaluated using the good versus bad list analysis - “100 Dirtiest Cities” or “Top 10 Cities with Best Air Quality”, usually only considering air quality levels for a city. This provides a subjective and incomplete picture as it does not consider the institutional capacity as well as the programmes and actions being implemented in the city. Another limitation is that, it does not provide guidance where cities can improve. Aside from addressing traditional air pollutants (particulate matter, Sulphur dioxide, Nitrogen dioxide, Carbon monoxide, ozone, and Lead), cities are also pressed to reduce greenhouse gas (GHG) emissions (Carbon dioxide, methane, Nitrous oxide, among others).

Need for strong air management legislations:

- ◆ Polluted air and water are harmful to life. Air pollution creates problems for healthy living beings, plants and also material. Water pollution also creates problems for all living beings, agriculture, water bodies, all plants and animals living in water, land fertility, etc. Thus, one’s consciousness should always attempt to generate means to control pollution of any type.
- ◆ Most of the governments all over the world have laws setting up benchmarks, which no one is supposed to exceed creating pollution in air or water beyond prescribed limits. Law breakers often face punishments to the tune of heavy fines and even stoppage of work.

In India, the Bhopal gas tragedy is the best example to explain the necessity to take adequate measures to control pollution. Thousands of people were affected due to lack of adequate measures. The managing director of the company Union Carbide, India was arrested and a warrant issued against the name of Union Carbide USA until he lived.

Another example is the BSES plant at Dahanu, India. While preparation of the feasibility report, plant designers had not considered the low sulphonation plant while starting the unit. With more than 10 years of litigation, it has surfaced now that the court had to order stoppage of work or take necessary steps.

#### **Some suggestive steps to prevent Industrial Air Pollution**

For existing plants, thorough study should be made to locate the sources. Pressures, Temperatures, etc. should be adjusted so that the leakages are minimum. At a level when reduction is not possible, steps should be taken to collect the same and then provide treatment. Plants designed 10 years or before or by lowly equipped designs are sure cases for detailed study. For prevention generous use of scrubbers and filters will be necessary. It is said that a routine check will reduce 10%, a minor modification will reduce 15-20% and a thorough overhauling of the system will reduce more than 30% of power consumption and pollution creation.

### 40.3 Water Policy and Management

Water pollution has emerged as one of the gravest environmental threats in India. Its biggest sources are city sewage and industrial waste that are discharged untreated into the rivers. Despite the best efforts of the government, only about 10% of the waste water that is generated in the cities is treated and the rest is discharged into the rivers. It is estimated that 75% to 80% of water pollution by volume is caused by domestic sewage. The major industries causing water pollution include: distilleries, sugar, textile, electroplating, pesticides, pharmaceuticals, pulp and paper mills, tanneries, dyes and dye intermediates, petro-chemicals, steel plants, etc. Non-point sources such as fertilizer and pesticide run-offs in rural areas also cause pollution. Only 60% of chemical fertilizers are utilised in soils and the balance is leached into soil polluting the ground water. Excess phosphate run-off leads to eutrophication in lakes and water bodies.

The entry of toxic substances into water bodies like lakes, streams and rivers leads to deterioration in the quality of water and severely affects the aquatic ecosystems. Due to this, even the ground water gets contaminated. All these have a devastating effect on all living creatures that exist near the polluted water bodies. Urgent steps are needed to be taken by the Indian government on the water pollution management front and the flawed policies need to be amended in order to obtain concrete results.

Water pollution is a reality of human existence. When various by-products are released in drains, they travel to the common drains. The washing of the equipment also adds water to this. These are the main causes of contamination of water. Activities like agriculture and industrial production generate water pollution apart from the biological waste. In India, every year, approximately 50,000 million liters of wastewater, both industrial and domestic, is generated in urban areas. If the data of rural areas is also taken into account, the overall figure will be much higher. The materials that constitute industrial waste include highly harmful substances like salts, chemicals, grease, oils, paints, iron, cadmium, lead, arsenic, zinc, tin, etc. In some cases, even radio-active materials are discharged into the rivers bodies by some companies, who for the sake of saving money on water treatment, throw all the norms to the winds.

All efforts by the government to put a check on wastewater management have not yielded desired results. This is because the treatment systems require high capital investment for installation and also high cost is incurred on operational maintenance. This is a sore point not only for the farmers but also for the factory owners as the high cost of treating industrial wastewater affects their bottom-line. The cost of establishing and running a wastewater treatment plant in a factory can be as high as 20% of the total expenditure. Hence, we see a situation where, despite the presence of government norms, effluents continue to flow into the river bodies untreated.

On the other hand, the government of India is spending millions of rupees every year on water pollution control. According to rough estimates, Indian government has spent nearly 20,000 crore rupees till now on various schemes like the Ganga Action Plan and

Yamuna Action Plan, to control water pollution in rivers. However, no positive results have been achieved as yet. The government should realise that all efforts to get the river-bodies free from water pollution will fail unless the process of untreated industrial and other wastewater getting into the water bodies is not stopped.

Hence the government should, instead of spending money on pollution control schemes, divert its resources to encourage wastewater treatment in agriculture and industrial sector. The money spent on pollution control should be spent on giving subsidies to the industries which generate wastewater and on strict monitoring of their adherence to the norms. Research should be promoted in areas like nanotechnology to find out ways and means to build cheaper wastewater management plants. Here also, the approach should be to re-use the treated water for agriculture instead of letting it go into the rivers and streams.

It should not be forgotten that only 0.3% of total water available on this planet is fit for consumption for human beings, animals and plants. The remaining 99.7% is present either as sea water or as glaciers on the mountains. Hence ignoring the issue of water pollution any longer would mean inviting a Third World War which would be fought for the control of water resources.

The Central Pollution Control Board in consultation with State Pollution Control Boards has identified 24 areas in the country as critically polluted areas. These are: Bhadravati (Karnataka), Chembur (Maharashtra), Digboi (Assam), Govindgarh (Punjab), Greater Cochin (Kerala), Kala-Amb (Himachal Pradesh), Parwanoo (Himachal Pradesh), Korba (Madhya Pradesh), Manali (Tamil Nadu), North Arcot (Tamil Nadu), Pali (Rajasthan), Talcher (Odisha), Vapi (Gujarat), Visakhapatnam (Andhra Pradesh), Dhanbad (Bihar), Durgapur (West Bengal), Howrah (West Bengal), Jodhpur (Rajasthan), Nagda- Ratlam (Madhya Pradesh), Najafgarh Drain (Delhi), Patancheru Bollaram (Andhra Pradesh), Singrauli (Uttar Pradesh), Ankleshwar (Gujarat), Tarapur (Maharashtra)

## 40.4 Land Policy and Management

The widespread use of land is crucial for the economic, social, and environmental advancement of all countries. Although it is part of man's natural heritage, access to land is controlled by ownership patterns. Land is partitioned for administrative and economic purposes, and it is used and transformed in a myriad of ways.

Land is one of the basic elements of life support system on our planet since the dawn of civilisation. All great civilisations, flourished where resources like land were available in plenty and they declined or perished with the depletion of these resources. In recent years, the land resource has been subjected to a variety of pressures. Still it is surviving and sustaining mankind. What is alarming in the way land is being used is the tendency towards over-exploitation on account of a number of reasons leading to this pristine resource being robbed of its resilience.

Of all the species on the earth, man is the chief culprit of this degradation. He views land in terms of its utility, meaning the capability to meet his perceived needs and wants. The most easily categorised varieties of land from the utility point of view are - land fit for use, land with potential for use and land which appears useless at least in the foreseeable future.

The advent of modern age and the advent of newer forces, our land resource is fast deteriorating mainly on account of consumerism, materialistic value systems, short-term profit-driven motives and greed of the users. As a result, land has degraded, soil fertility depleted, the rivers polluted and the forests destroyed.

The current trend of economic and industrial development coupled with the steady growth of human as well as livestock population have been the major reasons behind the incidence of land degradation in India. These factors exert pressure on limited land resources of the country for agricultural, industrial and housing needs of the growing population. It is the lands under cultivation which face the biggest challenge of land degradation in India.

Land degradation refers to a decline in the overall quality of soil, water or vegetation condition commonly caused by human activities. The Vegetation Management Act, 1999 states that the phrase includes soil erosion, rising water tables, the expression of salinity, mass movement by gravity of soil or rock, stream bank instability and a process that results in declining water quality. Degradation is also considered to include a change in the ground cover to less palatable species, or a change from predominantly perennial grasses to predominantly annual grasses. Environmental dilapidation is brought about by pollution especially in urban areas, which not only experience a rapid growth of population due to high fertility rates, low mortality and increasing rural-urban migration, but also due to the rapid industrialisation.

Major ecological and socio-economic crisis are perpetrated by land/soil degradation. Direct impacts of agricultural development on the environment arise from farming activities, which contribute to soil erosion, salinity/ brackishness of land and loss of nutrients. The Green Revolution has been accompanied by over exploitation of land and water resources and use of fertilizers and pesticides have increased manifold. In the race to urbanise virgin territory, there has been random violation of the land laws.

According to the Indian Constitution, state legislatures are empowered to make laws and regulations regarding to a number of subject-matters, including water, land ( rights in or over land, land tenure, transfer and alienation of agricultural land), as well as the preservation, protection and improvement of stock and the prevention of animal disease.

India constitutes 18% of the world's population, 15% of the livestock population and only 2% of the geographic area, one percent of the forest area and 0.5% of pasture lands. The per capita availability of forests in India is only 0.08 per ha. as against the world average of 0.8%, thus leading to the pressure on land and forests. This poses a major and urgent concern. In accordance with the National Remote Sensing Agency's (NRSA) findings there

are 75.5 million ha. of wastelands in the country. It has been estimated that out of these around 58 million ha. are treatable and can be brought back to original productive levels through appropriate measures. At the moment, taking into account the efforts being made by all the various players in this field treating facilities are in place only for around 1 million ha. per year. At this rate, that there is no further degradation and also assuming that our efforts are 100% successful, it will take around 58 years to complete the process.

### ***Watershed Management***

Watershed is a like a drainage basin. A watershed may also be known as a catchment, catchment area, catchment basin, drainage area, river basin or water basin. It refers to an extent or area of land where water from rain and melting snow or ice drains downhill into a body of water, such as a river, lake, reservoir, estuary, wetland, sea or ocean. The drainage basin includes both the streams and rivers that convey the water as well as the land surfaces from which water drains into those channels, and is separated from adjacent basins by a drainage divide.

The drainage basin acts as a funnel by collecting all the water within the area covered by the basin and channelling it into a waterway. Each drainage basin is separated topographically from adjacent basins by a geographical barrier such as a hill, ridge or mountain. Watershed is a geo-hydrological unit which drains at a common point. Rains falling on the mountain start flowing down into small rivulets. Many of them, as they come down, join to form small streams. The small streams form bigger streams and then finally the bigger streams join to form a *nallah* to drain out of a village. The entire area that supplies water to a stream or river, i.e. the drainage basin or catchment area, is called the watershed of that particular stream or river.

Watershed management is the process of creating and implementing plans, programmes, and projects to sustain and enhance watershed functions that affect the plant, animal and human communities within a watershed boundary. Features of a watershed that agencies seek to manage include water rights and the overall planning and utilisation of watersheds. Landowners, land use agencies, storm water management experts, environmental specialists, water use purveyors and communities all play an integral part in the management of a watershed. Watershed degradation in the third world countries threatens the livelihood of millions of people and constraints the ability of countries to develop a healthy agricultural and natural resource base. Increasing population and livestock are rapidly depleting the existing natural resource base because the soil and vegetation system cannot support present level of use. As population continues to rise, the pressure on forests, community lands and marginal agricultural lands lead to inappropriate cultivation practices, forests removal and grazing intensities that leave a barren environment yielding unwanted sediment and damaging stream flow to downstream communities.

Management of watershed thus entails the rational utilisation of land and water resources for optimum production but with minimum hazard to natural and human resources. The

main objective of watershed management is to protect the natural resources such as soil, water and vegetation from degradation. In the broader sense, it is an undertaking to maintain the equilibrium between elements of natural ecosystem of vegetation, land or water on the one hand and man's activities on the other hand.

When all possible inputs are obtaining, the man in the watershed still remains the most important component of the entire watershed system. The key issue is how far the people can be motivated, involved and organised to drive the movement. No significant improvement can be expected without the people being brought to centre-stage.

### **Role of Ministry of Rural Development**

The Ministry of Rural Development, Government of India, has recently created a Department of Land Resources to act as a nodal department in the field of watershed management and development. This has the mandate of developing the valuable land resources of India, which are presently under various stages of degradation and it also endeavours to prevent further degradation of these resources through appropriate management and necessary measures.

The Department of Land Resources, being the nodal department has taken up certain new initiatives to play a more pro-active role in the Land Resource management in the country. At the conceptual level it has been realised that the management rather than the mere use of land is the central theme. There is no dearth of land, the real issue is management which should include: dynamic conservation, sustainable development and equitable access to the benefits of intervention.

The concept of sustainable development focuses on help for the very poor because they are left with no option but to destroy their own environment. It also includes the idea of cost-effective development using differing economic criteria to the traditional approach; that is to say development should not degrade environment quality, or reduce productivity in the long run. The greater issues of health control, appropriate technologies, food self-reliance, clean water and shelter for all are to be addressed. Sustainable development should seek to maintain an acceptable rate of growth in per capita real incomes without depleting the national capital asset stock or the natural environmental asset stock.

Equitable access to the benefits of development could be achieved either through land reforms or a dedicated and institutionalised mode of people's participation. Here, besides the Government, other players like the corporate sector, NGOs, various institutions and self-help groups can be involved.

## **40.5 Conclusion**

The Environment is everything, which surrounds an organism and influences its life in many ways. It includes physical and biological components. The physical components of the environment are soil, water, air, light and temperature. These are termed as abiotic

components. The plants and animals are collectively referred to as biotic components. All these components of the environment work together, interact and modify the effect of one another. These resources are unlimited in nature, and they are not likely to be exhausted by human activities. Examples are solar radiation, air, water, precipitation (rainfall, snow fall, etc.) and atomic power. About 70-73% of earth is covered by water. Water is available in the form of oceans, seas, rivers, lakes, ponds, pools, polar ice caps and water vapour and this forms the hydrosphere. The main component of hydrosphere is water. Water exists in all the three forms i.e., solid (snow), liquid (water) and gas (water vapour). Air is an inexhaustible natural resource. It is very essential for the survival of all the living organisms on earth. In atmosphere, about 95% of the total air is present up to a height of 20 km above the earth's surface. The remaining 5% of air is present up to a height of about 280 km. Air is a mixture of different gases; nitrogen and oxygen are the major components. Thus, total volume of air present in atmosphere consists of 78% nitrogen 21% oxygen and remaining 1% is made up of other gases such as argon, neon, helium, krypton, xenon and radon. The word soil is derived from a Latin word 'solum' meaning ground. It is a stratified mixture of inorganic and organic materials, both of which are products of decomposition. Flora refers to plant species and fauna refers to animal species. The term biota includes both plant as well as the domesticated and wild species of animals. Our country has a rich diversity of flora and fauna. There are over 45,000 plant species and 81,251 animal species. It represents about 7% of world's flora and 6.5% of world's fauna.

There is an urgent need to think deeply about destruction of natural resources. With the exponential increase in human population and increased technological advancement, the natural resources get relentlessly exploited. There is a need for optimisation of its usage. This is possible only when we adopt the concepts of management and conservation of natural resources. Management and conservation mean scientific utilisation of resources while maintaining their sustained yield and quality. Mutual relation exists between forests (trees), rainfall concentration, the amount of water in rivers and conservation of wild animals.

A species is considered extinct when there is no reasonable doubt that its last individual has died, e.g., mountain quail, pink headed duck, one horned rhino and cheetah. In India, birds and animals are worshipped from time immemorial. They are considered to be cultural assets and have a profound effect on Indian art, sculpture, literature and religion. It is imperative that we protect wildlife. Awareness should be created amongst the masses using the various media of communication like the TV, radio, newspapers and the magazines.

# FOREST MANAGEMENT |

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### 41.1 Introduction

Balancing the effective, sustainable management of forest resources with economic, social and environmental factors has emerged as one of the key challenges in natural resource management. The environment and fora in which decisions concerning natural resource management are made are evolving as a result of global trends such as the globalisation of the economy; growing awareness of and response to environmental concerns; decentralisation and devolution of government control; the need for secured property rights; and increasing pressure for democratisation.

Among the responses to these trends is a greater willingness to consider local forest management as a viable alternative to centralised State control. Throughout the world, a large number of forestry activities (national, multilateral, bilateral and non-governmental) with participatory, local or community forestry components are being implemented. Although much remains to be done, participatory approaches are increasingly recognized as essential to sustainable forest management.

#### What are forests?

The Oxford English Dictionary defines forests as, 'An extensive tract of land covered with trees and undergrowth, sometimes intermingled with pasture (in proper names also a district formerly forest but now cultivated); and the trees growing in such a tract.'

The Encyclopaedia Britannica considers a forest to be a, 'Complex ecological system, in which trees are the dominant life form.' A more ecological definition can be seen in Wikipedia.org that states, 'A forest is an area with a high density of trees. These plant communities cover large areas of the globe and function as carbon dioxide sinks, animal

habitats, hydrologic flow modulators, and soil conservers, constituting one of the most important aspects of the Earth's biosphere.'

Some other important definitions of 'Forest':

- 1) **United Nations Convention on Combating Desertification** - Dense canopy with multi-layered structure including large trees in the upper storey.
- 2) UN-FAO- Land under forestry or no land use spanning more than 0.5 hectares; with trees higher than 5 meters and a canopy cover of more than 10%, or trees able to reach these thresholds in situ. Note: Forests are determined both by the presence of trees and the absence of other predominant land uses. The term specifically includes forest roads, firebreaks and other small open areas; forest in national parks, nature reserves and other protected areas such as those of specific scientific, historical, cultural or spiritual interest; windbreaks, shelterbelts and corridors of trees with an area of more than 0.5 hectare and width of more than 20 meters; plantations primarily used for forestry purposes, including rubberwood plantations and cork oak stands.
- 3) United Nations Framework Convention on Climate Change - Young natural stands and all plantations which have yet to reach a crown density of 10-30% or tree height of 2-5 meters are included under forest, as are areas normally forming part of the forest area which are temporarily unstocked as a result of human intervention such as harvesting or natural causes but which are expected to revert to forest.
- 4) Kyoto Forest - A forest planted since 1 January 1990 on land that was previously non-forest. A NON-KYOTO FOREST or 'pre-1990 forest', refers to forests already in existence on 1 January 1990.

Despite the existence of these explanations to the term 'forest', no specific definition of the term 'Forest' has been provided in any of the legislations. The definition that exists is the one pronounced by the Supreme Court in the case of *T.N. Godavarman Thirumulpad v. Union of India*, (Writ Petition No. 202 of 1995) commonly known as Godavarman case, wherein the court expanded the definition of "forests" to include not only forests as mentioned in government record but all areas that are forests as per the dictionary meaning of the term irrespective of the nature of ownership and classification thereof.

Another significant case after the Godavarman concerning forests is the case titled *CEL, WWF India v. Union of India* (W.P 337 of 1995). The case concerns largely with the implementation of the Wildlife (Protection) Act. Just in the way the Godavarman case did not limit itself to the Forest (Conservation) Act, 1980 but included within its scope other Acts, similarly the CEL case had an impact on other Acts and the most significant being the Forest (Conservation) Act, 1980.

## 41.2 Judicial Interpretation of 'Forest'

Donning the mantle of the principal decision-maker in issues relating to forests and wildlife, the Indian judiciary has played a pioneering role in forest conservation. This

has led to fundamental changes in the pattern of forest governance and decision-making. The two landmark cases that have paved way to the forest governance in India are:

- 1) *T. N. Godavarman Thirumulpad v. Union of India and Ors.* (WP No. 202 of 1995)- The case, popularly known as the Godavarman case, pertains to the implementation of the Forest Conservation Act, 1980. In this case, the SC reinterpreted the Forest (Conservation) Act, 1980.

In its order dated 12 December 1996, the SC expanded the scope of the term “forest”. Before this order, the word ‘forest’ was limited only to government declared forests irrespective of whether it had tree cover or not. Likewise, areas with significant tree cover were not regarded as ‘forest’ simply because in government records it was not declared as ‘forest’. Due to this, large areas under good forest cover were outside the purview of the Forest (Conservation) Act, 1980. However, by its order, the SC expanded the term which now included within its scope not only forests as mentioned in government record but all areas that are forests in the dictionary meaning of the term irrespective of the nature of ownership and classification thereof.

The court’s clarification expanded the statutory recognition to forests irrespective of nature of ownership and classification. This implies that forests could be designated as reserved and protected whether they are privately owned or otherwise under the Forest (Conservation) Act, Section 2(1).

The question being debated in the case was the scope of the Forest Conservation Act, 1980 (FCA). This Act, which itself is a watershed in forest governance in the country, requires that any conversion of forest land to non-forest uses (which are defined in the Act) must be approved by the central government (i.e., Ministry of Environment and Forests or MoEF). Conventionally, in the application of this act, “Forest land” was assumed to be only that land which has been legally notified as forest according to the Indian Forest Act or state forest Acts, i.e., typically Reserve or Protected Forest. Even this narrow interpretation of the Act had slowed down and often halted certain kinds of forest land conversions that state governments seemed to have mindlessly engaged in during the 1960s and 1970s. However, the Godavarman case highlighted the fact that significant tracts of lands that were physically forested had, due to some quirk of history or anomaly of administration, not been notified as Reserved Forests or Protected Forests and hence were denied the “protection” of the FCA. The Supreme Court, in its landmark order of 12 December 1996, sought to rectify this anomaly by stating that the FCA applied to “all areas that are forests in the dictionary meaning of the term irrespective of the nature of ownership and classification thereof.”

- 2) *The Centre for Environmental Law (CEL), WWF v. Union of India and others* (WP No. 337 of 1995)- This case pertains to the issue of settlement of Rights in National Parks and Sanctuaries and certain other issues under the Wildlife (Protection) Act, 1972. The most significant orders in the CEL case were the orders dated 22 August 1997 and the order dated 13 November 2000.

The following are excerpts from the order dated August 22, 1997, 22-7, which have been of immense consequence:

- ◆ **On Settlement** - “Even though notification in respect of sanctuaries/national parks have been issued under Section 18/35 in all the States/ Union Territories, further proceedings are required under the Act i.e. issue of proclamation under Section 21 and other steps as contemplated has not been taken. The concerned State Governments/ Union Territories are directed to issue proclamation under Section 21 in respect of the sanctuaries/ national parks within two months and complete the process of determination of rights and acquisition of land or rights as contemplated by the Act within a period of one year...”
- ◆ **On Poaching** - “In order to effectively control the growing increase of poaching in the Sanctuaries/National Parks the Central Government as well as the Government of the States/ UT’s are directed to ensure that the forest guards in the Sanctuaries/ National Parks are provided modern arms, communication facilities viz. wireless sets and other necessary equipment in that regards. Necessary steps in this regard shall be taken within six months.”
- ◆ **On Denotification** - “As regards denotification of any area which is included in a Sanctuary/national park, it is directed that before placing the proposal before the Legislative Assembly the concerned State Government shall refer the proposal to the Indian Board for Wildlife for its opinion and the proposal shall be placed for consideration before the legislative Assembly along with the opinion of the Indian Board for Wildlife.”

Excerpts from the order dated 13 November 2000

- ◆ “this Court while directing to list the above application after five weeks DOTH ORDER THAT pending further orders no dereservation of forest/Sanctuaries/ National Parks shall be effected.”

By this single order, the Supreme Court divested the Central government (in respect to forests) and the State Legislature (concerning National Parks and Sanctuaries) of all powers of dereservation/ denotification. Thus, while the Godavarman case prohibited non-forest use of forest land without Central Government approval, the CEL prohibited dereservation without Supreme Court approval.

Both the Godavarman and the Centre for Environmental Law (CEL), WWF v. Union of India and others cases have led to fundamental changes that have wide impact on forest management. These cases are being heard for over a decade now and are a part of what is termed as “continuing mandamus”, whereby the Courts, rather than passing final judgments, keep on passing orders and directions with an aim of monitoring the functioning of the executive. These orders have tremendous affect and implication on forest management and governance. For example:

- 1) No forest, National Park or Sanctuary can be de-reserved without the approval of the Supreme Court.

- 2) No non-forest activity is permitted in any National Park or Sanctuary even if prior approval under the Forest (Conservation) Act, 1980 had been obtained.
- 3) An interim order in 2000 prohibited the removal of any dead or decaying trees, grasses, driftwood, etc. from any area comprising a National Park or Sanctuary. It was also directed that if any order to the contrary had been passed by any State government or other authorities, that order shall be stayed.
- 4) New authorities, committees and agencies have been set up such as the Central Empowered Committee (CEC) and the Compensatory Afforestation Management and Planning Agency.

### 41.3 Attempts to Define the Term 'Forest'

The orders of the court in these two cases were pronounced to further the spirit of the FCA. There certainly are significant areas of (currently or until recently) forested lands whose legal status for some reason was not that of Reserved Forest, Protected Forest or Village forest. However, some experts have urged the orders, especially the order dated 12 December 1996 (passed in the Godavarman case) is flawed and inadequate in law since it attempts to move away the definition of forest land from a 'legal forest' to a 'physical forest' by replacing a due process with a single universal definition<sup>1</sup>.

The need to evolve a definition of the word 'Forest' thus received an unprecedented attention after the Supreme Court of India referred to the term Forest in its various pronouncements.

On 7 February 2006, the MoEF of the government of India invited "expressions of interest" for a study to establish the definition of "forests". It was recommended that a holistic definition of the term forest must be evolved.

For this purpose, five institutions were shortlisted by the ministry to act as a consultant. Letter F. No. 15-1/2005-FP dated 4 July 2006 was sent to all the five shortlisted institutions. It outlines two purposes:

- ◆ To evolve the definition(s) of forest in Indian context keeping international commitments and different orders of the apex court of the country into consideration.
- ◆ To develop ecologically sound and socially desirable definition of forests<sup>2</sup>.

<sup>1</sup> Lele, Sharachandra, A 'Defining' Moment for Forests, Economic and political Weekly, June 23, 2003.

<sup>2</sup> The 'international commitments' mentioned in the letter is left completely undefined. Consultants are merely required to keep within their scope, "Forest-related definitions accepted in various international conventions such as cbd, unccd, unfccc and unff etc". In all these conventions, the definitions follow the technicism tenets of 'scientific forestry'. Moreover, when the terms of reference (in the letter) stated the need to make allowance for the "different orders of the apex court of the country", the reference is to *T N Godavarman Thirumalpad v. Union of India*, an ongoing case under whose umbrella all forest cases are today sheltered. In a December 12, 1996 order, the SC provided the definition of 'forest' by bringing all areas into the 'dictionary meaning' of forests. This rewrote the law, by bringing into the ambit areas of forests not under the forest department, but under tree cover.

The MoEF awarded a consultancy to Ashoka Trust for Research in Ecology and the Environment (ATREE), which was one of the five shortlisted institutions, with the objective of evolving the definition(s) of forest in an Indian context keeping international commitments and different orders of the apex court of the country into consideration. An allied objective was to develop ecologically sound and socially desirable definition of forest. The consultant (ATREE) in turn began widespread consultations from February 2007 for the purpose of developing a sound and appropriate definition to the term 'Forest'.

The project team at ATREE prepared a draft document on "Definition of the Forest an Indian Context". This draft document was presented and discussed in a two day meeting on April 30 - May 1, 2007<sup>3</sup>. This meeting was an important step in the process of finalising the recommendations of the study undertaken by ATREE.

An array of forest officials along with Non-Governmental Organisations (NGOs) attended the two days meeting. The meeting discussed history of forests in India, the forests of India, the valuation of forests, various National Forest Policies and definition of forests under various forest Acts and forest policies, as well as the international conventions and treaties. All these efforts were aimed to evolve a Definition of Forest. ATREE proposed to define a forest as "An area under Government control notified or recorded as forests under any Act for the conservation and management of ecological and biological resources."

**Explanation:** Such forests will include areas with trees, scrubland, grasslands, wetlands, water bodies, deserts, glaciers, geomorphic features or any other area that is necessary to maintain ecological security.

On the basis of consultation made with different stakeholders throughout the country, the possible options for the definition of Forests were derived as under:

#### **Option-1**

"An area under Government control notified or recorded as forests under any Act for the conservation and management of ecological and biological resources."

**Explanation:** Such forests will include areas with trees, scrubland, grasslands, wetlands, water bodies, deserts, glaciers, geomorphic features or any other area that is necessary to maintain ecological security.

#### **Option-2**

"An area owned by Government and notified as forest under any act or recorded as a forest in any Government record functioning as ecological, biological, livelihood-support and/or social resource."

**Explanation:** such forests will include areas having trees, scrub, grasslands, wetlands, water bodies, deserts, glaciers, geomorphic features or any other area fulfilling the functions of a forest.

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<sup>3</sup> Minutes of the Meeting of the Expert Group on Definition of Forests at MoEF New Delhi, on 30th April and 1st May 2007.

### Option-3

“An area notified as forests in any Act or recorded as forests in any Government record functioning as ecological, biological, social resource or livelihood support system.”

### Explanation

- 1) Such forests will include areas having trees, scrub, grassland, wetland, water bodies, deserts, geomorphic features or any other that is necessary for ecological security of the nation.
- 2) This will also include areas recorded as jungle such as Jhupudi Jungal, Doli Land, etc., and unclassified state forests, community owned or privately owned lands.

However, these definitions exclude areas that may not have trees but are part of the forest system, man-made plantations, and tree crops on private and community-owned land. It also does away with the broad classification of forests as understood by the dictionary meaning. There are certain other shortcomings in this definition. For example, riverbeds are presently included in the forest areas and thus covered under the forest Act. But they will be open for exploitation if as explained by ATREE. Similarly, there may be certain areas that are snow bound. With the melting of snows, they act as catchment areas. But this snow bound area again falls outside the purview of the definition of forests. Then there are rocky areas that have their own set of vegetations. It may be in the form of lichens or others and they too stand excluded from the proposed definition of forests.

Ecologists weigh the unscientific use of the term against their wish to ensure forest conservation by whatever means possible. Social activists warn that sweeping definitions will antagonise local communities. Foresters seem to be interested in ensuring that their domain does not shrink. Other ministries probably want definitions that will enable easy setting up of development projects like dams and roads. The corporate sector would like definitions that will make the leasing-in of state land for commercial forestry free of legal hassles. In this situation, it may be worth asking whether the issue itself has really been tackled from the right perspective, or is it a case of missing the woods for the trees<sup>4</sup>!

## 41.4 Forest Conservation in India

A forest is a terrestrial ecosystem, a community of plants and animals interacting with one another and with the physical environment. They are natural renewable resources. Depending on the potential of climate and land area, all countries differ in their forest resources.

In recent times, there has been a considerable reduction in the forest cover throughout the world. Today, forests cover only nearly 30 to 40% of the world's land.

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<sup>4</sup> Lele, Sharachchandra, A 'Defining' Moment for Forests, Economic and Political Weekly, June 23, 2003.

India is the seventh largest country in the world occupying 2.5% of the world area. However, only 1.8% of forest covers lies in India. Despite recent efforts to increase forest cover through reforestation, India's forests are in a devastated condition, with only about 21.54% of India under forest cover in 2017<sup>5</sup>. Very dense forests cover only 2.99% of land. The policy requirement is that the forest cover should be 33% of the area of the country, and all of this should be closed forest. However, we are far from achieving this figure.

Forests are a precious resource of economic development and environmental stability. However, forests today are under immense threat of deforestation. They are reducing at an alarming rate. This process of deforestation is a serious threat to the economy, quality of life and the future of environment in our country.

It is estimated that some 1.6 billion people worldwide depend on forests for their livelihoods. 60 million indigenous people depend on forests for their subsistence. Forest resources also represent a survival base for as many as 200-300 million small farmers and shifting cultivators around the world. Seasonal harvesting of forest products is of vital importance to most shifting cultivator households especially during the hungry period between harvests. Some 350 million people that live in or near forests depend on them for income and subsistence. Some additional 1 billion people worldwide, constituting about 20 percent of the global population, depend on varying degrees on forests or agro-forestry farming.

Forests are major stores of carbon and other greenhouse gases such as methane. They play a crucial role in conserving the world's biodiversity. Forests provide habitats for at least two-thirds of the world's species and contain at least 80% of the remaining earth's biodiversity.

#### Box 1

Some major reasons for degradation and decline of forests are:

- ◆ Rapid explosion of human and livestock population
- ◆ Over utilisation of forest resources by local communities
- ◆ Conversion of land to non-forestry use
- ◆ Expansion of agricultural cropland for farming
- ◆ Practice of slash and burn agriculture on invaded lands
- ◆ Enhanced grazing by cattle
- ◆ Increased demand in fuel-wood, timber, wooden crates, paper, medicines, and other forest dependent products
- ◆ Impact of other commercial activity
- ◆ Impact of developmental activity
- ◆ Impact of chemicals and other hazardous substances
- ◆ Illegal forest activities

<sup>5</sup> FSI 2017.

Forests also play a major role in containing soil erosion and in regulating water supplies. They contribute to reducing sedimentation in dams and reservoirs, to clean rivers and protect fishery resources, to maintaining agricultural productivity. Tree shelterbelts slow wind velocity and lower temperature thus contributing to moisture conservation and agricultural productivity. Trees and forests critically contribute to food security in most of the food-deficient countries of the world.

### **Forest Conservation and the Constitutional Mandate**

At the time of framing of the Constitution forest was a 'State' subject place under Entry 19, List II of the Seventh Schedule. The forests departments of individual states regulated forests in accordance with the pre-existing Forest Act of 1927, as implemented by state regulations.

However, the Indian Parliament, realising the national significance of the forests, made certain changes to the Seventh Schedule. In 1976, the Forty-second Amendment Act led to the deletion of Entry 19 from List II of the Schedule. A new entry (Entry 17-A) related to forests was inserted in the Concurrent list or List III of Seventh Schedule. Now, forestry is a concurrent subject in the Indian Constitution, being under the purview of both the central and state government. Hence, as per the Constitution, both Centre and State may legislate on issues related to forests and protection of wildlife.

The provisions directly related to the conservation of forests were also included in the Constitution of India by the Constitution (Forty-second Amendment) Act, 1976. The Forty-second Amendment introduced a new Directive Principle of State Policy [Article 48-A] under Part IV and a Fundamental Duty [51 (A) (g)] under Part IV A for the protection and improvement of the forests. These provisions provide as under:

- 1) **Article 48-A - Protection and improvement of environment and safeguarding of forests and wildlife.** The State shall endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country.
- 2) **Article 51(A) (g) -** It shall be the duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wildlife, and to have compassion for living creatures.

### **Forest Conservation and Legislative Action**

Even prior to the British era, customary rules have regulated the use of forests in India. Certain types of trees were regarded as sacred and never cut. Certain areas under forest were regarded as God's groves and not even deadwood and leaves were taken out from these areas. Even today, some such areas in their natural condition are found in different parts of the country, though their condition is rapidly worsening.

The history of modern forest legislation in India is more than a century old. The first codification which came to the statute book in relation to the administration of forest in India was the Indian Forest Act, 1865. It empowered the government to declare any land covered with trees or brushwood as government forest and to make rules to manage

them. The Act was applicable only to the forests in control of the government and did not cover private forests. It made no provision regarding the rights of the users.

The Act of 1865 was replaced by a more comprehensive Indian Forest Act of 1878. Forests were divided into reserve forests, protected forests and village forests. Several restrictions were imposed upon the people's rights over forest land and produce in the protected and reserved forests. The act empowered the local government to levy duty on timber produced in British India or brought from any place beyond the frontier of British India, thus encouraging them to earn revenue from forests. The Act radically changed the nature of common property and made it state property.

The Act was amended from time to time and was ultimately repealed and replaced by the Indian Forest Act, 1927.

### **Current Forest Legislations in India**

The important forest legislations in India are:

- 1) The Indian Forest Act, 1927
- 2) The Wildlife Protection Act, 1972
- 3) The Forest Conservation Act, 1980
- 4) The Scheduled Tribes and other Traditional Forest Dwellers Act, 2006

#### **◆ The Indian Forest Act, 1927**

The Indian Forest Act, 1927 was enacted during pre-independence era with the object to consolidate the law relating to forests, the transit of forest-produce and the duty leviable on timber and other forest-produce. It also sought to consolidate and reserve the areas having forest cover, or significant wildlife.

The Act contains 86 Sections and still remains in force. However, it has been subjected to amendments from time to time to make it more in tune with the current situation. The Forests Act establishes three kinds of forests, namely, Reserve forests, Protected forests and Village forests. Reserved forests are the most restrictive category of forests. These forests are constituted by the State Government on any forestland or wasteland which is the property of the government or on which the government has proprietary rights. Protected forests, constituted by the state government, are forests other than reserved forests over which the government has proprietary rights. Village forests, on the other hand, are those in which the state government assigns to "any village-community the rights of government to or over any land which has been constituted a reserved forest." The categories are explained in detail as follows:

- 1) **Reserved Forests** - Reserved forest is dealt with in Chapter II of the Act. It is an area or mass of land duly notified under Section 20 or under the reservation provisions of the Forest Acts of the State Governments of the Indian Union. It is within power of a State Government to issue a preliminary notification under Section 4 of the Act declaring that it has been decided to constitute such land, as specified in a Schedule with details of its location, area and boundary description, into a Reserved Forest.

Such a notification also appoints an officer of the State Government, normally the Deputy Commissioner of the concerned district, as Forest Settlement Officer. The Forest Settlement Officer fixes a period not less than three months, to hear the claims and objections of every person having or claiming any rights over the land which is so notified to be reserved and conducts inquiries into the claims of rights, and may reject or accept the same. He is empowered even to acquire land over which right is claimed. For rights other than that of right of way, right of pasture, right to forest produce, or right to a water course, the Forest Settlement Officer may exclude such land in whole or in part, or come to an agreement with the owner for surrender of his rights, or proceed to acquire such land in the manner prescribed under the Land Acquisition Act, 1894. Once the Forest Settlement Officer settles all the rights either by admitting them or rejecting them, as per the provisions of the Act, and has heard appeals, if any, and settled the same, all the rights with the said piece of land, with or without alteration or modification of boundaries, vests with the State Government. Thereafter, the State Government issues notification under Section 20 of the Indian Forest Act, 1927 declaring that piece of land to be a Reserved Forest.

- 2) **Village Forests** - Village forest is dealt with in Chapter III of the Act. It is constituted under Section 28. The Government may assign to any village community the rights over a land which may be a part of a reserved forest for use of the community. Usually, forested community lands are constituted into Village Grazing Reserve (VGR). Parcels of land so notified are marked on the settlement revenue maps of the villages.

A Village forest is different from a Forest Village. Though many times both terms are used interchangeably, both are different in their meaning. While village forest is a legal category under the Indian Forest Act forest village is merely an administrative category. Although forest village is recognised by a forest department, the revenue benefits cannot accrue to such villages as they are not technically under the revenue departments.

- 3) **Protected Forests** - Protected forest is dealt with in Chapter IV of the Act. It is an area or mass of land, which is not a reserved forest, and over which the Government has property rights, declared to be so by a State Government under the provisions of the Section 29. It does not require the long and tedious process of settlement, as in case of declaration of a reserved forest. However, if such a declaration infringes upon a person's rights, the Government may cause an inquiry into the same; but pending such inquiries, the declaration cannot abridge or affect such rights of persons or communities. Further, in a protected forest, the Government may issue notifications declaring certain trees to be reserved, or suspend private rights, if any, for a period not exceeding 30 years, or prohibit quarrying, removal of any forest produce, breaking of land, etc.

There is another type of forests known as Non-government Forests. Though this category is not expressly termed as a separate category, it is dealt with in Chapter V of the Act. It covers the forests and land not being in control of the government. The State

government can, by notification, regulate or prohibit the breaking up or clearing of land for cultivation, the pasture for cattle or the firing or clearing of vegetation to protect against storms, winds, rolling stones, floods and avalanches, to preserve soil from erosion, to maintain water supply in springs, rivers and tanks, to protect roads, bridges, railway, lines of communication and to preserve public health.

The State Governments are also empowered under the Act to impose duty on timber and other forest produce as well as control transit of the same. The Act also defines a forest offense and vests power in the State Governments to impose penalties on violation of the provisions of the Act.

#### ◆ The Forest Conservation Act, 1980

In 1980, the Parliament, in response to the rapid decline in the forest covers in India, and also to fulfil the Constitutional obligation under Article 48-A, enacted a new legislation called the Forest Conservation Act, 1980.

Deforestation causes ecological imbalance and leads to environmental deterioration. With a view to check further deforestation, the President promulgated the Forest (Conservation) Ordinance, 1980 on the 25 October 1980. The Ordinance made the prior approval of the Central Government necessary for de-reservation of reserved forest and for use of forest land for non-forest purposes. Ordinance also provided for the constitution of an advisory Committee to advise the Central Government with regard to grant of such approval.

The Ordinance was later on replaced with the enactment of the Forest Conservation Act, 1980 that came into force on 25 October 1980, which is the date on which the Forest Conservation Ordinance was promulgated. The Act too was passed with a view to check deforestation. The basic aim of the Act was to provide for the conservation of forests and for matters connected therewith or ancillary or incidental thereto. Under the provisions of this Act, prior approval of the Central Government is essential for diversion of forest lands for the non-forestry purposes. In the national interest and in the interest of future generations, this Act, therefore, regulates the diversion of forest lands to non-forestry purposes. The basic objective of the Act is, to regulate the indiscriminate diversion of forest lands for non-forestry uses and to maintain a logical balance between the developmental needs of the country and the conservation of natural heritage. The, guidelines have been issued under the Act from time to time, to simplify the procedures, to cut down delays and to make the Act more user friendly.

Prior to 1980, the rate of diversion of forest lands for non-forestry purposes was about 1.43 lakh hectare per annum. However, with the advent of the Forest (Conservation) Act, 1980, the rate of diversion of forest lands were controlled to a certain extent. The Act allows the diversion of forest land only for certain purposes such as to meet the developmental needs for drinking water projects, irrigation projects, transmission lines, railway lines, roads, power projects, defence related projects, mining, etc. For such diversions of forest lands for non- forestry purposes, compensatory afforestation is

stipulated and catchment area treatment plan, wildlife habitat improvement plan, rehabilitation plan, etc. are implemented, to mitigate the ill effects of diversion of such vast area of green forests.

To monitor the effective implementation of the compensatory afforestation in the country, an authority named as “Compensatory Afforestation Management and Planning Authority (CAMPA)” is being constituted at the national level. A monitoring cell is also being set up in the Ministry of Environment and Forests to monitor the movement of proposals at various stages and the compliance of the conditions stipulated in the forestry clearances by the user agencies. Clearance from Central Government for de-reservation of Reserve Forests, for use of forestland for non-forest purpose and for assignment of leases has been made mandatory under The Forest Conservation Act, 1980. Under Section 2 of the Act, prior approval of Central Government has to be obtained by the State Government or other authority for undertaking any of the above-mentioned activities. For this purpose, the proposal has to be sent to the Central Government in the form specified in The Forest Conservation Rules, 1982.

To better regulate the matter, the Ministry of Environment and Forest drafted a legislation “The Compensatory Afforestation Fund Bill, 2008” to achieve the same general objective. The Bill was examined by the Department-related Parliamentary Standing Committee for Science and Technology, Environment and Forests. Keeping in view the observations of the Committee, the MoE&F introduced The Compensatory Afforestation Fund Bill, 2015 (“CAF Bill 2015” in short) in Parliament in May 2015 in place of the 2008 Bill which had lapsed. The Bill was referred to the Department-related Parliamentary Standing Committee (DRPSC) on Science and Technology, Environment and Forests soon after it was introduced in Lok Sabha in May 2015. The Standing Committee submitted its report in February 2016, proposing some changes to the Bill. The revised Bill was passed by Lok Sabha and Rajya Sabha in May and July 2016, respectively. The main features of the Compensatory Afforestation Fund Act, 2016 (CAF Act) are as follows:

- 1) There shall be a National Compensatory Afforestation Fund at Central level and a State Compensatory Afforestation Fund at State level; along with a National Compensatory Fund Authority and a State Compensatory Fund Authority;
- 2) All payments towards compensatory afforestation, additional compensatory afforestation, penal compensatory afforestation, net present value, catchment area treatment plan or any money for compliance of conditions stipulated by the Central Government while according approval under the provisions of the Forest (Conservation) Act, 1980, or due under the Wild Life (Protection) Act, 1972, as a consequence to be credited to the State Fund, and 10% transferred to the National Fund;
- 3) State Fund to be used for artificial regeneration (plantation), assisted natural regeneration, forest management, forest protection, forest and wildlife related infrastructure development, wildlife protection and management, supply of wood and other forest produce saving devices, and other allied activities in the manner as

may be prescribed; interest may be used for meeting the expenses of the State Authority. The National Authority will approve annual plan of operations of the State Authorities for the purpose within three months of receipt;

- 4) The National Fund to be used for meeting the expenses of the National Authority or for a “scheme”, including any institute, society, centre of excellence in the field of forest and wildlife, pilot schemes, standardisation of codes and guidelines, and such other related activities for the forestry and wildlife sector;
- 5) The Annual Report of the National Authority shall be laid in Parliament and of the State Authority in the State Legislature; the accounts shall be audited by the Comptroller and Auditor-General of India;
- 6) The Central Government, in consultation with the State Governments, may make rules for the management of the National Fund by the National Authority and of the State Fund by the State Authorities. It may also make rules for the conduct of business by the National and State Authorities and their organs;
- 7) The Central Government may, from time to time, by writing give such directions to the National Authority and each State Authority, as it may think necessary;
- 8) In the Statement of Objects and Reasons, the Ministry has stated that the Honourable Supreme Court, in its judgment dated the 26 September 2005, in the case *T.N. Godavarman Thirumulpad v. Union of India* [Writ Petition (C) No. 202 of 1995], observed that the fund generated for protecting ecology and providing regeneration should not be treated as a fund under Article 266 or Article 283 of the Constitution. The Funds are therefore kept outside the Consolidated Fund of India or Public Account of India.

The Rules of 2003 made in pursuance of the Forest Conservation Act 1980 provide that every user agency wanting to use forest land for non-forest use must apply to a Nodal officer of the State Government concerned. The State Government after being satisfied that it is justified, recommends the proposal to the Central Government for its prior approval. In respect of areas comprising 5 ha. or less (other than for mining) the approval is given by the Regional office of MoE&F. In respect of areas from 5 to 40 ha. (other than mining) the approval is accorded by a Regional Empowered Committee of MoE&F. In respect of areas measuring 40 ha. or more and all mining proposals, the advice of the Forest Advisory Committee in the MoE&F is taken by the Central Government. The Rules provide that the Forest Advisory Committee shall consist of four senior officials of the Central Government and three non-official experts.

◆ **The Scheduled Tribe and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006**

The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 was passed almost unanimously by the Lok Sabha as well as the Rajya Sabha on 18 December 2006. This legislation, aimed at giving ownership rights over forestland to traditional forest dwellers. The law concerns the rights of forest dwelling communities

to land and other resources, denied to them over decades as a result of the continuance of colonial forest laws in India.

A little over one year after it was passed, the Act was notified into force on 31 December 2007. On 1 January 2008, this was followed by the notification of the “Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Rules, 2007” framed by the Ministry of Tribal Affairs to supplement the procedural aspects of the Act. The Ministry of Tribal Affairs was established as an independent ministry in 1999 to deal specifically with scheduled tribes. The criteria for designating a tribe as “scheduled” include having ‘primitive’ traits, dwelling in geographical isolation, having a distinct culture, being shy of contact with the outside world and being economically ‘backward’. There are more than 600 officially listed scheduled tribes in the country, comprising less than 10% of the country’s total population and with little over 2% believed to be dwelling in forests.

The list of rights as provided under the Act includes:

- ◆ Right to live in the forest under the individual or common occupation for habitation or for self-cultivation for livelihood;
- ◆ Right to access, use or dispose off minor forest produce;
- ◆ Rights of entitlement such as grazing and traditional seasonal resource access;
- ◆ Rights for conversion of leases or grants issued by any local authority or any state government on forest lands to titles; and
- ◆ Right to protect, regenerate or conserve or manage any community forest resource which the scheduled tribes and other traditional forest dwellers have been traditionally protecting and conserving.

The Act grants four types of rights. Section 3(1) of the Act grants **Title rights**, that is, ownership to land that is being farmed by tribals or forest dwellers as on 13 December 2005, subject to a maximum of 4 hectares. Ownership is only for land that is actually being cultivated by the concerned family as on that date, meaning that no new lands are granted. Section 3 (1) also grants:

**Use rights** over minor forest produce, including the ownership, to grazing areas, to pastoralist routes, etc.

**Relief and development rights** are granted under Sections 3 (1) and 3 (2) of the Act. It includes the right to rehabilitation in case of illegal eviction or forced displacement and to basic amenities, subject to restrictions for forest protection.

**Forest management rights** are granted under Section 3 (1) and Section 5 of the Act with the view to protect forests and wildlife.

## Opposition to the Act

The Act is one of the most controversial and strongly opposed legislations right from the very beginning. Since the bill was drafted and introduced in the parliament, it has generated a lot of debate. It is perhaps the first and only Act in the history of India to have been opposed through a TV campaign. In October 2003, Vanshakti, a group based in Mumbai, ran TV advertisements against the Act.

The Act was vehemently opposed by the wildlife conservation lobby and the Ministry of Environment and Forests who termed it as the ideal recipe to ensure the destruction of India's forests and wildlife by "legalising encroachments". The forest department, together with the timber mafia, had been blocking it, since it would severely erode their stranglehold over forest products. Corporates are also against it, since the illegal status of tribals and other forest dwellers makes the process of eviction and land acquisition for industrial projects easier. Some of this opposition has been motivated by those who see the law as a land distribution scheme that will lead to the handing over of forests to tribals and forest dwellers. However, the strongest opposition to the Act has come from wildlife conservationists who fear that the law will make it impossible to create "inviolable spaces", or areas free of human presence, for the purposes of wildlife conservation. Tiger conservation in particular has been an object of concern. Many conservationists have also given recommendations for the amendment of the Act.

Parliamentarians supporting the Act have been accused by some as pursuing vote-bank politics to appease tribals. There is a view that the Act itself is capable of providing the basis for the extension of the rights to other forest dwellers. On the other hand, the supporters of the Act argue that it is large developmental projects, such as large dams, power plants and mining activities, etc., that need to be checked, rather than the forceful eviction of traditional forest-dependent communities to save the forests. Several groups contend that it is not tribals who are bringing in commercial activities into forests, but external commercial pressures that are degrading the forest resources and thereby eroding the traditional lifestyles of tribal communities. Meanwhile the more radical green groups warn against the land mafia misusing the provisions of the proposed law into conning unsuspecting tribals vested with land rights to part with their land in prime forest areas. They also fear that the proposed legal provision allowing for the "sale of forest-based products for their household needs", would translate into large-scale commercialisation of forest resources.

However, supporters of the Act take the position that the Act is not a land distribution measure, and further that the Act is more transparent than existing law and so can help stop land grabbing. Regarding wildlife conservation, they have argued that the Act actually provides a clear and explicit procedure for resettling people where necessary for wildlife protection, but also provides safeguards to prevent this being done arbitrarily. Supporters of the Act and others also argue that the provisions in the Act for community conservation will in fact strengthen forest protection in the country. This is said to be because it will provide a legal right for communities themselves to protect the forest, as thousands of villages are already doing in the face of official opposition.

## 41.5 Forest Management and Social Forestry

India is one of the first countries in the world to have stated scientific management of its forests. During the year 1864 the then British India Government started the Imperial Forest Department. The first Inspector General of Forests was Dr. Dietrich Brandis, a German Forest officer who was appointed in 1866. In 1887, the Imperial Forest Service was constituted to organise the affairs of the Imperial Forest Department. In addition, Provincial Forest Service and Executive and Subordinate Services were also constituted for effective management of forest resources the British India Government. Initially, the subject of "Forestry" which was managed by the Federal Government which was later transferred to the "Provincial List" by the Government of India Act, 1935 and subsequently recruitment to the Imperial Forest Service was discontinued.

The Indian Forest Service was constituted in the year 1966 under the All India Services Act, 1951 by the Government of India. The main mandate of the service is the implementation of the National Forest Policies. Since 1935 the management of the forests remained in the hands of the Provincial Governments in pre-independence era, and even today the Forest Departments are managing the forests of the country under the respective State governments.

Systematic management of forests began in the mid-nineteenth century. The first forest policy of India enunciated in 1894 focused on commercial exploitation of timber and gave importance to permanent cultivation. The 1952 revision of the policy recognised the protective role of forests and proposed that one-third of the land area of the country be retained under forest and tree cover. The Forest policy of 1988 focused on environmental stability and maintenance of ecological balance.

### International Conventions and Initiatives signed by India pertaining to Forests

India has participated in international dialogues on forests. The important international conventions concerning forests to which India is a signatory are:

- 1) International Convention for Regulation of Whaling - Signed in 1946
- 2) Convention for Protection of World Cultural and Natural Heritage - Signed in 1972
- 3) Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES) - Signed 1973, Ratified 1976
- 4) Convention on Wetlands of International Importance especially as Waterfowl Habitat, Ramsar - Signed in 1971
- 5) Convention on Conservation of Migratory Species of Animals, Bonn, 1979
- 6) United Nations Convention on Laws of the Sea (UNCLOS) - Signed in 1982, Ratified in 1995
- 7) United Nations Framework Convention on Climate Change (UNFCCC) - Signed in 1992, Ratified in 1993
- 8) Convention on Biological Diversity (CBD) - Signed in 1992, Ratified in 1994

- 9) United Nations Convention to Combat Desertification (UNCCD) - Signed in 1994, Ratified in 1996

The provisions on trade and environment measures by the World Trade Organisation (WTO) Agreement significantly affect the forestry sector. Moreover, Chapter XI of Agenda 21 and the non-binding Forestry Principles also contain provisions for protection and improvement of forests. Agenda 21 recognises the need for specific actions to combat deforestation. Chapter 11 of the document identifies four programme areas for action.

