COURSE 4
National Environmental Law and Policy

Centre for Environmental Law, WWF-India
172-B, Lodi Estate, New Delhi-110003

National Law University, Delhi
Sector-14, Dwarka, New Delhi-110078

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Unit Compilation
Ramya Iyer, CEL, WWF-India

Course Advisor & Editor
Moulika Arabhi, CEL, WWF-India

Proofreading
Neeru, Independent Consultant

Laser Composition
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Course 4: National Environmental Law and Policy

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1.1 Introduction

The protection and preservation of environment is integral to the culture and religion of most human communities; nature is seen as an essential part of the society at large. Good environment is also essential to ensure basic human rights, even the right to life, 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 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 between man and his 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.

1.2 Duty of the State

Part IV of the Constitution of India contains the Directive Principles of State Policy. 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 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 48-A. 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 word 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 emphasis the fact that the State should try not only to protect but to improve the environment.[1]

Article 39(e), 47 and 48-A of the Directive Principles of State Policy have a definite bearing of 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 the monuments of national importance, the protection of which is a duty of the State under Article 49 of the Constitution. Article 49 of the Directive Principles of State Policy provides for the obligation of the State to protect monuments, places and objects of national importance. In the *Taj* case[2] 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 to conjunction with the specific treaty provision, may also serve to strengthen the hands of pro-conservation judge.

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[1] H.M. Seervai, *Constitutional Law of India: A Critical Commentary*, 2019 (Vol.2, 1993).
[2] *M.C. Mehta v. Union of India*, AIR 1997 SC 734.

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.

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.

1.3 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"[3]

After making reference 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 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.[4]

[3] *Rural Litigation and Entitlement Kendra v. State of U.P.,* AIR 1987 SC 359, 364.
[4] *Kinkri devi v. State of Himachal Pradesh*, AIR 1988 HP 4,8.

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.

1.4 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

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[5] .

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[6] . 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. Lakshmipathy v. State of Karnataka*[7] 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'.

[5] *M.C. Mehta v. Union of India,* AIR 1987 SC 965.
[6] *Attakoya Thangal v. Union of India* 1990 (1) KLT 580.
[7] AIR 1992 Kant 57.

- **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.

The right to livelihood has been recognised by the Supreme Court in the case of *Olga Tellis v. Bombay Municipal Corporation*[8]. 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 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."[9]

Thus, permission for contractions that is 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 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. The freedom however, is not uncontrolled.

[8] AIR 1986 SC 180.
[9] *Ajay Hasia v. Khalid Mujib Shervardi*, AIR 1981 SC 487,499.

The 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 the 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 it carry on any occupation, trade the fundamental right to carry in 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 or the establishment of intermediate and district levels. Article 243-G authorises the legislature of State to endow the 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 maters 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 maintainace 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 the Writ Jurisdiction 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*[10] (*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*[11] *(Kanpur Tanneries* case), a public interest litigation was filed by an active social worker and Supreme Court advocate for 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 if 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.

[10] AIR 1987 SC 1086.

[11] AIR 1988 SC 1115.

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.

1.5 Role of Judiciary and Good Governance[12]

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; instill 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,

[12] Relevant extract were taken from Role of Judiciary in good governance By Justice Y.K. Sabharwal, Chief Justice of India.

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 necessarily is a pointer to "representative democracy".

The attribute of "rule of law" in hers as prerequisite "fair legal frameworks" that are enforced impartially and particularly "full protection of human rights", especially of the vulnerable sections of the society. 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".

Democracy, liberty and the rule of law together represent the troika that is universally accepted now as the index of a 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 "the 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 person, 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.[13] 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

[13] 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.

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 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 limit 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, 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 and spoilation* 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".

1.6 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 the 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.[14]

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 center 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.

[14] Rule of law, good governance, and sustainable development Morita, Sachiko and Zaelke,Durwood, Washington, DC 2007.

– 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).

1.7 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 environmentally 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.

2 Other Laws and Environment (IPC, CrPC, Torts)

Chapter Contents **Page Nos.**

2.1 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. Kautalya'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 Bristish rule, were allege 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 provision on protecting environment. 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[1]. 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.

2.2 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 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:

[1] Environment Assessment, Country Data: India. The World Bank. 2011.

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 fir 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 is 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 make punishable.[2]

[2] L.N. Mathur ,"A Federal Legislative History of Control of Water Pollution in India" in *Legal Control of Environmental Pollution, op. cit.,* p. 90.

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.

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 tranquility, 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 mire in the area of the environmental protection than in any other field. *Municipal council, Ratlam v. Vardhichand*[3] 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 provison are conducive to the demands of the rule of law necessitated by the conditions of developing countries. The Supreme Court had no hesitation in the endorsing the view that the municipality should prepare a scheme and abate the nuisance which was allowed to continue only due to the lack do initiative from the municipality.

[3] AIR 1980 SC 1622.

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 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:

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 atleast 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 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 broken environmental law. They are interested with regulations concerning 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 the 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. Atleast 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, even 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 that the Alaskan 'Exxon Valdez' disaster, could happen again.

Probably the most serious environmental disaster of the 20th centuary 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[4] . Many suffered

[4] 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.

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 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.

2.3 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 serious concern for the protection of 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*[5].

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*[6], which was popularly known as the Oleum gas leak case. It was public interest litigation under Article 32 of the Indian constitution.

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

[5] (1868) LR 3 HL 330.

[6] AIR 1987 SC 1086.

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 if 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 a 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 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 on 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.

2.4 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 manmade 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 quantity 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 arid 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 Center 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 Center 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. Subject to those caveats, however, it is possible to argue that if the kinds of thinking that have now come to prevail had been well established when the Constitution was being drafted, the constitutional provisions might well have been very different.

ii) Water Resources Management in India

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.

iii) The National Water Policy, 2002

The current National Water Policy (NWP) in India was formulated in the year 2002. Prior to the said policy, the Water Policy in existence was the NWP of 1987.

The 1987 policy has envisaged a plan promising drinking water for all by 2005. However, it remains as an elusive dream even today. Moreover, there were various loopholes in the 1987 policy and hence, the need arose to revise the NWP. However, it was only in 2002, after a gap of 15 years, that the Union Government released a revised version of the NWP.

The NWP 2002, for the first time, recognises water as a precious 'national asset', a part of larger ecosystems that is to be treated as an essential environment for sustaining all life forms.

The policy emphasizes planning, development and management of water resources in a national perspective through a well-developed information system and river basin organisations for the integrated and multidisciplinary management of entire drainage basins. It has prioritised water allocation, starting with drinking water, irrigation, hydropower, ecology, agro-industries and non-industries, navigation

and other uses. It details the various elements required for effective implementation, including environmental-developmental factors and methodological aspects ranging from groundwater, flood control, sea erosion, rehabilitation and inter-State distribution to project planning, participatory approach, private sector participation, etc. For the first time, it asserts the 'polluter pays' principle to manage polluted waters, and legislation to preserve existing water bodies from encroachment and water quality deterioration.

The broad objective of the guidelines governing the allocation of water is defined as "developing the waters of Inter-State River for the betterment of the population of the co-basin States/Union Territories to the extent such developments are not detrimental to the interests of other co-basin States".

Section 21 of the 2002 policy deals with the point of sharing of water among States and provides as follows:

Water Sharing / Distribution amongst the States

21.1 The water sharing / distribution amongst the States should be guided by a national perspective with due regard to water resources availability and needs within the river basin. Necessary guidelines, including for water short states even outside the basin, need to be evolved for facilitating future agreements amongst the basin States.

21.2 The Inter-State Water Disputes Act of 1956 may be suitably reviewed and amended for timely adjudication of water disputes referred to the Tribunal.

Policy of 1987 basically dealt with the idea of developing the water shared by 2 or more States, whereas, the policy of 2002, dwells on the point that rules should be framed, which must be abided by to facilitate the agreements, made between States.

