UNIT -I

1. **Environmental law**
2. **Ecology**
3. **Ecosystem**
4. **Pollution**
5. **Environment: a global problem**

Environmental law or "environmental and natural resources law" is a collective term describing the network of treaties, statutes, regulations and customary laws addressing the effects of human activity on the natural environment.

Human development has generally been parasitic on the environment because there is fundamental interdependence between environment, the physical, biological and social surroundings and their interactions, that sustain all life forms. When the integrity of the planet's ecosystems suffered imbalance, human insecurity increases.

There is a close relationship between environment and life. Destruction of environment leads to destruction of all living creatures including human beings. Over production, over exploitation of resources, nuclear radiations, industrial wastes, industrial accidents, brutal exploitation of forests, indiscriminate quarrying, pollution of rivers and water resources, rapid increase of air and noise pollution are the contributing factors for environmental degradation.
Global warming, ozone depletion and pollution are some of the negative effects of existing development strategy, which badly affect the human life. The notion of development should be to protect soils, animals, forests, human health and the atmosphere but not mere insistence on progress of development. Therefore, there is a need to identify a development that promotes both ecological development and international viability.

Ecology is the scientific analysis and study of interactions among organisms and their environment, such as the interactions organisms have with each other and with their biotic environment.
Topics of interest to ecologists include the diversity, distribution, amount (biomass), number (population) of organisms, as well as competition between them within and among ecosystems.
Ecosystems are composed of dynamically interacting parts including organisms, the communities they make up, and the non-living components of their environment. Ecosystem processes, such as primary production, pedogenesis, nutrient cycling, and various niche construction activities, regulate the flux of energy and matter through an environment. These processes are sustained by organisms with specific life history traits, and the variety of organisms is called biodiversity. Biodiversity, which refers to the varieties of species, genes, and ecosystems, enhances certain ecosystem services.

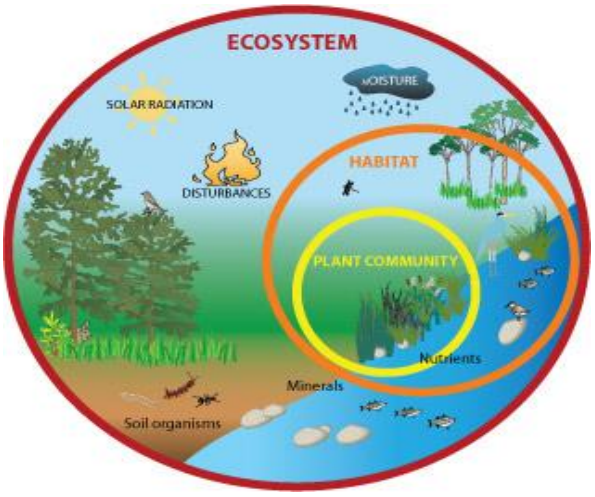
Ecology is not synonymous with environment, environmentalism, natural history, or environmental science. It is closely related to evolutionary biology, genetics, and ethology.

An understanding of how biodiversity affects ecological function is an important focus area in ecological studies. Ecologists seek to explain:

- Life processes, interactions and adaptations
- The movement of materials and energy through living communities
- The successional development of ecosystems
- The abundance and distribution of organisms and biodiversity in the context of the environment.

Ecology is a human science as well. There are many practical applications of ecology in conservation biology, wetland management, natural resource management (agro ecology, agriculture, forestry, agro forestry, fisheries), city planning (urban ecology), community health, economics, basic and applied science, and human social interaction (human ecology). For example, the *Circles of Sustainability* approach treats ecology as more than the environment 'out there'. It is not treated as separate from humans.

Organisms (including humans) and resources compose ecosystems which, in turn, maintain biophysical feedback mechanisms that moderate processes acting on living (biotic) and non-living (abiotic) components of the planet. Ecosystems sustain life-supporting functions and produce natural capital like biomass production (food, fuel, fiber and medicine), the regulation of climate, global biogeochemical cycles, water filtration, soil formation, erosion control, flood protection and many other natural features of scientific, historical, economic, or intrinsic value.



Ecosystem

- Ecosystems are defined by the network of interactions among organisms, and between organisms and their environment; they can be of any size but usually encompass specific, limited spaces.
- Energy, water, nitrogen and soil minerals are other essential abiotic components of an ecosystem.

An ecosystem is a community of living organisms (plants, animals and microbes) in conjunction with the nonliving components of their environment (things like air, water and mineral soil), interacting as a system. These biotic and abiotic components are regarded as linked together through nutrient cycles and energy flows.

The energy that flows through ecosystems is obtained primarily from the sun. It generally enters the system through photosynthesis, a process that also captures carbon from the atmosphere. By feeding on plants and on one another, animals play an important role in the movement of matter and energy through the system. They also influence the quantity of plant and microbial biomass present. By breaking down dead organic matter, decomposers release carbon back to the atmosphere and facilitate nutrient cycling by converting nutrients stored in dead biomass back to a form that can be readily used by plants and other microbes.

Ecosystems are controlled both by external and internal factors. External factors such as climate, the parent material which forms the soil and topography, control the overall structure of an ecosystem and the way things work within it, but are not themselves influenced by the ecosystem.

Other external factors include time and potential biota. Ecosystems are dynamic entities invariably; they are subject to periodic disturbances and are in the process of recovering from some past disturbance. Ecosystems in similar environments that are located in different parts of the world can have very different characteristics simply because they contain different species. The introduction of non-native species can cause substantial shifts in ecosystem function.

Internal factors not only control ecosystem processes but are also controlled by them and are often subject to feedback loops. While the resource inputs are generally controlled by external processes like climate and parent material, the availability of these resources within the ecosystem is controlled

by internal factors like decomposition, root competition or shading. Other internal factors include disturbance, succession and the types of species present. Although humans exist and operate within ecosystems, their cumulative effects are large enough to influence external factors like climate.

Biodiversity affects ecosystem function, as do the processes of disturbance and succession. Ecosystems provide a variety of goods and services upon which people depend; the principles of ecosystem management suggest that rather than managing individual species, natural resources should be managed at the level of the ecosystem itself. Classifying ecosystems into ecologically homogeneous units is an important step towards effective ecosystem management, but there is no single, agreed-upon way to do this.

Pollution

Pollution is the introduction of contaminants into the natural environment that causes adverse change. Pollution can take the form of chemical substances or energy, such as noise, heat or light. Pollutants, the components of pollution, can be either foreign substances/energies or naturally occurring contaminants. Pollution is often classed as point source or nonpoint source pollution.

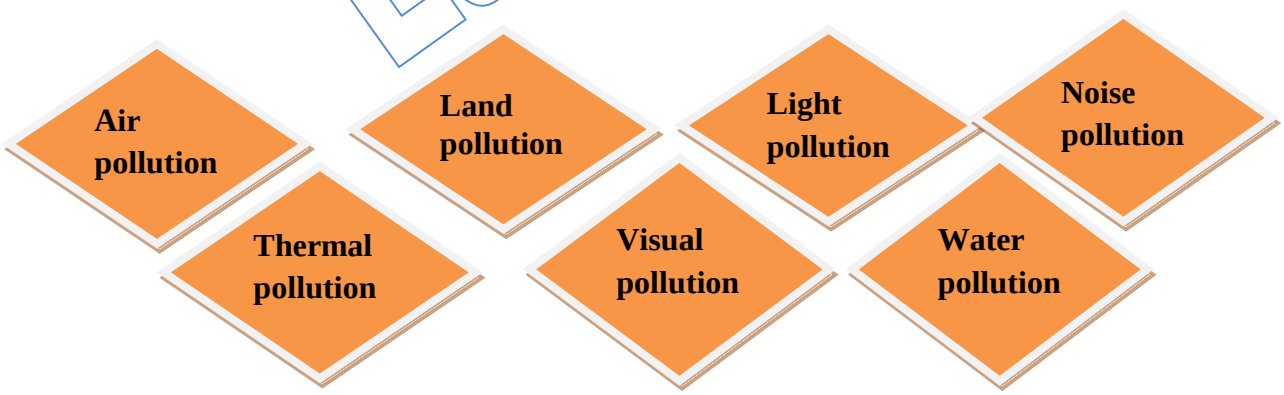
Forms of pollution

The major forms of pollution are listed below along with the particular contaminant relevant to each of them:

- **Air pollution**: - the release of chemicals and particulates into the atmosphere. Common gaseous pollutants include carbon monoxide, sulphur dioxide, chlorofluorocarbons (CFCs) and nitrogen oxides produced by industry and motor vehicles. Photochemical ozone and smog are created as nitrogen oxides and hydrocarbons react to sunlight.
- **Light pollution**: - includes light trespass, over-illumination and astronomical interference.
- **Littering**: - the criminal throwing of inappropriate man-made objects, unremoved, onto public and private properties.
- **Noise pollution**: - which encompasses roadway noise, aircraft noise, industrial noise as well as high-intensity sonar.

- **Soil contamination**- occurs when chemicals are released by spill or underground leakage. Among the most significant contaminants are hydrocarbons, heavy metals, MTBE, herbicides, pesticides and chlorinated hydrocarbons.
- **Radioactive contamination**- resulting from 20th century activities in atomic physics, such as nuclear power generation and nuclear weapons research, manufacture and deployment.
- **Thermal pollution**- is a temperature change in natural water bodies caused by human influence, such as use of water as coolant in a power plant.
- **Visual pollution**- which can refer to the presence of overhead power lines, motorway billboards, scarred landforms (as from strip mining), open storage of trash, municipal solid waste or space debris.
- **Water pollution**- by the discharge of wastewater from commercial and industrial waste (intentionally or through spills) into surface waters; discharges of untreated domestic sewage, and chemical contaminants, such as chlorine, from treated sewage; release of waste and contaminants into surface runoff flowing to surface waters (including urban runoff and agricultural runoff, which may contain chemical fertilizers and pesticides); waste disposal and leaching into groundwater; eutrophication and littering.

There are actually seven different kinds of environmental pollution, listed below are each kind and examples to help you understand just how we can affect the environment and each other.



According to the dictionary, air pollution is the contamination of air by smoke and harmful gases, mainly oxides of carbon, sulphur, and nitrogen. Some examples of air pollution include:

- Exhaust fumes from vehicles
- The burning of fossil fuels, such as coal, oil, or gas
- Harmful off-gassing from things such as paint, plastic production, and so on
- Radiation spills or nuclear accidents
- Air pollution is linked to asthma, allergies and other respiratory illnesses.
- Combustion (of natural gas, petroleum, coal & wood in industries, automobiles, aircrafts etc.)
- Metallurgical processing (mineral dust, fumes containing fluorides, sulphides etc.)
- chemical industries
- processing industries(like cotton textiles, wheat flour mills)
- welding, stone crushing etc

Effects of Air pollution on human health-

- Much evidence links air pollutants to respiratory & other diseases in humans
- Examples of air pollution-related diseases:
- Pulmonary irritation & impaired lung function:
    - chronic bronchitis
    - emphysema
- Cancer
- Systemic toxicity:
    - Lead
    - Mercury
- Increased susceptibility to disease

Effects of Air Pollution on other animals & plants:

- Wild & domestic animals probably affected in the same ways as humans
- Plants damaged by ozone, sulfur dioxide, & acids:
    - ozone - weakens pine needles & makes them more susceptible to insects & diseases
    - sulfur dioxide - suppresses growth
    - acid - damages leaves & needles & also removes nutrients

Solutions of the problem of air pollution

1. **Save energy**: Making electricity in conventional power plants generates pollution, so anything you can do to save energy will help to reduce pollution (and global warming as well). Switch to low-energy lamps, use a laptop computer instead of a desktop, dry your clothes outdoors, and heat insulate your home. Use an electricity monitor to help identify your most inefficient appliances.
2. **Save water when you can**: Producing cool, clean water needs huge amounts of energy so cutting water waste is another good way to save energy and pollution.
3. **Cut the car**: Sometimes we have to use cars, but often we can get a bus or a train or (for shorter distances) walk or cycle. Cars are now the biggest source of air pollution in most urban areas, so traveling some other way through a town or city helps to keep the air clean. When you have to use your car, drive efficiently to save fuel and money, and cut pollution. It's particularly important to avoid car use when smog is bad in your city.
4. **Never burn household waste**: If you burn plastic, you release horrible toxic chemicals into the local environment, some of which can be sucked up your own nose.
5. **Garden organically**: Spray of pesticide in the garden is a dangerous act. We can tackle virtually all garden pests and diseases in more environmentally friendly organic ways. Buying or growing organic food is a good option.
6. **Cut the chemicals**: Spray of an air freshener is a choking with chemical pollution. Try to be natural and healthy.
7. **Use water-based paints and glues**: The nasty solvents in paints, varnishes, and wood preservatives should be avoided.
8. **Reduce, reuse, and recycle**: Buying new stuff is fun, but reusing old things can be just as good.
9. **Don't smoke**: Cigarettes contain addictive chemical called nicotine that makes you want to go on smoking them. They cause all kinds of health problems, but they also cause much localized air pollution.

