

The legal and regulatory framework for environmental protection in India

Introduction

Over the years, together with a spreading of environmental consciousness, there has been a change in the traditionally-held perception that there is a trade-off between environmental quality and economic growth as people have come to believe that the two are necessarily complementary. The current focus on environment is not new—environmental considerations have been an integral part of the Indian culture. The need for conservation and sustainable use of natural resources has been expressed in Indian scriptures, more than three thousand years old and is reflected in the constitutional, legislative and policy framework as also in the international commitments of the country.

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

Since the 1970s an extensive network of environmental legislation has grown in the country. The MoEF and the pollution control boards (CPCB i.e. Central Pollution Control Board and SPCBs i.e. State Pollution Control Boards) together form the regulatory and administrative core of the sector.

A policy framework has also been developed to complement the legislative provisions. The Policy Statement for Abatement of Pollution and the National Conservation Strategy and Policy Statement on Environment and Development were brought out by the MoEF in 1992, to develop and promote initiatives for the protection and improvement of the environment. The EAP (Environmental

Action Programme) was formulated in 1993 with the objective of improving environmental services and integrating environmental considerations in to development programmes.

Other measures have also been taken by the government to protect and preserve the environment. Several sector-specific policies have evolved, which are discussed at length in the concerned chapters.

This chapter attempts to highlight only legislative initiatives towards the protection of the environment.

Legislation for environmental protection in India

Water

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

Water (Prevention and Control of Pollution) Act, 1974

This Act represented India's first attempts to comprehensively deal with environmental issues. The Act prohibits the discharge of pollutants into water bodies beyond a given standard, and lays down penalties for non-compliance. The Act was amended in 1988 to conform closely to the provisions of the EPA, 1986. It set up the CPCB (Central Pollution Control Board) which lays down standards for the prevention and control of water pollution. At the State level, the SPCBs (State Pollution Control Board) function under the direction of the CPCB and the state government.

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

This Act provides for a levy and collection of a cess on water consumed by industries and local authorities. It aims at augmenting the resources of the central and state boards for prevention and control of water pollution.

Following this Act, *The Water (Prevention and Control of Pollution) Cess Rules* were

formulated in 1978 for defining standards and indications for the kind of and location of meters that every consumer of water is required to install.

Air

Air (Prevention and Control of Pollution) Act, 1981

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

National Ambient Air Quality Standards (NAAQS) for major pollutants were notified by the CPCB in April 1994. These are deemed to be levels of air quality necessary with an adequate margin of safety, to protect public health, vegetation and property (CPCB 1995 cited in Gupta, 1999). The NAAQS prescribe specific standards for industrial, residential, rural and other sensitive areas. Industry-specific emission standards have also been developed for iron and steel plants, cement plants, fertilizer plants, oil refineries and the aluminium industry. The ambient quality standards prescribed in India are similar to those prevailing in many developed and developing countries.

To empower the central and state pollution boards to meet grave emergencies, the *Air (Prevention and Control of Pollution) Amendment Act, 1987*, was enacted. The boards were authorized to take immediate measures to tackle such emergencies and recover the expenses incurred from the offenders. The power to cancel consent for non-fulfilment of the conditions prescribed has also been emphasized in the Air Act Amendment.

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

Complementing the above Acts is the *Atomic Energy Act* of 1982, which was introduced to deal with radioactive waste. In 1988, the *Motor Vehicles Act*, was enacted to regulate vehicular traffic, besides ensuring proper packaging, labelling and transportation of the hazardous wastes. Various aspects of

vehicular pollution have also been notified under the EPA of 1986. Mass emission standards were notified in 1990, which were made more stringent in 1996. In 2000 these standards were revised yet again and for the first time separate obligations for vehicle owners, manufacturers and enforcing agencies were stipulated. In addition, fairly stringent Euro I and II emission norms were notified by the Supreme Court on April 29, 1999 for the city of Delhi. The notification made it mandatory for car manufacturers to conform to the Euro I and Euro II norms by May 1999 and April 2000, respectively, for new non-commercial vehicle sold in Delhi.