- **Criticisms to the NWP of 2002**

The NWP of 2002 emphasizes continued government control over water resources. Critics of the policy say that it is not the revision of 1987 policy that was long overdue, but what is truly overdue is the removal of those entrusted with its implementation. The NWP has been highly criticised for its stand in continuing government control and for the lack of effective inclusion of crucial water management techniques such as rainwater harvesting, community management of water resources, etc. Some experts are of the opinion that the policy ignores the potential of rainwater harvesting and the importance of involving local communities in simple methods to ensure that rainwater is trapped and refills natural aquifers in the ground. Experts also believe that the National Water Policy will remain inert

and ineffectual because it is far removed from the two simple but important challenges of water management today, i.e. rainwater harvesting and community management in this initiative.

The 2002 NWP document is a repeat of the 1987 water policy with words like 'community' and 'participatory approach' merely added to it on paper but not in sprit. Many experts have also dismissed the document as a mere short-term policy guide. They say that the policy merely highlights issues that need immediate attention but fails to give a strategy for their effective implementation.

The revised policy emphasizes on strengthening the existing State Institutions, but says little about empowering the local communities. Community participation has been limited to mere consultation, say experts. Local people have no role to play in the implementation process, as per the policy.

A part of the funds are directly released by the Central Government to these communities. Nevertheless, as their roles remain unspecified, many fear that it could lead to gross misappropriation of funds. According to L.C. Jain, a former member of India's Planning Commission, India has over the last 50 years spent $50 billion on developing water resources and another $7.5 billion on drinking water with little to show for the money, much of which was siphoned out through a corrupt contractor system. Apart from big dams and irrigation systems, the government has encouraged the digging of millions of tube wells and bore wells energised by electric and diesel-driven pumps that now provide half of the country's irrigation. As more and more water is pumped out of the ground, there has been a dramatic lowering of the water table across the country. Groundwater in States that have taken to intensive agriculture under the so-called Green Revolution of the 70s are now turning brackish or are ridden with fluorides or arsenic.

By 1991 a review of the irrigation sector by the World Bank showed that one of the world's largest irrigation investments was performing unevenly and far below potential, mainly because the focus was on construction of new projects rather than management of existing ones. "Sooner rather than later the burden will be financially unsustainable and infrastructure will be physically unsustainable due to declining construction and maintenance standards. The situation is compounded in some areas by environmental degradation", the Bank noted.

According to Jain, who has served as vice chairman of the World Commission on Dams, the NWP fails to address these problems or to chalk out an effective plan of implementation, creating the possibility of situations where worst fears may come true.

iv) Interlinking of Rivers

Basically, '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.[7]

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.

[7] Iyer, R.R., *Federalism and Water Resources,* Economic and Political Weekly, March 26,1994, 733-735.

- 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.

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 15th 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 10th 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 7th March 2001. The Bill was passed in Lok Sabha on 3rd August 2001 and Rajya Sabha on 11th March 2002 and received the assent of the President on 28th 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 a facts found by it and giving its decision on the same within a period of three years.

Inter-State Rivers disputes – A few 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 (April 1969)
2) Krishna Water Disputes Tribunal (April 1969)
3) Narmada Water Disputes Tribunal (October 1969)
4) Ravi and Beas Waters Tribunal (April 1986)
5) Cauvery Water Disputes Tribunal (June 1990)

The first three Tribunals have been completed, but a final decision is still pending on the last two matters.

2.5 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 28th 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 that the urban local bodies can 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 the 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 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.

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

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 taking into account 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, Orissa, 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 1st 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 houselessness, 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.

2.6 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 Hazardous Wastes (Management and Handling) Rules, 1989
- The Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989
- The Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996
- The Bio-Medical Waste (Management and Handling) Rules, 1998
- The Recycled Plastics Manufacture and Usage Rules, 1999
- The Municipal Solid Wastes (Management and Handling) Rules, 2000
- The Noise Pollution (Regulation and Control) Rules, 2000
- The Ozone Depleting Substances (Regulation) Rules, 2000
- The Batteries (Management and Handling) Rules, 2001

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 Wild Life (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 carrying 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 cause 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 have 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 fulfill 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 & 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 upto Rs. 5000/- per day.

If violation continues beyond one year imprisonment can be increased upto 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 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 upto 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 uptil 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 Europian 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.

2.7 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, atleast 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 aluminum, 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, the **Hazardous Wastes Rules, 1989**, was notified on July 28, 1989 and published in the Gazette of India, Extraordinary, Part II, 3(ii) on the same day. It was subsequently amended vide S.O. 116(E) dated 5-2-90, G.S.R.380(E) dated 31-3-92, S.O.625(E) dated 3-9-96, S.O.24(E) dated 6-1-2000 and S.O.593(E), dated 20-5-2003.

The Rule defines 18 categories of wastes, when handled above a certain quantity, as hazardous. These are listed in the Schedule to the Rules.

In the HW Rules, 1989, as amended in 2000, hazardous wastes are defined as follows:

i) Waste substances which are generated in the processes indicated in column 2 of Schedule 1 and consist wholly or partially of the waste substances referred to in column 3 of the same Schedule. (Schedule 1 describes 46 processes and 136 waste streams as generating hazardous waste.)

ii) Waste substances which consist wholly or partially of substances indicated in column-2 of Schedule-2, unless the concentration of the substances is less than the limit indicated in the same Schedule; and,

iii) Waste substances indicated in Part-A, list-"A" and "B" of Schedule-3 applicable only to rule 12, 13 and 14 unless they do not possess any of the hazardous characteristics in Part B of the same Schedule.

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[8]

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.

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

[8] Source: http://www.envis.neeri.res.in/management.php, as visited on April 21, 2008.

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 Waste (Management and Handling) Rules (HWM Rules) on July 28, 1989 under the provisions of the Environment (Protection) Act, 1986 and was further amended in the year 2000 and 2003. These amendments enable to identify hazardous wastes by means of industrial processes and waste streams in Schedule-I and also by way of concentrations of specified constituents of the hazardous waste in Schedule II. Categories of wastes banned for export and import have also been defined (Schedule-8) The procedure for registration of the recyclers /re-processors with environmentally sound facilities for processing waste categories such as used lead acid batteries, non-ferrous metal and used oil as contained in Schedule-4 and Schedule-5 respectively has also been laid down.

Further, separate Rules have also been notified in continuation of the above Rules for bio-medical wastes as well as used lead acid batteries.

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 tones (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).

S. 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	Recycl-able	Incinera-able	Disposal	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
	Toal	**524**	**373**	**11138**	**13011**	**-**	**-**	**-**	**4434257**

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 15th March, 1990 and ratified on 24th 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 23rd 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 5th 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 4th 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 materials 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 13th 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 20th 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 10th 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 October 14, 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 14th 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 5th 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 are 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 (Rs. 6.35 lacs) 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 over all 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 CPCB, suitably strengthened and assigned necessary responsibilities. In addition, the State Pollution Control Boards 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 labeled and certified.

- **Location of industrial sites and secured landfills**

The MoEF would consider the suggestion of 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 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 tones 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 resources.

- **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.

MoEF and Health Ministry shall examine and respond to the recommendations of HPC which read MoEF and Ministry of Health are required are to compile an extensive data regarding exposure and epidemiological studies (with special reference to endocrine disruptors). Directions may also be issued for centers 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. 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 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 our 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 do 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 basis 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 bound 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 October 14, 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. Now it has been recognised as a manufacturing process as per Central Excise and Sales Act, also. The ship braking activities are carried out at various coasts of the county; however, the main center 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-time contractors make unbelievable 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. Also some 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 safely 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 alive 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 Environment 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 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.

That 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. Breaking 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 knows 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.

That 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 this 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 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 which 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. 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 atleast 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 atleast 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 forty 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 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 through

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 Cout which was issued on October 14, 2003 under the supervision ofthe Supreme Court Monitoring Committee.

