

children who were in the low lying coastal areas while their husbands were at sea fishing. Over 800 kilometres of coast was severely affected, often up to five kilometres inland. At least 654 villages were damaged or destroyed, more than 500,000 people lost their homes, and more than 150,000 children were left without schools. To add to the devastation an earthquake measuring 8.7 on the Richter scale struck the west coast of Sumatra near the island of Nias on 28 March 2005.

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SOCIAL ISSUES

India is the largest contributor to world population growth, adding about 17 million people every year to an already huge population of over one billion. Although more than two-thirds of India's population still lives in the rural areas, it has experienced rapid urbanization over the last two decades. India has attained food sufficiency in spite of its growing population. It has also created a large base of skilled scientific and technical human resources with a diversified industrial base. However, the benefits of this impressive growth have been substantially offset by environmental degradation. Even though India has a rich tradition of environment conservation, large scale environment degradation has resulted from population pressures, industrialization and the indiscriminate use of forest areas for fuel, power generation and irrigation purposes. The spread of input-intensive green technology has given India, of a certain measure of food security, but it has been at the cost of falling water tables, degrading soils, poor management of irrigation systems and the harmful side-effects of increasing pesticide and fertiliser use. Industrial growth and uncontrolled urbanisation pollute water, air and land. Similarly, rapid economic growth led to changing lifestyle such as increasing use of automobiles and plastics are also putting an immense stress on resources and the environment. All these circumstances raise the issue of how to achieve environmentally sustainable economic development. In this context, it is fundamental that policy-makers and the public understand how society and the economy have changed, and how they cause environmental degradation.

FROM UNSUSTAINABLE TO SUSTAINABLE DEVELOPMENT.

Sustainable development has been defined as "Development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (The World Commission on Environment and Development, Brundtland Commission 1987). In other words, when people make decisions about how to use the Earth's resources such as forests, water, minerals, wildlife, etc. they must take into account not only how much of these resources they are using, what processes they used to get these resources, and who has access to these resources. Are enough resources going to be left for our future generations to use and will the environment be left as we know it today? Therefore, development plans have to ensure: sustainable and equitable use of

resources for meeting the needs of the present and future generations without causing damage to environment.

.The primary objective of sustainable development is to reduce the absolute poverty of the world's poor through providing lasting and secure livelihoods that minimize resource depletion, environmental degradation, cultural disruption and social instability.

It also considers the equity between countries and continents races and closes, gender and ages. It includes social and economic development. It is a process which leads to a better quality of life while reducing the impact on the environment.

To ensure sustainable development, any activity that is expected to bring about economic growth must also consider its environmental impacts for long term growth and development. Long term economic development is inter linked with environmental practices.

Practicing sustainable development poses a challenge because people must learn to live on the world's ecological interest and not on ecological capital. To accomplish sustainable development, a number of areas have to be organised. Those are

1. Improving energy efficiency
2. Saving forests
3. Safeguarding biodiversity
4. Adopting water resources management
5. Managing coastal zones and ocean fisheries
6. Arresting pollution
7. Planning cities better
8. Accomplishing a second green revolution
9. Stabilizing world population
10. Stopping environmentally destructive subsidies

WOMEN AND CHILD WELFARE

There are several environmental factors that are closely linked to the welfare of women and children. Each year, close to eleven million children worldwide are estimated to have died from the effects of disease and inadequate nutrition. Most of these deaths are in the developing world. In some countries, more than one in five children die before they are 5 years old. Seven out of ten childhood deaths in developing countries can be attributed to five main causes, or a combination of them. These are: pneumonia, diarrhea, measles, malaria and malnutrition. Around the world, three out of every four children suffer from at least one of these conditions.

Most respiratory diseases are caused by or are worsened by polluted air. living in crowded, ill-ventilated homes with smoky, open fires can trigger respiratory conditions, especially in children.

There are strong connections between the status of the environment and the welfare of women and children in India.