Forests and wildlife

The Wildlife (Protection) Act, 1972, Amendment 1991

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

The Forest (Conservation) Act, 1980

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

General

Environment (Protection) Act, 1986 (EPA)

This Act is an umbrella legislation designed to provide a framework for the co-ordination of central and state authorities established under the Water (Prevention and Control) Act, 1974 and Air (Prevention and Control) Act, 1981.

Under this Act, the central government is empowered to take measures necessary to protect and improve the quality of the environment by setting standards for emissions and discharges; regulating the location of industries; management of hazardous wastes, and protection of public health and welfare.

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

Some notifications issued under this Act are:

- *Doon Valley Notification (1989)*, which prohibits the setting up of an industry in which the daily consumption of coal/fuel is more than 24 MT (million tonnes) per day in the Doon Valley.
- *Coastal Regulation Zone Notification (1991)*, which regulates activities along coastal stretches. As per this notification, dumping ash or any other waste in the CRZ is prohibited. The thermal power plants (only foreshore facilities for transport of raw materials, facilities for intake of cooling water and outfall for discharge of treated waste water/cooling water) require clearance from the MoEF.
- *Dhanu Taluka Notification (1991)*, under which the district of Dhanu Taluka has been declared an ecologically fragile region and setting up power plants in its vicinity is prohibited.
- *Revdanda Creek Notification (1989)*, which prohibits setting up industries in the belt around the Revdanda Creek as per the rules laid down in the notification.
- *The Environmental Impact Assessment of Development Projects Notification, (1994 and as amended in 1997)*. As per this notification:
 - All projects listed under Schedule I require environmental clearance from the MoEF.
 - Projects under the delicensed category of the New Industrial Policy also require clearance from the MoEF.
 - All developmental projects whether or not under the Schedule I, if located in fragile regions must obtain MoEF clearance.
 - Industrial projects with investments above Rs 500 million must obtain MoEF clearance and are further required to obtain a LOI (Letter Of Intent) from the Ministry of Industry, and an NOC (No Objection Certificate) from the SPCB and the State Forest Department if the location involves forestland. Once the NOC is obtained, the LOI is converted into an industrial licence by the state authority.

- The notification also stipulated procedural requirements for the establishment and operation of new power plants. As per this notification, two-stage clearance for site-specific projects such as pithead thermal power plants and valley projects is required. Site clearance is given in the first stage and final environmental clearance in the second. A public hearing has been made mandatory for projects covered by this notification. This is an important step in providing transparency and a greater role to local communities.
- *Ash Content Notification (1997)*, required the use of beneficiated coal with ash content not exceeding 34% with effect from June 2001, (the date later was extended to June 2002). This applies to all thermal plants located beyond one thousand kilometres from the pithead and any thermal plant located in an urban area or, sensitive area irrespective of the distance from the pithead except any pithead power plant.
- *Taj Trapezium Notification (1998)*, provided that no power plant could be set up within the geographical limit of the Taj Trapezium assigned by the Taj Trapezium Zone Pollution (Prevention and Control) Authority.
- *Disposal of Fly Ash Notification (1999)* the main objective of which is to conserve the topsoil, protect the environment and prevent the dumping and disposal of fly ash discharged from lignite-based power plants. The salient feature of this notification is that no person within a radius of 50 km from a coal-or lignite-based power plant shall manufacture clay bricks or tiles without mixing at least 25% of ash with soil on a weight-to-weight basis. For the thermal power plants the utilisation of the flyash would be as follows:
 - Every coal-or lignite-based power plant shall make available ash for at least ten years from the date of publication of the above notification without any payment or any other consideration, for the purpose of manufacturing ash-based products such as cement, concrete blocks, bricks, panels or any other material or for construction of roads, embankments, dams, dykes or for any other construction activity.
 - Every coal or lignite based thermal power plant commissioned subject to environmental clearance conditions stipulating the submission of an action plan for full utilisation of fly ash shall, within a period of nine years from the publication of this notification, phase out the dumping and disposal of fly ash on land in accordance with the plan.^a

^a Details of the notification available on <http://envfor.nic.in/legis/hsm/flyash.html>

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

The Environment (Protection) Rules, 1986

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

The National Environment Appellate Authority Act, 1997

This Act provided for the establishment of a National Environment Appellate Authority to hear appeals with respect to restriction of areas in which any industry operation or process or class of industries, operations or processes could not carry out or would be allowed to carry out subject to certain safeguards under the Environment (Protection) Act, 1986.