2.8 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.

Municipal Solid Wastes (Management and Handling) Rules, 2000 (MSW Rules) are applicable to every municipal authority responsible for collection, segregation, storage, transportation, processing and disposal of municipal sol.

The Rule contains four Schedules, namely:

1) Schedule-I : Relates to implementation Schedule

2) Schedule-II : Specifications relating to collection, segregation, storage, transportation, processing and disposal of municipal solid waste (MSW)

3) Schedule-III : Specifications for landfilling indicating; site selection, facilities at the site, specifications for landfilling, Pollution prevention, water quality monitoring, ambient air quality monitoring, Plantation at landfill site, closure of landfill site and post care.

4) Schedule-IV : Indicate waste processing options including; standards for composting, treated leachates and incinerations.

2.9 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 Bio-Medical Waste (Management and Handling) Rules, 1998, which has come into force since July 27,1998.

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 entire north zone is pathetic. In Punjab a common facility has been developed to cater to the cities of Ludhiana, Jallandhur, 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 treatment facility. Segregation is the most neglected aspect and progress on this part paint dismal picture.

The current scenario shows that there is lack of awareness amongst the hospital staff including doctors towards the segregation of infectious waste 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 programme for management of bio-medical must be taken up.

2.10 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 equipments / 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 obsolete computers originating from government offices, business houses, industries and household is of the order of 2 million nos. Manufactures and assemblers in a single calendar year, estimated to produce around 1200 tons of electronic scrap. It should be noted that obsolence rate of personal computers (PC) is one in every two years. The consumers finds 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. Due to the lack of governmental legislations on e-waste, standards for disposal, proper mechanism for handling these toxic hi-tech products, mostly end up in landfills or partly recycled in a unhygienic conditions and partly thrown into waste streams. Computer waste is generated from the 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 extensively using computers and electronic equipments 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 The Batteries (Management and Handling) Rules, 2001 – Notified in the official gazette on 16/5/2001 *vide* S.O.432 (E).

2.11 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.

3 Environment Protection Act, 1986

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3.1 Introduction

India has prepared pollution abatement strategy, which include 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 crakers, the Government of India has enacted noise standards for fire-crackers vide G.S.R.682(E), dated 5th 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 Dec. 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.

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.

Impacts of the steps taken in Delhi: All regulatory pollutants show a decreasing trend in concentrations in Delhi. CO decreased to 3069 ug/m^3 in 2000-2001 from 5450 ug/m^3 in 1998. NO_2 decreased from 75 ug/m^3 in 1996 to 59 ug/m^3 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.

3.2 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 Clarence, 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.

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 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) 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 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 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 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 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.

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.

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 legislate 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.

3.3 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 molder 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.

3.4 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 including Jammu & Kashmir. 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[6]. 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.

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 -

   a) 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;

b) 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* (1998) 6 SCC 63, 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 December 31, 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*[1] 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 enunciated the principle further that the polluter pays. 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 his 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.

[1] (1996) 5 SCC 281.

– **Other cases**

In *Vellore Citizen Welfare Forum v. Union of India & others*[2] the polluter principle as interpreted by the Supreme Court means that the 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*[3] 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 Abetment of Environment Pollution**

Chapter III of the EPA deals with prevention, Control and abetment 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 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.

[2] (1996) 5 SCC 647.

[3] (2001) 2 SCC 97.

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 incharge 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 that 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.

3.5 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 January 30, 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.—(1) 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 Act, 1997. (Annexure 2)

The NEAA Act, which was granted presidential assent on 26th 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 expeditions 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.

3.6 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 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.

The National Environmental Policy (NEP) was drafted under the obligation imposed by 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.

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 taken into account.

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 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 Abetment 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 definitely 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.

3.7 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. The Act was last amended in 1991.

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 especially 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 November 19, 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 the 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.

4 The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 and Forest Conservation Act, 1980

4.1 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. 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 less than 18% of India under forest cover in 1997[1]. Dense forests

[1] Reply by Union Minister of Environment and Forests to Rajya Sabha, 24 March, 1998.

cover only 12% of land.[2] 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.

4.2 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.

[2] State of India's Environment: The Citizen's Fifth Report, Centre for Science and Environment, 1999.

4.3 The Forest Conservation Act, 1980

In 1980, the Parliament, in response to the rapid decline in the forest covers in India, and also to fulfill 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 October 25, 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 October 25, 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, defense 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.

4.4 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 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 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 December 13, 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, an group based in Mumbai, ran TV advertisements against the Act.[3]

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[4].

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 "inviolate spaces", or areas free of human presence, for the purposes of wildlife conservation. Tiger conservation in particular has been an object of concern[5]. 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

[3] Sethi, Nitin, Activists come out with Ads to Slam Forest Act, Times of India, October 23, 2007.

[4] Krishnan, Radhika, Forest Rights Act, 2006 – Misplaced Euphoria, Liberation, January 2007.

[5] Thapar, Valmik, Conflict will go up by 10000 percent, Daily News and Analysis, December 23, 2007.

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[6]

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

[6] Kalpavriksh Position and Recommendations March, 2007 reproduced.

increased livelihood insecurity. These would require appropriate amendments. Key examples of the positive elements of the Act are:

- 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

Element Provision Kalpavriksh Comments and Recommendations (Note: some of these recommendations would require an amendment of the Act, and these are given in italics; others are possible to integrate into Rules or guidelines under the Act)

1) Eligibility of claimants Scheduled Tribes, and other forest-dwellers (of atleast 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' upto 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 atleast 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 (atleast 6 months), a decision by atleast 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 fulfill 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 take action 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.

(i) 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).

4.5 Conclusion

Forestry in India is a significant rural industry and a major environmental issue. Dense forests once covered India. As of 2002, the Food and Agriculture Organisation of the United Nations estimates India's forest cover to be about 64 million hectares, or 19.5% of the country's area. However, in terms of availability of forest land per person in India, the rate is one of the lowest in the world at 0.08 ha, against an average of 0.5 ha for developing countries and 0.64 ha for the world. Forest degradation is a matter of serious concern. In 2002, forestry industry contributed 1.7% to India's GDP. In 2010, the contribution to GDP dropped 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, rattazikistan ware and pern 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.

5 Panchayats Extension to Scheduled Areas (PESA) Act, 1996

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5.1 Introduction

Panchayati Raj Institutions have been in existence since a long time. The philosophy of Panchayat Raj is deeply steeped in tradition and 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 recommended 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 plants 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 and 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.

5.2 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 alongwith its State Adoptations 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 Instituions 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 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 specifically 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.

5.3 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 in acted in 1996 Tribal Self Rule 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.

5.4 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;

5.5 Problems in Implementation of PESA

A decade and a half 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 misgovernance 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 was 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 need to be clarified to the States.

5.6 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, which recognised for the first time 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 frame, 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 perhaps it is 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 some ineffective sop in the garb of any social welfare legislation.

6 Wild Life Protection Act, 1972

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6.1 Introduction

The term 'Wildlife' was coined by William Hornady in 1913 in his book "Our vanishing Wildlife". Wildlife implies to 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 since cetuaries. 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 microorganisms found on the earth. Biodiversity term is mostly considered as a synonym to species diversity. It is very important level of biodiversity since it is easier to work with it and the species can be seen with the naked eyes 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 actually 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, fibers, 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 could be attributed to the following reasons -

1) **Loss of Habitat -** Owing to 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 the endangered species which we risk losing if we do not preserve adequate amounts 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 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 byproducts, 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 especies 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 camara* 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 of the 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.

6.2 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 and in this direction steps have been taken at the local, regional, national and even at the international levels.

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 its conservation.

Continuous efforts are being made by some 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 techinques 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 e*x 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 the 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 however, 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 (Center 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

6.3 The Wildlife in India

India is 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 harboring 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 northwestern limit of the Asian elephant's current range, is home to 112 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 350 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.

