ENVIRONMENTAL REGULATIONS IN INDIA

INTRODUCTION

Dear friends, we know it well and experience as well that world over environmental problems are getting serious and more awareness and education on the subject is mounting. Different countries have started taking measures and designed specific policy measure to arrest severe environmental consequences, 'man induced', for the pursuit of development. Scientific and technological advances have imparted positive externalities, but they are also accompanied with negative externalities in the form of environmental degradation hazards, causing threat to health and existence of human and non human beings and disbursing the natural set up of our planet.

We have seen different policy measure and actions, by different approaches like law legislations', command and control as well as market approaches to combat the environmental issues. Like other countries of the world India too has gone for different policy measures to restrict environmental damages and degradations. Here in, in the context of India we shall explore the measures such as, environmental legislation and institutions, and different instruments with regard to resolve environmental issues. We shall also analyze the interfaces of each measure and see that how far they have succeeded.

Environmental policy : The Indian Experience

1. Evolution of Environmental Legislation And Institution in India.

In the aftermath of the UN conference on the Human Environment in Stockholm in 1972, the Indian parliament enacted and the legal institutions for environmental management were established. Addressing the UN conference, the late prime minister of India Mrs. Indira Gandhi said,

The environmental problems of developing countries are not side effects of excessive industrialization but reflect the inadequacy of development. The rich countries may look upon development as the cause of environmental destruction, but to us (developing countries). It is one of the primary means of improving the environment for living or providing food, water, sanitation and shelter, of making the desert green and the mountains habitable.

The policy makers of environmental, and changes in it, understood the reality that here is no tradeoff between environment and development. In fact they are complementary. Development is not possible with the exploitation of natural resources. Hence the strategy of development in India was designed, keeping in mind the preservation of natural resources. As an integral of development strategy, preservation of natural resources is must and in case the development strategy causes the environmental degradation then appropriate institutional structure ought to be built. And keeping this in mind India developed environment preserving institutions as early as 17th century. We can show these institutions i.e. different Acts pertaining to environment preservation, in different times passed in the tabular form.

	Year	Act
1.	1865	Indian Forest Act
2.	1879	Elephant Preservation Act

3. 1882 Indian Easement Act, Protecting the property rights of riparian owners against pollution by upstream users.

4. 1905 Bengal Smoke Nuisance Act

5. 1912 Bombay Smoke Nuisance Act

6. 1912 Wild Birds Animal Protection Act

7. 1938 Motor Vehicle Act

8. 1948 Factories Act

9. 1956 River Boards Act

10. 1972 Wild Life Protection Act Amended in 1991

11. 1974 Water (Preservation and Control of Pollution Act Amended in 1986)

12. 1977 Water Preservation and Control of Pollution) Cess Act. Amended in 1988

13. 1980 Forest (Conservation) Act

14. 1981 Air (Prevention and Control of Pollution) Act Amended in 1988

15. 1986 Environment protection Act ameded in 1983

16. 1986 Amendment of the Motor Vehicles Act of 1938

17. 1988 Public Liability Act. Amended in 1986

18. 1991 Coastal Regulation Zone, Notification

These are the most important laws pertaining to environmental management in India. We should note that the Acts passed in seventies and onward, are after the 1972 Stockholm conference, and in view of that conference the government of India had formed the National Commission on Environmental planning (NCEP) in 1972 in the department of Science and Technology which was regarded as an apex body concerning all environmental matters. Its main responsibility was to plan and co-ordinate the activities of various ministries and agencies dealing with environmental matters.

Various institutions responsible for the implementation and monitoring of environmental laws mentioned above are as follows.