Women and girls are often the last to eat, as their role in traditional society is to cook the family meal and feed their husband and sons first. This leads to malnutrition and anemia due to inadequate nutrition. The girl child is given less attention and educational facilities as compared to boys in India. Thus, they are unable to compete with men in later life. This social-environmental divide is a major concern that needs to be corrected throughout the country.

Poverty-environment-malnutrition: There is a close association between poverty, a degraded environment, and malnutrition. This is further aggravated by a lack of awareness on how children become malnourished.

The Department of Women and Child Development was set up in the year 1985 as a part of the Ministry of Human Resource Development to give the much needed impetus to the holistic development of women and children. As the national machinery for the advancement of women and children, the department formulates plans, policies and programmes; enacts/amends legislation, guides and coordinates the efforts of both governmental and non-governmental organizations working in the field of Women and Child Development. Besides, playing its nodal role, the Department implements certain innovative programmes for women and children. These programmes cover welfare and support services, training for employment and income generation, awareness generation and gender sensitization. These programmes play a supplementary and complementary role to the other general developmental programmes in the sectors of health, education, rural development etc. All these efforts are directed to ensure that women are empowered both economically and socially and thus become equal partners in national development along with men.

Child Development

Government of India proclaimed a National Policy on Children in August 1974 declaring children as, “supremely important assets”. The policy provided the required framework for assigning priority to different needs of the child. The programme of the Integrated Child Development Services (ICDS) was launched in 1975 seeking to provide an integrated package of services in a convergent manner for the holistic development of the child.

For the holistic development of the child, the Department has been implementing the worlds largest almost unique and outreach programme of Integrated Child Development services (ICDS) providing a package of services comprising of the following:

- Supplementary nutrition,
- Immunization,
- Health check-up and referral services,
- Pre-school non-formal education.

HIV/AIDS

The Human Immuno-deficiency Virus (HIV) causes Acquired Immunodeficiency Syndrome (AIDS) through contact with the tissue fluids of infected individuals, especially through sexual contact. It is not a disease but a weakness in the body that results in the body being unable to fight off illnesses. The immune system of a person with AIDS is weakened to such a point that medical intervention is necessary to prevent or treat the deterioration in the body and the entire system. AIDS is the most serious stage of HIV infection. It results from the destruction of the infected person's immune system. As it reduces an individual's resistance to disease, it causes infected individuals to suffer from a large number of environment-related diseases and reduces the ability of infected individuals to go about their normal lives. It saps their strength, leads to skin lesions (Kaposi's sarcoma) and they become increasingly vulnerable to any air- or water-borne pollutant, until they eventually die. Our immune system is our body's defense system. Cells of our immune system fight off infection and other diseases. If the immune system does not work well, we are at risk for serious and life-threatening infections and cancers. HIV attacks and destroys the disease-fighting cells of the immune system, leaving the body with a weakened defense against infection and cancer.

HIV/ AIDS has a serious impact on the socioeconomic fabric of society. By 2002, India had an estimated 3.97 million infected individuals. HIV in India is rapidly moving from being a primarily urban disease to rural communities. Research in Nepal has shown a linkage between rural poverty, deforestation and a shift of population to urban areas resulting in a rising number of AIDS patients. Prior to 1992, it was mainly seen in males who migrated to urban centers.

HIV Test

The only way to know infected person is to be tested for HIV infection. Many people who are infected with HIV do not have any symptoms at all for many years. The following may be warning signs of infection with HIV:

- Rapid weight loss, dry cough
- Recurring fever or profuse night sweats, profound and unexplained fatigue
- Swollen lymph glands in the armpits, groin, or neck, diarrhea that lasts for more than a week, white spots or unusual blemishes on the tongue, in the mouth, or in the throat
- Pneumonia, red, brown, pink, or purplish blotches on or under the skin or inside the mouth, nose, or eyelids
- Memory loss, depression, and other neurological disorders

However, no one should assume they are infected if they have any of these symptoms. Each of these symptoms can be related to other illnesses. Again, the only way to determine whether a person is infected is to be tested for HIV infection. The symptoms of AIDS are similar to the symptoms of many other illnesses. AIDS is a medical diagnosis made by a doctor based on specific criteria established.