Like everywhere else, 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 Center 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 center 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).[1]

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.[2]

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.

[1] Botanical Survey of India, 1983.
[2] *Ibid.*

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 center 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 is 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 Watter 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.

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.

6.4 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 Center 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 interpretating 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.

6.5 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 referece to the establishment of *abhayaranyas* or forest sanctuaries. The Muslim 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 more 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 at around 1600 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 northeastern United States to draw timber for shipbuilding, iron-smelting and farming.

There was a total indifference to the needs of the 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 all felled in even 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 assess State monopoly right over the forest was the enactment the Forest Act, 1865. Hurriedly 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 Chennai) 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 center 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 it's 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 if wildlife were as follows:

1) Elephant Preservation Act, 1879
2) World 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 97 existing national parks in India covering an area of 38,223.89 km^2, which is 1.16% of the geographical area of the country (National Wildlife Database, Feb.2008). In addition to the above 74 national parks covering an area of 16,630.08 km^2 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 508 existing wildlife sanctuaries in India covering an area of 118,400.76 km^2, which is 3.60% of the geographical area of the country (National Wildlife Database, Feb. 2008). Another 217 sanctuaries are proposed in the Protected Area Network Report covering an area of 16,669.44 km^2. India has also set up 14 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 Wild Life 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 was 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.

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 life saving 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 March 31, 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 four regional offices at New Delhi, Kolkata, Mumbai and Chennai and three sub regional offices across India. 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 23rd 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.

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 Wild Life 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

Current National Policies and Plans

- **National Zoo Policy, 1998**

The Central Zoo Authority was created by the Government of India in the year 1992 through an amendment of the Wild Life (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.

6.6 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*[3]. 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.

[3] 1993 Supp (3) SCC 115.

- **Conservation Reserves** - Conservation reserves are new categories of protected areas introduced after the 2002 Amendment to the WPA. They were conceived with 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 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 is imprisonment for a period ranging from a minimum of three to a maximum of seven years with fines not less than 10,000 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, there is prohibition of entry into a National Park and Sanctuary with weapon, for causing fire and on use of injurious substances. Further in case of National Park entry of livestock for grazing is also strictly prohibited. Subject to the grant of permit 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 all 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 2007, The World Network of Biosphere Reserves was constituted of a collection of all 529 biosphere reserves in 105 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 Nilgiri 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 Manupulative Zone and Restoration Zone are the transition areas where approved practices may be permitted.

In India, there are four internationally recognised Biosphere Reserves, whereas there are in total twelve biosphere reserves declared by the Indian Government in India. The four internationally recognised biosphere reserves are**:** Nilgiri, Gulf of Mannar in 2001, Sunderbans in 2001 and Nanda Devi in 2004 by MAB (Man and Biosphere Programme of UNESCO). Besides, Sunderbans is also a National Park and a World Heritage Site. In addition, Ministry of Environment and Forests (MoEF), Government of India has also identified 13 biosphere reserves (Nilgiri, Nanda Devi, Nokrek, Great Nicobar Islands, Gulf of Mannar, Manas, Sunderbans, Simlipal, Dibru-Saikhowa, Dehang-Debang, Panchmarhi, Khangchendzonga and Agasthyamalai) at the national level including the four biosphere reserves recognised by MAB.

- **Biodiversity Hotspot Zones**

In order to identify the 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 atleast 1500 species of endemic vascular plants and should have lost about 70% of its original habitat.

In India, three hotspot regions have been recognised. These are: **the Himalayas, Western Ghats (extending up to Sri Lanka) and Indo-Burma region**.

- **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 endangered Asian elephant. Unfortunately, there has been excessive human interference in this region resulting in great loss of habitat and biodiversity.

- **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.

6.7 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 paticipates 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 the place 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 signature until 31 December, 1974. It entered into force after the 10th ratification by a signatory State, on July 1, 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. They include -

- 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 fourteen meetings of the Conference of Parties (COPs). The Fourteenth meeting was held in The Hague, Netherlands, from June 3 to 15, 2007. 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
To be held at Doha (Qatar), 16-28 January 2010

At each 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 or 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 notifies 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), the next of which will be held in Qatar in 2009. 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 Fourteenth meeting of the Conference of the Parties in 2007

At COP14 (June 3-15, 2007), held at The Hague, member countries voted on 36 proposals to amend the CITES Appendices with the objective of giving protection to more number of wild species threatened by international trade.

The proposals were made with the view to introduce measures that affect a number of high-profile species such as bobcats, leopards, African elephants, sawfishes, corals and orchids among others. There was also voting for a change in the way CITES operates, including for a proposed "strategic vision" aimed at altering the very purpose of this important wildlife convention.

Some major outcomes of COP 14 are as follows:

1) **Elephants** - One of the outcomes was the landmark approval of nearly a decade-long suspension of trade in elephant ivory. However, although the general feeling at CITES was that the consensus decision was a victory, certain conservation groups feel that the trade suspension did not come without cost, which was the allowance of huge stockpiles sales. They believe that elephants remain in a precarious State and efforts must be made to prevent the rampant poaching which such stockpile sales and any legal ivory market encourage. In its decision, the Parties accepted, by consensus, a plan to allow sale of current ivory stockpiles from Botswana, Namibia, South Africa, and Zimbabwe, while instituting a moratorium on consideration of further ivory trade proposals from these countries for a period not less than nine years following the sale.

2) **Tigers** - Another major win at CITES was the fight for the continued survival of tigers in the wild. Previously there was a stark increase in the arena of commercial tiger farming, where thousands of tigers were bred for the trade in their parts under the dubious guise of Traditional Medicine. One decision taken at COP 14 and adopted by all CITES Parties was that "tigers should not be bred for trade in their parts and derivatives".

   A proposal by China to limit the text to "*international*" trade was rejected by the Parties 19 in favour, 47 against and 11 abstentions.

3) **Whales** - With respect to whaling, Japan and Iceland had been making attempts to reopen the international whale meat trade despite the world-wide moratorium on commercial whaling. CITES parties however, made it clear in their rebuke to Japan that the convention may not undermine environmental decisions by other international agreements and would therefore continue to defer to the IWC's ban on whaling.

   The Parties rejecting the proposal from Japan to conduct a periodic review of all cetaceans in Appendix-I with 26 voted in favour, 54 against, and 13 abstentions. The Parties approved in Committee I, with 59 voted in favour, 21 against and 13 abstentions, a Decision proposed by Australia that no periodic review of any great whale should occur while the IWC moratorium is in place.

This decision effectively repeals the controversial decision by the Animals Committee in 2006 to allow Iceland to conduct a review of the central North Atlantic stock of fin whale. Palau attempted to reopen debate on the Australian proposal in plenary on the last day of the meeting, but failed to win the required one-third support with 35 votes in favour, 71 against, and 19 abstentions.

4) **Sharks** - In Committee I, which is the first phase of the meeting, the Parties rejected proposals to list porbeagle (*Lamna nasus*) (54 in favour, 39 against and 12 abstentions) and spiny dogfish (*Squalus acanthias*) (57 in favour, 26 against, and 10 abstentions) in Appendix-II. Germany, on behalf of the EU, moved successfully to reopen debate on the spiny dogfish proposal in plenary on the last day of the meeting, but the proposal was rejected again, this time by secret ballot.

5) **Other Marine Proposals** - An amended proposal to list sawfishes (*Pristidae*) in Appendix-I was accepted, with 67 votes in favour, 30 against, and 7 abstentions. A proposal to list the European eel (*Anguilla anguilla*) in Appendix-II was accepted with in 93 in favour, 9 against, and 4 abstentions. A proposal to list red and pink corals (*Corallium* spp.) in Appendix-II, annotated with a delayed entry into force for 18 months, was accepted in Committee by a vote of 62 in favour, 28 opposed and 13 abstentions, but was rejected in plenary by secret ballot on the last day of the meeting.