1. Department of Environment in 1980 and the mile grated Ministry of Environmental and forests in 1985; Department of Science and Technology; Department of Agriculture and Co-Operation Department of Biotechnology; Department of Non-Conventional Energy sources. Energy Management Centre; Council of Scientific and Industrial Research etc. at the centre and Departments of Environment at the state and Union Territory Levels;
2. Central Pollution Control Board and State Pollution Control Board;
3. Central Forestry Board ;
4. Indian Council of Forestry Research and Education with Specialized institutions for research in arid zones, forestry, moist and deciduous forest, wood technology, genetic and tree breeding;

5. Forest survey of India (FSI) and the Wildlife Institute of India (WII) in addition of existing organizations like Botanical Survey of India (BSI) and Zoological survey of India (ZSI) ;
6. National Wastelands development Board ;
7. Indian Board of Wildlife ;
8. National Museum of Natural History, Center for Environmental Education, Institute for Himalayan Environmental Development and Center of Excellence in specified subject areas .

(II) ENVIRONMENTAL LEGISLATION AND INSTITUTIONS FOR THEIR ENACTMENT AND IMPLEMENTATION.

(A) Water Act of 1974 And Air Act of 1981

The Water Act enacted by Indian parliament in 1974 for preventing and controlling water pollution, and maintaining entire purity of water. The water control board was given powers and assigned functions relating to controlling water contamination. Later on it was resulted into the recreation of central and state Pollution Control Boards which aim at prevention, abatement and control of water pollution. The Air Act enacted be the Indian Parliament on 29th March. 1981 has enlarged the mandate of the central and state Pollution Boards to deal with the air pollution also.

The Central Pollution Control Board (CPCB) which forms part of the Ministry of Environment and Forests (MOEF) is a body consisting of experts in water and air pollution abatement drawn by the Central Government to protect the interest of key sector like industry, agriculture, fishery, trade etc. It has representations from the State and Government owned companies and corporations. In short it takes in to consideration people's participation for designing and implementing the Act for the prevention and control of water and air pollution.

The Functions of CPCB

1) Advise the Central Government on any matter concerning the prevention and control of water and air pollution.
2) Co-ordinate the activities of State Boards and prevent disputes among them;
3) Provide technical assistance and guidance to State Boards, carry out and sponsor investigations and research relating to problems of controlling and abating water and air pollution;
4) Plan and organize the training of persons engaged in programs for prevention and abatement of water and air pollution;
5) Organize through mass media a comprehensive program regarding the prevention and control of water and air pollution.
6) Collect, compile and analyze technical and statistical data relating to water and air pollution and the measures devised for their effective prevention and control and prepare manuals and codes relating to treatment and disposal of effluents and disseminate information connected there with ;
7) Lay down, modify or annual, in consultation with State Governments concerned, the standards for water and air quality ;
8) Plan and cause to be executed a nation-wide program for the prevention and abatement of water and air pollution; and
9) Perform such other functions as prescribed.

The Functions of State Pollution Control Boards (SPCB)

(1) To plan a comprehensive program for the prevention and abatement of air and water pollution in the state;

(2) To advise the State Government on matters concerning the control and abatement of water and air pollution ;
(3) To collect and disseminate information relating to water and air pollution prevention and abatement thereof ;
(4) To encourage, conduct and participate in investigations and research relating to problems and water and air pollution abatement ;
(5) To collaborate with the Central Board in organizing and training of persons engaged in the programs for the abatement of air and water pollution ;
(6) To inspect effluent works and plants for the treatment of effluents ;
(7) To lay down, modify or annual standards for air and water pollution with regard to the standards of air or water quality laid down by the central board and the ambient air and water quality specific to the region or the water body ;
(8) To evolve economical and reliable methods for treatment of effluents with regard to peculiar ambient air and water quality of different regions ;
(9) To evolve methods for utilization of sewage and suitable trade effluents in the case of water pollution abatement;
(10) To advise the state government about the location of any industry causing air or water pollution;
(11) To perform other functions as may be prescribed from time to time or be entrusted to it by the central board or the state government.

As per the Water and Air Act if any industry or organization is not following it or violating the Act, then it is subject to fine and imprisonment. The board if necessary can also close down certain polluting factories.