Transmission of HIV

HIV transmission can occur when body fluids of an infected person enters the body of an uninfected person. The most common ways that HIV is transmitted from one person to another:

1. By having sexual intercourse with an HIV-infected person;
2. By sharing needles or injection equipment with an injection drug user who is infected with HIV;
3. From HIV infected women to babies before or during birth, or through breast-feeding after birth.
4. HIV can also be transmitted through transfusions of infected blood or blood clotting factors.
5. Some health care workers have become infected after being stuck with needles containing HIV infected blood or, less frequently, after infected blood contact with the worker's open cut or through splashes into the worker's eyes or inside his or her nose.

PREVENTION:

1. However, the most important measure to prevent AIDS is the proper use of condoms that form a barrier to the spread of the virus.
2. Using disposable needles
3. transfusion of uninfected blood
4. Organizing AIDS education on prevention and management of disease.

ROLE OF INFORMATION TECHNOLOGY IN ENVIRONMENT AND HUMAN HEALTH

The understanding of environmental concerns and issues related to human health has exploded during the last few years due to the sudden growth of information technology. The computer age has turned the world around due to the incredible rapidity with which IT spreads knowledge. IT can do several tasks extremely rapidly, accurately and spread the information through the world's networks of millions of computer systems. Information technology has also increased the pace of discovery. The capacity of establishing and maintaining worldwide databases has linked environmental, researches around the globe. The advancement in computer, communication, satellite and other technological developments have enabled engineers or environmentalists to gather relevant information simultaneously from many sources. The information is utilized for developing an early warning system and to forecast any eventuality much earlier. A large amount of information is easily available through Remote Sensing technology, Geographical Information System (GIS) and Global Positioning System (GPS) that is being used for various environmental studies.

Ministry of Environment, Government of India has established an Environmental Information System (ENVIS) in 1982. This has been established as a decentralized information system network whose purpose is collection, storage, retrieval and dissemination of environmental information to decision makers, policy makers, planners, scientists, engineers, environmentalists, researchers and general public all

over the country. The ENVIS network has its focal point in the Environmental ministry along with thirteen subject oriented centers, known as ENVIS Centers, set up in the various institutions, organizations of the country in the priority areas of environment like pollution control, toxic chemicals, energy and environment, environmentally sound and mangroves, corals and lagoons, media and environment etc.

New communication links are particularly vital to make use of such information sources as Geographic Information Systems (GIS), a computerbased system for gathering, manipulating, and analyzing environmental data. GIS databases are commonly established with information obtained from remote surveys via satellite and a variety of atmospheric and ground level surveys. GIS software packages and databases, which have almost unlimited applications, have a crucial relevance for national and local environmental management and learning. GIS allows for the simulation of hypothetical models of environmental management and can demonstrate how subUe changes in one element of a landscape may have a powerful effect elsewhere. GIS is a tool to map Land use patterns and document change by studying digitized top sheets and/or satellite imagery. Once this is done, an expert can ask a variety of questions which the software can answer by producing maps which helps in land use planning.

Online healthcare information about Medicare and various related web sites guide consumers to a wide variety of health information available including the full text of clinical practice guidelines, and consumer brochures developed. A number of centers for disease control & prevention are functioning and the public health service maintains their websites.

The Internet with its thousands of websites has made it very simple to get the appropriate environmental information for any study or environmental management planning. This not only assists scientists and students but is a powerful tool to help increase public awareness about environmental issues.

Specialized software can analyze data for epidemiological studies, population dynamics and a variety of key environmental concerns. The relationship between the environment and health has been established due to the growing utilization of computer technology. This looks at infection rates, morbidity or mortality and the etiology (causative factors) of a disease. As our knowledge expands, computers wilt become increasingly efficient.