6) **Other Species of Fauna** - The Parties approved by consensus, proposals to include slow lorises (*Nycticebus* spp.), Cuvier's gazelle (*Gazella cuvieri*), slender-horned gazelle (*Gazella leptoceros*), and Guatemalan beaded lizard (*Heloderma horridum charlesbogerti*) in Appendix-I, and rejected a proposal to delete bobcat (*Lynx rufus*) from Appendix-II with 28 votes in favour, 63 against and 9 abstentions.

7) **Timber Proposals** - An amended proposal to include brazilwood (*Caesalpinia echinata*) in Appendix-II was adopted by consensus. The EU withdrew its proposals for listing Spanish cedar (*Cedrela* spp.) and rosewood *(Dalbergia retusa*, *Dalbergia granadillo* and *Dalbergia stevensoni*) in Appendix-II. In response, the Parties adopted a plan of action to complete knowledge on the conservation status, trade in and sustainable use of *Cedrela odorata* and the three *Dalbergia* species.

8) **Proposals Withdrawn** - A record number of proposals were withdrawn. In addition to the proposals relating to African elephants, cedar, rosewood and *Dalbergia stevensonii*, Parties withdrew a proposal to list the Dorcas gazelle

(*Gazella dorcas*) in Appendix-I and proposals to list the Banggai cardinalfish (*Pterapogon kauderni*) and the Brazilian populations of the Caribbean and smoothtail spiny lobsters (*Panulirus argus* and *Panulirus laevicauda*) in Appendix-II.

9) **Socio-economic Issues** - The CITES Secretariat, the EU and some Parties supported agenda items that promoted the consideration of livelihoods issues and sustainable use within the CITES processes, Strategic Goals, and implementation. Though socio-economic considerations are important to the broader scheme of conservation and development, giving them a major role in CITES threatens to undermine the basis of science-based decision-making and divert scarce resources to new priorities best handled by other instruments or national governments. Fortunately, the original documents were amended significantly by the Parties, in response to concerns that these documents went too far beyond the scope of the treaty.

India's compliance with CITES

The international community possesses a powerful tool to control wildlife trade, that is the CITES. For over the 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 (CITES) 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 July 20, 1976. It came into force in India on October 18, 1976.

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 1st 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, Sunderbans, Manas and Sariska. All these reserves act as Conservation Centers for tigers in India.

Besides, there is the Gir National Park, the only habitat for Asiatic lions in India. The Kaziranga Wildlife Sanctuary is 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, Uttaranchal, Uttar Pradesh and West Bengal.

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.

6.8 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 lead 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 was 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 April 1, 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 27 tiger reserves covering an area of about 37,761 sq.km.

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 count has dropped again to 1,411 as per 2008 official census.

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.

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;
- Strengthning of measures for protection of wild elephants form poachers and unnatural causes of death;
- Research on elephant management related issues;
- Public education and awareness programmes;
- Eco-develoment
- Verterinary 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.

Elephent 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 & South Odisha in Odisha and Ganga-Jamuna (Shiwalik) ER in U.P (now Uttarakhand) has been accorded by MoEF. The concerned State Governments are yet to notify these ERs.

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 April 1, 2004. These include Shiwalik 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 Nilgiri (Tamil Nadu).

c) Conservation Centers in India

There are a number of conservation centers developed by the government, to maintain the biodiversity in nature and in turn look after the interest of the wild-life. Some of these government centers are:

- **Green Foundation Conservation Center** - Spread across 3 acres of dry land at Thally in Tamil Nadu-Karnataka border, this conservation center 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 center for the protection of Crocodiles.
- **Crocodile Bank** - 42 kms from Chennai, the crocodile bank at Mamallapuram os another conservation center 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 center 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 Center** - This is a center for conservation of Olive Ridley Sea Turtles in Odisha , in the Eastern Coast of India.

Apart from these specific government conservation centers 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) 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 Center 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.

7 Coastal Regulation Zone and Coastal Regulation Management

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7.1 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.

7.2 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. The coastal zone includes the area between high and low tide line, up to 10 nautical miles toward the sea from high tide line and up to 20 km from high tide line towards land side.

Coastal regulation zone is the boundary from the high tide line up to 500 m in the land-ward side. Area between the low tide line and high tide line. In the case of

rivers, creeks and backwaters, the distance from the high tide level shall apply to both sides and this distance shall not be less than 100 meters or the width of the creek, river or backwater whichever is less, (Ministry of Environment and Forests Notification, Feb 1994). There are four types of categories in coastal regulation zone:

a) Category - I (CRZ-I)

Areas that are ecologically sensitive and important such as national parks, marine parks, sanctuaries, reserve forests, wildlife habitats, mangroves, corals/coral reefs, areas close to breeding and spawning grounds of fish and other marine life, areas of outstanding natural beauty, historically important and heritage areas, area rich in genetic diversity, areas likely to be inundated due to rise in sea level consequent upon global warming and such other areas as notified by government from time to time.

b) Category - II (CRZ-II)

Area that have already been developed up to or close to the shoreline. For this purpose , developed area is referred to as area within the municipal limits or other legally designated urban areas which is already substantially build up and which has been provided with drainage and approach roads and other infrastructure facilities such as water supply and sewerage lines.

c) Category - III (CRZ-III)

Area that are relatively undisturbed and those which do not belong to either I or II. These will include coastal zone in the rural areas developed or undeveloped and also areas within municipal limits or in other legally designated urban areas which are not substantially built up.

d) Category - IV (CRZ-IV)

Coastal stretches in the Andaman and Nicobar Islands, Lakshadweep and other small islands except those designated as Category I, II and III.

7.3 CRZ Notification and its Objectives

The Ministry of Environment and Forests, 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.

On 19 February 1991, the Ministry of Environment and Forests issued an elaborate notification called the Coastal Regulation Zone (CRZ) Notification which regulate 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 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.

Swaminathan Committee Reports, 2005

In July 2004 the Ministry of Environment and Forest constituted the Swaminathan Committee with the terms of reference to -

1) Review the reports of various committee appointed by the Ministry of Environment and Forest on coastal zone management, international practices and suggest the scientific principles for an integrated coastal zone management best suited for the country.

2) Define and enlist various coastal and marine resources and recommend the methodology for their identification and the extent of safeguards required for conservation and protection.

3) Revisit the Coastal Resources Zone, Notification, 1991 in the light of above the recommend necessary amendments to make the regulatory framework consistent with recommendations on (1) and (2) above and the Environment Protection Act, 1986.

Many groups and associations of the fishing community have rejected the report for its severe democratic deficit, apart from the short shrift that the report has given the coastal communities on their rights of control and access to coastal resources.

Terms of reference-1

The Swaminathan Committee has made recommendations under each terms of reference. The committee's first ToR was to review reports of various other committees set up earlier by the Ministry of Environment and Forest and other international practices thereby suggesting scientific principles for an integrated coastal zone management system that would best suit the country.

The committee suggests a holistic approach to tackle coastal problems and has suggested inclusion of the ocean and tidal water bodies along with coastal areas. However, when it comes to regulation, the committee has suggested a "pragmatic management" approach for protecting ecological systems. Later, the committee has recommended that regulatory framework and plans at area and region levels need to be ensured.

The committee states that coastal areas are common property resources. So collective and democratic initiatives are required at the level of local communities for preparation and implementation of Integrated Coastal Zone Management. Such initiatives are also required at various levels of government – State and national but the committee is silent about those.

It states that the Integrated Coastal Zone Management seeks to bring together users of coastal resources and relevant governmental agencies in order to achieve "eco-development". Here there is a lack of explanation as to who the coastal resource users are. Coastal communities are also users of coastal resources. They have traditional rights of access and use of coastal resources. But 'other' users such as tourism are intensive activities have led to the displacement of coastal communities and denied their traditional rights. Therefore, bringing together two entirely different kinds of coastal resource users to achieve sustainable development needs a carefully thought through mechanism. There are doubts whether the proposed integrated coastal management will be able to deliver this mechanism as the role

of local self government has been reduced to educating people on coastal management and only consulting them while undertaking activities on the coast.