(B) Water Cess Act of 1977 and the Environment Protection Act of 1986

The Water Cess Acts enacted by the parliament on 7th December 1977 with its amendments in 1988 provides for levying a tax or Cess on water consumed by certain industries and by local authorities. The main objective of this tax is to increase the resource of the central and state pollution control boards for the prevention and control of water pollution. The rate of tax (it is not a pollution tax. It may be regarded as a nominal royalty paid by the industry for using the water) applicable to various water polluting activities varies from Rs. 0.015 to Rs 0.08 per kilo litre of water consumed. If there is a tax evasion by the concerned parties then they are liable to imprisonment up to six months or fine up to thousand rupees or both.

The environmental protection act enacted by the parliament on 26th May, 1986 is intended to remedy the lacunae noticed in the earlier laws and to serve as a single environmental legislation. This act provides for the protection and improvement of environmental resources like water, land and air as per the decisions taken at UN conference on the Human Environment held at Stockholm in June, 1972. This Act empowers the central government to take all such measures as it deems necessary for the protection and improvement of the quality of environment and preventing, controlling and abating environmental pollution.

By this enactment the central government was empowered to plan and execute, operate, implement-co ordinate, fixing standards of emission, investigate and research, collect and disseminate information relating to environmental pollution abatement.

(C) Forest Conservation Act 1980, Wildlife Protection Act, 1972 and National policy for conservation of forest and wildlife.

The forest policy in India has its origin in the Resolution No. 13/52/F, dated the 12th May, 1952 in the erstwhile ministry of food and agriculture, government of India. In spite of this resolution, forests in the country have suffered serious depletion which is attributable to pressures arising from the ever-increasing demand for fuel, wood, fodder and timber, inadequacy of policing, diversion of forest land to non-forest uses, and the tendency of government to look to the forest as a revenue earning resource. As result a need was felt for having a comprehensive law covering forest conservation. The wild life protection Act and the forest conservation Act which were enacted by the parliament respectively in the years 1972 and 1980 formed a basis for the current National Forest and Wildlife Protection Policy In India.

The distinguish features of these Acts are that they emphasize the multiple objectives covering and comprehending all issues related to environmental stability, conservation of natural resources, maintaining and preserving biodiversity, restricting environmental degradation, restoration of ecological balance and attaining sustainability.

(D) National Environmental Tribunal Act, 1995 and National Environment Appellate Authority 1997

The national Environmental Tribunal Act has in to force from 17 June, 1995. It provides for;

(a) strict liability for damages arising out of any accident occurring while handling any hazardous substance and
(b) Establishment of a National Environmental Tribunal for effective and expeditious disposal of cases arising out of such accidents with a view to give relief and compensation for damages to persons, property and the environment.

This legislation is the first of its kind in the world for providing relief, compensation and restitution to victims of accidents while handling hazardous substances and for environmental damage.

The salient features of the Act;

(1) The Tribunal shall be established with its benches in each state and Union Territory or for a group of state/Union Territories in a phased manner.
(2) The Tribunal shall be guided by the principles of natural justice and shall entertain all legal procedure powers and examine records, evidences and documents.
(3) The Tribunal shall take in to account the applications of aggrieved parties and dispense justice to the victims of an accident.
(4) The Tribunal will entertain claims for compensation for damage if they are presented within five years from the occurrence of the damage.
(5) Non-compliance of the Tribunal's directions or orders will be punishable with imprisonment up to three years or with five which may extend up to Rs. 10 lakhs or both.

The government of India has issued the National Environment Appellate Authority Ordinance on 30th January, 1977. The ordinance provides for the establishment of a National Environmental Appellate Authority 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 Environmental (protection) Act. This is to bring in accountability, transparency and implementation of developmental schemes and projects.