Land Pollution

Land pollution is the degradation of the Earth's surface caused by a misuse of resources and improper disposal of waste. Some examples of land pollution include:

- Litter found on the side of the road
- Illegal dumping in natural habitats
- Oil spills that happen inland
- The use of pesticides and other farming

chemicals
- Damage and debris caused from unsustainable mining and logging practices
- Radiation spills or nuclear accidents

Land pollution is responsible for damage done to natural habitat of animals, deforestation and damage done to natural resources, and the general detonating up of our communities.

Light pollution is the brightening of the night sky inhibiting the visibility of stars and planets by the use of improper lighting of communities. Some examples of what causes light pollution:
- Street lamps that shine light in all directions, instead of with a hood to point light downward toward the street.
- Extra, unnecessary lights around the home
- Cities that run lights all night long

Light pollution uses more energy may affect human health and our sleep cycles, and most importantly, corrupts our kids' telescopes and their curiosity.

Noise pollution is any loud sounds that are either harmful or annoying to humans and animals. Some examples of noise pollution:
- Airplanes, helicopters, and motor vehicles
- Construction or demolition noise

- Human activities such as sporting events or concerts
- Noise pollution can be disruptive to humans' stress levels, may be harmful to unborn babies, and drives animals away by causing nervousness and decreasing their ability to hear prey or predators.
- Various industries such as textile mills, printing presses, engineering establishments.
- Agriculture machines like tractors, harvesters, tube wells etc.
- defence equipments such as tanks, shooting practices, explosions.
- transport vehicles
- Public address systems like loud speakers.
- dynamite blasting
- cracker used at occasions like marriages & festivals
- Stone crushing, construction work etc.

Control of noise pollution-

- Decibels meters
- Noise pollution control laws
- Green mufflers or green belt vegetation
- Ear plugs & ear muffs
- Permissible time & sound level for use of crackers
- Sound diversion

Thermal Pollution

Thermal pollution is the increase of temperature caused by human activity. A few examples of this include:

- Warmer lake water from nearby manufacturing (using cool water to cool the plant and then pump it back into the lake)
- Included in thermal pollution should also be the increase in temperatures in areas with lots of concrete or vehicles, generally in cities

These kinds of environmental pollution can cause aquatic life to suffer or die due to the increased temperature, can cause discomfort to communities dealing with higher temperatures, and will affect plant-life in and around the area.

Visual Pollution

Visual pollution is what you would call anything unattractive or visualising damaging to the nearby landscape. This tends to be a highly subjective topic. Some examples of visual pollution:

- Skyscrapers that blocks a natural view
- Graffiti or carving on trees, rocks, or other natural landscapes

- Billboards, litter, abandoned homes, and junkyards could also be considered among three kinds of environmental pollution

Mostly, visual kinds of environmental pollution are annoying and ugly, although some may say they are also depressing, and they of course affect the surrounding landscape with the changes they cause.

Water Pollution

Water pollution is the contamination of any body of water (lakes, groundwater, oceans, etc).

Sources of water pollution

- **Natural sources**- clay & slit from soil erosion, leaching of minerals, falling of organic matter from banks.
- **Man-made sources**-
  a. municipal waste water
  b. industrial waste water
  c. domestic sewage
  d. surface run off (contain pesticides & fertilizers)

Some examples of water pollution:

- Raw sewage running into lake or streams
- Industrial waste spills contaminating groundwater
- Radiation spills or nuclear accidents
- Illegal dumping of substances or items within bodies of water
- Biological contamination, such as bacteria growth
- Farm runoff into nearby bodies of water

These kinds of environmental pollution are linked to health issues in humans, animals and plant-life.

Control of water pollution-

- Biodegradation of domestic sewage
- Suspended, solid particles & inorganic material can be removed by use of filter
- Industrial effluents under various treatments to lower pollutants rate
- Any type of waste material does not discharge into water bodies
- Agriculture runoff water should be minimized
- In industry there must be a water treatment plant

Causes of Pollution

There are many causes for pollution.

- Air pollution can be caused by both human and anthropogenic sources.
- The main contributors for air pollution are human-made pollutants due to activities like combustion, construction; mining, agriculture and warfare are significant.
- Emissions from motor vehicles are one of the leading causes of air pollution.
- Pollution sources that are stationary include chemical plants, coal-fuelled power plants, petrochemical plants, oil refineries, nuclear waste disposal, large live stock farms, incinerators, factories producing PVC, metals, plastics and other heavy industry.
- Pollution from agriculture comes from clear felling, burning and spraying of pesticides and herbicides. Humans are the primary cause of global warming since 1950s.
- Soil contaminants include chlorinated hydrocarbons, heavy metals, solid hospital wastes, lead, and fuel. Ordinary landfills are the source of chemical substances entering the soil environment.
- Water pollution can be caused by discharge of toxic pollutants like pesticides, heavy metals and non-degradable chemical compounds into fresh or ocean waters.
- The sources of these can be industries, chemical, heavy metal, hospital wastes. They also can be untreated or partially treated sewage water.

Pollutants

Pollutants are substance or energy which when introduced into the environment causes undesired effects or adverse effects on useful resources. These pollutants may be gases, liquids, solids or high pitched sounds. Gaseous pollutants are produced during the manufacturing process by most industries. Gaseous pollutants are also emitted by vehicles and burning of fuel and other substances. Some of the common gaseous pollutants are carbon monoxide, carbon dioxide, sulphur dioxide, hydrogen sulphide, hydrogen cyanide, ammonia gas.

Pollution Control Methods

The control of the emission of various particulates into the environment so as to bring down the level of the pollution is termed as pollution control. The main steps that can be followed in this regard include recycling and reusing the products that can be used a few times so that the waste produced from them does not deplete the environment. Also the waste water that is to be thrown into the water bodies from the industries should be treated first to bring down its hazardous nature which poses a threat to the aquatic natural species.

Moreover the amount of raw material that is to be used should be used in an adequate quantity so that it results in low generation of the waste amount which is mixed with the environmental agents later. Apart from these, proper noise and smoke precipitators should be used to bring down the amount of lethal smoke and noise produced to help protect the environment. Here is a great blog post which discusses some other very effective and useful methods to help and keep our environment clean and pollution free.

Environment: a global problem

Environmental Pollution has now evolved and grown to be a global problem. The very existence of the man depends upon the Nature, which is based on the ecological balance, with the development of Science and Technology and ever increasing world population. Tremendous changes in human environment took place. These changes upset the eco-laws and shook the balance between human life and the Environment and brought innumerable problems affecting the Environment.

The life of human beings depends upon not only on the environment but also upon ecological factors. Ecology means the study of the relationship between organisms and all aspects of their environment. So, the human beings should learn about environment and environmental factors and also about ecological factors which influence the environment. The environment and ecology are interrelated sciences. The life of human beings depends upon the ecological balance and environmental protection. If the human beings protect the environment and promote the ecological development automatically an environment free from pollution may be developed and with that development of the living conditions of human beings and living organisms will be developed. If any destruction caused to the environment and ecological factors it certainly leads to the destruction of human beings. So, there is a need to protect environment and maintain ecological balance by each and every human being.

Environment protection becomes one of the foremost concerns of the world community. Environmental deterioration through human activity is proceeding at an unprecedented rate. Unless this process is held in check, the damage caused will be grave and irreversible, damaging not only ourselves but future generations. The environmental damage will be caused not only in the nation where it occurs but at the global level in general. All public institutions, including the judiciary, need to make collective effort to fight against this universal peril. Human activities sometimes tend to submerge concepts such as respect for nature, trusteeship of earth resources and community interests in common amenities, present in the traditions of many developing countries. These traditions can be a rich source of inspiration for the environmental law of the future, where relevant attention is drawn to them.

Environmental problems stem from two main categories of human activities. First, the use of resources at unsustainable levels and contamination of the environment through pollution and secondly discharge of the wastes at levels beyond the capacity of the earth and environment to absorb them or render them harmless results in ecological damage and environmental degradation. Environmental damage around the world includes: biodiversity loss, pollution of water and consequent health problems, air pollution resulting increase in respiratory diseases, causing deterioration of buildings and monuments, loss of soil fertility, desertification, increase in skin cancers and eye diseases in certain areas due to ozone depletion, and more widespread diseases. Environmental hazards are created by the excess consumption propensities of rich people, while the weight of environmental degradation is primarily borne by the poor people. Economy, efficiency and effectiveness are already a part of the public audit lexicon, equity being the only novelty imposed by environmental concerns. The usefulness and acceptability of environmental issues are greatly advanced, especially in view of the enormous scope the topic offers for the study.

The environmental degradation has become the subject of global concern and it possesses a challenge to the present and the future generation of mankind. As such the environmental protection should be a priority and high social visibility item for the very existence of life and for the protection of right to life. One must not forget that it is the responsibility of present generation which has the opportunity to tackle environmental problems because the next generation will not be there if the present situation is allowed to continue. The environmental challenges provide a much more formidable and permanent target because a healthy environment is a necessary prerequisite of Right to life. The environmental agenda is no longer one of ethical or social sentiment; it has now become question of human survival.

UNIT II

1. Stockholm conference
2. Rio conference
3. U.N. declaration on right to development
4. Green house effect and ozone depletion

The Stockholm and Rio Declarations are outputs of the first and second global environmental conferences, respectively, namely the United Nations Conference on the Human Environment in Stockholm, June 5-16, 1972, and the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro, June 3-14, 1992. Other policy or legal instruments that emerged from these conferences, such as the Action Plan for the Human Environment at Stockholm and Agenda 21 at Rio, are intimately linked to the two declarations, conceptually as well as politically. However, the declarations, in their own right, represent signal achievements. Adopted twenty years apart, they undeniably represent major milestones in the evolution of international environmental law, bracketing what has been called the "modern era" of international environmental law.

Stockholm Conference

When the UN General Assembly decided to convene the 1972 Stockholm Conference, at the initiative of the Government of Sweden to host it, UN Secretary-General U Thant invited Maurice Strong to lead it as Secretary-General of the Conference, as the Canadian diplomat had initiated and already worked for over two years on the project.

Sweden first suggested to ECOSOC in 1968 the idea of having a UN conference to focus on human interactions with the environment. ECOSOC passed resolution 1346 supporting the idea. General Assembly Resolution 2398 in 1969 decided to convene a conference in 1972 and mandated a set of reports from the UN secretary-general suggesting that the conference focus on "stimulating and providing guidelines for action by national government and international organizations" facing environmental issues.

The meeting agreed upon a Declaration containing 26 principles concerning the environment and development; an Action Plan with 109 recommendations, and a Resolution. Principles of the Stockholm Declaration:

1. Human rights must be asserted, apartheid and colonialism condemned
2. Natural resources must be safeguarded
3. The Earth's capacity to produce renewable resources must be maintained
4. Wildlife must be safeguarded
5. Non-renewable resources must be shared and not exhausted
6. Pollution must not exceed the environment's capacity to clean itself
7. Damaging oceanic pollution must be prevented
8. Development is needed to improve the environment
9. Developing countries therefore need assistance
10. Developing countries need reasonable prices for exports to carry out environmental management
11. Environment policy must not hamper development
12. Developing countries need money to develop environmental safeguards
13. Integrated development planning is needed
14. Rational planning should resolve conflicts between environment and development
15. Human settlements must be planned to eliminate environmental problems
16. Governments should plan their own appropriate population policies
17. National institutions must plan development of states' natural resources
18. Science and technology must be used to improve the environment
19. Environmental education is essential
20. Environmental research must be promoted, particularly in developing countries
21. States may exploit their resources as they wish but must not endanger others
22. Compensation is due to states thus endangered
23. Each nation must establish its own standards
24. There must be cooperation on international issues
25. International organizations should help to improve the environment
26. Weapons of mass destruction must be eliminated.

One of the seminal issues that emerged from the conference is the recognition for poverty alleviation for protecting the environment. The Indian Prime Minister Indira Gandhi in her seminal speech in the conference brought forward the connection between ecological management and poverty alleviation. It is to be noted that she was the only other speaker in the conference other than the hosting country prime minister.

Some argue that this conference, and more importantly the scientific conferences preceding it, had a real impact on the environmental policies of the European Community (that later became the European Union). For example, in 1973, the EU created the Environmental and Consumer Protection Directorate, and composed the first Environmental Action Program. Such increased interest and research collaboration arguably paved the way for further understanding of global warming, which has led to such agreements as the Kyoto Protocol and also this has given a foundation of modern environmentalism.

Rio Declaration on Environment and Development

Principle 1
Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature.

Principle 2
States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental and developmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.

Principle 3
The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations.

Principle 4
In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it.

Principle 5
All States and all people shall cooperate in the essential task of eradicating poverty as an indispensable requirement for sustainable development, in order to decrease the disparities in standards of living and better meet the needs of the majority of the people of the world.

Principle 6
The special situation and needs of developing countries, particularly the least developed and those most environmentally vulnerable, shall be given special priority. International actions in the field of environment and development should also address the interests and needs of all countries.

Principle 7
States shall cooperate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth's ecosystem. In view of the different contributions to global environmental degradation, States have common but differentiated responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit to sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command.