Environment and social impact assessments have been recommended as compulsory for any development activity along with provisions of a public review process.

The committee highlights the criticality of co-ordinating activities of government departments with jurisdiction in coastal areas and to ensure that there is no ambiguity in the allocation of responsibility and accountability.

Terms of reference-2

Under this Terms of reference, the committee has made many general recommendations pertaining to sustainable use of coastal resources. The coastal and marine resources that have been identified for protection, which have been recommended to be notified as ecologically sensitive areas, are all the various ecosystems and landforms. Identifying and protecting sites of archaeological importance has also been suggested. While the committee has indentified the need to protect natural and cultural heritage of the coast, safeguards to check increase in tourism activity need to be put in place because of tourism's tendency to target precisely protected areas of these kinds. The committee does not make references to this effect in its recommendations.

The committee recommends that coastal policy and regulation should be guided by the principle of equity and through the participatory processes of fair, just and transparent environmental decision making.

Terms of reference-3

Where the coastal regulation zone notification, 1991 is concerned, the committee acknowledges need for transparency in current implementation of coastal regulation zone and that the various amendments have been detrimental to the coastal areas and have distracted the original notification from its objectives. Therefore, strengthening of coastal regulation zone notification has been recommended keeping in mind the needs of coastal communities and conservation of the coast.

The committee has recommended doing away with demarcating the high tide line and adopting a natural boundary. The reason for this being misuse by local authorities who implement some provisions of the coastal regulation zone notification and deny essential activities on the coasts.

Conclusion on Swaminathan Committee Report

One of the points of critique of the Swaminathan Committee report has been the lack of consultations with various community organisations, fisher folks associations and civil society organisations who are engaged on coastal issue.

Some of the recommendations of Swaminathan Committee are useful and will help in strengthening the current coastal regulation zone notification.

The positive aspects of Swaminathan Committee recommendations, which need to be accepted, are:

1) Inclusion of marine areas with the seabed within the coastal zone.
2) Strengthening of coastal regulation zone notification, 1991 and bringing transparency in the process of its implementation.
3) Formulating a coastal policy and rule.

The ministry of Environment and Forest should strengthen the current coastal regulation zone notification and scrap the proposed coastal management zone notification. There is a need to revisit earlier amendments and reconsider recommendations of previous committee like Fr. Saidanha committee and Dr. Arcot Ramachandran committee constituted to look into aspects of the coastal regulation zone notification.

The various committees that were constituted are:

1) V.V Bohra Committee
2) Prof. N Balakrishnan Nair Committee
3) Fr. Saidanha Committee-I
4) Dr. Arcot Ramachandran Committee
5) Fr. Saidanha Committee-II
6) D.M Sukthankar Committee-I
7) D.M Sukthankar Committee-II

7.4 Brief Overview of CRZ Notification

a) Prohibited Activities

1) Setting up of new industries and expansion of the existing industries except -
   a) Those related to water front or directly which need foreshore facility.

b) Project of department of Atomic Energy

c) Non polluting industries such as information technology

d) Other service industries of Special Economic Zone

2) Manufactures are handling or storage or disposal of hazardous substances as specified in the notification.

3) Setting up and expansion of fish processing units including warehousing except hatchery and natural fishing drying in permitted areas.

4) Setting up and expansion of mechanism for disposal of waste and effluent except facilities required for -

a) Discharging treated effluents into the water course with the approval by Water Prevention and Control of Pollution Act, 1974.

b) Storm water drains.

c) Treatment of wastes and effluents arising from hotels and beach resorts located in coastal regulation zone-I and disposal of treated wastes.

5) Discharge of untreated wastes and effluents from industries cities or towns and other human settlements.

6) Dumping of city or town waste for the purpose of land filling.

7) Dumping of ash or any wastes from thermal power stations.

8) Land reclamation, bunding or disturbing the natural course of seawater except,

a) Required for conservation or modernisation or expansion of ports, harbours jetties, wharves quays, slipways etc.

b) and other facilities that are essential for activities permissible under the notification, control of coastal erosion, maintenance and clearance of waterways, channels etc.

9) Mining of sand, rocks and other substrata materials, except those rare materials not available outside CRZ areas.

10) Harvesting or drawl of ground water and construction of mechanism within 200 m of HTL, in 200 m-500 m of HTL it can be done only manually through ordinary wells for drinking, horticulture, fisheries etc.

11) Construction activities in CRZ except as specified in Annexure-I of the notification.

12) Dressing or altering of sand dunes. Hills natural features including landscape changes for beautification, recreational and other purpose, except as permissible under this notification.

b) Regulations of Permissible Activities

All the other activities, except those prohibited will be regulated as under -

1) Activities near the Coastal Regulation Zone shall be permitted only if it requires water front and foreshore facilities.

2) The following activities require the permission from the Ministry of Environment and Forest, Government of India -

   i) Construction activities related to projects of atomic energy or defence requirements for which foreshore facilities are essential.

   i.a) the clearance so granted shall be valid only for a period of 5 years for the commencement of the construction.

   ii) Operational construction of ports, harbours and light houses and construction activities of jetties, wharves and conveying systems including transmission lines provided that environmental clearance in case of construction or modernisation or expansion of jetties and wharves in the Union Territory of Lakshadweep for providing embarkation and disembarkation facilities shall be on the basis of a report of scientific study conducted by Central Government or any agency authorised or recognised by it suggesting environmental safeguard measures required to be taken for minimising damage to corals and associated biodiversity.

   ii.a) Exploration and extraction of oil and natural gas and all associated activities.

   iii) Thermal power plants (includes foreshore facilities for transport of raw materials, facilities for intake of cooling water.

   iii.a) Housing schemes in CRZ areas as specified in sub-paragraph (2) of paragraph (6).

   iii.b) Minerals of rare materials.

   iii.c) Specified activities in SEZ subject to one time approval by Government of India MoEF to such activities based on the Master plan of SEZ, spatial distribution of projects to be located in CRZ and such other information as may be required for the purpose.

iii.d) Facilities for generating power by non-conventional energy sources, desalination plants and weather radars.

iii.e) Airstrips and associated facilities in Lakshadweep and Andaman and Nicobar Islands.

iv) Demolition or reconstruction of -

1) Buildings of archaeological or historical importance

2) Heritage buildings and

3) Buildings under public use

v) All activities with investment of five crore rupees or more.

c) Procedure for Monitoring and Enforcement

The Ministry of Environment and Forest and the Government of State or Union Territory and such other authorities at the State or Union Territory levels, as may be designated for this purpose, shall be responsible for monitoring and enforcement of the provisions of this notification within their respective jurisdictions.

7.5 Merits and De-merits of CRZ Notification

a) Merits

1) CRZ policy provides a blanket restriction on all activities in a zone that we generally understand to be fragile.

2) It allows the sea to operate freely in the 500 m domain beyond the High Tide Line.

3) At first it applies an equal brake to all allows the society to take up a vigilant approach.

4) It segregates nationally important activities from not so important ones. To some extent, it prioritises the socially oriented activities over the profit oriented activities.

5) It is not fully inflexible and is not development unfriendly.

6) It accepts the past developments and attempts to minimise further damages in zones that have already had urban growth.

b) De-merits

1) Coastal Regulation Zone operates only landward. It does not address activities below the low tide line.

2) Since the HTL is the bottom line, establishments of nation-wide HTL, has become a necessity. HTL is not easy to demarcate, especially for areas that are fast changing like Gulf of Cambay. Even after 8 years of initial notification of CRZ, HTL has not been fully and accurately established for the entire country with a coastline of 7600 km.