In addition to these, various Acts specific to the coal sector have been enacted. The first attempts in this direction can be traced back to the *Mines Act, 1952*, which promoted health and safety standards in coal mines. Later the *Coal Mines (Conservation and Development) Act (1974)* came up for conservation of coal during mining operations. For conservation and development of oil and natural gas resources a similar legislation was enacted in 1959.

Hazardous wastes

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

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

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

Factories Act, 1948 and its Amendment in 1987

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

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

Public Liability Insurance Act (PLIA), 1991

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

authorized to establish the Environmental Relief Fund, for making relief payments.

National Environment Tribunal Act, 1995

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

International agreements on environmental issues

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

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

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

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

The Montreal Protocol to the Vienna Convention on Substances that deplete the Ozone Layer, came into force in 1989. The protocol set targets for reducing the

^a For details refer to <http://envfor.nic.in>

consumption and production of a range of ozone depleting substances (ODS). In a major innovation the Protocol recognized that all nations should not be treated equally. The agreement acknowledges that certain countries have contributed to ozone depletion more than others. It also recognizes that a nation's obligation to reduce current emissions should reflect its technological and financial ability to do so. Because of this, the agreement sets more stringent standards and accelerated phase-out timetables to countries that have contributed most to ozone depletion (Divan and Rosencranz, 2001).

India acceded to the Montreal Protocol along with its London Amendment in September 1992. The MoEF has established an Ozone Cell and a steering committee on the Montreal Protocol to facilitate implementation of the India Country Program, for phasing out ODS production by 2010.

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

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

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

Basel Convention on Transboundary Movement of Hazardous Wastes, 1989

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

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

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

UN Framework Convention on Climate Change (UNFCCC), 1992

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

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

Convention on Biological Diversity, 1992

The Convention on Biological Diversity (CBD) is a legally binding, framework treaty that has been ratified until now by 180 countries. The CBD has three main thrust areas: conservation of biodiversity, sustainable use of biological resources and equitable sharing of benefits arising from their sustainable use.

The Convention on Biological Diversity came into force in 1993. Many biodiversity issues are addressed in the convention, including habitat preservation, intellectual property rights, biosafety, and indigenous peoples' rights.

India's initiatives under the Convention are detailed in the chapter on Biodiversity. These include the promulgation of the Wildlife (Protection) Act of 1972, amended in 1991; and participation in several international conventions such as CITES.

UN Convention on Desertification, 1994

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

The UN General Assembly established such a committee in 1992 that later helped formulation of Convention on Desertification in 1994.

The convention is distinctive as it endorses and employs a bottom-up approach to international environmental cooperation. Under the terms of the convention, activities related to the control and alleviation of desertification and its effects are to be closely linked to the needs and participation of local land-users and non-governmental organizations. Seven countries in the South Asian region are signatories to the Convention, which aims at tackling desertification through national, regional and sub-regional action programmes. The Regional Action Programme has six Thematic Programme Networks (TPN's) for the Asian region, each headed by a country task manager. India hosts the network on agroforestry and soil conservation. For details refer to the land resource chapter.

International Tropical Timber Agreement and The International Tropical Timber Organisation (ITTO), 1983, 1994

The ITTO established by the International Tropical Timber Agreement (ITTA), 1983, came into force in 1985 and became operational in 1987^a. The ITTO facilitates discussion, consultation and international cooperation on issues relating to the international trade and utilization of tropical timber and the sustainable management of its resource base. The successor agreement to the ITTA (1983) was negotiated in 1994, and came into force on 1 January 1997. The organization has 57 member countries. India ratified the ITTA in 1996.