Principle 8
To achieve sustainable development and a higher quality of life for all people, States should reduce and eliminate unsustainable patterns of production and consumption and promote appropriate demographic policies.

Principle 9
States should cooperate to strengthen endogenous capacity-building for sustainable development by improving scientific understanding through exchanges of scientific and technological knowledge, and by enhancing the development, adaptation, diffusion and transfer of technologies, including new and innovative technologies.

Principle 10

Environmental issues are best handled with participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided.

Principle 11

States shall enact effective environmental legislation. Environmental standards, management objectives and priorities should reflect the environmental and development context to which they apply. Standards applied by some countries may be inappropriate and of unwarranted economic and social cost to other countries, in particular developing countries.

Principle 12

States should cooperate to promote a supportive and open international economic system that would lead to economic growth and sustainable development in all countries, to better address the problems of environmental degradation. Trade policy measures for environmental purposes should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade.

Unilateral actions to deal with environmental challenges outside the jurisdiction of the importing country should be avoided. Environmental measures addressing trans boundary or global environmental problems should, as far as possible, be based on an international consensus.

Principle 13

States shall develop national law regarding liability and compensation for the victims of pollution and other environmental damage. States shall also cooperate in an expeditious and more determined manner to develop further international law regarding liability and compensation for adverse effects of environmental damage caused by activities within their jurisdiction or control to areas beyond their jurisdiction.

Principle 14

States should effectively cooperate to discourage or prevent the relocation and transfer to other States of any activities and substances that cause severe environmental degradation or are found to be harmful to human health.

Principle 15

In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

Principle 16

National authorities should endeavor to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment.

Principle 17

Environmental impact assessment, as a national instrument, shall be undertaken for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent national authority.

Principle 18

States shall immediately notify other States of any natural disasters or other emergencies that are likely to produce sudden harmful effects on the environment of those States. Every effort shall be made by the international community to help States so afflicted.

Principle 19

States shall provide prior and timely notification and relevant information to potentially affected States on activities that may have a significant adverse transboundary environmental effect and shall consult with those States at an early stage and in good faith.

Principle 20

Women have a vital role in environmental management and development. Their full participation is therefore essential to achieve sustainable development.

Principle 21

The creativity, ideals and courage of the youth of the world should be mobilized to forge a global partnership in order to achieve sustainable development and ensure a better future for all.

Principle 22

Indigenous people and their communities and other local communities have a vital role in environmental management and development because of their knowledge and traditional practices. States should recognize and duly support their identity, culture and interests and enable their effective participation in the achievement of sustainable development.

Principle 23

The environment and natural resources of people under oppression, domination and occupation shall be protected.

Principle 24

Warfare is inherently destructive of sustainable development. States shall therefore respect international law providing protection for the environment in times of armed conflict and cooperate in its further development, as necessary.

Principle 25

Peace, development and environmental protection are interdependent and indivisible.

Principle 26

States shall resolve all their environmental disputes peacefully and by appropriate means in accordance with the Charter of the United Nations.

Principle 27

States and people shall cooperate in good faith and in a spirit of partnership in the fulfillment of the principles embodied in this Declaration and in the further development of international law in the field of sustainable development.

Declaration of the United Nations Conference on the Human Environment

The United Nations Conference on the Human Environment, having met at Stockholm from 5 to 16 June 1972, having considered the need for a common outlook and for common principles to inspire and guide the peoples of the world in the preservation and enhancement of the human environment,

Proclaims that:

1. Man is both creature and molder of his environment, which gives him physical sustenance and affords him the opportunity for intellectual, moral, social and spiritual growth. In the long and tortuous evolution of the human race on this planet a stage has 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

the man-made, are essential to his well-being and to the enjoyment of basic human rights the right to life itself.

2. The protection and improvement of the human environment is a major issue which affects the well-being of peoples and economic development throughout the world; it is the urgent desire of the peoples of the whole world and the duty of all Governments.

3. Man has constantly to sum up experience and go on discovering, inventing, creating and advancing. In our time, man's capability to transform his surroundings, if used wisely, can bring to all peoples the benefits of development and the opportunity to enhance the quality of life. Wrongly or heedlessly applied, the same power can do incalculable harm to human beings and the human environment. We see around us growing evidence of man-made harm in many regions of the earth: dangerous levels of pollution in water, air, earth and living beings; major and undesirable disturbances to the ecological balance of the biosphere; destruction and depletion of irreplaceable resources; and gross deficiencies, harmful to the physical, mental and social health of man, in the man-made environment, particularly in the living and working environment.

4. In the developing countries most of the environmental problems are caused by under-development. Millions continue to live far below the minimum levels required for a decent human existence, deprived of adequate food and clothing, shelter and education, health and sanitation. Therefore, the developing countries must direct their efforts to development, bearing in mind their priorities and the need to safeguard and improve the environment. For the same purpose, the industrialized countries should make efforts to reduce the gap themselves and the developing countries. In the industrialized countries, environmental problems are generally related to industrialization and technological development.

5. The natural growth of population continuously presents problems for the preservation of the environment, and adequate policies and measures should be adopted, as appropriate, to face these problems. Of all things in the world, people are the most precious. It is the people that propel social progress, create social wealth, develop science and technology and, through their hard work, continuously transform the human environment. Along with social progress and the advance of production, science and technology, the capability of man to improve the environment increases with each passing day.

6. A point has been reached in history when we must shape our actions throughout the world with a more prudent care for their environmental consequences. Through ignorance or indifference we can do massive and irreversible harm to the earthly environment on which our life and well being depend. Conversely, through fuller knowledge and wiser action, we can achieve for ourselves and our posterity a better life in an environment more in keeping with human needs and hopes. There are broad vistas for the enhancement of environmental quality and the creation of a good life. What is needed is an enthusiastic but calm state of mind and intense but orderly work. For the purpose of attaining freedom in the world of nature, man must use knowledge to build, in collaboration with nature, a better environment. To defend and improve the human environment for present and future generations has become an imperative goal for mankind-a goal to be pursued together with, and in harmony with, the established and fundamental goals of peace and of worldwide economic and social development.

7. To achieve this environmental goal will demand the acceptance of responsibility by citizens and communities and by enterprises and institutions at every level, all sharing equitably in common efforts. Individuals in all walks of life as well as organizations in many fields, by their values and the sum of their actions, will shape the world environment of the future.

Local and national governments will bear the greatest burden for large-scale environmental policy and action within their jurisdictions. International cooperation is also needed in order to raise resources to support the developing countries in carrying out their responsibilities in this field. A growing class of environmental problems, because they are regional or global in extent or because they affect the common international realm, will require extensive cooperation among nations and action by international organizations in the common interest.

The Conference calls upon Governments and peoples to exert common efforts for the preservation and improvement of the human environment, for the benefit of all the people and for their posterity.

Principles States the common conviction that:

Principle 1

Man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being, and he bears a solemn responsibility to protect and improve the environment for present and future generations. In this respect, policies promoting or perpetuating apartheid, racial segregation, discrimination, colonial and other forms of oppression and foreign domination stand condemned and must be eliminated.

Principle 2

The natural resources of the earth, including the air, water, land, flora and fauna and especially representative samples of natural ecosystems, must be safeguarded for the benefit of present and future generations through careful planning or management, as appropriate.

Principle 3

The capacity of the earth to produce vital renewable resources must be maintained and, wherever practicable, restored or improved.

Principle 4

Man has a special responsibility to safeguard and wisely manage the heritage of wildlife and its habitat, which are now gravely imperiled by a combination of adverse factors. Nature conservation, including wildlife, must therefore receive importance in planning for economic development.

Principle 5

The non-renewable resources of the earth must be employed in such a way as to guard against the danger of their future exhaustion and to ensure that benefits from such employment are shared by all mankind.

Principle 6

The discharge of toxic substances or of other substances and the release of heat, in such quantities or concentrations as to exceed the capacity of the environment to render them harmless, must be halted in order to ensure that serious or irreversible damage is not inflicted upon ecosystems. The just struggle of the peoples of ill countries against pollution should be supported.

Principle 7

States shall take all possible steps to prevent pollution of the seas by substances that are liable to create hazards to human health, to harm living resources and marine life, to damage amenities or to interfere with other legitimate uses of the sea.

Principle 8

Economic and social development is essential for ensuring a favorable living and working environment for man and for creating conditions on earth that is necessary for the improvement of the quality of life.

Principle 9

Environmental deficiencies generated by the conditions of under-development and natural disasters pose grave problems and can best be remedied by accelerated development through the transfer of

substantial quantities of financial and technological assistance as a supplement to the domestic effort of the developing countries and such timely assistance as may be required.

Principle 10

For the developing countries, stability of prices and adequate earnings for primary commodities and raw materials are essential to environmental management, since economic factors as well as ecological processes must be taken into account.

Principle 11

The environmental policies of all States should enhance and not adversely affect the present or future development potential of developing countries, nor should they hamper the attainment of better living conditions for all, and appropriate steps should be taken by States and international organizations with a view to reaching agreement on meeting the possible national and international economic consequences resulting from the application of environmental measures.

Principle 12

Resources should be made available to preserve and improve the environment, taking into account the circumstances and particular requirements of developing countries and any costs which may emanate- from their incorporating environmental safeguards into their development planning and the need for making available to them, upon their request, additional international technical and financial assistance for this purpose.

Principle 13

In order to achieve a more rational management of resources and thus to improve the environment, States should adopt an integrated and coordinated approach to their development planning so as to ensure that development is compatible with the need to protect and improve environment for the benefit of their population.

Principle 14

Rational planning constitutes an essential tool for reconciling any conflict between the needs of development and the need to protect and improve the environment.

Principle 15

Planning must be applied to human settlements and urbanization with a view to avoiding adverse effects on the environment and obtaining maximum social, economic and environmental benefits for all. In this respect projects which arc designed for colonialist and racist domination must be abandoned.

Principle 16

Demographic policies which are without prejudice to basic human rights and which are deemed appropriate by Governments concerned should be applied in those regions where the rate of population growth or excessive population concentrations are likely to have adverse effects on the environment of the human environment and impede development.

Principle 17

Appropriate national institutions must be entrusted with the task of planning, managing or controlling the 9 environmental resources of States with a view to enhancing environmental quality.

Principle 18

Science and technology, as part of their contribution to economic and social development, must be applied to the identification, avoidance and control of environmental risks and the solution of environmental problems and for the common good of mankind.

Principle 19

Education in environmental matters, for the younger generation as well as adults, giving due consideration to the underprivileged, is essential in order to broaden the basis for an enlightened opinion and responsible conduct by individuals, enterprises and communities in protecting and improving the environment in its full human dimension. It is also essential that mass media of communications avoid contributing to the deterioration of the environment, but, on the contrary,

disseminates information of an educational nature on the need to project and improve the environment in order to enable mal to develop in every respect.

Principle 20

Scientific research and development in the context of environmental problems, both national and multinational, must be promoted in all countries, especially the developing countries. In this connection, the free flow of up-to-date scientific information and transfer of experience must be supported and assisted, to facilitate the solution of environmental problems; environmental technologies should be made available to developing countries on terms which would encourage their wide dissemination without constituting an economic burden on the developing countries.

Principle 21

States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.

Principle 22

States shall cooperate to develop further the international law regarding liability and compensation for the victims of pollution and other environmental damage caused by activities within the jurisdiction or control of such States to areas beyond their jurisdiction.

Principle 23

Without prejudice to such criteria as may be agreed upon by the international community, or to standards which will have to be determined nationally, it will be essential in all cases to consider the systems of values prevailing in each country, and the extent of the applicability of standards which are valid for the most advanced countries but which may be inappropriate and of unwarranted social cost for the developing countries.

Principle 24

International matters concerning the protection and improvement of the environment should be handled in a cooperative spirit by all countries, big and small, on an equal footing.

Cooperation through multilateral or bilateral arrangements or other appropriate means is essential to effectively control, prevent, reduce and eliminate adverse environmental effects resulting from activities conducted in all spheres, in such a way that due account is taken of the sovereignty and interests of all States.

Principle 25

States shall ensure that international organizations play a coordinated, efficient and dynamic role for the protection and improvement of the environment.

Principle 26Man and his environment must be spared the effects of nuclear weapons and all other means of mass destruction. States must strive to reach prompt agreement, in the relevant international organs, on the elimination and complete destruction of such weapons.

1. The ozone gas in the atmosphere protects mankind from harmful radiation, and its depletion is therefore undesirable, while the greenhouse gases like carbon dioxide trap heat in the atmosphere thereby raising temperatures worldwide with harmful repercussions for the rest of the world.

2. Ozone is present in the earth's stratosphere. Greenhouse effect pertains to the warming of the planet because of the solar heat that gets trapped by our atmosphere, because of the presence of greenhouse effect causing substances like gas, dust and clouds.

3. As much as 4% per decade in the total quantity of ozone in the Earth's stratosphere and much bigger decline ozone around the Earth's arctic and Antarctic regions has occurred in the recent past. Greenhouse gases absorb this infrared radiation and convey this absorbed heat to other atmospheric gases by way of molecular collisions.