3) Coastal Regulation Zone policy may surely bring in caution in development, but is also slows down the development and makes way for innumerable litigations.

4) Coastal Regulation Zone is blind towards global changes. All these would look meaningless later.

5) Putting up structures such as sea wall, groin and such erosion protective measures also need to go through the CRZ procedures and damage mitigation on an urgent basis become very difficult. Hence it appears that the classification requires another zone where hazards are frequent and mitigation is imminent.

6) Coastal Regulation Zone clearance authority is vested with the federal Government and it is long way for clearances. Any wise practice (including regulations) should potray timeliness in order to be effective and purposeful. Of four zones, not every critical zones may be identified and the local government may be authorised to provide clearances, so that development is speeded up.

Prohibitions and Exceptions

1) The CRZ notification lays down not only certain prohibitions, but also exceptions to the prohibitions.

2) Setting up of new industries and expansions of existing industries are prohibited.

3) Projects of the departments of atomic energy and non-polluting industries in the field and other services in the CRZ of special economic zone (SEZ) are not prohibited.

4) Other exceptions are salt harvesting by solar evaporation of seawater, desalination plants and storage of non-hazardous cargo such as edible oil, fertilizers and food grain within notified ports.

5) Manufactures, handling, storage or disposal of hazardous wastes and substances also fall within the prohibitions. However, transfer of hazardous substances from ships to ports, terminals and refineries and vice-versa is allowed.

6) Facilities for receipt of petroleum products and liquefied natural gas (LNG) and facilities for re-gasifications may be permitted within areas of CRZ I which consists of ecologically sensitive and important areas.

7) The permission is subject to safety regulations and subject to further terms and conditions for implementing ameliorative and restorative measures in relation to the environment as may be stipulated by the Ministry of Environment and Forests.

8) Mechanism for disposal of wastes and effluents into watercourse can be set up for or expanded only with approval under the Water Act. Those industries which are directly related to water front or needing directly foreshore facilities are exempted.

9) In *Jagannath v. Union of India* the supreme court held that the aquaculture industry is not the one which is directly related to waterfront or which directly needs foreshore facilities. It is pertinent to note that all exempted activities are to be undertaken without adverse impact upon the ecology of the coastal zone. Prohibition against fish processing units does not extend to fish cultivation and natural fish drying in separate permitted areas or to their modernisation. Therefore conditional exemption is granted in this case.

10) Discharge of untreated wastes and effluents and dumping of municipal wastes as landfills or otherwise is prohibited. There is total prohibition on dumping ash or any wastes from thermal power station. Land reclamation or such other acts disturbing the natural course of seawater are allowed only for purpose of construction of ports, harbours, jetties, wharves, quays, bridges and sea links and other facilities.

11) Reclamation for commercial purposes such as shopping and housing complex hotels and entertainment activities is permissible.

12) Mining of sands, rocks and other substrata materials, except rare minerals not available outside CRZ is prohibited.

13) Separate mechanism of permission is provided for mining of sands in the Union Territory of Andaman and Nicobar Islands.

State's responsibility

The States are bound to draw a Coastal Zone Management Plan (CRZMP) identifying and classifying the CRZ areas as mentioned in the CRZ notification. In Kerala the said work is done by Center for Earth Science Studies (CESS).

All the States have constituted the Coastal Zone Management Authority (CZMA) for the purpose of the examination of the proposal of permissible activities, violation, proposal for change, etc.

7.6 Strengthening CRZ

1) Consider CRZ 1991 (without the amendments) as the base document to further strengthen the CRZ.
2) All CRZ violations must be identified and CRZ violators punished.
3) Pending CRZ violation cases must be speeded up and violators punished so that it would become precedence and future violations are controlled.
4) Instead of a notification on CRZ an Act is required to protect the fishers and prevent violations.
5) A clause must be introduced in the CRZ 91 so that any new and future amendments to Coastal Regulation Zone and only happen after undergoing a public consultation process with the local fishers and coastal community.
6) No permissions for further industrial construction activities must be granted for areas within 500 m from High Tide Line.
7) Existing dwelling units of the fishers must be protected. Land rights use must first be prioritised for fishers and coastal community, especially for their housing and traditional livelihood activities.
8) Atomic power plants must not be allowed.
9) New ports must not be allowed and neither permission given for further expansion of existing ports.
10) Non-Conventional Energy should be promoted instead of thermal power plants and atomic power plants. Ministry of Renewable and Non Conventional Energy Resources must concentrate on coastal areas to promote the huge potential of tapping solar and wind energy in order to meet the power requirements. This would also benefit the local community in terms of their clean energy requirements. The Gulf of Kachchh has huge land space available for this. Therefore, promoting clean energy must be a priority.

11) The seaward side boundary (atleast till 12 nautical mile) must be covered under a special category like CRZ V. The seaward space must be managed for protection and conservation of the marine ecosystem and livelihood activities of traditional fishers.

12) The new notification must be available in the local language and must be widely disseminated in order to seek the opinion of the fishers, coastal community and grass root organisations, CBOs.

13) Public consultations to seek the view points atleast from each coastal district or at the Gram Sabha level must be organised and initiated by the local administration or State authorities or concerned departments.

14) Land use pattern in the coastal areas of Katchch must be available on public domain. Future projects earmarked must be highlighted.

15) Original and updated versions of the CRZ map and CZMP (coastal zone management plans) must made available publicly and local community must know about the land use pattern and proposed projects.

16) Methodology of preparing CRZ map must be disclosed. Scientific research to identify critically vulnerable areas must be made.

17) Preparation of CRZ and CZMP plans should have involvement of the local fishers and community. The Panchayats should be involved.

18) Update the HTL continuously and modify maps to reflect the current situation.

7.7 Some Violations of CRZ

1) 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 and other livelihood are 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 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.