ACTS

Excessive rise in population, rampant industrialization and rapid growth in industrial sectors has led to a great deterioration of Indian environment. However, Environmental management is now accepted as a major guiding factor for National Development in India. Over the last few decades there has been a progressive & strengthening of official involvement in environmental management with increased scientific technical, administrative and legislative back up at the central and state levels.

Evolution of Environmental Policy: A policy is a deliberate plan of action to guide decisions and achieve rational outcome(s). Some of the milestones of Indian environmental policy are. Year 1972 was the beginning of India's efforts in developing any environmental policy when the then prime minister of India Mrs. Indira Gandhi attended the first UN conference on Human Environment and delivered her most popular speech "*poverty the polluter.*" The environmental movement in India really got started after her return when she setup a committee under the Chairmanship of Shri. Pitamber Pant to prepare a basic report on India's environmental policy which led to formation of "National Committee on Environmental Planning and coordination (NCEPC)" which was formed in Department of Science & Technology. **NCEPC** was given various tasks to perform ranging from review of policies, reviews of ecological research etc. During the VIth five year plan (1980-85) special emphasis was given on sound environmental and ecological principles in land use, agriculture, forestry, wildlife, water, air marine environment, minerals, fisheries, renewable resources, energy and human settlements.

In 1980 Govt. of India set-up a committee under the chairmanship of Shri. N.D. Tiwari. popularly known as Tiwari committee recommending legislative measures and administrative machinery to ensure environmental protection. It recommended the creation of a Department of Environment at the center to give explicit recognition to the pivotal role that environment conservation must play for sustainable National Development. In 1980 a separate Department of Environment was established. It became Ministry of Environment, Forests and wildlife in 1986. India has a unitary constitutional system. It has 25 states and union territories. Each state has a separate Department of Environment. The function of the state Department of Environment is basically to regulate industries subject to the provision of union list. CPCB and SPCB established in every state/ country are responsible for implementing these legislations as well as issuing the rules, regulations and notification thereof which prescribe the standards for emissions and effluents of air and water pollutants and noise levels

The thrust areas of activities on pollution monitoring and control are addressed to the following:

- Assessment and regulatory measures for prevention and control of pollution from point sources.
- Assessment and regulatory measures for prevention and control of pollution in ambient air and water (inland and land-based coastal pollution); and
- Promotional measures through incentives, guidelines, development of cost-effective technology demonstration projects.

ENVIRONMENTAL LAWS

Following is a list of major Environmental Acts and Rules applicable in India.

- The Water (Prevention & Control of Pollution) Act 1974 (as amended upto 1998).
- The Water (Prevention & control of Pollution) cess Act, 1977 (as amended by Amendment Act 1991).

- The Air (Prevention & Control of Pollution) Act 1981 as amended by Amendment Act 1986
- Environment (Protection) Act 1986.
- Hazardous Waste (Management & Handling) Rules 1989.
- The Public Liability Insurance Act 1991.
- Environment Protection Amendment Rule 1983.
- Manufacture, Storage and Import of Hazardous Chemicals (Amendment) Rules 1984.
- The Factories Act 1984.
- The Forest Conservation Act 1980.
- The Notification on Environment Impact Assessment 1994.

Besides this there are a large number of RULES and AMENDMENTS and a plethora of STATE LAWS. Only Major acts are briefly discussed here.

THE ENVIRONMENT (PROTECTION) ACT (EPA)

The Environment (Protection) Act, 1986 not only has important constitutional implications but also an international background. The spirit of the proclamation adopted by the United Nations Conference on Human Environment, held in Stockholm in June 1972, was implemented by the Government of India by creating this Act.

