CHAPTER I

INTRODUCTION: ENVIRONMENTAL PROTECTION POLICIES IN INDIA

Man is both creature and moulders 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 been reached when, through the rapid acceleration of science and technology, man has acquired the power to transform his environment in countless ways and on an unprecedented scale. Both aspects of man's environment, the natural and man-made, are essential to his well being and to the enjoyment of basic human rights-even the right to life itself.


The environment is a complicated dynamic system, with many interacting components. Our knowledge of these components, of their interactions between them, and the relationship between people, resources, environment and development has undergone profound evolution over the last many years.¹

Environment problems arise in virtually all sectors of human activity in both the developing and developed countries.² In modern time society's interaction with nature is so extensive that it has given rise to what we know as the environmental question affecting all humanity. Environmental deterioration can be attributed to industrialization and urbanization, the depletion of traditional sources of energy and raw materials, constant population growth, the disruption of natural ecological balances, the destruction for economic ends of various animal and plant species, and the negative genetic consequences of the industrial and other pollutants, which


include the danger of man's genetic degeneration. Steady scientific and technical progress has secured an unprecedented growth of man's power in relation to nature. We have built on a scientific and technical civilization that is encroaching heavily on nature.

Our industrial, economic, scientific and technical activity has not simply attained a geological scale, but also a cosmic one as well. We are now creating new seas, and transforming huge deserts into fertile oases. In general we are in a position to encroach upon nature without limit, remaking her more and more radically. But we cannot and must not exercise all our power over nature without restrictions, without allowing for the possible negative consequences of our activity.³

The atomic bombing of Hiroshima and Nagasaki also told environmental disaster in human history. It was conceived and manipulated by men of science in collusion with the vindictive politicians with the sole purpose of domination over the earth by a cruel act of elimination of a sizable section of the Japanese population.⁴ The gruesome mass poisoning that claimed more than 15,000 lives in Bhopal was the worst environment disaster in recent years. The killer gas leaked out of the U.S. multinational Union Carbide Plant was one more in a long list of outrages perpetrated by the multinationals against people of developing countries. Thousands of families completely perished as a result of the exposure to the killer gas and thousands were crippled or maimed and more than lakhs of people were severely affected.⁵

The Indian traditions of love, respect and reverence for nature go back to time immemorial. Historically, the protection of nature and wildlife formed an ardent article of faith, reflected in the daily lives of people and also enshrined in myths, folklore, religion, art and culture. Various rulers of different kingdoms in pre-colonial India were conscious of environmental conservation. Similarly, the pronouncements of Emperor Ashoka who viewed the protection of animal life and

⁵ ibid. p.12
the preservation of plants as one of the duties of the king, forbade killing and
hunting of animals for food and game which the teachings of Buddhism and
Jainism could not prevent decades of environmental destruction.⁶

The need to appraise all of human history from an ecological perspective
notwithstanding, in the Indian context, the British colonial rule which identified as
a crucial ecological watershed, in the sense that it brought with it novel techniques
of managing as well as destroying nature, while simultaneously instituting
laws and procedures that radically undermined indigenous pattern of resource
uses. Research on the ecological history of different regions has generally studied
some or all of the following variables:

i. The human ecology of peasants, pastoralists, swiddin agriculturists, etc. with
   a particular focus on the social and cultural institutions that facilitated or
   hindered sustainable use;

ii. The relations of power which governed natural resource utilization, and the
   impact on them of changing technologies;

iii. The legal and scientific techniques brought in by the British to manage forests
    fisheries, water etc. Several of them which (such as the Indian Forest Act)
    are still in operation today;

iv. The social consequences of state intervention including protest movements;

v. The environmental consequence of colonial rule, such as deforestation and
   pollution, the coming in of new species, and changes in human demography.⁷

The main environmental problems in India relate to air and water pollution;
degradation of common property resources; threat to bio-diversity; solid waste
disposal and sanitation. Increasing deforestation, industrialization, urbanization,
transportation and input-intensive agriculture are some of the major causes of
environmental problems faced by the country. Poverty presents special problems

⁶ Dwivedi, O.P., “India’s Environmental Policies, Programmes and Stewardship”. St. Martin’s Press,
New York, 1997 p.51

for a heavily populated country with limited resources.\textsuperscript{8} Noxious and toxic substances like Sulphur dioxide contaminate water, oxides of nitrogen, and suspended particulate matter are serious air pollutants in industrial regions and cities.