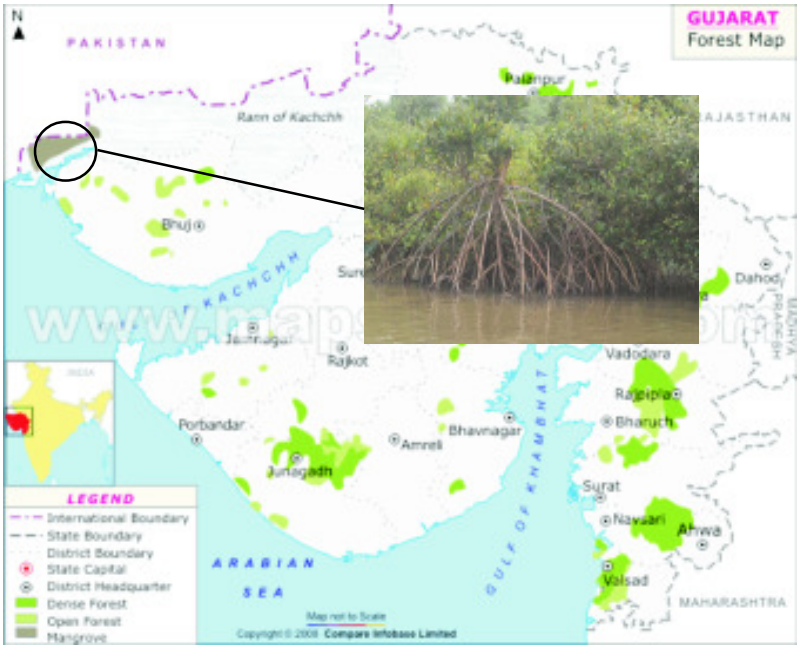

Figure 1: West mangrove reserve forest, Gujarat

2) Kerala

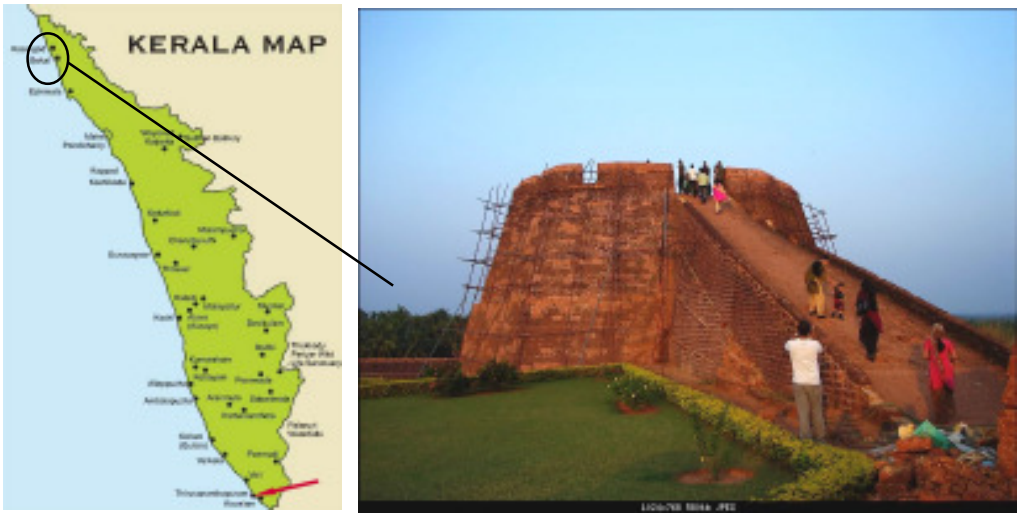

Figure 2: Bekal Fort, Kasargod, Kerala

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 has been declared as the Special Tourism Area (STA) by the National Action Council for Tourism Development. Government of Kerala constituted Bakel Resort Development Corporation Ltd. to carry out this project.

In the coastal stretches here, the traditional fishing communities still enjoy their customary rights and practices. The coastal stretch has another uniqueness – that being the only areas in Kerala where Tobacco cultivation is practised. By the coming up of tourism project the landscape and the lifestyle of the local inhabitants will be 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 due 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.

3) 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.

7.8 Coastal Regulation Zone Notification, Amendment, 2010

The government plans to bring the sea along the Indian coasts under the ambit of the Coastal Regulation Zone (CRZ) guidelines and strengthen enforcement provisions. Some leniency will be given for fishing facilities and to the coastal communities in Mumbai, Kerala, certain biosphere reserves, the Sunderbans and Goa. These are some of the new initiatives in the government's proposal to amend the CRZ Notification, 1991, and issue a new notification in 2010.

1) A pre-draft paper has been finalised and the Union Ministry for Environment and Forests has invited comments by May 31. These amendments come after the draft Coastal Management Zone, 2008, was allowed to lapse following strong objections by fishing and other coastal communities.

2) While the 1991 notification only included land regions, the new amendments say that aquatic region — that is the sea up to 12 nautical miles, and the water area of tidal influenced water bodies — will also come under its jurisdiction.

3) These aquatic regions will be classified separately as CRZ-IV. While the first three categories — namely, ecologically sensitive areas, built-up

municipal areas and rural areas — remain the same, a fifth category of “areas requiring special consideration ” has been newly created.

4) These special cases include Greater and Navi Mumbai, where 136 slums exist within 500 meters of the coast and the heavily-populated islands in Kerala's backwaters. These areas would be given special dispensations. Special attention will be given to the Sunderbans, which will get an integrated management plan designed to protect its mangroves and provide infrastructure facilities for its local communities.

Following representations from fishing communities during the public consultations which preceded this draft, it has been decided to allow the construction of facilities such as fish drying yards, auction halls, net mending yards, traditional boat building yards, ice crushing units and fish curing facilities in the No-Development Zone of rural CRZ areas.

1) Coastal stretches will be classified on the basis of their vulnerability to erosion, while hazard-mapping mechanisms are being revised to take into account sea-level rise and shoreline changes and provide safeguards for local communities.

2) State Governments will be required to produce action plans for pollution control within six months. Funds will be provided for implementation which will be monitored by the Central Pollution Control Board.

3) Clearance procedures have been simplified and deadlines will be laid down. Monitoring and enforcement provisions are also being strengthened, according to the concept note.

7.9 Conclusion

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. 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. So protection of coasts and adjacent areas is all the more important to the countries like India, which has a coat line of 6000 km.

To regulate the unprecedented anthropogenic activities in the coastal area, Government of India in 1991 issued CRZ notification under Environment Protection Act and Rules of 1986. Basic characters of the notification are -

a) Principle and specialised legalisation that guides the anthropogenic activities on the coast.

b) Does not impose blanket ban on all activities.

c) To achieve a balance between anthropogenic needs and bio-diversity conservation.

Jurisdictional classification of Coastal Regulation Zone is based on Geomorphological characters and anthropogenic activities. For the effective implementation of the law, State Governments were asked to prepare (CZMP) during the mandatory period of one year in 1992. No State Government submitted the CZMP and the Supreme Court in 1996 directed the State Government to submit the CZMP in 1996. Many States submitted their CZMP but the Ministry of Environment and Forest gave only conditional approval and asked them to resubmit. State Coastal Zone Management Plan Authority was constituted in the year 2000 by the Government of India responsible for monitoring and implementing Coastal Regulation Zone rules, bench marking high tide line/low tide line, preparation of local level Coastal Zone Regulation Maps, identification of ecologically fragile zones and preparation of area specific coastal zone management plans. Each State Coastal zone management authority functions in liaison with the National Coastal Zone Management Authority in the Ministry of Environment and Forest, Government of India. The State Authority has specific powers for protecting, abating and controlling environmental pollution in the coastal areas. The State authority is also to ensure compliance of all specific conditions laid down in the approved coastal zone management plans.

The State Government has many departments which has powers to regulate the anthropogenic activities for example, in the State of Kerala, Coastal Erosion and related matters is monitored by the State irrigation board, Sand mining from the rivers are controlled by State Mining and Geology Department, aquaculture farms and fish processing centers in the coastal zone comes under the jurisdiction of State pollution control board, Development of minor ports and harbours is under State Ports and Harbour department. Lack of co-ordination of these departments is a major impediment in the effective implementation of the CRZ Regulations. CRZ policy has its inherent demerits, such as CRZ applies only landward, it does not address activities below the low tide line; demarcation of HTL line in the 7000 km of Indian has not been yet completed even after the 19 years of initial notification

of CRZ. Over the years 19 amendments in the CRZ have diluted the basic objectives of the CRZ, even then the CRZ policy may surely bring in caution in development but is also slows down the development and makes way for innumerable litigations.

State Government are bound to draw a Coastal Zone Management Plan (CRZMP) identifying and classifying the CRZ areas as mentioned in the CRZ notification. In the light of the above discussion there is an urgent need for strengthening Coastal Regulation Zone, considering the CRZ 1991 notification (without amendments) as the base documents. All CRZ violation must be identified and violators are punished, pending CRZ violation cases must be expedited. State SCZMAs have fairly extensive and important mandates. The major reason for the non-compliance of CRZ by the State Governments are lack of adequate infra structure, No clarity in demarcation of HTL and LTL given by MoEF, pressure on urbanisation, need of expansion of economic activities and lack of adequate maps in implementing scales.

MoEF is bringing a new proposal in place of CRZ based on the best practices adopted elsewhere. The new proposal says that CRZ based on HTL is not scientific instead a vulnerability line based on the hazard assessment of each coastal area may be considered. This vulnerability line shall be the setback line demarcated along the coast. It also proposed 4 Coastal Management Zone (CMZ) viz,CMZ-I areas designated as ecologically sensitive, CMZ-II areas identified as Areas of Particular concern such as economically important areas, high population areas and culturally/ strategically important, CMZ-III. All other open areas, including the coastal areas, excluding those areas classified as CMZ-I, CMZ-II AND CMZ-IV&V pertains to Andaman & Nicobar Islands and Lakshadweep.