(III) INSTRUMENTS AND INSTITUTIONS FOR POLLUTION ABATEMENT IN INDIA

(a) ECONOMIC INSTRUMENTS

In previous chapter we have seen the market based instrument to deal with environmental externalities. These instruments are mainly; tax on pollution and the subsidy for the damage caused by pollution. Moreover we also discussed the trading permits to deal with the environmental problem. These instruments are corrective measures in the pre market processes dealing with the externality of environmental pollution. They are known as market - based - instruments because they allow allocate efficiency by function of market and environmental externalities are dealt with. The important property of economic instruments is that they facilitate the choice of least-cost-pollution abatement technologies. Designing tax standards enable us to estimate the cost of damage so as to acertain appropriate policy to deal with environmental externalities.

Though market-based measures are seen in application in a developed world for dealing with pollution problems, but in India we don't see the application of such measures. And the laws, regulation and different types of Acts that we have seen are falling in command - control approach to deal with environmental problems. However this approach is not giving incentives, but Government of India has so far resorted only to such measures for controlling industrial pollution in India. It is worth noting that no serious attempts have been made in India so far for using market - based instrument for industrial pollution abatement. Some recent research studies on water pollution abatement in India have found that the pollution tax on industrial water use should be several times higher than the current rate of water cess to realize the prescribed water quality standards.

In India the irony is this that Government is giving subsidies to small and medium size industries and also for establishment of industrial states to encourage and to give them incentive, but they are causing environmental pollution and for them no abatement tax is imposed.

(b) Collective Action

Collective action is now gaining ground as an alternative institution to economic instruments like pollution taxes and subsidy to deal with environmental problems. Coase has shown that there is no need for Piguvian approach of tax subsidy to combat environmental problems. They can be settled by negotiation (bargaining) where in transaction cost is either zero and negligible and property rights are well defined. Free market will result in the optimal control of the externality, and the final outcome will be independent of the initial allocation of property rights. However the Coase theorem is seen in practice in India with regard to the solution of environmental problems especially in cases of water pollution abatement in industrial estates and rural areas in local village forests.

Collective Action: An Example of Industrial water pollution Abatement in India

Collective action based on co-operation involving all the relevant parties for water pollution abatement (factories, affected parties and government) is now seen as an institutional alternative to deal with the problem of water pollution abatement on industrial estates in India. Collective action in industrial water pollution abatement is meant to bring about the necessary institutional changes that are computable with the choice of cost saving technologies. A common effluent treatment plant (CETP) adopted for industrial estates confers the benefits of saving in costs to factories and the reduction in damages to the

affected parties. There are many incentives for polluters, affected parties and the Government to promote collective action in industrial water pollution abatement.

(c) Incentives for the Industries :

1. CETP is less expensive in terms of capital and operation cost.
2. It is easy for a club to secure financial support from the government and NGOs.
3. With CETP, water can be treated economically to produce process grade water which can be reused and recycled in the industry. It is an important incentive to form a club in water scarce regions.
4. The size of an industrial estate depends up on water availability and the facility to dispose waste water on a sustainable basis. A CETP may help achieve both these objectives.

Incentives to Affected Parties

1. Improved quality of drinking water
2. Reduction in damages from water borne diseases
3. Recreational facilities from the preserved water body
4. Reduction in the cost of legal action against polluters
5. Increase in access to legal institutions

Incentive to the Government :

1. Reduction in the burden of various government agencies working for abating and controlling water pollution.
2. Respectability for a catalytic role rather than the unpopularity of a certain role.

The collective action measure has two important elements; namely complementarily and feasibility in industrial water pollution abatement.

The interests of relevant parties are considered and it involves all relevant parties such as factories, affected parties and the government. It also high lights the role of different parties, especially the catalytic role of the government.

The recent studies in India show that there is an adaptation of CETP technologies by some industrial estate in Andhra Pradesh, Haryana and Tamil Nadu. It provides an evidence that collective action plays a role for controlling water pollution in industrial estate. There are three processes involved in the collective action for control of water pollution on an industrial estate. There are (a) collective action of affected parties (b) collective action of factories and (c) bargaining between a coalition of affected people and a coalition of factories. In this measure when there is a threat of collective action from the affected parties, there is a scope of choice least cost-technology from the available pollution abatement technologies. Hence the collective action by factories can be technology driven. Finally, bargaining between a coalition of affected people and a coalition of factories produces the end result of collective action, which is realization of the prescribed environmental standards

Collective Action: An Example of Managing Village Commons in India

Management of local commons is another important case of collective action in operation in India. The management of the commons in villages is possible only when complementaritie between benefits and the benefits to the community exist collective action has co-operation base and it is recognized that cooperation has more benefits than pre market management of common property resources.