Ozone
Depletion vs Green House **Effect**

The state of the ozone hole in the atmosphere and global warming caused by the green house effect are possibly the most contentious and significant issues that confront mankind. The ozone gas in the atmosphere protects mankind from harmful radiation, while the greenhouse gases like carbon dioxide trap heat in the atmosphere thereby raising temperatures worldwide with harmful repercussions for the rest of the world.

Ozone is present in the earth's stratosphere and comes into being by ultraviolet light colliding with oxygen molecules containing two oxygen atoms (O2), and dividing them into individual oxygen atoms. There after the atomic oxygen then combines with unbroken O2 to create ozone, O3.This critically important gas in the atmosphere is what shields us from the harmful UV or ultraviolet rays coming from the sun; in particular UV-C which is the most detrimental to human health.
Greenhouse effect pertains to the warming of the planet because of the solar heat that gets trapped by our atmosphere, because of the presence of greenhouse effect causing substances like gas, dust and clouds.
Ozone depletion really has to do with two separate, but interconnected truths: a steady fall by as much as 4% per decade in the total quantity of ozone in the Earth's stratosphere (ozone layer) and much bigger decline ozone around the Earth's arctic and Antarctic regions across the same period. This is referred to as the ozone hole.

The greenhouse effect causes the heating of the surface of any planetary body by the presence of an atmosphere comprising of gases that absorb and emit radiation. This implies that greenhouse gases trap heat within the surface-troposphere system. The Earth gets its energy from the sun as visible

light. Approximately 50% of the sun's energy gets to reach the Earth and is absorbed by the surface. The earth in turn radiates energy in the infrared range. Greenhouse gases absorb this infrared radiation and convey this absorbed heat to other atmospheric gases by way of molecular collisions. Thus we can see that though often used interchangeably ozone layer depletion and green house effect are two entirely distinct phenomena which may both cause harmful effects upon the surface of planet earth.

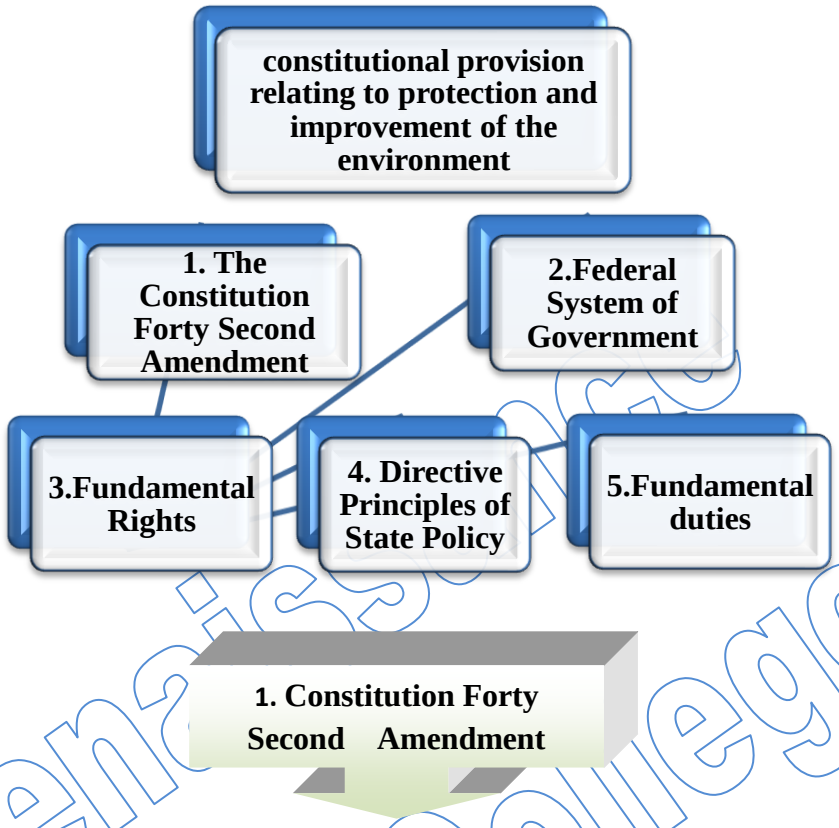
UNIT III

1. Constitution in making- development and property oriented approach
2. Directive Principles, - Status, role and interrelationship with fundamental rights and fundamental duties
3. Fundamental Duties
4. Judicial approach
5. Fundamental Rights
6. Enforcing agencies and remedies (Courts, Tribunal, Constitutional, statutory and judicial remedies)
7. Emerging principles (Polluter pays: public liability insurance, Precautionary principles)
8. Sustainable development

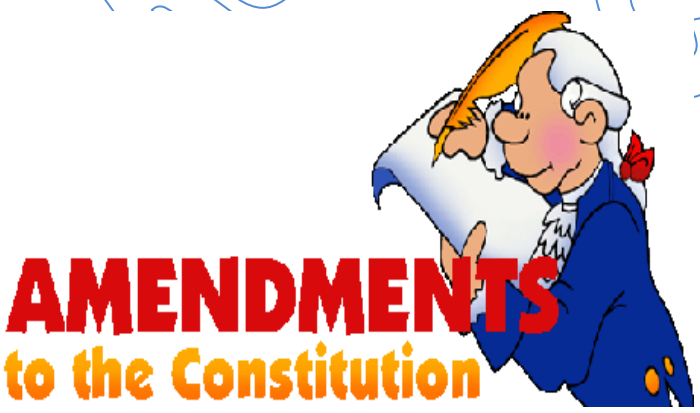
Constitution pertaining to environmental protection

The Constitution of India came into force on 26th January, 1950. Originally, the constitution contains no specific provisions for environmental protection. However, certain specific provisions have been incorporated by the Constitution (Forty Second Amendment) Act, 1976 and subsequent amendments. Indian Constitution is one of the very few constitutions in the world, which provides for specific provision for the protection and improvement of the Environment.

The constitution, being the fundamental law of the land has a binding force on citizens, non – citizens as well as the State. The Fundamental Rights and the Directive Principles of the State Policy underline our national commitment to protect and improve the environment. The courts in India have also given a new interpretation to the constitutional provision relating to protection and improvement of the environment (the intended meaning of the environment in the constitution) may be explained with reference to the following head:



1. Constitution Forty Second Amendment



In 1976, under the leadership of the then Prime Minister, Smt. Indira Gandhi, the Constitution (Forty Second Amendment) Act was passed and the provisions relating to the protection of environment for the first time were incorporated by adding a new provision Article 48-A in the Chapter, Directive Principles of State Policy.

According to Article 48-A "the State shall Endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country".

Further, a new provision Article 51-A in the form of "Fundamental Duties" was also incorporated by the 42nd Amendment. According to the sub-clause (g) of Article 51-A, "it shall be the duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wildlife and to have compassion for living creatures". The above two provision impose two-fold responsibilities. On the one hand, it gives directive to the State for protection and improvement of environment, and on the other hand it casts/imposes a duty on every citizen to help in the preservation of natural environment.

2. Federal System of Government (Distribution of Legislative Power)

Under Federal system the government powers shared between Union and State governments. Article 246 of the Constitution of India deals with subject-matter of law made by Parliament and by the Legislature of States. Parliament and State Legislature of any state have exclusive power to make laws with respect of any of the matters enumerated in the seventh schedule:

a. List I is Union List (contains 97 subjects and the Parliament alone has the power to legislate)
b. List II is State List (contains 66 subjects and the States have power to legislate)
c. List III is Concurrent List (contains 52 subjects, both the Parliament and the State Legislatures have the power to legislate)

Environmental Legislative Powers are available under all the three lists as detailed below:

List I-Union

Entry 52: Industries: The control of which by the union is declared by the Parliament by law to be expedient in the public interest.
Entry 53: Regulation and Development of Oil Fields and Mineral Resources.
Entry 54: Regulation of Mines and Mineral Development. 181
Entry 55: Regulation and Development of Inter-State Rivers and River Valleys.
Entry 57: Fishing & Fisheries beyond territorial waters.

List II - State

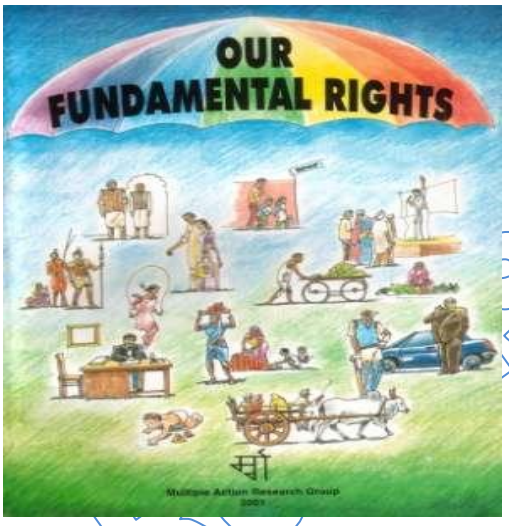
Entry 6 : Public Health and Sanitation.
Entry 14 : Agriculture, Protection against pests and prevention of plant diseases.
Entry 18 : Land, that is to say, right in and over land.
Entry 21 : Fisheries.
Entry 23 : Mines and Minerals, subject to provision of List I.
Entry 29 : Industries, subject to provisions of List I.
Entry 25 : Gas and Gas works.

List III - Concurrent List

Entry 17A: Forests.
Entry 17B: Protection of Wildlife Animals and Birds.
Entry 20: Economical and Social Planning.
According to Article 249 the Parliament has residual power to legislate on subjects not covered by the three lists. Under Article 254-A State Law passed subsequent to the Central Law will prevail however,

if it has received presidential assent but the basic principle is that, in case of conflict between Central Law and State Law the former will prevail. Article 253 of the 182 Constitution empowers Parliament to make laws implementing India's international obligations as well as any decision made at an international conference, association or other body.

There are about 200 Central and State Legislation on environmental protection. The most important environmental legislations, passed by the parliament under Article 249 of the Constitution are The Water (Prevention and Control of Pollution) Act, 1974; The Air (Prevention and Control of Pollution) Act, 1974; The Air (Prevention and Control of Pollution) Act, 1981; and the Environment (Protection) Act, 1986.



3. Fundamental Rights

It is present under Part –III of the Constitution, containing-

- Articles 12 to 35, deals with fundamental rights.
- Articles 15(2) (b);
- Article 21 and Article 24 provide for specific provision for environmental protection.

Article 15(2)(b):- According to Art. 15(2) (b), "No citizen shall, on grounds only of religion, race, caste, sex, place of birth or any of them be subjected to any disability, liability, restriction or condition with regard to: the use of wells, bathing ghats, roads and places of public resort, maintained wholly or partly out for state funds or dedicated to the use of general public".

In simple words, Art. 15(2) prohibit discrimination on the ground of sex, race, religion, caste, place of birth etc. to make use of the public places the general public. The public places, which are part and parcel of the human environment, should be made available to the public. The preamble to our constitution ensures socialistic pattern of the society and decent standard of life, which can be pollution free environment.

Article 21:- According to Article 21 of the constitution, "no person shall be deprived of his life or personal liberty except according to procedure established by law".

Case laws-

- Article 21 is the heart of the fundamental rights and has received expanded meaning from time to time after the decision of the Supreme Court in **Maneka Gandhi vs. Union of India**, (AIR 1978 SC 597). Art. 21 guarantees a fundamental right to life a life of dignity to be lived in a proper environment, free of danger of disease and infection. The right to live in a healthy environment as part of Article 21 of the Constitution was first recognized in the case of.
- **Rural Litigation and Entitlement Kendra vs. State of U.P**., AIR 1988 SC 2187 (Popularly known as Dehradun Quarrying Case).It is the first case of this kind in India, involving issues relating to environment and ecological balance. The R.L. & E. Kendra and others in a letter to the Supreme Court complained about the illegal / unauthorized mining in the Missouri, Dehradun belt. As a result, the ecology of the surrounding area was adversely affected and it led to the environmental disorder.

  The Supreme Court treated the letter as writ petition under Art. 32 of the Constitution and directed to stop the excavation (illegal mining) under the Environment (Protection) Act, 1986. The respondents contended / argued that the write petition was registered in 1983 and the

Environment (Protection) Act was passed in 1986 and hence the criminal proceedings cannot be initiated with retrospective effect. The court rejected the contention of the respondents and held that the provisions of procedural law shall apply to ordinary criminal cases and not to the environmental cases. The court directed the Central and State Governments to take necessary steps to prevent illegal mining and to re-afforesation in the area of mining.

- In **M.C. Mehta vs. Union of India**, AIR 1987 SC 1086 (Popularly known as "Oleum Gas Leak Case") – The Supreme Court treated the right to live in pollution free environment as a part of fundamental right to life under Art. 21of the Constitution. Further the A.P. High Court in T. Damodar Rao vs. S.O., Municipal Corporation, Hyderabad, (AIR 1987 A.P. 171) laid down that right to live in healthy environment was specially declared to be part of Art. 21 to the Constitution.

Article 24: Article 24 of the Constitution speaks about exploitation of child labor. It says that "No child below the age of 14 years shall be employed to work in any factory or mine or engaged in any other hazardous employment" this provisions is certainly in the interest of public health and part of the environment. Further, Article 39 (e) and 39 (f) under Directive Principles of State Policy provide for the protection of the health and strength of children below the age of 14 years.