Other problem is noise pollution, which occurs mainly in commercial and residential areas as a result of vehicular traffic, industrial activities, and religious festivals. These three major problem water, air and noise pollution are constantly discussed in various forums. Mindful of the seriousness of environmental pollution problems in India, the judiciary has on several occasions ruled that polluting activity by individuals, industries and corporate bodies should cease.\textsuperscript{9}

\textbf{The Government of India's Response to Environmental Concerns}

The year 1972 marked a watershed in the history of environmental management in India. Prior to 1972 different Union ministries dealt with environmental concerns such as sewage disposal, sanitation and public health, and each pursued these objectives in the absence of a proper coordination system at the central or intergovernmental level.\textsuperscript{10} When the 24\textsuperscript{th} United Nations General Assembly decided to convene a conference on the human environment in 1972, and requested a report from each member country on the state of their environment, a committee on the Human Environment under the chairmanship of Pitambar Pant, a member of the Planning Commission, was set up to prepare India's report.\textsuperscript{11}

By May 1971 three reports had been prepared, so with the help of these reports, the impact of the population explosion on the natural environment and the

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\textsuperscript{8} Year Book of Energy -Environmental Statistic (YES)-1998 New Delhi, p.373.
\textsuperscript{11} National Committee on Environmental Planning and Coordination, Inaugural Function (Proceedings published by the Department of Science and Technology,New Delhi), 12 April 1972, p.1
\end{flushright}
existing state of environmental problems were examined. By early 1972 it had been realized that unless a national body was established to bring about greater coherence and coordination in environmental policies and programs to integrate environmental concerns in the plans for economic development, an important lacunae would remain in India’s planning process.12 Consequently, on 12 April 1972 a National Committee on Environment Planning and Co-ordination (NCEPC) was set up, as a high powered advisory body to the Government. Within its purview falls the appraisal of development projects, human settlements planning, survey of natural eco-systems like wetlands, and spreads of environment awareness. On the recommendation of the NCEPC Environment Boards in every state and union territory had been set up.13

Until the General election of 1977, none of the political parties in India considered environmental problems worthy of inclusion in their election platforms. But thereafter a number of environmental controversies such as Silent Valley and Mathura Refinery causing acid rain on the Taj Mahal sparked public concern, and as a consequence major political parties (Congress-I, Lok Dal, Janata and Congress-U) included environmental matters in their 1980 general election manifestoes. Congress-I won the election and it immediately set up a committee headed by N.D. Tiwari.14

On the recommendation of Tiwari Committee a separate Union Department of Environment was set up in November 1980 to act as a nodal agency for environmental protection and eco-development work and to carry out environmental appraisal of development projects. Responsibility for pollution monitoring and regulation and conservation of marine eco-systems and critical eco-systems designated as biosphere reserved is also assigned to it. The Department of Environment was put under the direct supervision of the Prime Minister with a Deputy Minister in Charge of the Department.15

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12 Dwivedi, n.6, pp. 54-55.
14 Dwivedi, n.6, p. 56
15 Diwan, n.13, p.16
Following another recommendation of the Tiwari committee the NCEPC had been replaced by a National Committee on Environmental Planning (NCEP), with functions similar to those of its predecessor. The NCEP was formed in April 1981 and authorized to prepare an annual 'state of the environment' report, to arrange public hearings or conferences on significant environmental issues, establish a nationwide environmental information and communication system and propagate environmental awareness through the mass media. Because these duties, as well as its management functions, overlapped in some respect with those of the Department of Environment, it appeared that one agency was being relegated to a subservient role. The hope did not materialize that NCEP could acquire the status and act in a manner similar to that of the United States Council on Environmental Quality to rectify the apparent problems of overlapping jurisdiction and authority pattern. 16