Although there were several existing laws that dealt directly or indirectly with environmental issues it was necessary to have a general legislation for environmental protection because the existing laws focused on very specific types of pollution, or specific categories of hazardous substances, or were indirectly related to the environment through laws that control land use, protect our national parks and sanctuaries and our wildlife. However, there was no overarching legislation and certain areas of environmental hazards were not covered. There were also gaps in areas that were potential environmental hazards and there were essentially related to the multiplicity of regulatory agencies. Thus, there was a need for an authority to study, plan and implement the long-term requirements of environmental safety, and direct and coordinate a system of appropriate response to emergencies threatening the environment,

This Act was thus passed to protect the environment, as there was a growing concern over the deteriorating state of the environment. As impacts grew considerably environmental protection became a national priority in the 1970s. While the wider general legislation to protect our environment is now in place, it has become increasingly evident that our environmental situation continues to deteriorate. We need to implement this Act much more aggressively if our environment is to be protected. The presence of excessive concentrations of harmful chemicals in the atmosphere and aquatic ecosystems leads to the disruption of food chains and a loss of species.

Public concern and support is crucial for implementing the EPA. This must be supported by an enlightened media, good administrators, highly aware policy makers, informed judiciary and trained technocrats who together can influence and prevent further degradation of our environment. Each of us has a responsibility to make this happen.

THE AIR (PREVENTION & CONTROL OF POLLUTION) ACT:

It is also a comprehensive legislation with more than fifty sections. It makes provisions, *inter alia*, for Central and State Boards, power to declare pollution control areas, restrictions on certain industrial units, authority of the Boards to limit emission of air pollutants, power of entry, inspection, taking samples and analysis, penalties, offences by companies and Government and cognizance of offences etc. The Act specifically empowers State Government to designate air pollution areas and to prescribe the type of fuel to be used in these designated areas. According to this Act, no person can operate certain types of industries including the asbestos, cement, fertilizer and petroleum industries without consent of the State Board. The Board can predicate its consent upon the fulfillment of certain conditions. The Air Act apparently adopts an industry wide “best available technology” requirement. As in the Water Act, courts may hear complaints under the Act only at the instigation of, or with the sanction of, the State Board.

The Government passed this Act in 1981 to clean up our air by controlling pollution. It states that sources of air pollution such as industry, vehicles, power plants, etc., are not permitted to release particulate matter, lead, carbon monoxide, sulfur dioxide, nitrogen oxide, volatile organic compounds (VOCs) or other toxic substances beyond a prescribed level. To ensure this, Pollution Control Boards (PCBs) have been set up by Government to measure pollution levels in the atmosphere and at certain sources by testing the air. This is measured in parts per million or in milligrams or micrograms per cubic meter. The particulate matter and gases that are released by industry and by cars, buses and two wheelers is measured by using air-sampling equipment. However, the most important aspect is for people themselves to appreciate the dangers of air pollution and reduce their own potential as polluters by seeing that their own vehicles or the industry they work in reduces levels of emissions. This Act is created to take appropriate steps for the preservation of the natural resources of the Earth which among other things includes the preservation of high quality air and ensures controlling the level of air pollution. The main objectives of the Act are as follows:

- (a) To provide for the prevention, control and abatement of air pollution.
- (b) To provide for the establishment of central and State Boards with a view to implement the Act.
- (C) To confer on the Boards the powers to implement the provisions of the Act and assign to the Boards functions relating to pollution

Air pollution is more acute in heavily industrialized and urbanized areas, which are also densely populated. The presence of pollution beyond certain Limits due to various pollutants discharged through industrial emission is monitored by the PCBs set up in every state.

Powers and Functions of the Boards

Central Pollution Board: The main function of the Central Board is to implement legislation created to improve the quality of air and to prevent and control air pollution in

the country. The Board advises the Central Government on matters concerning the improvement of air quality and also coordinates activities, provides technical assistance and guidance to State Boards and lays down standards for the quality of air. It collects and disseminates information in respect of matters relating to air pollution and performs functions as prescribed in the Act.

State Pollution Control Boards: The State Boards have the power to advise the State Government on any matter concerning the prevention and control of air pollution. They have the right to inspect at all reasonable times any control equipment, industrial plant, or manufacturing process and give orders to take the necessary steps to control pollution. They are expected to inspect air pollution control areas at intervals or whenever necessary. They are empowered to provide standards for emissions to be laid down for different industrial plants with regard to quantity and composition of emission of air pollutants into the atmosphere. A State Board may establish or recognize a laboratory to perform this function. The State Governments have been given powers to declare air pollution control areas after consulting with the State Board and also give instructions to ensure standards of emission from automobiles and restriction on use of certain industrial plants.