Case law-

- In **people's Union for Democratic Rights vs. Union of India**, (AIR 1982 SC 1473), the Supreme Court held that the prohibition under Art. 24 could be enforced against any one, be it the State or private individual.

In pursuance of this obligation, parliament enacted the Child Labour (prohibition and Regulation) Act, 1986. The Act prohibits specifically the employment of children in certain industries.

4. Directive Principles of State Policy

Part IV of the Constitution, Containing Articles 36 to 51, deals with Directive Principles of State Policy. The directive principles form the fundamental feature and are designed to achieve socio economic goals.

Art. 39 (a), (which was inserted by the Constitution 942nd Amendment) Act, 1976 provides for Equal Justice and Free Legal Aid. It promotes justice on the basis of equal opportunities. It imposes an imperative duty upon the State to provide free legal aid to the poor litigant so as to secure him equal protection of laws against his well to do opponent.

1. Equal right of men and women to adequate means of livelihood.
2. Distribution of ownership and control of the material resources community to the common good.
3. To ensure that the economic system should not result in concentration of wealth and means of production to the common detriment.
4. Equal pay for equal work for both men and women.

5. To protect health and strength of workers and tender age of children and to ensure that they are not forced by economic necessity to entire avocations unsuited to their age or strength; and
6. That child are given opportunities and facilities to develop in a healthy manner and in conditions of freedom and dignity and that childhood and youth are protected against exploitation and against moral and material abandonment.

Article 39(b):- The expression 'material source' under Art. 39 (b) means all things, which are capable producing wealth for the community. In includes those, which are already vested in the State but also in the hands of private individuals. Further, the expression 'distribution' in Article 39 (b) does not mean that one's property is taken over and is distributed to others. It also includes nationalization which is an effective means to prevent concentration of wealth in a few hands so as to benefit the society at large.

Article 39(1):- Art. 39(1) was amended by the Constitution (42nd Amendment) Act, 1976 with a view to emphasize the constructive role of the State with regard to children.

Article 47:- Art. 47 provide that the State shall regard the raising of the level of nutrition and the standard of living of its people and the improvement of public health as among its primary duties. The improvement of public health also includes the protection and improvement of environment without which public health cannot be assured.

Article 48:- It deals with organization of agriculture and animal husbandry. Art. 48 direct the State to take steps to organize agriculture and animal husbandry on modern and scientific lines. In particular, it should take steps for preserving and improving the breeds and prohibiting the slaughter of cows and calves and other milch and draught cattle.

Article 49:-It deals with protection of monuments and places and objects of national importance. Art. 49 require the State to protect c-very monument or place or object of artistic or historic interest (declared by or under law made by parliament to be of national importance) from spoliation, disfigurement, destruction, removal, disposal or export.

Art. 51-A was added under the Constitution (42nd Amendment) Act. 1976, which deals with 'Fundamental Duties' under Part IV-A Article 51 - A enlists ten fundamental duties designed for restructuring and building a welfare society 'State **Art. 51 –A (g)** specifically deals with the fundamental duty with respect to environment. It provides "it shall be the duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wild life and to have compassion for living creatures.

Environmental Policy and Legislations in India

A policy is a board guideline for planners and administrators. It lays down the general objectives and its execution is left to the administrators.

In India, attention has been paid right from the ancient times to the present age in the field of

environmental protection and improvement. Historically speaking, the laws relating to environment improvement were simple but quite effective and people were aware of the necessity of environmental protection. The present day legislations in India are the outcome of the growing industrialization and population pressure. There are stated to be over 500 Central and State statues which have at least some concern with environmental protection, either directly or indirectly. Besides that, the common law and Constitutional remedies relating to environmental protection are also there.

Policy and Laws in Ancient India

In ancient India, protection and cleaning up of environment was the essence of Vedic culture. The conservation of environment formed an ardent article of faith, reflected in the daily lives of the people and also enshrined in myth folklore, art, culture and religion. In Hindu theology forests, trees and wildlife protection held a place of special reverence. Cutting green trees was prohibited and punishment was prescribed for such acts.

Policy and Laws in Medieval

During the Mughal period environment conservation did not receive much attention. However, the forests were managed with the help of a complex range of rules and regulations woven around the socio-cultural features as well as the economic activities of local communities. Further, the religious policy of Akbar based on the principal of complete tolerance also reflects concern for protection of birds and beasts in so muchso as endeavours were taken during his region to stop their unnecessary killing. During medieval era, another set of legal principles were inducted, governed by the holy Koran which declares that "we made from water every living things".

Policy and Laws in British India

With the establishment of British Colonial rule, many changes were brought in the religiously oriented indigenous system. The British regime saw the beginning of organized forest management. It was the forestry, wildlife and water pollution which attracted their attention in particular.

The environmental policy during the British rule was not directed at the conservation of nature but rather was directed at the appropriation and exploitation of common resources with a primary objective of earning revenue. Neither were there effective laws for the protection of environment. Further, these laws had a narrow scope and limited territorial reach.

Policy and Laws after Independence

The India Constitution, as adopted in 1950, did not deal with the subject of environment or prevention and control of pollution as such (until 1976 Amendment). There were scattered provisions for checking pollution of air, water, etc., but there was no unified effort in developing any policy concerning the pollution emanating from these areas. This position went up to the seventies.

Meanwhile concern arose over, inter-alia, population increase, greater pollution levels; human impact on animal populations and natural landscapes and other aspects of resource depletion. It was the Stockholm Declaration of 1972 which turned the attention of the Indian Government to the boarder perspective of environmental protection. The government made its stand well known through five year plans as well as the legislations enacted subsequently to curb and control environmental pollution.

After 1970, comprehensive (special) environmental laws were enacted by the Central Government in India.

- The Wildlife (Protection) Act, 1972, aimed at rational and modern wild life management.
- The Water (Prevention and Control of Pollution) Act, 1974, provides for the establishment of pollution control boards at Centre and States to act as watchdogs for prevention and control of pollution.
- The Forest(Conservation) Act, 1980 aimed to check deforestation, diversion of forest land for non-forestry purposes, and to promote social forestry.
- The Air (Prevention and Control of Pollution) Act,1981, aimed at checking air pollution via pollution control boards.
- The Environment (Protection) Act, 1986 is a landmark legislation which provides for single focus in the country for protection of environment and aims at plugging the loopholes in existing legislation. It provides mainly for pollution control, with stringent penalties for violations.
- The Public Liability Insurance Act, 1991, provides for mandatory insurance for the purpose of providing immediate relief to person affected by accidents occurring while handling any hazardous substance.
- The National Environment Tribunals Act, 1995, was formulated in view of the fact that civil courts litigations take a long time (as happened in Bhopal case). The Act provides for speedy disposal of environmental related cases through environmental tribunals. Under the Act, four benches of the tribunal will be set up in Delhi, Calcutta, Madras and Bombay and 8,000 of the most Hazardous industrial units in the country will be brought under its security.
- The National Environment Appellate Authority Act, 1997, provides for the established of a National Environment Appellant Authority (NEAA) to hear appeals with respect to restriction in areas in which any industries, operations or processes shall not be carried out or shall be carried out subject to certain safeguards under the Environment (Protection) Act, 1986.
- The Biological Diversity Act, 2002, is a major legislation intervention affected in the name of the communities supposed to be involved in the protection of biodiversity around them. The Act intends to facilitate access to genetic materials while protecting the traditional knowledge associated with them.

Environmental Policy Since 1970's

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 programmes and to integrate environmental concerns in the plans for economic development, an important lacuna would remain in India's planning process. Thus, in Feb. 1972, a National Committee on Environmental Planning and Coordination (NCEPC) was established in the Dept. of Science and Technology.

The NCEPC was an apex advisory body in all matters relating to environmental protection and improvement. The Committee was to plan and coordinate, but the responsibility for execution remained with the various ministries and governmental agencies. Over time the composition of the

Committee changes significantly and it became unwieldy, and decision making more complex. Greater bureaucratization occurred with the addition of more secretaries.

Policy Statements

In 1992, the Union Government adopted a "National Conservation Strategy and Policy Statement on Environment and Development" (NCS). The preamble to the NCS adopts the policy of "sustainable development" and declares the government's commitment to re-orient policies and action "in unison with the environmental perspective". The NCS proceeds to recognize the enormous dimensions of the environmental problems facing India and declares strategies for action in various spheres such as agriculture, forestry, industrial development, mining and tourism. Special sections in the NCS deal with the rehabilitation of persons ousted by large development projects; the role of NGOs; and the special relationship between women and the environment.

Again, in 1992, the Union Government came out with "Policy Statement for Abatement of Pollution." This statement declares the objective of the government to integrate environmental considerations into decision-making at all levels. To achieve this goal, the statement adopts fundamental guiding principles, namely:

(i) Prevention of pollution at source;
(ii) Adoption of the best available technology;
(iii) Polluter pays principles; and
(iv) Public participation in decision-making.

The policy statements, though unenforceable in a court of law, represent a broad, political consensus and amplify the duties of the government under the Directive Principles of State Policy contained in Part IV of the Constitution. In the hands of a creative judge the policy documents may serve as an aid for interpreting environmental statutes or for spelling out the obligations of government agencies under environmental laws.

Recent Legislative Measures (Delegated Legislation)

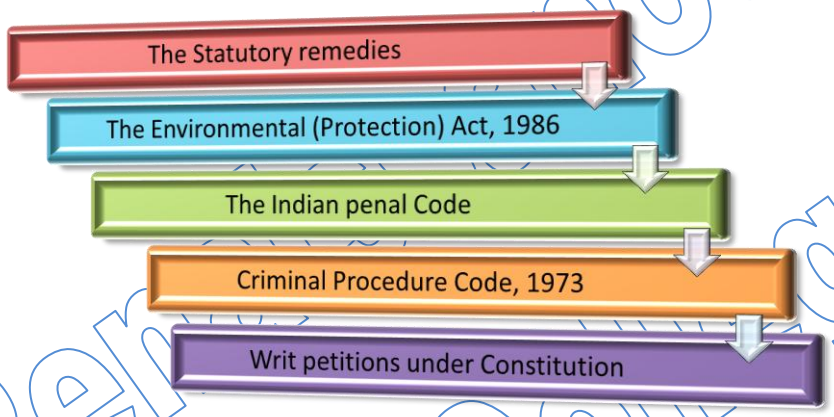
During the nineties, some steps have been taken by the Central Ministry of Environment to provide legal and institutional basis for management and protection of environment by way of rules, notification of standards, delegation of powers, identification of agencies for hazardous chemicals management and setting up of Environmental Councils in some States.

General Legislations on Environment

In India, there are a number of laws which deal with various aspect of environment protection regulation, conduct of environmentally harmful activities and provide for remedies in case of their

breach. Some of them are "general" having an "indirect" bearing on environment protection, while others are "special", as follows:-

- Water, Air and Environmental Acts, Forest Act, etc.) being "directly" concerned with environment protection.
- General legislation comprises of Indian Penal Code, 1860; Code of Criminal Procedure, 1973; Code of Civil Procedure, 1908
- specific sectoral legislations having a bearing on the environmental aspects like:-
  - The Factories Act, 1948,
  - The Mines Act, 1952,
  - The Industries (Development and Regulation) Act, 1951,
  - The Insecticides Act, 1968, The Atomic Energy Act, 1962,
  - The Motor Vehicles Act, 1939 and 1988,
  - The Delhi Municipal Corporation Act, 1957, etc.



The statutory remedies includes: Citizen's suit, e.g., an action brought under section 19 of the Environmental (Protection) Act, 1986, an action under section 133, Criminal Procedure Code, 1973 for public nuisance covered with the framework of section268, Indian Penal Code,1860: and an action brought by filling a writ petition under Article 32 in the Supreme Court of India or under Article 226 in the High Court.

Under Indian law, for instance, the remedies for a public nuisance are:-

(i) a criminal prosecution for the offence of causing a public nuisance (Indian Penal Code 1860, Sec. 268),

(ii) (ii) a criminal proceeding before a Magistrate for removing a public nuisance (Criminal Procedure Code 1973, Secs. 133-44), and

(iii) (iii) a civil action by Advocate General or by two or more members of the public with the permission of the court, for a declaration, an injunction or both (Civil Procedure Code 1908, Sect. 91).

The remedy under the civil law is not often used; however this provision is a reservoir for class action against environmental violations. Traditionally, the interpretation of the Indian Penal Code has been viewed as a conservative attempt at enforcement. This is because punishment and fines have been characterized as meager. The law of public nuisance contained in Sec. 133, Cr. P.C. has been used in a number of cases for the purpose of protection of the environment.

The general legislations like IPC, Cr. PC, CPC, MV Act, Labour Acts, etc., could be quite effective in controlling environmental violations because of the easy availability of the enforcement machinery (Police, judiciary, etc.,) in every district of the country. Some of these Acts have been amended recently to incorporate current trends and requirements. Thus, besides an effective implementation of these Acts and creating a greater public awareness about them, there should be coordination between different types of authorities so as to effectively preserve and protect the environment.