Environment and the Constitution

The Constitution of India is one of the few in the world having specific provisions for the protection of environment. These provisions came to be incorporated in the constitution in the post-Stockholm period. A Constitution amendment for the first time inserted relevant provisions in Part IV (Directive Principles of State Policy) and Part IV A (Fundamental Duties) of the constitution. 17

In Part IV relating to Directive Principles of State Policy, the Article 48 A was added which is as follows: "48A. Protection and improvement of environment and safeguarding of Forests and Wild-life. The State shall endeavor to protect and improve the environment and to safeguard the forests and wildlife of the country. 18

16 Dwivedi,n.6, p.57
17 Desai, Bharat, "Water Pollution in India Law and Enforcement" Lancers Books, New Delhi-1990,p.40
18 Bakshi, P.M., "The Constitution of India with Comments and subjects Index", Universal Book Traders, Delhi.1992, p59
A new clause in the Fundamental Duties of Article 51A (g) was added in the Constitution of India, Article 51A (g) the part is as follows:

“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”. 19

Besides these Constitutional Provisions which provide for environmental protection, in the three lists of the Seventh Schedule of the Constitution of India, the following entries exist which permit the Union or the State or both, to make laws having a bearing, directly or indirectly, on environment.

List I –Union List

Entry No:

6. Atomic Energy and mineral resources necessary for its production.

14. Entering into treaties and agreements with foreign countries and implementing of treaties, agreements and convention with foreign countries,

24 Shipping and navigation, including shipping and navigation on tidal waves.

25 Maritime shipping and navigation, including shipping and navigation on tidal waves.

29. Airways, regulation and organization of air traffic and of aerodromes.

52. Industries, the control of which by the Union is declared by Parliament by law to be expedient in the public interest.

53. Regulation and development of oil fields and mineral resources.

19 ibid.p.61
54. Regulation of mines and mineral development 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.

56. Regulation and development of inter-state rivers and river valley.

57. Fishing and fisheries beyond territorial waters.

List II – State List:

6. Public health and sanitation; hospitals and dispensaries.

10. Burials and Burial grounds; cremations and cremation grounds.

14. Agriculture, including agricultural education and research, protection against pests and prevention of Plant disease.

15. Preservation, protection and improvement of stock and prevention of animal diseases.

17. Water, that is to say, water supplies, irrigation and canals, drainage and embankment, water storage and water power subject to the provisions of entry 56 of List I

18. Land, that is to say, rights in or over land, land tenures including the relation of landlord and tenant and the collection of rents; transfer and alienation of agricultural land, land improvement and agricultural lands; colonization.

List III – Concurrent List:

17. Prevention of cruelty to animals.

17A. Forests.

17B. Protection of wild animals and birds.

18. Adulteration of foodstuffs and other goods.

19. Drugs and poisons subject to the provisions of Entry 59 of List I with respect to opium.

20. Economic and Social Planning.

20A. Population control and Family Planning.

29. Prevention of the extension from one state to another infections or contagious diseases or pests affecting men, animals or plants.

31. Shipping and navigation on inland waterways as regards mechanically propelled vessels.

36. Factories.

37. Boilers.
Archaeological sites and remains other than those declared by or under law made by parliament to be of national importance.  