Penalties: The persons managing industry are to be penalized if they produce emissions of air pollutants in excess of the standards laid down by the State Board. The Board also makes applications to the court for restraining persons causing air pollution. Whoever contravenes any of the provision of the Act or any order or direction issued is punishable with imprisonment for a term which may extend to three months or with a fine of Rs 10,000 or with both, and in case of continuing offence with an additional fine which may extend to Rs 5,000 for every day during which such contravention continues after conviction for the first contravention.

THE WATER (PREVENTION & CONTROL OF POLLUTION) ACT:

The government formulated this act in 1974 to prevent the pollution of water by industrial, agricultural and household wastewater that can contaminate our water sources. Wastewaters with high levels of pollutants that enter wetlands, rivers, lakes, wells as well as the sea are serious health hazards. Controlling the point sources by monitoring the levels of different pollutants is one way to prevent pollution, by punishing the polluter. Individuals can also do several things to reduce water pollution such as using biodegradable chemicals for household use, reducing the use of pesticides in gardens, and identifying polluting sources at work places and in industrial units where oil and other petroleum products and heavy metals are used. Excessive organic matter, sediments and infecting organism from hospital wastes can also pollute our water. Citizens need to develop a watchdog force to inform authorities to appropriate actions against different types of water pollution. However, preventing pollution is better than trying to cure the problems it has created, or punishing offenders.

The main objectives of the Water Act are to provide for prevention, control and abatement of water pollution and the maintenance or restoration of the wholesomeness of

water. It is designed to assess pollution levels and punish polluters. The Central Government and State Government have set up PCBs to monitor water pollution.

The Water Act 1974 with certain amendments in 1978 is an extensive legislation with more than sixty sections for the prevention and control of water pollution. Among other things, the Act provides for constitution of central and State Boards for preventing water pollution, power to take water samples and their analysis, discharge of sewage or trade effluents, appeals, revision, minimum and maximum penalties, publication of names of offenders, offences by companies and Government departments, cognizance of offences, water laboratories, analysis etc. Prevention and control of water pollution is achieved through a permit or 'consent administration' procedure. Discharge of effluents is permitted by obtaining the consent of the State Water Board, subject to any condition they specify. Any person who fails to comply with a directive of the State cannot, however, entertain in suit under this Act unless the suit is brought by, or with the sanction of the State Board.

WATER POLLUTION CESS ACT 1977 According to this Act, anyone consuming water has to pay certain amount of cess depending on 1. Whether the industry is using water for industrial cooling, spraying in mine pits or boilers feed, 2. For domestic purposes, 3. in processing, whereby water gets polluted and pollutants are easily biodegradable, and 4. in processing whereby water gets polluted and the pollutants are not easily bio-degradable and are toxic. Those industries that had installed a suitable treatment plant for the treatment of industrial effluents can get a rebate of 70 per cent on the cess payable.

FOREST CONSERVATION ACT

The Indian Forest Act of 1927 consolidated all the previous laws regarding forests that were passed before the 1920s. The Act gave the Government and Forest Department the power to create Reserved Forests, and the right to use Reserved Forests for Government use alone. It also created Protected Forests, in which the use of resources by local people was controlled. Some forests were to be controlled by the village community, and these were called village Forests. The Act remained in force till the 1980s when it was realized that protecting forests for timber production alone was not acceptable. The other values of protecting the services that forests provide and its valuable assets such as biodiversity began to overshadow the importance of their revenue earnings from timber. This led to the Forest Conservation Act of 1980 and its amendment 1988. India's first Forest Policy was enunciated in 1952. Between 1952 and 1988, the extent of deforestation was so great that it became essential to formulate a new policy on forests and their utilization. The earlier forest policies had focused only on revenue generation. In the 1980's it became clear that forests must be protected for their other functions such as the maintenance of soil and water regimes centered around ecological concerns. It also provided for the use of goods and services of the forest for its local inhabitants,