The Environment Protection Act, 1986

The most important legislation in this category is The Environment (Protection) Act of 1986. Through this Act, Central Government gets full power for the purpose of protecting and improving the quality of the Environment and preventing, controlling and abating pollution. Details of the Act are given below:- Under the Act, the Central Government may, by notification in the office Gazette, make rules for the enforcement of the Act. It is worth mentioning the names of few important rules, which have been notified under the Environment (Protection) Act, 1986 in recent past for the management and control of hazardous substances, which include hazardous chemicals, waste and micro-organisms.

(i) Hazardous Waste (Management and Handling) Rules of 1989: Objective is to control generation, collection, treatment, import, storage and handling of hazardous waste.

(ii) The Manufacture, Storage and Import of Hazardous Chemical Rules of 1989 Defines the terms used in this context, and sets up an Authority to inspect, once a year, the industrial activity competent with hazardous chemicals and storage facilitie.

(iii) The Manufacture, use, Import, Export and Storage of Hazardous Micro-Organisms/Genetically Engineered Organisms or Cells Rules of 1989 These were introduced with a view to protect the environment, nature and health in connection with the application of gene technology and micro-organisms.

(iv) Biomedical Waste (Management and Handling) Rules of 1998. It is a legal binding on the healthcare institutions of streamline the process of proper handling of hospital waste such as its segregation, disposal, collection and treatment.

(v) Recycled Plastic Manufacture and Usage Rules of 1999 & Recycled Plastic Manufacture and Usage Amendment Rules Of 2002. Rules were introduced to prohibit the usage of carry bags or containers made of recycled plastic for foodstuffs. Rules also lay down procedures for the manufacture of virgin and recycled plastic carry bags and recycled plastic containers.

(vi) Municipal Solid Wastes (Management and Handling) Rules, 2000 According to these rules any municipal solid waste generated in a city or a town, shall be managed and handled in accordance with the compliance criteria and the procedure laid down in Schedules of these rules. The waste processing and disposal facilities to be set up by the municipal authority on their own or through an operator of a facility shall meet the specifications and standards as specified in Schedules. **4.30** National Environmental Tribunal Act of 1995 This has been created to award compensation for damages to persons, property and the environment arising from any activity involving hazardous substances. Thus the concluding observation is that there are various Environment Legislations in India. But the need of the hour is the effective enforcement and implementation of these Legislations to control and monitor ever- increasing environment pollution.

CrPc

Section 133 CrPC provides a speedy and summary remedy in case of urgency where damages to public interest or public health etc. are concerned. It runs as under:

"133. (1) Whenever a District Magistrate or a Sub-Divisional Magistrate or any other Executive Magistrate specially empowered in this behalf by the State Government, on receiving the report of a police officer or other information on taking such evidence (if any) as he thinks fit, considers-

(*a*) that any unlawful obstruction or nuisance should be removed from any public place or from any way, river or channel which is or may be lawfully used by the public; or
(*b*) that the conduct of any trade or occupation, or the keeping of any goods or merchandise, is injurious to the health or physical comfort of the community, and that in consequence such trade or occupation should be prohibited or regulated or such goods or merchandise should be removed or the keeping thereof regulated; or
(*d*) that any building, tent or structure, or any tree is in such a condition that it is likely to fall and thereby cause injury to persons living or carrying on business in the neighborhood or passing by, and that in consequence the removal, repair or support of such tree, is necessary; or
(*e*) that any tank, well or excavation adjacent to any such way or public place should be fenced in such manner as to prevent danger arising to the public; or
(*f*) that any dangerous animal should be destroyed, confined or otherwise disposed of,
such Magistrate may make a conditional order requiring the person causing such obstruction or nuisance, or carrying such trade or occupation, or keeping any such goods or merchandise, or owning, possessing or controlling such building, tent, structure, substance, tank, well or excavation, or owning or possessing such animal or tree, within a time to be fixed in the order-
(*i*) to remove such obstruction or nuisance; or
(*ii*) to desist from carrying on, or to remove or regulate in such manner as may be directed, such trade or occupation, or to remove such goods or merchandise, or to regulate the keeping thereof in such manner as may be directed; or
(*iii*) to prevent or stop the construction of such building, or to alter the disposal of such substance; or
(*iv*) to remove, repair or support such building, tent or structure, or to remove or support such trees; or
(*v*) to fence such tank, well or excavation; or
(*vi*) to destroy, confine or dispose of such dangerous animal in the manner provided in the said order;
or, if he objects so to do, to appear before himself or some other Executive Magistrate subordinate to him at a time and place to be fixed by the order, and show cause, in the manner hereinafter provided, why the order should not be made absolute.
(2) No order duly made by a Magistrate under this section shall be called in question in any civil court.
In all proceedings initiated under this section, the Magistrate should bear in mind that he is supposed to be acting purely in the interest of the public, and should be on this ground against any tendency to use this section as a substitute for litigating in the civil court in order to arrive at the settlement of a private dispute.
For invoking jurisdiction under Section 133(1) CrPC it is not necessary that there should always be danger or inconvenience to public at large but even if danger or inconvenience is about to be caused, it is actionable under Section 133(1) and 138 CrPC. But the Magistrate has to act purely in the interest of the public. Drastic powers are conferred by Section 133(1). Those powers should be sparingly used. Any order made under Section 136 without notice under Section 133(1) is bad, consequential order under Section 144 is also bad.

Conditions precedent for the application of Section 133 CrPC

In order to provide a sanction under Section 133 the Magistrate must be satisfied that-
1. It is a public nuisance i.e. the number of persons injuriously affected is so considerable that they may reasonably be regarded as the public or a portion of it.
2. It is not a private dispute between different members of the public for which the proper forum is the civil court.
3. It is a case of great emergency of imminent danger to the public interest.

Section 133 CrPC vis-a-vis other special laws

There are other special or local laws dealing with nuisance. But the Magistrate's power to act under Section 133 is not affected by them. Even the Water (Prevention and Control of Pollution) Act, 1974 has not taken away powers of the Sub-Divisional Magistrate under Section 133 CrPC. The Sub-Divisional Magistrate has power to close a factory causing pollution, when appreciation certificate from the Pollution Control Board is not produced. Section 24 of the Environment (Protection) Act, 1986 reads:

"24. (1) Subject to the provisions of sub-section (2), the provisions of this Act and the rules or orders made therein shall have effect notwithstanding anything inconsistent therewith contained in any enactment other than this Act.

(2) Where any act or omission constitutes an offence punishable under this Act and also under any other Act then the offender found guilty of such offence shall be liable to be punished under the other Act and not under this Act."

Therefore using criminal law machinery is not a bar even as per the Environment (Protection) Act, 1986.

In *Lakshmi Cement case* it was held that Section 133 CrPC does not automatically or impliedly get repealed after the commencement of the Air (Prevention and Control of Pollution) Act, 1981. So proceedings under Section 133 CrPC are not barred.

Order of proceedings under Section 133

(1) issue of conditional ex parte orders
(2) service of order
(3) person to obey or show cause
(4) in urgency, issue of temporary injunction
(5) enquiry and findings' recording
(6) examination by an expert
(7) dropping or continuing the proceedings
(8) enforcement

Case laws-

- To analyze the use of criminal sanctions for abatement of environmental nuisance it is essential to consider the various precedents in this regard. In *Ajeet Mehta* v. *State of Rajastha,* it was held that stocking of fodder on a certain plot in a residential colony constitutes pollution of atmosphere and hence public nuisance. The order directing removal of this nuisance was held valid and the respondents were directed not to do any business of fodder on that plot.

In another case there were fodder tali in a residential colony to which fodder was brought daily during the night by trucks which were unloaded in the morning. This caused intolerable noise, emanating offensive smell and spreading dust-containing particles of fodder cut. It was held as public nuisance.

- In *Nagarjuna Paper Mills case* it was observed by the A.P. High Court that the power relating to air and water pollution, the Water Act, 1974 has taken away the power of the Sub-Divisional Magistrate to pass an order to close a factory causing pollution. The above said view was also confirmed by the Supreme Court in *Ratlam case* where Their Lordships held that "when on disclosure of existence of a public nuisance from information and evidence, the Magistrate considers that such unlawful obstruction or nuisance should be removed from any public place which maybe lawfully used by the public, he is to order removal of such nuisance". (SCC p. 170, para 13)

Limitations

But while passing an order under Section 133 the Magistrate should be very keen about the complaint and also should see the fulfilment of the required conditions as stipulated. Otherwise the order passed

by such Magistrate can be held illegal as it was in *Chabila Roy* v. *State* where the Magistrate on receiving a complaint regarding the running of a "khatal" did not examine the petitioner and the local people about the physical discomfort or health hazard on account of the "khatal", passed an order. It was held that the order was illegal being in variance with express provisions of Section 133 CrPC.

IPC

In addition to the provisions of CrPC, Chapter XIV of the Indian Penal Code deals with public nuisance. It is undoubtedly an offence affecting the public health, safety, convenience, decency and morals. Under the penal law of India, nuisance is of two kinds: public and private. Public or common nuisances, which affect the public, and are an annoyance to all citizens, are treated as public wrongs. Thus a person trotting rams trained to fight in a market place, a person fouling the water of a streamlet by putting into it bundles of stalks of *tur* plants, a person throwing dust and sweeping on the road in front of his house and thus making the atmosphere noxious to health, a woman keeping on her premises vegetable matter which caused a smell offensive to a person using the public street were guilty of public nuisance.

Environmental Courts

The inherent limitations of the judicial system of review substantive questions relating to the environment make it desirable to establish an alternative forum, with an alternative strategy. As early as 1987, the Supreme Court was convinced of the need for scientific and technological expertise as an essential input to inform judicial decision-making. The court urged the Government of India to set up an Ecological Science Research Group, with professionally competent and independent experts who would act as an "information bank" for the court and government departments and could generate correct and unbiased information.

Case laws-

- Going a step forward and urging the Government of India to establish Environment Courts, the apex court said in [**M.C. Mehta Vs. Union of India ("Shriram Gas Leak Case"**):

"Since cases involving issues of environmental pollution, ecological destruction and conflicts over natural resources are increasingly coming up for adjudication and these cases involve assessment and evaluation of scientific and technical data, it might be desirable to set up Environment and these cases involve assessment and evaluation of scientific and technical data, it might be desirable to set up Environment Courts on the regional basis with one professional judge and two experts drawn from the Ecological Science Research Group keeping in view the nature of the case and the expertise required for its adjudication. There would be of course a right of appeal to the Supreme Court from the decision of the environment court."

- In **Vellore Citizens' Case**, the Supreme Court made a request to the Chief Justice of the Madras High Court to constitute a special bench-"a green bench"- to deal with cases on environmental matters, as is done in Calcutta, Madhya Pradesh, and Punjab and Haryana High Courts. The rationale of such request is obviously admission and an approval of the need for experienced judicial institutions with the requisite environmental expertise, at the regional and State levels, to deal with environmental and ecological issues of local/regional significance.
- In Indian Council for **Enviro-Legal Action v. UOI** ("Coastal Protection Case"), the apex court suggested that environmental matters should first be raised before the High Court having the territorial jurisdiction over the are in question.

In Indian Council for **Enviro-Legal Action v. UOI**, the apex court again reiterated the need for creating environmental courts „to deal with all matters, civil and criminal, relating to the environment" (in

view of the fact that procedure in ordinary courts takes a long time and thus defeat the very purpose of granting the relief). According to the court, such courts should be managed by legally trained persons/judicial officers and should be allowed to adopt summery proceedings.

For review of environmental decisions, it is necessary to have a mechanism of environmental courts or tribunals competent enough to analyze, in an objective manner, environmental, legal and policy issues. The National Environmental Tribunal Act, 1995 provides such a structure. However, the jurisdiction of the Tribunal is limited to determination of compensation for accidents while handling hazardous substances whereas, there are a number of other problems to be decided, examined and reviewed.

- **A.P. Pollution Control Board v. M.V. Nayudu** The Supreme Court in this case again expressed the need for the establishment of environmental courts consisting of judicial and scientific expertise. It suggested amendments in environmental statutes to ensure that in all environmental courts, tribunals and appellate authorities, there is always a judge of the rank of a High Court judge-sitting or retired- and scientist or group of scientists so as to help a proper and fair adjudication of environmental –related disputes. The Court felt that the practice adopted by the higher courts thus far resolving dispute matters through help of commission may not be sustainable over a long term.

National Environment Appellate Authority Act, 1997

The National Environmental Appellate Authority Act, 1997 comes very close to the ideals set by Supreme Court. The Authority, being combination of judicial and technical inputs, possess expertise to give adequate help to the Supreme Court and High Courts to arrive at decisions in environmental matters.