### **Policies pertaining to Forests-National Forest Policies**

Since independence, there have been three forest policy pronouncements in India. They are listed as follows:

- 1) National Forest policy, 1952
- 2) The National Commission on Agriculture, 1972
- 3) National Forest Policy, 1988

The first National Forest Policy Resolution was adopted by the government in 1952. Though the resolution highlighted the ecological and social aspects of forest management, giving secondary importance to the needs of commerce, industry and revenue, it did not call for any change in the forest law and remained only a pious declaration.

The Ministry of Forest was originally a part of the Ministry of Agriculture. In 1972, the Ministry appointed a National Commission on Agriculture. The multi-volume Report of the National Commission on Agriculture, published in 1976, covered forests in the 9th Part. The commission recommended that the revised national forest policy should be based on important needs of the country. All forest lands should be classified into protection forests, production forests and social forests. It gave the highest priority to production forests and the lowest priority to social forests. The object of forest management should be that 'each hectare of forest land should be in a position to yield a net income of many more times than is being obtained at present.' It recommended enactment of a revised all India Forest Act.

However, in 1985, the Forest Department was shifted from the Ministry of Agriculture to the Ministry of Environment and Forests (MoEF). The MoEF was established as a nodal agency for planning, coordination and implementation of environmental and forestry programs. This helped to shift the emphasis from revenue to environmental concerns. In December 1988, the Parliament passed a new forest policy resolution more or less rejecting the recommendations of the National Commission on Agriculture. The resolution stressed the welfare of forest dwelling communities as a major objective of the forest policy, and categorically stated that the life of tribals and other poor living within and near forests revolves around forests and that the rights and the concessions enjoyed by them should be fully protected. Their domestic requirements of fuel-wood, fodder, minor forest produce and construction timber should be the first charge on forest produce.

However, while the resolution adopted a pro-tribal policy, the old Act of 1927 with all the subsequent amendments remained unchanged.

The National Forestry Action Program (NFAP) was initiated in 1999. It is a comprehensive long-term strategic plan for the next 20 years. It identifies the issues and programmes for achieving sustainable forestry development in India by harmonising the activities of different stakeholders. The NFAP evolved through coordinated centre-state strategic planning with inputs from many national and international consultants. It identifies five programmes:

- 1) Protect existing forest resources,
- 2) Improve forest productivity,
- 3) Reduce total demand,
- 4) Strengthen the policy and institutional framework, and
- 5) Expand the forest area.

#### **Current National Forest Policy - National Forest Policy, 1988**

The National Forest Policy, 1988, is the primary policy statement related to forestry reflecting the ethical standards on the natural environment enshrined in the constitution. Forestry and the environment interface with many other sectors, which affect the forest and wildlife resources. The principal aim of the policy is to ensure environmental stability and maintenance of ecological balance including atmospheric stability, which is vital for sustenance of all life forms, human, animal and plant. It unambiguously states that the derivation of direct economic benefit must be subordinated to this principal aim, and that conservation includes preservation, maintenance, sustainable utilisation, restoration and enhancement of the natural environment.

The main objectives of the National Forest Policy, 1998 are as follows:

- ◆ Maintenance of environmental stability through preservation and, where necessary, restoration of the ecological balance that has been adversely disturbed by serious depletion of the forests of the country.
- ◆ Conserving the natural heritage of the country by preserving the remaining natural forests with the vast variety of flora and fauna, which represent the remarkable biological diversity and genetic resources of the country.
- ◆ Checking soil erosion and denudation in the catchment areas of rivers, lakes, reservoirs in the “interest of soil and water conservation, for mitigating floods and droughts and for the retardation of siltation of reservoirs.”
- ◆ Checking the extension of sand-dunes in the desert areas of Rajasthan and along the coastal tracts.
- ◆ Increasing substantially the forest/tree cover in the country through massive afforestation and social forestry programmes, especially on all denuded, degraded and unproductive lands.
- ◆ Meeting the requirements of fuel-wood, fodder, minor forest produce and small timber of the rural and tribal populations.

- ◆ Increasing the productivity of forests to meet essential national needs.
- ◆ Encouraging efficient utilisation of forest produce and maximising substitution of wood.
- ◆ Creating a massive people's movement with the involvement of women, for achieving these objectives and to minimise pressure on existing forests.

Creating a massive people's movement including the involvement of women and indigenous people for forest conservation is an integral feature of the policy. The policy underscores the full protection of customary rights and concessions of tribal communities and other rural poor living within and near forests. It recognises their requirements for fuel wood, fodder, construction timber, etc. The basic objectives and strategies defined in the policy are still relevant, and guide forest conservation in India.

The National Forest Policy advocates the use of miscellaneous policy instruments including legislation and regulation, voluntary agreements, fiscal incentives, research and educational and extension campaigns for the conservation and sustainable development of forests. The administrative framework of the forestry sector has changed significantly from regulatory to participatory. The legal framework of the forestry sector can be classified into three categories:

- 1) The first set of Acts regulates access and use of forest products such as the Indian Forest Act (1927).
- 2) The second set focuses on conservation such as the Wildlife Act (1972) and the Forest Conservation Act (1980).
- 3) The third set comprises enabling laws that encourage private investment as well as restrictive laws with regard to land ceilings, tree felling, transit passes and marketing that have discouraged the private sector from engaging in farm forestry and agro-forestry.

## 41.6 Conclusion

The term 'Social Forestry' first used in the National Commission on Agriculture in its report in 1976. Social forestry is aimed at raising plantations by the common man so as to meet the growing demand for timber, fuel wood, fodder, etc., thereby reducing the pressure on the traditional forest area. This concept of village forests was developed to meet the needs of the rural people. However, this concept is not new as it has existed through the centuries all over the country.

Social Forestry is an umbrella term for farm forestry where the whole village or community is engaged in communal village planting. It basically includes the participatory forest management methodologies where the forest department sponsors plantations on variety of wastelands and provides technical assistance, subsidies, etc. to the local communities who manage such forestry activities on those unproductive and fallow grounds that may be government or community lands.

The social forestry was introduced in late 1970s and early 1980s. With the introduction of Social Forestry, it was the first time in India that the rights of the local communities to forest resources were formally recognised. It was aimed at encouraging rural participation in the management of natural resources as well as to involve them in a drive towards afforestation.

Social forestry, however, was a mixed blessing. It had certain implemental shortcomings. Some villagers perceived the woodlots to be sources of communal incomes rather than sources of fuel-wood to meet village needs. Panchayats could not impose the discipline required to manage the plantations as the Forest Department extension staff primarily interacted only with the Panchayat Pradhans (heads), making little effort to involve local community as a whole. There was also no continuity of management and control of numerous scattered pieces of planted village lands. Moreover, the shares that would go to the forest department, panchayat, village, individuals, etc. was not clearly laid down. All these factors with a combination of other practical problems led to the decline of popularity of this concept in the mid-1980s.

However, with the dwindling of Social Forestry, new concepts began to emerge for the efficient management of the forests.

### **1) Participatory Forest Management**

Since the eighteenth-century forests have been savagely degraded through commercial exploitation during colonisation and post-independence felling for supportive infrastructure for national growth. The colonial and post-colonial state's custodianship and policing of forests has vitiated human-nature interactions. In response to this crisis various strategies for ecological restoration have emerged in independent India, some exclusively among community groups, others that involve community groups and state agencies in collaboration. Participatory Forest Management (PFM) has emerged as result of the failure of colonial and post-colonial system of governance to conserve the forests.

PFM is a term widely used when describing the forest management systems that are collaborative in nature, involving local community groups and state forest departments, as well as other agencies. Involving local communities is a vital step since the primary stakeholders in a forest are the communities that directly depend on it for their subsistence.

### **2) Joint Forest Management**

Joint Forest Management (JFM) is the official term for partnerships in-forest management involving both the state forest departments and local communities. JFM was a scheme launched by the Government in 1990 by way of a circular. The scheme provided for an 'arrangement' between the village community, the NGO's and the state government for regeneration and maintenance of forest areas. The policies and objectives of Joint Forest Management are detailed in the Indian comprehensive National Forest Policy of 1988 and the Joint Forest Management Guidelines of 1990.

Although schemes vary from state to state and are known by different names in different Indian languages, usually in a JFM, the villagers agree to assist in the safeguarding of forest resources through protection from fire, grazing, and illegal harvesting in exchange for which they receive non-timber forest products and a share of the revenue from the sale of timber products of the forest. The committee representing the village or local community is most commonly referred to as the Forest Protection Committee (FPC). In some states, panchayats can also enter into a JFM agreement with the Forest Department. Under the JFM, an FPC takes the responsibility for protecting a forest area in return of greater access to forest produce and a share in income earned from that forest area.

Some states have provided a statutory backing to the scheme by amending the provisions relating to village forests under their respective Forests Acts. The novel idea behind the scheme was to involve people in the development and protection of forests and to motivate forest communities to identify themselves with the development and protection of forests from which they derive benefits. JFM aims at involving people in resource generation activities through motivation, and eliciting their participation in forest management and the sharing of benefits through adequate institutional arrangements.

JFM programme in the present form can be traced to the Arabari experiment initiated by foresters in the state of West Bengal. This experiment provided a strong feedback for incorporation of the system in the National Forest Policy of 1988. In many locations people's voluntary groups were engaged in protection of forests without any initiative from the Government. Subsequently, based on the experience, the process of institutionalising people's participation in forest protection and regeneration began.

### Issues related to JFM

Following the launch of the JFM programme in India in the last decade, several issues of importance have emerged, like the diversity in institutional and benefit-sharing arrangements, development of technology and silvicultural practices to increase the productivity of degraded forests, etc.

While the scheme is revolutionary, many NGOs facilitating the same have gained an insight into the institutional arrangements, productivity, silviculture, benefit sharing, marketing, etc. NGOs have gained considerable knowledge on the strengths, unique features, weakness, and ambiguities in the manner in which the programme has evolved in different states. Some of these issues are:

- ◆ Fund Allocation- Most state orders and resolutions have not spelt out provisions for flow of funds for the JFM programme. Budgetary allocations for JFM-related activities by the Forest are lacking. Consequently, the JFM programme relies heavily on foreign aid in the form of World Bank funds, etc. which is important but needs to be balanced against long-term sustainability needs. There is lack of coordination and inter-sectoral or interdepartmental linkage is quite poor. Joint departmental implementation is also virtually a missing feature.
- ◆ Gender involvement in JFM institutions - Field studies suggest that women's participation in JFM-related activities is by and large inadequate.

As a first step JFM resolutions of many states need to be altered to ensure women's participation.

- ◆ Institutional and benefit sharing - Following the June 1990 resolution of the Government of India, the JFM programme was formally introduced in the country, which involved village communities and NGOs in the regeneration, management, and protection of degraded forests. The development of JFM institutions became imperative and various state governments have also provided in their resolutions, the modalities of forest protection, benefit-sharing arrangements, and membership norms. However, to what extent have these arrangements been implemented, is a different question altogether.
- ◆ Legal and statutory provisions - There is a morass of resolutions, laws, policies, Acts, etc., many of which are conflicting, ambiguous and contradict each other, and lack legal validity or can be superseded on the basis of legal technicalities, are an implementation hurdle.
- ◆ Limited Awareness - Awareness of the programme and its ramifications should be created through regular discussions and meetings with the people, putting up notice boards in the regional language, or by describing the terms of the JFM agreement and entitlements. Similarly, the schedule of rates for wages should be circulated amongst members and displayed on notice boards. Their involvement in preparing micro-plans and annual work plans would be crucial to villagers being more aware on activities/interventions planned, likely benefits, scope for their participation, etc. this however, is not being done to make the scheme effective.
- ◆ Membership norms, rules and composition of the JFM committees - Membership composition, rules, and norms as stipulated in the government orders vary across the country. This diversity of resolution structures is important and symbolises the attempt of each state to keep these in consonance with local needs, socio-cultural situations and the nature of the forest resource base. Nonetheless, certain uniform norms need to emerge which ensure equity, participation of the landless, the marginalised, and women to ensure people's needs are met, while the integrity of the forest cover is maintained and improved.
- ◆ Micro-plan - Many current provisions in the government orders have also created legally ambiguous situations with respect to micro-plans. Some like Madhya Pradesh even have provisions whereby the micro-plan would supersede any existing Working Plan for the allocated JFM area. This stipulation has several legal ramifications since, currently, under a Supreme Court ruling no forest area can be worked unless it is covered by a working plan duly approved by the Government of India. The Forest (Conservation) Act, 1980, additionally states that all proposals involving clearing of naturally grown trees in forest land or portion thereof, for the purpose of using it for reforestation, can only be sent in the form of a Working Plan / Management Plan. Provisions for forestry operations therefore, cannot take place at the behest of a micro-plan.

- ◆ Role of the Forest Department in the institutional structure - While JFM has helped bring the people and Forest Department together, several committees are seen to be heavily dependent upon the Forest Department for their day-to-day functioning, convening meetings, record maintenance, preparation of plans, etc. Forest Department officials are also member secretaries of village committees in many states. With powers to disband a badly functioning committee, cancel membership, and nominate NGOs for membership, the relationship is unequal. An important requirement of the JFM institutional design is therefore, making executive/management committees more accountable and which would take care of record maintenance and day-to-day functioning.
- ◆ Status of JFM committees - The legal status of JFM committees, the powers they possess to carry out their daily patrolling activities for sharing benefits and, for taking recourse to legal action to protect their own interests, are crucial issues. Field visits have indicated that when the members of protection committees sought to fine offenders, found illicitly felling wood in contravention of rules, they were often challenged and threatened with legal action. In practice, however, it was found that many JFM Committees function by imposing such fines that act as a deterrent to forest violators while the Indian Forest Act, 1927 does not recognise these functions of the Committees.
- ◆ Village funds - Village funds, with a proportion of revenue derived from the sale of forest produce is to be utilised for forest or village development activities is neither mandatory nor binding on the people or the Forest Department. The current sources include voluntary contributions, money obtained in lieu of protection, membership fees, voluntary labour contributions, the sale of surplus forest produce and of timber harvests, fines generated through social fencing activities, revenue generated against the use of the committee's forests, etc. While community funds need to be encouraged and diversified, other interventions for promoting greater self-sufficiency at the village level needs to be implemented.

### 3) Community Forest Management

The ever expanding human and livestock populations and large-scale poverty exert unrelenting pressure on forests. In view of the severe degradation of India's forest resources, the Government has attempted to cut down losses to its forests and increase tree cover through Community Forest Management (CFM). This attempt is to further decentralise the management of forests, moving from conventional "State-controlled forest management" to "decentralised community forest management".

CFM refers to processes that enable those people who have a direct stake in forest resources to be part of decision-making in all aspects of forest management, from managing resources to formulating and implementing institutional frameworks. CFM is a component of participatory forestry that focuses on local communities as key stakeholders in managing common property resources.

CFM involves the raising of trees on community land and not on private land. The programme aims to provide for the entire community and not for any individual. The

government has the responsibility of providing seedlings, fertilizer but the community has to take responsibility of protecting the trees.

The community institution is created to manage the forests in a sustainable way. It is through the community institution that individual forest users are reached. Its principal function is to provide an institutional framework, which can articulate and represent the interests of all user sub-groups of a forest area in partnership agreement with the Forest Department. The community institution that comes into play in CFM is the Gram Sabha which is the local body that is given usufruct rights over timber, fuel wood, fodder and bamboo produced from the forest area developed, managed and protected by the community.

Under the CFM Scheme, some communities managed the plantations sensibly and in a sustainable manner in order to utilise optimum benefits in a positive way. However, some others took advantage of the common land which was easy to exploit and sold the timber for a short-term individual profit.

#### **Way forward in Forest legislations**

Forest Conservation Act, 1980 restricts and regulates de-reservation of forests or use of the forest land for non-forest purposes without prior approval of the Union Government. However, economic development in India has resulted in increased demand for land, thereby, leading to the conversion of forest land for non-forestry purposes. As such, during 1980-2017 around 1,35,874 ha. land was diverted for mining purposes. Therefore, it is essential that strict monitoring and vigilance against the land use change through this Act is undertaken.

The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 recognises and vests the traditional rights to forest dwelling communities over access to forest goods and occupation in forest lands. However, implementation of this Act has been a major challenge, therefore, it is necessary that the process of forest rights recognition is revisited and gaps therein are mitigated.

# URBAN DEVELOPMENT POLICY |

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### 42.1 Introduction

Urbanisation is the physical growth of urban areas. It can be defined as the rapid and massive growth of, and migration to, large cities resulting in both positive and negative consequences. Urbanisation is also defined as the movement of people from rural to urban areas with population growth equating to urban migration. Hence, it is the increase over time in the population of cities in relation to the region's rural population. Urbanisation has intense effects on the ecology and economy of a region. To explain the definition of Urban area and Urbanisation more clearly, let us examine the following phrases provided by United Nations Statistics Division. The *United Nations Demographic Yearbook: Population Density and Urbanisation*, states<sup>1</sup>:

“Because of national differences in the characteristics that distinguish urban from rural areas, the distinction between the urban and the rural population is not yet amenable to a single definition that would be applicable to all countries or, for the most part, even to the countries within a region. Where there are no regional recommendations on the matter, countries must establish their own definitions in accordance with their own needs.”

The traditional distinction between urban and rural areas within a country has been based on the assumption that urban areas, no matter how they are defined, provide a

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<sup>1</sup> United Nations Statistics Division which collects, compiles and disseminates data from national statistical offices on population density and urbanisation through the Demographic Yearbook data collection system has compiled data population density in urban areas.

different way of life and usually a higher standard of living than are found in rural areas. In many industrialised countries, this distinction has become blurred and the principal difference between urban and rural areas in terms of the circumstances of living tends to be a matter of the degree of concentration of population. Although the differences between urban and rural ways of life and standards of living remain significant in developing countries, rapid urbanisation in these countries has created a great need for information related to different sizes of urban areas.

Hence, although the traditional urban-rural dichotomy is still needed, classification by size of locality can usefully supplement the dichotomy or even replace it where the major concern is with characteristics related only to density along the continuum from the most sparsely settled areas to the most densely built-up localities.

Density of settlement may not, however, be a sufficient criterion in many countries, particularly where there are large localities that are still characterised by a truly rural way of life. Such countries will find it necessary to use additional criteria in developing classifications that are more distinctive than a simple urban rural differentiation. Some of the additional criteria that may be useful are the percentage of the economically active population employed in agriculture, the general availability of electricity and/or piped water in living quarters and the ease of access to medical care, schools and recreation facilities. For certain countries where the facilities noted above are available in some areas that are still rural since agriculture is the predominant source of employment, it might be advisable to adopt different criteria in different parts of the country. Care must be taken, however, to ensure that the definition used does not become too complicated for application to the census and for comprehension by the users of the census results.

Even in the industrialised countries, it may be considered appropriate to distinguish between agricultural localities, market towns, industrial centres, service centres and so forth, within size-categories of localities.

The widespread and all- pervading urbanisation of the twenty first century is historically unprecedented Urbanisation and its key characteristics that constitute the major determinants of the political process have historically shaped the urban structures and economic policies of the modern governments. Over the last two decades, most growth sectors in the national economies of the countries have been largely based on activities located in urban areas. Experience worldwide indicates that cities and towns are central to economic growth- a phenomena which can be explained by a well-established theory that acceleration of urbanisation takes place with the corresponding increase in economic growth promoted through the economies of scale in production, existence of information externalities and the substitution of capital for land. Cities that consistently provide a conducive environment for the institutional and technological innovations are often referred as the 'engines of economic growth', 'agents of change' and 'incubators of innovation'. Further the forces of globalisation that led to the internationalisation of production, finance, banking and services, coupled with cheap labour and advances in telecommunications and information technology, has increased the pace of urbanisation.

These emerging patterns of urbanisation and the cities' direct relationship to the global economic processes have made today's cities very important in locating businesses and attracting population. For instance, in the year 2000, nearly half the world's population lived in urban areas. While the urbanisation phenomenon is widely accepted as being an inevitable by-product of development, there are many undesirable outcomes that have resulted from urbanisation. In such a scenario local city level planning and management innovations have become more important than the national policies itself.

## 42.2 Relevant Provisions from the Indian Constitution

While India, like many other regions, has always had local councils of some sort, the mechanisms in existence today are rooted in the period during which it was a colony of the United Kingdom. A major foundation of the British roots of Indian local government was Lord Ripon's resolution of May, 1882, on the subject of local self-government covering the structure and establishment of local bodies, their functions, finances and powers. This is the root of local self-government in post-Independence India. In the context of the Indian Constitution, local government bodies are the subject of the State List and are thereby governed by State Statutes, or in the case of Union Territories, by the Union Parliament. Federal recognition of local government was substantively expressed in the 74th Constitution Amendment Act of 1992.

Constitution may be defined as a document having a special legal sanctity which sets out the frame work and principal function. Aspen of urban laws is widespread and requires a minute study to give it relevancy to the Indian constitution. Constitution and urban laws maintain a chain reaction as the laws enacted by the law framers supplement the stumbling attribute of urban laws and policies similarly the laws which supplement these urban policies derive their basis from the constitution itself.

Relevant provisions -

### I) Directive Principles of the State Policy

Part 4th of the Indian constitution relates to the directive principles of the state policy. It sets forth the ideals and objectives to be achieved by the state for setting up in India a social welfare state as distinguished from the mere police state. A social welfare state aims at the social welfare and the common good and to secure to all its citizens justice-social and economic. The inspiration for including in the constitution was drawn from the constitution of Ireland, 1937. The basic aim of the welfare state is the attainment of substantial degree of social, economic, and political equalities, as well as the assumption by the community acting through the State. These provisions that pertain to a welfare state also, indirectly lend the bearing of an ideal urban India. These provisions are as follows:

- a) **Article 39 (b) and (c)** are very significant Constitutional provisions as they effect the entire economic system in India. It relates to the distribution of the ownership and control of the material resources of the community. An act falling under the clause of this Article must have in operation in the economic system.

- b) **Article 39(b) and 39(c)** relate to distribution of ownership and control of material resources of the community. The aim of socialism is the distributions of the material resources of the community in such a way as to sub serve the common good. A socialistic state secures to its people socio-economic justice.
- c) **Article 39(d)** ensures **equal pay for equal work**. The Article states that the State has to ensure that there is equal pay for equal work for both men and women. The Act also ensures that there will be no discrimination against the recruitment of the women and provides for the setting up of the advisory committees to promote employment opportunities for women.

Parliament has enacted the **Equal Remuneration Act, 1976**, to implement **Article 39(d)**. The act provides for equal remuneration for both men and women workers for the same work, or work of similar nature and for the prevention of discrimination on the grounds of sex.

Besides the principles of gender equality in the matter specifically embodied in the Article 39(d) the Supreme Court has extracted the general principles of equal pay for equal work by reading **Article 14, 16 and 39(d)**.

## II) Relations between the Union and the States

A federal constitution establishes a dual polity with the union at the centre and the states at the periphery, each endowed with the powers to be exercised in the field assigned to them. The legislative, executive and the financial authority is divided between the centre and the units not by any law passed by the centre but the Constitution itself.

The Indian Constitution provides a new kind of federalism to meet India's peculiar needs. In the matter of distribution of powers, the framers followed the pattern of the government of India Act, 1935, which had laid the foundation for a federal set up of the nation.

The seventh schedule to the Indian Constitution divides the subject of the legislations under three lists, viz. Union, state and concurrent list.

**The Union list (list 1)** contains as many as **97 items** and comprises of the subjects which affect the entire country and are of general interest. These matters lie within the exclusive legislation competence of the union parliament.

**The state list (list II)** enumerates **66 items** and comprises of subjects of subjects of local or state interest and as such lie within the legislative competence of the state legislatures.

**The concurrent list (list III)** enumerates **47 items**, with respect to which both- union parliament and the state legislatures have concurrent power of legislation. The union list has overlapped and shared jurisdiction over 52 subjects including forests.

### III) Environment Protection and Improvement (Article 48 A)

Environment protection and improvement were explicitly incorporated into the constitution by the constitution (Forty-second amendment) Act, 1976. **Article 48 A** was added to the directive principles. It declares: 'the state shall Endeavour to protect and improve the environment and to safeguard the forests'. **Article 51 A (g)** in the new chapter entitled the fundamental duties, imposes a similar responsibility on every citizen.

#### Constitution 74th Amendment Act, 1992

The 73rd and 74th Constitutional Amendments Acts were introduced in the early 1990's in a bid to achieve democratic decentralisation and provide constitutional endorsement of local self-governance authorities. These amendments confer authority on legislatures of States to endow respectively Panchayats and Municipalities with such powers and functions as may be necessary to enable them to act as institutions of self-government. For the purpose, the Panchayats and Municipalities have been charged with the responsibility of preparing and implementing plans for economic development and social justice including those in relation to matters listed in the Eleventh and Twelfth Schedules of the Constitution. The central objective of these amendments is the decentralisation of planning and decision-making procedures. It also has the implicit intention of removing centralised notions of control and monopoly over development of resources.

**Panchayats** - Article 243G provides that, subject to the provisions of the Constitution, the legislature of any State may, by law, endow the Panchayats, with such powers and authority as may be necessary to enable them to function as institutions of self-government and such law may contain provisions for the devolution of powers and responsibilities upon Panchayat at the appropriate level.

The Panchayats have been entrusted with the implementation of schemes for economic development and social justice including those in relation to the matters listed in the Eleventh schedule. The Municipalities have been entrusted with the implementation of schemes for economic development and listed in the Twelfth schedule. These being, among others,

- ◆ Urban Planning and town planning,
- ◆ Regulation of land-use and construction of buildings,
- ◆ Planning for social and economic development,
- ◆ Slum improvement and upgradation,
- ◆ Provision of urban amenities and facilities such as parks, gardens, playgrounds, and
- ◆ Public amenities including street lighting, parking lots, bus stops and public conveniences.

**Municipalities**- Articles 243W provides that, subject to the provisions of the Constitution, the legislature of any State may, by law, endow the Municipalities, with such powers and authority as may be necessary to enable them to function institutions of self-government

and such law may contain provisions for the devolution of powers and responsibilities upon Municipalities respectively at the appropriate level.

Article 243ZD provides for the creation of a district level planning committee for the preparation of the District Development Plan. The District Planning Committee has been placed with the powers to draft district development plan to consolidate the plans prepared by the panchayats and municipalities, having regard to matters of common interest including spatial planning, sharing of water and other natural and physical resources, the integrated development of infrastructure and environmental considerations. Further, the district development plans should be prepared to consolidate the plans prepared by the panchayat and municipalities. Article 243ZE provides that for metropolitan areas, a Metropolitan Planning Committee shall be elected by and from amongst the elected members of the municipalities and chairpersons of the panchayats within the metropolitan area in proportion to the ratio between the population of the municipalities and panchayats in the metropolitan areas having the same mandate as mentioned above for the district planning committee.

**Background of The Constitution (74th Amendment) Act, 1992** - Towns and cities contribute substantially to the economic development of the country. These urban centres also play an important support role in the development of rural hinterland. To keep this economic transformation in line with needs and realities at the grassroots level, it was deemed necessary that the people and their representatives are fully involved in the planning and implementation of the programmes at local level. Hence the 74th Amendment Act was enacted with the aim of strengthening the roots of democracy by extending their reach to towns, villages and the cities where the people live.

The Constitution of India has made detailed provisions for ensuring protection of democracy in Parliament and in State Legislatures. Hence, democracy in these institutions has survived and flourished since last numerous decades. Initially, the Constitution had not made Local Self Government in urban areas a clear-cut Constitutional obligation. While the Directive Principles of State Policy referred to Village Panchayats, there was no specific reference to municipalities except implicitly in Entry-5 of the State List, which placed the subject of Local Self Government as a responsibility of the State<sup>2</sup>. As a consequence of this inadequate constitutional provision for Local Self Government, democracy in municipal governance was not stable. Though the respective municipal acts of the States provided for regular elections to municipal bodies, they were frequently suspended and superseded for indefinite periods of time. Frequent and indefinite suspensions or supersessions eroded the very basis of local self-government and had a negative effect on democracy at the grassroots level.

The general position with regard to financial resources of the municipal bodies was also not satisfactory. Over the years, there was a steady encroachment on the assigned

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<sup>2</sup> Entry-5 reads as under: *Local Government, that is to say, the constitution and powers of municipal corporations, improvement trusts, district boards, mining settlement authorities and other local authorities for the purpose of local self-Government or village administration.*

functions and revenues of Urban Local Bodies by specialised agencies of the State Governments. As a result, many urban local bodies became weak and were not able to perform effectively. The weakened status of ULBs crystallised public opinion in favour of need for a Constitutional guarantee to safeguard the interests of urban local bodies in order to provide for:

- ◆ Regular and fair conduct of elections to these bodies.
- ◆ Holding of elections within a specified time limit in case of supersession.
- ◆ Adequate representation of SC/ST and women in the elected bodies.
- ◆ Placing on firm footing the relationship between the State Governments and the urban local bodies with respect to:
  - functions and taxation powers of the urban local bodies
  - arrangement for revenue sharing between the State Government and the urban local bodies.
- ◆ Involvement of elected representatives at grassroot level in planning at the district and metropolitan levels.

Accordingly, the Constitution (73rd Amendment) Bill was introduced in the Parliament in 1991, which was referred to the Joint Parliamentary Committee with Members from both Lok Sabha and Rajya Sabha for consideration. The Committee held several sittings and also took oral evidence and written comments from various organisations and individuals. The Committee had the opportunity of visiting various municipalities and held detailed discussions with their officers and elected representatives as well as with several State Governments. This was probably the first time that the Parliamentary Committee had deliberated so extensively on a legislation concerning local self-government.

The Bill as reported by the Joint Parliamentary Committee was taken up for consideration and passed by the Lok Sabha on 22 December 1992 and by the Rajya Sabha on 23 December 1992 and it received the assent of President on 20 April 1993. It was published in the Government Gazette on 20 April 1993 as the “Constitution (Seventy Forth Amendment) Act, 1992”. The 74th Constitutional Amendment Act came into force on 1 June 1993. It had introduced a new part to the Constitution namely, Part IXA in the Constitution, which deals with the issues relating to municipalities. The main provisions introduced by the above Act are as under:

- i) **Constitution of Municipalities-** It provides for constitution of 3 types of municipalities depending upon the size and area, namely
  - a) Nagar Panchayat for an area in transition from rural to urban area;
  - b) Municipal Council for smaller urban area; and
  - c) Municipal Corporation for larger urban area.

Demographic and other conditions, which are determining factors for constituting a particular type of municipality differ a great deal from one State to another. It has,

therefore, been left to the State Legislatures to decide which specific type of municipality will be constituted for particular urban area.

- ii) **Composition of Municipalities-** The seats are filled by direct elections. Besides the seats filled by direct elections, some seats may be filled by nomination of persons having special knowledge and experience in municipal administration. Persons so nominated shall not have the right to vote in the meetings of the municipality. The Legislature of a State may, by law, also provide for the representation in a municipality of members of the House of the People and the members of the Legislative Assembly of the State representing constituencies which comprise wholly or partly the Municipal area and also the Members of the Council of States and the members of the Legislative Council of the State registered as electors within the municipal area. The manner of election of Chairpersons of municipalities has been left to be specified by the State Legislature.
- iii) **Constitution of Wards Committees-** This provides for constitution of Ward Committees in all municipalities with a population of 3 lakhs or more.
- iv) **Reservation of seats-** In order to provide for adequate representation of SC/ ST and of women in the municipal bodies, provisions have been made for reservation of seats. The proportion of seats to be reserved for SC/ST to the total number of seats shall be same as the proportion of the population of SC/ ST in the municipal area. The reservation would be made in respect of seats to be filled by direct elections only. Not less than one-third of the total number of seats reserved for SC/ST shall be reserved for women belonging to SC/ST. This is a mandatory provision.  
  
In respect of women, the seats shall be reserved to the extent of not less than one-third of the total number of seats. This includes seats reserved for women belonging to SC/ST. These reservations will apply for direct elections only. This is also a mandatory provision. There will be no bar on State Legislatures from making provisions for reservation of seats in any municipality or office of Chairperson in the municipalities in favour of backward class of citizens. This is an optional provision.
- v) **Duration of Municipalities-** The municipality has a fixed term of 5 years from the date appointed for its first meeting. Elections to constitute a municipality are required to be completed before the expiration of the duration of the municipality. If the municipality is dissolved before the expiry of 5 years, the elections for constituting a new municipality are required to be completed within a period of 6 months from the date of its dissolution.
- vi) **Powers and Functions of the Municipalities-** All municipalities would be empowered with such powers and responsibilities as may be necessary to enable them to function as effective institutions of self-government. The State Legislature may, by law, specify what powers and responsibilities would be given to the municipalities in respect of preparation of plans for economic development and social justice and for implementation of schemes as may be entrusted to them. An illustrative list of functions that may be entrusted to the municipalities has been incorporated as the Twelfth Schedule of the Constitution.

**vii) Finances of Municipalities-** It has been left to the Legislature of a State to specify, by law, matters relating to imposition of taxes. Such law may specify:

- ◆ Taxes, duties, fees, etc. which could be levied and collected by the Municipalities, as per the procedure to be laid down in the State law;
- ◆ Taxes, duties, fees, etc. which would be levied and collected by the State Government and a share passed on to the Municipalities;
- ◆ Grant-in-aid that would be given to the Municipalities from the State; and
- ◆ Constitution of funds for crediting and withdrawal of moneys by the Municipality.

**viii) Finance Commission-** The Finance Commission constituted under Article 243-I to review the financial positions of Panchayati Raj Institutions shall also review the financial position of the municipalities and will make recommendations to the Governor.

The recommendations of the Finance Commission will cover the following:

- ◆ Distribution between the State Government and Municipalities of the net proceeds of the taxes, duties, tolls and fees leviable by the State;
- ◆ Allocation of share of such proceeds between the Municipalities at all levels in the State;
- ◆ Determination of taxes, duties, tolls and fees to be assigned or appropriated by the Municipalities;
- ◆ Grants-in-aid to Municipalities from the Consolidated Fund of the State; and
- ◆ Measures needed to improve the financial position of the Municipalities.

**ix) Elections to Municipalities-** The superintendence, direction and control of the preparation of the electoral rolls for, and the conduct of, all elections to the panchayats and municipalities shall be vested in the State Election Commissions.

**x) Audit and Accounts-** The maintenance of the accounts of the municipalities and other audit shall be done in accordance with the provisions in the State law. The State Legislatures will be free to make appropriate provisions in this regard depending upon the local needs and institutional framework available for this purpose.

**xi) Committee for District Planning-** Planning and allocation of resources at the district level for the Panchayati Raj institutions are normally to be done by the Zilla Parishad. With regard to urban areas, municipal bodies discharge these functions within their respective jurisdictions. However, some important questions may arise, which would concern the urban-rural interface, and it may be necessary to take an overall view with regard to development of the district as a whole and decide on allocation of investments between the rural and urban institutions.

Provision has, therefore, been made for the Constitution of a Planning Committee at the district level with a view to consolidating the plans prepared by the Panchayats and the Municipalities and preparing a development plan for the district as a whole.

The District Planning Committee in preparing the Draft Development Plan shall have regard to:

- ◆ Matter of common interest between the Panchayats and the Municipalities including spatial planning;
- ◆ Sharing of water and other physical and natural resources;
- ◆ Integrated development of infrastructure and environment conservation; and
- ◆ Extent and type of available resources, whether financial or otherwise.

The Draft District Development Plan so prepared and recommended by the District Planning Committee shall be forwarded by the Chairperson of the Committee to the State Government.

**xii) Metropolitan Planning Committees-** It is provided in the Act that in every Metropolitan area (with a population of 10 lakhs or more), a Metropolitan Planning Committee shall be constituted for preparing a draft development plan for the metropolitan area as a whole. The Metropolitan Planning Committee shall take into account the following for preparation of the Draft Development Plan:

- ◆ Plan prepared by the Municipalities and the Panchayats in the metropolitan area;
- ◆ Matter of common interest between the Municipalities and Panchayats including coordinated spatial plans of the area;
- ◆ Sharing of water and other physical and natural resources;
- ◆ Integrated development of infrastructure and environmental conservation;
- ◆ Overall objectives and priorities set by the Government of India and the State Government;
- ◆ Extent and nature of investments likely to be made in the metropolitan area by agencies of the Government; and
- ◆ Other available resources, financial and otherwise.

In terms of Article 243ZC of the Constitution, nothing in Part IXA shall apply to Scheduled areas and Tribal areas as referred to in Article 244 of the Constitution. However, Parliament may by law, extend the provisions of Part IXA to these areas subject to such exceptions and modifications as may be specified in that law.

**Implementation of Part IXA** - In order to provide time to allow changes to be made in the then existing laws which were inconsistent with the provisions of the Constitution (74th Amendment) Act, a transition period of one year was provided for. Immediately after the Constitution (74th Amendment) Act came into force on 1 June 1993, the Ministry of Urban Development took necessary steps to ensure that the provisions of the State Municipal Laws are brought in conformity with the provisions of the above Act. As a result of various steps taken up by the Ministry of Urban Development through correspondence and also organising meetings of the State level Secretaries, the State

Governments brought in place the conformity legislations by target date i.e. 31 May 1994.

The amended State municipal laws provide for detailed provisions for constitution and composition of municipalities, reservation of seats for SC/ST and women, fixed term of 5 years and re-election of municipalities within a period of 6 months in case of dissolution, functions and financial powers of municipalities, setting up of State Finance Commission, etc.

#### **What has actually changed after 74th Constitution Amendment Act of 1992?**

Municipalities have been in existence in several cities of India before 1992 as well. The question that arose hence was that what exactly have changed after this Amendment. The difference between the municipal bodies functioning pre-and post the 1992 Amendment Act are as follows:

- ◆ The municipalities in pre-1992 era did not have the constitutional status and the State governments were free to extend or control the functional sphere through executive decisions. This was done away with post 1992.
- ◆ Before the amendment, the State government could control the municipalities by controlling the funds. Amendment the State government is mandated to transfer the funds in accordance with the recommendations of the State Finance Commission.
- ◆ The subject of jurisdiction was clearly defined in the 74th amendment with municipalities having exclusive control over 18 listed subjects.
- ◆ Representation of SCs/STs and women was laid down in the Act itself making the municipalities a more representative body.

## **42.3 Some Urban Issues Discussed in Light of Constitutional Provisions**

### **I) Constitutional provisions pertaining to Noise Pollution**

Noise by definition is unwanted sound. Noise pollution can be divided into two categories viz. Natural and man-made. Natural causes of noise pollution are air, noise, volcanoes, seas, rivers, exchanging voices of living organs including man and animals. Some of the chief causes of man-made noise pollution are machines and modern equipment of various types, automobiles, trains, planes, use of explosive, bursting of firecracker and new age machineries.

Noise affects human life in many ways. It affects sleep, hearing, communication and mental health and physical health and finally the peace of living. It may even lead to madness in some persons. However, noise, which is melodious whether natural or man-made, cannot always be considered as a contributor to pollution.

**The Right to means of expressions and sound:** The Indian Constitution under **Article 19** grants fundamental right to every citizen to freedom of speech and expression, with reasonable restriction of decency, morality, security of State, defamation, incitement of offence, etc. The use of loudspeaker as a means of expression is regulated by reasonable restriction so as to meet public order and safety. Having regard to the provision of Article 19(1)(a) of the Constitution, it cannot be said that the District Magistrate, Sub-Divisional Officer and the Police authorities are the sole authority who can grant at will permission without having any regard to the fundamental rights of the fellow citizens.

A bye-law of a municipality requiring permission for using a loudspeaker does not infringe **Article 19(1)(a)**. State can regulate the use of loudspeakers and mechanical or other contrivances to amplify sound, and does not amount to an infringement of the right under **Article 19(1) (a)**. Similar is the case with explosives, fire cracker, etc. Article 25 of the Constitution also grants the right to use loud speaker protecting the freedom, conscience and free profession, practice and propagation of religion.

#### **Some legal response to Noise Pollution:**

- 1) **Railways Act, 1890 and noise:** A large amount of noise pollution is advanced by the noise emitted from railway engines and carriages. There is no check to curb this noise pollution under the **Railways Act, 1890 (Act No. IX OF 1890)** statutory authority for the use of locomotives to railways administration.
- 2) **The Motor Vehicles Act, 1988:** The Motor Vehicles Act, 1988 through Sections 20, 21 (j), 41, 68, 68 I, 70, 91 and 111 empowers a State Government to frame rules for the un keep of motor vehicles and control of noise produced by them in this jurisdiction. It is submitted that the Motor Vehicles Rules made by States do not contain any effective control measures to control noise pollution except a meagre control of horns and silencers of the motor vehicles.

#### **II) Constitutional provisions pertaining to Sanitation**

If the human race is to survive and progress, preservation of good health is a must. Worldwide, nations are seeking viable answers to the question of how to offer a health care system. Healthy living conditions and good quality health is not only a necessary requirement it is also a recognised fundamental right for each and every Indian and is a crucial factor for socio-economic maturity of the nation. The country's policy towards health has been traditionally identified by the provision of primary healthcare as the states responsibility.

At the beginning of 2000 one-sixth of the world's population was without access to improved water supply and two-fifth lacked access to improved sanitation<sup>3</sup>. In the absence of proper sanitation, people suffered from high levels of infectious diseases leading to high incidences of morbidity and mortality. Inadequate sanitation like unsafe disposal of human excreta, open defecation, lack of infrastructure (sewerage, drainage/silages), and absence of hygiene management constitute a major threat to the health of the people. Despite the efforts and investment, many low-income countries continue to

suffer from inadequate and unsafe sanitation, India falls as one of those countries. Despite the global commitments, the improvements made by many countries during the last few decades are very poor. The constraints identified are: financial difficulties, institutional problems, inadequate human resources, and lack of political commitment, insufficient community involvement, inadequate operation and maintenance, lack of hygiene education, poor water quality, people's attitudes towards sanitation and insufficient information and communication.

## 42.4 Urbanisation in India: Trends and Explanations

Cities are probably the most complex things that human beings have ever created. They are the wellsprings of culture, technology, wealth and power. People have love-hate relationship with cities. We are torn between our needs for community and privacy and the conflicting attractions of urban and rural life. Urban Planning can be defined as the design and regulation of the uses of space that focus on the physical form, economic functions, and social impacts of the urban environment and on the location of different activities within it.

According to the oxford dictionary word urban means a city or a large permanent settlement. The U.S census bureau defines urban areas on the basis of the census blocks. Urban areas can include an entire country or parts of the country; it is a contiguous area of census blocks. An urban area is usually known as a city. There is no one standard international definition of a city; the term may be used either for a town possessing city status; for an urban locality exceeding an arbitrary population size; for a town dominating other towns with particular regional economic or administrative significance. Although city can refer to an agglomeration including suburban and satellite areas, the term is not appropriate for a con-urban (cluster) of distinct urban places, nor for a wider metropolitan area including more than one city, each acting as a focus for parts of the area.

An urban area usually consists of residential, industrial and business areas together with administrative functions which may relate to a wider geographical area. A large share of a city's area is generally taken up by houses, roads, and streets. Lakes and rivers may be the only undeveloped areas within the city. Cities generally have advanced systems for sanitation, utilities, land usage, housing, and transportation. The concentration of development greatly facilitates interaction between people and businesses, benefiting both parties in the process. A big city, or metropolis, usually has associated suburbs. Such cities are usually associated with metropolitan areas and urban sprawl, creating numerous business commuters traveling to urban centres of employment.

Urbanisation in India is characterised by unplanned and uncontrolled growth leading to urban sprawl. Land use planning and the pattern of development, relationship between residential areas and industrial, commercial and office complexes have a considerable impact on the environment. Most of all, appropriate infrastructure provision has not

<sup>3</sup> Global Water Supply and Sanitation Assessment Report, 2002.

kept pace with economic growth. Consequently, the environment of urban areas, particularly of larger cities, has been deteriorating rapidly.

Urban local bodies (ULBs) in India are faced with a plethora of issues that directly impact their capacity to manage municipal service delivery while simultaneously addressing environmental concerns.

These include:

- ◆ multiplicity of organisations;
- ◆ inadequate resource mobilisation;
- ◆ lack of capability to adopt proper corporate planning;
- ◆ lack of information and information systems; and
- ◆ inadequate monitoring of policy implementation.

Where the municipalities are struggling to provide basic amenities to citizens, issues of environmental pollution or hazard management are not accorded priority till matters reach the proportions of a crisis. A primary reason for the delay was that local governments were perceived to be rivals, rather than complements, by state governments. Hence, local government was generally not a level that was maintained with commitment and sufficiently empowered in the post-Independence era. For that reason, it could be said that even by 2004, the state of West Bengal distinguished itself by its commitment to having regular local elections once the current ruling party of West Bengal came to power in the 1970s. In other states, these bodies were frequently superseded for long periods by state governments. West Bengal's commitment to local government, in fact, had an important role to play in the national recognition accorded to local government. Its commitment inspired the 74th Amendment Act that formerly gave constitutional recognition to local government.

However, it can also be said that there is today a growing awareness of the need and importance of local self-government, as being a provider of services to local communities and as a mechanism for democratic self-government. There are currently two distinct types of local government system: urban local system and the rural local system. The structure of the latter is multi-tiered and will not form the subject of this article, which focuses on urban local government. India is witnessing urbanisation at a faster pace than ever before. Some 30 million people are migrating to Indian cities from rural areas; if the trend continues, the country's urban population is likely to reach 600 million by 2030<sup>4</sup>.

The relatively slower growth in urban population during the 1950s and the 1960s can be attributed to the physical planning controls on the location of economic activities and the urban land-use, imposed through master plans that had put a 'ceiling' on the absorptive capacity of large Indian cities. Also, the success of green revolution had further dampened the urban-rural migration.

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<sup>4</sup> Pranav Divay, "India preparing for the biggest human migration on the planet", accessed 23 April 2019.

The country recorded the fastest urban growth rate of the twentieth century during the 1970s. The high rate of 3.8% a year can be attributed to an increase in population in the industrialising towns causing large migration and to the emergence of a large number of new towns. In 1991-2001, while the total population of India increased by 21.3%, the urban population rose by 31.2%. The country with one of the largest urban systems in the world, is projected to increase its urban population to over 400 million in the year 2011 and 553 million by 2021 (NIUA, 2000), accounting to about 40% of the country's population. Demographically, urbanisation patterns developed differently across different states.

As per Census 2011, for the first time since Independence, the absolute increase in population is more in urban areas than in rural areas.

**Table 1: Population Difference (in Crore)**

	2001	2011	Difference
India	102.9	121.0	18.1
Rural	74.3	83.3	9.0
Urban	28.6	37.7	9.1

With the historical pattern of urbanisation suggesting that countries tend to urbanise slowly until they attain 25 to 30% of urbanisation, increases its pace with economic growth, causing rapid structural shifts in the economy. Many urban researchers predict, that urbanisation in India is likely to persist at least until 2030 when India will achieve 50% of urbanisation (World Bank, 2004).

According to the latest census of 2011, the urbanisation level in India has increased from 27.8% in 2001 to 31.2% in 2011, and for the first time, the absolute increase in urban population exceeded the increase in rural population.

The dynamics of urban development in India can be analysed by looking at the interdependence of the level and pace of urbanisation in relation to the indicators of economic development. The urbanisation, urban growth and new dimensions of macro-economic management emanating from the economic liberalisation, fiscal adjustment and financial sector reform that are leading to new investments in the form of trade and industrial activities in the urban centres or in its fringes. The Expert Group on the Commercialisation of Infrastructure Projects (1996), in its report states that the rapid pace of urbanisation is a consequence of the new economic policy. Also the linking of the economic policy to the global economy pursuing open trade policy is bringing in massive inflow of capital both, indigenous and exogenous investments fostering the process of urbanisation even further. In particular, the large cities in the developed states have attracted most of the emerging business and economic activities, experiencing high economic and demographic growth. For instance, Bangalore in Karnataka (industries, services, and information technology), Hyderabad in Andhra Pradesh (information technology), Chennai in Tamil Nadu (manufacturing and services) and Pune in Maharashtra

(manufacturing and services) grew at faster rates. The increase in economic integration has obliged cities to take their own economic environments more seriously, especially with the macroeconomic policies and their correlation to urban demands becoming increasingly important within the emerging scenario. At the practical level this requires that the governments at all levels to provide the much needed urban infrastructure support for higher productivity and to enhance the quality of life, by facilitating policies that increase the local resource base, which is otherwise declining.

## 42.5 Urban Local Bodies in India

Broadly, the ULBs are classified into four major categories based on its structures and economic conditions as: (i) Municipal Corporation for larger urban areas, (ii) Municipalities for smaller urban areas (municipal councils, municipal board, municipal committee), (iii) Nagara Panchayats (town area committee) for the rural-urban transition areas and (vi) Others, which constitute town Panchayats, notified area committees, municipal councils, town area committees, city and town municipal councils, notified area councils, municipal boards, and notified area authorities.

### Urban infrastructure: an analysis of the basic amenities

In India, rapid urbanisation coupled with low rates of investment in urban development, has led to severe deficiencies in the availability of basic urban infrastructure, services and amenities (Expert Group on Commercialisation of Infrastructure, 1996). Studies by the various international and national agencies on Indian cities suggests that in almost all the urban centers of the country, basic urban services are greatly strained, with a large section of the urban populations having no access to drinking water, sanitation, public transport and so on (Bhalla, 1982; Dutta, 1999; Kundu, 1994; 1997).

The need for up-gradation and development of urban infrastructure and urban services cannot be overstated. The high percentage of labour migration from rural areas to cities is contributing to urban congestion, creating pressure on basic amenities such as water and sanitation, etc., and creating housing shortages in cities across India. The present levels of urban infrastructure is grossly inadequate to meet the demand of the existing urban population. As per the 54th Round of the National Sample Survey Organisation (NSSO) states that only 45.8% of urban households have tap water within the premises, 25.5% of households have no access to any latrine, and only 18% of households use garbage collection facility provided by local authorities (12th Fin. Comm, 2006).

The government has estimated a shortage of more than 18.78 million homes at the beginning of 2012, of which 95% were in the EWS (Economically Weaker Sections) and LIG (Low Income Group) segments. Further, the country's total urban housing shortage is projected to be about 30 million by 2022<sup>5</sup>.

<sup>5</sup> <https://www2.deloitte.com/content/dam/Deloitte/in/Documents/public-sector/in-ps-affordable-housing-noexp.pdf>

With the proponents of economic liberalisation and structural reformists arguing that new strategies would accelerate the pace of urbanisation there is an imperative need for augmenting the basic urban infrastructure and services in order to sustain its competitive edge.

The central and the state governments invests directly in urban infrastructure by handling the capital investments and the O&M activities through their respective departments such as housing, public works, water supply and drainage, road transport, public health, and engineering. In a few cases, the state governments undertake capital investments through statutory boards (Chennai Metropolitan Water Supply and Sewerage Board in Tamil Nadu, Bangalore Water Supply and Sewerage Board in Karnataka, Delhi Jal Board in New Delhi, etc.), leaving the O&M to local governments. However, the resource scarcity faced at the central and the state levels has led to a reduction in the current and capital expenditures on infrastructure and social sectors in recent years creating serious uncertainty with regard to the provision of basic amenities to the urban population. A study by the National Institute of Public Finance and Policy (NIPFP) on the finances of ULBs shows that cities are experiencing tremendous fiscal stress even to operate and maintain basic urban services to satisfactory levels (let alone augment them) while the majority of them are unable to raise adequate resources on their own to meet the growing demand of urban services. Some of the major reasons for the existing state of affairs include ineffective local governance, inefficient management practices, poor planning process, lack of periodical revision of municipal tax rates, user charges, poor information system and record management.

However, demand for municipal services, which already exceeds supply, is increasing exponentially with time as more and more people migrate into the cities. The inability of municipalities to meet demand has led to a wide spread of diseases such as cholera and typhoid and the failure of cities to realise economic development. Based on the review of the existing status of basic urban infrastructure at the macro-level and its implications, a special case can be made for providing special forms of financial assistance to the small and medium towns that are not in a position to allocate the requisite funds for providing basic urban infrastructure or to attract private capital for investments in these sectors.

## 42.6 Urban Local Bodies: Structure, Functions and Financial Status

In this section we shall discuss the trends in the fiscal and financial situations of the ULBs in the recent years and the emerging policy reforms with the objective of developing pool finance and local bond markets to facilitate borrowings. In this discussion we recognise the importance of the state in facilitating the development of municipal credit markets but confine our discussion to the ULBs. We begin the discussion by describing the structure, functions and the financial status of ULBs followed by a discussion on the financial requirements as estimated by the various committees for upgrading core infrastructure and services for the cities in India.

### Functional domains of Urban Local Bodies

Although Local governments are recognised and protected by the Indian Constitution, the states have the de facto legislative powers over them. The State list of the Constitution empowers the state governments to lay down the functions, powers and responsibilities of municipal governments that are recognised as the third tier of governments following the Constitutional Amendment Act, 1992 (Box 1). The Act which focuses on the decentralisation of urban governance advocates the devolution of the responsibilities for delivering local public services to the ULBs and to generate revenues needed to sustain these services by amending their municipal laws. But since the functions delegated to the ULBs are concurrent, state governments also act simultaneously within the framework of municipal functions.