An assessment of the legal and regulatory framework for environmental protection in India

The extent of the environmental legislation network is evident from the above discussion but the enforcement of the laws has been a matter of concern. One commonly cited reason is the prevailing command and control nature of the environmental regime. Coupled with this is the prevalence of the all-or-nothing approach of the law; they do not consider the extent of violation. Fines are levied on a flat basis and in addition, there are no incentives to lower the discharges below prescribed levels.

^a For details refer to the web site: www.itto.or.jp/Index.html

Some initiatives have addressed these issues in the recent past. The Government of India came out with a Policy Statement for Abatement of Pollution in 1992, before the Rio conference, which declared that market-based approaches would be considered in controlling pollution. It stated that economic instruments will be investigated to encourage the shift from curative to preventive measures, internalise the costs of pollution and conserve resources, particularly water. In 1995, the Ministry of Environment and Forest (MoEF) constituted a task force to evaluate market-based instruments, which strongly advocated their use for the abatement of industrial pollution. Various economic incentives have been used to supplement the command-and-control policies. Depreciation allowances, exemptions from excise or customs duty payment, and arrangement of soft loans for the adoption of clean technologies are instances of such incentives. Another aspect that is evident is the shift in the focus from end-of-pipe treatment of pollution to treatment at source. The role of remote sensing and geographical information systems in natural resource management and environmental protection has also gained importance over time (Box 2.1).

An important recent development is the rise of judicial activism in the enforcement of environmental legislation. This is reflected in the growth of environment-related public litigation cases that have led the courts to take major steps such as ordering the shut-down of polluting factories.

Agenda 21 highlights the need for integration of environmental concerns at all stages of policy, planning and decision-making processes including the use of an effective legal and regulatory framework, economic instruments and other incentives. These very principles were fundamental to guiding environmental protection in the country well before Rio and will be reinforced, drawing on India's own experiences and those of other countries.

Box 2.1 Natural resource management and environmental protection: use of remote sensing

India has made commendable advances in the use of remote sensing for natural resource management. The major achievements can be classified as follows:

Use of remote sensing in integrating environment and development at the policy planning and management levels: The country has an extensive and integrated institutional infrastructure and focussed programme elements to enable integration of environmental concerns in decision making. The main initiatives include:

National Natural Resource Management Systems: An integrated resource management system aimed at optimal utilisation of the country's natural resources through a systematic inventory of resource availability using remote sensing in conjunction with other techniques

Remote sensing for sound environmental management: Remote sensing is playing an important role in providing information on physical environmental parameters, such as land and climate, vegetation, soils, water, terrain and slope, land use, air and water pollution etc. Through the use of Geographical Information Systems, this information is integrated with relevant collateral information to evolve solutions to many environment issues. Notable achievements have been made in the area of regular forest cover mapping and monitoring as well as detection and monitoring of natural disasters along with assessment of the associated damages.

Role of remote sensing in strengthening the legal and regulatory framework for environmental protection

Remote sensing has established itself as an operational means to provide reliable information and benchmark survey mechanisms in the context of (i) making laws and regulations more effective (ii) establishing judicial and administrative procedures, (iii) providing legal reference and support services, (iv) developing effective national programmes for reviewing and enforcing compliance with national, state and local laws on environment and development. A number of case studies in the country demonstrate the application of remote sensing in this context- these cover forest encroachment studies, mapping of coastal regulation zones, enforcement of environmental legislation, environmental impact assessments, vegetation change detection studies and land use planning studies

Generation of natural resources information towards strengthening the national accounting system: Endeavors include the setting up of a National Spatial Data Infrastructure (to build a repository of natural resource information), National (Natural) Resources Information System (to provide integrated information on natural resources, socio-economic factors etc), Groundwater Prospects Zone Mapping, Bio-resource Data Base, Wasteland Mapping, and the Integrated Mission for Sustainable Development. The IMSD project aimed at generating action plans to enhance the productivity and quality of natural resources. The project covered 85 million ha of problem lands falling in 175 districts in the country and has been successful in evolving action plans with community participation to address several issues including enriching groundwater potential and increasing cropping intensity.

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