On 30th January 1997, the President of India, in exercise of the powers conferred under Art. 123 of the Constitution of India promulgated an ordinance to provide for the establishment of a National Environment Appellate Authority (NEAA) to hear appeals with respect to restriction in areas in which any industries, operations or processes shall not be carried out or shall be carried out subject to certain safeguards under the Environment (Protection) Act, 1986. The said ordinance has been replaced by the National Environment Appellate Authority Act, 1997

With effect from the date of establishment of the Authority, no Civil Court or other authority shall have jurisdiction to entertain any appeal in respect of any matter with the Authority is empowered by or under this Act (Sec.15). The headquarters of the Authority shall be in Delhi. However, the appeals may be heard at the headquarters or at the discretion of the Chairperson, at any other place (Rule 4, The National Environment Appellate Authority Rules, 1997). The Authority shall consist of a Chairperson, a Vice-Chairperson and such other members (to be appointed by President) not exceeding three as the Central Government may deem fit (Sec.4). A person to be appointed as Chairperson should have been a judge of the Supreme Court, or the Chief Justice of a High Court. A person to be appointed as Vice-Chairperson should have for at least two years held the post of a Secretary to the Government of India, and expertise or experience in administrative, legal, managerial or technical aspects or problems relating to environment. A person to be appointed as a member of the Authority should have the professional knowledge or practical experience in the areas pertaining to conservation, environment management, law or planning and development (Sec. 5). The association of a bureaucrat in the form of Vice-Chairperson is undesirable, as his opinion might be influenced by the political rather than environmental considerations.

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

The Water Cess Act was passed to help meet the expenses of the Central and State Water Boards. The Act creates economic incentives for pollution control and requires local authorities and certain designated industries to pay a cess (tax) for water consumption. These revenues are used to implement the Water Act. The Central Government, after deducting the expenses of collection, pays the Central Board and the states such sums, as it deems necessary to enforce the provisions of Water Act. To encourage capital investment in pollution control, the Act gives a polluter a 70 per cent rebate of the applicable cess upon installing effluent treatment equipment.

The Air (Prevention and Control of Pollution) Act of 1981 and Amendment, 1987

To implant the decisions taken at the United Nations Conference on the Human Environment held at Stockholm in June 1972, Parliament enacted the nationwide Air Act. The main objectives of this Act are to improve the quality of air and to prevent, control and abate air pollution in the country. Important provisions of this Act are given below :-

- The Air Act's framework is similar to the one created by its predecessor, the Water Act of 1974. To enable an integrated approach to environmental problems, the Air Act expanded the authority of the central and state boards established under the Water Act, to include air pollution control.
- States not having water pollution boards were required to set up air pollution boards.
- Under the Act, all industries operating within designated air pollution control areas must obtain „consent" (permit) from the State Boards. The States are required to prescribe emission standards for industry and automobiles after consulting the Central Board and nothing its ambient air quality standards.
- Act granted power to the board to ensure compliance with the Act includes the power of entry for examination, testing of equipment and other purposes and power to take the sample for the purpose of analysis of air or emission from any chimney, fly ash or dust or any other outlet in such manner as may be prescribed.
- Prior to its amendment in 1987, the Air Act was enforced through mild court-administered penalties on violations. The 1987 Amendment strengthened the enforcement machinery and introduced stiffer penalties. Now, the boards may close down a defaulting industrial plant or may stop its supply of electricity or water. A board may also apply to the court to restrain emissions that exceed prescribed limits. Notably, the 1987 Amendment introduced a citizens" suit provision into the Air Act and extended the Act to include Noise Pollution.

The Forest (Conservation) Act of 1980

First Forest Act was enacted in 1927. This is one of the many surviving colonial legislations. It was enacted to consolidate the law related to forest, the transit of forest produce and the duty livable on timber and other forest produce. Subsequently, the Forest (Conservation) Act was promulgated in 1980 to make certain reforms over the preceding Act of 1927.

The 1927 Act deals with the four categories of the forests:-

- reserved forests,
- village forests,
- protected forests and
- Private forests.

A state may declare forest lands or waste lands as reserved forest and may sell the produce from these forests. Any unauthorized felling of trees quarrying, grazing and hunting in reserved forests is punishable with a fine or imprisonment, or both.

Reserved forests assigned to a village Community is called village forests. The State Governments are empowered to designate protected forests and may prohibit the felling of trees, quarrying and the removal of forest produce from these forests.

The preservation of protected forests is enforced through rules, licenses and criminal prosecutions. Forest officers and their staff administer the Forest Act. Alarmed at India's rapid deforestation and resulting environmental degradation, Central Government enacted the Forest (Conservation) Act in 1980. Under the provisions of this Act, prior approval of the Central Government required for diversion of forestlands for non-forest purposes.

An Advisory Committee constituted under the Act advises the Centre on these approvals. **4.29 Biodiversity Act, 2000** India is one of the twelve mega-biodiversity countries of the world and became a party to the International Convention on Biological Diversity in 1994. The objectives of the convention are:

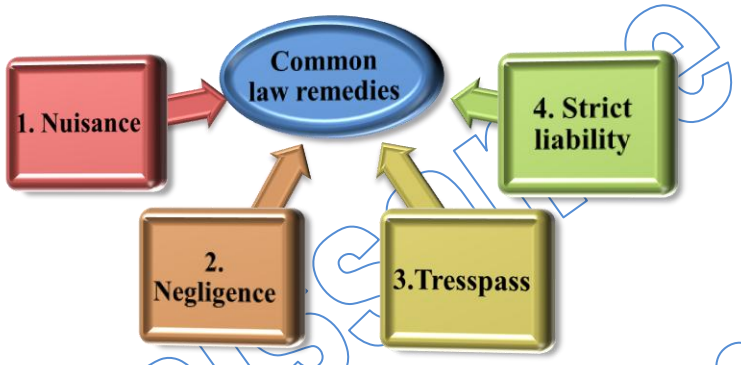
- The conservation of Biological Diversity,
- The sustainable use of its component, and
- The fair and equitable sharing of the benefits arising of the utilization of genetic resources.

Following this a National Policy and Action Strategy on Biodiversity, which seek to consolidate the ongoing efforts of conservation and sustainable use of biological diversity and to establish a policy and programmable regime for the purpose, released by the Government on May 2000. To achieve these goals Biodiversity Bill 2000 was introduced in Parliament in May 2000. This has been finally passed in December 2002. This seeks to check bio-piracy, protect biological diversity and local growers through a three-tier structure of central and state boards and local committees. These will regulate access to plant and animal genetic resources and share the benefits. The National Biodiversity Authority (NBA) will deal with all cases of access by foreigners. Its approval will be required before obtaining any intellectual propriety right on an invention based on a biological resourced from India, or given in other countries.

The NBA will enjoy the power to states if it feels a naturally rich area, is threatened by overuse, abuse or neglect.

Judicial remedies

The remedies available in India for environmental pollution comprise of statutory as well as common law remedies. The term "common law" is derived from the Latin word *lex communis*. The common law is force in India under Article 372 of the Constitution of India.



Nuisance

This type of environmental damage or harm entails the interference with your quality of life and the enjoyment of your own property due to the actions of a third party. This could through means such as rubbish dumping, excessive noise nuisance, odour nuisance and other actions that can adversely affect the way that you use and enjoy your own property. The damages awarded in this type of lawsuit can include damages for loss of value of the property due to the nuisance, damages for personal injury or harm, and damages for loss of use and enjoyment of your property.

Trespass

This type of environmental damage or harm entails the invasion or contamination of your property by the third party. Whether the third party physically invades your property or takes action that could be construed as contamination and invasion (such as rubbish dumping on your property) this would all come under the umbrella of trespass law. Damages for trespass include the recover of either the market value of the property or the cleanup of the pollution. This can differ from state-to-state, and some states will award the cheaper of the two options whereas others will award clean up costs regardless.

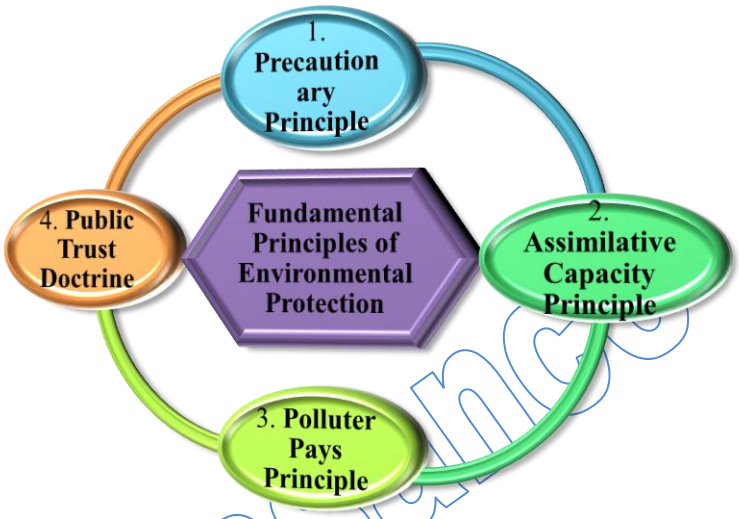
Strict Liability

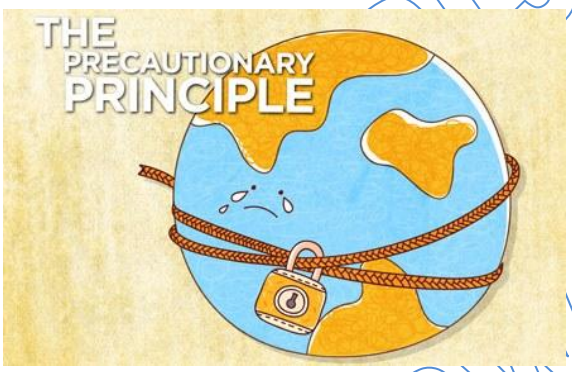
This type of environmental damage or harm entails the use of a hazardous substance by a third party, which has caused harm or damage to you or your property. Strict liability does not take in to consideration why the substance was used and does not take ignorance as an excuse. Whether or not the third party intended to cause damage to another's property is irrelevant, and the third party will till be held accountable. Damages are usually calculated in accordance with the cost of retuning the property to its former state before the contaminant was released.

Negligence

This type of environmental damage or harm entails damage or injury to you or your property through contamination caused by the actions of a third party. Whether it was action or lack of action from the third party that caused your exposure, injury or damage, you can still bring a claim. However, this is if the third party used the contaminating substance in what is deemed an unreasonable manner.

Damages can include compensation for clearing the contamination, damages, decreased property values and personal injury.





Precautionary Principle

Precautionary principle plays a significant role in determining whether developmental process is sustainable or not. Precautionary principle underlies sustainable development which requires that the developmental activity must be stopped and prevented if it causes serious and irreversible environmental damage. The emergence of precautionary principle marks a shift in the international environmental jurisprudence- a shift from assimilative capacity principle to precautionary principle.

The essential ingredients of the precautionary principle are:-

(i) Environmental measures- by the State Government and the statutory authorities-must anticipate, prevent and attack the causes of environmental degradation.

(ii) When there are threats of serious and irreversible damages, lack of scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

(iii) The "onus of proof" is on the actor or the developer/industrialist to show that his action is environmentally benign ("Reversal of burden of proof).

(iv) Precautionary duties must not only be triggered by the suspicion of concrete danger but also by (justified) concern or risk potential.

The precautionary principle suggests that where there is an identifiable risk of serious or irreversible harm, including, for example, extinction of species, widespread toxic pollution in major threats to essential ecological processes, it may be appropriate to place the burden of proof on the person or entity proposing he activity that is potentially harmful to the environment.

Case laws-

- In **Vellore Citizens Welfare Forum v. Union of India** (Tamil Nadu Tanneries Case), about 900tanneries in five districts of the State of Tamil Nadu were discharging enormous amount

of untreated effluent consisting of about 170 different types of chemicals into agricultural fields, roadside, waterways and open land. About 35,000 hectares of land became partially or totally unfit for cultivation. The water in the area became unfit for consumption and irrigation purposes.

In his judgment, Justice Kuldip Singh (known to be a Green Judge) observed that, even otherwise once these principles are accepted as part of the Customary International Law, there would be no difficulty in accepting them as part of the domestic law. It is almost accepted proposition of municipal law, that the rule of customary international law, which are not contrary to the municipal law shall be deemed to have been incorporated in the domestic law and shall also be followed by the Courts of laws of the country.

One of the significant directions given by the Supreme Court in this litigation was contained in an order passed in 1995 whereby some of the industries were required to set up effluent treatment plants.

- In **Narmada Bachao Andolan v. Union of India**, precautionary principle came to be considered by the majority of judges. The Court also took the view that the doctrine is to be employed only in cases of pollution when its impact is uncertain and non-negligible.
- In **M.C. Mehta v. Union of India**, the Supreme Court once again followed the path of sustainable development and directed that the industries operating in Taj Trapezium Zone using a coke/coalas industrial fuel must stop functioning and they could relocate to the alternate site provided under the Agra Master Plan. It further stated that not even 1% chance could be taken when human life a part, the preservation of a prestigious monument like the Taj was involved.
- In **Shobha Rama Subramanayyam v. The Member Secretary**, Chennai Metropolitan Authority, The Court stated that the construction builders have a duty to use modes for digging foundation for multistory buildings, so that it does not cause noise pollution in the neighboring areas.
- In **S. Jagannath v. Union of India**, the Supreme Court held that sea beaches and sea coasts are gifts of nature and any activity polluting the same cannot be permitted. The intensified shrimp(prawn) farming culture industry by modern method in coastal areas was causing degradation of mangrove ecosystem, depletion of plantation discharge of highly polluting effluents and pollution of potable as well as ground water. The Precautionary Principle led to the evolution of the special principle of burden of proof mentioned in Vellore Citizens Welfare Forum.