India was the first major nation to amend its constitution in this way. However, between 1977 and 1979 not much happened in the field of environmental protection. During this time Indira Gandhi was defeated in the 1977 general election and the victorious Janāta Dal Party did not consider environmental protection to be an important issue. Likewise, in 1980 (Indira Gandhi again came into power), Central Government appointed Tiwari Committee; which recommended for formation of Department of Environment for Legislative Measures and Administrative Machinery for Ensuring Environmental Protection. On the basis of its recommendations a full-fledged Department of Environment was created with effect from November 1, 1980 under the charge of the Prime Minister. The functions of the department of Environment have been identified as:

a. Nodal agency for environmental protection and eco-development in the country;

b. Carrying out of environmental appraisal of development projects through other ministers/ agencies as well as directly;

c. Administrative responsibility for (1) Pollution monitoring and regulation,
(2) Conservation of critical eco-systems designated as Bio-sphere Reserves, and
(3) Conservation of marine eco-system.  

The NCEPC was replaced by a National Commission on Environmental Planning (NCEP) to discharge the following functions:

i. Preparation of an annual “Stat of Environmental Report” of the country;

ii. Establishing an Environmental Information and communication system to propagate environmental awareness through the mass media;

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21 Dwivedi, n,6, p.57
iii. To sponsor environmental significance.

The Department of Environment has two bodies i.e. (NCEP and National Development Board) to assist and advice the functions of the following bodies; Botanical Survey of India, Zoological Survey of India, Central Board for Prevention and Control of Water Pollution and National Museum of Natural History function. There are about 30 major enactments related to protection of environment being administered by the central and state governments. The Water (Prevention and Control of Pollution) Act, 1974, the Factories Act and the Insecticides Act are some of the prominent ones among these enactments. These Acts are implemented through several organizations like the Central and State Pollution Control Boards, chief inspectors of factories and insecticides inspectors of agriculture department. In spite of several organizations functioning in the field, industrial accidents have led to widespread concern regarding the danger to environment from hazardous substances. The existing laws to cover such hazards do not provide clear focus of authority to prevent or limit the damages.

In view of many lacunae in the existing Indian laws related to environment protection, a new Environment (Protection) Bill was passed on 8th May 1986, to overcome some of the problems for coordination, implementation and enforcement. The Environment (Protection) Act (EPA), in essence, is an enabling statute seeking to provide for the protection and improvement of environment. It also aims at implementing the decision of the United Nations Conference on Human Environment (Stockholm, 1972). The Act has adopted a very wide definition of environment and its pollutants. It specifically gives power to the Central Government to take all such measures for the purpose of protecting and improving the quality of the environment and preventing, controlling and abating environmental pollution. Accordingly, the Act enumerates a variety of subjects,
including quality standards, maximum permissible concentrations of pollutants and location of industry, which the central Government may regulate for the purpose. Thus the EPA extends government control beyond air and water pollution to include other possible polluted media too. It specifically defines hazardous substances, as a regular or distinguished from ordinary pollutants.\textsuperscript{24} The department of Environment will also be well advised to constitute the relevant authority or authorities, to speed up enforcement of the EPA. It is also important to ensure proper coordination between the existing machinery and such authority, which will come into being, apart from avoiding overlapping and conflict of jurisdictions.\textsuperscript{25}

**The Five Year Plans and Environmental Protections**

From 1952, National Programmes for Sanitation, Public health, Nutrition, Water supply and housing were given high priority, but the issue of environmentally sustainable development received little recognition in the planning process until 1968. Then, in the Fourth Five-year Plan (1969-70 to 1973-74) the following observation was made:

The Physical environment is a dynamic, complex and inter-connected system in which any action in one part affects others. There also exists the interdependence of living things and their relationships with land, air and water. Planning for harmonious development recognizes this unity of nature and man. Such planning is possible only on the basis of a comprehensive appraisal of environmental issues, particularly economical and ecological... It is necessary therefore, to introduce the environmental aspect into our planning and development.\textsuperscript{26}

\begin{thebibliography}{9}
\bibitem{24} Desai, Bharat, "Water Pollution in India Law and Enforcement", Lancer Books, New Delhi, 1990 p.60
\bibitem{25} ibid. p.63.
\bibitem{26} Planning Commission, Fifth Five Year Plan, 1969-74, Ch. 2 (New Delhi, 1969).
\end{thebibliography}
The Fifth Five Year Plan (1974-79) stressed that the NCEPC should be involved in all major industrial decisions so that environmental goals would be taken fully into account. The Plan also emphasized that the pursuit of development goals would likely cause a reduction in the quality of life, it balances between development planning and environmental management was maintained. In this context, the Minimum Needs Programs (concerning rural and elementary education, rural health and sanitation, nutrition, drinking water, provision of housing sites and slum improvement) received a fairly high priority, and was expected to minimize environmental pollution and degradation in rural areas and reduce poverty levels.