#### Box 1: 74th Amendment of the Constitutional Amendment Act, 1992

The Constitutional Amendment Act, 1992 provides a constitutional recognition of the ULBs to devise a democratic and empowered system of urban governance to enable them to function as an effective democratic institution of local self-government.

The Act introduced some of the fundamental changes in the system of local governance with the objective of transferring the functional and fiscal responsibilities to the ULBs. The Act also envisages assigning more revenue sources to local governments, and to promote local accountability. In summary the Act provides for: (i) holding of regular elections, under the supervision of the state election commissions, (ii) protection against arbitrary dissolution of local elected bodies by higher levels of government; (iii) constitution of ward committees in cities with a population of three lakhs or above; (iv) gradual transfer of powers and authority of state legislatures to ULBs; (v) clear demarcation of ULBs' responsibilities as assigned under the twelfth schedule of the Constitution; (vi) formation of state finance commissions (SFCs), once every five years, to identify avenues for improving the health of the municipal finance and recommend their legislatures of the criteria to devolve resources from state to local bodies; and finally (vii) the act requires the state to constitute Metropolitan Planning Committees (MPC) and District Planning Committees (DPC), for the preparation and consolidation of development plans.

Besides its traditional core functions, municipalities are also expected to play a crucial role in the preparation and implementation of local development plans and social justice programmes.

Source: 74th Amendment, 1992

The primary functions of the ULBs relate to the public health (water supply, sewerage and sanitation, eradication of communicable diseases, etc.), welfare (education, recreation, etc.), regulatory (registration of births and deaths, enforcing building byelaws, encroachments on public land, etc.), public safety (fire protection, street lighting etc.), public works (construction, maintenance of city roads, etc.) and development activities (related to town planning and development of commercial markets). Besides the

mandatory functions, several state departments assign unilaterally and on agency basis, various other functions including family planning, nutrition and slum improvement, disease and epidemic control and so on apart from executing various central and state government programme and policies (resulting in duplication of the functions performed by the government agencies). The democratic decentralisation of the ULBs, as envisaged by the Decentralisation Act, 1992, has broadened the range of functions and responsibilities of these urban bodies. In broad terms, the Act led to a periodic shift in the functional domain of municipalities by requiring them to take crucial roles in the delivery of development functions like planning for economic growth and social justice, urban poverty alleviation programmes and promotion of cultural, educational and aesthetic aspects, environmental protection in addition to its core functions. Under the twelfth schedule of the 74th Amendment (Article 243) an illustrative list of eighteen functions that are entrusted to the municipalities are provided in Box 2.

The 12th schedule of the Constitution also directs the state governments to determine the revenue base of the municipalities by giving it a discretionary power based on the recommendations of the State Finance Commissions (SFCs). However, in most cases the inter-state disparities in municipal functions, powers and responsibilities (as also the nature of state-municipal fiscal relationships, discussed later) among the jurisdictions are large and diverse.

#### **Box 2: Functions to be undertaken by the Urban Local Bodies**

- 1) Urban planning including town planning
- 2) Regulation of land use and construction of buildings
- 3) Slum improvement and up-gradation
- 4) Planning for social and economic development
- 5) Urban poverty alleviation
- 6) Public health, sanitation, solid waste management and conservancy
- 7) Water supply for domestic, commercial and industrial purposes
- 8) Public amenities including street lighting, parking lots, bus stops and public conveniences
- 9) Vital statistics including registration of births and deaths
- 10) Safeguarding the interests of weaker sections of the society (including the handicapped and mentally retarded)
- 11) Urban forestry, protection of the environment and promotion of ecological aspects
- 12) Provision of urban amenities and facilities such as parks, gardens, playgrounds
- 13) Promotion of cultural, education and aesthetic aspects
- 14) Burials and burial grounds, cremation grounds and electric crematoriums
- 15) Cattle pounds, prevention of cruelty against animals
- 16) Regulation of slaughter houses and tanneries
- 17) Fire services
- 18) Roads and bridges

But the transferring of socio-economic responsibilities to ULBs without examining their economic base and resource-raising capacity or making provision of adequate transfer of funds has had serious consequences on the city's infrastructure. Critiques argue that civic bodies that depend on their 'own resources' will result in further increasing the disparity in the level of services and economic infrastructure across size class of urban centres. Administratively, among the various classes of the ULBs, the municipal corporations enjoy a greater deal of fiscal autonomy, although specific fiscal and functional powers vary across the states. In general, the local governments with larger populations have a more diversified economic base and deal with the state governments directly, while the municipalities have lesser autonomy, smaller jurisdictions and deal with the state governments through the Directorate of Municipalities or through the collector of the district.

### Fiscal domain of the Urban Local Bodies

While the Indian Constitution specifies the division of taxes between the Union and the State governments (Article 268 and 274), it does not lay down the revenue base for municipalities, leaving it to the respective state governments to determine their revenue base. But in general, the resource base of the ULBs consists of own tax, shared taxes, non-tax revenues, grants-in-aid, loans from the central governments and their own market borrowings. Within this framework the state governments specify certain taxes which the municipalities can levy and collect, such as taxes on land and buildings (property), taxes on the entry of goods into a local area- the octroi (in some states), advertisements tax, sales tax, taxes on animals and boats, tolls, taxes on professions, trades, entertainment tax and motor vehicles. The non-tax base source of revenue includes interest receipts, cost recovery charges for various services provided by the local government, profits and dividends from state-owned enterprises, charges, fees and fines.

Table 2: Major Sources of Income for Municipal Bodies in India

Sources	Major Components
<b>INTERNAL</b> Tax Revenue Non-Tax Revenue	Property taxes; Octroi (in some states), entertainment tax; tax on advertisements, tourism tax, etc. Building licence fees; Water and Sewerage; Rents from municipal assets; Income from Municipal Undertakings; User charges; Fines; Vehicles and Animal; etc.
<b>EXTERNAL</b> Grants- in-aid Shared Taxes	State and Central; General purpose; specific purpose; grants in lieu of taxes. Entertainment tax; electricity tax; tax on transfer of immovable property; motor vehicle tax; stamp duties; profession tax; etc.

### Municipal Finances: present status and future prospects

Urbanisation has a major impact on the realisation of the composition of revenue base and resource allocations. The internal resource mobilisation abilities of the municipalities is the principal criterion for measuring its performance, as it measures the capacity of

the ULBs to be able to effectively put to use the combined effect of the fiscal powers and the sector's capacity utilisation.

The High Powered Expert Committee (HPEC Ahluwalia 2011) and McKinsey (2010) highlighted the fact that Indian municipalities are under-spending in core infrastructure like transport, water supply, sewerage, drainage, etc. for decades, thereby striking at the very root of the country's potential for economic growth and prosperity.

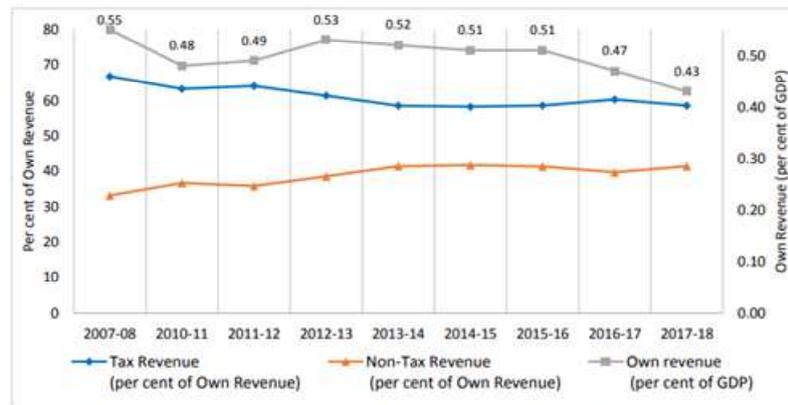
In this section we shall analyse the performance of the municipalities by examining its internal resource generation (per capita own revenues and annual average growth rates), municipal revenue receipts (own revenue component and transfers from the higher tiers of government), and revenue expenditure (both discretionary and non-discretionary components) - as a proxy for evaluating the level of services and revenue-expenditure gap.

In fiscal terms, the municipal sector's contribution in India is tiny. Based on the aggregate revenue incomes of the ULBs, the revenue receipts of the municipalities ranged from 11250 crores in 1997-98 to 17750 crores in 2001-02 registering an annual growth rate of 11.40% between 1998-02. Within this, the own source revenues (tax and non-tax) of the municipalities, showed a marginal increase from 8,345 crores in 1997-98 (0.61% of India's GDP) to 12,748 crores (0.63% of India's GDP) in 2001-02. The tax revenue receipts of the municipalities for the country grew at an annual rate of 9.2% between 1998-01 and the proportion of non-tax revenue receipts grew from 20.9% in 1997-98 to 25% in 2001-02 during the same period. Overall, the municipal's share in the publicly raised resources has changed, notionally by about 0.23 percentage points over the last five years (although the inter-state differences in the performance of municipalities are extraordinarily large). Its share in the total revenues generated by all the three tiers of government rose from 2.84% in 1997-98 to 3.07% in 2001-02 (12th CFC, 2004). Among the ULBs studies show a significant disparity in their incomes, across different size classes of urban centres (NIPPF, 2004; Mathur, 2001).

Municipal's own revenue as per cent of GDP between 2010-11 and 2012-13 but has declined thereafter. In 2017-18, own revenue was at 0.43% of GDP, the lowest in the last eight years. Municipal tax revenue forms a major yet declining share of own revenue. It includes property tax, profession tax, entertainment tax, and the recently abolished octroi/entry tax and advertisement tax, among others, with the taxes levied varying across states. However, in most states, local taxes other than property tax have been taken over by the states over the years<sup>6</sup>.

Correlations between the own revenues of municipalities, levels of urbanisation and the gross domestic state products (GDSP) suggest a strong relation over the fiscal and financial health of municipalities. When we analyse the composition of municipal revenues it shows that in a majority of the states there is a greater reliance on tax sources, mainly, property taxes and Octroi (in a few states) which are also among the stable source of income for the majority of municipalities.

<sup>6</sup> [https://fincomindia.nic.in/writereaddata/html\\_en\\_files/fincom15/StudyReports/State%20of%20Municipal%20Finances%20in%20India.pdf](https://fincomindia.nic.in/writereaddata/html_en_files/fincom15/StudyReports/State%20of%20Municipal%20Finances%20in%20India.pdf)



Note: Own Revenue is plotted as per cent of GDP on the right vertical axis. Tax and non-tax revenue are plotted as per cent of own revenue on the left vertical axis.

**Figure 1: Municipal Tax Revenue, Non-Tax Revenue and Own Revenue (percent)**

Source: State of Municipal Finances in India: A Study Prepared for the Fifteenth Finance Commission, Indian Council for Research on International Economic Relations (ICRIER) (2019).

In per capita terms the receipts of municipalities for the country as a whole increased from Rs. 501 in 1998 to Rs. 707 in 2001 at an average of 8.6%. At present, property tax remains the only major tax in the municipal portfolio in India and it contributed about 60% to municipal tax revenue in India in 2017-18.

In 2001, the per capita revenue receipts of municipalities ranged from a low of Rs. 40 in Bihar to a high of Rs. 1494 in Maharashtra. Such low per capita receipts of municipalities can be explained by low user charges and inefficient tax collection. Further at the macro-level the resources are weakened due to the mismatch between the sources of revenue and the residual functions, abolition of octroi (in most states), loss of elasticity and buoyancy in property taxes, poor cost recovery and defective pricing system of services.

### Changing System of Infrastructure Financing

State governments guarantee the borrowings of their local bodies and corporations. The outstanding guarantees extended by all state governments stood at 8% of the GDP by the end of March 2001, or nearly twice the level of guarantees made by the central Government. State Housing Boards, Urban Development Authorities, Municipal Corporations, State Electricity Boards and the State Road Transport Corporations that mobilise borrowings and bond issues through government guarantees, and other forms of credit enhancements such as escrow accounts and pledging grants of higher levels of government. In response to the deteriorating financial status of the ULBs the various State Finance Commissions (I and II) have recommendations, which are summarised in 12th Finance Comm. (2004). In the next section we shall seek explanations for the differential performance of municipalities. The user charges statistics for the municipalities in India show that municipalities in India recover far less than the cost of providing the services from user charges than would seem necessary and desirable. Suresh (1998) points out that the ratio between the water charges collected and

expenditure incurred on operation and maintenance in some Indian states varies between 30 and 46%. In terms of prices, the average urban water charge is about Rs. 1.5 per kiloliter (US \$0.03), whereas the average cost is about Rs. 15 per kilo (US \$0.33). Clearly the charges levied bear no relationship with the costs incurred on the provision of services, leading to an impediment in the effective delivery of services and deprivation of capital expenditure in the long run. As a result of this, the resource requirements for investments in India's urban sector are massive, as various estimates present from time to time. While the accurate estimates of financial resource requirements for urban infrastructure are difficult to arrive at, efforts have been made to evolve various norms and standards by converting the physical norms into financial norms to compute the financial needs of urban infrastructure. However, the costs of the desired service levels depend on a number of factors including population size, topology of the urban area, technology used, economic profiles of the city, investments in the past in particular service, area covered and so on.

Urban management will be directly related to urban finance. With the country's fast paced development, government will be further implicated in all things urban, particularly infrastructure. The India Infrastructure Report (1996) estimated an investment needs for urban water supply, sanitation and roads at Rs 1.25 trillion for the period 2000-05. Mathur (1999) states that the municipal bodies in India would require an additional investment to the existing expenditure of about 74,000 crores if the deficiencies in the existing levels of basic urban services are to be eliminated and all sections of urban population are to be provided with an access to a modicum of services by 2020 and an additional investment of 18,000 crores a year towards Operation and Maintenance of these services. Zerah (2006) summarises the requirements of incremental investment in sewerage as being between Rs. 91.2 billion corresponding to a low urban population projection and Rs. 165 billion for a high urban population projection scenario for 2001-11. The study assumes that for large cities, full coverage by sewage treatment, and for medium towns, public sewers with partial coverage by septic tanks and for small towns, low cost sanitation methods are adopted. The National Institute of Urban Affairs (2000), by using the urban population projection of 404.17 million for 2011, states a per capita requirement of nearly Rs. 200 (Rs. 450 per capita for the high urban population projection) for the urban population's sewerage needs during the entire period 2001-2011. The Central Public Health and Environmental Engineering Organisation has estimated a requirement of Rs. 37 billion for a 100% coverage of the urban population under safe water supply and sanitation service during the tenth five year plan. On the per capita basis the study by the PricewaterhouseCoopers (2001) updating the expenditure norms of the Zakaria committee report estimates the per capita norm for street lights in towns with greater than two million population to be Rs. 59.26 per annum (at 2000-01 prices). Similarly, for the sanitation/sewerage, ORG (1989) calculates the cost of providing sanitation/sewerage at Rs. 587 per capita in metro centres (those with population of greater than a million) and in cities with population between 100,000-million, the study estimates this cost to be Rs. 604.

Table 3: Estimates of Urban Infrastructure Investment Requirements

Source	Services Covered	Period of Recommendation	Resource Requirements (in crores)
Ninth Plan Document	Urban water supply and sanitation	1997-2002	50,000
NIUA (Planning Commission Norms updated to 1998-99 prices)	Water Supply, Sewerage, Solid Waste Disposal, Storm Water Drains, Roads, Street Lights	2000-2020	129484-174634
India Infrastructure Report (Rakesh Mohan Committee)	Water Supply, Sanitation, Roads capital and O&M costs	2000-2005	125,000
Zakaria Committee Norms (updated to 1998-99 prices)	Water Supply, Sewerage, Drainage, Roads and Street Lights	2000-2020	114,000
Ministry of Urban Development, Gol	Revenue gap in O&M requirements relating to civic services	2000-2005	18,500
JNNURM	Basic urban infrastructure; urban renewal;	2007-2012	1,26,000
Central Public Health & Environmental Engineering Organisation	Water supply, sanitation and solid waste management	2002-2007	53,720

However, neither the municipal bodies nor the parastatal institutions, that depend on the public sector funds, are in a position to finance the scale and size of investments through the budgetary resources. Therefore, the massive need for investments in urban infrastructure development needs to come from multiple sources of financing. An appropriate mix of public and private funding could help in augmenting and financing the growing demand for basic urban infrastructure.

It is suggested that a major chunk of resources would have to come from financial markets and external sources (World Bank, 2004). The financial liberalisation of the Government of India has provided the much needed access to private capital markets and an impetus to the ULBs to raise resources by issuing general and project specific bonds to augment funds available from plan allocation for development works (discussed later). Given the volume of investments required to create urban infrastructure it is imperative to develop local credit markets so that the ULBs can access private savings to augment municipal finances to invest in infrastructure. In order to facilitate the process, a series of reforms were undertaken to encourage investments in infrastructure through fiscal incentives in the form of tax exemption for private funds investing in urban infrastructure projects and municipal bonds by amending the Income Tax Act, 1961. The National Budget, 2002 also proposed the creation of 'Pooled Finance

Development Scheme' to help the small ULBs access capital markets by issuing bonds with credit enhancement facilities, which bundles grants and loans together. The fund also provides technical assistance to build ULBs capacity in project preparation and financial management. In addressing this, the Government of India, along with the state governments, have initiated some of the major urban infrastructure schemes and services including the Integrated Development of Small and Medium-Sized Towns (IDSMT), where the central and state governments share the costs at 60:40, Mega City Scheme (MCS) for funding water supply, drainage, sewerage, sanitation, city transport network, land development, and slum development projects. Accelerated Urban Water Supply Programme (AUWSP) aims to provide water to towns of less than 20,000 people as per the 1991 census, covering 2,151 towns. But the fiscal constraints in India, along with other policy rigidities at the city level have resulted in sub-optimal levels of urban infrastructure investment over the last 20-30 years of urbanisation (EGCIP 1997).

### **Financing the Urban Local Bodies**

In theory, local government debts are incurred to finance long-term projects, such as local infrastructure, on the premise that the debts will be retired through local governments' future tax revenue. In practice, however, when local governments initiate public projects such as roads, housing, environmental facilities, or other local economic developments, the central Government helps them after evaluating the merits of such projects and support them with specific grants. But when the Central Government's revenue set aside for intergovernmental grants is insufficient for the projects, the Central Government allows state/local governments to assume debts to finance the project.

In the Indian context the state government's power to borrow is subject to Article 293(3)14 of the Indian Constitution, which is subjected to the Central government's approval. The government's borrowings are considered as borrowings made against the security of the consolidated funds of India or the respective states. Similarly, the state government guaranteed borrowings by the state level enterprises and statutory boards, becomes state's liability. However the fiscal constraints of the Central Government and its diminishing opportunities to borrow from multilateral lending agencies at concessional terms and conditions compel the local governments to explore alternative arrangements to finance resulting in a series of fiscal reforms that were initiated at the centre by reducing subsidies, grants-in-aid, loans and other forms of transfers from the government. This has put considerable pressures on the states to raise resources for long-term projects from the markets leading to unplanned cuts in the current expenditure and deferral of expenditures required for maintaining physical infrastructure. On the supply side, poor revenue base of the municipalities, inefficient collection and restricted functions due to inadequate local laws, municipalities are unable to demonstrate the financial and operational efficiency necessary to attract investments from the private sector. But increasing urbanisation continues to put severe demands on the local governments to provide infrastructure and civic amenities, bringing in significant pressure on the local governments to close the fiscal gap and to finance the city's infrastructure demands.

The Government of India in its efforts to push forward the 'decentralisation' agenda further encouraged the state governments to design and implement the municipal financing programme through special-purpose funds meant to catalyse institutional, fiscal, and financial reform of cities to make them creditworthy and improve their service delivery. For instance, the Eighth Five Plan (1992-97) envisaged building cost recovery into the municipal finance system which was further reinforced during the Ninth Plan period (1997-2002) advocating for substantial reduction in the budgetary allocations for infrastructure development. The plan states, 'Financing of urban infrastructure is bound to pose new challenges to the different constituents of the financing system. Innovative mechanisms and practices will have to be encouraged and supported to stimulate the flow of finances such as the municipal bond system, municipal financial reforms, fiscal and monetary incentives for the creation of friendly environment, participation of cooperatives, community groups and NGOs etc.' In general, the benefits of accessing capital markets by the local governments enable ULBs to leverage internal resources to access long-term capital for urban infrastructure investments through bond issuance; help in shifting focus from distorted financial resource allocation to market based credit discipline on city governments in allocating funds; promote fair disclosure and accounting and better management practices and thereby help the state and city governments in exploring alternative means of revenue-raising. In continuing its efforts to bolster fiscal and urban sector reforms, the Government of India in its 2002-03 budget initiated several reforms including, Infrastructure Equity Fund (IEF), Urban Reform Initiative Fund (URIF), the City Challenge Fund (CCF) and the Pooled Finance Development Facility (PFDF) with the aim of assisting municipalities to undertake fiscal, financial and institutional reforms. The idea behind the creation of such funds stems from the need to make urban areas more efficient and growth-oriented by incentivising the cities to undertake systems and structural reforms to create efficient and equitable urban centres. In addition to this the ULBs in their effort to generate their own resources are seeking additional sources of funds for long term investments (other than budgetary support) by exploring the capital and debt markets.

## 42.7 Sustainable Development Goals (SDGs) and Urbanisations

Sustainable Development Goals (SDGs) have replaced the Millennium Development Goals (MDGs) to usher in a new development era and complete the development mission which began in 2000.

Goal 11 of the SDG is closely linked to Urbanisation. Goal 11 is titled as, 'Sustainable cities and communities.' Goal 11 thereby aims at to make cities inclusive, safe, resilient and sustainable i.e., it intends to promote urban planning as one of the recommended methods for achieving sustainable development and includes a new focus on participatory and integrated planning for cities; development of inclusive, green, and public spaces; climate change resilience; and resource efficiency.

Some of India's development initiatives are in line with SDGs. Bill Gates once said,

“India is to the SDGs what China was to the MDGs, i.e. the world could not have achieved its poverty reduction targets without China coming through; the world will not achieve many of its SDGs targets without India coming through.”

**Target under Goal 11 of SDGs are:**

- |      |   |
|------|---|
| 11.1 | By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums;   |
| 11.2 | By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons;   |
| 11.3 | By 2030, enhance inclusive and sustainable urbanisation and capacity for participatory, integrated and sustainable human settlement planning and management in all countries;   |
| 11.4 | Strengthen efforts to protect and safeguard the world’s cultural and natural heritage;  |
| 11.5 | By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations;   |
| 11.6 | By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management;   |
| 11.7 | By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities;  |
| 11.A | Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning;  |
| 11.B | By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels; |
| 11.C | Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilising local materials  |

**Table 4: Development programmes of the Government of India which are in line with the goals and targets covered under SDGs 11.**

SDG Target	Centrally Sponsored /Central Sector Schemes (CSS)
11.1 By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums.	<ol style="list-style-type: none"> <li>1. Pradhan Mantri Awas Yojana (PMAY) - Urban</li> <li>2. Atal Mission for Rejuvenation and Urban Transformation (AMRUT)</li> <li>3. Smart Cities Mission</li> <li>4. Pradhan Mantri Awas Yojana (PMAY) - Rural</li> </ol>
11.2 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons	<ol style="list-style-type: none"> <li>1. Atal Mission for Rejuvenation and Urban Transformation (AMRUT)</li> <li>2. Smart Cities Mission</li> <li>3. MRTS and Metro Project</li> <li>4. Bharatmala Pariyojan</li> <li>5. Schemes for Railway Infrastructure Development<sup>6</sup>.</li> </ol>
11.3 By 2030, enhance inclusive and sustainable urbanisation and capacity for participatory, integrated and sustainable human settlement planning and management in all countries	<ol style="list-style-type: none"> <li>1. Atal Mission for Rejuvenation and Urban Transformation (AMRUT)</li> <li>2. Smart Cities Mission</li> <li>3. Swachh Bharat Mission</li> </ol>
11.4 Strengthen efforts to protect and safeguard the world's cultural and natural heritage	<ol style="list-style-type: none"> <li>1. Kala Sanskriti Vikas Yojana</li> <li>2. National Heritage City Development and Augmentation Yojana (HRIDAY)</li> </ol>
11.5 By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations	<ol style="list-style-type: none"> <li>1. Infrastructure of Disaster Management</li> <li>2. National Cyclone Risk Mitigation Project (NCRMP)</li> <li>3. Other Disaster Management Schemes</li> <li>4. Flood Management and Border Areas Programme</li> <li>5. Development of Water Resources Information System</li> <li>6. Atmosphere and Climate Research - Modelling, Observing Systems and Services (ACROSS)</li> <li>7. Ocean Services, Technology, Observations, Resources, Modelling and Science (OSTORMS)</li> <li>8. Seismology and Geosciences (SAGE)</li> <li>9. Design &amp; Development of Applications for EO, Communication, Disaster Management, etc.</li> </ol>
11.6 By 2030, reduce the adverse per capita environmental impact of cities,	<ol style="list-style-type: none"> <li>1. Atal Mission for Rejuvenation and Urban Transformation (AMRUT)</li> </ol>

Contd...

including by paying special attention to air quality and municipal and other waste management	<ol style="list-style-type: none"> <li>2. Smart Cities Mission</li> <li>3. Swachh Bharat Mission-Urban</li> <li>4. Environment Protection, Management and Sustainable Development</li> </ol>
11.7 By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities	<ol style="list-style-type: none"> <li>1. Atal Mission for Rejuvenation and Urban Transformation (AMRUT)</li> </ol>
11.A Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning	<ol style="list-style-type: none"> <li>1. Shyama Prasad Mukherjee RURBAN Mission</li> <li>2. North Eastern Regional Urban Development Project (NERUDP) and other projects in the North Eastern Region</li> <li>3. Rastriya Gram Swaraj Abhiyan (RGSA)</li> </ol>
11.B By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels	<ol style="list-style-type: none"> <li>1. Atal Mission for Rejuvenation and Urban Transformation (AMRUT)</li> <li>2. Infrastructure of Disaster Management</li> <li>3. National Cyclone Risk Mitigation Project (NCRMP)</li> <li>4. Other Disaster Management Schemes</li> <li>5. Flood Management and Border Areas Programme</li> <li>6. Development of Water Resources Information System</li> <li>7. Atmosphere and Climate Research - Modelling, Observing Systems and Services (ACROSS)</li> <li>8. Ocean Services, Technology, Observations, Resources, Modelling and Science (OSTORMS)</li> <li>9. Seismology and Geosciences (SAGE).</li> <li>10. Design &amp; Development of Applications for EO, Communication, Disaster Management, etc.</li> </ol>
11.C Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilizing local materials	Purview of Ministry of External Affairs, Government of India

Source: SDG India Index Baseline Report 2018<sup>7</sup>

<sup>7</sup> <http://4dj7dt2ychlw3310xlowzop2.wpengine.netdna-cdn.com/wp-content/uploads/2018/12/SDX-Index-India-21-12-2018.pdf>

## 42.8 Conclusion

Urban laws and Indian Constitution can be called as two sides of the same coin, so if the coin loses any of its side then the coin is useless. The framers of the Constitution while making it were well aware of the circumstances and the need of law as it was the mere transfer of the laws from white hall to south hall many of the laws need to be looked upon minutely and there was urgent need of their enactment. As after the mid 90's the concern of the legislative as well as executive is to bring a change in the society and to promote urbanisation for which directive principles have been laid down and 74th Constitutional Amendment enacted several other laws which we elaborate in detail. Constitution of India gives a concrete structure to the urban laws and policies, =and it is there to maintain the equilibrium in implementing as well as strengthening the urban laws.

Presently the contribution of financial markets to infrastructure creation has been impressive and the recent trends show great potential due to the increasing number of ULBs becoming credit rated. With a few policy changes and a broad array of reforms initiated at different levels of governance the financial sector can become an important provider of capital to the urban sector. Further a policy framework supported by an enabling regulatory and institutional framework along with multilateral assistance, could make pool financing an attractive option for investment and development of urban infrastructure.

### *Institutional framework*

Establish an independent special-purpose vehicle or asset management company to ensure the viability of projects financed through bond issues. The institution must be empowered to collect revenues from the projects to repay the bonds at maturity to make the process transparent, accountable and free of political interference. External aid agencies in collaboration with rating agencies, merchant bankers, regulatory agencies and stock exchanges, can act as facilitators and expedite the development of projects to issue municipal bonds. It might be prudent to create the funds in collaboration with an international counterpart and Indian financial institutions, along with the state government as equity participant, to attract private capital flows into urban infrastructure projects. Municipalities, statutory boards and state-level public sector undertakings could be the eligible borrowers.

### *Project costs and means of finance*

The initial funding for the implementation of the projects can be given in the form of capital grant along with the ULBs contribution and bridge loan from the constituted state urban development fund. Further, the private sector participation in local government financing will enhance the confidence of the domestic investors, foreign investors and multilateral development banks.

### *Funds to be raised by each ULB*

Establish an intermediate institution to develop the local government to rely on a special kind of guarantee for their bond financing, such as a trust fund at the initial stage. A

ceiling should be imposed on the maximum amount of tax-free municipal bonds that can be raised by the ULBs (a certain percentage of the total project costs) and the debt-equity ratio for the project should not be allowed to exceed a certain ratio (viz., 3:1). The issuers will need to contribute at least 20% of the project costs from internal resources, other grants, or a mix.

### *User charges*

User charges need to be rationalised to cover both the fixed cost (to meet capital costs) and tariff (user charges) to cover both the debt service and the Operation and Maintenance (O&M) costs. Differential pricing (both fixed and tariffs) needs to be worked out for commercial, industrial and residential. Tariffs need to be revised, on a regular basis, in accordance with the elasticity of revenue with the growth of GDP to ensure that revenues increase to accommodate inflationary changes.

### *Escrow Account*

The ULBs need to maintain an escrow account to which all or a streamlined revenue from the project needs to be deposited and only the debt service and O&M can be carried out using the amount in the escrow account.

### *Macro reforms*

At the macro-level the central, state and the local governments must reform some of their regulatory, institutional mechanism, legal and administrative frameworks (discussed later) to provide an enabling environment for the issuers and create a vibrant market for the municipal securities and for enhancing the credibility of the ULBs. In this section we shall discuss some of the measures that need to be addressed in order to make pool finance a credit worthy investment and discuss some of the macro reforms that need to be undertaken to enhance market for municipal bonds under the broad headings of State and ULBs, Regulators.

### *Administrative and the Markets Framework for Reforms State and ULBs*

- 1) Support decentralisation by actually devolving the financial responsibilities to the ULBs including taxes, user charges, shared revenues and other intergovernmental transfers to strengthen fiscal federalism and by creating appropriate infrastructure, as envisaged in the 74th Amendment and endorsed by the Central Finance Commission (CFCs).
- 2) The state governments need to manage their debt levels, by gradually phasing out credit guarantee and other forms of structured payment obligations that result in significant fiscal risks in a rational and time-bound manner.
- 3) The state should allow the ULBs to issue bonds directly, particularly for the commercially viable projects.
- 4) The states need to develop institutional reforms and design regulatory frameworks that defines the municipal borrowing power.

- 5) Guidelines needs to ensure that funds borrowed from the pool funds are only for capital investments in urban infrastructure, setting up new projects and expansion, augmentation or improvement of existing system on a priority basis.
- 6) The states need to create an environment for greater revenue generation and resource mobilisation. At the macro-level, measures should focus on-public expenditure management, tax policy and administration, public enterprise reforms and private sector participation, financial management and accountability of the ULBs.
- 7) Establish a clear environmental and social framework guidelines for all projects to be executed under the PFDF.
- 8) The expenditure function of the ULBs has to be linked to revenue-generating capacity a measure which requires central government intervention, to make state governments surrender their expenditure responsibilities to local bodies.
- 9) Human resources are woefully inadequate to undertake the new responsibilities envisaged under the 74th Amendment. Therefore, a separate municipal cadre assigning development responsibilities need to be developed.
- 10) Presently no performance measurement tools are available to measure the comparative ULB performance, this lack of information hinders raising capital through capital markets. Therefore, local government can use city-level indicators to set performance targets and make rational financial and planning decisions.
- 11) States should recognise the concept of 'divisible pool' of taxes shared among the central, states and local governments and standardise it in order to bring uniformity across states. It should also establish tax collection responsibility.

#### *Administrative*

- 1) Institutional framework establishing the roles of different actors in the pool, mode of payment, contractual obligations, operation and maintenance, quality standards and monitoring should be clearly established.
- 2) Management must be improved to strengthen local governments' revenue performance through sectoral reforms, dealing with land use, rent control, user charges and efficiency.
- 3) Local governments should aim for more efficient and effective collection and utilisation of revenue resources and put in place a set of performance standards against which to measure actual performance.
- 4) Urban managers of the medium and smaller ULBs need skills and expertise in project development such as technical sanctions, costing for various works, development of contractual documents, bidding procedures, commercial assessment and so on. Local authorities must reorient and train their staff and administrators.
- 5) Presently less than 75% of the target income is collected by the ULBs, in order to improve their revenue administrative mechanism, strict law enforcement and new incentive schemes to motivate the local staff and collect the targeted revenue should be put in place.

### *Regulators*

- 1) Local authority loans and securities carry additional risks weighting over loans and securities issued by the central and state governments. The RBI guidelines require banks to assign a risk weighting 20% to state government guaranteed securities. A similar 'risk weight' need to be assigned to the securities issued by the ULBs to calculate the risk attached to it.
- 2) State laws should provide for the preparation and adoption of municipal budgets in a transparent manner and ensure it is put in the public domain. The information helps credit rating agencies and investors to access and evaluate the information
- 3) Presently securities issued by local bodies are governed by multiple laws as Local Authority Act, Public Debt Act and regulated by multiple agencies- Department of Economic Affairs, Department of Company Affairs, RBI and SEBI, resulting in lack of clarity. This should be integrated into single law and dealt by a single agency.
- 4) A regulatory mechanism that ensures the protection of principal and interest payments needs to be created.
- 5) Listing and disclosure rules must be standardised and enforced for municipal securities by a regulating agency (similar to SEBI) that includes particulars of the issue, project cost, sources of financing, listing proposed, auditors, lead managers, trustee, credit rating, and other matters such as local government borrowing powers and clearances from the ministries in the prospectus.

# MUNICIPAL SOLID WASTE AND E-WASTE MANAGEMENT

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### 43.1 Introduction

India is one of the fastest growing economy, however, this economic growth coupled with population growth and rapid urbanisation is resulting in an increase in the amount of urban waste that is being generated in India. As such, the waste management responses have not kept pace with the increased pace of waste generation.

Basel Convention by UNEP define wastes “as substances or objects, which are disposed of or are intended to be disposed of or are required to be disposed of by the provisions of national law.”

A study conducted by The Energy and Resources Institute (TERI) projects the annual per capita municipal waste generation to increase at 1 to 1.33%, which would result in generation of over 260 million tonnes of waste by 2047 (a five-fold increase over 1997 levels). It is projected that an additional 1400 km<sup>3</sup> of land will be required to dispose this waste. Municipal Solid waste disposal in landfills is also associated with generation of methane gas and it is projected that by 2047, methane emissions from landfills will reach 39 million tones.

It was only after the issuance of Municipal Solid Waste (Management and Handling) rules 2000 that the urban governance institutions started giving importance to solid waste management. The collection efficiency of Municipal Solid Waste in India is still well below 75% leaving a large chunk of waste unattended. The municipalities in India thus are faced with the challenge of developing, reinforcing and upgrading the infrastructure for an efficient MSW management and its scientific disposal.

Devices such as PCs, faxes, mobile phones, music players and a host of others open up exciting possibilities for individuals and businesses alike. Yet there is a downside to this digital era - the growing mountain of electronic waste (e-waste). How we tackle this dilemma, will have major implications for sustainability. India generates about 1.5 lakh tones of e-waste annually and almost all of it finds its way into the informal sector as there is no organised alternative available at present.

### Classification of Waste

Sustainable Waste Management aims at managing waste in an environmentally sound, socially satisfactory and a techno-economically viable manner. Strategic planning, institutional capacity building, fiscal incentives, techno-economically viable technologies, public-private partnerships and community participation contributes towards sustainable waste management.

Waste can be broadly classified as follows<sup>1</sup>:

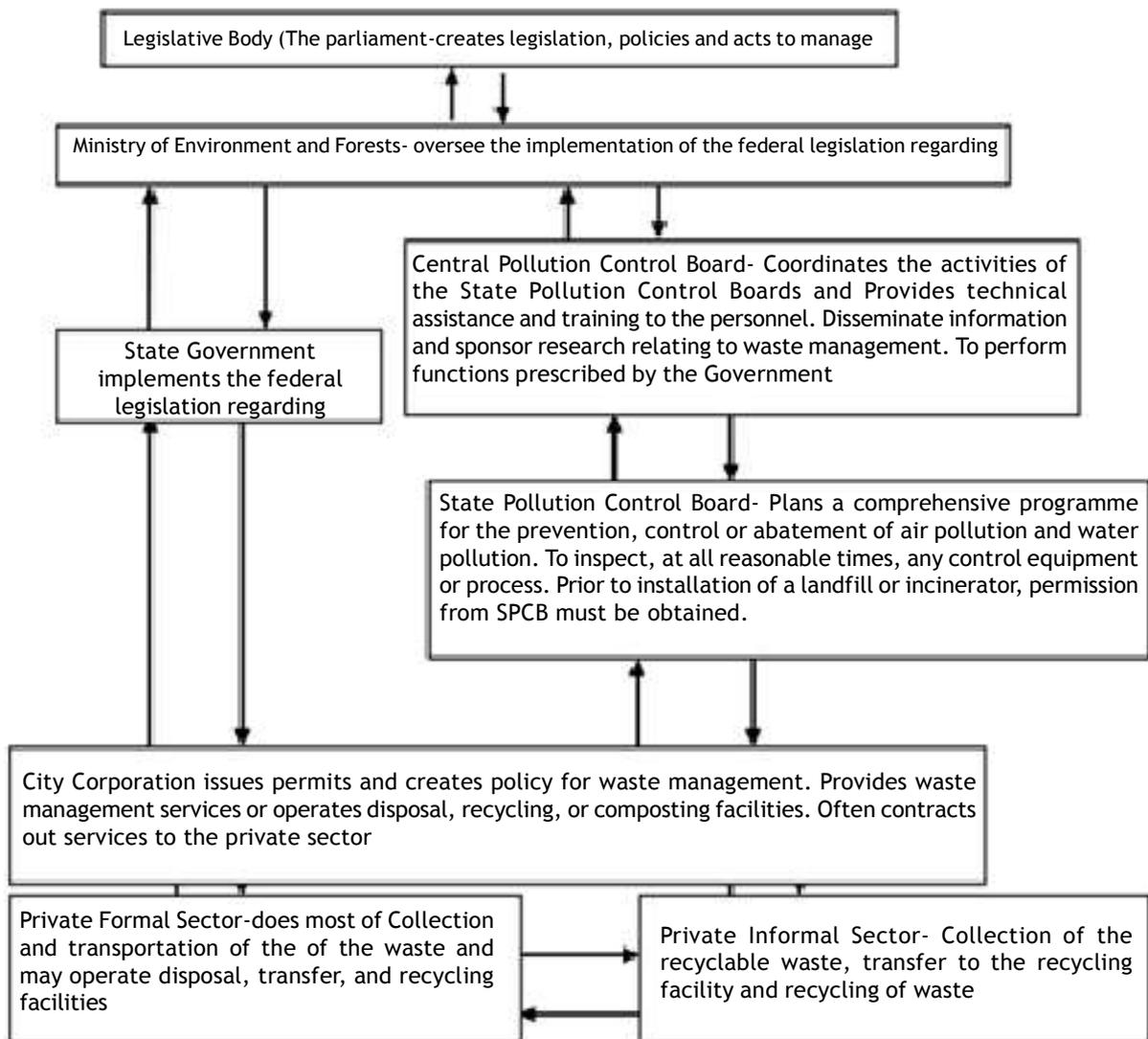
- ◆ Municipal solid waste: Commercial and residential wastes generated in a municipal or notified areas, excluding industrial hazardous wastes but including treated bio-medical wastes. Governed by the Municipal Solid Waste Management and Handling Rules, 2016.
- ◆ Bio-medical Waste: Any waste which is generated during the diagnosis, treatment or immunisation of human beings or animals or in research activities pertaining thereto or in the production or testing of biologicals. Governed by the Bio-Medical Waste Management Rules, 2016.
- ◆ Plastic waste: Waste generated from indiscriminate use and disposal of plastic in to the physical environment leading to water, soil and air pollution Any waste which is generated during the diagnosis, treatment or immunisation of human beings or animals or in research activities pertaining thereto or in the production or testing of biologicals. Governed by the Bio-Medical Waste Management Rules, 2016 Governed by the Plastic Waste Management Rules, 2016.
- ◆ E-Waste: e-waste' means electrical and electronic equipment, whole or in part discarded as waste by the consumer or bulk consumer as well as rejects from manufacturing, refurbishment and repair processes. Governed by the E-waste (Management), Rules, 2016.
- ◆ Hazardous waste: Waste either generated from residential, commercial or industrial activity. the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.

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<sup>1</sup> Adapted from Waste Management in India - Shifting Gears published by ASSOCHAM India.

- ◆ Industrial waste: Attributes to waste material produced during the industrial activity. Governed by various rules based on the type of waste.

The solid waste management system in India spans the complete cycle from waste generation, collection, resource recovery and recycling, transportation to processing or disposal of waste. The institutional framework on solid waste management is as follows<sup>2</sup>:



## 43.2 What is Municipal Solid Waste (MSW)?

Any material that is thrown away or discarded as useless and unwanted is considered solid waste. While the problem of solid waste disposal seems to be simple it is a far cry from being simple by any measure. Solid waste can be classified into different types depending on their source:

<sup>2</sup> An overview of legal framework for waste management system in India with special allusion to SWM rules, 2016 Mithun Ray and Mijanur Rahman.

- a) Household waste is generally classified as municipal waste,
- b) Industrial waste is classified as hazardous waste, and
- c) Biomedical waste or hospital waste is classified as infectious waste.

Efficient delivery of public services and infrastructure are pressing issues for municipalities in most developing countries; and in many countries, solid waste has become a top priority. Solid waste management is costly and complex for local governments, but it is so essential to the health, environment, and quality of life of the people - in particular, the poor - that municipalities cannot afford to get it wrong. Bad waste collection practices and improper solid waste disposal contribute to local episodes of disease, regional water resource pollution, and global greenhouse gases.

Municipal solid waste consists of household waste, construction and demolition debris, sanitation residue, and waste from streets. This garbage is generated mainly from residential and commercial complexes. With rising urbanisation and change in lifestyle and food habits, the amount of municipal solid waste has been increasing rapidly and its composition changing. In 1947 cities and towns in India generated an estimated 6 million tonnes of solid waste; in 1997 it was about 48 million tonnes. More than 25% of the municipal solid waste is not collected at all; 70% of the Indian cities lack adequate capacity to transport it and there are no sanitary landfills to dispose of the waste. The existing landfills are neither well equipped nor well managed and are not lined properly to protect against contamination of soil and groundwater.

A country such as India, with its high economic growth and rapid urbanisation, requires immediate solutions to the problems related to mismanagement of urban waste. City managers are actively trying to understand the problem and are seeking effective ways of intervening. They realise that such interventions are essential to improving the quality of their cities and to reducing adverse health and environmental impacts. For cities to be sustainable and to continue their economic development, they must be clean and healthy. They need to improve their Municipal Solid Waste (MSW) management systems by adopting good collection coverage, appropriate transfer methods, and healthy disposal practices.

With rising urbanisation and change in lifestyle and food habits, the amount of municipal solid waste has been increasing rapidly and its composition changing. In 1947, cities and towns in India generated an estimated 6 million tonnes of solid waste; in 1997 it was about 48 million tones. More than 25% of the municipal solid waste is not collected at all; 70% of the Indian cities lack adequate capacity to transport it and there are no sanitary landfills to dispose of the waste. The existing landfills are neither well equipped nor well managed and are not lined properly to protect against contamination of soil and groundwater.

As per CPCB data, in India MSW rose to 49.34 million tonnes per annum (MTPA) in 2017, e-waste increased to 1.7 MTPA in 2015, the C&D waste increased to 530 MTPA in 2016 and plastic waste stream grew to 9.47 MTPA in 2016.

Over the last few years, the consumer market has grown rapidly leading to products being packed in cans, aluminum foils, plastics, and other such non-biodegradable items that cause incalculable harm to the environment. In India, some municipal areas have banned the use of plastics and they seem to have achieved success. For example, today one will not see a single piece of plastic in the entire district of Ladakh where the local authorities imposed a ban on plastics in 1998. Other states should follow the example of this region and ban the use of items that cause harm to the environment. One positive note is that in many large cities, shops have begun packing items in reusable or biodegradable bags. Certain biodegradable items can also be composted and reused. In fact, proper handling of the biodegradable waste will considerably lessen the burden of solid waste that each city has to tackle.

There are different categories of waste generated, each take their own time to degenerate<sup>3</sup> (as illustrated in the table below).

<b>The type of litter we generate and the approximate time it takes to degenerate</b>
Type of litter
Organic waste such as vegetable and fruit peels, leftover foodstuff, etc.
Paper
Cotton cloth
Wood
Woollen items
Tin, aluminium, and other metal items such as cans
Plastic bags
Glass bottles

Waste is a continually growing problem at global and regional as well as at local levels. Solid wastes arise from human and animal activities that are normally discarded as useless or unwanted. In other words, solid wastes may be defined as the organic and inorganic waste materials produced by various activities of the society and which have lost their value to the first user. As the result of rapid increase in production and consumption, urban society rejects and generates solid material regularly which leads to considerable increase in the volume of waste generated from several sources such as, domestic wastes, commercial wastes, institutional wastes and industrial wastes of most diverse categories. In its scope, solid waste management includes all administrative, financial, legal, planning, and engineering functions involved in the whole spectrum of solutions to problems of solid wastes thrust upon the community by its inhabitants.

Over the last few years, the consumer market has grown rapidly leading to products being packed in cans, aluminium foils, plastics, and other such non-biodegradable items

<sup>3</sup> <http://edugreen.teri.res.in/explore/solwaste/types.htm>

that cause incalculable harm to the environment. In India, some municipal areas have banned the use of plastics and they seem to have achieved success. For example, today one will not see a single piece of plastic in the entire district of Ladakh where the local authorities imposed a ban on plastics in 1998. Other states should follow the example of this region and ban the use of items that cause harm to the environment. One positive note is that in many large cities, shops have begun packing items in reusable or biodegradable bags. Certain biodegradable items can also be composted and reused. In fact, proper handling of the biodegradable waste will considerably lessen the burden of solid waste that each city has to tackle.

There are different categories of waste generated, each take their own time to degenerate (as illustrated in the table below).

<b>The type of litter we generate and the approximate time it takes to degenerate</b>	
Type of litter	Approximate time it takes to degenerate the litter
Organic waste such as vegetable and fruit peels, leftover foodstuff, etc.	Few days to 2 weeks.
Paper	10-30 days
Cotton cloth	2-5 months
Wood	10-15 years
Woollen items	1 year
Tin, aluminium, and other metal items such as cans	100-500 years
Plastic bags	A million years

### 43.3 Municipal Solid Waste

Municipal Solid Waste Management is a part of public health and sanitation, and is entrusted to the municipal authority for execution. Presently, the systems are assuming larger importance due to population explosion in municipal areas, legal intervention, emergence of newer technologies and rising public awareness towards cleanliness.

There are four key elements of integrated solid waste management:

- a) Reduce the generation of solid waste.
- b) Recycle (include composting) for productive reuse as much as practicable.
- c) Combust to recover energy for productive use, wherever feasible.
- d) Landfill the remainder in a secured landfill.

### SOME FACTS ABOUT MUNICIPAL SOLID WASTE

- ◆ About 0.1 million tonnes of municipal solid waste is generated in India every day. That is approximately 36.5 million tonnes annually.
- ◆ Per capita waste generation in major Indian cities ranges from 0.2 kg to 0.6 kg.
- ◆ Difference in per capita waste generation between lower and higher income groups range between 180 to 800 gm per day.
- ◆ The urban local bodies spend approximately Rs. 500 to Rs.1500 per tonne on solid waste for collection, transportation, treatment and disposal. About 60-70% of this amount is spent on collection, 20-30% on transportation and less than 5% on final disposal.
- ◆ Calorific value of Indian solid waste is between 600 and 800 Kcal/kg and the density of waste is between 330 and 560 kg/m<sup>3</sup>.
- ◆ Waste collection efficiency in Indian cities ranges from 50% to 90%.
- ◆ Out of the total municipal waste collected, on an average 94% is dumped on land and 5% is composted.

#### Role of NGO's:

NGOs can play a very important role in waste management by:

- ◆ Creating mass awareness, ensuring public participation in segregation of recyclable material and storage of waste at source;
- ◆ Ensuring public participation in community based primary collection system;
- ◆ Organising rag-pickers for collection of recyclable materials at the community level;
- ◆ Providing health education to the rag-pickers and suggesting tools for safety;
- ◆ Providing employment through organising door to door collection of waste; and
- ◆ Encouraging minimisation of waste through in house backyard composting, vermiculture and biogas generation, etc.;
- ◆ Providing a Model for waste minimisation, reuse, recycling, treatment and disposal;
- ◆ Bridging between Government and Society; and
- ◆ Acting as a buffer between the community and the municipal authorities.

Following are points that need to be taken care of:

- ◆ Keep away from political activity;
- ◆ Consider carefully what can be done with available resources;
- ◆ Try to evolve a system of self-help rather than depending completely on the municipal corporation;

- ◆ Aim at cooperation rather than confrontation with the municipalities;
- ◆ Keep in contact with other NGOs in the area to avoid duplication of work;
- ◆ Encourage the target groups to focus more on their duties and less on their rights;
- ◆ Do not raise too many expectations otherwise failure to fulfil them all may lead to disappointment and withdrawal.

Potential hazards of wastes are numerous to the living community when it is improperly managed. The group at risk from the unscientific disposal of waste include - the population in areas where there is no proper waste disposal method, especially the pre-school children; waste workers; and workers in facilities producing toxic and infectious material. Other high-risk group include population living close to a waste dump and those, whose water supply has become contaminated either due to waste dumping or leakage from landfill sites. Uncollected solid waste also increases risk of injury, and infection. Some of the hazards caused by solid wastes are listed below:

- ◆ Uncollected wastes often end up in drains, causing blockages that result in flooding and unsanitary conditions.
- ◆ Open and overflowing bins attract stray dogs, which has been a major cause of the spread of rabies.
- ◆ Open waste bins also attract stray and domestic cattle. Cattle in the city causes nuisance by blocking the traffic on the roads. Cattle that graze on the waste from bins end up eating the plastic along with the vegetable matter, which proves to be fatal for them. The milk obtained from the cattle that feed on waste can be contaminated and can prove to be unsafe for human health.
- ◆ Flies breed in some constituents of solid wastes, and flies are very effective vectors that spread disease.
- ◆ Mosquitoes breed in blocked drains and in rainwater that is retained in discarded cans, tyre and other objects. Mosquitoes spread disease, including malaria and dengue.
- ◆ Rats find shelter and food in waste dumps. Rats consume and spoil food, spread disease, damage electrical cables and other materials and inflict unpleasant bites.
- ◆ The open burning of waste causes air pollution; the products of combustion include dioxins that are particularly hazardous.
- ◆ Aerosols and dusts can spread fungi and pathogens from uncollected and decomposing wastes.
- ◆ Uncollected waste degrades the urban environment, discouraging efforts to keep streets and open spaces in a clean and hygienic condition. Plastic bags are in particular an aesthetic nuisance.

- ◆ Waste collection workers face particular occupational hazards, including strains from lifting, injuries from sharp objects and contact with pathogens when manually handling the waste.
- ◆ Dangerous items (such as broken glass, razor blades, hypodermic needles and other healthcare wastes, aerosol cans and potentially explosive containers and chemicals from industries) may pose risks of injury or poisoning, particularly to children and people who sort through the waste.
- ◆ Heavy refuse collection trucks can cause significant damage to the surfaces of roads that were not designed for such weights.
- ◆ Waste items that are reused without being cleaned effectively or sterilised can transmit infection to later users. (Examples are bottles and medical supplies.)
- ◆ Polluted water (leachate) flowing from waste dumps and disposal sites can cause serious pollution of water supplies, ponds and lakes. Chemical wastes (especially persistent organics) may be fatal or have serious effects if ingested, inhaled or touched and can cause widespread pollution of water supplies.
- ◆ Waste that is treated or disposed of in unsatisfactory ways can cause a severe aesthetic nuisance in terms of smell and appearance.
- ◆ Liquids and fumes, escaping from deposits of wastes (perhaps formed as a result of chemical reactions between components in the wastes), can have fatal or other serious effects.
- ◆ Methane (one of the main components of landfill gas) is much more effective than carbon dioxide as a greenhouse gas, leading to climate change.
- ◆ Fires on disposal sites can cause major air pollution, causing illness and reducing visibility, making disposal sites dangerously unstable, causing explosions of cans, and possibly spreading to adjacent property.
- ◆ Former disposal sites provide very poor foundation support for large buildings, so buildings constructed on former sites are prone to collapse.
- ◆ Rag pickers working on landfill are prone to many diseases like respiratory infections such as lung impairment. In a study carried out by Chittaranjan National Cancer Institute, Kolkata compared the health of Delhi's rag pickers with that of the control subjects from east Delhi slums. Nearly 75.5 rag pickers from the sample group of 98 had higher frequency of upper respiratory symptoms (sinusitis, running or stuffy nose, sore throat, common cold, fever) and 81.6% showed lower respiratory symptoms (dry cough, cough with phlegm, wheezing, and chest discomfort) and breathing problem.