The degradation of village common and forest lands is generally seen in developing countries and that could be reckoned as limitation collective action in the village communities. Hence, the government can play an enabling role in promoting collective action by the following.

(1) It can give a subsidy or a loan to village communities for creating community assets that are complementary to preservation.
(2) It can undertake reforms to reduce the imbalance in the distribution of land in the village economy.
(3) It can provide alternative employment to population in excess of threshold levels in the village economy.

It is interesting to note that the study by Chopra, Kadekodi and Murty (1990) in Indian context have found that the government or an outside agency has successfully played a catalytic role in the management of village commons and forest lands.

Peoples' Participation in Management of Forest Resources:

The institution of Joint Forest Management:

The National forest policy, 1988 envisages people's involvement in the development and protection of forests to fulfill the objectives of providing fuel, wood, fodder and small timber to local communities as well as to develop the forests for improving the environment. In order to implement this policy prescription, the MOEF issued guidelines in 1990 to involve village communities in the development and protection of degraded forests on urgent basis. The concept of Joint Forest Management (JFM) was accordingly initiated and extended to all states and Union Territories for operationalising the same by developing appropriate mechanisms. So far seventeen states have issued their resolution for JFM. As per reports received from nine states, 4.05 million hectors of degraded forest in the country are being managed and protected through approximately 40,300 village forest protection committees.

The institution of JFM involves the participation of village committees, NGO, and state forest department in the management of forest lands.

The most important point to note regarding JFM is that its working is based on people's participation co-operation.co-ordination, monitoring and evaluation in decision making implementing and operating along with taking care of rights and shares of each party involved in it. This could be reckoned as a hard core of JFM.

(d) National Parks and Sanctuaries: An Example of the Implementation of Provisions of Wildlife Protection Act, 1972

The Wildlife Protection Act, 1972 has three objectives :

1. To be a comprehensive and uniform legislation for protection of wildlife throughout the country.
2. To prevent and regulate hunting of and trading in wildlife or any product there of

3. To lay down the procedure for the establishment maintenance and administration of areas as sanctuaries and national parks.

The 42nd constitution amendment of 1976 gave a list of common rights and duties of state and central government. It provided for protection and improvement of the environment and safeguarding forest and wildlife in the directive principles of state policy and declared that it is the fundamental duty of every citizen to protect and improve the natural environment including forests and wildlife. This amendment of act gave a positive results with regard to the development of National Parks and Sanctuary. Now there are about 80 national parks and 441 sanctuaries in India covering 4.5 percent of the total land mass.

The conflict between the park and people and the distribution of costs and benefits are taken care by the government under the provision of wildlife protection Act.

(IV) CONCLUSION

In environmental policy the design monitoring and enforcement component are equally important, but we find that in most of the policies the design is emphasized, and the monitoring and enforcement get very little space.

Historically, the theory of environmental policy has gone through three phases;

(1) Investigation of market failures and prisoners dilemma,
(2) Purely government solution and
(3) Institutional alternatives in which the market plays an important role.

However, still, in less developed and developing countries the market approach to arrest environmental externalities is not adequate, because absence of property rights of environmental resources and legal systems. Other approaches like command and control and tax-subsidy approach have gained partial success. There is a need to have better and effective institutional structure that can properly link the people factories, government and market along with affected people.

There is a need to make government solution practical and intensification of monitoring and enforcement. In India at present the command and controls measures are used to control industrial pollution. Mixed regimes deal with the problems of management of forests and wildlife and the control of industrial pollution on industrial estates.