In the Sixth Five Year Plan (1980-85) an entire chapter on ‘Environment and Development’ was included that emphasize sound environmental and ecological principles in land use, agriculture, forestry, marine exploitation, mineral extraction, fisheries, energy production and human settlements. It also provided environmental guidelines to be used by administrators and resource managers, when formulating and implementing programmes and lay down an institutional structure for environmental management by the central and state governments. Although the documents were alarmist in approach, it provided a good starting point from which to address the degraded environmental conditions in India.

The Seventh Fifth-Year Plan (1985-90) also placed substantial emphasis on environmental conservation and protection. The Plan called for the government and voluntary agencies to work together to create environmental awareness, because improving the quality of the environment required the involvement of the entire public. This is a philosophy, which would permeate the entire effort in the field of environment.

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27 Planning Commission, Sixth Five Year Plan, 1974-79, Part II (New Delhi, 1974), p.138
28 India Planning Commission, Sixth Five Year Plan, 1980-85, Section on ecology and environment (New Delhi, 1980).
By the late 1980s, the Indian leaders came to realize that poverty and underdevelopment opposed to developmental process led to a number of environmental problems and such problems could no longer be sidestepped. Therefore the Seventh Plan recognized the nation's planning for economic growth and social well being in each sector should always take note of the needs to protect the environmental resources and secure improvement in environmental quality.\(^{30}\)

Due to the political instability in the early 1990s, the Eight Five Year plan (1992-97) which was supposed to be started in the year 1990 came into operation only in 1992. It gave an important place to environment by moving it to the fourth category of subjects examined in the text. The Plan stated systematic efforts which had been existing since the Sixth plan period to integrate environmental considerations and imperatives in the planning process in all the key socio-economic sectors. As a result of sustained endeavor, planning in all major sectors like industry, science and technology, agriculture, energy and education includes environmental consideration.\(^{31}\)

The Planning Commission set up an expert committee to formulate long-term sectoral including environment and forest policies. The Planning Commission suggested eight major tasks:

1. To protect the natural environment.
2. To regenerate and restore degraded ecosystem and increase their productivity, and to generate employment through these activities.
3. To decentralize control over nature and natural resources.
4. To develop and disseminate an understanding of nature and natural processes.

\(^{30}\) ibid., p.387

\(^{31}\) Planning Commission, Eight Five Year Plan, 1992-97, vol.II (New Delhi, 1992) p. 100
5. To formulate a national policy for the environment and design an appropriate institutional and legal framework in support of the policy.

6. To ensure coordinated and integrated government action aimed at conserving nature and making sustainable use of natural resources.

7. To make individuals and institutions more accountable for any action impinging on the environment and the ecosystem.

8. To monitor the state of the environment.

Realizing that environmental protection was an integral part of economic and social development, the Planning Commission decided to increase the budgetary allocations. The planned outlay under the Sixth, Seventh and Eight plans are shown in the table below.

Table: Budget allocation for the environment and forest sector, 1980-97 (Million rupees)

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<tr>
<th>Sixth Plan</th>
<th>Seventh Plan</th>
<th>Eight Plan</th>
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<tr>
<td>405.0</td>
<td>4279.0</td>
<td>6750.0</td>
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Source: Seventh Five Year Plan and Eight Five Year Plan (New Delhi: Planning Commission, 1985, 1992), pp. 100 and 349 respectively.