Solid waste can be categorised based on source as shown in table.<sup>4</sup>

Source	Typical facilities, activities, or locations where wastes are generated	Types of Solid waste
Agricultural	Field and row crops, orchards, vineyards, diaries, feedlots, farms, etc.	Spoiled food wastes, agricultural wastes, rubbish, and hazardous wastes
Industrial	Construction, fabrication, light and heavy manufacturing, refineries, chemical plants, power plants, demolition, etc.	Industrial process wastes, scrap materials, etc.; nonindustrial waste including food waste, rubbish, ashes, demolition and construction wastes, special wastes, and hazardous waste.
Commercial and Institutional	Stores, restaurants, markets, office buildings, hotels, auto repair shops.	Paper, cardboard, plastics, wood, food wastes, glass, metal wastes, ashes, special wastes, etc.
Municipal solid waste	Includes residential, commercial and institutions	Special waste, rubbish, general waste, paper, plastics, metals, food waste, etc.

Municipal Solid waste management involves the application of Principle of Integrated Solid Waste Management (ISWM) to municipal waste. ISWM is the application of suitable techniques, technologies and management programmes covering all types of solid wastes from all sources to achieve the twin objectives of:

(a) waste reduction and (b) effective management of waste produced after waste reduction.

In the Municipal Solid Waste Management, the major issues to be considered are:

- ◆ Increasing waste quantities
- ◆ Wastes not reported in the national MSW totals
- ◆ Lack of clear definition for solid waste management terms and functions
- ◆ Lack of quality data
- ◆ Need for clear roles in state and local government
- ◆ Need for even and predictable enforcement regulations and standards

Numerous technologies / options are available in SWM, among developed countries. Replicating the same in low-income countries is inappropriate / incompatible. The success of waste disposal practices depends largely on overcoming the following constraints:

- ◆ Municipal capacity: The scale of task is enormous and regulatory authorities are able to collect only 60-70% of total waste generated, so treatment and disposal inevitably receives less attention. Attempts are being made in a few instances to overcome this lack of capacity by privatising this operation.

<sup>4</sup> Hester, R. E and Harrison, R. M., 2002.

- ◆ **Political commitments:** Solid waste management is much more than a technical issue, it has implications for local taxation, employment, and regulation of public and managing authorities. Any change needs political support to be effective. However, it is rarely a priority for political concerns unless there is strong and active public interest. This is viewed as a cost to the “public” without apparent returns.
- ◆ **Finance, cost recovery and resource constraints:** Deployment of a proper management system represents a major investment and it may be difficult to give it priority over other resource demands. Most of the waste management authorities are severely constrained by the lack of resource to finance their services. Since the collection and transport itself usually dominate SWM costs in developing countries, safe disposal invariably receives less attention where as in all other developed countries concentrate on all aspects of management.
- ◆ **Technical guidelines:** Standards of planning and implementation in high-income countries may not be appropriate in low-income countries due to difference in climate, resource, institutions, attitude priorities, etc. However, relatively little appropriate guidance is available for low-income countries. Arising from this uncertainty, officials find themselves ill equipped to plan management strategies, which are both achievable and avoid unacceptable environmental hazards.
- ◆ **Institutional responsibilities:** Though managing wastes effectively is the responsibility of the municipality, there is no clearly stated vision of management (i.e. sufficient priority is not given to SWM). Existing vision is accompanied by a typical apathy to solid waste is an “out of sight is out of mind” attitude by the municipalities and public. Waste management necessitates the co-ordination of all authorities concerned and may involve departments that are accustomed to acting independently with the lack of accountability in all levels of management. Among the authorities, the roles and responsibilities of different departments need to be clearly defined and accepted by all concerned. Some smaller towns may not have staff with specific responsibility for providing a solid waste management service.

- ◆ **Waste Generation**

Waste generation encompasses activities in which materials are identified as no longer being of value (in their present form) and are either thrown away or gathered together for disposal. Waste generation at present is not very controllable. However, reduction of waste at source is included in system evaluations as a method of limiting the quantity of waste generated. The compositional terms that are used can vary a lot, from relatively simple descriptions in terms of organic to more complicated schemes, using many or all of the constituents, such as paper, plastic, glass, metal, etc. The composition of the waste is a description of the contents of the waste. In addition to providing important information about the way to handle the waste, the composition tells us about the people who generated the waste. Waste handling and sorting involves activities associated with management of wastes until they are placed in storage containers for collection. Handling also encompasses the movement of loaded containers to the point of collection.

- ◆ Sorting is an important component of waste management and best-done onsite. However, there are various stages of sorting. These can be identified as the following:
  - At the source or house hold level,
  - At the community bin (municipal bin),
  - At transfer station or centralised sorting facility,
  - At waste processing site (pre-sorting and post sorting), and
  - At the landfill site.
- ◆ Sorting Operations can be carried out in three ways:
  - Manual sorting
  - Semi-mechanised sorting
  - Fully mechanised sorting
- ◆ Onsite storage is of primary importance because of public health concerns. Open ground storage, make shift containers should always be avoided and only closed containers should be used. Processing at the source involves backyard composting. Storage of wastes can be done at three levels:
  - At source
  - At community level
  - At transfer stations
- ◆ **Collection**

This includes gathering the solid wastes and recyclable materials and transport of these materials to either the processing facility, transfer facility or the disposal site. Types of Collection are:

- i) **Community bins** - They are placed in convenient locations, where the community members carry the waste and throw it in. This method is comparatively cheaper to other methods. This is the most widely adopted method in western countries. For this method to be adopted it is important that the bins are covered, they are aesthetic, they are attended to regularly, kept clean, easy to handle and separate bins are provided for recyclable, mixed, paper and biodegradable waste.
- ii) **Door-to-Door collection** - The waste is placed at the doorstep at a set time when the waste collector arrives. In this method, it is the collector of the waste has the responsibility to collect the waste separately. This method is very convenient for the householder, however requires homeowner cooperation and scheduled service for homeowner cooperation.
- iii) **Block collection** - The collection vehicles arrive at a particular place on a set day and time to collect waste from the households. Households bring their waste containers and empty directly into the vehicle. This method requires a higher homeowner cooperation and scheduled service for homeowner cooperation.

- iv) **Curb side collection** - The homeowner is responsible for placing the containers to be emptied at the curb on the collection day and for returning the empty containers to their storage location until the next collection.
- v) **Street cleansing** is another type of collection method mainly for collection of street litter.

◆ **Sorting, processing and transformation of Solid Waste**

This functional unit encompasses the recovery of the sorted materials, processing of solid waste and transformation of solid waste that occurs primarily in locations away from the source of waste generation. Sorting of the mixed waste usually occurs at a material recovery facility, transfer stations, combustion facilities and disposal sites. Sorting includes separation of bulky items, separation of waste components by size using screens, manual separation of waste components, and separation of ferrous and non-ferrous metals. Waste processing and transformation solid waste processing reduces the amount of material requiring disposal and, in some cases produces a useful product. Examples of solid waste processing technologies include material recovery facilities, where recyclable materials are removed and/or sorted; composting facilities where organics in solid waste undergo controlled decomposition; and waste-to-energy facilities where waste becomes energy for electricity. Land filling continues to be required even if solid waste processing technologies are employed because all of these technologies produce some sort of residue or handle only a portion of the waste stream. For example, land filling is still required for ash and bypass waste(waste that cannot be burnt) from waste-to energy facilities. Thus, solid waste processing technologies do not replace land filling rather they are a part of an integrated system that reduces the amount of material that requires landfill disposal. The different types of processing techniques are given below

**Recycling and reuse** - The process, by which materials otherwise destined for disposal are collected, reprocessed or remanufactured and are reused. The recycling and reuse (the use of a product more than once in its same form for the same or other purpose) sector of waste management in cities of Asian developing countries is potentially high. Its economic assessment is a difficult task since it is practiced in an informal way.

**Composting** is a biological process of decomposition carried out under controlled conditions of ventilation, temperature, moisture and organisms in the waste themselves that convert waste into humus-like material by acting on the organic portion of the solid waste. It produces a sludge, which is high in nutrients and can be used as a fertilizer. This is one element of an integrated solid waste management strategy that can be applied to mixed municipal solid waste (MSW) or to separately collected leaves, yard waste or food waste. There are various methods of composting, which are:

**Bangalore method** - This is an anaerobic method conventionally carried out in pits. The waste and the soil are alternatively laid out in layers and then is covered with a solid layer to prevent flies, odour and water seepage. This material is allowed to decompose for 4 to 6 months after which the stabilised material is taken out and used as compost.

**Indore method** - This method is similar to Bangalore method, however to ensure aerobic condition the material is turned at specific intervals. First turn is given manually after 4-7 days. 2nd turn is given after 5-10 days and further turning is normally not required and the compost is ready in 2 to 4 weeks.

**Windrow composting** - This method is a common method of composting, it involves the stabilisation of organic solid waste through aerobic degradation. The waste is piled in heaps with approximately a height of 3 m, width of 1.5 m and varying lengths. The waste is left for 60 days for decomposition with weekly turnings to aerate the heaps. After which, it can be sieved and the compost is obtained.

**Vermicomposting** - This method is a comparatively new method in composting, it involves the stabilisation of organic solid waste through earthworm consumption that converts the material into earthworm castings. Vermicomposting is the result of combined activity of microorganisms and earthworms. Smaller size aids in faster decomposition of the waste. Waste of high density reflects a high proportion of biodegradable organic matter and moisture. Low-density wastes, on the other hand, indicate a high proportion of paper, plastic and other combustibles. High moisture content causes biodegradable waste fraction to decompose more rapidly than in dry conditions. It also makes the waste rather unsuitable for thermo-chemical conversion (incineration, gasification) for energy recovery, as heat must first be supplied to remove moisture.

**Bio-gasification** - It is also called bio-methanisation. This is the process of decomposing biomass with anaerobic bacteria to produce biogas. This process produces Biogas containing approximately 60:40 mixtures of methane ( $\text{CH}_4$ ), and carbon dioxide ( $\text{CO}_2$ ) and simultaneously generating an enriched sludge fertilizer- with an energy content of 22.5 MJ/m<sup>3</sup>. In Anaerobic digestion (AD) the organic fraction of municipal solid waste offers the advantage of both a net energy gain by producing methane as well as the production of a fertilizer from the residuals.

**Landfill gas recovery** - The waste deposited in a landfill gets subjected, over a period of time to anaerobic conditions and its organic fraction gets slowly volatilised and decomposed. This leads to production of landfill gas containing about 45-55% methane, which can be recovered through a network of gas collection pipes and utilised as a source of energy.

**Thermo chemical conversion** - Incineration is one of the most effective means of dealing with many wastes, which reduces their harmful potential, and often to convert them to energy form. Incineration is the controlled burning of waste in a purpose built facility. It involves the process of direct burning of wastes in the presence of excess air at the temperatures of about 800°C and above (The Expert Committee, 2000). The process sterilises and stabilises the waste. For most wastes, it will reduce its volume to less than a quarter of the original. Most of the combustible material is converted into ash and carbon dioxide. In practice, about 65-80% of the energy content of the organic matter can be recovered as heat energy, which can be utilised either for direct thermal applications, or for producing power.

**Gasification** - Involves thermal decomposition of organic matter at high temperatures in presence of limited amounts of air/oxygen, producing mainly a mixture of combustible and non-combustible gas (carbon monoxide, hydrogen and carbon dioxide).

### **Functional Elements of Municipal Solid Waste Management**

To implement proper waste management, various aspects have to be considered such as waste generation (source reduction), waste handling and sorting, storage and processing at the source (onsite storage), collection, sorting, processing and transformation, transfer and transport, and disposal. Transfer of waste from smaller collection vehicle to a larger transport vehicle and, the subsequent transport of the wastes usually over long distances to a processing or disposal site. The transfer usually takes place at a transfer station.

**Non-engineered disposal** - This is the most common method of disposal in low-income countries, which have no control, or with only slight or moderate controls. They tend to remain for longer time and environmental degradation could be high, include mosquito, rodent and water pollution, and degradation of the land.

**Sanitary Landfill** : This is a fully engineered disposal option, which avoids harmful effects of uncontrolled dumping by spreading, compacting and covering the wasteland that has been carefully engineered before use. The four minimum requirements for setting up a sanitary landfill are full or partial hydrological isolation, formal engineering preparation, and permanent control and planned waste placement and covering. Land filling relies on containment rather than treatment (for control) of wastes. Appropriate liners for protection of the groundwater, leachate collection and treatment, monitoring wells and appropriate final cover design are integral components of an environmentally sound sanitary landfill.

Municipal Solid Waste Management systems in India-

- ◆ The Ministry of Environment and Forests: The Ministry of Environment and Forests is responsible for general aspects related to waste management, and draws up, coordinates the environmental policy and oversees the implementation of the federal legislation regarding waste management.
- ◆ Central Pollution Control Board: Coordinates the activities of the State Pollution Control Boards and provides technical assistance and training to the personnel. Disseminates information to sponsor relating to waste management. Performs functions prescribed by the Government.
- ◆ State Pollution Control Board: Plans a comprehensive programme for the prevention, control or abatement of air pollution and water pollution. To inspect, at all reasonable times, any control equipment or process. Prior to installation of a landfill or incinerator, permission from SPCB must be obtained.
- ◆ City Corporation: City Corporation issues permits and creates policy for waste management. Provides waste management services or operates disposal, recycling, or composting facilities. Often contracts out services to the private sector.

- ◆ Private Formal Sector: Private Formal Sector- participates in performing the functions of collection and transportation of the waste and may operate disposal, transfer, and recycling facilities.
- ◆ Private Informal Sector: Private Informal Sector - collection of the recyclable waste, transfer to the recycling facility and recycling of waste.
- ◆ Donor Agency: Donor Agency helps in sponsoring of innovative projects and projects in low-income areas.
- ◆ Service Users - The people who use the service of municipal waste management

### Recycling

The recycling sector in India has been in operation since the 1960's and while only a fraction of the total plastic waste is being recycled in most western countries around 75% of the plastic wastes are recycled in India. Rag pickers mainly carry out the recycling process in India and they play a vital role in the economy of solid waste recycling process. They feed the need of the intermediary buyers, who, in turn, meet the demand of factories using recyclable solid waste as raw materials. However, the rag pickers do not have sufficient protection and are exposed to waste and sometimes even the hazardous waste present in MSW. A study carried out in 2003 has shown that 75% rag pickers have upper and lower respiratory symptoms<sup>5</sup>. Even the quality of the successively recycled products in the informal sector in terms of their (i) physical appearance (ii) polymeric properties (iii) health hazards (for the recyclers and users of such products involved) are in serious question.

Another aspect to be noted is that plastic carry bags and PET do not figure in the list of priorities for rag pickers, because collecting them is not profitable. This is primarily because the rewards do not match the efforts required for collection, and this leads to plastic bags and PET continuing to pose a major threat to the environment.

#### ◆ Composting

Composting urban waste in India has a long history. Sir Albert Howard developed the Indore process nearly 75 years ago by systemising the traditional process that was carried out in India. Government intervention to promote this practice can be traced to the 1940s and the early 1970s, when the national government initiated a scheme to revive urban composting. However, centralised large-scale composting plants in urban areas promoted in the 1970s proved to be uneconomical. Only a few installations are currently still operational due to high operating and transport costs and the poorly developed market for compost, the expected profits could not be realised as planned. Composting of mixed waste also had a negative effect on compost quality and, thus, on its acceptance by farmers.

From 1990's decentralised composting schemes have been implemented by NGO's with the help of international funding. The decentralised composting schemes became very

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<sup>5</sup> Bani Bhattacharya (March 15th 2005) Yet, life's in tatters, Down to Earth, pp. 4

popular and widespread in a short span of time. Various types of composting have been adopted by these schemes e.g. bin-composting, shallow windrow, pit composting and vermin-composting. However, the maintenance of such schemes proved to be difficult because the household involvement was sporadic, as many people believe that it is the municipal corporation's responsibility to collect waste and do not want to make additional payments. This study states that though decentralised composting has more advantages than centralised composting, the market for MSW compost is limited and is rarely financially competitive to heavily subsidise chemical fertilisers and traditional cow dung or poultry manure.

However, in Class II, Class III and Class IV cities an urban agricultural set up exists and functions, where there is optimal use of municipal solid waste. The farmers buy the organic waste from the municipality at very low costs and use it as manure. There are also companies that have taken over the responsibility of segregating, decontaminating and composting MSW. This high quality compost is then sold to the farmers at a very high cost compared to the raw MSW. It has been observed that the farmers prefer the raw MSW to the processed high quality compost, because the latter is too expensive.

Currently, there are few large-scale composting plants around India that are running successfully. For e.g. composting plant in Hyderabad run by AP technology development and promotion centre (intake of 200MT/day), composting plant in Vijaywada by Exel Industries (intake of 125 MT/day), composting plant in Bangalore by Karnataka Compost Development Authority (KCDC)(intake of 300MT/day) and composting plant in Bangalore by Terra Firma Bio-technologies (100MT capacity)<sup>6</sup> .

#### ◆ Anaerobic Digesters

Biogas is a successful renewable energy technology developed and disseminated in India, second only to improved wood stoves in its spread. Biogas was first introduced to India as an alternative to piped natural gas in 1897 for providing gas-based illumination. The superiority of biogas slurry both as manure as well as compost starter and the cleanliness of the process has been emphasized in several publications of the Indian Agricultural Research Institute (IARI) and other agricultural institutions in the country,<sup>7</sup> However, biogas production has been restricted mostly to rural areas (with cattle dung) and in urban areas (with sewage). The anaerobic digesters used in the rural areas are simple in design and to maintain, but they require constant monitoring and are less efficient. The complex digesters on the other hand, are designed to automatically adjust when environmental conditions change, such as would occur with the feedstock. These are used in developed nations to treat unpredictable waste flows and such digesters would be suitable for processing of MSW. Many studies have been conducted on the use of MSW for production of Biogas. One of the studies suggests that by having decentralised anaerobic digesters in the localities, the odour problem caused by MSW from bins and during long

<sup>6</sup> Garibay, S. V. and Jyothi, K., 2003. Market Opportunities and Challenges for Indian Organic products. Research Institute for Organic Agriculture and AC Nielson ORG-MARG.

<sup>7</sup> Channakya, H. N., Jagadish.K.S, and Rajabapaiah, P., 2002. Biogas plants: Towards a green and organic future. Rural Technology- A 25 year Perspective, Silver jubilee Proc. Volume 2.

transportation distances can be minimised. In India, not many large-scale bio-methanisation plants using MSW have been set up. One of the few bio-methanation plants set up was in Lucknow that consumed 300 MT/day of MSW to generate 75 MT/day of organic manure and 5.1 MW of electricity. This plant was recently shut down, and the main cause for failure was the intake of un-segregated waste.

### Policy/Rule

The Johannesburg World Summit on Sustainable Development<sup>8</sup> in 2002 focused on initiatives to accelerate the shift to sustainable consumption and production, and the reduction of resource degradation, pollution, and waste. The priority was given to waste minimisation, recycle, and reuse followed by the safe disposal of waste to minimise pollution. The government of India started encouraging proper management of solid waste as early as 1960's by giving loans for setting composting plants for MSW. The government of India over the years has taken many initiatives and implemented new technologies and methods. With the rapid urbanisation, the problem of the MSWM problem has compounded and India is awakening to the magnitude of the problem.

Legislation concerning waste is usually differentiated according to the type of waste. International conventions often cover nuclear and hazardous waste, whereas non-hazardous waste, often called solid waste is usually more regulated at the national level. From an environmental angle the following environmental rules, regulations and acts would be the most relevant for SWM:

- ◆ Solid Waste Management Rules (SWM), 2016, notified by the Ministry of Environment, Forests and Climate Change replaces the previous Municipal Solid Wastes (Management and Handling) Rules, 2000. In the said rule, the jurisdiction of the rules have been extended beyond Municipal area.
- ◆ The Water (Prevention and Control of Pollution) Act, 1974. Two aspects have to be kept in mind of this law in regard to MSWM. Firstly, consent from the state pollution control board for establishment of a sanitary landfill site and compost plant is essential and secondly, no water pollution should be caused by the leachate that is emitted by the sanitary landfill site or a compost plant.
- ◆ The Water (Prevention and Control of Pollution) Cess Act, 1977 and amendments thereon. The only aspect that should be considered in this law in regard to MSWM is provision for levying and collection of cess on water consumed for the sanitary landfilling, composting and anaerobic digesters.
- ◆ The Air (Prevention and Control of Pollution) Act, 1981 and amendments thereon. The aspects to be considered in this law with respect to MSWM is the need for obtaining consent from the State Pollution Control Board for establishment of the processing plants and disposal site and from an environmental aspect would be the pollution caused by incineration plants, compost plants and landfill sites.

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<sup>8</sup> [http://www.johannesburgsummit.org/html/documents/summit\\_docs/131302\\_wssd\\_report\\_reissued.pdf](http://www.johannesburgsummit.org/html/documents/summit_docs/131302_wssd_report_reissued.pdf)

- ◆ The Environmental (Protection) Act, 1986 and its subsequent notifications. The aspect in regard to MSWM would be the EIA notification, 1944, which states that for any project to be authorised an EIA report should be submitted first.

### **Solid Waste Management Rules (SWM), 2016**

The MoEF&CC notified the Solid Waste Management Rules (SWM), 2016 which replaces the previous Municipal Solid Wastes (Management and Handling) Rules, 2000. The jurisdiction of the rules have been extended beyond Municipal area to cover, outgrowths in urban agglomerations, census towns, notified industrial townships, areas under the control of Indian Railways, airports, airbase, port and harbour, defence establishments, special economic zones, State and Central government organisations, places of pilgrims, religious and historical importance. These Rules prescribe duty for waste generators and several ministries and departments.

#### **Duties of waste generators**

- ◆ All waste generators shall segregate and store the waste generated by them in three separate streams namely biodegradable, non biodegradable and domestic hazardous wastes in suitable bins and handover segregated wastes to authorised rag pickers or waste collectors;
- ◆ Shall wrap securely the used sanitary waste like diapers, sanitary pads etc in the pouches provided by the manufacturers or brand owners of these products or in a suitable wrapping material and shall place the same in the bin meant for dry waste / non biodegradable waste;
- ◆ Shall store separately construction and demolition waste, as and when generated and dispose off as per the Construction and Demolition Waste Management Rules, 2016;
- ◆ Shall store horticulture waste and garden waste generated from his premises separately and dispose of as per the directions of the local authority;
- ◆ Shall not throw, burn or burry the solid waste generated by him, on streets, open public spaces outside his premises or in the drain or water bodies;
- ◆ Shall pay such user fee for solid waste management, as specified in the bye laws of the local bodies;
- ◆ No person shall organise an event or gathering of more than 100 persons at any unlicensed place without intimating the local authority, at least three working days in advance. Such person or the organiser of such event shall ensure segregation of waste at source and handing over of segregated waste to waste collector or agency as specified by local authority.
- ◆ Every street vendor shall keep suitable containers for storage of waste generated during the course of his activity such as food waste, disposable plates, cups, cans, wrappers, coconut shells, leftover food, vegetables, fruits etc. and shall deposit such

waste at waste storage depot or container or vehicle as notified by the local authority.

- ◆ All Resident Welfare and Market Associations, Gated communities and institution with an area >5,000 sq m and all hotels and restaurant shall, within one year from the date of notification of these rules and in partnership with the local authority ensure segregation of waste at source by the generators as prescribed in these rules, facilitate collection of segregated waste in separate streams, handover recyclable material to either the authorised waste pickers or the authorised recyclers. The bio degradable waste shall be processed, treated and disposed off through composting or bio methanation within the premises as far as possible. The residual waste shall be given to the waste collectors or agency as directed by the local authority.

**Some of the salient features of SWM Rules, 2016 include:**

- 1) The Rules are now applicable beyond Municipal areas and extend to urban agglomerations, census towns, notified industrial townships, areas under the control of Indian Railways, airports, airbase, Port and harbour, defence establishments, special economic zones, State and Central government organisations, places of pilgrims, religious and historical importance.
- 2) The source segregation of waste has been mandated to channelise the waste to wealth by recovery, reuse and recycle.
- 3) Responsibilities of Generators have been introduced to segregate waste in to three streams: wet (biodegradable), dry (plastic, paper, metal, wood, etc.) and domestic hazardous wastes (diapers, napkins, empty containers of cleaning agents, mosquito repellents, etc.) and handover segregated wastes to authorised rag-pickers or waste collectors or local bodies.
- 4) Integration of waste pickers/ ragpickers and waste dealers/ Kabadiwalas in the formal system should be done by State Governments, and Self-Help Group, or any other group to be formed.
- 5) No person should throw, burn, or bury the solid waste generated by him, on streets, open public spaces outside his premises, or in the drain, or water bodies.
- 6) Generator will have to pay 'User Fee' to waste collector and for 'Spot Fine' for Littering and Non-segregation.
- 7) Used sanitary waste like diapers, sanitary pads should be wrapped securely in pouches provided by manufacturers or brand owners of these products or in a suitable wrapping material and shall place the same in the bin meant for dry waste / non-bio-degradable waste.
- 8) The concept of partnership in Swachh Bharat has been introduced. Bulk and institutional generators, market associations, event organisers and hotels and restaurants have been made directly responsible for segregation and sorting the waste and manage in partnership with local bodies.

- 9) All hotels and restaurants should segregate biodegradable waste and set up a system of collection or follow the system of collection set up by local body to ensure that such food waste is utilised for composting / biomethanation.
- 10) All Resident Welfare and market Associations, Gated communities and institution with an area >5,000 sq m should segregate waste at source- in to valuable dry waste like plastic, tin, glass, paper, etc. and handover recyclable material to either the authorised waste pickers or the authorized recyclers, or to the urban local body.
- 11) The biodegradable waste should be processed, treated and disposed of through composting or biomethanation within the premises as far as possible. The residual waste shall be given to the waste collectors or agency as directed by the local authority.
- 12) New townships and Group Housing Societies have been made responsible to develop in-house waste handling, and processing arrangements for biodegradable waste.
- 13) Every street vendor should keep suitable containers for storage of waste generated during the course of his activity such as food waste, disposable plates, cups, cans, wrappers, coconut shells, leftover food, vegetables, fruits, etc. and deposit such waste at waste storage depot or container or vehicle as notified by the local authority.
- 14) The developers of Special Economic Zone, industrial estate, industrial park to earmark at least 5% of the total area of the plot or minimum 5 plots/ sheds for recovery and recycling facility.
- 15) All manufacturers of disposable products such as tin, glass, plastics packaging etc. or brand owners who introduce such products in the market shall provide necessary financial assistance to local authorities for the establishment of waste management system.
- 16) All such brand owners who sale or market their products in such packaging material which are non-biodegradable should put in place a system to collect back the packaging waste generated due to their production.
- 17) Manufacturers or Brand Owners or marketing companies of sanitary napkins and diapers should explore the possibility of using all recyclable materials in their products or they shall provide a pouch or wrapper for disposal of each napkin or diapers along with the packet of their sanitary products.
- 18) All such manufacturers, brand owners or marketing companies should educate the masses for wrapping and disposal of their products.
- 19) All industrial units using fuel and located within 100 km from a solid waste-based RDF plant shall make arrangements within six months from the date of notification of these rules to replace at least 5% of their fuel requirement by RDF so produced.

- 20) Non-recyclable waste having calorific value of 1500 Kcal/kg or more shall not be disposed of on landfills and shall only be utilised for generating energy either or through refuse derived fuel or by giving away as feed stock for preparing refuse derived fuel.
- 21) High calorific wastes shall be used for co-processing in cement or thermal power plants.
- 22) Construction and demolition waste should be stored, separately disposed of, as per the Construction and Demolition Waste Management Rules, 2016.
- 23) Horticulture waste and garden waste generated from his premises should be disposed as per the directions of local authority.
- 24) An event, or gathering organiser of more than 100 persons at any licensed/ unlicensed place, should ensure segregation of waste at source and handing over of segregated waste to waste collector or agency, as specified by local authority.
- 25) Special provision for management of solid waste in hilly areas:- Construction of landfill on the hill shall be avoided. A transfer station at a suitable enclosed location shall be setup to collect residual waste from the processing facility and inert waste. Suitable land shall be identified in the plain areas, down the hill, within 25 kilometers for setting up sanitary landfill. The residual waste from the transfer station shall be disposed of at this sanitary landfill.
- 26) In case of non-availability of such land, efforts shall be made to set up regional sanitary landfill for the inert and residual waste.

**Some significant facets of Solid Waste Management Rules, 2006 are:**

◆ Source segregation of waste and Duties of waste generator

These Rules emphasizes source segregation of waste, a basic need for channelising the waste to wealth by recovery, reuse and recycle. As per the Rules, waste generator (individual; event or gathering organiser; hotels and restaurants; all resident welfare and market associations, gated communities and institution with an area more than 5000 sq.m and SEZ) have to segregate waste into three streams- Biodegradable, Dry (plastic, paper, metal, wood, etc.) and domestic Hazardous Waste (diapers, napkins, mosquito repellents, etc.) before handing it to authorised rag pickers or waste collectors or local bodies.

◆ Introduction of the concept of partnership in Swachh Bharat

Bulk and institutional generators, market associations, event organisers and hotels and restaurants have been made directly responsible for segregation and sorting the waste and manage in partnership with local bodies.

◆ Collection and disposal of sanitary waste

The manufacturers or brand owners of sanitary napkins and diapers shall provide a pouch or wrapper for disposal of each napkin or diapers along with the packet of their

sanitary products. Used sanitary wastes should be wrapped securely in pouches provided by manufacturers or brand owners of the products or in a suitable wrapping material and shall place the same in the bin meant for dry waste/ non-biodegradable waste.

- ◆ Collect back scheme for packaging waste

As per the rules, all brand owners who sale or market their products in such packaging material which are non-biodegradable should put in place a system to collect back the packaging waste generated due to their production.

- ◆ User fee and spot fine

The new rules have given power to the local bodies across India to decide the user fees. Generator will have to pay 'user fee' to waste collector and a 'spot fine' for littering and non-segregation. The rules also stipulate zero tolerance for throwing; burning, or burying the solid waste generated on streets, open public spaces outside the generator's premises, or in the drain, or water bodies.

- ◆ Promotion of marketing and utilisation of compost

The Department of Fertilizers, Ministry of Chemicals and Fertilizers shall provide market development assistance on city compost and ensure promotion of co-marketing of compost with chemical fertilizers in the ratio of 3 to 4 bags: 6 to 7 bags by the fertilizer companies to the extent compost is made available for marketing to the companies. The Ministry of Agriculture shall provide flexibility in fertilizer control order for manufacturing and sale of compost, propagating utilisation of compost on farm land set up laboratories to test quality of compost produced by local authorities or their authorised agencies. This will make the compost plants economically viable and improve the gainful utilisation of waste.

- ◆ Promotion of waste to energy

Ministry of Power shall fix tariff or charges for the power generated from the waste to energy plants based on solid waste and ensure compulsory purchase of power generated from such waste to energy plants by DISCOMs. The Ministry of New and Renewable Energy Sources shall facilitate infrastructure creation for waste to energy plants and provide appropriate subsidy or incentives for such waste to energy plants. All industrial units using fuel and located within 100 km from a solid waste-based Refuse-Derived Fuel (RDF) plant shall make arrangements within six months from the date of notification of these rules i.e. 18 March 2016 to replace at least 5% of their fuel requirement by RDF so produced.

- ◆ Criteria and standards for waste treatment facility and pollution control

As per the new rules, the landfill site shall be 100 meters away from a river, 200 meters from a pond, 500, 200 meters away from highways, habitations, public parks and water supply wells and 20 km away from airports/airbase. Emission standards are completely amended and include parameters for dioxins, furans, reduced limits for particulate

matters from 150 to 100 and now 50. Also, the compost standards have been amended to align with Fertilizer Control Order.

- ◆ Management of waste in hilly areas

Construction of landfill on the hill shall be avoided. A transfer station at a suitable enclosed location shall be set up to collect residual waste from the processing facility and inert waste. Suitable land shall be identified in the plain areas, down the hill, within 25 kilometers for setting up sanitary landfill. The residual waste from the transfer station shall be disposed of at this sanitary landfill.

- ◆ Duties of Secretary, State Urban Development Department, the Commissioner Municipal Administration, Director of Local Bodies, Local authorities and Village Panchayats.

Detailed duties and responsibilities have been assigned to the Secretary, state Urban Development Department, the Commissioner Municipal Administration, Director of Local Bodies, Local authorities and Village Panchayats. They are responsible for preparation of state policy and solid waste management strategy in consultation with stakeholders including representative of waste pickers, self-help group and similar groups working in the field of waste management.

- ◆ Duties of Ministry of Urban Development

Being the nodal Ministry on the subject Solid Waste Management, more responsibilities have been assigned to MoUD. State Urban Development Department should: a) prepare a state policy on solid waste management; b) ensure identification and allocation of suitable land for setting up processing and disposal facilities for solid wastes within one year and incorporate them in the master plan; c) undertake training and capacity building of local bodies and other stakeholders.

- ◆ Constitution of a central monitoring committee

The government has also constituted a Central Monitoring Committee under the chairmanship of Secretary, MoEF&CC to monitor the overall implementation of the rules. The committee comprising of various stakeholders from the central and state governments will meet once a year to monitor the implementation of these rules.

A more systematic way of thinking and looking at waste management is provided by an approach called sustainable and integrated solid waste management. Sustainable and integrated SWM puts into a focal matrix the urgent planning aspects including the environmental, socio-cultural, institutional, political, and legal aspects as well as the important role of stakeholders (rag pickers, the informal recycling sector, small-scale enterprises, women heads of household) and the other elements of the waste management system, such as prevention, reuse and recycling, collection, street sweeping, and disposal.

Sustainable and integrated SWM is an integral part of good local governance because it is one of the most visible urban services influencing local perceptions of governance. It

is conducted in a transparent and accountable manner to minimise opportunities for corruption and unwarranted political interference.

Sustainable and integrated SWM recognises that willingness to pay is affected by perceptions of the service quality received and by the involvement of stakeholders in decision making; it therefore places a high priority on keeping stakeholders informed about and involved in issues and proposals. Furthermore, it looks for ways to enable communities to be responsible and for individuals to take action in ways that build public cooperation with the service. Sustainable and integrated SWM provides workers with uniforms and safe working conditions and defines clear collection routes and verifiable performance tasks and outputs. To do so, it establishes management information systems that enable cost-effective accounting and overall cost-related performance monitoring. Sustainable and integrated SWM provides economical service delivery and establishes cost-recovery mechanisms for long-term sustainability. A modern SWM programme can be implemented for a reasonable cost.

Sustainable and integrated SWM involves environmental impact assessment and public involvement for all new transfer, treatment, and disposal facilities, and it ensures that those facilities are designed to meet environmentally cost-effective discharge and impact standards. It monitors the emissions and environmental changes related to all waste storage, handling, and disposal activities and uses systems to track and document hazardous waste. Those systems ensure that significant quantities are not mixed with other waste but are instead taken to secure facilities for treatment and disposal. Sustainable and integrated SWM embraces public participation: planning and operations are participatory and enable continuous feedback from those involved in receiving and in providing service. It sensitises the public to environmental issues, occupational health and safety issues, waste minimisation opportunities, and the values of recycling and resource recovery. Adequate local authority and autonomy is provided to enable good municipal governance of the solid waste sector and self-sustainable financing and cost recovery. Sustainable and integrated SWM also allows local governments to enter multiyear private sector arrangements that match periods of depreciation for investments and that strengthen local capacity in planning, operation, and rationalisation of operations.

#### 43.4 Electronic Waste (E-Waste)

Solid waste management, which is already a mammoth task in India, is becoming more complicated by the invasion of e-waste, particularly computer waste. E-waste from developed countries find an easy way into developing countries in the name of free trade is further complicating the problems associated with waste management. *Electronic Waste* or *Waste Electrical and Electronic Equipment* (WEEE) are terms used to describe end of life or discarded appliances using electricity. It includes



computers, consumer electronics, mobile phones, air conditioners, digital diaries, etc. Some electronic scrap components, such as CRTs contain contaminants such as lead, cadmium, beryllium, mercury, and brominated flame retardants. In developed countries recycling and disposal of e-waste may involve significant risk to workers and communities and adequate care must be taken to avoid unsafe exposure in recycling operations and leaching of material such as heavy metals from landfills. The communities that are affected by the toxics in e-waste need not necessarily be those that are creating the waste.

The electronic industry is the world's largest and fastest growing manufacturing industry incinerator ashes. During the last decade, it has assumed the role of providing a forceful leverage to the socio-economic and technological growth of a developing society. The consequence of its consumer oriented growth combined with rapid product obsolescence and technological advances are a new environmental challenge - the growing menace of "Electronics Waste" or "e-waste" that consists of obsolete electronic devices. It is an emerging problem as well as a business opportunity of increasing significance, given the volumes of e-waste being generated and the content of both toxic and valuable materials in them.

A 2010 report by UNEP (United Nations Environment Programme) forecasted that by 2020, e-waste in India from old computers will jump by 500% from 2007 and discarded mobile phones, televisions will add to the numbers. As per a study by ASSOCHAM as many as 8,500 mobile phones, 5,500 TVs and 3,000 personal computers are dismantled in Delhi every day for reuse of their component parts and materials. It is estimated that over 150,000 workers are employed in official and unofficial e-recycling units. There are 97 authorised e-waste recyclers in India (27 in Karnataka, 18 in Maharashtra, 15 in Uttar Pradesh, 11 in Tamil Nadu, 6 in Rajasthan, 5 in Gujarat).

### **Regulation of Electronic Waste in India**

As there is no separate collection of e-waste in India, there is no clear data on the quantity generated and disposed of each year and the resulting extent of environmental risk. The preferred practice to get rid of obsolete electronic items in India is to get them in exchange from retailers when purchasing a new item. The business sector is estimated to account for 78% of all installed computers in India. Obsolete computers from the business sector are sold by auctions. Sometimes educational institutes or charitable institutions receive old computers for reuse. It is estimated that the total number of obsolete personal computers emanating each year from business and individual households in India will be around 1.38 million.

To combat the ever growing e-waste problem, there is a need for strong rules and regulations in place. Despite a wide range of environmental legislation in India there are no specific laws or guidelines for electronic waste or computer waste. As per the Hazardous Waste Rules (1989), e-waste is not treated as hazardous unless proved to have higher concentration of certain substances. Though PCBs and CRTs would always exceed these parameters, there are several grey areas that need to be addressed. Basel Convention

has Waste electronic assemblies in A1180 and mirror entry in B1110, mainly on concerns of mercury, lead and cadmium. Electronic waste is included under List-A and List-B of Schedule-3 of the Hazardous Wastes (Management and Handling) Rules, 1989 as amended in 2000 and 2003. The import of this waste therefore requires specific permission of the Ministry of Environment and Forests.

The Government of India notified the E-Waste (Management) Rules, 2016 vide G.S.R. 338(E) dated 23.03.2016 which came to force on October 10, 2016. The E-Waste (Management) Rules, 2016 are applicable to each producer, consumer, dismantler, recycler, bulk consumer and collector of E-waste involved in the sale, manufacture, purchase, processing and use of the electrical and electronic equipment or components as are specified in the schedule-1 of the said rules. The salient features of the E-Waste (Management) Rules, 2016 are as follows:

- 1) Compact Fluorescent Lamp (CFL) and other mercury containing lamp brought under the purview of rules;
- 2) Collection is now exclusively Producer's responsibility, which can set up collection centre or point or even can arrange buy back mechanism for such collection;
- 3) Single EPR Authorisation for Producers is now being made CPCB's responsibility to ensure pan India implementation;
- 4) Option has been given for setting up of PRO, e-waste exchange, e-retailer, Deposit Refund Scheme as additional channel for implementation of EPR by Producers to ensure efficient channelisation of e-waste;
- 5) Collection and channelisation of e-waste in Extended Producer Responsibility - Authorisation shall be in line with the targets prescribed in Schedule III of the Rules;
- 6) Pan India EPR authorisation by CPCB;
- 7) Deposit Refund Scheme has been introduced as an additional economic instrument wherein the producer charges an additional amount as a deposit at the time of sale of the electrical and electronic equipment and returns it to the consumer along with interest when the end-of-life electrical and electronic equipment is returned;
- 8) The e-waste exchange as an option has been provided in the rules;
- 9) To collect e-waste generated during the manufacture of any electrical and electronic equipment and channelise it for recycling or disposal and seek authorisation from SPCB; in the case the dealer has been given the responsibility of collection on behalf of the producer, the dealer shall collect the e-waste by providing the consumer a box Dealer or retailer or e-retailer shall refund the amount as per take back system or Deposit Refund Scheme of the producer to the depositor of e-waste;
- 10) Collect e-waste generated during the process of refurbishing and channelise the waste to authorised dismantler or recycler through its collection centre and seek one time authorisation from SPCB;

- 11) Bulk Consumer is being redefined by adding 'and health care facilities which have turnover of more than one crore or have more than twenty employees'. They need to file annual returns;
- 12) The roles of the State Government has been also introduced in the Rules in order to ensure safety, health and skill development of the workers involved in the dismantling and recycling operations;
- 13) Provision on Reduction of Hazardous Substances (RoHS) and related Schedule II has been revised in line with existing EU regulatory framework which forms the basis of the provision;
- 14) The transportation of e-waste shall be carried out as per the manifest system whereby the transporter shall be required to carry a document (three copies) prepared by the sender, giving the details as per Form-6;
- 15) Liability for damages caused to the environment or third party due to improper management of e-waste including provision for levying financial penalty for violation of provisions of the Rules has also been introduced;
- 16) Urban Local Bodies (Municipal Committee/Council/Corporation) has been assign the duty to collect and channelised the orphan products to authorised dismantler or recycler.

### 43.5 Plastic Waste

Because of need for plastic in several sectors in India such as the automotive, construction, electronics, healthcare, and textiles, the Indian plastic industry is witnessing rapid growth. Plastic industry in India are likely to further witness growth owing to various government initiatives, such as Make in India, Skill India, Digital India, and the Swachh Bharat Abhiyan. However, this plastic production comes at the cost of environment degradation. It is pertinent to mention that 15,342 tonnes of plastic waste is generated per day and as per Central Pollution Control Board, plastic waste contribute to about 8% of the generated solid waste in the India.

It is pertinent to mention that the per capita waste generation in India has seen a firm rise from 0.44 kg/day in 2001 to 0.5 kg/day and has been estimated to be growing at a rate of 1.33% per annum.

#### Regulation of Plastic Waste in India

To regulate the manufacture and usage of plastic carry bags, the Union Ministry drafted "Plastics (Manufacture, Usage and Waste Management) Rules, 2009" to replace the Recycled Plastics Manufacture and Usage Rules, 1999 (amended in 2003). The draft rules were widely published for public comments. An expert committee was constituted by the Ministry to examine these comments and to suggest economic instruments. These Rules have been finalised as Plastic Waste (Management and Handling) Rules, 2011 and notified on 4 February 2011. The 2011 rules were succeeded by the Plastic Waste

Management Rules, 2016 which was far more comprehensive and sought to effectively address the issue of plastic waste. This version of the rules extended its purview and applicability to rural areas and plastic importers in the supply chain. Further, the minimum thickness of plastic carry bags was increased from 40 micron to 50 micron.

The 2016 rules were revised to be known as the Plastic Waste Management (Amendment) Rules 2018 to include three major changes, i.e., (1) the rules notify that under Section 9(3), the term 'non-recyclable multi-layered plastic' has been substituted by 'multi-layered plastic which is non-recyclable or non-energy recoverable or with no alternate use'; (2) Section 15 dealing with the pricing of carry bags has been omitted and (3) the new rules attempt to establish a centralised registration system by mandating brand owners and producers operating in more than two states to register with the CPCB.

Salient features of Plastic Waste Management Rules, 2016 are as follows:

- 1) Carry bag made of virgin or recycled plastic, shall not be less than fifty microns in thickness;
- 2) Waste Generators including institutional generators, event organisers shall not to litter the plastic waste segregate waste and handover to authorised agency. Pay user fee as prescribed by ULB and spot fine in case of violation.;
- 3) Producer, Brand Owner need to work out modalities for waste collection system for collecting back the plastic waste within a period of six months in consultation with local authority / State Urban Development Department and implement with two years thereafter. This plan shall be submitted to the SPCB while applying for Consent to Establish or Operate or Renewal;
- 4) Promote use of plastic waste for road construction as per Indian Road Congress guidelines or energy recovery or waste to oil, etc.;
- 5) Shall not renew registration of producer unless the producer possesses and action plan endorsed by the Secretary in charge of Urban Development for setting of plastic waste management system; and
- 6) The Department dealing the land allotment in the State Government shall be responsible to provide land for establishing waste management facility.

## 43.6 Construction and Demolition Waste

Construction and demolition waste is generated whenever any construction/demolition activity takes place, such as, building roads, bridges, fly over, subway, remodelling, etc. It consists mostly of inert and non-biodegradable material such as concrete, plaster, metal, wood, plastics, etc.

Construction and demolition waste is usually considered to be of high volume, low risk.

Components of Construction and Demolition Waste are represented in the table below:

Major Components	Minor Components
Cement concrete	Conduits (iron, plastic)
Bricks	Pipes (GI, iron, plastic)
Cement plaster	Electrical fixtures (copper/aluminium wiring, wooden baton, bakelite/plastic switches, wire insulation)
Steel (from RCC, door/window frames, roofing support, railings of staircase etc.)	Panels (wooden, laminated)
Rubble	Others (glazed tiles, glass panes)
Stone (marble, granite, sand stone)	
Timber/wood (especially demolition of old buildings)	

These Government have notified the Construction and Demolition Waste Management Rules, 2016. These rules apply to every waste resulting from construction, re-modelling, repair and demolition of any civil structure of individual or organisation or authority who generates construction and demolition waste such as building materials, debris, rubble.

Salient features of the Construction and Demolition Waste Management Rules, 2016 are:

### 1) Application

- a) Applies to everyone who generates construction and demolition waste.

### 2) Duties of waste Generators

- a) Every waste generator shall segregate construction and demolition waste and deposit at collection centre or handover it to the authorised processing facilities.
- b) Shall ensure that there is no littering or deposition so as to prevent obstruction to the traffic or the public or drains.
- c) Large generators (who generate more than 20 tons or more in one day or 300 tons per project in a month) shall submit waste management plan and get appropriate approvals from the local authority before starting construction or demolition or remodelling work.
- d) Large generators shall have environment management plan to address the likely environmental issues from construction, demolition, storage, transportation process and disposal / reuse of C&D Waste.
- e) Large generators shall segregate the waste into four streams such as concrete, soil, steel, wood and plastics, bricks and mortar.
- f) Large generators shall pay relevant charges for collection, transportation, processing and disposal as notified by the concerned authorities.

### 3) Duties of Service providers and Contractors

- a) The service providers shall prepare a comprehensive waste management plan for waste generated within their jurisdiction, within six months from the date of notification of these rules,
- b) Shall remove all construction and demolition waste in consultation with the concerned local authority on their own or through any agency.

### 4) Duties of State Government and Local Authorities

- a) The Secretary, UDD in the State Government shall prepare their policy with respect to management of construction and demolition of waste within one year from date of final notification of these rules.
- b) The concerned department in the State Government dealing with land shall provide suitable sites for setting up of the storage, processing and recycling facilities for construction and demolition waste with one-and-a-half years from date of final notification of these rules.
- c) The Town and Country planning Department shall incorporate the site in the approved land use plan so that there is no disturbance to the processing facility on a long-term basis.
- d) Shall procure and utilise 10-20% materials made from construction and demolition waste in municipal and Government contracts.
- e) Local Authority shall place appropriate containers for collection of waste, removal at regular intervals, transportation to appropriate sites for processing and disposal.
- f) LA shall seek detailed plan or undertaking from large generator of construction and demolition waste and sanction the waste management plan.
- g) Seek assistance from concerned authorities for safe disposal of construction and demolition waste contaminated with industrial hazardous or toxic material or nuclear waste if any.
- h) LA shall give appropriate incentives to generator for salvaging, processing and or recycling preferably in-situ.
- i) LA shall establish a data base and update once in a year.
- j) Million plus cities (based on 2011 census of India), shall commission the processing and disposal facility within one-and-a-half years from date of final notification of these rules.
- k) 0.5 to 1 million cities, shall commission the processing and disposal facility within two years from date of final notification of these rules.
- l) for other cities (< 0.5 million populations), shall commission the processing and disposal facility within three years from date of final notification of these rules.

- 5) Duties of Central Pollution Control Board, State Pollution Control Board or Pollution Control Committee**
- a) The Central Pollution Control Board shall prepare operational guidelines related to environmental management of construction and demolition waste.
  - b) SPCB shall grant authorisation to construction and demolition waste processing facility.
  - c) Monitor the implementation of these rules by the concerned local bodies.
  - d) Submit annual report to the Central Pollution Control Board and the State Government.
- 6) Standards for products of construction and demolition waste**
- a) The Bureau of Indian Standards need to prepare code of practices and standards for products of construction and demolition waste.
  - b) Indian Roads Congress need to prepare standards and practices pertaining to products of construction and demolition waste in roads construction.
- 7) Duties of Central Ministries**
- a) The Ministry of Urban Development, and the Ministry of Rural Development, Ministry of Panchayat Raj, shall facilitate local bodies in compliance of these rules;
  - b) The Ministry of Environment, Forest and Climate Change shall review implementation of these rules as and when required.
- 8) Facility for processing / recycling facility**
- a) The operator of the facility shall obtain authorisation from State Pollution Control Board or Pollution Control Committee.
  - b) The processing / recycling site shall be away from habitation clusters, forest areas, water bodies, monuments, national parks, wetlands and places of important cultural, historical or religious interest.
  - c) The processing/recycling facility exceeding five tonnes per day capacity shall maintain a buffer zone of no development around the facility.

## 43.7 Industrial Waste

The Environmental Protection Act defines industrial waste as “The waste from a factory, or from any premises used for, or in connection with provision of public transport; public supply of gas, water, electricity or sewerage services; or provision to the public of postal or communication services.”

The rapid economic growth of India has led to an increase in generation of industrial waste. As such, even though there are laws requiring for pollution control measures,

industries usually dumped their waste on land or discharge them into water bodies, without adequate treatment, and thus industrial waste has become a significant source of environmental pollution and health hazard.

Industrial waste could be both hazardous or non-hazardous. This unit discusses only hazardous waste.

Hazardous wastes produced from various industries in India. The major HW generating industries in India include petrochemicals, pharmaceuticals, pesticides, paint and dye, petroleum, fertilisers, asbestos, caustic soda, inorganic chemicals and general engineering industries. HW from these industrial sectors contains heavy metals, cyanides, pesticides, complex aromatic compounds and other chemicals, which are toxic, flammable, reactive, and corrosive or have explosive properties.

It is presumed that about 10 to 15% of waste produced by industries are hazardous and the generation of hazardous wastes is increasing at the rate of 2 to 5% per year<sup>9</sup>.

Hazardous waste is regulated by the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016. These rules apply to the management of hazardous and other wastes as specified in the Schedules to these rules.

The salient features of Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 include the following:

- 1) The ambit of the Rules has been expanded by including 'Other Waste'.
- 2) Waste Management hierarchy in the sequence of priority of prevention, minimisation, reuse, recycling, recovery, co-processing; and safe disposal has been incorporated.
- 3) All the forms under the rules for permission, import/export, filing of annual returns, transportation, etc. have been revised significantly, indicating the stringent approach for management of such hazardous and other wastes with simultaneous simplification of procedure.
- 4) The basic necessity of infrastructure to safeguard the health and environment from waste processing industry has been prescribed as Standard Operating Procedure (SOPs), specific to waste type, which has to be complied by the stakeholders and ensured by SPCB/PCC while granting such authorisation.
- 5) Procedure has been simplified to merge all the approvals as a single window clearance for setting up of hazardous waste disposal facility and import of other wastes.
- 6) Co-processing as preferential mechanism over disposal for use of waste as supplementary resource, or for recovery of energy has been provided.
- 7) The approval process for co-processing of hazardous waste to recover energy has been streamlined and put on emission norms basis rather than on trial basis.
- 8) The process of import/export of waste under the Rules has been streamlined by simplifying the document-based procedure and by revising the list of waste regulated for import/export.

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<sup>9</sup> [http://www.eai.in/ref/ae/wte/typ/clas/india\\_industrial\\_wastes.html](http://www.eai.in/ref/ae/wte/typ/clas/india_industrial_wastes.html)

- 9) The import of metal scrap, paper waste and various categories of electrical and electronic equipment for re-use purpose has been exempted from the need of obtaining Ministry's permission.
- 10) The basic necessity of infrastructure to safeguard the health and environment from waste processing industry has been prescribed as Standard Operating Procedure (SOPs) specific to waste type.
- 11) Responsibilities of State Government for environmentally sound management of hazardous and other wastes have been introduced as follows:
  - a) To set up/ allot industrial space or sheds for recycling, pre-processing and other utilisation of hazardous or other waste.
  - b) To register the workers involved in recycling, pre-processing and other utilisation activities.
  - c) To form groups of workers to facilitate setting up such facilities.
  - d) To undertake industrial skill development activities and ensure safety and health of workers.
- 12) List of processes generating hazardous wastes has been reviewed taking into account technological evolution in the industries.
- 13) List of Waste Constituents with Concentration Limits has been revised as per international standard and drinking water standard.
- 14) State Government is authorised to prepare integrated plan for effective implementation of these provisions, and have to submit annual report to Ministry of Environment, Forest and Climate Change.
- 15) State Pollution Control Board is mandated to prepare an annual inventory of the waste generated; waste recycled, recovered, utilised including co-processed; waste re-exported and waste disposed and submit to the Central Pollution Control Board by the 30th day of September every year.