The new policy framework made conversion of forests into other uses much less possible. Conservation of the forests as a natural heritage finds a place in the new policy, which includes the preservation of its biological diversity and genetic resources. It also values meeting the needs of local people for food, fuel wood, fodder and Non Timber Forest Produce or NTFPs. It gives priority to maintaining environmental stability and ecological balances. It expressly states that the network of Protected Areas should be strengthened and extended.

The Forest Conservation Act of 1980 was enacted to control deforestation, It ensured that forestlands could not be de-reserved without prior approval of the Central Government, This was created as some states had begun to dereserve the Reserved Forests for non-forest use. These states had regularized encroachments and resettled 'project Affected people' from development projects such as dams in these de-reserved areas. The need for a new legislation became urgent. The Act made it possible to retain a greater control over the frightening level of deforestation in the country and specified penalties for offenders.

Penalties for offences in Reserved Forests:

- No person is allowed to make clearing or set fire to a reserved forest. Cattle are not permitted to trespass into the reserved forest, cutting, collecting of timber, bark or leaves, quarrying or collecting any forest products is punishable with imprisonment for a term of six months or with a fine which may extend to Rs 500 or both.

Penalties for offences in protected Forests:

- A person who commits any of the following offences like cutting of trees, stripping the bark or leaves of trees, set fire to such forests or permits cattle to damage any tree, shall be punishable with imprisonment for a term which may extend to six months or with a fine which may extend to Rs 500 or both.
- Any forest officer even without an order from the magistrate or a warrant can arrest any person against whom a reasonable suspicion exists.

WILD LIFE (PROTECTION) ACT, 1972, amended in 1983, 1986 and 1991:

The act is aimed to protect and preserve wild life. Wild life refers to all animals and plants that are not domesticated. India has rich wild life heritage; it has 350 species of mammals, 1200 species of birds and about 20,000 known species of insects. Some of them are listed as 'endangered species' in the Wild life (Protection) Act.

The Act envisages national parks and wild life sanctuaries as protected areas to conserve wild life. Wild life populations are regularly monitored and management strategies formulated to protect them.

The Act covers the rights and non-rights of forest dwellers too,- it provides restricted grazing in sanctuaries but prohibits in national parks. It also prohibits the collection of non-timber forest produce which might not harm the system. The rights of forest dwellers recognized by the Forest policy of 1988 are taken away by the Amended Wild life Act of 1991.

The act, a landmark in the history of wildlife legislation in our country by which wildlife was transferred from State list to concurrent list in 1976, thus giving power to the Central Government to enact the legislation. In India, nearly 134 animal species have been regarded as threatened. A National Wildlife action plan has been prepared whose objective is to establish a network of scientifically managed areas such as national parks, sanctuaries and biosphere reserves, to cover representative and viable samples of all significant bio-geographic subdivisions within the country.

The major activities and provisions in the act can be summed up as follows:

1. It defines the wildlife related terminology.
2. It provides for the appointment of wildlife advisory board, wildlife warden, their powers, duties etc
3. Under the Act, comprehensive listing of endangered wildlife species was done for the first time and prohibition of hunting of the endangered species was mentioned
4. Protection to some endangered plants like Beddome cycad, Blue Vanda, Ladies Slipper Orchid, Pitcher plant etc. is also provided under the Act.
5. The act provides for setting up of National Parks, Wild life Sanctuaries etc.
6. The Act provides for the constitution of Central Zoo Authority.
7. There is provision for trade and commerce in some wildlife species with license for sale, possession, transfer etc.
8. The Act imposes a ban on the trade or commerce in scheduled animals.
9. It provides for legal powers to officers and punishment of offenders.
10. It provides for captive breeding programme for endangered species.