One of the objectives of the Ninth Five-Year Plan (as formulated by the United Front Government, March 1998) was to ensure environmental sustainability of the development process through social mobilization and participation of people at all the levels. The Ninth Plan is based on the belief that the principle task of planning in a federal structure is to evolve a shared vision and development strategy. The Ninth Plan recognizes the symbiotic relationship
between the tribals and the forests and gives a special focus to the Scheduled Castes, the tribals and other weaker sections living in and around the forests.

The Ninth Plan envisages a multi-pronged strategy for sustainable development of the country. Amongst the important elements of this strategy are:

1. Empowering the people through information generation, dissemination and access;
2. Involving the industry in both the private and public sectors.
3. Integrating environment with decision making through valuation of environmental impacts; evolving market-based economic instruments reinforcing complementing environmental regulation; appropriate pricing of natural resources based on their long-term marginal cost of supply; appropriate fiscal reforms and natural resource accounting.
4. Evolving the rights for common property resources.
5. Inter-sectoral coordination and cooperation.
6. Ensuring scientific and technological inputs.  

**Review of the Five-Year Plans**

The First Five-Year Plan promoted the protection and improvement of ecological and environmental assets as a necessary part of short and long-term developmental goals. Administrative mechanisms were altered to ensure integrity, efficiency and economy, as laid down in the prevention of Corruption Act (1974), and changes were made in the methods of work organization and training in the field of economic and industrial management in order to secure the Plan's aims. But it was not until the Fifth (1970-75) and Sixth (1975-80) Plans that the Parliament readily admitted the importance of planning for environmental protection in India. The Plan's goal of assuring safe human environment providing

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33 Yearbook of Energy – Environment Statistic (YES)- 1998 Bharat Information Technology Services (BITS), New Delhi, p.375
sanitation and clean drinking water, the creation of the Ganga Action Plan, the formations of the Central Pollution Control Boards, air and water legislation and the overarching environmental regulations of the Environmental Protection Act are examples in this regards. The Seventh Five-Year Plan (1985-90) also emphasized the prevention of air and water pollution, the need for planned urban development to replace unplanned and illegal urban growth and the means by which to clean up riverbeds, sewage and industrial waste disposal in Indian cities. In fact it occurred in the new climate of restrained show that the promise of long-term thinking and the desire to address the fundamental tensions between the environment and developments. However, the administrative changes have not been sufficient to bridge the gap between the plan intentions and actual implementation. Without doubt, there have been notable gains in institutional, statutory, policy and planning capabilities since the environment became a policy issue in 1980s. Changes needed in order to gauge India's capabilities for sustainable development are in the sphere of Five-Year Plans, and in operationalisation of policies and legislation.

Environmental concerns, as outlined in the Fifth, Sixth, Seventh and Eight Five Year Plans, have resulted in the creation of several environmental institutions and laws, which reflects the broadened scope and importance accorded to the environment in overall development activities. Institutional expansion has not been accompanied by linkages and cooperation among the various body, which remains fragmented. For example, the Industrial Policy licensing system, the Union Finance Minister in 1992 said that an entrepreneur had to seek nearly 50 approvals before implementing a project. This led to delays in project implementations as well as cost and time overruns. While a certain number of project approvals may be warranted, industry and commerce cannot expect to function efficiently within such a bureaucratic maze. Moreover, Plan and

Programme aim for sustainable development, which ultimately undermined by the irrational duplication of controls and procedures. A reappraisal of economic, social and environmental trends in the country might lead to the better planning, construction and management of projects.