## 43.8 International Scenario on Waste Management

There are two key sources which are suggestive of international waste management law regime are international custom and treaties.

International custom ranges in a spectrum from general principle to customary rule, with a customary rule being a strong form of a general principle of law. Principle 2 of the Rio Declaration represents State sovereignty and gives States the right to exploit their own natural resources provided they do not cause transboundary environmental damage, thus impacting on another State's right to exploit its own natural resources. According to principles of State sovereignty, a State can generate waste as abundantly as it wishes, dispose of its waste in whatever manner it sees fit with the key proviso that the waste must remain within its territory.

The London Convention 1972 and the Basel Convention 1989 are the two primary multilateral treaties concerned with the management of waste.

The London Convention and its 1996 Protocol establishes the trajectory in the development of international waste management law built upon precaution. The Basel Convention continues with this principle, but tightens it to a principle of prevention. The Convention prohibits the shipment of hazardous waste to non- Parties, as well as prohibiting shipments of waste to States that have barred the import of such waste. Where the shipment is not prohibited, the Convention establishes a system of control. The proposed amendment to the Convention takes the Convention substantially further from this value neutral system of control. Rather than leaving it for States to decide if they do not want to import waste, the amendment proposes to prohibit the disposal of hazardous waste from developed in developing States, and to phase out this export where the waste is to be recycled. Through this ban, the Basel Convention moves from a system of control to a system of prevention.

The precautionary principle has a strong and strengthening influence on international law. *Gabcikovo-Nagymaros case*, Judge Weeramantry in a separate opinion to the ICJ affirmed that the precautionary principle is a constituent of the broader legal concept of sustainable development which has worldwide acceptance.

### 43.9 Sustainable and Integrated SWM

A more systematic way of thinking and looking at waste management is provided by an approach called sustainable and integrated solid waste management. Sustainable and integrated SWM puts into a focal matrix the urgent planning aspects including the environmental, socio-cultural, institutional, political, and legal aspects as well as the important role of stakeholders (rag pickers, the informal recycling sector, small-scale enterprises, women heads of household) and the other elements of the waste management system, such as prevention, reuse and recycling, collection, street sweeping, and disposal.

Sustainable and integrated SWM is an integral part of good local governance because it is one of the most visible urban services influencing local perceptions of governance. It is conducted in a transparent and accountable manner to minimise opportunities for corruption and unwarranted political interference.

Sustainable and integrated SWM recognises that willingness to pay is affected by perceptions of the service quality received and by the involvement of stakeholders in decision making; it therefore places a high priority on keeping stakeholders informed about and involved in issues and proposals. Furthermore, it looks for ways to enable communities to be responsible and for individuals to take action in ways that build public cooperation with the service. Sustainable and integrated SWM provides workers with uniforms and safe working conditions and defines clear collection routes and verifiable performance tasks and outputs. To do so, it establishes management information systems that enable cost-effective accounting and overall cost-related performance

monitoring. Sustainable and integrated SWM provides economical service delivery and establishes cost-recovery mechanisms for long-term sustainability. A modern SWM programme can be implemented for a reasonable cost.

Sustainable and integrated SWM involves environmental impact assessment and public involvement for all new transfer, treatment, and disposal facilities, and it ensures that those facilities are designed to meet environmentally cost-effective discharge and impact standards. It monitors the emissions and environmental changes related to all waste storage, handling, and disposal activities and uses systems to track and document hazardous waste. Those systems ensure that significant quantities are not mixed with other waste but are instead taken to secure facilities for treatment and disposal. Sustainable and integrated SWM embraces public participation: planning and operations are participatory and enable continuous feedback from those involved in receiving and in providing service. It sensitises the public to environmental issues, occupational health and safety issues, waste minimisation opportunities, and the values of recycling and resource recovery. Adequate local authority and autonomy is provided to enable good municipal governance of the solid waste sector and self-sustainable financing and cost recovery. Sustainable and integrated SWM also allows local governments to enter multiyear private sector arrangements that match periods of depreciation for investments and that strengthen local capacity in planning, operation, and rationalisation of operations.

## 43.10 Conclusion

The current practices of waste management in India suffer from a number of drawbacks like the difficulty in inventorisation, unhealthy conditions of informal recycling, inadequate legislation, poor awareness and reluctance on part of the corporate to address the critical issues. The consequences are that (i) toxic materials enter the waste stream with no special precautions to avoid the known adverse effects on the environment and human health, and (ii) resources are wasted when economically valuable materials are dumped or unhealthy conditions are developed during the informal recycling.

World Bank Report suggests supporting countries to make critical solid waste management financing, policy, and planning decisions is key and observes following solutions:

- ◆ Providing financing to countries most in need, especially the fastest growing countries, to develop state-of-the-art waste management systems.
- ◆ Supporting major waste producing countries to reduce consumption of plastics and marine litter through comprehensive waste reduction and recycling programs.
- ◆ Reducing food waste through consumer education, organics management, and coordinated food waste management programmes.



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**COURSE 6:  
ENVIRONMENT PROTECTION  
MECHANISMS**

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# INTRODUCTION TO PUBLIC INTEREST LITIGATION

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### 44.1 Introduction

The Constitution of India follows parliamentary system of government. The Constitution was adopted by the India Constituent Assembly on 26 November 1949, and came into effect on 26 January 1950. The Constitution of India is the document which defines the manner in which the country is to be governed. It embodies within itself the founding faiths of the nation and guiding principles for its governance. In the Preamble to the Constitution it is stated that the people of India have resolved to secure to all the citizen' justice - social, economic and political, liberty of thought, expression, belief, faith and worship, equality of status and of opportunity and to promote fraternity among all. Actions of the three branches of the government - Legislature, Executive, and Judiciary - have to be in consonance with the constitutional mandate and guiding philosophy of the Preamble.

Another important feature of the Indian Constitution is Judicial Review. In the Indian Constitution, judicial review is dealt with under Article 13. Judicial review refers that the Constitution is the supreme power of the nation and all laws are under its supremacy. Article 13 states that:

- 1) All pre-constitutional laws, if in part or completely in conflict with the Constitution, shall have all conflicting provisions deemed ineffective until an amendment to the Constitution ends the conflict. In such situation the provision of that law will again come into force, if it is compatible with the constitution as amended. This is called the *Doctrine of Eclipse*.

- 2) In a similar manner, laws made after adoption of the Constitution by the Constituent Assembly must be compatible with the constitution, otherwise the laws and amendments will be deemed to be void *ab initio*.
- 3) In such situations, the Supreme Court or High Court interprets the laws to decide if they are in conformity with the Constitution. If such an interpretation is not possible because of inconsistency, and where a separation is possible, the provision that is inconsistent with the Constitution is considered to be void. In addition to Article 13, Articles 32, 226 and 227 provide a constitutional basis to judicial review in India.

Despite the laudatory goals set out in the Preamble and the fundamental rights guaranteed by the Constitution, there are still a lot of issues. The poor, the uneducated, the socially backward do not know their rights; and others are too scared to raise a voice against their oppressor. To overcome such practical implementation problems with access to justice, the Supreme Court of India in 1970s started a new kind of proceedings before itself (and which was soon adopted by the High Courts) called Public Interest Litigation. This form of proceedings allowed persons, who would otherwise probably not have any standing before the Court, to represent disadvantaged sections of society who are unable to fight for their fundamental rights and other rights.

In Indian law, **Article 32** of the Indian Constitution contains a tool which directly joins the public with judiciary. A PIL may be introduced in a court of law by the court itself (*suo motu*), rather than the aggrieved party or another third party. For the exercise of the court's jurisdiction, it is not necessary for the victim of the violation of his or her rights to personally approach the court. In a PIL, the right to file suit is given to a member of the public by the courts through judicial activism. The member of the public may be NGO, an institution or an individual. The Supreme Court, rejecting the criticism of judicial activism, has stated that the judiciary has stepped in to give direction because due to executive inaction, the laws enacted by Parliament and the state legislatures for the poor since independence have not been properly implemented.

The need for PILs is not only for the marginalised sections of society but also because in cases where a voice is raised to challenge administrative action (or inaction), there is may be one to hear it. The legislature and executive may be plagued by inaction towards its own public duty and to the demands of people whose rights are being violated or who are being affected by the administrative indifference.

The law relating to Public Interest Litigation (PIL) has evolved over the last four decades. PILs have been filed on behalf of a wide spectrum of subject areas and for varied causes - from prisoners' rights to rights of minimum wage earners, from rights of child labourers to right to pollution free air, from harassment at work place to corruption in bureaucracy. The response of the Courts to the PILs have also been very progressive and, in fact, innovative at times. In some cases, the Courts have chosen to monitor the compliance of its orders by the Executive on a regular basis and in some cases, they have disposed of the matters with a single order. In some cases, in appreciation of the work done by the person bringing the matter to court, the Court has directed the party to pay the costs of the litigation to such person.

While the need for PIL proceedings in a country like India is undeniable, Courts in the recent past have on a number of occasions commented that people who are fighting for their personal interests in the garb of filing a PIL should not be entertained and that the Court should not have to waste time on frivolous and vexatious petitions.

In this unit we will study the history of PILs proceedings in India, and will study how the Courts have loosened the restrictions with regard to standing before the Court. We will also look at some of the distinguishing features PIL type of litigation. Throughout the chapter, examples of PILs before the Courts will be referred to, particularly in the context of environmental law. We will finally discuss some of the ways in which the Courts are regulating the PILs filed before them.

## 44.2 Public Interest Litigation - An Overview

Public Interest Litigation as the name suggests is litigation in the interest of the public. It is in the interest of these people that PILs as a type of proceedings were initiated by the Supreme Court in 1970s in which other persons were allowed to represent them. In the last two decades the scope of PILs have extended considerably and are now filed not only to espouse the rights of a certain disadvantaged group but also to demand governmental action on a certain issue, to fight a cause such as protection of the environment, or to raise important constitutional questions. In Indian law, public interest litigation means litigation for the protection of the public interest. It is litigation introduced in a court of law, not by the aggrieved party but by the court itself or by any other private party. It is not necessary, for the exercise of the court's jurisdiction, that the person who is the victim of the violation of his or her right should personally approach the court. Public interest litigation is the power given to the public by courts through judicial activism. However, the person filing the petition must prove to the satisfaction of the court that the petition is being filed for a public interest and not just as a frivolous litigation by a busy body.

Such cases may occur when the victim does not have the necessary resources to commence litigation or his freedom to move court has been suppressed or encroached upon. The court can itself take cognizance of the matter and proceed suo motu or cases can commence on the petition of any public-spirited individual.

PILs do not find a mention in the text of the Constitution. But they have proved to be an extremely crucial tool in cases in which the rights enshrined in the Constitution are violated or the government fails to perform its public duties. PILs are not restricted to cases in which fundamental rights are violated. They can be filed even when statutory rights of a certain group of persons have been violated or a public duty owed to the citizenry by the government has not been performed.

PILs can be brought before the Supreme Court of India under Article 32 and before the High Courts under Article 226 of the Constitution of India. Under Article 32, a person can approach the Supreme Court if her fundamental right is violated. There is no restriction on the kind of orders the Supreme Court can give when it is exercising its jurisdiction

under this Article. High Courts can be approached under Article 226 for violation of fundamental rights and other rights.

### *Locus Standi*

The seeds of the concept of public interest litigation were initially sown in India by Krishna Iyer J., in 1976 in *Mumbai Kamagar Sabha v. Abdul Thai* (AIR 1976 SC 1455; 1976 (3) SCC 832) and was initiated in *Akhil Bhartiya Soshit Karamchari Sangh v. Union of India and Ors.*, wherein an unregistered association of workers was permitted to institute a writ petition under Art.32 of the Constitution for the redressal of common grievances. Krishna Iyer J., enunciated the reasons for liberalisation of the rule of Locus Standi in *Fertilizer Corporation Kamgar v. Union of India* (AIR 1981 SC 149; 1981 (2) SCR 52) and the ideal of 'Public Interest Litigation' was blossomed in *S.F. Gupta and others v. Union of India*, (AIR 1982 SC 149).

Public interest litigation or social interest litigation today has great significance and drew the attention of all concerned. The traditional rule of "Locus Standi" that a person, whose right is infringed alone can file a petition, has been considerably relaxed by the Supreme Court in its recent decisions. Now, the court permits public interest litigation at the instance of public-spirited citizens for the enforcement of constitutional or legal rights. Now, any public-spirited citizen can move/approach the court for the public cause (in the interests of the public or public welfare) by filing a petition:

- 1) in Supreme Court under Article 32 of the Constitution;
- 2) in High Court under Article 226 of the Constitution; and
- 3) in the Court of Magistrate under Section 133, Cr. P.C.

Justice Krishna Iyer in *Fertilizer Corporation Kamgar Union v. Union of India*, (1981) enumerated the following reasons for liberalisation of the rule of Locus Standi:

- 1) Exercise of State power to eradicate corruption may result in unrelated interference with individuals' rights.
- 2) Social justice wants liberal judicial review administrative action.
- 3) Restrictive rules of standing are antithesis to a healthy system of administrative action.
- 4) "Activism is essential for participative public justice."

Therefore, a public minded citizen must be given an opportunity to move the court in the interests of the public.

In order to ensure that FRs did not remain empty declarations, the founding fathers made various provisions in the Constitution to establish an independent judiciary. Provisions related to FRs, DPs and independent judiciary together provided a firm constitutional foundation to the evolution of PIL in India. The founding fathers envisaged "the judiciary as a bastion of rights and justice." An independent judiciary armed with the power of judicial review was the constitutional device chosen to achieve this

objective. The power to enforce the FRs was conferred on both the Supreme Court and the High Courts - the courts that have entertained all the PIL cases.

The rule of *Locus Standi* requires that only a person who is aggrieved can approach the Court i.e. a person who has suffered a specific legal injury can claim a judicial remedy. This rule is followed to ensure that only persons who are themselves affected and who would themselves benefit from a judicial remedy approach the courts. Many laws which set up decision making bodies also provide for a list of persons who would have the *locus standi* or the legal standing to approach this decision-making body. For instance, the National Environment Appellate Authority Act, 1997, about which you will learn more in a later unit, in Section 11(1) gives a list of persons who can approach the Appellate Authority with their appeals. If a person cannot prove her standing before the Court - that is, she is unable to convince the Court that she is in some way aggrieved by some action or law, the Court can decide not to listen to that case.

However, a strict compliance of this rule of *locus standi* has the impact that many lapses in the administration of the country would go unnoticed. The poor and oppressed sections of the society who are unable to raise their voice to fight their cause, would never get justice, because no one else would be able to fight on their behalf and in their interest.

### **Liberalisation of the rule of *locus standi***

In 1970s the Supreme Court started giving a broader interpretation to the rule of *locus standi* to accommodate cases on behalf of the underprivileged sections of the society which could not initiate legal action themselves. In *Mumbai Kamgar Sabha v. Abdulbhai Faizullabhai* AIR 1976 SC 1455, the Supreme Court held that the 'public interest is promoted by a spacious construction of *locus standi* in our socio-economic circumstances'.

The main concern that was raised against the broad interpretation of *locus standi* was that it would open the floodgates and the Courts would be inundated with cases as there would be no control over who could file a case. The Supreme Court responded to this concern in *Bar Council of Maharashtra v. MV Dabholkar* 1976 SCC(2) 291 in which it held that

*“The possible apprehension that widening legal standing with a public connotation may unloose a flood of litigation which may overwhelm the judges is misplaced because public resort to court to suppress public mischief is a tribute to the justice system.”*

The turning point with regard to this issue came in 1981 with the decision of the Supreme Court in the case of *SP Gupta v. Union of India* (1981) Supp SCC 87. The case was a landmark case for many reasons but one of the main issues of law addressed by the judgment in this case was with regard *locus standii* of the persons approaching the Court. Justice Bhagwati in his decision addressed a crucial issue - if no specific legal injury is caused to anyone by an act of commission or omission of the Administration, but injury was caused to public interest, then who can bring an action for vindicating performance of the public duty.

Some of the important parts of this decision are provided below, which give an idea as to why PILs and the liberalisation of the *locus standi* rule were important.

*“If no one can maintain an action for redress of such public wrong or public injury, it would be disastrous for the rule of law, for it would then be open to the state or a public authority to act with impunity beyond the scope of its power or in breach of a public duty owed by it. The courts cannot countenance such a situation where the observance of the law is left to the sweet will of the authority bound by it, without redress if the law is contravened.*

...

*Whenever there is a public wrong or public injury caused by an act or omission of the state or a public authority which is contrary to the Constitution or the law, any member of the public acting bona fide and having sufficient interest can maintain an action for redressal of such wrong or public injury.*

...

*... we would, therefore, hold that any member of the public having sufficient interest can maintain an action for judicial redress for public injury arising from breach of public duty or from violation of some provision of the Constitution or the law and seek enforcement of such public duty and observance of such constitutional or legal provision.*

...

*If public duties are to be enforced and social collective ‘diffused’ rights and interests are to be protected, we have to utilise the initiative and zeal of public minded persons and organizations by allowing them to move the Court and act for a general or group interest, even though they may not be directly injured in their own rights.”*

In another landmark case, *People’s Union for Democratic Rights v. Union of India* AIR 1982 SC 1473, Justice Bhagwati elaborated this matter even further. In this case, the Petitioner, People’s Union for Democratic Rights (PUDR), a voluntary non-profit organisation addressed a letter to Justice Bhagwati complaining of the violations of labour laws by private contractors who had been awarded contracts in the run up to the Asiad Games to be held in Delhi in 1982. The letter was treated as a PIL.

The workers at construction sites were being denied the benefits under various labour laws such as minimum wage, weekly holidays, etc. The workers were economically and socially disadvantaged and were not in a position to approach the courts for legal recourse. The Respondents in the case objected to the maintainability of the case on the ground that the PUDR had no *locus standi* to approach the Court. Justice Bhagwati observed in his order -

*“This Court has taken the view that having regard to the peculiar socio-economic conditions prevailing in the country where there is considerable*

*poverty, illiteracy and ignorance obstructing and impeding accessibility to the judicial process, it would result in closing the doors of justice to the poor and deprived sections of the community if the traditional rule of standing evolved by Anglo-Saxon jurisprudence that only a person wronged can sue for judicial redress were to be blindly adhered to and followed and it is therefore necessary to evolve a new strategy by relaxing this traditional rule of standing in order that justice may become easily available to the lowly and the lost.”*

### **Blurring of the lines of Separation of Powers**

One of the fundamental principles of governance in India is the separation of powers - i.e. the three branches of the government - legislature, executive and judicial - have to function separately and without arbitrary interference into each other's spheres of functions. A system of checks and balances has been put in place so that each of the branches can ensure that the other branch is exercising its powers legally, discharging its duties and is not overstepping its jurisdiction.

When an action is initiated before the Supreme Court or the High Courts as part of a PIL, it generally challenges some action or inaction on part of the Executive branch of the Government. For instance, in *Indian Council for Enviro-Legal Action v. Union of India* AIR 1996 SC 1446, the matter before the Court was that industrial effluents were polluting the land and water supply of the villagers and the concerned authorities were not acting against the polluters.

In PILs, the directions of the Judiciary are such that they often 'step on the toes' of the Executive branch of the government. The Judiciary through its decisions tells the Executive how to do its job and sometimes even gives a time line within which the Executive has to comply with the directions. It is almost as if the Judiciary is performing the functions of the Executive since it has not been able to do so itself. Therefore, PILs has led to a blurring of the lines of separate jurisdictions of the branches of the Government.

## **44.3 Features of Public Interest Litigations**

### **Types of Locus Standi**

Three categories of PILs can be identified based on the persons who approach the Court:

- 1) A case initiated by a person or a group of persons who are members of a class which may have been adversely affected by an administrative wrong.

*Example:* In *Kinkri Devi v. State of Himachal Pradesh* AIR 1988 HP 4, a PIL was initiated before the High Court of Himachal Pradesh which highlighted impact of the unscientific and uncontrolled blasting for limestone in the Shivalik hills on the ecology and the inhabitants of Sirmaur district. The Petitioner was one of the affected villagers.

- 2) A case initiated by a citizen or a group who does not belong to the class of persons whose rights have been violated, but is approaching the Court to vindicate the rights of such persons.

*Example:* In *MC Mehta v. Union of India and Others* (1988) 1 SCC 471, the Supreme Court was approached by activist lawyer MC Mehta who brought to the attention of the Court the pollution caused to the river Ganga by the release of untreated trade effluents by tanneries located near the river in Kanpur. His standing before the Court was based on the fact that he was interested in protecting the lives of people who are dependent on the water of the river Ganga.

- 3) A case initiated by a public-spirited citizen who is not representing any particular class of persons, but is filing the case in her own capacity of being a citizen of the country to whom certain public duty is owed to by the Government.

*Example:* *Almitra Patel v. Union of India* was a PIL filed in the Supreme Court in 1996. In this case, the Petitioner raised the issue of faulty and deficient garbage disposal system in the country. The Court was requested to direct the concerned government authorities to stop open dumping of garbage and to identify mechanisms for proper disposal of waste across the country.

### ***Letters and news items as petitions***

Several PILs in the courts have been initiated through a simple letter to the court by an affected individual or a public-spirited concerned individual. The reason behind doing away with the formal processes of drafting and filing a case in the Courts in the case of PILs is that the Petitioner as a member of the public is often undertaking the litigation in the Court voluntarily and not in self-interest. In many of the cases, the Petitioner belongs to the poor and disadvantaged section of the society. In view of this, the Courts have considered it necessary to do away with the procedural requirements of a regular litigation and to accept letters sent to the Court as a PIL. Letters are not rejected by the Courts on the grounds that they are not accompanied by an Affidavit.

The Courts have also initiated PILs on the basis of articles appearing in print media which are a result of investigative journalism into some problem in the country. The Courts then direct the concerned Government authorities to respond in the matter. An example of this is a case regarding pollution in the River Yamuna which was heard by the Supreme Court. A newspaper article titled '*And quiet flows the Maily Yamuna*' published in the Hindustan Times in 1994 was converted into a PIL by the Supreme Court. The news article highlighted the deterioration in the quality of the water in the river Yamuna once it entered Delhi. The Chief Secretary of Delhi was asked to be personally present in the Court during some of the hearings to ensure that the Government of Delhi was strictly complying with the orders of the Court.

### ***Nature of proceedings***

The nature of proceedings in a PIL is often unconventional. In India, litigation before the Courts is adversarial in nature - i.e. the two opposing parties are 'adversaries' and each party tries to convince the Court that its stand is correct. Courts have repeatedly held that PILs are not adversarial litigation but in fact require collaborative effort from all parties. PILs are filed for socio-economic cause and in public interest. The respondents

in PILs are government authorities who are equally interested in upholding the rights which are in question or discharging the public duty which is assigned to them in a proper fashion. Therefore, the 'opposing parties' in a PIL are in reality both on the same side. The Executive branch of the government, becomes part of the problem-solving exercise and it works with the Court, Court-appointed committees, petitioners and other interested parties to ensure that the Court's directions are complied with.

The Court in *Bandhua Mukti Morcha v. Union of India* AIR 1984 SC 802 held that 'public interest litigation is not in the nature of adversary litigation but it is a challenge and an opportunity to the Government and its officers to make basic human rights meaningful to the deprived and vulnerable sections of the community and to assure them social and economic justice which is the signature tune of our Constitution.'

The Courts have developed several innovative ways to arrive at constructive solutions to the problems which come before it. The unique nature of PILs - the fact that they are filed in response to the consistent failure of the concerned authorities, the complexity of the matter involved, the impact of the Court's directions on different sections of the society across different parts of the country - make it necessary for the Court to resort to techniques which would allow for effective decision making.

### ***Appointment of Amicus Curiae***

The issues involved in a PIL are often complicated and require the consideration of several technical facts and appreciation of the ground situation. The Courts, given the constraints on time and resources available to the Court, have taken recourse to appointing *Amicus Curiae* or 'friends of the court' to assist the Court in analysing the varied facts and points of law. *Amicus Curiae* are lawyers who are requested by the Court to assist it in a particular matter based on their area of knowledge and legal expertise. For instance, the Supreme Court appointed Mr. Harish Salve, Mr. UU Lalit, Mr. Siddharth Choudhary and Mr. ADN Rao - lawyers of good standing in the Supreme Court - to assist it in *TN Godavarman v. Union of India*. This case is also known as the Forest Case and was initially filed in 1995. It concerns the conservation of forests across the country.

Harish Salve, Senior Advocate and Former Solicitor General of India, served as the *amicus curiae* to the Supreme Court of India in the matter wherein the Court banned the sale of diesel passenger vehicles with engine capacity of 2 liters and above till 31 March and had directed taxis in Delhi and the National Capital Region to shift to CNG fuel.

*Amicus curiae* Aparajita Singh assisted the Hon'ble Supreme Court of India when the Court conducted an emergency hearing on 4 November 2019 for bringing an 'immediate solution' to the air pollution crisis of Delhi.

### ***Appointment of Expert Bodies***

Appointment of expert bodies and Committees are another example of the kind of innovative measures undertaken by the Court to deal with peculiar situations which are thrown up in PILs. These expert bodies assist the Court by conducting site inspections,

listening to detailed arguments of different interested/affected parties, preparing reports and recommendations for the Court to consider. These bodies generally consist of members with varied backgrounds to suit the case - experts from the field, lawyers, former judges, former and current bureaucrats, scientists, academics, etc. The recommendations made by such expert bodies are presented to the Court and it is then for the Court to decide whether it wishes to accept or reject them. The Court is not bound by recommendations by these bodies.

In the Forest case, as mentioned above, the Court appointed the Central Empowered Committee as an Expert body to assist it in dealing with the all pending applications as well as the task of examining the reports and affidavits filed by the states in response to the orders made by the Court. As each application has a unique set of facts, the Committee hears the parties first, visits the site if necessary and then makes its recommendation to the Court.

The National Green Tribunal (NGT) while hearing an application seeking action against depleting groundwater levels in the country and prevention of its illegal extraction, set up a committee to formulate steps required to prevent its unauthorised extraction, directed setting up a of committee to formulate steps required to prevent its unauthorised extraction. The NGT bench further directed the committee to evolve a robust mechanism to ensure that groundwater is not illegally extracted and to monitor manning and functioning of the Central Ground Water Authority (CGWA).

### ***Continuing Mandamus***

PILs are litigated in the Courts for several years with the Courts passing a series of orders. As the PILs are a result of the failure of the Executive to discharge its functions properly, judges are aware that just giving directions and disposing of a case serves no purpose. Regular monitoring to ensure compliance of the directions of the Court is necessary along with further orders and modification of previous orders. The case then becomes a 'continuous mandamus' - the Court keeps the case under its judicial oversight for several years and keeps issuing orders and directions to the concerned government authorities suited to the situation on the ground.

One of the examples of continuing mandamus is the monitoring committee appointed by the Hon'ble Supreme Court of India vide its order dated 24 March 2006 comprising of Sh. K.J. Rao, Former Advisor of Election Commission, Sh. Bhure Lal, Chairman, E.P.C.A. and Maj General (Retd.) Som Jhingon, Kirti Chakra, VSM. The mandate of this monitoring committee is to over-see the implementation of the law, namely sealing of offending premises in terms of the letter and spirit of the Courts directions.

## **44.4 Regulation of Public Interest Litigation**

PILs have been introduced as a special form of litigation for a very important purpose - to give a voice to the downtrodden and the disadvantaged. The Courts do away with the formality of traditional litigation, often give priority to hearings of PILs and spend years

on each case issuing series of orders to address the injustice and administrative failure. While on one hand the Court has liberalised the definition of *locus standi*, on the other hand, the Courts have been careful to ensure that the person who is approaching as a petitioner in a PIL should be genuinely interested in the matter and that the issues he is bringing to the Court are not for his private benefit but in response to administrative failure to address certain social, economic, political or environmental problems. The Court in *People's Union for Democratic Rights v. Union of India* AIR 1982 SC 1473 held that-

*“where a person or class of persons to whom legal injury is caused or legal wrong is done is by reason of poverty, disability or socially educationally disadvantaged position not able to approach the court for judicial redress, any member of the public acting bona fide and free of any extraneous motivation may move the court for judicial redress of the legal injury or wrong suffered by such person or class of persons.”* (emphasis added)

- ◆ The Courts have, on several occasions, observed that a PIL cannot be entertained if it is filed by a person who has no interest in the matter or if the person has filed the PIL for his private interest or personal gain or for some political motivation. A very serious view has been taken by the Courts in cases where a frivolous case is filed by a Petitioner which serves no public interest but in turn wastes the time of the Court and the government. In many cases, judges have imposed costs on the petitioner - i.e. fined the petitioner - for wasting time of the Court in the garb of a PIL and abusing the process of law. Judges have also directed the Bar Associations of different states to ensure that lawyers registered at their Bar to not indulge in filing frivolous and unnecessary PILs.
- ◆ In *Gurpal Singh v. State of Punjab and Others* (2005) 5 SCC 136, the Court held that the scope of entertaining a petition styled as a PIL and *locus standi* of the petitioner, the Court must be satisfied about (a) the credentials of the applicant; (b) the prima facie correctness or nature of information given by him; (c) the information being not vague and indefinite. The information should show gravity and seriousness involved. The Court has to strike balance between two conflicting interests- (i) nobody should be allowed to indulge in wild and reckless allegations besmirching the character of others; and (ii) avoidance of public mischief and to avoid mischievous petitions seeking to assail, for oblique motives, justifiable executive actions.
- ◆ The NGT in 2018, while disposing off an application, took a strong note that frivolous petitions are being filed in the name of environment. While disposing off an application, NGT Chairperson Justice Adarsh Kumar Goel said the Tribunal would deal with only those cases which have an important question relating to environment and ecology.
- ◆ In the recent past, judges especially in the Supreme Court, have become very critical about unnecessary cases being filed in the name of PILs. The former Chief Justice of India, Justice SH Kapadia soon after being appointed as the Chief Justice of India observed in a case that PIL petitioners were moving the courts straightaway without

bringing the problem to the notice of the authorities and that the Courts were entertaining these PILs and virtually taking over the function of the authorities. He held that such bypassing of the authorities would not be allowed to take place anymore. He further warned that huge costs would be imposed on parties bringing frivolous cases. The issue before the Supreme Court in *State of Uttaranchal v. Balwant Singh Chauhan and Ors.* Civil Appeal Nos.1134-1135 of 2002 was an issue which had been decided by several courts previously - whether there was any age limit for persons who were appointed as Advocate General of a state (in this case Uttarakhand). The Supreme Court in a lengthy decision listed the number of cases in which this issue had already been decided - there was no such age limit. The judges observed that lawyers should at least carry out basic research before approaching the Court. The Court imposed cost of one lakh rupees on the persons who had brought the case to the High Court initially. Towards the end of the judgment, the judge laid down guidelines with regard to entertainment of PILs and held -

*“In order to preserve the purity and sanctity of the PIL, it has become imperative to issue the following directions:*

- 1) *The courts must encourage genuine and bona fide PIL and effectively discourage and curb the PIL filed for extraneous considerations.*
- 2) *Instead of every individual judge devising his own procedure for dealing with the public interest litigation, it would be appropriate for each High Court to properly formulate rules for encouraging the genuine PIL and discouraging the PIL filed with oblique motives. Consequently, we request that the High Courts who have not yet framed the rules, should frame the rules within three months. The Registrar General of each High Court is directed to ensure that a copy of the Rules prepared by the High Court is sent to the Secretary General of this court immediately thereafter.*
- 3) *The courts should prima facie verify the credentials of the petitioner before entertaining a P.I.L.*
- 4) *The court should be prima facie satisfied regarding the correctness of the contents of the petition before entertaining a PIL.*
- 5) *The court should be fully satisfied that substantial public interest is involved before entertaining the petition.*
- 6) *The court should ensure that the petition which involves larger public interest, gravity and urgency must be given priority over other petitions.*
- 7) *The courts before entertaining the PIL should ensure that the PIL is aimed at redressal of genuine public harm or public injury. The court should also ensure that there is no personal gain, private motive or oblique motive behind filing the public interest litigation.*
- 8) *The court should also ensure that the petitions filed by busybodies for extraneous and ulterior motives must be discouraged by imposing exemplary costs or by adopting similar novel methods to curb frivolous petitions and the petitions filed for extraneous considerations.”*

## 44.5 Examples of Environmental PILs

Several important achievements have been made in the field of environment protection through the route of PILs. Public spirited citizens as well as those affected by environmental degradation have filed PILs requesting the Court to intervene and direct the concerned authorities to ensure that the natural environment is conserved. Following are examples of some of the PILs filed in the Supreme Court of India in the environmental context-

In *Rural Litigation and Entitlement Kendra, Dehradun and Others v. State of U.P. and Others* AIR 1989 SC 594, the Petitioner organisation approached the Court to protest against the quarrying in the lime stone quarries in the Doon Valley as it was adversely affecting the environment of the region particularly the water sources. The Court heard this matter for over three years, and finally decided, given the impact of the quarrying on the region, to close down the mines. The Court appointed a Monitoring Committee to oversee the reforestation activities and other related activities initiated to restore the environment of the Doon Valley. The Court also expressed the need to set up another committee to monitor the rehabilitation of the displaced miners.

The issue of pollution of the river Palar by the discharge of wastes by tanneries near Vellore was raised before the Supreme Court in *Vellore Citizens' Welfare Forum v. Union of India* (1996) 5 SCC 647. The Court directed the defaulting tanneries to meet the standard of effluent discharge as set by the Pollution Control Boards and allowed the tanneries to continue only after they compensated the persons affected by the pollution and paid the cost of restoring the damage done to the environment. As the case would require continued monitoring, the Supreme Court requested the Chief Justice of the High Court of Tamil Nadu to form a 'Green Bench' to deal with the case.

In *S. Jagannath v. Union of India and Others* (1997) 2 SCC 87, a PIL was filed by the Gram Swaraj Movement, a voluntary organisation working for the upliftment of the weaker section of society. The petitioner sought the enforcement of Coastal Zone Regulation Notification dated 19.2.1991 and stoppage of intensive and semi-intensive type of prawn farming in the ecologically fragile coastal areas. The Court passed several significant directions including:

- ◆ The Central Government shall constitute an authority conferring on the said authority all the powers necessary to protect the ecologically fragile coastal areas, seashore, waterfront and other coastal areas and specially to deal with the situation created by the shrimp culture industry in coastal States. The authority so constituted by the Central Government shall implement "the Precautionary principle" and "the Polluter Pays" principles.
- ◆ The shrimp culture industry/the shrimp ponds are covered by the prohibition contained in para 2(i) of the CRZ Notification. No shrimp culture pond can be constructed or set up within the coastal regulation zone as defined in the CRZ notification. This shall be applicable to all seas, bays, estuaries, creeks rivers and

backwaters. This direction shall not apply to traditional and improved traditional types of technologies (as defined in Alagarswami report) which are practised in the coastal low-lying areas.

- ◆ All aquaculture industries/shrimp culture industries/shrimp culture ponds operating/ set up in the coastal regulation zone as defined under the CRZ Notification shall be demolished and removed from the said area before 31 March 1997.
- ◆ The agricultural lands, salt pan lands, mangroves, wet lands, forest lands, land for village common purpose and the land meant for public purposes shall not be used/ converted for construction of the shrimp culture ponds.
- ◆ The authority was directed to compute the compensation under two heads namely, for reversing the ecology and for payment to individuals.
- ◆ The compensation amount recovered from the polluters shall be deposited under a separate head called “Environment Protection Fund” and shall be utilised for compensating the affected persons as identified by the authority and also for restoring the damaged environment.

## 44.6 Conclusion

With the view to regulate the abuse of PIL, the apex court itself has framed certain guidelines (to govern the management and disposal of PILs.) The court must be careful to see that the petitioner who approaches it is acting bona fide and not for personal gain, private profit or political or other oblique considerations. The court should not allow its process to be abused by politicians and others to delay legitimate administrative action or to gain political objectives. There may be cases where the PIL may affect the right of persons not before the court, and therefore in shaping the relief the court must invariably consider its impact on those interests and the court must exercise greatest caution and adopt procedure ensuring sufficient notice to all interests likely to be affected.

At present, the court can treat a letter as a writ petition and take action upon it. But it is not every letter which may be treated as a writ petition by the court. The court would be justified in treating the letter as a writ petition only in the following cases -

- i) It is only where the letter is addressed by an aggrieved person, or
- ii) a public-spirited individual, or
- iii) a social action group for enforcement of the constitutional or the legal rights of a person in custody or of a class or group of persons who by reason of poverty, disability or socially or economically disadvantaged position find it difficult to approach the court for redress.

Even though it is very much essential to curb the misuse and abuse of PIL, any move by the government to regulate the PIL results in widespread protests from those who are not aware of its abuse and equate any form of regulation with erosion of their fundamental

rights. Under these circumstances the Supreme Court of India is required to step in by incorporating safeguards provided by the Civil Procedure Code in matters of stay orders /injunctions in the arena of PIL.

Public Interest Litigants, all over the country, have not taken very kindly to such court decisions. They do fear that this will sound the death-knell of the people friendly concept of PIL. However, bona fide litigants of India have nothing to fear. Only those PIL activists who prefer to file frivolous complaints will have to pay compensation to the opposite parties. It is actually a welcome move because no one in the country can deny that even PIL activists should be responsible and accountable. In any way, PIL now does require a complete rethink and restructuring. Anyway, overuse and abuse of PIL will only make it stale and ineffective. Since it is an extraordinary remedy available at a cheaper cost to all citizens of the country, it ought not to be used by all litigants as a substitute for ordinary cases or as a means to file frivolous complaints.

Let us have a look at some guidelines by the Supreme Court of India (Based on full Court decision dated 1.12.1988 and subsequent modifications) -

No petition involving individual/ personal matter shall be entertained as a PIL matter except as indicated hereinafter.

Letter-petitions falling under the following categories alone will ordinarily be entertained as Public Interest Litigation:

- 1) Bonded Labour matters.
- 2) Neglected Children.
- 3) Non-payment of minimum wages to workers and exploitation of casual workers and complaints of violation of Labour Laws (except in individual cases).
- 4) Petitions from jails complaining of harassment, for (pre-mature release)<sup>1</sup> and seeking release after having completed 14 years in jail, death in jail, transfer, release on personal bond, speedy trial as a fundamental right.
- 5) Petitions against police for refusing to register a case, harassment by police and death in police custody.
- 6) Petitions against atrocities on women, in particular harassment of bride, bride-burning, rape, murder, kidnapping, etc.
- 7) Petitions complaining of harassment or torture of villagers by co-villagers or by police from persons belonging to Scheduled Caste and Scheduled Tribes and economically backward classes.

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<sup>1</sup> Petitions for premature release, parole etc. are not matters which deserve to be treated as petitions u/Article 32 as they can effectively be dealt with by the concerned High Court. To save time Registry may simultaneously call for remarks of the jail Superintendent and ask him to forward the same to High Court. The main petition may be forwarded to the concerned High Court for disposal in accordance with law.

Even in regard to petitions containing allegations against Jail Authorities there is no reason why it cannot be dealt with by the High Court. But petitions complaining of torture, custody death and the like may be entertained by this Court directly if the allegations are of a serious nature.

- 8) Petitions pertaining to environmental pollution, disturbance of ecological balance, drugs, food adulteration, maintenance of heritage and culture, antiques, forest and wild life and other matters of public importance.
- 9) Petitions from riot-victims.
- 10) Family Pension.

All letter-petitions received in the PIL Cell will first be screened in the Cell and only such petitions as are covered by the above-mentioned categories will be placed before a Judge to be nominated by Hon'ble the Chief Justice of India for directions after which the case will be listed before the Bench concerned.

If a letter-petition is to be lodged, the orders to that effect should be passed by Registrar (Judicial) (or any Registrar nominated by the Hon'ble Chief Justice of India), instead of Additional Registrar, or any junior officer.

To begin with, only one Hon'ble Judge may be assigned this work and number maybe increased to two or three later depending on the workload.

Cases falling under the following categories will not be entertained as Public Interest Litigation and these may be returned to the petitioners or filed in the PIL Cell, as the case may be:

- 1) Landlord-Tenant matters.
- 2) Service matter and those pertaining to Pension and Gratuity.
- 3) Complaints against Central/ State Government Departments and Local Bodies except those relating to item Nos. (1) to (10) in above list.
- 4) Admission to medical and other educational institution.
- 5) Petitions for early hearing of cases pending in High Courts and Subordinate Courts.

In regard to the petitions concerning maintenance of wife, children and parents, the petitioners may be asked to file a Petition under Section 125 of Cr. P.C. or a Suit in the Court of competent jurisdiction and for that purpose to approach the nearest Legal Aid Committee for legal aid and advice.

#### **Merits of PIL:**

- 1) In Public Interest Litigation (PIL) vigilant citizens of the country can find an inexpensive legal remedy because there is only a nominal fixed court fee involved in this.
- 2) Further, through the so-called PIL, the litigants can focus attention on and achieve results pertaining to larger public issues, especially in the fields of human rights, consumer welfare and environment.

#### **Some Demerits of PIL:**

- 1) The genuine causes and cases of public interest have in fact receded to the background and irresponsible PIL activists all over the country have started to play a major but

not a constructive role in the arena of litigation. Of late, many of the PIL activists in the country have found the PIL as a handy tool of harassment since frivolous cases could be filed without investment of heavy court fees as required in private civil litigation and deals could then be negotiated with the victims of stay orders obtained in the so-called PILs.

- 2) The framers of Indian Constitution did not incorporate a strict doctrine of separation of powers but envisaged a system of checks and balances. Policy making and implementation of policy are conventionally regarded as the exclusive domain of the executive and the legislature. *Vishaka v. State of Rajasthan* was a PIL concerning sexual harassment of women at work place. The court declared that till the legislature enacted a law consistent with the convention on the Elimination of All Forms of Discrimination Against Women, of which India was a signatory, the guidelines set out by the court would be enforceable.
- 3) The flexibility of procedure that is a character of PIL has given rise to another set of problems. It gives an opportunity to opposite parties to ascertain the precise allegation and respond specific issues.
- 4) The credibility of PIL process is now adversely affected by the criticism that the judiciary is overstepping the boundaries of its jurisdiction and that it is unable to supervise the effective implementation of its orders. It has also been increasingly felt that PIL is being misused by the people agitating for private grievance in the garb of public interest and seeking publicity rather than espousing public cause.

# UNIT 45

## FOREST CASES AND RESPONSES

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### 45.1 Introduction

Forests are critical for the quality of global environment. They are of great importance to the sustainability and prosperity of human beings since they yield multiple benefits to society. These include tangible products such as fuel wood, timber, fodder, manure and minor forest products, intangible services such as hydrological benefits, soil conservation, climate change mitigation and habitat for wildlife, and other intangible values such as spiritual or aesthetic values. These benefits flow towards many different beneficiary groups. Only some of these beneficiaries live in physical proximity of the forest. Others live downstream in the watershed, or in the whole region or nation or even world. It is estimated that some 1.6 billion people worldwide depend on forests for their livelihoods. 60 million indigenous people depend on forests for their subsistence.

The subject of forest has received special attention of the Supreme Court since the year 1996 when the Court on a weekly basis started hearing a petition titled *T.N Godavarman Thirumulpad v. Union of India* [‘Godavarman’ for short]. The understanding of the some of the orders in *Godavarman* is crucial for it not only shows the scope of Public Interest Litigation but also how the Courts fill up gaps in existing laws and policies. Through the *Godavarman* case, the Supreme Court has dealt with a wide range of issues concerning the subject of forest. It set up a Committee to assist it in dealing with forest issues i.e. the Central Empowered Committee (under Section 3 (3) of the Environment (Protection) Act, 1986.

This unit provides an overview of some of the major issues related to forest on which the Court has passed significant orders. However, before that, let us revisit the important forest legislations:

◆ ***Forest Conservation Act, 1980***

The history of modern forest legislation in India is more than a century old. The first codification which came to the statute book in relation to the administration of forest in India was the Indian Forest Act, 1865. In 1980, the Parliament, in response to the rapid decline in the forest covers in India, and also to fulfil the Constitutional obligation under Article 48-A, enacted a new legislation called the Forest Conservation Act, 1980.

◆ ***Panchayats Extension to Scheduled Areas (PESA) Act 1996***

Panchayat Extension to Scheduled Areas Act (PESA) was passed in the year 1996. It was passed with a view to provide for the extension of the provisions of Part IX of the Constitution relating to the Panchayats to the Scheduled Areas.

◆ ***The Scheduled Tribes and other Traditional Forest Dwellers Act, 2006***

The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 was passed almost unanimously by the Lok Sabha as well as the Rajya Sabha on 18 December 2006. This legislation, aimed at giving ownership rights over forestland to traditional forest dwellers. The law concerns the rights of forest dwelling communities to land and other resources, denied to them over decades as a result of the continuance of colonial forest laws in India.

## 45.2 Forest Conservation Act and the Genesis of the Godavarman Case

The Forest (Conservation) Act, was enacted in 1980 and subsequently amended in 1988. Section 2 of the Act forms the core and states that ‘no State Government or other authority shall make, except with the prior approval of the Central Government, any order directing -

- i) that any reserved forest (within the meaning of the expression “reserved forest” in any law for the time being in force that State) or any portion thereof, shall cease to be reserved;
- ii) that any forest land or any portion thereof may be used for any non-forest purpose;
- iii) that any forest land or any portion thereof may be assigned by way of lease or otherwise to any private person or to any authority, corporation, agency or any other organisation not owned, managed or controlled by Government;
- iv) that any forest land or any portion thereof may be cleared of trees which have grown naturally in that land or portion, for the purpose of using it for re-forestation.

Explanation. –For the purpose of this section, “non-forest purpose” means the breaking up or clearing of any forest land or portion thereof for -

- a) the cultivation of tea, coffee, spices, rubber, palms, oil-bearing plants, horticultural crops or medicinal plant;
- b) any purpose other than re-forestation; but does not include any work relating or ancillary to conservation, development and management of forest and wild life, namely, the establishment of check-posts, fire lines, wireless communications and construction of fencing, bridges and culverts, dams, waterholes, trench marks, boundary marks, pipelines or other like purpose.’

### The Godavarman Case-

The genesis of the *Godavarman* case was a result of the non-responsiveness of various State Governments to the issue of forest conservation. The Writ Petition filed by *Environmental Awareness Forum* (W.P. 171 of 1995) and the *T.N. Godavarman Thirumulpad* (W.P. 202 of 1995) on limited and restricted issue of forest conservation was extended by the Supreme Court on 02.09.1996, when the Court directed the issue of Notice to Chief Secretaries of all the State Governments other than States that were already made parties. The Court in its order noted that “in spite of notice being issued to all the State Governments, many of them have not entered appearances.” The Court, therefore, directed the issue of fresh notice. Unfortunately, even this did not result in much response. The Court in its order dated 28.11.1996 observed that in spite of notice been served on all the State Governments, there is no representation on behalf of most of the State Governments. The Court felt that the version of the North Eastern States, in particular, is necessary but no assistance to that effect was available to the Court on account of absence of any representation at that time on behalf of any of the seven North Eastern States. The Court emphasized the fact that “it is necessary that effective representation on behalf of each of the seven North Eastern States be ensured during the entire hearing of this matter.” It, therefore, directed the personal presence of the Secretary dealing with Forest and Environment of each of the seven North Eastern States along with the Secretaries of Sikkim, Kerala and Maharashtra during the hearing of this matter.

On the next date of hearing i.e. on 12.12.1996, the Supreme Court passed an Interim order that was to be one of the most significant decisions of the Court on an environmental issue. The order of 12.12.1996 became the basis for the subsequent judicial involvement in forest conservation.

Among the most significant orders passed by the Supreme Court in *Godavarman* was the order of 12.12.1996 which clarified certain provisions of the Forest (Conservation) Act, 1980 [FCA] and also extended the scope of the Act.

The Supreme Court observed in its order of 12.12.1996 that there is misconception in certain quarters about the true scope of the Act and the meaning of the word “forest” used therein. There is also misconception about the need of prior approval of the Central Government. The Court order dealt with the following aspects:

### Dictionary Meaning of Forest

The Court did a purposive interpretation of the Act, and held that the Act was enacted with a view to check further deforestation, which ultimately results in ecological imbalances, and therefore, the provisions made therein for conservation of forests must apply to all types of forests irrespective of the nature of ownership or classification. Most significantly, the Court held that:

- ◆ The word “forest” must be understood according to the dictionary meaning. The Court clarified that this description covers all statutorily recognised forest, whether designated as reserved, protected or otherwise for the purpose of Section 2(i) of the Act.
- ◆ The term “forest land” as occurring in Section 2 will not only include “forest” as understood in the dictionary sense, but also any area recorded as forest in the Government record irrespective of the ownership.
- ◆ The provisions enacted in the Act, for the conservation of forests must apply clearly to all forests so understood irrespective of the ownership or classification thereof.

### Identifying Forest

Having extended the scope of the Act by including diverse categories as “forest”, the Court directed each State Government to constitute within one month an expert committee to:

- ◆ Identify areas which are ‘forests’ irrespective of whether they are so notified, recognised or classified under any law, and irrespective of the ownership of the land of such forest;
- ◆ Identify areas which were earlier forests but stand degraded, denuded or cleared; and
- ◆ Identify areas covered by plantation trees belonging to the Government and those belonging to persons.

### Specific Directions on Non-Forest Activities

The Court directed that in accordance with Section 2 of the Act, “all ongoing activity within any forest in any State throughout the country, without the prior approval of the Central Government, must cease forthwith.” Significantly, the felling of trees in all forests was to remain suspended except in accordance with working plans of the State Government, as approved by the Central Government. Specific orders were passed for the North Eastern State and for Tirap and Changlang in Arunachal Pradesh, Jammu and Kashmir, Himachal Pradesh and hill regions of Uttar Pradesh, Tamil Nadu. Most importantly, it was directed that this order (i.e. 12.12.1996) will operate and be implemented notwithstanding any order at variance, made or which may be made by any Government or any authority, tribunal or court, including the High Court<sup>1</sup>.

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<sup>1</sup> This was further reiterated in order dated 04.03.1997.

Thus, began the engagement of the Supreme Court on a continuing basis with the issue of forest conservation. This case came to be known popularly as the *Godavarman*<sup>2</sup> case or less commonly the ‘forest conservation case’.<sup>3</sup> The prime focus of *Godavarman* was the effective implementation of the Forest (Conservation) Act, 1980. However, as the case progressed, the Wild life (Protection) Act, 1972 [WPA] and all State and local laws relevant for forest conservation also came within the purview of the *Godavarman* case.

### Godavarman and Centre for Environmental Law

Forest conservation law in India is now impacted not only by the outcome of the *Godavarman* case but also the ongoing litigation concerning the National Parks and Sanctuaries through the *Centre for Environmental Law WWF-India v. Union of India*, (W.P. 337 of 1995). Although, in principle the case concerns the issue of settlement of rights in National Parks and Sanctuaries, yet its scope is much beyond this issue. Perhaps, the most significant was the order dated 13.11.2000, wherein the Supreme Court through an interim order restrained all State Government from despoiling National Parks, Sanctuaries and Forests. The order reads as follows:

“This Court while directing to list the above application after five weeks DOTH ORDER THAT pending further orders no dereservation of Forests/ Sanctuaries/ National Parks shall be effected...

AND THIS COURT DOTH FURTHER ORDER THAT this ORDER be punctually observed and carried into execution by all concerned.”

The inclusion of the word ‘forest’ is significant and adds a completely new dimension to the implementation of forest law in the country and specifically of the Forest (Conservation) Act, 1980 and the Wild Life (Protection) Act, 1972.

The combined implication of the *Godavarman* and *Centre for Environmental Law* case can be summarised as follows:

- ◆ The Court by order dated 12.12.1996 in *Godavarman* restrained all State Governments from using forest land for non-forest purpose without the prior approval of the Central Government in accordance with the provisions of Section 2(ii) of the Forest (Conservation) Act, 1980.
- ◆ The Court, by the same order, stayed all non-forest activities insofar as they were being carried out without prior approval of the Central Government. Thus, the decision of 12.12.1996 aimed at ensuring the proper and effective implementation of the Forest (Conservation) Act, 1980.

<sup>2</sup> Incidentally, the petitioner, TN Godavarman Thirumulpad has little to do with the subsequent developments in the case.

<sup>3</sup> Shyam Diwan and Armin Rosencranz, *Environmental Law and Policy in India* 289 (Oxford University Press, 2nd ed., 2001).

**ORDERS AND JUDGMENTS:****Working Plan**

The *Godavarman* case attracted significant attention when on 12.12.1996 the Court in its order 'suspended' the felling of trees in all forest except in accordance with the working plans of the State Governments which were approved by the Central Government. It was brought to the notice of the Court that most of the working plans on the basis of which timber were harvested were based on plans which placed primacy to commercial consideration over ecological and social concerns. The issue of working plans was dealt with extensively in the order dated 15.01.1998, the Court directed that working plans for all forest divisions shall be prepared by the State Governments and approval will be obtained from the Government of India. It was clarified that the term 'State Government' would also include District Councils constituted under Schedule VI of the Constitution of India. The working plans would have to be prepared within a period of two years. During the intervening period, the forest shall be worked according to an annual felling programme approved by the Ministry of Environment and Forests. In respect of District, Regional and Village Council Forests, it was directed that the same shall be worked in accordance with the working scheme, which has to specify both the programme for regeneration and harvesting. It was however clarified that the plantation schemes raised on private and community holding shall be excluded from these requirements but will be regulated under the respective State rules and regulations. For the purpose of preparing the working plans, the States were directed to constitute a state level expert Committee to be headed by the PCCF.