Several conservation projects for individual endangered species like lion (1972), tiger (1973), crocodile (1974), and brown antlered deer (1981) were started under this Act. The Act is adopted by all states in India except J&K, which has its own Act!

ISSUES INVOLVED IN THE ENFORCEMENT OF ENVIRONMENTAL LEGISLATION

Legislation evolves in response to problems, so there is often delay between need and the establishment of satisfactory law. Without effective legislation—resource use, pollution control, conservation, and most fields of human activity are likely to fall into chaos and conflict. It must, therefore, be made clear that there is little point in passing laws or making international agreements if there cannot be adequate enforcement. Various forms of legislation/regulation principles, standards, guidelines, *etc.*, which are not firm laws, but help lawmakers. Environmental legislation is evolved to protect our environment as whole our health and the Earth's resources. For successful implementation, there has to be an effective agency to collect relevant data, process it and pass it on to a law enforcement agency. If the law rule is broken by an individual or institution, this has to be punished through the legal process.

Three issues/things that are especially important for environmental legislation are:

1. **The precautionary principle** This principle has evolved to deal with risks and uncertainties faced by environmental management. The principle implies that an ounce of prevention is worth a pound of cure— it does not prevent problems but may reduce their

occurrence and helps ensure contingency plans are made. The application of this principle requires either cautious progress until a development can be judged 'innocent', or avoiding development until research indicates exactly what the risks are, and then proceeding to minimize them. Once a threat is identified, action should be taken to prevent or control damage even if there is uncertainty about whether the threat is real. Some environmental problems become impossible or costly to solve if there is delay, therefore waiting for research and legal proof is not costless.

2. The polluter-pays principle In addition to the obvious—the polluter pays for the damage caused by a development—this principle also implies that a polluter pays for monitoring and policing. A problem with this approach is that fines may bankrupt small businesses, yet be low enough for a large company to write them off as an occasional overhead, which does little for pollution control. There is, thus, debate as to whether the principle should be retrospective. If the polluter pays, how long back does liability stretch? Developing nations are seeking to have developed countries pay more for carbon dioxide and other emissions controls, arguing that they polluted the global environment during the Industrial Revolution, yet enjoy the fruits of invention from the era. This principle, in fact, is more a way of allocating costs to the polluter than a legal principle. This principle was adopted by OECD member countries in 1972, at least in theory.

3. Freedom of information: Environmental planning and management is hindered if the public, NGOs or even official bodies are unable to get information. Many countries have now begun to release more information—the USA has a Freedom of Information Act, and the European Union is moving in this direction. But still many governors and multinational corporations fear that industrial secrets will leak to competitors if there is too much disclosure, and there are situations where authorities declare strategic needs and suspend disclosure.

PUBLIC AWARENESS

Environmental sensitivity in our country can only grow through a major public awareness campaign. This has several tools—the electronic media, the press, school and college education, adult education, which are all essentially complementary to each other. Green movements can grow out of small local initiatives to become major players in advocating environmental protection to the Government. Policy makers will only work towards environmental preservation if there is a sufficiently large bank of voters that insist on protecting the environment. Orienting the media to project pro-environmental issues is an important aspect. Several advertising campaigns frequently have messages that are negative to environmental preservation.

Using an environmental calendar of activities:

There are several days of special environmental significance, which can be celebrated in the community and can be used for creating environmental awareness.

Feb 2nd: World Wetland Day is celebrated to create awareness about wetland and their value to mankind.

March 21st: World Forest Day can be used to initiate a public awareness campaign about the extremely rapid disappearance of forests.

March 22nd: World Water Day

April 7th : World Health Day (WHO) come into existence on this day in 1948

April 18th : World Heritage Day; to arrange a visit to a local museum

April 22nd: Earth Day; to draw attention to increasing environmental problems caused by humans

on earth

June 5th : World Environment Day

June 11th: World Population Day

Aug 6th : Hiroshima Day

Sept 16th: World Ozone Day

Sept 28th: Green Consumer Day

October 16th: World Food Day