The Eight Five-Year Plan (1992–97) implies an awareness of the need for economic and environmental considerations to be mutually reinforcing rather mutually constraining. However it fails to outline explicit means of integrating environmental considerations within sectoral programmes and projects. This omission is most notable in the passes relating to industry, agriculture, water resources energy, transport and mining, and is also evident in the "thrust" paper for the Eight Plan, finalized and approved by the NDC (National Development Council). The Plan’s objectives reflect both domestic economic policy and the imposed structural adjustments initiated by the World Bank in 1992. For example, reliance on domestic financing for projects reflect the fact part that few countries are willing to lend India money because of its fiscal deficit, high rate of inflation and low foreign exchange reserve (a mere $1 billion in 1991 and $6 billion in 1992)\(^\text{35}\)

However, the stabilization measures are aimed at correcting macroeconomic imbalances through the reform of administrative and sectoral operations, which favor industrial and trade policy. In an effort to encourage modernization and competitive efficiency in the Indian economy, industrial licensing has been abolished for all 18 of the most polluting industries. According to the minister of finance:

The elimination of licensing will... help to reduce capital costs and thereby free resources for deployment in environment friendly technologies, thereby

\(^{35}\) Leslie Coates, "Sustainable Development in India with Special reference to Waste Management", (M.A. Thesis) Guelph, Canada; Dept. of Political Studies, University of Guelphm1995,p.3.
helping to contain overall capital costs despite increased spending on environment friendly technologies.36

The inadequacy of environmental planning that led to a prohibitive licensing system in essence favoured industry and discouraged industrial concerns from following strict environmental considerations. Means of ecological sustainability are recognized in the Eight Plan as not independent of traditional development objectives, thus subject to trade-offs or, to made mutually reinforcing. The latter will depend on the existence of adequate environmental safeguards and standards in the form of environmental legislation, environmental impact assessments, economic and regulatory instruments, and skilled management to safeguard the environment from potential abuse.

The growth of sectors such as industry and minerals, transports and agriculture are exacerbating pollution and environmental degradation. The Ministry of Environment and Forests (MEF) Policy statement for Abatement of Pollution states in Section 2.3 that environmental problems are becoming larger in scale. In spite of policy protection measures, the chemical industry generates an increasing quantity of substances every year in industrial high-density areas, we are confronted with damage to the social and economic functions of the environment.37

A wide range of disciplines is required to understand and solve many of the environmental problems, which have now become apparent. Indeed, the prospects for successful action to halt the degradation of our environment cannot be ranked very high until there is a greater awareness that all members of society have contributed to the creation of the problems and that all will have to be parties

36 ibid., p.5
to the solution. The responsibility to act in defense of the environment extends across the entire social structure of the nation.

The primary responsibility for this action rests with the government both at the national and state level. The Ministry of Environment and Forests should also be strengthened in finance, administrative and regulatory capability. Without adequate safeguards for the environment built in at all stages of planning, policy-making, allocation of resources and implementation, all administrative steps taken towards vigorous monitoring and ameliorative action will not work efficiently. It is also important to view the expansion of population in the country as a potential threat to a healthy environment as indeed is the danger from consumptive lifestyles being pursued mindlessly by the richest in the country and a growing middle class both in urban as well as rural areas. Environmental education at school level makes a major difference in creating healthy attitudes and mindsets that see the benefit and sanctity of a healthier environment and a rich natural resources base.

The potential of modern information technology makes it possible to reach out with knowledge on these projects to the remotest parts of the country. But most importantly, unless the public is convinced that by protecting the environment and controlling pollution, its health and property can be safeguarded, all legislative, administrative and enforcement measures will remain ineffective. Public awareness and public participation are the two key elements of environmental protection and management. Two groups will have to lead the environmental regulatory agencies in defending the environment: the mass media, which is known for its faultfinding and unsparing comments; and the judiciary, which has become eco-activist.

At the same time, several environmentalists must also understand that a farsighted environmental policy has to be built around economic objectives which
would require the integration of environmental variables in economic decision making. As a first step the Central Statistical Organization has to develop a system of natural resources accounting that is seen in the conjunction with national income accounts, to inform the country of the cost of environmental degradation. TERI (Tata Environmental Research Institute) as an independent institute is working on the next phase of the GREEN India 2047(Directions, Innovations, and Strategies for Harnessing Action) which hopes to provide some tentative directions for constructing a base for sustainable development in the country.