Very interestingly, the Court in its above order directed the North Eastern States to identify ecologically sensitive areas in consultation with institutions such as the Indian Council of Forest Research and Education, Wild Life Institute of India, North Eastern Hill University, North Eastern Regional Institute of Science and Technology and NGOs, and ensure that such identified ecologically sensitive areas are totally excluded from any kind of exploitation. The Court further stipulated that minimum extent of such area shall be 10% of the total area of the State.

Subsequently, (on 12.05.2001), the Court laid down detailed guidelines for the felling of trees from forest areas as well as non-forest areas including plantation. As per the order, the felling of trees from forest areas could be allowed only as per the approved working plans/schemes, whereas the felling of trees from non-forest areas could be allowed only as per detailed guidelines which are prepared by the State Government with the concurrence of the Central Government. This order, together with the order of the Court on 15.01.1998 forms the guidelines for felling of trees. The highlights of the Order dated 12.05.2001 were -

- i) Felling of trees from forest shall be only in accordance with working plans/ schemes or felling schemes approved by the Ministry of Environment and Forests.
- ii) Such working plans/schemes shall also be needed for felling of trees from any non-Government forest areas including land which is required to be treated as "forest as per the decision of the Court on 12.12.1996."

- iii) While implementing the working plans/schemes approved by the Central Government, the State Government or the concerned authority shall ensure that no felling is done unless and until sufficient budgetary provisions exist for the regeneration of such areas.
- iv) For felling of trees from non-forest areas, including plantations on concerned State Government which will come in force only after concurrence from the Ministry of Environment and Forest.
- v) The Guidelines/Rules shall also include provisions for penalties and mode of disposal in respect of any felling done in violation of such Guideline/Rules.
- vi) Till such Guidelines/Rules become effective no felling from any area other than that under approved working plans/schemes or felling schemes shall be permitted.
- vii) The schemes are to be prepared within a period of three months and the Ministry of Environment and Forests has to take a decision on the same within a period of one month of the date of receipt.

### 45.3 Cases Related to Mining

In a series of orders in the *Godavarma* case, the Supreme Court dealt at length and at times in minute details about instances of mining taking place in forest area. The Supreme Court however, made it clear that it was not against mining *per se* but against mining which is in violation of the Forest (Conservation) Act, 1980, and also mining in National Parks and Sanctuaries. In one of its order dated 17.12.1999, on application filed by the National Mineral Development Corporation (N.M.D.C.), the Court clarified its position vis-à-vis wherein it held that the ban imposed on mining was subject to the approval of the Central Government and when Central Government has granted the permission the applicant would be at liberty to operate the said mines<sup>4</sup>. What was prohibited was illegal felling of trees without the permission of the Central Government.

#### The Kudremukh Case

The continued operations of the Kudremukh Iron Ore Company Limited (KIOCL), Public Sector Unit, was a major issue for many environmental groups. The Supreme Court's response was based on an application filed by 'Wild Life First!' a Karnataka based NGO.

According to the Petitioner, in spite of the orders passed by the Supreme Court, mining activities were conducted by the KIOCL within the Kudremukh National Park which were in clear violation of orders passed by this Court. The main reliefs sought were: (a) to direct the MoEF to withdraw the illegal "temporary working permission" issued by it and stop mining activities, (b) direct KIOCL to stop polluting the Bhadra river due to open cast mining, (c) take action against KIOCL for illegal encroachment in the forest and for the destruction of forests in the Kudremukh National Park, and (d) to stop KIOCL from laying a new slurry pipe line in the forest of the National Park The Court accepted the

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<sup>4</sup> I.A. No. 419 & 420.

time period for stopping mining activities as fixed by the Forest Advisory Committee constituted under Section 3 of Forest (Conservation) Act, 1980. It meant that KIOCL was to be given five years to wind up operation from the time its earlier lease expired (it had already expired). This meant mining would be allowed till the end of 2005 by which time the weathered secondary ore available in the already broken area will be exhausted. In view of the series of temporary working permission that were granted, as well as the inconsistency on part of the Government of Karnataka and Ministry of Environment and Forests, the Court observed:

*“Before we part with the case, we note with concern that the State and the Central Government were not very consistent in their approach about the period for which the activities could be permitted. Reasons have been highlighted to justify the somersault. Whatever be the justification, it was but imperative that due application of mind should have been made before taking a particular stand and not to change colour like chameleon, and that too not infrequently.”*

The *Kudremukh* case is also important in view of the law laid down with respect to the use of discretionary powers to be exercised under the Forest (Conservation) Act, 1980. The Court also emphasised the need to implement the provisions of the Convention on Biological Diversity:

*“Duty is cast upon the Government under Article 21 of the Constitution of India to protect the environment and the two salutary principles which govern the law of the environment are; (i) the principles of sustainable development and (ii) the precautionary principle. It needs to be highlighted that our country has acceded to the Convention on Biological Diversity and therefore, it has to implement the same. As was absence by this Court in *Vishaka v. State of Rajasthan*, [1997(6) SCC 241], in the absence of any inconsistency between the domestic law and the international conventions, the rule of Judicial Construction is that regard must be had to international conventions, and norms been in construing the domestic law. It is, therefore, necessary for the Government to keep in view the international obligations while exercising discretionary powers under the Conservation Act unless there are compelling reasons to depart there from.”*

### **Niyamgiri hills case**

The Supreme Court judgment in the case *Orissa Mining Corporation v. MoEF and others* is a landmark judgment on mining issues. In this case, Odisha Mining Corporation had approached the Court seeking a Writ of Certiorari to quash the order passed by the Ministry of Environment and Forests (MOEF) dated 24.8.2010 rejecting the Stage-II forest clearance for diversion of 660.749 hectares of forest land for mining of bauxite ore in Lanjigarh Bauxite Mines in Kalahandi and Rayagada Districts of Odisha and also for other consequential reliefs.

The Court directed the government to place the issue of forest rights and its safeguarding, including those related to religion and culture, before the Gram Sabhas. It was further observed that only once the aforementioned was done, the MoEF&CC could take a final decision on whether or not to grant its final approval for mining.

In this judgment, the court observed that the Forest Rights Act has been enacted conferring powers on the Gram Sabha constituted under the Act to protect the community resources, individual rights as well as cultural and religious rights.

#### 45.4 Cases Related to Saw Mills and Wood Based Units

The Court in order dater 12.12.1996 directed that all ongoing activities within any forest without the prior approval of the Central Government must cease forthwith. The Court made it absolutely clear that the running of saw mills of any kind, including, veneer or plywood mills are not permissible without prior Central Government approval. Specifically concerned about the danger to the tropical wet evergreen forest of Tirap and Changlang in Arunachal Pradesh, the Court directed the immediate closure of all saw mills, plywood mills and veneer mills within a distance of 100 kms from the border of Assam. Further, in order to stop the trade in timber, the Court directed that there shall be a complete ban on the movement of cut trees and timber from any of the seven North Eastern States to any other State.

Each State Government was directed to file within two months a report regarding the number of saw mills, veneer and plywood mills operating within each State, the real owners of these mills, the licensed and actual capacity of the mills their proximity to the nearest forest and their source of timber. Further the Sates were also directed to constitute within one month an Expert Committee to:

- ◆ assess the sustainable capacity of the forest of the State vis-à-vis saw mills and timber-based industries;
- ◆ the number of existing saw mills that can be safely be sustained by the State; and
- ◆ the optimum distance from the forest at which the saw mills should be located.

In view of the large number of saw mills operating in the North Eastern Region, the Court constituted a High Power Committee (HPC) on 04.03.1997 in order to oversee the 'strict and faithful implementation' of the orders of the Court. On the same day, the Court passed an order that no new unlicensed sawmills, plywood, veneer and wood based units shall function in the State of Uttar Pradesh and Maharashtra. All unlicensed sawmills, veneer, plywood industries in the States of Maharashtra and Uttar Pradesh were to be closed forthwith and the State Government would not remove or relax the condition for grant of permission/ license for the opening of any such sawmill, veneer and plywood industry. The Court directed that it shall not grant any fresh permission/license for this purpose.

The order dated 15.01.1998 was very significant and dealt at length with the running of wood based industries specifically in the North Eastern States. The Court in its order observed:

*“Even though the proliferation of wood based industries has been the main cause of degradation of forest in the North Eastern States, considering the extent of forest (64% of the geographical area) and the dependence of local people on the forest in the region it is neither feasible nor desirable to ban completely either the timber trade or running of wood based industries. However, their number and capacities are to be regulated ... and they are also required to be relocated in specified industrial zones. Moreover, industrial requirements have to be subordinated to the maintenance of environment and ecology as well as bona fide local needs.”*

With a view to regulating the saw mills, the Court directed the State Governments to notify industrial estates for locating wood based industrial units in consultation with the Ministry of Environment and Forest some of the important directions issued are as follows:

- ◆ Licenses given to all wood based industries shall stand suspended.
- ◆ Wood based industries cleared by the HPC will have the option to shift to identified industrial estates.
- ◆ Units which do not want to shift shall be allowed to be wound up as per law.
- ◆ Licenses of units shall be renewed annually only when no illegality is attributed.
- ◆ Number of wood based industries shall be determined strictly within the quantity of timber that can be felled annually on a sustainable basis as determined by approved working plan from time to time.
- ◆ There shall be a complete moratorium on the issue of new licenses for any wood based unit for the next five years.

**Movement of Timber:** In a significant step the court restricted the movement of timber including sawn timber, veneer and plywood outside the North East unless the same is sourced from or processed in HPC cleared wood based units situated within the approved industrial estates except in the State of Mizoram where no industrial estate exist. Round and hand sawn timber was not allowed to be transported outside North East except with the prior approval of the HPC or the Ministry of Environment and Forest. For controlling illicit trade in timber and timber products, the court directed that transit passes (TPs) printed in water marked paper shall only be used for the transportation of timber and timber products with effect from a date to be fixed by the MoEF but not later than 1 December 2001. For regulating consumption of raw material by timber and veneer units and for keeping record of the finished products and the disposal and movement of the same it was required by the court that the MoEF should issue detailed guidelines within three months from May 2001.

## 45.5 Compensatory Afforestation

Compensatory afforestation refers to afforestation activities carried out to compensate the losses due to diversion of forest land due to non-forest activities. Compensatory afforestation prior to the orders of the Court was carried out in accordance with the

guidelines issued by the Ministry of Environment and Forests under the provisions of the Forest (Conservation) Act, 1980. According to the guidelines:

- ◆ The compensatory afforestation is to be done over an equivalent non-forest area at the cost of the user agency.
- ◆ Wherever non-forest land is not available, which is to be certified by the Chief Secretary of the State, compensatory afforestation is to be done over double the degraded forest area at the cost of the user agency.
- ◆ After the funds for compensatory afforestation are deposited with the concerned State Government and the land for this purpose is transferred and mutated in favour of the forest department, a formal approval for diversion of forest land for non-forest use under Section 2 of the FC Act is given by the Ministry of Environment and Forests.
- ◆ Compensatory afforestation is generally to be done by the Forest Departments in the respective States.

The Central Empowered Committee considered at length all aspects related to compensatory afforestation. It consulted the Ministry of Environment and Forests as well as the State Governments. Although, there were guidelines on compensatory afforestation, the same were not uniformly followed. For example, the procedure for the receipt and utilisation of funds differed among different states. Thus, in the States of Chhattisgarh, Madhya Pradesh, Uttarakhand and Uttar Pradesh, the money received on account of compensatory afforestation is directly deposited by the user agency with the Forest Department as “forest deposit” and do not form part of the consolidated fund of the State. In these States, accessing funds for compensatory afforestation is not a problem. Unfortunately, in most other States, the funds received from the user agencies for compensatory afforestation are deposited as ‘revenue receipts’ with the State Governments, which are made available to the forest department only through budgetary provision and sanction. As such, in all States other than Karnataka, there is problem of timely release of funds for compensatory afforestation. It was, therefore, felt that a Fund for Compensatory Afforestation should be created to be called ‘Compensatory Afforestation Fund’ wherein all the amount received from the user agencies be deposited and subsequently released directly to the implementing agencies as and when required. It was further recognised that plantations raised under compensatory afforestation can never adequately compensate for the loss of natural forests as they are poor substitutes of the natural forests. The CEC in its report noted that in the states of Madhya Pradesh and Chhattisgarh, the net present value is being recovered at the rate of Rs. 5.80 Lakh per hectare to Rs.9.20 Lakh per hectare of forest land depending upon the quality and the density of the forest land diverted for non-forest purpose. The CEC recommended that the Net Present Value of the forest land diverted for non-forest purpose should also be recovered from the user agency while according approval under FCA. The fund so recovered could be utilised for undertaking specific activities such as forest protection and other conservation measures<sup>5</sup>.

<sup>5</sup> I. A. No. 566; see order dated 26.09.2005.

### Compensatory Afforestation Fund Management and Planning Authority (CAMPA)

On 29.10.2002, the Court directed that a Compensatory Afforestation Fund shall be created in which all the monies received from the user agencies towards compensatory afforestation, additional compensatory afforestation, Net Present Value of forest land, Catchment Area treatment fund shall be deposited. The fund will be administered through a body called CAMPA. However, in view of the fact that the considerable time would be required till CAMPA becomes operational, the Court constituted<sup>6</sup> an Ad Hoc CAMPA. The Ad Hoc CAMPA would comprise of Director General of Forest as Chairman and have members from the CEC, the CAG and Ministry of Environment and Forest. It was directed that all the State Governments/ Union Territories shall account for and pay the amount collected with effect from 30 October 2002 in conformity with the order dated 29.10.2002 to the said Ad-Hoc CAMPA.

The functioning of CAMPA and specifically the management of funds collected by the Ad Hoc CAMPA was considered at length by the Courts at different hearings. It was observed by the Court that various agencies had deposited amounts by way of Net Present Value when the forest area were utilised for non-forest purposes. This amount is lying with CAMPA. The issue was examined in detail by the CEC and a report filed<sup>7</sup>. Based on the Report of the CEC, the Court accepted<sup>8</sup> the following recommendations:

- A) The guidelines and the structure of the State CAMPA as prepared by the MoEF may be notified/implemented. All previous orders passed by this Court regarding this would stand modified to the extent necessary for implementation of the present proposal.
- B) Substantial amount of funds have been received by the Ad-hoc CAMPA and sudden release and utilisation of this large sum all at one time may not be appropriate and may lead to its improper use without any effective control on expenditure. This Court considers it appropriate to permit the Ad-hoc CAMPA to release, for the next 5 years, in proportion of 10% of the principal amount pertaining to the respective State/UT as per the conditions given below:
  - i) the details of the bank account opened by the State Executive Committee (in Nationalised Bank) are intimated to the Ad-hoc CAMPA;
  - ii) the amount towards the NPV and the protected area may be released after the schemes have been reviewed by the State Level Executive committee and the Annual Plan of Operation is approved by the Steering Committee;
  - iii) The amount towards the CA, Additional CA, PCA and the Catchment Area Treatment Plan may be released in the respective bank accounts of the States/ UTs immediately for taking up site specific works already approved by the MoEF while granting prior approval under the Forest (Conservation) Act, 1980.

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<sup>6</sup> Order dated 05.05.2006.

<sup>7</sup> I.A. No. 2143.

<sup>8</sup> Order dated 10.07.2009.

- C) An amount upto 5% of the amount released to the State CAMPA may also be released and utilised by the National CAMPA Advisory Council, for monitoring and evaluation and for the implementation of the various schemes as given in para 19 of the Guidelines on the State CAMPA. It is left to the discretion of the National CAMPA Advisory Council whether it wants to spend money directly or through the Ad hoc CAMPA.
- D) The recommendations for the release of the additional funds, if any, will be made in due course from time to time after seeing the progress made by the State Level CAMPA and the effectiveness of the accounting, monitoring and evaluation systems.
- E) The State Accountant General shall carry out the audit of the expenditure done out of State CAMPA funds every year on annual basis.
- F) The State Level Executive Committee shall evolve an appropriate and effective accounting process for maintenance of accounts, returns and for audit.
- G) The interest received by the State CAMPA on the amounts placed at their disposal by the Ad hoc CAMPA may be used by it for administrative expenditure.

### **Compensatory Afforestation Fund Act, 2016**

Compensatory Afforestation Fund Act, 2016 provides for setting up Compensatory Afforestation Fund Management and Planning Authority (CAMPA) at both central and state level to ensure expeditious and transparent utilisation of amounts realised in lieu of forest land diverted for non-forest purpose.

Salient features of the Acts are as follows:

- 1) It seeks to establish the National Compensatory Afforestation Fund under the Public Account of India, and a State Compensatory Afforestation Fund under the Public Account of each state;
- 2) The payments into the funds include compensatory afforestation, NPV, and any project specific payments. The National Fund will get 10% of funds collected and the remaining 90% will go to respective State Fund;
- 3) The collected funds will be utilised for afforestation, regeneration of forest ecosystem, wild life protection and infrastructure development;
- 4) The act also seeks to establish National and State Compensatory Afforestation Fund Management and Planning Authorities to manage the funds;
- 5) The determination of NPV will be delegated to an expert committee constituted by the central government;
- 6) NPV quantifies the services provided by the forest. It includes goods and services (tourism and timber); regulating services (climate change); and non-material benefits (recreation); and

- 7) It seeks to provide safety, security and transparency in utilisation of CAMPA funds which are currently kept in Nationalised Banks and managed by an ad-hoc body. These funds would be brought under the focus of Parliament and State Legislatures by transferring them to non-lapsable interest bearing funds.

### **The Compensatory Afforestation Fund Rules, 2018**

The Government notified the Compensatory Afforestation Fund Rules, 2018 in August, 2018. The Rule 5 of these Rules explain in detail the manner of utilisation of net present value. It is pertinent to mention that Sub-rule 5(3) of the Rules have specific provision for independent concurrent monitoring and evaluation and third party monitoring of various works undertaken from State Fund; publicity-cum-awareness programme and exhibition on the various schemes being implemented by the State Authority from State Fund; production and distribution of quality planting material through certified nurseries at subsidised price for promotion of trees outside forests on Government lands promoted by State Government; and forest certification and development of certification standards.

## **45.6 Conclusion**

Since 1996, the Supreme Court of India has assumed the role of the principal decision maker so far as issues relating to forests and wildlife are concerned. This has been due to Supreme Court's intervention through the following cases:

- 1) The *T. N. Godavarman Thirumulkpad v. Union of India and Ors.* (WP No 202 of 1995), concerning the implementation of the Forest Conservation Act, 1980.
- 2) The Centre for *Environmental Law (CEL), WWF v. Union of India and Ors.* (WP No 337 of 1995), concerning the issue of settlement of Rights in National Parks and Sanctuaries and other issues under the Wildlife (Protection) Act, 1972.

These cases are being heard for the last nine years and are a part of what is termed as “continuing mandamus”, whereby the Courts, rather than passing final judgments, keeps on passing orders and directions with a view to monitor the functioning of the executive. They have led to fundamental changes in the pattern of forest governance and decision making.

Some examples include:

- a) By virtue of the Supreme Court's order dated 13.11.2000 in the CEL WWF case (W.P. No. 337 of 1995), no forest, National Park or Sanctuary can be dereserved without the approval of the Supreme Court.
- b) No non-forest activity is permitted in any National Park or Sanctuary even if prior approval under the Forest (Conservation) Act, 1980 has been obtained.
- c) The interim order dated 14.2.2000 prohibited the removal of any dead or decaying trees, grasses, drift wood etc. from any area comprising a National Park or a Sanctuary notified under Section 18 or 35 of the Wildlife (Protection) Act, 1972.

It was also directed that if any order to the contrary has been passed by any State Government or other authorities the operation of the same shall be stayed. In order to advise the Supreme Court on the various issues concerning forest and wildlife conservation, the Central Empowered Committee (CEC) was set up as an authority under Section 3 (3) of the Environment (Protection) Act, 1986 to adjudicate on forest and wildlife related issues. Despite its wide impact and implication on forest management and governance most environment, human rights and activist groups and the Government are not generally aware of the current developments in the Courts. Existing methods of reporting of Court's orders and judgments are generally inadequate and do not reach the concerned groups in time. An Information Dissemination Service is therefore been envisaged as a neutral body that will keep a watch on the happenings in the Supreme Court and disseminate information through electronic as well as other means to interested groups and individuals on all decisions concerning the above two cases.

# UNIT 46

## RIGHT TO INFORMATION ACT, 2005

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### 46.1 Introduction

Most aspects of our daily lives are touched by governmental action (or inaction). Very often we are either personally affected by corruption and inefficiency in different levels of government or know of someone who has been - inordinate delays, demands for bribe, nepotism, red-tapism, waiting for months for a ration card or a passport - these are common, very unfortunate, experiences for any Indian citizen. The root cause of corruption in government is the lack of transparency and accountability. A citizen finds himself faced with massive government machinery which works behind closed doors and shrouds its actions in secrecy and silence. No one knows where the government spends its money, what is the progress of development work undertaken by the government, how much subsidy is being given and to whom, what projects are being sanctioned and why. This lack of information in the public domain allows government officials to manipulate the citizenry at its will. A government official can without hesitation ask for bribe because he knows that the common man would rather pay the bribe than be harassed for years. The official is further emboldened in his dishonest motivations because the whole governmental structure and policy is often designed to support this corruption.

How can society rid itself of the evil of corruption and ensure that the government that it has democratically elected serves it efficiently and effectively? The answer lies in

bringing complete transparency in governance, increasing accountability in government decision making and providing access to government records and documents to the citizenry thereby opening the whole government structure to scrutiny. Once their actions are open to public scrutiny, government officials would no longer be able to under-perform or engage in any form of corrupt practices with impunity.

Each citizen of India has the fundamental right to be informed. This right is guaranteed by the Constitution of India and the Supreme Court of India has upheld this on several occasions. Therefore, a citizen has the right to seek information relating to any action of the government without any arbitrary restriction. While this fundamental right has been existence for several decades now, citizens could not enjoy it for various reasons - the existence of legislation called the Official Secrets Act which had been introduced by the colonial rulers in 1923; a bureaucracy which believed that it was accountable to no one; rampant corruption in every aspect of governance. To give this fundamental right a more meaningful status, from 1997 to 2003 legislatures of nine states across the country formulated laws which more clearly defined this right and how citizens could enjoy. However, these laws had many weaknesses and what was required was a central standardised legislation. A legislation called the Freedom of Information Act 2002 was passed by the Parliament but it never came into force.

In June 2005, under the leadership of the UPA-led government, the Right to Information Act 2005 (RTI Act) was passed by the Parliament. It came into force on 12 October 2005. The Act has been considered to be a revolutionary piece was legislation as it gives citizens the rights to access almost all information held by not only government bodies, but also bodies held, controlled or substantially financed by the government.

In the context of environment protection, the RTI Act is being used by citizens and environment groups across the country to access information on a broad spectrum of issues such as work done by the government towards protection of environment, expenditure and budget outlays for such works, and information relating to projects which are being submitted to the government for approval which have an impact on the environment. The information received through filing of RTI Applications is proving to be an immensely useful tool in the environment protection movement.

This unit will discuss the right to information as guaranteed by the Constitution of India, the provisions of the Right to Information Act 2005 (RTI Act, 2005), and the issues involved in its implementation. We will also discuss some of the instances in which the RTI Act has been used to help protect the environment.

## 46.2 Right to Information - A Fundamental Right

### Introduction

The Constitution of India recognises certain rights as fundamental rights. These rights are paramount and no law in India can take away these rights. If any law made by a legislature or any act of a government is found to be in violation of these rights, the law

or the act would be considered to be unconstitutional and will be struck down. Chapter III of the Constitution of India identifies several rights as fundamental rights. However, over the years, the Supreme Court of India has broadened the spectrum of fundamental rights by liberally interpreting the existing rights. The right to information is one such right which the Supreme Court of India has considered to be a fundamental right of every citizen of this country under Article 19(1)(a) of the Constitution of India. Article 19(1)(a) of the Constitution provides-

19. (1) All citizens shall have the right -  
(a) to freedom of speech and expression;

### Case law

One of the first cases in which the Supreme Court held that the public has a right to know was *State of Uttar Pradesh v. Raj Narain* AIR 1975 SC 865. The Court held that -

“In a government of responsibility like ours, where all the agents of the public must be responsible for their conduct, there can but few secrets. *The people of this country have a right to know every public act, everything, that is done in a public way, by their public functionaries. They are entitled to know the particulars of every public transaction in all its bearing.* The right to know, which is derived from the concept of freedom of speech, though not absolute, is a factor which should make one wary, when secrecy is claimed for transactions which can, at any rate, have no repercussion on public security. To cover with veil secrecy the common routine business, is not in the interest of the public. Such secrecy can seldom be legitimately desired. It is generally desired for the purpose of parties and politics or personal self-interest or bureaucratic routine. The responsibility of officials to explain and to justify their acts is the chief safeguard against oppression and corruption.” (emphasis added)

Some years later, the issue before the Supreme Court in *SP Gupta v. Union of India* 1981 (Supp) SCC 87 was whether the correspondence between the law minister and the Chief Justice of India and the Chief Justices of the High Courts of Delhi and Patna in relation to the transfer and non-appointment of judges could be disclosed. The Court held that in the functioning of the Government, disclosure of information must be the ordinary rule while secrecy must be an exception, justified only when it is demanded by the requirement of public interest. The approach must be to narrow the area of secrecy as much as possible while bearing in mind that disclosure also serves an important aspect of public interest<sup>1</sup>. The Court ordered that the correspondence to be disclosed. Justice P.N. Bhagwati in his decision in this case emphasized need for information and accountability in a democracy and wrote:

“Where a society has chosen to accept democracy as its credal faith, it is elementary that *the Citizens ought to know what the Government is doing.* The citizens have a right to decide by whom and by what rules they shall be governed

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<sup>1</sup> Para 66

and they are entitled to call on those who govern on their behalf to account for their conduct. *No democratic government can survive without accountability and the basic postulate of accountability is that the people should have information about the functioning of the Government...a popular government without popular information or the means of obtaining it, is but a prologue to a force or tragedy or perhaps both.* The Citizen's right to know the facts, the true facts, about the administration of the country is thus one of the pillars of a democratic state"<sup>2</sup>.

In *Secretary, Ministry of Information and Broadcasting, Government of India v. Cricket Association of Bengal* AIR 1995 SC 1236, the Supreme Court opined that the right to information was crucial in a democratic set up. In a democracy where each person has a right to participate, participation in the governance of the country has no meaning unless the persons are well informed with regard to all the issues. The Court held-

“True democracy cannot exist unless all citizens have a right to participate in the affairs of the polity of the country. *The right to participate in the affairs of the country is meaningless unless the citizens are well informed on all sides of the issues, in respect of which they are called upon to express their views. One-sided information, disinformation, misinformation and non-information all equally create an uninformed citizenry which makes democracy a farce* when medium of information is monopolised either by a partisan central authority or by private individuals or oligarchic organisations.”

The Supreme Court in *Dinesh Trivedi v. Union of India* (1997) 4 SCC 306 held that to ensure the continued participation of the people in the democratic process, they must be kept informed of the vital decisions taken by the Government and the basis thereof. Democracy, therefore, expects openness and openness is concomitant of a free society. Sunlight is the best disinfectant.

The Constitution bench of the Supreme Court headed by the then Chief Justice of India (CJI) in *Central Public Information Officer, Supreme Court of India v. Subhash Chandra Agarwal* held that office of CJI is a “public authority” and is subject to the RTI Act.

### Right to Information - an internationally recognised right

Several international legal instruments recognise the right to information as part of the right to freedom of speech and expression. India has made commitment under these instruments to honour this right.

- ◆ The Universal Declaration of Human Rights, 1948 (UDHR) has been signed by India. Article 19 of this Declaration specifically states that the right to freedom of opinion and expression includes the right to seek, receive and impart information.

**Article 19:** Everyone has the right to freedom of opinion and expression; this right includes freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers.

<sup>2</sup> Para 64

- ◆ India has also signed and ratified the International Covenant on Civil and Political Rights, 1966. Article 19(2) of this Covenant reiterates what had been provided in the UDHR-

### Article 19

- 1) Everyone shall have the right to hold opinions without interference.
- 2) Everyone shall have the right to freedom of expression; this right shall include freedom to seek, receive and impart information and ideas of all kinds, regardless of frontiers, either orally, in writing or in print, in the form of art, or through any other media of his choice.

...

In the environmental context the access to information is all the more important as good environmental decision making requires participation of all affected persons. In 1992, 178 countries including India signed the Rio Declaration on Environment and Development. Principle 10 of the Rio Declaration is -

### Principle 10

Environmental issues are best handled with participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided.

## 46.3 Right to Information Act, 2005

### Freedom of Information Act, 2002

In 1997, the Government in power drafted a law called the Freedom of Information Bill 1997. However, this Bill was not enacted. In 1998, the then Prime Minister Mr. Atal Bihari Vajpayee announced that a law on the Right to Information would be passed soon. In the year 2000, the Freedom of Information Bill, 2000 was tabled before the Parliament. The Bill was passed by the Parliament in 2002 and it was called the Freedom of Information Act, 2002. This Act never came into force as the required notification under the Act was never issued.

### Right to Information Act, 2005

The UPA led coalition government which came to power at the Center in 2004 released its agenda in the form of the Common Minimum Programme in May 2004. In this programme, a clear commitment was made by the Government to pass the Right to Information Act. It was stated - '*The Right to Information Act will be made more progressive, participatory and meaningful.*' A National Advisory Council was constituted by the Government to look

into the implementation of the Common Minimum Programme. Two members of the National Advisory Council - Ms. Aruna Roy and Mr. Jean Dreze - had been associated with the right to information campaign in India for a long time. Ms. Aruna Roy and Mr. Jean Dreze played an instrumental role along with other civil society organisations such as the Commonwealth Human Rights Initiative and the National Campaign from People's Right to Information pressurised the Government in honouring its commitment.

The Right to Information Bill, 2004 was introduced in the Parliament on 23 December 2004. On 11 May 2005, Dr. Manmohan Singh, the Prime Minister, made an intervention with regard to the Bill. In his speech he stated -

“I believe that the passage of this Bill will see the dawn of a new era in our processes of governance, an era of performance and efficiency, an era which will ensure that benefits of growth flow to all sections of our people, an era which will eliminate the scourge of corruption, an era which will bring the common man's concern to the heart of all processes of governance, an era which will truly fulfil the hopes of the founding fathers of our Republic.”

The Bill was passed by the Lok Sabha on 11 May 2005 and by the Rajya Sabha on 12 May 2005. After being passed by both Houses, it received the Presidential assent on 15 June 2005. The Right to Information Act, 2005 (RTI Act) came into force through notification on 12 October 2005.

## Overview of the RTI Act

### *Preamble*

The RTI Act in its Preamble sets down the rationale behind the framing of this Act. It recognises the importance of access to information for the functioning of a democracy and that a well-informed citizenry can help in reducing corruption in the Government and hold the Government accountable. The Preamble states-

AND WHEREAS democracy requires an informed citizenry and transparency of information which are vital to its functioning and also to contain corruption and to hold Governments and their instrumentalities accountable to the governed;

AND WHEREAS revelation of information in actual practice is likely to conflict with other public interests including efficient operations of the Governments, optimum use of limited fiscal resources and the preservation of confidentiality of sensitive information;

AND WHEREAS it is necessary to harmonise these conflicting interests while preserving the paramountcy of the democratic ideal;

NOW, THEREFORE, it is expedient to provide for furnishing certain information to citizens who desire to have it.

It is interesting to note that the Parliament was well aware of the fact that there would be certain conflicting interests involved - disclosure of information to citizens may

conflict with the efficient functioning of a government office, the limited financial and human resources available in a government office and the requirement to keep certain sensitive information as confidential. Therefore, the provisions of the RTI Act are drafted in a manner that these conflicts can be minimised while at the same time transparency in government offices is ensured.

### ***Territorial jurisdiction***

As the RTI Act is a central Act, it applies to every state of the country, even in the State of Jammu and Kashmir as they have now been declared as Union Territories. State governments and the Central government as well as certain other competent authorities as defined in the Act have been given the power to draft rules which would regulate certain aspects of the Act such as the fees payable by the person requesting the information; salaries of persons appointed as Information Commissioners and officers of the Commissions and procedure to be adopted by the Commissions.

### ***Act to have overriding effect***

The RTI Act replaced its predecessor - the Freedom of Information Act, 2002. Section 22 of the RTI Act is one of the most important provisions of the Act and its states-

**Section 22:** The provisions of this Act shall have effect notwithstanding anything inconsistent therewith contained in the Official Secrets Act, 1923, and any other law for the time being in force or in any instrument having effect by virtue of any law other than this Act.

According to this section, the RTI Act ***overrides*** any other previous law in force in case there is a conflict between the provisions of the RTI Act and such previous law. Other Acts such as the Indian Evidence Act, 1872 have certain provisions which, if and when in conflict with the RTI Act, will be overridden by the RTI Act. However, it is important to know that the provisions in these other Acts do not cease to exist- i.e. they are still valid in law. It is only *when there is a conflict*, the RTI Act will overrule. This includes the Official Secrets Act, 1923- which had been brought into force by the colonial rulers which made most governmental actions and records confidential and not open to scrutiny. This Act has not been repealed, but several parts of it have been rendered redundant by the RTI Act whose provisions would gain primacy.

### ***Applicability***

Information can be sought under this Act by any citizen of India. This means that only individuals can seek information and bodies such as associations, society, companies, etc. cannot seek information under the Act. It must be pointed out here that if a person is seeking information on behalf of any such body, as long as he or she has written his or her name, there should not be a problem. Also, if a person writes his designation or post in an organisation along with his name- it is acceptable. However, if a person only writes his position, for example, secretary of a resident welfare association - and does not include his name - the application for information may be rejected.

Information under the RTI Act can be sought from Public Authorities. A Public Authority is defined in Section 2(h) of the RTI Act as -

**Section 2(h):** “public authority” means any authority or body or institution of self-government established or constituted -

- a) by or under the Constitution;
- b) by any other law made by Parliament;
- c) by any other law made by State Legislature;
- d) by notification issued or order made by the appropriate Government, and includes any -
  - i) body owned, controlled or substantially financed;
  - ii) non-Government organisation substantially financed, directly or indirectly by funds provided by the appropriate Government Public authorities therefore include-
    - ◆ All central and state government departments;
    - ◆ Any authority, body or institution which has been set up under the Constitution of India - for example - Public Service Commissions and Election Commission;
    - ◆ Any authority, body or institution which has been set up by a central or state law - for example - central and state pollution control boards, National Environment Appellate Authority;
    - ◆ Any authority, body or institution which has been set up under any notification order made by the central or state government - for example - the Central Empowered Committee;
    - ◆ Bodies which are owned, controlled or substantially financed directly or indirectly by government funds;
    - ◆ NGOs which are substantially financed directly or indirectly by government funds.

The RTI Act does not provide a definition of substantially financed and till date a case-to-case analysis has been used by the Commissions set up under the Act and the Courts to decide whether a particular body is substantial financed or not.

### ***Suo moto disclosures***

The RTI Act is not only *reactive* statute- i.e. it does not come into action only when a person seeks certain type of information from a department. One of the reasons why the RTI Act is considered to be a landmark legislation is because it mandates that public authorities would *suo moto* (on its own) make certain disclosures. Section 4 of the RTI Act includes an extensive list of kinds of information which the public authorities are required to make available to the public within 120 days of the enactment of the Act. This information should be regularly updated and disseminated widely and, in a manner, and form which makes it easily accessible to citizens. Uploading information on official

websites is the most commonly used method of dissemination of information. This section also requires public authorities to properly catalogue and index the records in a way that they are easily accessible under the RTI Act.

Section 4(1)(b) of the RTI Act requires the following information to be publicly disclosed by public authorities -

- i) the particulars of its organisation, functions and duties;
- ii) the powers and duties of its officers and employees;
- iii) the procedure followed in the decision-making process, including channels of supervision and accountability;
- iv) the norms set by it for the discharge of its functions;
- v) the rules, regulations, instructions, manuals and records, held by it or under its control or used by its employees for discharging its functions;
- vi) a statement of the categories of documents that are held by it or under its control;
- vii) the particulars of any arrangement that exists for consultation with, or representation by, the members of the public in relation to the formulation of its policy or implementation thereof;
- viii) a statement of the boards, councils, committees and other bodies consisting of two or more persons constituted as its part or for the purpose of its advice, and as to whether meetings of those boards, councils, committees and other bodies are open to the public, or the minutes of such meetings are accessible for public;
- ix) a directory of its officers and employees;
- x) the monthly remuneration received by each of its officers and employees, including the system of compensation as provided in its regulations;
- xi) the budget allocated to each of its agency, indicating the particulars of all plans, proposed expenditures and reports on disbursements made;
- xii) the manner of execution of subsidy programmes, including the amounts allocated and the details of beneficiaries of such programmes;
- xiii) particulars of recipients of concessions, permits or authorisations granted by it;
- xiv) details in respect of the information, available to or held by it, reduced in an electronic form;
- xv) the particulars of facilities available to citizens for obtaining information, including the working hours of a library or reading room, if maintained for public use;
- xvi) the names, designations and other particulars of the Public Information Officers;
- xvii) such other information as may be prescribed.

The last requirement - 'such other information as may be prescribed' - is important as it allows for other types of information which have not been specified in the Act to be

subsequently identified. The significance of this section lies in the fact that public authorities are expected to make information easily accessible and open to public scrutiny. This disclosure of information is also expected to make departmental procedures and norms, budgets, expenditure, minutes of meetings, etc. easily available to the public thereby making the public authorities more transparent.

## 46.4 Right to Information Act - In Practice

### The process of filing an RTI Application

A citizen of India can request for information from any public authority by filing an RTI Application. What is a public authority has already been discussed above. Information has been defined in Section 2(1)(f) of the RTI Act as -

**Section 2(f):** “information” means any material in any form, including records, documents, memos, e-mails, opinions, advices, press releases, circulars, orders, logbooks, contracts, reports, papers, samples, models, data material held in any electronic form and information relating to any private body which can be accessed by a public authority under any other law for the time being in force; therefore, information which is available on record with the public authority can be sought for in an RTI Application. Samples can also be sought, for example - samples of material used to make a road. An RTI Applicant can also request for an inspection of records. An RTI Application cannot ask the public authority to take action or to redress any grievances. Information can also be sought about a private body if it is information that the public authority can access from the private body under any law. For instance, if the law allows the public authority to direct a private body to submit records to it, then such records can also be sought through an RTI Application.

An RTI Application is written to the Public Information Officer of the concerned Department in English or Hindi or in the official language of the area in which the Application is made. Each Public Authority is required to designate one or more of its officers as Public Information Officers (PIOs) in all administrative units/offices. The RTI Application can be sent by post to the PIO and need not be hand delivered. Along with an RTI Application, an application fee which is prescribed has to be deposited in the manner prescribed. For instance, for all Central government departments the application fee is ten rupees and it has to be deposited by way of cash against proper receipt, or by demand draft or banker's cheque or Indian postal order (IPO) payable to the Accounts Officer of the Public Authority. The public authority can refuse to accept an RTI Application if application fees are not paid in the prescribed manner. Persons who are below poverty line are not required to pay application fee.

There is no special format for an RTI Application, but many departments suggest a format on their websites. The following should be there in an RTI Application:

- ◆ Name of Applicant
- ◆ Contact Information- address; phone number; email address

- ◆ Details of information sought
- ◆ Date of filing RTI Application
- ◆ Proof of person being below poverty line (if applicable)
- ◆ A statement whether the information sought concerns the life and liberty of a person

The RTI Act clearly states that the RTI Applicant need not mention reasons for which he or she is seeking information. It is often believed that information can be requested for only when there is a larger public interest being served and that unless the RTI Applicant gives evidence that the information he or she is seeking is in public interest, information need not be disclosed. This is a wrong understanding of the law. Information can be sought for any purpose. The PIO has to provide the information in accordance with the provisions of the RTI Act, irrespective of the purpose for which it has been sought.

### **Processing an RTI Application**

Once an RTI Application is received in any public authority, the PIO has to consider whether the questions concern some other public authority. If it concerns some other public authority, the PIO has to transfer the RTI Application to such other public authority within five days of receiving the RTI Application. A PIO cannot reject an RTI Application on the ground that it does not concern his or her public authority.

If the information sought concerns the life and liberty of a person (not necessarily of the RTI Applicant), the information sought has to be provided by the PIO within forty-eight hours of receiving the Application. If not, then information has to be provided within 30 days. The PIO can seek assistance of such other officer of the same public authority who is the custodian of the information sought while providing information to the Applicant.

If the information has to be provided in the form of photocopies of documents, or a compact disc for which the public authority has to incur a cost, the same is chargeable to the Applicant on the basis of prescribed rules. For Central Government departments, the fees are as follows:

- ◆ Two rupees for each page created or copied (A4 or A3 size)
- ◆ Actual charge or cost price of a copy in a larger paper size
- ◆ Actual cost or price for samples or models
- ◆ Fifty rupees per diskette or floppy
- ◆ First of inspection is free and then a free of rupees five for each subsequent hour of inspection
- ◆ For information provided in printed form at the price fixed for such publication or rupees two per page of photocopy for extracts from the publication

Persons below poverty line do not have to pay the afore-mentioned fees and the information has to be provided free of cost to such persons. The PIO has to inform the Applicant the amount that has to be paid and the calculations with regard to how he

came to this amount. The intervening period between this intimation requesting the Applicant to pay fees and the payment of the fees by the Applicant is not included in the thirty days that the PIO has to respond to an RTI Application. It is important to note that fee that is charged is all inclusive. No additional fees may be charged for postage of information to the Applicant or for the human resource spent in gathering the information.

If the RTI Applicant has specified format in which he or she is seeking information, it has to be provided in that format. The exception to this rule is that if providing the information in that format would disproportionately divert the resources of the public authority or would be detrimental to the safety and preservation of the record. Even then information cannot be refused by the PIO. It must then be provided in a different format. For example, if the information sought by the Applicant is very voluminous, the PIO may offer inspection of the documents by the Applicant instead of photocopying of the documents. Once the Applicant has inspected the documents, he or she may identify the documents which he or she requires photocopies of.

If the information sought by the Applicant is provided to him after thirty days of receiving the RTI Application, the PIO has to provide this information free of cost.

The PIO may decide to reject whole or part of the RTI Application. In such a case, reasons for rejecting the Application have to be sent to the RTI Applicant within thirty days of receiving the RTI Application. The Applicant has to be informed about the period within which an appeal may be filed against the rejection and the contact details of the person with whom the appeal has to be filed.

### **Grounds on which information may not be disclosed**

According to the RTI Act, information has to be provided as a rule and there are only limited specified grounds based on which information may not be disclosed. These grounds are provided under **Section 8 and 9 of the RTI Act**. Section 8(1) has ten clauses each of which is a different ground for exempting information from disclosure.

Any of the following information need not be disclosed except in circumstance discussed later:

- a) information, disclosure of which would prejudicially affect the sovereignty and integrity of India, the security, strategic, scientific or economic interests of the State, relation with foreign State or lead to incitement of an offence;
- b) information which has been expressly forbidden to be published by any court of law or tribunal or the disclosure of which may constitute contempt of court;
- c) information, the disclosure of which would cause a breach of privilege of Parliament or the State Legislature;
- d) information including commercial confidence, trade secrets or intellectual property, the disclosure of which would harm the competitive position of a third party, unless the competent authority is satisfied that larger public interest warrants the disclosure of such information;

- e) information available to a person in his fiduciary relationship, unless the competent authority is satisfied that the larger public interest warrants the disclosure of such information;
- f) information received in confidence from foreign Government;
- g) information, the disclosure of which would endanger the life or physical safety of any person or identify the source of information or assistance given in confidence for law enforcement or security purposes;
- h) information which would impede the process of investigation or apprehension or prosecution of offenders;
- i) cabinet papers including records of deliberations of the Council of Ministers, Secretaries and other officers:

Provided that the decisions of Council of Ministers, the reasons thereof, and the material on the basis of which the decisions were taken shall be made public after the decision has been taken, and the matter is complete, or over:

Provided further that those matters which come under the exemptions specified in this section shall not be disclosed;

- j) information which relates to personal information the disclosure of which has no relationship to any public activity or interest, or which would cause unwarranted invasion of the privacy of the individual unless the Central Public Information Officer or the State Public Information Officer or the appellate authority, as the case may be, is satisfied that the larger public interest justifies the disclosure of such information: Provided that the information which cannot be denied to the Parliament or a State Legislature shall not be denied to any person.

It must be kept in mind that these exemptions have to be construed narrowly as they impinge on the fundamental right to information. The Delhi High Court in *Bhagat Singh v. CIC and Ors.* W.P. (C) 3114/2007 has observed the following in this regard -

“13. Access to information, under Section 3 of the Act, is the rule and exemptions under Section 8, the exception. Section 8 being a restriction on this fundamental right, must therefore be strictly construed. It should not be interpreted in manner as to shadow the very right itself”.

These exemptions are not blanket exemptions and there are certain circumstances in which the information would still have to be provided even if the exemption applied -

- ◆ Circumstances that are mentioned along with the exemptions themselves. For instance, cabinet papers which are otherwise exempt from disclosure shall be made public once the decision is taken.
- ◆ If the public authority finds that the public interest in disclosing the information outweighs the harm caused to the private interests if the information is disclosed. This is provided in Section 8(2) of the Act which states -

**Section 8(2):** Notwithstanding anything in the Official Secrets Act, 1923 nor any of the exemptions permissible in accordance with sub-section (1), a public authority may allow access to information, if public interest in disclosure outweighs the harm to the protected interests.

For instance, if it is found that information sought is personal in nature and the disclosure may invade the privacy of the person to whom the information relates to - the information would ordinarily be exempt from disclosure. But if the disclosure of such information serves a public interest which outweighs the harm done to such a person on disclosure, the information would have to be disclosed.

- ◆ Section 8(3) provides that in case the information sought pertains to any incident or matter which took place twenty years before, the information will be made public even if any of the exemptions apply. However, if the exemptions under clauses (a), (c) and (i) as mentioned above apply - the information cannot be disclosed.

Under Section 9 of the RTI Act, the PIO can reject a request for information if providing access to such information would lead to an infringement of copyright subsisting in a person. However, if the copyright subsists in the State, this provision does not apply and the PIO would have to disclose the information.

### Severance of information

In a situation where part of the information that has been sought is exempt but the rest of the information is not, the PIO may provide the information that is not exempt after severing it from the part which contains exempt information. For example, if the RTI Applicant is seeking a copy of an investigation report and the PIO is of the opinion that if the names of the witnesses are revealed then their life would be in danger and therefore clause (g) of the exemption would apply - the PIO can provide a copy of the report after deleting the names of the witnesses and any other clue to their identification from the report and then give it to the Applicant.

### Information relating to third party

Under the RTI Act, any citizen can seek information even about a third party. Third party has been defined under the RTI Act in Section 2(n) as-

**Section 2(n)** “third party” means a person other than the citizen making a request for information and includes a public authority.

However, if the PIO finds that the information sought about the third party has been given to the public authority by the third party and is being treated as confidential by such third party, then in accordance with Section 11 the PIO will within five days of receiving the RTI Application send a notice to such third party asking for submissions whether the information should be disclosed. The PIO will then consider the submissions received from the third party before deciding whether any of the exemptions under Section 8(1) and 9 apply; and if yes, any of the circumstances mentioned above which

override the exemptions, apply. Many PIOs make the mistake of considering Section 11 to be an exemption clause itself and they refuse to provide information to the RTI Applicant if the third party objects to the disclosure of the information. Section 11 is only a procedural section. It lays down the procedure to be adopted in case the information relates to the third party and is treated as confidential by this third party. Even if the third party objects, the PIO has to independently apply his or her mind to the case and see if information can still be disclosed in accordance with the provisions of the RTI Act.

## 46.5 Information Commissions

### Central Information Commission

The Central Information Commission (CIC) has been set up under the RTI Act. The CIC consists of the Chief Information Commissioner and other Information Commissioners, not more than ten in number. The office of the CIC is in Delhi. The CIC has jurisdiction over public authorities which are departments of the Central Government or any of the Union Territories; or are formed by central Acts or orders/ notifications issued by the Central Government or any of the Union Territories; or are controlled or substantially funded by the Central Government or any of the Union Territories.

The Central Information Commissioners are appointed by the President on the recommendation of the following persons - the Prime Minister, the Leader of the Opposition and a Union Cabinet Minister who has been nominated by the Prime Minister. They hold the post for a period of five years or till the age of sixty five - whichever is earlier. Commissioners are supposed to be 'persons of eminence in public life with wide knowledge and experience in law, science and technology, social service, management, journalism, mass media or administration and governance.'

### State Information Commission

State Information Commissions (SIC) have been set up in every State of the country under the RTI Act. Each SIC consists of a Chief Information Commissioner and Information Commissioners, not more than ten in number. The SICs have jurisdiction over the public authorities which are departments of the respective state Government; or are formed by State Acts or orders/notifications issued by the State Government; or are controlled or substantially funded by the State Government.

The State Information Commissioners are appointed by the Governor of the respective state on the recommendation of the Chief Minister, Leader of the Opposition and a Cabinet Minister who is nominated by the Chief Minister. Like the Central Information Commissioners, State Information Commissioners hold the post for a period of five years or till the age of sixty five - whichever is earlier. Commissioners are supposed to be 'persons of eminence in public life with wide knowledge and experience in law, science and technology, social service, management, journalism, mass media or administration and governance.'

### The Right to Information (Amendment) Act, 2019

The RTI (Amendment) Act received the assent of the President on the 1 August 2019. The amended Act has changed Sections 13 and 16 of the RTI Act, 2005. Section 13 of the original Act sets the term of Central Chief Information Commissioner and Information Commissioners at five years (or until the age of 65, whichever is earlier). It has been replaced now with “for such term” as may be prescribed by the Central government. Again, Section 13 says that salaries, allowances and other terms of service of the “Chief Information Commissioner shall be the same as that of the Chief Election Commissioner”, and those of an Information Commissioner “shall be the same as of the Election Commissioner”. Through amendment now, the salaries, allowances and other terms of service of the Chief Information Commissioner and the Information Commissioners “shall be such as may be prescribed by the Central Government”. Almost identical changes through amending Section 16 of the original Act have been brought to Chief Information Commissioner and Information Commissioners of states.

#### Powers of Information Commissioners

Central and State Information Commissioners have the following powers:

- ◆ Decide on Appeals filed under Section 19 and Complaints under Section 18.
- ◆ Penalise erring PIOs and/or recommend disciplinary proceedings against them.
- ◆ Award compensation to RTI Applicants for any loss or detriment suffered due to the delay in providing the information.
- ◆ Recommend specific steps to public authorities so that they can work in consonance with the RTI Act such as providing access to information in a particular form, directing that certain category of information be published, suggest changes in the practices of the public authority, require the submission of an annual report with regard to *suo moto* disclosure of information under Section 4 of the Act.

The Information Commissioners have to submit an annual report to the Central or State Government which includes details regarding the implementation of the RTI Act. This report has to be presented before each House of Parliament or Legislature.

## 46.6 Appeal Under Section 19

### First Appeal Procedure

Each Public Authority has to designate a person as the First Appellate Authority. He or she has to be a person who is a senior in rank to the PIO. If the RTI Applicant is not satisfied with the information given by the PIO; or has not received any information from the PIO; or the request for information has been wrongly rejected- he or she may file a first appeal with the First Appellate Authority. This Appeal has to be filed within 30 days of receiving the reply of the PIO or the date on which the PIO’s reply should have been received - i.e. within 30 days of filing of the RTI Application. An appeal may be accepted after the time period of 30 days has passed, if sufficient cause is shown that the Appellant was prevented from filing the appeal within time.

If a third party is aggrieved by the decision of the PIO to disclose the information to the RTI Applicant, such third party may also file a first appeal.

During the hearing of the First Appeal the onus lies on the PIO to prove that the denial of information was justified. The First Appellate Authority has to decide the matter within 30 days of receiving the appeal. This time period of 30 days may be extended up to 45 days for reasons which have to be given by the First Appellate Authority in writing.

### **Second Appeal Procedure**

If the RTI Applicant is not satisfied with the order of the First Appellate Authority, or the Authority has not delivered an order within the time limit stipulated in the Act or the order of the Authority has not been complied with- the RTI Applicant can file a Second Appeal before the CIC or the SIC. The Second Appeal has to be filed within ninety days of receiving the order of the First Appellate Authority or ninety days from the date on which the order should have been issued but was not. A Second Appeal may be accepted by the CIC or the SIC after the period of ninety days has passed if sufficient cause is shown by the Appellant that he was prevented from filing it within ninety days.

During the second Appeal proceedings, as in the first Appeal proceedings, the onus lies on the PIO to prove that the denial of information was justified. The CIC or the SIC has the power to direct the public authority to take oral or written evidence on oath/ affidavit; inspect documents or copies; hear and receive affidavits from the PIO against whom the appeal has been made and/or the Appellate Authority who has decided the first appeal; and to hear from you. If the decision of a PIO or Appellate Authority relates to a third party, then that third party also has the right to be heard by the Information Commission before it makes a decision.

The decision of the CIC or the SIC is binding. No appeal lies from the decision of either the SIC or the CIC. It is important to understand that the CIC does not have any jurisdiction over the SIC and the subject matter jurisdiction of these Commissions are entirely separate. Therefore, no appeal or review lies from the decision of the SIC to the CIC.

### **Penalty**

The Information Commissions have the power to impose penalty on the PIOs, if the PIO, without reasonable cause -

- ◆ refused to receive an application for information;
- ◆ did not furnish information within the time limit stipulate in the Act;
- ◆ denied the request for information with malafide intentions;
- ◆ knowingly gave incorrect, incomplete or misleading information or destroyed information which was the subject of the request;
- ◆ obstructed in any manner in furnishing the information.

If the PIO has sought assistance from another officer who is the custodian of the record, then for the purposes of penalty such other officer would be considered the PIO. The CIC

and the SICs have to give a proper hearing to the PIO before coming to a conclusion. The burden lies on the PIO to prove that he acted reasonably and diligently. The discretion lies on the Information Commissioners to decide whether a reasonable cause existed or not. If the Commission finds any of the above circumstances to exist in any case without reasonable cause, it has the power to impose a penalty of two hundred and fifty rupees each day till the application is received or the correct information is furnished. The Act stipulates a maximum limit of twenty-five thousand rupees as penalty. Therefore, any delay of more than hundred would attract the same amount of penalty - twenty-five thousand rupees. This penalty has to be paid by the PIO personally and is not paid by the Public Authority.

The Commission can also recommend disciplinary proceedings against a PIO if he or she, without any reasonable cause and persistently, does any of the afore-mentioned actions.

## 46.7 Complaint Procedure

A Complaint may be filed with the Information Commissions for any of the following reasons -

- ◆ If an RTI Applicant has not been able to submit his request to the PIO as either no such officer has been appointed by the Public Authority or because the PIO appointed has refused to accept the RTI Application.
- ◆ If the PIO has refused to give access to any of the information requested under the Act.
- ◆ If the RTI Applicant has not received a response to the Application within the time limit stipulate in the Act.
- ◆ If the RTI Applicant has been asked to deposit fees which he or she finds to be unreasonable
- ◆ If the RTI Applicant believes that incomplete, misleading or false information is being provided.
- ◆ Any other matter relating to requesting or obtaining access to records under this Act.

The grounds for Complaint under Section 18 of the Act are similar to the grounds for Appeal under Section 19 and this has been one of the criticisms with regard to the drafting of the Act. However, grounds such as non-appointment of PIOs and unreasonable fees can only be grounds for complaint under Section 18 and not Appeal under Section 19. Also, there can only be complaint about 'any other matter relating to requesting or obtaining access to records under this Act.' Examples of this last ground are if the RTI Applicant is harassed by any person for seeking information under the RTI Act, or if department proceedings are initiated against an RTI Applicant who is a government employee for seeking information from his own department.

Penalty proceedings can be initiated in response to a Complaint as well. The process is exactly the same as that for Appeals.

The Commission has the power to initiate an inquiry into a matter if it is satisfied that there are reasonable grounds to do so. While inquiring into any matter, the Commission has the powers vested in a civil court while trying a suit under the Code of Civil Procedure, 1980 in respect of the following matters -

- a) summoning and enforcing the attendance of persons and compel them to give oral or written evidence on oath and to produce the documents or things;
- b) requiring the discovery and inspection of documents;
- c) receiving evidence on affidavit;
- d) requisitioning any public record or copies thereof from any court or office;
- e) issuing summons for examination of witnesses or documents; and
- f) any other matter which may be prescribed.

## 46.8 Use of RTI Act in Environmental Decision-making

RTI Applications are very useful tools for citizens who wish to intervene in environmental decision-making in the country. By filing an RTI Application, a citizen can gain access to various documents which the government has in its custody such as - Environment Impact Assessment Reports, minutes of meetings held by different committees on environmental issues, file noting of government officers which often reflect the real reasons behind an administrative decision and correspondence between the Department and licensees which, would reveal the action taken by the Department with regard to compliance of clearance conditions.

The Courts and judicial forums across the country have also relied on information which has been procured by either party through the RTI route. In two important environmental cases before the High Court of Delhi, the Petitioners produced information before the Court which had been accessed through the RTI route.

In *Utkarsh Mandal v. Union of India and Others*, WP (C) No. 9340/2009, the High Court of Delhi decided that the Environmental Clearance to a mining project in Goa granted by the Ministry of Environment and Forests had to be set aside as it was based on recommendations given by the Expert Appraisal Committee whose credibility was in doubt. The Petitioner in the matter had presented before Court information that it had received in response to an RTI Application filed with the Ministry of Environment and Forests. The reply received from the Ministry showed that the Chairman of the Expert Appraisal Committee (EAC), which had recommended the mining project for clearance, was himself a Director of four mining companies. The reply also revealed that the EAC had recommended 419 mining projects for clearance in six months. The High Court observed in its order that this information created a doubt over the credibility of the EAC. This was one of the reasons why the Environmental Clearance granted was set aside by the Delhi High Court.

In another case, *Balachandra Bhikaji Nalwade v. Union of India and Others*, WP (C) No. 388 of 2009, the High Court had to decide whether the Environmental Clearance granted

to a thermal power plant in Maharashtra was valid in law or not. The Petitioner challenged the Environmental Clearance on the ground that a proper Environment Impact Assessment had not been undertaken prior to the grant of clearance. The Petitioner in this case produced before the Court copies of correspondence he had received in response to his RTI Application between the Government and a research institution which clearly proved that enough research had not been undertaken before the Environmental Clearance was granted. The High Court on this basis quashed the Environmental Clearance.

In both these cases, the information which was produced before the Court by the Petitioner was able to convince the Court because it was part of the authoritative reply given by a public authority itself and not just based on the Petitioner own contentions.

RTI Applications have also been used by environmental organisations such as Kalpavriksha for their research work. Kalpavriksha released a report called 'Calling the Bluff' in 2009 in which it analysed, among other things, the level of compliance and monitoring of conditions stipulated in Environmental Clearances. One of the main sources of data for this study was the information received by Kalpavriksha in response to RTI Applications filed by it. The information revealed that there was virtually no monitoring or compliance of conditions stipulated in the Environmental Clearances and companies were flouting several environmental regulations as there was no efficient monitoring mechanism in place.

## 46.9 Conclusion

The agencies that are exempt are Central Intelligence and Security agencies specified in the Second Schedule like IB, Directorate General of Income Tax(Investigation), RAW, Central Bureau of Investigation (CBI), Directorate of Revenue Intelligence, Central Economic Intelligence Bureau, Directorate of Enforcement, Narcotics Control Bureau, Aviation Research Centre, Special Frontier Force, BSF, CRPF, ITBP, CISF, NSG, Assam Rifles, Special Service Bureau, Special Branch (CID), Andaman and Nicobar, The Crime Branch-CID-CB, Dadra and Nagar Haveli and Special Branch, Lakshadweep Police. Agencies specified by the State Governments through a Notification will also be excluded. The exclusion, however, is not absolute and these organisations have an obligation to provide information pertaining to allegations of corruption and human rights violations. Further, information relating to allegations of human rights violation could be given but only with the approval of the Central or State Information Commission.

The following is exempt from disclosure under Section 8 of the Act:

- ◆ Information, disclosure of which would prejudicially affect the sovereignty and integrity of India, the security, "strategic, scientific or economic" interests of the State, relation with foreign State or lead to incitement of an offense;
- ◆ Information which has been expressly forbidden to be published by any court of law or tribunal or the disclosure of which may constitute contempt of court;
- ◆ Information, the disclosure of which would cause a breach of privilege of Parliament or the State Legislature;

- ◆ Information including commercial confidence, trade secrets or intellectual property, the disclosure of which would harm the competitive position of a third party, unless the competent authority is satisfied that larger public interest warrants the disclosure of such information;
- ◆ Information available to a person in his fiduciary relationship, unless the competent authority is satisfied that the larger public interest warrants the disclosure of such information;
- ◆ Information received in confidence from foreign Government;
- ◆ Information, the disclosure of which would endanger the life or physical safety of any person or identify the source of information or assistance given in confidence for law enforcement or security purposes;
- ◆ Information which would impede the process of investigation or apprehension or prosecution of offenders;
- ◆ Cabinet papers including records of deliberations of the Council of Ministers, Secretaries and other officers;
- ◆ Information which relates to personal information the disclosure of which has no relationship to any public activity or interest, or which would cause unwarranted invasion of the privacy of the individual (but it is also provided that the information which cannot be denied to the Parliament or a State Legislature shall not be denied by this exemption);
- ◆ Notwithstanding any of the exemptions listed above, a public authority may allow access to information, if public interest in disclosure outweighs the harm to the protected interests. However, this does not apply to disclosure of “trade or commercial secrets protected by law”.

# INTRODUCTION TO ENVIRONMENT TRIBUNALS

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### 47.1 Introduction

As one of the largest economies of the world, India is constantly striving towards a double-digit economic growth rate. As the economy grows, so does the ‘collateral damage’ - the impact on the environment. From industries letting out poisonous sewage into the rivers and streams to lakhs of vehicles emitting poisonous gases into the air; from hazardous waste being negligently dumped near residential areas to rampant decimation of forests and wildlife; from encroachment of the fragile coastal areas to widespread mining in the middle of pristine jungles - the common man in India has experienced it all.

The Constitution of India gives every person a right to life. It is a fundamental right and no law or administrative action can violate this right. The Supreme Court of India has interpreted several other rights within this right to life including the fundamental right to clean and healthy environment. In the past two decades, the Supreme Court of India and the High Courts have on many occasions upheld this right guaranteed under Article 21 of the Constitution of India to protect different aspects of the environment - air, water, forests, wildlife, soil, etc.

The Constitution of India also recognises, as one of the fundamental principles of governance, the duty of the government to protect and improve the environment and safeguard forests and wildlife. It also places a duty on every citizen of the country to protect and improve the natural environment.

Several legislations have been enacted to protect various aspects of the environment such as the Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981 and the Environment (Protection) Act, 1986. These legislations, among other things, put in place processes to analyse the impact of any activity on the environment; lay down norms and criteria to reduce the adverse impact of human activity on the environment; and create institutions to monitor the activities of industries and redress grievances.

Given that each citizen of this country has the fundamental right to clean and healthy environment and there are statutes to minimise the impact on the environment, it is the constitutional mandate of all three branches of the government - the legislature, the executive and the judiciary - to ensure that the statutes are enforced and the fundamental right to a healthy environment can be enjoyed. One important way in which this can be done is to make available effective redressal mechanisms which the citizens can resort to when their rights are violated or statutory requirements are not adhered to.

Over the past few decades, the higher judiciary in the country - the Supreme Court and the High Courts - has played a crucial role in providing redressal mechanisms. Exercising jurisdiction under Articles 32 and 226 of the Constitution, these courts have passed orders with far reaching consequences for people and the environment. In many cases where the other two branches of the government - the Legislature and the Executive - have not performed their functions or met their constitutional mandate to protect the environment, the courts have stepped in to give strict directions to these branches.

But the higher judiciary cannot be the only redressal mechanism available to the citizens. On a practical level - it could be many years before the courts given any decision in a matter as they are overburdened with lakhs of pending cases. On a more substantive level - the issues relating to the environment which come before the courts are very technical in nature and require scientific and technical expertise to be resolved. Courts in most cases do not possess this expertise and, on several occasions, had to seek assistance from specially constituted expert bodies before making a decision.

Over the past decade, the judiciary has on many instances voiced the need for specialised courts/tribunals which can deal with environmental litigation in a more efficacious manner. These 'environmental courts' should include scientific and technical experts in their panel, alongside legal/judicial members so that the decision making in the environmental matters is better informed.

## 47.2 Need for Green Tribunals

The Constitution of India guarantees several fundamental rights to persons in India. Some of these rights have been clearly spelt out in the text of the Constitution (e.g. right to equality, right to life, right to freedom speech and expression, etc.) while others have emerged as a result of the liberal interpretation of the 'spelt out' rights by the judiciary of this country. The fundamental right which has been most broadly interpreted to

include other rights is the right under Article 21. Article 21 of the Constitution of India states -

*21. No person shall be deprived of his life or personal liberty except according to procedure established by law.*

The Supreme Court of India on many occasions has held that this right to life is not the right to mere animal existence but something much more than physical survival. This 'something more' has been used by the Courts to include several other rights within the ambit of right to life and give them the status of fundamental rights such as the right to livelihood, right against torture, right to legal aid, etc. One of the most significant set of rights which the Supreme Court has read into the fundamental right to life is the right to clean and healthy environment and other concomitant rights. One of the first cases in which the Supreme Court of India gave an expansive interpretation to the right to life to include the right to enjoyment of clean environment is *Subhash Kumar v. State of Bihar* AIR 1991 SC 420 in which the Court held -

“Right to live is a fundamental right under Article 21 of the Constitution and it includes the right of enjoyment of pollution free water and air for full enjoyment of life. If anything endangers or impairs that quality of life in derogation of laws, a citizen has right to have recourse to Article 32 of the Constitution for removing the pollution of water or air which may be detrimental to the quality of life<sup>1</sup>.”

In Part IV, the Constitution of India lays down certain fundamental principles called the Directive Principles of State Policy which the State is expected to keep in mind while framing laws. One such Principle is enunciated in Article 48A, which states -

*48A. The State shall endeavour to protect and improve the environment and to safeguard the forests and wild life of the country.*

Article 51A enumerates certain duties of every citizen of India. In clause (g) of Article 51A, a duty has been imposed on every citizen to '*protect and improve the natural environment including forests, lakes, rivers and wild life, and to have compassion for living creatures.*'

Though neither Article 48A nor Article 51A is judicially enforceable,<sup>2</sup> the fact that Article 21 has been given an expansive interpretation to make the right to enjoy a clean

<sup>1</sup> Article 32 of the Constitution of India gives the right to any person whose fundamental right has been violated to approach the Supreme Court of India for the enforcement of such right. Jurisdiction under Article 32 can only be invoked if there has been a violation of a fundamental right and therefore this decision is significant because it opens the doors of the Court under Article 32 for violation of the right to clean (unpolluted) environment.

<sup>2</sup> Unlike fundamental rights, Directive Principles of State Policies and Fundamental Duties are only directory in nature and not mandatory. Therefore, if the state makes a law which violates such a directive principle (and not a fundamental right) or a citizen of the country does something which is against her fundamental duty under Article 51A, the same cannot be judicially enforced under the Constitution unless some other statutory remedy has been specifically enacted for the same.

environment a fundamental right, allows the Courts to take action and at the same time invoke Article 48A and Article 51A(g).

While the Constitution guarantees the fundamental right to clean environment, environment legislations such as the Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act, 1981 and the Environment (Protection) Act, 1986 provide statutory rights to clean environment by bringing into force, among other things, emission/disposal standards, procedures to consider the environmental impact of an industry before it is set up and processes by which the adverse impact on the environment caused by activities can be monitored. If there is any violation of the emission/disposal standards laid down in the statute or if there is non-compliance of statutory conditions, the industry can be taken to court by the government or by any citizen.

From mid-1980s more and more cases relating to the environment started coming to the Supreme Court and the High Courts. The Courts on many occasions had to decide between two contrary scientific opinions being brought before it by opposite parties. Having little technical expertise, the Courts started seeking advice from scientific experts or setting up expert bodies to investigate a matter and submit a report making recommendations to the Courts. The Courts relied on these recommendations to come to its final decision.

In the following section we look at some of the decisions of the Supreme Court of India in which the Court has expressed the need for specialised environmental courts which would be able to meet the need for expertise on scientific issues by having experts on the adjudicating panel along with judges.

### Case law

In 1986, a case came before the Supreme Court in which the issue before the court related to the leakage of oleum gas from a fertilizer plant in Delhi because of which one person had died and whether the plant should be allowed to restart. The Court in this case had been faced with conflicting reports from experts and therefore appointed another Expert body to assist it. In its order *M.C. Mehta v. Union of India* (1986)2 SCC 176 in Para 22, the Court made the following observation -

“There is also one other matter to which we should like to draw the attention of the Government of India. We have noticed that in the past few years there is an increasing trend in the number of cases based on environmental pollution and ecological destruction coming up before the Courts. Many such cases concerning the material basis of livelihood of millions of poor people and reaching this Court by way of Public interest litigation. In most of these cases there is need for neutral scientific expertise as an essential input to inform judicial decision making. These cases require expertise at a high level of scientific and technical sophistication. We felt the need for such expertise in this very case and we had to appoint several expert committees to inform the court as to what measures were required to be adopted by the Management

of Shriram to safeguard against the hazard or possibility of leaks, explosion, pollution of air and water etc. and how many of the safety devices against this hazard or possibility existed in the plant and which of them, though necessary, were not installed. We have great difficulty in finding out independent experts who would be able to advise the court on these issues. Since there is at present no independent and competent machinery to generate, gather and make available the necessary scientific and technical information, we had to make an effort on our own to identify experts who would provide reliable scientific and technical input necessary for the decision of the case and this was obviously a difficult and by its very nature, unsatisfactory exercise. It is therefore absolutely essential that there should be an independent Centre with professionally competent and public spirited experts to provide the needed scientific and technological input. We would in the circumstances urge upon the Government of India to set up an Ecological Sciences Research Group consisting of independent, professionally competent experts in different branches of science and technology, who would act as an information bank for the Court and the Government Departments and generate new information according to the particular requirements of the Court or the concerned Government department. We would also suggest to the Government of India that since cases involving issues of environmental pollution, ecological destruction and conflicts over natural resources are increasingly coming up for adjudication and these cases involve assessment and evolution of scientific and technical data, it might be desirable to set up Environment Courts on the regional basis with one professional Judge and two experts drawn from the Ecological Sciences Research Group keeping in view the nature of the case and the expertise required for its adjudication. There would of course be a right of appeal to this Court from the decision of the Environment Court.”

Almost a decade after this decision of the Court, the Court stated in its judgment in *Indian Council for Environmental-Legal Action v. Union of India* 1996(3) SCC 212 that ‘suggestion for establishment of environment courts is a commendable one’. The Court observed that the work load in ordinary criminal courts was very high and therefore prosecutions launched in these courts never reach their conclusion. In para 6 the Court further observed that -

“Moreover, any orders passed by the authorities under Water and Air Acts and the Environment Act are immediately questioned by the industries in courts. Those proceedings take years and years to reach conclusion. Very often, interim orders are granted meanwhile which effectively disable the authorities from ensuring the implementation of their orders. All this points to the need for creating environment courts which alone should be empowered to deal with all matters, civil and criminal, relating to environment. These courts should be manned by legally trained persons/judicial officers and should be allowed to adopt summary procedures. This issue, no doubt, requires to be studied and examined in-depth from all angles before taking any action.”

In two significant orders in *A.P. Pollution Control Board v. Prof. M.V. Nayudu* 1999 (2) SCC 718 and 2001 (2) SCC 62, the Supreme Court once again reiterated the need for environmental courts. In this case the Court was dealing with the issue of whether a hazardous industry could be located within a ten km radius of two water reservoirs which were the source of water for the twin cities of Hyderabad and Secunderabad. The Court decided to refer the matter to the National Environment Appellate Authority to investigate the issues which were very technical and scientific in nature. The Court held that -

“53. In a large number of matters coming up before this Court either under Article 32 or under Article 136 and also before the High Courts under Article 226, complex issues relating to environment and pollution, science and technology have been arising and in some cases, this Court has been finding sufficient difficulty in providing adequate solutions to meet the requirements of public interest, environmental protection, elimination of pollution and sustained development. In some cases this Court has been referring matters to professional or technical bodies. The monitoring of a case as it progresses before the professional body and the consideration of objections raised by affected parties to the opinion given by these professional technical bodies have again been creating complex problems. Further these matters sometime require day to day hearing which, having regard to other workload of this Court, (- a factor mentioned by Lord Woolf) it is not always possible to give urgent decisions. In such a situation, this Court has been feeling the need for an alternative procedure which can be expeditious and scientifically adequate.”

In the second order, the Court on the issue of Environmental Courts referred the matter to the Law Commission of India for its consideration on the question of review of the environmental laws and the need for constitution of environmental courts with experts in environmental law along with judicial members in light of experience in other countries.

### **Report of the Law Commission**

Pursuant to the second order of the Supreme Court in *A.P. Pollution Control Board v. Prof. M.V. Nayudu*, the Law Commission of India submitted its 186th report in September 2003 in which it recommended the following:

“The Judicial body will be an Environment Court at State Level consisting of sitting/retired judges or members of the Bar with more than 20 years standing, assisted by a statutory panel of experts in each State. It will be a Court of original jurisdiction on all environmental issues and also an appellate authority under all the three Acts, viz., Water Act, Air Act and Environment (Protection) Act, 1986 and will reduce the burden of High Courts/Supreme Court. There will lie a further statutory appeal direct to the Supreme Court against the judgment of the proposed Environment Court. In our view, this scheme is preferable to the Government’s proposal of a single appellate Court at Delhi, which will be beyond the reach of affected parties.”

### Other reasons in support of environment courts or green tribunals<sup>3</sup>

There are other reasons which support the constitution of environment courts or green tribunals other than those mentioned by the Supreme Court. These include:

- ◆ Specialised tribunals can help in improving government accountability. If there is a more informed adjudicatory authority overlooking the actions of the executive branches of the government, these agencies are likely to act in more transparent and responsible manner.
- ◆ In the absence of specialised tribunals, decisions given by separate high courts of the country, and the Supreme Court, lack consistency in terms of the principles applied and the conclusion reached. If an environment court is constituted, it would bring uniformity in environmental adjudication and would also help in increasing the predictability of the decision making process.
- ◆ Environment courts can draft more flexible rules with regard to standing and costs which can make it easier for persons to come before it and complain against environmental damage. Litigation in general can be prohibitively expensive and specialised courts can also reduce the costs involved by moving faster on the issue.
- ◆ As some environmental cases require urgent hearing to prevent environmental damage, specialised courts can prioritise such cases and fast track them. Environment courts are expected to handle cases more efficiently than other general courts given their technical and scientific expertise.
- ◆ Environment Courts also allow for the adoption of an integrated approach to dealing with separate environmental laws, so that all environmental aspects of a problem can be dealt with simultaneously.
- ◆ Flexible rules of such a court can also help by allowing the court to be innovative with regard to the remedy that may be provided in any particular situation.

### Access to environmental justice in International Law

In 1992, 178 countries including India signed the Rio Declaration on Environment and Development. Principle 10 of the Rio Declaration is -

#### Principle 10

Environmental issues are best handled with participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided.

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<sup>3</sup> Adapted from *Greening Justice*.

Specialised environmental courts or green tribunals provide a more effective judicial remedy because the adjudicating panel includes experts with the required scientific and technical background who would be able to make a more informed decision than a panel consisting only of judges trained in the area of law.

A study published in 2009 called 'Greening Justice' has recorded that in 1970s there were only a handful of environmental courts/ green tribunals in the world. In 2009, the number has gone up to 350 such courts in 41 countries<sup>4</sup>. Over half of these courts have been created after 2004.

### 47.3 National Environment Tribunal and National Environment Appellate Authority

#### National Environment Tribunal

India had participated in the United Nations Conference on Environment and Development held at Rio de Janeiro in June, 1992 and signed on the Rio Declaration. Among other principles set out in the Declaration were Principles 10 and 13 quite significant. Principle 10 (as stated above) requires states to provide access to effective judicial and administrative process, remedies and redressal. Principle 13 states -

#### Principle 13

States shall develop national law regarding liability and compensation for the victims of pollution and other environmental damage. States shall also cooperate in an expeditious and more determined manner to develop further international law regarding liability and compensation for adverse effects of environmental damage caused by activities within their jurisdiction or control to areas beyond their jurisdiction.

To meet the requirements of Principles 10 and 13, the Parliament passed the National Environment Tribunal Act 1995 with the following Preamble:

“An Act to provide for strict liability for damages arising out of any accident occurring while handling any hazardous substance and for the establishment of a National Environment Tribunal for effective and expeditious disposal of cases arising from such accident, with a view to giving relief and compensation for damages to persons, property and the environment and for matters connected therewith or incidental thereto.

WHEREAS decisions were taken at the United Nations Conference on Environment and Development held at Rio de Janeiro in June, 1992, in which India participated, calling upon the States to develop national laws regarding liability and compensation for the victims of pollution and other environmental damages;

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<sup>4</sup> Most countries do not have national level environmental courts but have them on regional or local level.

AND WHEREAS it is considered expedient to implement the decisions of the aforesaid Conference so far as they relate to the protection of environment and payment of compensation for damage to persons, property and the environment while handling hazardous substances;”

The Act laid down provisions with regard to compensation which could be claimed in case of injury or death due to damage to property or environment caused by an individual activity or as a result of a combination of activities. Heads were specified in the Act under which compensation could be claimed (death, permanent, temporary, total or partial disability or other injury or sickness, loss of wages, etc.). Provisions were included in the Act for the constitution of the National Environment Tribunal which would decide on an application for compensation. This Tribunal was given the powers of a civil court under the Code of Civil Procedure, 1908 and an appeal against the decision of the Tribunal would lie with the Supreme Court of India. The Tribunal would consist of a mix of judicial and technical members. A person would not be qualified for appointment as a technical member unless he had adequate knowledge of, or experience in, or capacity to deal with, administrative, scientific or technical aspects of the problems relating to environment.

Despite the ‘noble’ intentions of the Parliament to bring in place a mechanism for awarding compensation in environmental matters, the National Environment Tribunal was never formed as the Ministry of Environment and Forests did not take any steps to notify its constitution.

### **National Environment Appellate Authority**

The National Environment Appellate Authority (NEAA) was constituted under the National Environment Appellate Authority Act, 1997. The NEAA was meant to be an authority where clearances granted under the Environment (Protection) Act, 1986 with regard to siting of industries could be challenged. The Preamble of the Act stated-

An Act to provide for the establishment of a National Environment Appellate Authority to hear appeals with respect to restriction of areas in which any industries, operations or processes or class of industries, operations or processes shall not be carried out or shall be carried out subject to certain safeguards under the Environment (Protection) Act, 1986 and for matters connected therewith or incidental thereto.

National Environment Appellate Authority had performed below expectations and despite being constituted (unlike the National Environment Tribunal), the NEAA was rendered ineffective. At this point it would suffice to state that the National Environment Appellate Authority Act has also provided that the NEAA consist of a mix of judicial and technical members, the latter bringing the required expertise in scientific and technical areas to the decision making process.

## 47.4 The National Green Tribunal Act, 2010

### Introduction

It is significant that the Preambles of the National Environment Tribunal Act and National Environment Appellate Authority (discussed above) do not make any reference to the need for specialised courts arising from the fact that more and more complicated and technical issues were coming before the courts, which the judiciary was finding difficult to respond to.

In April 2010, the Parliament passed the National Green Tribunal Act, 2010. In the Preamble of this Act, for the first time, the Parliament specifically refers to not only the multi-disciplinary issues which are coming up before the courts, but also the expansive interpretation of Article 21 of the Constitution as discussed above. It includes the need to provide relief and compensation to affected persons and refers to the various international commitments that India has made. The Preamble is as follows:

An Act to provide for the establishment of a National Green Tribunal for the effective and expeditious disposal of cases relating to environmental protection and conservation of forests and other natural resources including enforcement of any legal right relating to environment and giving relief and compensation for damages to persons and property and for matters connected therewith or incidental thereto.

AND WHEREAS India is a party to the decisions taken at the United Nations Conference on the Human Environment held at Stockholm in June, 1972, in which India participated, calling upon the States to take appropriate steps for the protection and improvement of the human environment;

AND WHEREAS decisions were taken at the United Nations Conference on Environment and Development held at Rio de Janeiro in June, 1992, in which India participated, calling upon the States to provide effective access to judicial and administrative proceedings, including redress and remedy and to develop national laws regarding liability and compensation for the victims of pollution and other environmental damage;

AND WHEREAS in the judicial pronouncement in India, the right to healthy environment has been construed as a part of the right to life under Article 21 of the Constitution;

AND WHEREAS it is considered expedient to implement the decisions taken at the aforesaid conferences and to have a National Green Tribunal in view of the involvement of multi-disciplinary issues relating to the environment.

### Composition of the Tribunal

The Tribunal would consist of a Chairperson, full time judicial members minimum ten in number which could go up to a maximum of twenty and full-time expert members

minimum ten in number which could also go up to a maximum of twenty in number. The Chairperson can appoint additional experts in a particular case to assist the Tribunal.

The Chairperson will be appointed by the Central Government in consultation with the Chief Justice of India. Only a former Supreme Court judge or a former Chief Justice of a High Court is eligible for the post of the Chairperson of the Tribunal. A former judge of the High Court is eligible to be appointed as a judicial member. Interestingly, legal practitioners in the area of environmental law are not eligible for becoming a judicial member. For Expert members, the qualification is as follows:

- a) has a degree in Master of Science (in physical sciences or life sciences) with a Doctorate degree or Master of Engineering or Master of Technology and has an experience of fifteen years in the relevant field including five years practical experience in the field of environment and forests (including pollution control, hazardous substance management, environment impact assessment, climate change management, biological diversity management and forest conservation) in a reputed National level institution; or
- b) has administrative experience of fifteen years including experience of five years in dealing with environmental matters in the Central or a State Government or in a reputed National or State level institution.

It is interesting to note that only those with a background in Engineering, Science or Technology are eligible for the position of Expert Member. Experts from the social sciences have been completely excluded even though in recent years it has been seen that most environmental matters are intricately linked with social and anthropological issues.

### ***Locus standi***<sup>5</sup>

Any person who is aggrieved by the following orders or decisions made on or after the commencement of the National Green Tribunal Act, 2010, can appeal to the Tribunal within thirty days of the passing of such order or decision:

- a) an order or decision by the appellate authority under Section 28 of the Water (Prevention and Control of Pollution) Act, 1974;
- b) an order passed by the State Government under Section 29 of the Water (Prevention and Control of Pollution) Act, 1974;
- c) directions issued by a Board, under Section 33A of the Water (Prevention and Control of Pollution) Act, 1974;
- d) an order or decision by the appellate authority under Section 13 of the Water (Prevention and Control of Pollution) Cess Act, 1977;
- e) an order or decision by the State Government or other authority under Section 2 of the Forest (Conservation) Act, 1980;
- f) an order or decision by the appellate authority under Section 31 of the Air (Prevention and Control of Pollution) Act, 1981;

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<sup>5</sup> *Locus standi* means who has the legal standing or ability or eligibility to take a case to court.

- g) any direction issued under Section 5 of the Environment (Protection) Act, 1986;
- h) an order granting environmental clearance in the area in which any industries, operations or processes or class of industries, operations and processes shall not be carried out or shall be carried out subject to certain safeguards under the Environment (Protection) Act, 1986;
- i) an order refusing to grant environmental clearance for carrying out any activity or operation or process under the Environment (Protection) Act, 1986;
- j) any determination of benefit sharing or order by the National Biodiversity Authority or a State Biodiversity Board under the provisions of the Biological Diversity Act, 2002.

Even though the time limit set is thirty days, if the Tribunal finds that the Appellant was prevented from approaching the Tribunal by sufficient cause from filing the appeal within thirty days from the date of the order, the Tribunal may allow an extension of an additional time but not more than sixty days. It may be noted that the National Green Tribunal has the power to hear all the cases which the National Environment Appellate Authority has the power to hear.

The following persons can approach the Tribunal for grant of relief or compensation or settlement of dispute:

- a) the person, who has sustained the injury; or
- b) the owner of the property to which the damage has been caused; or
- c) where death has resulted from the environmental damage, by all or any of the legal representatives of the deceased; or
- d) any agent duly authorised by such person or owner of such property or all or any of the legal representatives of the deceased, as the case may be; or
- e) any person aggrieved, including any representative body or organisation; or
- f) the Central Government or a State Government or a Union Territory Administration or the Central Pollution Control Board or a State Pollution Control Board or a Pollution Control Committee or a local authority, or any environmental authority constituted or established under the Environment (Protection) Act, 1986 or any other law for the time being in force:

The person could be an individual, a Hindu undivided family, a company, a firm, a local authority, an association of persons, a trustee of a trust, or any other artificial person.

### **Powers of the Tribunal**

The Tribunal has the power to decide on:

- ◆ All civil cases where a substantial question relating to the environment, including enforcement of any legal right relating to environment is involved. According to the Act, a substantial question relating to the environment would include an instance where -

- i) there is a direct violation of a specific statutory environmental obligation by a person by which, -
  - A) the community at large other than an individual or group of individuals is affected or likely to be affected by the environmental consequences; or
  - B) the gravity of damage to the environment or property is substantial; or
  - C) the damage to public health is broadly measurable;
- ii) the environmental consequences relate to a specific activity or a point source of pollution;
- iii) Questions arising from the implementation of any of the following laws:
  - 1) The Water (Prevention and Control of Pollution) Act, 1974
  - 2) The Water (Prevention and Control of Pollution) Cess Act, 1977
  - 3) The Forest (Conservation) Act, 1980
  - 4) The Air (Prevention and Control of Pollution) Act, 1981
  - 5) The Environment (Protection) Act, 1986
  - 6) The Public Liability Insurance Act, 1991
  - 7) The Biological Diversity Act, 2002

The Tribunal can award relief and compensation to persons who have been victims of pollution and environmental damage including any accident due to the handling of hazardous wastes. Depending on the situation, the Tribunal can also award restitution of property or direct restitution of the damaged environment. This means that the Tribunal can ask the person responsible for the damage to undo the damage and restore the original state of affairs. An application for grant of compensation or relief has to be filed with the Tribunal within five years from the date on which the damage/cause for compensation first arose. For instance, if persons have consumed poisonous water and the impact of consuming this water is visible only after some time, then they five years from the date on which the impact was felt before which they have to approach the Tribunal. The Tribunal has the discretion to increase this period by additional two months if it sees sufficient cause. The National Environment Tribunal which was never constituted would have heard such cases if it had been constituted.

The Tribunal has all the powers of a civil court and can therefore summon and enforce the attendance of any person, receive evidence on affidavit, ask for any public record to be brought before it, pass an interim order, review its own order and pass any order directing any person to stop committing any violation of any statutory provision. Since the Tribunal has been given the powers of a civil court, no other court in the country has the power to entertain cases which the Tribunal has the power to hear.

If the Tribunal's order is not complied with, the person responsible can be punished with imprisonment maximum of 3 years or with fine which may extend up to rupees ten crores. If the failure to comply with the order of the Tribunal continues, then an additional fine of rupees twenty-five thousand per day can be imposed.

The Act states that the Tribunal would be guided by the principle of sustainable development, precautionary principle and polluter pays principle. An appeal against the decision of the Tribunal can be made before the Supreme Court of India within ninety days from the date on which the order is passed by the Tribunal.

As soon as the National Green Tribunal Act, 2010 is notified by the Central Government, the National Environment Tribunal Act, 1995 and the National Environment Appellate Authority, 1997 will be repealed and would no longer be in force. The National Environment Appellate Authority would be dissolved and all pending cases which were being heard by the Authority would be transferred to the National Green Tribunal for subsequent proceedings.

## 47.5 Arguments against Green Tribunals

While there are several reasons why environmental courts and green tribunals should be set up, some arguments have also been raised against the constitution of such specialised court. These include:

- ◆ Some people are of the opinion that creating specialised courts would marginalise the environmental cases as these cases would get less attention, less qualified decision makers, and inadequate budgets.
- ◆ Creating a new adjudicatory forum would entail a substantial expenditure for judges, infrastructure, staff, training, etc. An under-funded or overburdened court would not help in increasing access to environmental justice and remedy.
- ◆ For an environment court or green tribunal to be effective, it has to have well-trained members. If the members are not properly trained, they would not be able to make the expert contribution that they are expected to make and the decision making process would remain ill-informed.
- ◆ Sometimes non-environmental issues may be intricately linked with the environmental issues and the specialised environment court would neither have the power nor the capability to decide on such matters. An ordinary court with general powers would have the jurisdiction to all the issues.

## 47.6 Conclusion

As per the Green Tribunal Act, the Tribunal's dedicated jurisdiction in environmental matters shall provide speedy environmental justice and help reduce the burden of litigation in the higher courts. The Tribunal shall not be bound by the procedure laid down under the Code of Civil Procedure, 1908, but shall be guided by principles of natural justice. The Tribunal is mandated to make and endeavour for disposal of applications or appeals finally within 6 months of filing of the same. The Tribunal has a presence in five zones - North, Central, East, South and West. The Principal Bench is situated in the North Zone, headquartered in Delhi. The Central Zone bench is situated in Bhopal, East Zone in Kolkata, South Zone in Chennai and West Zone in Pune. In the absence of full strength of judicial and expert members in regional benches of the

Tribunal situated in Chennai, Pune, Bhopal and Kolkata, the Principal Bench in New Delhi is hearing applications from other jurisdictions remotely by video conferencing to meet the needs of the litigants.

The sanctioned strength of the tribunal is currently 10 expert members and 10 judicial members although the act allows for up to 20 of each. The Chairman of the tribunal who is the administrative head of the tribunal also serves as a judicial member. Every bench of the tribunal must consist of at least one expert member and one judicial member. The Chairman of the tribunal is required to be a serving or retired Chief Justice of a High Court or a retired judge of the Supreme Court of India. Members are chosen by a selection committee (headed by a sitting judge of the Supreme Court of India) that reviews their applications and conducts interviews. The judicial members are chosen from applicants who are serving or retired judges of High Courts. Expert members are chosen from applicants who are either serving or retired bureaucrats not below the rank of an Additional Secretary to the Government of India (not below the rank of Additional Chief Secretary if serving under a state government) with a minimum administrative experience of five years in dealing with environmental matters. Or, the expert members must have a doctorate in a related field.

The Tribunal has Original Jurisdiction on matters of “substantial question relating to environment” (i.e. a community at large is affected, damage to public health at broader level) and “damage to environment due to specific activity” (such as pollution). However, there is no specific method defined in law for determining “substantial” damage to environment, property or public health. There is restricted access to an individual only if damage to environment is substantial. The powers of tribunal related to an award are equivalent to civil court and tribunal may transmit any order/award to civil court having local jurisdiction. The NGT Act specifies that an application for dispute related to environment can be filled within six months only when first time dispute arose (provide tribunal can accept application after a further period of 60 days if it is satisfied that appellant was prevented by sufficient cause from filling the application.)

Also, Tribunal is competent to hear cases for several acts such as Forest (Conservation) Act, Biological Diversity Act, Environment (Protection) Act, Water and Air (Prevention and control of Pollution) Acts, etc. and also have appellate jurisdiction related to above acts provided the appeal is filed before the Tribunal within a period of 30 days from the date on which the award or order is communicated to the aggrieved party. The Act says that decision taken by majority of members shall be binding and every order of Tribunal shall be final. Any person aggrieved by an award, decision, or order of the Tribunal may appeal to the Supreme Court within 90 days of the award being communicated, but Supreme Court can entertain an appeal even after 90 days if appellant satisfies the Supreme Court by giving sufficient reasons. We will examine the Tribunal in detail in the next unit.

# THE NATIONAL GREEN TRIBUNAL |

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### 48.1 Introduction

The last unit discussed the need of a Green Tribunal and arguments against it. This Chapter will focus on the National Green Tribunal Act, 2010, the National Green Tribunal (NGT), and its impact on the environmental law sector.

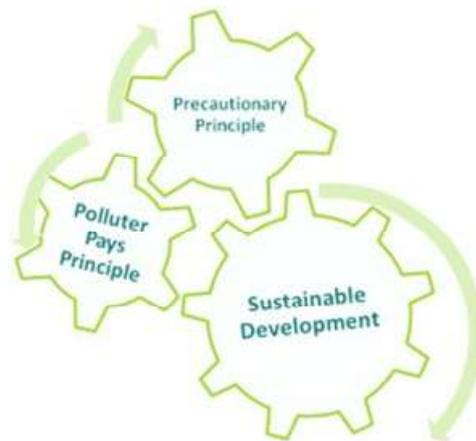
The Right to a healthy environment has been construed as a part of Article 21 of the Constitution in the judicial pronouncement in India. The Constitution, as a part of its Directive Principles of State Policy, states that, “*The State shall endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country,*” and bestows upon the citizens the duty to protect the environment, “*it shall be the duty of every citizen of India ... to protect and improve the natural environment including forests, lakes, rivers and wildlife, and to have compassion for living creatures.*” Therefore, environmental protection has been an integral part of India’s socio-economic jurisprudence since the beginning of India’s legal process.

While judicial bodies like the Supreme Court and High Courts have addressed environmental concerns since the time they were established, the need for a special environmental court was felt after India participated in the United Nations Conference at Stockholm in 1972 and later the Rio de Janeiro Conference in 1992, both of which called upon the states to take effective action against environmental degradation. After the failure of the National Environment Tribunal Act, 1995 and the National Environment Appellate Authority, 1997, the Supreme Court requested the Law Commission to set up a specialised Environment Court. The National Green Tribunal was thereafter set up on 18 October 2010 under the National Green Tribunal Act, 2010 (NGT Act).

The Preamble to the Act establishes it as “an act to provide for the effective and expeditious disposal of cases relating to environmental protection and conservation of forests and other natural resources including enforcement of any legal right relating to environment and giving relief and compensation for damages to persons and property and for matters connected therewith or incidental thereto.”

The fairly new Tribunal has consistently given judgments and orders upholding the fundamental principle of sustainable development. Till 31 October 2019, 31,551 cases have been instituted at NGT out of which 28,506 have been disposed. Irrespective of the hiccups in the beginning, NGT has come a long way in establishing itself as the principal authority to address environmental law disputes across the country. It has territorial jurisdiction in four regional Benches across India and has a mechanism of circuit Benches that have been held in cities like Shimla, Jodhpur and Shillong to address cases in areas too far from the nearest regional Bench. The aim is to reach out to as many people as possible and make environmental litigation accessible to the remotest areas of the country.

The Tribunal follows the three basic principles of environmental jurisprudence.



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#### ◆ Precautionary Principle

Precautionary Principle means that an action should be taken when a problem or threat occurs, not after harm has been inflicted. It is based on the premise that if there is a chance of excessive environmental damage due to a certain action, even if it is not foreseeable by scientific studies, the action should not be undertaken.

The Tribunal rejected the Environmental Clearance (EC) in *Jeet Singh Kanwar v. MoEF and Others*<sup>1</sup> based on the same and stated:

*“The precautionary principle requires the authority to examine probability of environmental degradation that may occur and result into damage. In the present case, it was utmost necessary to thoroughly examine the viability of the project in question, particularly, when there were identical coal-based*

<sup>1</sup> *Jeet Singh Kanwar v. MoEF and Others*; APPEAL No. 10/2011 (T).

*power projects in the proximity of the area and the area is declared as critically polluted one. There cannot be any doubt about the fact that installation of such thermal power plant, based on consumption of coal as fuel, would cause additional pollution load in the surrounding area. The suggested safety measure of increasing height of the chimney may not prove to be sufficient to disperse such excessive pollutants. Such contingency called for caution before giving green signal to the Project, which involved “ifs and buts”. In the Judges’ opinion, therefore, by applying precautionary principle, the EC should not have been granted by the MoEF.”*

#### ◆ Polluter Pays Principle

This principle means that an industry or individual who causes pollution or environmental damage should be held responsible for compensating for the damage caused to the environment. The principle aims to hold the pollutant responsible for the life cycle of the product and its environmental impact.

In *Hindustan Coco-cola Beverages Pvt. Ltd. v. Member Secretary, West Bengal Pollution Control Board and Others*,<sup>2</sup> the Tribunal stated:

*“An Industry or a person who pollutes the surrounding area or environment is bound to compensate the persons who have suffered the loss because of the activity. An industry or a person being responsible for causing the pollution cannot escape the responsibility of not meeting the expenses of removing the damages caused and restoring the environment to its original position. Section 20 of the National Green Tribunal (NGT) Act, 2010 clearly lays down the principle upon which this Tribunal should function. Thus it is no more res-integra, with regard to the legal proposition that a polluter is bound to pay and eradicate the damage caused by him and restores the environment. He is also responsible to pay for the damages caused due to the pollution caused by him.”*

In the case of *Samir Mehta v. Union of India and Ors.* the Tribunal observed,

“137. The pollution is diverse and has serious impact on marine environment. This pollution is a continuing one and does not come to an end with the pronouncement of this judgment. They have a liability to remove the ship wreck and the cargo from the present location. Thus, in our considered view, besides Rs. 6,91,84,405/- (Rupees Six Crore Ninety One Lakh Eighty Four Thousand Four Hundred and Five only), they should be held liable to pay Rs. 93,08,15,595 crores as environmental compensation (inclusive of Rs. 6,91,84,405/- spent on mitigation measures) for default, negligence in the upkeep of the ship and cargo and the persistent pollution caused by them to the marine environment, particularly on the shore, to tourism and public health at large in terms of Sections 15 and 17 read with Section 20 of the Act of 2010. Thus, it will be a total of 100 crores. They have a liability to pay for

<sup>2</sup> *Hindustan Coco-cola Beverages Pvt. Ltd. v. Member Secretary, West Bengal Pollution Control Board and Others*; Appeal No. 10 OF 2012.

their default, negligence and the pollution that they have already caused on the basis of the Polluter Pays Principle. Accordingly, we answer this issue against the Respondents holding that Respondents No. 5, 7 and 11 shall be liable to pay a total sum of Rs. 100 crores as environmental compensation. Respondent No. 6 is liable for environmental compensation for chartering a ship of this kind, dumping of 60054 MT of coal in the Contiguous zone of Indian waters. We have already discussed in detail that coal contains hazardous substance and is likely to cause pollution and is causing pollution of the marine environment. Thus, he would be liable to pay environmental compensation of Rs. 5 crores. The amount paid shall be utilised for restitution and restoration of the damage done as well as to ensure that no further pollution results from the sunken ship and the cargo. These amounts would also be utilised for restoring the mangroves to their original position or plantation of accepted species in that area. The Committee appointed under this judgment would recommend a complete plan in that behalf. Respondent No. 5, 7, 11 would be liable to pay Rs. 100 crores and Respondent No. 6 would be liable to pay Rs. 5 crores and all of them jointly and severally would be responsible for removing the ship wreck and cargo from its present location.”

#### ◆ Sustainable Development

According to the Brundtland report, “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

The Tribunal defined Sustainable Development in *Jeet Singh Kanwar v. MoEF*<sup>3</sup> :

*“The concept of “Sustainable Development” is an exercise of balancing the industrial activity with environment protection. The balancing act requires proper evaluation of both the aspects, namely, degree of environmental degradation which may occur due to the industrial activity and degree of the economic growth to be achieved. It is well settled that the person who wants to change the status quo has to discharge burden of proof to establish that the proposed development is of sustainable nature.”*

## 48.2 Background of Tribunal

Historically, India has had a number of legislations governing environment, forests, and wildlife. While the British enacted the Forest laws for the sole reason of making timber commercially available, it was only after independence that forest laws were amended for conservation purposes. However, there was no specific court of law that could efficiently deal with specific environmental matters. The National Environment Tribunal Act, 1955 was enacted to provide for strict liability for damages arising out of any accident during the handling of any hazardous material, and for the establishment of the National Environment Tribunal (NET) for the effective and expeditious disposal of

<sup>3</sup> *Jeet Singh Kanwar v. MoEF and Others*; APPEAL No. 10/2011 (T).

cases arising from such accidents, with a view to giving relief and compensation for damages to persons, property and the environment. However, the NET was not established due to its limited mandate. Thereafter, the National Environment Appellate Authority Act, 1997 was enacted to establish the National Environment Appellate Authority (NEAA) to hear appeals with respect to restriction of areas in which industries, operations or processes or class of industries, operations or processes shall not be carried out or shall be carried out subject to certain safeguards under the Environment (Protection) Act, 1986. The NEAA had a limited workload because of the narrow scope of its jurisdiction and was not effective in its approach. Thereafter, the Supreme Court in *M.C. Mehta v. Union of India*<sup>4</sup> stated:

*...Since there is at present no independent and competent machinery to generate, gather and make available the necessary scientific and technical information, we had to make an effort on our own to identify experts who would provide reliable scientific and technical input necessary for the decision of the case and this was obviously a difficult and by its very nature, unsatisfactory exercise. It is therefore absolutely essential that there should be an independent Centre with professionally competent and public spirited experts to provide the needed scientific and technological input. We would in the circumstances urge upon the Government of India to set up an Ecological Sciences Research Group consisting of independent, professionally competent experts in different branches of science and technology, who would act as an information bank for the Court and the Government Departments and generate new information according to the particular requirements of the Court or the concerned Government department. We would also suggest to the Government of India that since cases involving issues of environmental pollution, ecological destruction and conflicts over natural resources are increasingly coming up for adjudication and these cases involve assessment and evolution of scientific and technical data, it might be desirable to set up Environment Courts on the regional basis with one professional Judge and two experts drawn from the Ecological Sciences Research Group keeping in view the nature of the case and the expertise required for its adjudication. There would of-course be a right of appeal to this Court from the decision of the Environment Court.”*

Taking into account the large number of environmental cases pending in the higher courts, the Supreme Court requested the Law Commission of India to consider the need for constitution of a specialised environmental court. The Law Commission of India submitted its 186th report in September 2003 in which it recommended the following:

*“The Judicial body will be an Environment Court at State Level consisting of sitting/retired judges or members of the Bar with more than 20 years standing, assisted by a statutory panel of experts in each State. It will be a Court of original jurisdiction on all environmental issues and also an appellate authority*

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<sup>4</sup> *M.C. Mehta v. Union of India* 1987 AIR 965; Page 24.

*under all the three Acts, viz., Water Act, Air Act and Environment (Protection) Act, 1986 and will reduce the burden of High Courts/Supreme Court. There will lie a further statutory appeal direct to the Supreme Court against the judgment of the proposed Environment Court. In our view, this scheme is preferable to the Government's proposal of a single appellate Court at Delhi, which will be beyond the reach of affected parties."*

Accordingly, the National Green Tribunal (NGT) was set up on 18 October 2010 under the National Green Tribunal Act, 2010.

NGT was established as a statutory body with original and appellate jurisdiction. The Chairperson, who is or has been the judge of the Supreme Court or Chief Justice of any High Court, heads the Tribunal with a body of experts who provide technical expertise to adjudicate solely over environmental matters. Three years since its inception, the NGT has been recognised as a tribunal with special powers, successfully advancing the model of sustainable development in India. It is true that initially NGT faced a number of hiccups with constantly changing Chairpersons and functioning with multiple addresses, but over time and with Supreme Court's interventions, NGT finally has a stable set up and a permanent address - Faridkot House complex in New Delhi, which provides a humble abode to the Principal Bench of the Tribunal today.

### 48.3 Structure of the Tribunal

The Green Tribunal was established with the intention of making it accessible to the largest number of people across the country. The Principal Bench was the first to start functioning in New Delhi and slowly the regional Benches were established. The Tribunal has original and appellate jurisdiction all over India. However, it should be kept in mind that the Primary Bench is not above the regional Benches but only acts as the administrative head of the Tribunal. An appeal from NGT goes to the Supreme Court (Section 22 of the NGT Act) only.

Following is a list of the Zonal Benches where NGT has territorial jurisdiction.

Zone	Place of Sitting	Territorial Jurisdiction
North	Delhi (Principle Bench)	Uttar Pradesh, Uttarakhand, Punjab, Haryana, Himachal Pradesh, Jammu and Kashmir, National Capital Territory of Delhi and Union Territory of Chandigarh
West	Pune	Maharashtra, Gujarat, Goa with the Union Territory of Daman and Diu and Dadar and Nagar Haveli
Central	Bhopal	Madhya Pradesh, Rajasthan, Chhattisgarh
South	Chennai	Kerala, Tamil Nadu, Andhra Pradesh, Karnataka, Union Territory of Pondicherry and Lakshadweep
East	Kolkata	West Bengal, Odisha, Bihar, Jharkhand, Seven sisters of the North Eastern region and Sikkim, Andaman and Nicobar Islands

## 48.4 National Green Tribunal Act, 2010

India is party to the decisions taken at the United Nations Conference on the Human Environment held at Stockholm in June 1972, which called upon states to take appropriate steps for the protection and improvement of the human environment. India also participated in the United Nations Conference on Environment and Development held at *Rio de Janeiro* in June 1992, which called upon States to provide effective access to judicial and administrative proceedings, including redress and remedy, and to develop national laws regarding liability and compensation for the victims of pollution and other environmental damage.

The National Green Tribunal is based on these principles of advancing environmental protection through judicial and administrative measures for strengthening environmental protection and the conservation of forests and other natural resources. The Statement of Objects and Reasons of the National Green Tribunal Act, 2010 states that, *“the rapid expansion in industrial, infrastructure and transportation sectors and increasing urbanisation in recent years have given rise to new pressures on our natural resources and environment. There is a commensurate increase in environment related litigation pending in various Courts and other authorities. The risk to human health and environment arising out of hazardous activities has also become a matter of concern.”*

The Tribunal is expected to ensure effective environmental management and conservation, give relief and compensation for damages to persons and property and connected matters, and at the same time ensure sustainable development<sup>5</sup>.

### Composition:

NGT was established with the intention of adjudicating cases that involved a Substantial Question of Environment<sup>6</sup>. Before NGT became operational, the NEAA was still functional and all cases were to be transferred to NGT. The Supreme Court in *Vimal Bhai v. Union of India*<sup>7</sup> established the composition of members of NGT until the Rules were framed in order to kick-start the Tribunal. It gave an Order called the National Green Tribunal (Removal of Difficulties) Order, 2010:

*“Appointment of Expert Member of the Tribunal on ad hoc basis. - The Central Government may appoint a person, possessing the qualifications specified in Section 5 of the National Green Tribunal Act, 2010 (19 of 2010) to act as Expert Member on an ad hoc basis for a period not exceeding six months to exercise the powers and perform the functions of an Expert Member of the National Green Tribunal or until an Expert Member has been appointed in accordance with the provisions of the National Green Tribunal Act, 2010, whichever is earlier.”*

<sup>5</sup> BaijnathPrajapati v. Moef and Ors; NGT Appeal No. 18/2011.

<sup>6</sup> National Green Tribunal Act 2010; Section 14.

<sup>7</sup> Vimal Bhai v. Union of India, Special Leave to Appeal (Civil) No(s).12065/2009.

Counsel for the respondent submitted that with appointment of an Expert Member the Bench of the Tribunal would become functional, but those interested in filing applications/appeals will not be able to do so because the rules regulating the procedure of the Tribunal have not been framed. He further submitted that the aggrieved persons might also face the hurdle of limitation despite the fact that they could not file applications/appeals because the Tribunal has not become functional.

The Court therefore gave the following order:

*“The period of limitation prescribed for filing the appeals under the National Environment Appellate Authority Act, 1997 shall also apply to the applications/appeals which may be filed after the Bench of the Tribunal becomes functional.*

*The period between 18.10.2010 i.e. the date on which National Environment Appellate Authority stood abolished by operation of Section 38(5) of the 2010 Act and the date on which Bench of the National Green Tribunal becomes functional shall be excluded while computing the period of limitation for filing applications/appeals, etc.”*

Once the Rules were notified, the NGT Act came into force: Section 4 of the Act gives the composition of the Tribunal. The Tribunal consists of the following members:

- a) Full time Chairperson;
- b) Not less than ten but subject to maximum of twenty full time Judicial Members as the Central Government may, from time to time, notify;
- c) Not less than ten but subject to maximum of twenty full time Expert Members, as the Central Government may, from time to time, notify.

#### **Qualification of Members:**

A person can be qualified for appointment as the Chairperson or Judicial Member of the Tribunal if he is or has been a Judge of the Supreme Court of India or Chief Justice of a High Court.

An individual has to fulfil the following criteria to be eligible for the post of Expert Member. He cannot be an Expert Member unless he;

- a) Has a degree in Master of Science (in physical sciences or life sciences) with a Doctorate degree or Master of Engineering or Master of Technology and has an experience of fifteen years in the relevant field including five years practical experience in the field of environment and forests (including pollution control, hazardous substance management, environment impact assessment, climate change management, biological diversity management and forest conservation) in a reputed National level institution; or
- b) Has administrative experience of fifteen years including experience of five years in dealing with environmental matters in the Central or a State Government or in a reputed National or State level institution.

## Jurisdiction

Section 14 of the Act gives NGT the power to settle disputes. Section 14 states:

- 1) The Tribunal shall have the jurisdiction over all civil cases where a substantial question relating to environment (including enforcement of any legal right relating to environment) is involved and such question arises out of the implementation of the enactments specified in Schedule I.

Schedule 1 states the following enactments:

- 1) The Water (Prevention and Control of Pollution) Act, 1974;
  - 2) The Water (Prevention and Control of Pollution) Cess Act, 1977;
  - 3) The Forest (Conservation) Act, 1980;
  - 4) The Air (Prevention and Control of Pollution) Act, 1981;
  - 5) The Environment (Protection) Act, 1986;
  - 6) The Public Liability Insurance Act, 1991;
  - 7) The Biological Diversity Act, 2002.
- 2) The Tribunal shall hear the disputes arising from the questions referred to in sub-section (1), settle such disputes, and pass order thereon.
  - 3) No application for adjudication of dispute under this section shall be entertained by the Tribunal unless it is made within a period of six months from the date on which the cause of action for such dispute first arose: Provided that the Tribunal may, if it is satisfied that the applicant was prevented by sufficient cause from filing the application within the said period, allow it to be filed within a further period not exceeding sixty days.

Section 14 gives the Tribunal original jurisdiction over all civil cases involving a **Substantial Question relating to environment** falling within the limitation period of 6 months from the day the cause of action first arose with an additional period of sixty days if the Tribunal is convinced that the applicant was delayed due to sufficient cause.

**Substantial Question relating to environment** has been defined very clearly in *Goa Foundation v. Union of India*.<sup>8</sup>

Section 2(1)(c) of the NGT Act explains the word 'environment' as follows:

“Environment’ includes water, air and land and the interrelationship, which exists among and between water, air and land and human beings, other living creatures, plants, micro-organism and property.”

Section 2(m) defines the term 'substantial question relating to environment' as follows: “It shall include an instance where, -

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<sup>8</sup> Goa Foundation v. Union of India; Application no. 26 of 2012.

- i) there is a direct violation of a specific statutory environmental obligation by a person by which, -
  - A) The community at large other than an individual or group of individuals is affected or likely to be affected by the environmental consequences; or
  - B) The gravity of damage to the environment or property is substantial; or
  - C) The damage to public health is broadly measurable;
- ii) the environmental consequences relate to a specific activity or a point source of pollution.”

The legislature, in its wisdom, has defined the word ‘environment’ in very wide terms. It is inclusive of water, air, land, plants, micro-organisms and the inter-relationship between them, living and non-living creatures and property. Similarly, ‘substantial question relating to environment’ also is an inclusive definition and besides what it means, it also includes what has been specified under Section 2(m) of the NGT Act. Inclusive definitions are not exhaustive. One has to, therefore, give them a very wide meaning to make them as comprehensive as the statute permits on the principle of liberal interpretation. This is the very basis of an inclusive definition. Substantial, in terms of the Oxford Dictionary of English, is of considerable importance, strongly built or made, large, real and tangible, rather than imaginary. Substantial is actual or real as opposed to trivial, not serious, unimportant, imaginary or something. Substantial is not the same as unsubstantial i.e. just enough to avoid the de minimis principle. In *re Net Books Agreement* [1962] 1 WLR 231347, it was explained that, the term ‘substantial’ is not a term that demands a strictly quantitative or proportional assessment. Substantial can also mean more than reasonable. To put it aptly, a substantial question relating to environment must, therefore, be a question which is debatable, not previously settled and must have a material bearing on the case and its issues relating to environment.

Section 2(m) of the NGT Act classifies ‘substantial question relating to environment’ under different heads and states it to include the cases where there is a direct violation of a specific statutory environmental obligation as a result of which the community at large, other than an individual or group of individuals, is affected or is likely to be affected by the environmental consequences; or the gravity of damage to the environment or property is substantial; or the damage to public health is broadly measurable. The other kind of cases are where the environmental consequences relate to a specific activity or a point source of pollution. In other words, where there is a direct violation of a statutory duty or obligation which is likely to affect the community, it will be a substantial question relating to environment covered under Section 14(1) providing jurisdiction to the Tribunal.

Section 15 of the Act provides for the **Relief, Compensation and Restitution** to victims of pollution or other environmental damage.

The Tribunal, may by an order, provide-

- a) relief and compensation to the victims of pollution and other environmental damage arising under the enactments specified in the Schedule I (including accident occurring while handling any hazardous substance);

- b) for restitution of property damaged;
- c) for restitution of the environment for such area or areas, as the Tribunal may think fit.

Relief can be sought by the following persons:

- ◆ A person who has sustained an injury;
- ◆ An owner of property;
- ◆ Legal representative of deceased;
- ◆ Any person aggrieved including any representative body or organisation. Appeal under Section 16 and 18 can be filed by:
  - ◆ **“Any person aggrieved”** can prefer an Appeal
  - ◆ ‘Person’ *includes* an association of persons or individuals *whether* incorporated or not
  - ◆ It also includes *individuals, trusts, local authority*

An **aggrieved person** has been defined in *Save Mon Region Federation v. Union of India as*<sup>9</sup>:

*“Law gives a right to ‘any person’ who is ‘aggrieved’ by an order to prefer an appeal. The term ‘any person’ has to be widely construed. It is to include all legal entities so as to enable them to prefer an appeal, even if such an entity does not have any direct or indirect interest in a given project. The expression ‘aggrieved’, again, has to be construed liberally. The framers of law intended to give the right to any person aggrieved, to prefer an appeal without any limitation as regards his locus or interest. The grievance of a person against the Environmental Clearance may be general and not necessarily person specific.”*

### Limitation

Relief	Time Period
For violation of Law and Substantial questions related to environment	6 months from the time when the cause of action first arose + 60 days (with sufficient cause)
For Seeking compensation and restoration	5 years + 60 days (with sufficient cause)
For Filing Appeal	30 days + 60 days (with Sufficient Cause)

If the case is filed after the limitation period is over, a provision of condoning the delay is provided. However, there should be a sufficient cause for delay. Sufficient Cause has been defined in *Save Mon Region Federation and another v. Union of India*:

<sup>9</sup> *Save Mon Region Federation and another v. Union of India and Others*; APPLICATION NO. 104/2012.

*The words “sufficient cause for not making the application within the period of limitation” should be understood and applied in a reasonable, pragmatic, practical and liberal manner, depending upon the facts and circumstances of the case, and the type of case. The words ‘sufficient cause’ should receive a liberal construction so as to advance substantial justice, when the delay is not on account of any dilatory tactics, want of bona fides, deliberate inaction or negligence on the part of the Appellant.”*

## 48.5 Important Judgments

In the last couple of years of its existence, NGT has given some landmark judgments that have become precedents in the field of environmental jurisprudence. There are a number of significant issues like mining, Environmental Clearances, public hearings, sand mining, etc. that have been raised by the Tribunal.

Following are some of the important Orders given by NGT in the last couple of years:

### 1) Environment Impact Assessment

#### ◆ **Jeet Singh Kanwar v. Ministry of Environment and Forests**<sup>10</sup>

This case is one of the most important cases in NGT history. It is the only case where the Tribunal quashed the EC completely and stated:

*“It appears that the EAC did not conduct “detailed scrutiny” nor gave adequate reasons as to how the objections raised by the members of public were addressed by the Project Proponent and that the stand of the Project Proponent was found acceptable. On this ground also, we are inclined to hold that the impugned order of EC is arbitrarily issued and therefore it is unsustainable.”*

*...“it was necessary for the EAC / MoEF to verify the R&R Plan, action plan for CSR activities, the responses of the Project Proponent to the issues raised in the public hearing and to examine the relevant materials before granting the EC. We find that such exercise is skirted by the MoEF.”*

#### ◆ **Prafulla Samantra v. Union of India and Ors. (POSCO Case)**<sup>11</sup>

This case was filed against the Environment Clearance given to industrial giant- POSCO industries. The Tribunal agreed that the EIA report was not made properly and gave the following order:

*“A close scrutiny of the entire scheme of the process of issuing final order in the light of the facts placed before us and material placed on record together with the observations made by the review committee though in two separate volumes; reveals that a project of this magnitude particularly in partnership with a foreign country has been dealt with casually, without there being any*

<sup>10</sup> Jeet Singh Kanwar v. Ministry of Environment and Forests; APPEAL NO. 10/2011.

<sup>11</sup> Prafulla Samantra v. Union of India; APPLICATION NO. 8/2011.

*comprehensive scientific data regarding the possible environmental impacts. No meticulous scientific study was made on each and every aspect of the matter leaving lingering and threatening environmental and ecological doubts un-answered. We have dealt with some of these issues on the basis of records placed before us by the MOEF and argued by the Appellant -however for the purpose of cancellation of original ECs granted in 2007.”*

It became an important precedent as NGT took cognizance of the fact that development cannot be at the stake of environment and it is essential to take a cumulative view of the impact the industry will have on the coastal state. The Tribunal ordered the MoEF to start the process of EIA from the beginning and take a strategic view of the overall impact that the industry and the sub-projects have on the environment.

- ◆ Anil Tharthare v. The Secretary, Env't. Dept. Govt. of Maharashtra and Ors. (Appeal No. 122/2018)<sup>12</sup>

The Tribunal in this case held that the Maharashtra government's consistent practice of treating expansion of construction projects as a minor amendment and modifying the Environmental Clearance accordingly is invalid and has no legal sanction. The Tribunal further held that the office order permitting this practice is in violation of the Environment Impact Assessment Notification, 2006 which clearly lays down that prior environmental clearance is required for certain kinds of projects.

The Tribunal directed the project proponent to deposit a sum of Rs. 1 crore with the CPCB within one month towards interim cost of damage to the environment and setup an expert committee to ascertain total damage. The Tribunal reasoned that penalty was imposed despite having complied with the Maharashtra law since grant of legal sanction is never to be treated as unconditional and does not obviate the requirement to maintain environment norms.

## 2) Public Hearing

- ◆ Adivasi Majdoor Kisan Ekta Sangathan and Anr. v. MoEF<sup>13</sup>

The Case was filed to question the 'Public hearing' conducted as a part of the EIA process. The Tribunal in its Judgment observed:

*“In the case on hand, after viewing the CD of the public hearing conducted on 5.1.2008, we are surprised to note to our dismay that the same was a “farce”. It was a mockery of the public hearing and the procedure required to be followed thereof. All the norms required in conducting a smooth and fair procedure was given a go by.*

*Even before the public hearing could start, the affected people raised slogans to stop the public hearing. However, on the intervention of the Additional*

<sup>12</sup> Anil Tharthare v. The Secretary, Env't. Dept. Govt. of Maharashtra & Ors. (Appeal No. 122/2018).

<sup>13</sup> Adivasi Majdoor Kisan Ekta Sangathan and Anr. v. MoEF; M.A. NO. 36 OF 2011 (ARISING OUT OF APPEAL NO. 3 OF 2011).

*District Magistrate a few persons came forward and gave their statements saying that no Gram Sabha was conducted and the Gram Panchayats have issued “No Objection Certificates” and such certificates are invalid and cannot be relied upon to say that the people in the village have no objection for acquiring their lands for establishing the project ... In the meanwhile, it appears the persons raising slogans against each other also pelted stones and that created some commotion which resulted in the intervention of the police and use of force. The participants however, broke all the plastic chairs and left the place. The officers were all sitting quietly even after the people left the place after the police used force. Some media persons and the local people objected for continuing the proceedings after the people left the place. In fact, there was no announcement that the proceedings would be resumed after some time. However, the Additional District Magistrate resumed and continued the proceedings in the presence of few persons.*

*This time only the supporters of the project were paraded one after the other only to say one word “I Support”. The persons who supported the project all appeared to have been brought and prompted by the proponent. It was a mockery of the entire process of public hearing.”*

The Environment Clearance was set aside and the MoEF was directed to conduct the Public Hearing again.

◆ Nature Club of Rajasthan (NGO) v. Union of India and Ors.<sup>14</sup>

The National Green Tribunal in this case found that the Centre’s dilution of environmental clearances to sand and minor minerals are inconsistent with past Supreme Court orders and also against principles of sustainable development. The tribunal directed the Ministry of Environment, Forest, and Climate Change (MoEF&CC) which had done away with requirements of public hearing and environmental impact assessments (EIA) for certain mines to revise its procedures for granting clearances.

### 3) Bio Medical Waste

◆ Haat Supreme Wastech Pvt. Ltd. and Ors. v. State of Haryana and Ors.<sup>15</sup>

The Tribunal dealt with the issue ‘Whether or not the bio-medical waste disposal plants require Environmental Clearance (EC) in terms of the Environmental Clearance Regulation, 2006 (for short 2006 Notification).’ The Tribunal also discussed the issues related to Bio-Medical waste:

*“The decline in environmental quality which was evidenced by increasing pollution levels, loss of vegetation cover and biological diversity, excessive concentration of harmful chemicals in the ambient atmosphere and in the food chains creating reasons for environmental accidents and threats to life*

<sup>14</sup> Nature Club of Rajasthan (NGO) v. Union of India and Ors. (Original Application No. 102/2017).

<sup>15</sup> Haat Supreme Wastech Pvt. Ltd. Ors. v. State of Haryana Ors; Appeal No. 63/2012.

support systems compelled the international community and more particularly, the Indian Legislature to enact the Act of 1986. This was an Act to provide for the protection and improvement of environment and various matters allied thereto. The Act of 1986 vested wide ranging powers in the Central Government to protect and improve the environment. The Central Government was expected to take various measures to achieve this object by planning and execution of nation-wide programme for prevention, control and abatement of environmental pollution.

The Rules of 2008, the Municipal Solid Waste (Management and Handling) Rules, 2000 (for short the Rules of 2000) and the Rules of 1998 have been framed to handle, deal with and dispose of various kinds of wastes.

Now, we may proceed to examine as to what is the Bio-Medical Waste and if it is hazardous or otherwise. As far as Act of 1986 is concerned, it does not define as to what is a Bio- Medical Waste. However, the expression 'hazardous substance' has been defined under Section 2 (e) of the Act of 1986, which we have already referred above. The underlying feature of the definition is chemical or physico-chemical properties that are liable to cause harm to human beings and other living creatures including plants, micro-organism, property or the environment. The Rules of 1998 define, under Section 3(5), the 'Bio-Medical waste' as waste which is generated during the diagnosis, treatment or immunization of human beings or animals or in research activities pertaining thereto or in the production or testing of biologicals, and including categories mentioned in Schedule-I of the same rules. Under these very Rules, the Bio-Medical Waste treatment facility is explained as a facility wherein treatment, disposal of bio-medical waste or process incidental to such treatment and disposal is carried out.

As already noticed, Rules of 1998 deal with the handling, treatment and disposal of bio- medical waste for which an authorisation under these Rules is granted. Also, hospital waste or health care waste should include any type of material generated in any healthcare establishment including aqueous and other liquid waste. Hospital waste is normally understood to be any solid, fluid or liquid waste material including its container and any other intermediate product which is generated during short term and long term care consisting observational, diagnostic, therapeutic and rehabilitative services for a person suffering or suspected to be suffering from disease or injury and for parturient or during research pertaining to production and testing of biological, during immunisation of human beings. Hospitals wastes include garbage, refuse, rubbish and Bio Medical Waste. Waste management is one of the important public health and measures over the entire globe. Besides, other the hospital waste may even relate to body parts, organs, tissues, blood and body fluids along with soiled linen, cotton, bandage and plaster casts from infected and contaminated areas and need great care.

*With the proliferation of blood borne diseases, more attention is being focused on the issue of infectious medical waste and its disposal. It may contain highly virulent pathogens some of which may cause epidemics. Moreover, since pathogens multiply, even a small spread may lead to much larger consequences. Proper management of hospital waste is essential to maintain hygiene, aesthetics and cleanliness and control over environmental pollution. Hospital waste has been classified into hazardous waste (10-25%) and non-hazardous waste (75-90%). Out of the hazardous waste, 15 to 18% is infectious while 5 to 7% are other hazardous wastes. Such other hazardous waste may include radioactive waste, discarded glass, pressurised containers, chemical waste, cytotoxic waste and incinerator ash which have to be disposed of in accordance with Rules of 1998. On the other hand, the non-hazardous waste which forms greater part of the hospital waste is dealt with as municipal dump and is liable to be disposed of in accordance with the Rules of 2000. The sharp bio-medical waste may also be infectious and can transmit diseases like Tetanus, AID, Hepatitis, etc. The sharp bio-medical waste including needles, hypodermic needles, scalpels and other blades, knives, infusion sets, saws, broken glass, are considered to be highly hazardous waste and can cause cuts or puncture wounds. Hospital waste has to be treated in different forms and methods. General waste which is non-hazardous, non-toxic and non-infectious, should be dealt with, and its disposal ensured by municipal authorities in accordance with the Rules of 2000. On the other hand, the biomedical waste has to be handled, treated and disposed of by installation of incinerator, deep burial and auto-clave, micro-wave treatment, shredding, securing the landfill while the radio-active waste management has to be undertaken as per the guidelines of BARC, and finally, the liquid and chemical waste should be handled with due caution. Thus, multifarious treatments are itself indicative of the fact that the bio-medical waste is not an expression which is capable of being understood in abstract. It must be taken together with various kinds of procedures, methodologies that are required to be adopted for dealing with different hospital wastes which fall within the head of bio-medical waste.*

*The above scientific studies show that bio-medical waste is one of the more serious and hazardous pollutants and it can produce large number of infectious diseases, which would be very harmful to the humanity at large. Their impact on public health can be very adverse and it is not only expected but is mandatory that such bio-medical waste is dealt with strictly in accordance with Rules of 1998 to ensure that bio-medical waste does not cause any injury to public health and environment. For this purpose and with this object it is important to give wide interpretation to the relevant entries to ensure appropriate checks in regard to dealing and disposal of bio-medical waste. Thus, an interpretation which would put greater checks and balances over this process would be in line with even the object of the Act of 1986.”*

◆ Save Mon Region Federation and Ors. v. Union of India and Ors.<sup>16</sup>

The Tribunal in this case dealt with the issue of assailing the grant of Environmental Clearance (EC) dated 19.4.2012 to the construction of 780 Mega Watts (MW) Nyam Jang Chhu Hydroelectric Project (NJC-HEP) in Tawang district of Arunachal Pradesh. The Tribunal in this case was informed by the Appellant that the said project was situated close to the wintering site for a bird named Black-necked Crane, which is a Schedule I species under the Wildlife Protection Act, 1972 and features in the 'Threatened Birds of India' a literature produced by the Appellants. Apart from the birds, the area was also home to several other endangered species such as the snow leopard, red panda, Arunachal macaque, etc. The Tribunal while suspending the EC observed:

*"In order to do justice in the matter, therefore, we pass the following directions:*

- i) The EC dated 19.4.2011, is suspended till the time the studies as directed are carried out, public consultation thereon done, the EAC considers outcome of such public consultation, carries out a fresh appraisal of proposal for grant of EC, makes recommendation to the MoEF&CC, and the MoEF&CC acts upon such recommendations in accordance with law.*
- ii) The MoEF&CC shall cause to be made a separate study of E-flow requirement for protection of habitat of the Black necked Crane and for conservation of the Black necked Crane through the Wildlife Institute of India, Dehradun, as expeditiously as possible and make such study report along with Tawang River Basin study available for 'public consultation' and shall hold 'public consultation' in compliance of the aforesaid direction in accordance with law.*
- iii) The EAC shall thereupon, make fresh appraisal of the proposal for grant of EC and take appropriate decision for making recommendations to the MoEF&CC, who shall take decision thereupon in accordance with law."*

**4) Forest Clearance**

◆ Vimal Bhai v. Union of India<sup>17</sup>

The Tribunal dealt with the issue of Forest Clearance in this case and stated:

*"We are surprised to find that most of the State Governments do not pass separate orders in the light of the basic requirement of Section 2 of the FC Act as explained above thereby creating an embargo and depriving a person aggrieved from filing an Appeal. Section 2 of the FC Act, mandates that as and when the State Government decides to permit use of the Forest land for non-forest purpose, it has to pass order to that effect. The said order along with the conditions imposed by the Central Government according Stage - I and Stage - II Clearance is mandatorily required to be displayed in the website. A copy of the order should also be sent to the MoEF forthwith. After receiving*

<sup>16</sup> Save Mon Region Federation & Ors. v. Union of India and Ors. (Appeal No. 39 of 2012).

<sup>17</sup> Vimal Bhai v. Union of India; APPEAL NO. 7/2012.

*the copy of the order MoEF is also required to upload the same in its website so as to make the entire transactions transparent and bring it to public domain or Government portal and to enable any person aggrieved by the order passed under the provision of Section 2 of the FC Act, to approach this Tribunal in consonance with Section 2 (A) for FC Act or Section 16 (e) of the NGT Act...*

*Apart from the said action the State Government should also insist that the Project Proponent should publish the entire forest clearances granted in verbatim along with the conditions and safe-guards imposed by the Central Government in Stage - I Forest Clearance in two widely circulated daily newspapers one in vernacular language and the other in English language so as to make people aware of the permission granted to the Project Proponent for use of forest land for non-forest purposes. The cause of action for filing an Appeal would commence only from the date when such publication is made in the newspapers, as well as from the date when the forest clearance and permission to use the Forest land for non-forest purpose is displayed in the website of the concerned State Government or the MoEF, as the case may be. The copies of the Forest Clearance should also be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.”*

## 5) Mining

- ◆ **All Dimasa Students Union Dima Hasao Dist. Committee v.. State of Meghalaya and Ors.**<sup>15</sup>

The Tribunal gave an Order to stop rat-hole mining in Meghalaya through this judgment:

*“We are of the considered view that this act should be condemned and in any event such illegal activities are to be put to an end and the State of Meghalaya should come forward with an appropriate scheme and the statutory rules. Even though, in this application the applicant has restricted himself in respect of rat-hole mining operations in Jaintia Hills of the State of Meghalaya, we are of the view that if in the entire State of Meghalaya such illegal and unscientific operations of rat-hole mining are taking place, the same shall also be put to an end in the interest of people of the area and also people working in the mines for their safety as also for the protection of environment...*

*...We direct the Chief Secretary, Government of Meghalaya and the Director General of Police, State of Meghalaya to ensure that rat-hole mining/illegal mining is stopped forthwith throughout the State of Meghalaya and any illegal transport of coal shall not take place until further orders passed by this Tribunal. The Director General of Police, State of Meghalaya is also directed to report to this Tribunal about the compliance of the order by the next date of hearing.”*

<sup>15</sup> All Dimasa Students Union DimaHasao Dist. Committee v. State of Meghalaya and Ors; Original Application No. 73/2014 And M.A. No. 174/2014.

◆ **Threat to Life Arising Out of Coal Mining in South Garo Hills District v. State of Meghalaya and Ors.**<sup>19</sup>

The Tribunal directed the expert committee headed by former High court judge Justice B.P. Katakey and comprising of representatives from of CPCB and Indian School of Mines, Dhanbad to expedite efforts to identify victims of rat hole mining in Meghalaya since 2012. The committee's interim report has found that mining activity has been going on for a long time in unplanned and unscientific manner resulting in huge ecological disturbance and negative impact on the environment. It will continue to make field trips across the state to formulate a comprehensive restoration plan of the affected region by 31 March 2019. In order to ensure better compliance, the Tribunal has now also redirected its approach on the issue and has imposed an interim penalty of Rs. 100 crores on the government of Meghalaya. Further, the Tribunal also laid down that the state can be made liable for colluding with the polluters apart from non-compliance.

**6) Animal Corridors**

◆ **Tribunal at its own motion v. MoEF**<sup>20</sup>

The Bhopal bench of the National Green Tribunal took *suo moto* cognizance of environmental degradation and reducing corridors due to mining, and stated that '*mining is required to be taken up only if it is compatible with the objective of protecting the environment.*' The Bench had instituted a case on the basis of a news item in the Bhopal edition of daily newspaper 'Times of India' dated 10 April 2013 published on the front page under the caption "Dolomite mining a threat to Tiger corridor in Kanha - Foresters want ban on mining in Mandla District". The Tribunal stated:

*"...The recent reports further reveal that due to increase in their population, because of good management practices, it is not only leading to increase of incidents of human animal conflict but the Tigers are trying to migrate/disburse to the nearest Protected Area/wildlife habitats by establishing corridor even in non forest tracts crossing human habitations and crisis cross road net work. The best example is the recent news report wherein it was stated that one male Tiger is moving from Panna Tiger Reserve and heading towards Bandhavgarh Tiger Reserve which is about 120 km. distance crossing the fragmented habitat. It is reported that earlier the corridor from Panna to Bandhavgarh was freely accessible for movement of wildlife but of late, increase the anthropogenic activity caused its discontinuity. This incident gives an indication how even the areas well beyond 10 km. from the boundaries of the Protected Areas and restoration of lost corridors connecting the habitat of this magnificent animal are critical and there is urgent need to minimise the human interference in these areas particularly from the activities such as mining.*

<sup>19</sup> Threat to life arising out of coal mining in south Garo Hills district v. State of Meghalaya and Ors (O.A. No. 110(THC)/2012).

<sup>20</sup> Tribunal at its own motion v. MoEF; Original Application No. 16/2013 (CZ).

*Forest corridors play an important role in movement of Tigers from one locality to the other and thus help avoid inbreeding and maintain genetic variation among the Tigers. Therefore there is every need to restore the corridors wherever possible and increase the size of buffer areas around the Protected Areas if scientific management of the Tigers has to be sustained keeping pace with their increase in numbers in the wild. A new mechanism is required to be put into place adding as many buffer areas including non forest lands adjacent to the Protected Areas / forest areas, as possible. The private landscapes which are contiguous to the Reserved Forests also can be identified through an innovative mechanism within the framework of the existing environmental and wildlife provisions based on the scientific and objective criteria and developed as ecologically viable buffers which will increase opportunities and create viable buffers to existing Tiger habitats in the Protected Areas and reserves. Further, maintaining gene flow between isolated Tiger population is very important in order to avoid deleterious effects of low genetic diversity and inbreeding.*

*...It is reported that the Dolomite mined from these mines in Mandla District is of superior quality, highly valued and is in good demand in the market. It is also reported that this superior quality mineral is not found elsewhere in the country. However mining is required to be taken up only if it is compatible with the objective of protecting the environment, more so in the context of location of Dolomite mines relatively in close proximity to Kanha National Park. While the objective of granting ML forms part of the development process of the country, it is the duty of the Central Government and the State Government to take steps to protect the environment which includes wildlife and maintain the ecological balance and prevent damage that may be caused by mining operations..."*

The Tribunal gave the following orders:

- i) *Necessary penal action shall be initiated against those ML holders who were found violating the provisions of Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981 as well as the ML conditions and Forest Act and even revoking their licence if repeatedly found violating the provisions of law.*
- ii) *Though, ML area of most of the mines is limited and below 5 hectares, they are located in clusters in the limits of aforesaid 6 villages. Heavy human activity in these clusters involving high concentration of labour, deployment of machinery, movement of trucks to and from the mine sites shall definitely have a cumulative impact. Therefore, it may be examined whether these mines require cumulative Environment Impact Assessment (EIA) study and then Page 24 of 25 only granting EC under cluster approach as envisaged in EIA Notification, 2006 and amendments made therein from time to time and in accordance with guidelines issued by the MoEF from time to time. In the meanwhile, movement of vehicles and mining activities*

*shall be regulated in consultation with the Forest Department so as to not to disturb the wildlife in the area.*

- iii) The reply filed on behalf of the State Govt. functionaries reveal that there is no coordination between the Mining and Forest Departments at least in case of those mines which are located in the Forest area and which are in close proximity to the forest boundary. In the reply filed on behalf of the Respondents No. 2, 3, 4 and 6 it was stated that the local Forest officials have expressed their deep concern pertaining to the mines sanctioned in the Reserved Forest and mine operators are required to obtain transit passes from the Forest Department. It was also stated that the ML conditions are not informed to the Forest Department and the ML holders are also reluctant to provide the information to the Forest Department. There is a need to put full stop to this state of affairs and streamline the entire procedure of sanctioning and operating the mines. The Government should evolve a suitable mechanism to avoid such conflicting situation and ensure coordination among all the law enforcing authorities in the state.*
- iv) The irregularities pointed in the reply filed by the Regional Office, MoEF shall be taken up seriously and all the mines found violating the provisions and ML conditions as well as Environmental laws shall be dealt with seriously in accordance with law.*
- v) Keeping in view the concern expressed by the NTCA in their affidavit dated 25.02.2014 dealt under para 18(supra), all the necessary caution Page 25 of 25 needs to be taken before reviewing the existing MLs and granting / renewing EC and also before granting the Consent to Operate the mines.*
- vi) Even though the mines are under operation for a long period, it is surprising to note that such grave irregularities have been noticed only during the inspection of mines by the officials of the Regional Office, MoEF that too after the case was taken up suo motu by this Tribunal and no record was placed before us to the effect that any severe action has been taken against the defaulting ML holders. The Chief Secretary shall get the whole issue enquired and initiate action against the erring officials if it is found that they indulged in dereliction of duty by allowing the mines to continue to operate violating the law.*
- vii) With regard to those mines which are located on the boundary of the notified forest itself the issue may be examined in details and action may be taken to revoke their licence in accordance with law, if no such provision of granting MLs touching the notified forest boundary, exists.*

## **7) Sustainable Development**

Sustainable Development is one of the fundamental principles in national environmental laws. Protection of the environment cannot be at the stake of development and vice versa. There has to be a balance between the two and the Tribunal applies the same while adjudicating on environmental cases.

◆ **Goa Foundation v. Union of India**<sup>21</sup>

This case was filed against the indiscriminate development across the Western Ghats. The Case was important because it defined several tenets of the National Green Tribunal Act 2010. It defined:

‘Substantial Question of Environment’

*“To put it aptly, a substantial question relating to environment must, therefore, be a question which is debatable, not previously settled and must have a material bearing on the case and its issues relating to environment... Thus, disputes must relate to implementation of the enactments specified in Schedule I to the NGT Act.”*

‘Aggrieved Person’

*“person aggrieved”, thus, can be a person who has no direct or personal interest in invoking the provisions of the Act, or who can show before Tribunal that it affects the environment, and therefore, prays for issuance of directions within the contemplation of the provisions of Section 16 of the NGT Act.”*

‘Cause of Action’

*“Cause of action” is, in fact, a bundle of facts, which a party pleads before the Court or Tribunal to claim a relief. It is a bundle of facts pleaded and proved for the purpose of obtaining the relief claimed in the petition. These are the material facts and if the application discloses even a small cause of action, it is a settled law that the plaint cannot be rejected.”*

## 8) Cumulative Impact Assessment

◆ **T. Murugandam and Others v. Ministry of Environment and Forest and Others**<sup>22</sup>

The Tribunal raised important issues regarding Cumulative Impact Assessment (CIA) in this case and directed the project proponent to include a CIA report in addition to the EIA report.

*“The cumulative impact assessment exercise is considered necessary in this particular case, as Pichavaram Mangroves are located at a distance of 8 km from the Southern boundary of the proposed Power Plant, added to it the issues pertaining to the cumulative impacts were raised during the public hearing. As such, we strongly feel keeping in view the precautionary principle and sustainable development approach, cumulative impact assessment studies are required to be done in order to suggest adequate mitigation measures and environmental safeguards to avoid any adverse impacts on ecologically fragile eco-system of Pichavaram Mangroves and to the biological marine environment in the vicinity.”*

<sup>21</sup> Goa Foundation v. Union of India; Application no. 26 of 2012.

<sup>22</sup> T. Murugandam and Others v. Ministry of Environment and Forest and Others; APPEAL No. 17 OF 2011(T) NEAA NO. 20 OF 2010.

## 9) Thermal Power Plants

### ◆ Samata and Ors. v. Union of India<sup>23</sup>

This case was filed against the Environmental Clearance granted to a coal based Thermal Power Plant near Komarada village in Vizianagaram District, Andhra Pradesh. The Tribunal set aside the EC and directed the Expert Appraisal Committee to “*consider each and every issue separately and independently and record the reasons either for rejecting or accepting the concerns and objections and also the response by the Project Proponent thereon enabling thereby to understand both the Project Proponent and Objectors, ensuring transparency in the process of recommending either for acceptance or for rejection of the EC by the regulatory authority, namely the MoEF.*”

## 10) Wetlands

### ◆ Nagarjuna Construction Company v. Mohana and Others (Sompeta case)<sup>24</sup>

This case was transferred from NEAA to the Tribunal. Environmental Clearance was given to a project proposed to be established on “Beela Swamp” of Somepeta, a critical Wetland essential to the ecosystem of the area. The EC was *prima facie* flawed and the Tribunal stated:

*“Considering the submissions made before this Court in the light of the ratio decided by the Supreme Court in the case of S. Nagraj (Supra) we find that the Member of NEAA did not bear in mind the cardinal principles of law while passing the impugned order. He has not only utilised his personal knowledge, but also did not follow the fundamental principles of Natural Justice. He has also not discussed voluminous records produced before him and arrived at a conclusion abruptly only on the basis of facts gathered by him during the visit.*

*After going through Paragraph 6, we find that the Member, NEAA who visited the site has disposed of the case solely on the basis of the impression gathered by him personally without granting any opportunity to any of the 10 Parties to answer/ meet or clarify such impression. Thus he has become the “judge of his own cause.” The order further reveals that he had made up his mind before commencement of the hearing and the hearings made thereafter were only a empty formalities. It is well settled that justice should not only be done but it should appear to have been done. None of the Parties should feel that he has not been given an opportunity to rebut materials which form the basis of the order/judgment.”*

## 11) National Parks and Sanctuaries

### ◆ Rohit Choudhury v. Union of India and Others<sup>25</sup>

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<sup>23</sup> Samata and Ors v. Union of India; Appeal No. 9/2011.

<sup>24</sup> Nagarjuna Construction Company v. Mohana and Others REVIEW PETITION NO. 2 OF 2010 (ARISING OUT OF APPEAL NO. 1 TO 6 OF 2010).

<sup>25</sup> Rohit Choudhury v. Union of India; APPLICATION NO. 38/2011.

This case was filed against the unregulated quarrying in and around Kaziranga National Park. The Tribunal stated:

*“After hearing Learned Counsel for the parties and perusing the records, this Tribunal finds materials to reveal that 10 (ten) stone crusher units have been set-up in the NDZ after issuance of Notification in 1996.*

*After giving the matter a conscious thought and after taking into account all the factors, we are of the opinion that MoEF and the State Government of Assam have totally failed in their duties with respect to implementation of the provisions of the 1996 Notification and due to the callous and indifferent attitude exhibited by the Authorities, number of polluting industries / units were established in and around the No Development Zone of Kaziranga thereby posing immense threat to the biodiversity, eco-sensitive zone, ecology as well as environment. We are, further, satisfied that this is a clear case of infringement of law. We, therefore, have no hesitation to direct the MoEF and the Government of Assam to deposit Rs. 1,00,000/- (Rupees one lakh only) each, with the Director, Kaziranga National Park for conservation and restoration of flora and fauna as well as biodiversity, eco-sensitive zone, ecology and environment of the vicinity of Kaziranga National Park in general and within the No Development Zone in particular. The said amount shall be utilised exclusively by the Director, Kaziranga National Park for conservation, protection and restoration as well as for afforestation of suitable trees of the local species in and around the No Development Zone.”*

## 12) Noise Pollution

### ◆ Dileep B. Nevatia v. Union of India and Others

This was a first of its kind case where the Tribunal directed the Pollution Control Board to implement a regulated level of noise through vehicles.

*“The discussions made during the course of the proceeding reveals that no standards so far have been specified for use of sirens and multi-tone horns under the Motor Vehicles Act, 1989. The Government of India through the Ministry of Environment and Forests (for short MoEF) have already notified ambient noise standards under the provisions of the Noise Pollution (Regulation and Control) Rules, 2000 for different areas which include industrial areas, commercial areas, residential areas and silence zone. The ambient air quality is influenced by various sound producing sources such as loudspeakers, musical systems, sirens and horns fitted to vehicles, air compressors, high speed industrial machines, D.G. Sets, etc. In order to control ambient noise pollution, it is essential to control emanating noise at the source itself for which source specific standards are required to be formulated. Source specific standards have already been evolved by the MoEF and Central Pollution Control Board (for short CPCB) for the D.G. Sets, Industries, etc.”*

The Tribunal passed the following Orders:

- i) The Ministry of Road Transport and Highways is directed to notify the standards for sirens and multi-tone horns used by different vehicles either under Government duty or otherwise within a period of 3 months hence.
- ii) Based upon the standards to be prescribed by the Ministry of Road Transport and Highways, Government of India, the State of Maharashtra and the Transport Commissioner, Government of India, Maharashtra, Respondent Nos. 1 and 3 respectively will take adequate step to notify the standards for sirens and multi-tone horns for different zone, within a period of one month from the date of the notification.
- iii) The Transport Commissioner, Government of India of Maharashtra, is also directed to ensure the number of vehicles installed sirens and multi-tone sirens are limited to the bare minimum so as to comply with ambient air quality standards as specified in the Noise Pollution (Regulation and Control) Rules, 2000.
- iv) The Police Commissioner of Maharashtra is also directed to ensure that no private vehicle should be allowed to use sirens or multi-tone horns in residential and silent zones and in the vicinity of educational institutions, hospitals and other sensitive areas and also during night except emergencies and under exceptional circumstances.

The Police Commissioner shall further ensure and take precaution to the effect that the residents and residential areas are not affected by indiscriminate use of loud speaker during night time in other words the use of loud speaker should be strictly restricted to the prevailing Rules and Regulations.

◆ Hardeep Singh and Ors. v. SDMC and Ors<sup>26</sup>

The issue for consideration in this case before the NGT was the failure of the statutory authorities in controlling the noise pollution as per statutory mandate of Noise Pollution (Regulation and Control) Rules, 2000. The application was filed alleging that there were use of DJ systems, music systems, public address systems during weddings or other functions and noise was being created at odd hours adversely affecting the health of the citizens. The NGT while observing failure of authorities to comply with the directions of the Tribunal and directing the Delhi Government to deposit a sum of Rs. 5 Lakhs with the Central Pollution Control Board (CPCB) within one week observed:

*“8. Need for strict compliance of environment norms has been repeatedly mentioned in the interest of right of citizens to clean and peaceful environment. The Tribunal is constrained to take punitive measures to uphold the rule of law instead of remaining mute spectator when faced with failure of authorities in carrying out their obligation. Disobedience and disregard of law ought not to be taken lightly.*

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<sup>26</sup> Hardeep Singh and Ors. v. SDMC and Ors. (Original Application No. 519/2016).

9. *In view of clear failures as recorded above, while granting further opportunity to file fresh compliance report within one month we require the Delhi Government to deposit a sum of Rs. 5 Lakhs towards cost with the Central Pollution Control Board (CPCB) within one week. The amount may be spent on restoration of environment.”*

### 13) Solid Waste Management

◆ Almitra H. Patel and Ors. v. Union of India and Ors.<sup>27</sup>

This Application was filed for seeking directions for urgently taking steps to improve practices presently adopted for collection, storage, transportation, disposal, treatment and recycling of Municipal Solid Waste popularly known as garbage. The Tribunal, while observing that any further delay in proper enforcement of such action plans in accordance with the Rules is likely to prove disastrous for environmental protection and public health, issued following comprehensive directions:

*“1. Every State and Union Territory shall enforce and implement the Solid Waste Management Rules, 2016 in all respects and without any further delay.*

*2. All the State Governments and Union Territories shall prepare an action plan in terms of the Rules of 2016 and the directions in this Judgment, within four weeks from the date of pronouncement of the judgment. The action plan would relate to the management and disposal of waste in the entire State. The steps are required to be taken in a time bound manner. Establishment and operationalisation of the plants for processing and disposal of the waste and selection and specifications of landfill sites which have to be constructed, be prepared and maintained strictly in accordance with the Rules of 2016.*

*3. The period of six months specified under Rule 6(b), 15 of the Rules of 2016 has already lapsed. The State Governments have failed to take action in terms thereof within the stipulated period. By way of last opportunity, we direct that the period of six months shall be reckoned w.e.f. 1st January, 2017. There shall be no extension given to any State for compliance with these provisions any further.*

*The period of one year specified under Rule 11(a), 11(f), 15 (e) and 22 for compliance of the prepared plans and directions issued by the Committees shall, therefore, commence with effect from 1 July 2017. For this also, no extension shall be provided.*

*Any State or Union Territory which now fails to comply with the statutory obligations as afore indicated shall be liable to be proceeded against in accordance with Section 15 of the Environment (Protection) Act, 1986. Besides that, it would also be liable to pay environmental compensation, as may be imposed by this Tribunal. In addition to this, the senior most officer in-charge in the State Government/Urban Local Body shall be liable to be personally proceeded against for violation of the Rules and orders passed by this Tribunal.*

<sup>27</sup> Almitra H. Patel and Ors. v. Union of India and Ors. (Original Application No. 199 of 2014).

4. *The Central Government, State Government, Local Authorities and citizens shall perform their respective obligations/duties as contemplated under the Rules of 2016, now, without any further delay or demur.*

5. *All the State Governments, its departments and local authorities shall operate in complete co-ordination and cooperation with each other and ensure that the solid waste generated in the State is managed, processed and disposed of strictly in accordance with the Rules of 2016.*

6. *Wherever a waste to energy plant is established for processing of the waste, it shall be ensured that there is mandatory and proper segregation prior to incineration relatable to the quantum of the waste.*

7. *It shall be mandatory to provide for a buffer zone around plants and landfill sites whether they are geographically integrated or are located separately. The buffer zone necessarily need not be of 500 meters wherever there is a land constraint. The purpose of the buffer zone should be to segregate the plant by means of a green belt from surrounding areas so as to prevent and control pollution, besides, the site of the project should be horticulturally beautified. This should be decided by the authorities concerned and the Rules are silent with regard to extent of buffer zone. However, the Urban Development Manual provides for the same. Hence, we hold that this provision is not mandatory, but is directory.*

*We make it clear that buffer zone and green belt are essential and their extent would have to be decided on a case to case basis.*

8. *We direct that the Committees constituted under Rule-5 would meet at least once in three months and not once in a year. The minutes of the meeting shall be placed in the public domain. Directions, on the basis of the minutes, shall be issued immediately after the meeting, to the concerned States, local bodies, departments and Project Proponents.*

9. *The State Government and the local authorities shall issue directives to all concerned, making it mandatory for the power generation and cement plants within its jurisdiction to buy and use RDF as fuel in their respective plants, wherever such plant is located within a 100 km radius of the facility.*

*In other words, it will be obligatory on the part of the State, local authorities to create a market for consumption of RDF. It is also for the reason that, even in waste to energy plants, Waste-RDF-Energy is a preferred choice.*

10. *In waste to energy plant by direct incineration, absolute segregation shall be mandatory and be part of the terms and conditions of the contract.*

11. *The tipping fee, wherever payable to the concessionaire/operator of the facility, will not only be relatable to the quantum of waste supplied to the concessionaire/operator but also to the efficient and regular functioning of the*

plant. Wherever, tipping fee is related to load of the waste, proper computerised weighing machines should be connected to the online system of the concerned departments and local authorities mandatorily.

12. Wherever, the waste is to be collected by the concessionaire/operator of the facility, there it shall be obligatory for him to segregate inert and C&D waste at source/collection point and then transport it in accordance with the Rules to the identified sites.

13. The landfill sites shall be subjected to bio-stabilisation within six months from the date of pronouncement of the order. The windrows should be turned at regular intervals. At the landfill sites, every effort should be made to prevent, leachate and generation of Methane. The stabilised waste should be subjected to composting, which should then be utilised as compost, ready for use as organic manure.

14. Landfills should preferably be used only for depositing of inert waste and rejects. However, if the authorities are compelled to use the landfill for good and valid reasons, then the waste (other than inert) to be deposited at such landfill sites be segregated and handled in terms of clause-12.

15. The non-biodegradable waste and non-recyclable plastic should be segregated from the landfill sites and be used for construction of roads and embankments in all road projects all over the country. To this effect, there should be a specific stipulation in the contract awarding work to concessionaire/operator of the facility.

16. The State Government, Local Authorities, Pollution Control Boards of the respective States, Pollution Control Committees of the UTs and the concerned departments would ensure that they open or cause to be opened in discharge of Extended Producer Responsibility, appropriate number of centres in every colony of every district in the State which would collect or require residents of the locality to deposit the domestic hazardous waste like fluorescent tubes, bulbs, batteries, electronic items, syringe, expired medicines and such other allied items. Hazardous waste, so collected by the centres should be either sent for recycling, wherever possible and the remnant thereof should be transported to the hazardous waste disposal facility.

17. We direct MoEF&CC, and the State Governments to consider and pass appropriate directions in relation to ban on short life PVC and chlorinated plastics as expeditiously as possible and, in any case, not later than six months from the date of pronouncement of this judgment.

18. The directions and orders passed in this judgment shall not affect any existing contracts, however, we still direct that the parties to the contract relating to management or disposal of waste should, by mutual consent, bring their performance, rights and liabilities in consonance with this judgment of the Tribunal and the Rules of 2016. However, to all the concessionaire/operators of

facility even under process, this judgment and the Rules of 2016 shall completely and comprehensively apply.

19. We specifically direct that there shall be complete prohibition on open burning of waste on lands, including at landfill sites. For each such incident or default, violators including the project proponent, concessionaire, ULB, any person or body responsible for such burning, shall be liable to pay environmental compensation of Rs. 5,000/- (Rs. Five Thousand only) in case of simple burning, while Rs. 25,000/- (Rs. Twenty Five Thousand only) in case of bulk waste burning. Environmental compensation shall be recovered as arrears of land revenue by the competent authority in accordance with law.

20. All the local authorities, concessionaire, operator of the facility shall be obliged to display on their respective websites the data in relation to the functioning of the plant and its adherence to the prescribed parameters. This data shall be placed in the public domain and any person would be entitled to approach the authority, if the plant is not operating as per specified parameters.

21. We direct the CPCB and the respective State Boards to conduct survey and research by monitoring the incidents of such burning and to submit a report to the Tribunal as to what pollutants are emitted by such illegal and unauthorised burning of waste.

22. That the directions contained in the judgment of the Tribunal in the case of 'Kudrat Sandhu v. Govt. of NCT and Ors', O.A. No. 281 of 2016, shall mutatis mutandis apply to this judgment and consequently to all the stakeholders all over the country.

23. That any States/UTs, local authorities, concessionaires, facility operators, any stakeholders, generators of waste and any person who violates or fails to comply with the Rules of 2016 in the entire country and the directions contained in this judgment shall be liable for penal action in accordance with Section-15 of the Environment (Protection) Act, 1986 and shall also be liable to pay environmental compensation in terms of Sections 15 and 17 of the National Green Tribunal Act, 2010 to the extent determined by the Tribunal.

24. That the State Government/UT, public authorities, concessionaire/operators shall take all steps to create public awareness about the facilities available, processing of the waste, obligations of the public at large, public authorities, concessionaire and facility operators under the Rules and this judgment. They shall hold program for public awareness for that purpose at regular intervals. This programme should be conducted in the local languages of the concerned States/UTs/Districts.

25. We expect all the concerned authorities to take note of the fact that the Rules recognise only a landfill site and not dumping site and to take appropriate actions in that behalf.

26. We further direct that the directions contained in this judgment and the

*obligations contained under the Rules of 2016 should be circulated and published in the local languages.*

*27. Every Advisory Committee in the State shall also act as a Monitoring Committee for proper implementation of these directions and the Rules of 2016.*

*28. Copy of this judgment be circulated to all the Chief Secretaries/Advisers of States/UTs by the Registry of the Tribunal. The said authorities are hereby directed to take immediate steps to comply with all the directions contained in this judgment and submit a report of compliance to the Tribunal within one month from the date they receive copy of this judgment.”*

◆ *Social Action for Forest and Environment (SAFE) v. Union of India and Ors.*<sup>28</sup>

The Tribunal in this case dealt with solid waste management in Agra city and areas under the Agra Cantonment Board, and eco-sensitive Taj Trapezium Zone. *The Tribunal having dealt with the issue of compliance with Solid Waste Management Rules in regard to the grave situation in Agra directed the state to deposit a performance guarantee of Rs. 25 crores to the satisfaction of the Central Pollution Control Board to comply with the timelines in the action plan to be submitted within one month.*

◆ *Saloni Singh & Anr. v. Union of India and Ors.*<sup>29</sup>

The issue in this case related to compliance of Plastic and Solid Waste Management Rules, 2016 at the railway compartments, stations and railway tracks.

The Tribunal considered the report of the Comptroller and Auditor General of India (CAG) called “Environment Management in Indian Railways” based on study of the major railway stations and the 83rd report of the Public Accounts Committee and found unsatisfactory handling of waste generated and dumped on the railway tracks, open defecation on the tracks, leading to unhygienic conditions and health hazards. *The Tribunal henceforth directed that 36 railway stations, i.e. 5% of all stations achieve the target of achieving environment standard ‘14001’ laid down by BIS for selected railway stations in the form of Environment Management System within three months. The Eco-smart stations are to be replicated in phases in rest of the country.*

## 48.6 Conclusion

The National Green Tribunal has been successful to a great extent in upholding the principle of Sustainable Development in environmental jurisprudence in India. However, it is still in its nascent stages of development and therefore invites criticism from various stakeholders. The following are some of the criticisms that NGT faces:

<sup>28</sup> Social Action for Forest and Environment (SAFE) v. Union of India and Ors. (O.A. No. 306/2016).

<sup>29</sup> Saloni Singh and Anr. v. Union of India and Ors. (O.A. No. 141/2014)

### 1) Access to NGT

NGT faces a major issue of not being accessible by different states in the country. It currently has territorial jurisdiction in five zones and holds circuit benches in various parts of the country but it still becomes difficult for people to travel across from one state to the other for cases. It is essential to make the Tribunal accessible to more people; either through increased number of circuit Benches in different cities or establishing more seats in other parts of the country.

### 2) Appeal to Supreme Court

The NGT Act clearly states that any appeal from the Tribunal will go to the Supreme Court.

#### Section 22:

*Any person aggrieved by any award, decision or order of the Tribunal, may, file an appeal to the Supreme Court, within ninety days from the date of communication of the award, decision or order of the Tribunal, to him, on any one or more of the grounds specified in Section 100 of the Code of Civil Procedure, 1908: Provided that the Supreme Court may entertain any appeal after the expiry of ninety days, if it is satisfied that the appellant was prevented by sufficient cause from preferring the appeal.*

However, the Chennai High Court, through a recent order stated that a High Court under the powers given to it through Article 226 of the Constitution of India could entertain appeals from the NGT. It is felt that there should be some clarity on this matter as the purpose of establishing an Environmental Tribunal was to bring it at par with a High Court where an appeal could only be filed at the Apex Court.

### 3) Limitation period

The limitation period for filing a case for relief, compensation and restitution is 5 years, which may not be enough in cases where the effect of a particular environment problem takes a long time to manifest. Example: a woman who washes her husband's clothes daily contracts a fatal disease after 15 years due to the asbestos in the husband's factory clothes. She might not be able to file a complaint in the NGT due to the bar of limitation. It is essential to address the issue of limitation as effects of environmental pollutants can take a long time to manifest and the Tribunal should be the primary authority regulating such violations of environment protection standards.

Despite all these setbacks, NGT has been successful in establishing itself as the principle Court for environmental disputes. It is fairly new and according to statistics the judgments have gone up considerably since its inception. While there were 35 judgments delivered in 2011, the number went up to 91 and 154 judgments in 2012 and 2013 respectively. It is a clear indication of the growing awareness of environmental issues and redressal of the same. It is important to take advantage of the special environmental tribunal and use legal intervention measures to target environmental issues at an individual level.



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