Assimilative Capacity Principle

Assimilative capacity principle underlies earlier legal measures to protect the environment. In 1972, the UN conference on Human Environment was held at Stockholm which resulted in the adoption of Stockholm Declaration containing 26 principles.

Principles 6 of the Stockholm Declaration contains assimilative capacity principle which assumes that science could provide the policy makers with the necessary information and means to avoid encroaching upon the capacity of the environment to assimilate impacts and it presumes that relevant technical expertise would be available when environmental harm is predicted and there would be sufficient time to act in order to avoid such harm.

The assimilative capacity is based on the belief that scientific theories are certain and adequate to provide the remedies for ecological restoration whenever pollution occurs. The principle is built on the foundation of scientific certainties and adequacies.

Assimilative capacity principle suffers setback due to inadequacies and uncertainties of science visible in environment context. The uncertainty of scientific proof and its changing frontiers from time to time have led to great changes in the environmental concepts during the period between the Stockholm Conference of 1972 and the Rio Conference of 1992.

Polluter Pays Principle

Polluter Pays Principle has become a popular catchphrase in recent times. 'If you make a mess, it's your duty to clean it up'- this is the main basis of this slogan. It should be mentioned that in environmental law, the 'polluter pays principle' does not refer to "fault." Instead, it favors acurative approach which is concerned with repairing ecological damage.

It's a principle in international environmental law where the polluting party pays for the damage done to the natural environment. It is regarded as a regional custom because of the strong support it has received in most Organization for Economic Co-operation and Development (OECD) and European Community (EC) countries. International environmental law itself mentions little about the principle.

In recent days, the polluter pays principle is seen as a way of internalizing pollution-related costs within the context of the economic rationality of the enterprise. There is a close relationship between a country's environmental policy and its overall socioeconomic policy. Furthermore, under this principle it is not the responsibility of government to meet the costs involved in either prevention of environmental damage, or in carrying out remedial action, because the effect of this would be to shift the financial burden of the pollution incident to the taxpayer. But State practice does not support the view that all de-pollution costs should be borne by the polluter, particularly where transnational dispute is involved.

Case laws-

- It may be noted that the polluter pays principle evolved out of the rule of "absolute liability" as laid down by the apex court in **Shriram Gas Leak Case**. In the **Bichhri Case** the apex court nicely weighed and balanced the conspectus of absolute liability and polluter pays principle. The court interpreted the principle to mean that the absolute liability for harm to the environment extends to the cost of restoring the environmental degradation in additions to compensating the victims of pollution. The court observed that Sec. 3 and 5 of the Environment (Protection) Act, 1986, empower the Central Government to give directions and take measures for giving effect to this principle. The „power to lay down the procedures, safeguards and remedial measures" under the omnibus power of taking all measures impliedly incorporated the polluter pays principles. Also, in Vellore Citizens" ***Welfare Forum* v. *Union of India***, the apex court directed the Central Government to constituted separate authorities under Sec. 3(3) of the Environment Act and directed the authorities to assess the loss to the ecology/environment and recover the amount from the polluters.
- In the **Calcutta Tanneries Case**, the task of assessment and recovery of restoration costs was assigned to an authority appointed by the State Government. The apex court also directed polluters to pay a "pollution fine" with the proceeds being credited to an "environment protection fund" for the restoration of the local environment.
- Span Motel was directed to pay compensation for restitution of the environment and ecology in **M.C. Mehta v. Kamal Nath.** In the similar case, the apex court noted:-

"Pollution is a civil wrong. By its very nature, it is a tort committed against the community as a whole. A person, therefore, who is guilty of causing pollution has to pay damages (compensation) for restoration of the environment. He has also to pay damages to those who have suffered loss on account of the act of the offender. Further, the offender can also be held liable to pay exemplary damages so that it may act as a deterrent for others not to cause pollution in any manner. However, the court cannot impose any pollution fine in absence of any trial and finding of guilty under the relevant statutory provisions."

In the similar case (2002) 3 SCC 653, the apex court held: It would be both in public interest as well as in the interest of justice to fix the quantum of exemplary damages payable by Span Motels at Rs.10 lakhs only. The question relating to the quantum of damages on the principle of "polluter pays" will be determined separately.

- In **Pravinbhai J. Patel v. State of Gujarat**, the court directed the pollution units to either shut down or pay one percent of its gross turnover towards "Socio-economic uplift" of the affected villages. In **Deepak Nitrite Ltd. V. State of Gujarat**, the issue was when damages for, on account of "polluter to pay" can be awarded in case of pollution caused by industries. The court held that compensation to be awarded must have some broad correlation not only with the magnitude and capacity of the enterprise but also with the harm caused by it. In the present case, the industrial units were not observing norms prescribed by State PCB. However, the High Court gave no finding that such lapse has caused damage to environment. Thus, the payment of 1% of turnover as compensation ordered by the High Court to further investigate in each of these case and find our broadly whether there has been any damage caused by any of industrial units and that exercise need not be undertaken by High Court as if present proceeding is an action in tort but an action in public law. In this process, it is open to the High Court to consider whether 1% of turnover itself would be an appropriate formula or not.
- In **Vijay Singh Puniya v. State of Rajasthan**, the High Court, on the principle of "Polluter pays" directed that each of the polluting industrial units shall pay to State Industrial Corporation, 15% of its turnover by way of damages. The polluter pays principle though recognized judicially in India does not find a place in the major environmental legislations viz. Water, Air and Environment Acts. In Vellore Citizens Case, the apex court stated that precautionary principle and polluter pays principle govern the law in India as is clear from Arts. 48-A and 51-A(g) of the Constitution and that, in fact, in various environmental statutes, such as Water Act, 1974, the Environment (Provision) Act, 1986, and other statutes, these concepts are already implied.

Lack of executive action in India has led someone to comment that in essence, the "polluter pays" principle has degenerated into "pay and pollute". The CNG Vehicles case and so many other cases amplify the above point.

Public Trust Doctrine

The ancient Roman Empire developed a legal theory known as the as the "Doctrine of the Public Trust." The doctrine primarily rests on the principle that certain resources like air, sea, waters and the forests have such a great importance to the people as a whole that it would be wholly unjustified to make them a subject of private ownership.

The said resources being a gift of nature, they should be made freely available to everyone irrespective of the status in life. The doctrine enjoins upon the Government to protect the resources for the enjoyment of the general public rather than to permit their use for private ownership or commercial purposes. Though the public trust doctrine under the English Common Law extended only to certain traditional uses viz., navigation, commerce and fishing, the US Courts in recent cases expanded the concept of the public trust doctrine. The Supreme Court in India has also recognized that this doctrine is part of Indian law. The Court in the below-mentioned case held that the doctrine of public trust implies following restrictions on governmental authority:

"First, the property subject to the trust must not only be used for a public purpose, but it must be held available for use by the general public. Secondary, the property may not be sold, even for a fair cash equivalent. Thirdly, the property, must be maintained for particular types of uses."

Sustainable Development

As a working definition, sustainability can be defined as the practice of maintaining processes of productivity indefinitely natural or human made by replacing resources used with resources of equal or greater value without degrading or endangering natural biotic systems. According to M. Hasna, sustainability is a function of social, economic, technological and ecological themes. Sustainable development ties together concern for the carrying capacity of natural systems with the social, political, and economic challenges faced by humanity. As early as the 1970s, the concept of "sustainability" was employed to describe an economy "in equilibrium with basic ecological support systems." Scientists in many fields have highlighted The Limits to Growth, and economists have presented alternatives, for example a 'steady state economy'; to address concerns over the impacts of expanding human development on the planet.

The term sustainable development rose to significance after it was used by the Brundtland Commission in its 1987 report Our Common Future. In the report, the commission coined what has become the most often-quoted definition of sustainable development: "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." The United Nations Millennium Declaration identified principles and treaties on sustainable development, including economic development, social development and environmental protection.

Strategies for Sustainable Development in India

Statement of Mrs. Indira Gandhi would like to quote in which she was emphasized on environmental security for sustainable development. At the UN Conference on Human Environment at Stockholm in 1972 she said that, the removal of poverty is an integral part of the goal of an environmental strategy for the world.

Sustainable development ensures the well-being of individual by integrating social development, economic development, and environmental conservation and protection. The most frequently used definition of sustainable development is 'development that meets the needs of the present without

compromising the ability of future generations to meet their own needs.' The meaning of needs is something that is necessary for the organism to live a healthy life.
It is necessary for the sustainable development that the policies and technologies should be green so that environmental ability meets present and future generation in equal manner. It was coined in 1987 by the United Nations-appointed World Commission on Environment and Development, also known as the Brundtland Commission after its chair, former Norwegian Prime Minister Gro Harlem Brundtland.

Chronological Milieu of Sustainable Development

In the mid-20th century world community highlights four points of collective desire and aspiration of the people - peace, independence, development and environment. After this first time Rachel Carson represented the conflict between economic development and environment in his book '*Silent Spring*'
In 1966 D. H. Meadows in his book '*Limit to Growth*' centralized the attention on environment degradation occurs due to development in1972. This report challenged the idea of progress that compares the present with the past, and considers the future an endless possibility for further growth and improvement, on the grounds that it failed to acknowledge the obvious truth that resources are finite, and hence growth dependent on resources cannot be endless. The implicit message of The Limits to Growth was that growth needed to be replaced with no growth.

Challenges of sustainable development

The challenges of sustainable development and its consequences are clearly visible. It is only invisible if we not want to see.
Population is a major challenge for the sustainable development. In the beginning of the 21st century the population of the Earth reached 6 billion, and is expected to level out 10 and 11 billion over the next 50 years. The basic challenges will be shortage of water and arable land for food production.
Poverty is another major challenge because almost 25% of the world's population lives on less than USD 1 per day.
Inequality continues to be a serious obstacle to sustainable development with the number of people suffering from undernourishment. The fall of food prices over the past 30 years may have contributed to increases in consumption, but in many regions of the world arable terrains are limited, and the creation of new ones has a destructive effect on the remaining ecosystems. In the future, the growth of food production should not come at the expense of nature. By 2010 the current step of biodiversity loss should be significantly slowed.
The shortage of drinking water in many regions of the world is a major barrier to sustainable development. It is expected that, at the current rate of development, every second person will suffer from water shortage by the year 2025.
Human health is also an obstacle in sustainable development. In many cases, deaths in developing countries are avoidable. Humanity should direct more attention and money in the coming years to the struggle against diseases. The imminent task is to reduce the death rate among children under five years of age by two-thirds, and the death rate of young mothers by 75% by 2015.

Consumption of energy is a major challenge for the sustainable development. Consumption of all forms of energy is continually rising. The improvement of access to reliable, sustainable and environmentally friendly energy sources and services, as well as the creation of national programmes for energy effectiveness, is a particularly important task for the next 10-15 years.

Deforestation *is* particularly great challenge before the sustainable development. The world's forests diminish mainly due to expansion of agriculture. In the coming years, improving the recovery and management of the forests will be of utmost importance.

Petrol consumption is constantly rising. The Summit emphasised the need to realise the decisions of the Kyoto Protocol for reaching an agreement on emissions norms for greenhouse gases in developed countries.

Strategies for Sustainable Development

The conceptual meaning of sustainable development is not to create an obstacle in development process but this concept belongs to how we utilize our resources so that an inter-relationship can be established among present and future generation. To attained sustainable development many probable strategies can be useful.

Input Efficient Technology can be reducing the exploitation of resources. So this technology may good for sustainable development.

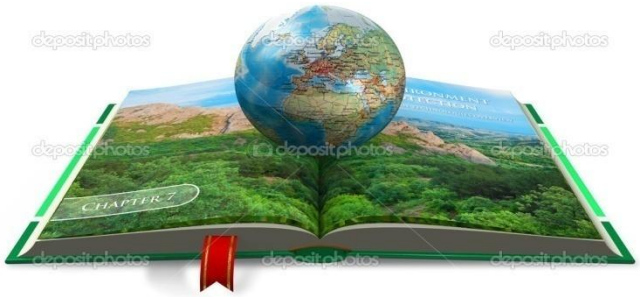
Using of Environmental friendly Sources of Energy, such as LPG and CNG which are eco-friendly fuel, we can reduce the greenhouse gases from the earth. Delhi Transport Corporation's initiative to CNG Buses in Delhi is the one of the best effort to reduce CO_2 and other harmful gases. Government should pay attention on

Integrated Rural Development Programmes, through this the burden and interdependency on cities for employment can be decrease. To focus on *renewable sources of energy* like solar and wind for energy needs. It will be beneficial for the country like India, where is enough sun light, to *Convert Sun light into solar Energy and Solar Energy in Electricity*. It will create an atmosphere for green development. For attaining the sustainable development it is necessary for the government and society to control on the *Tragedy of Commons*. It means to stop the maximum use of easy available resources. With above these government should stimulate the *organic forming* and *recycle the wastes*. Last but not least, it is responsibility of citizens to encourage the awareness *to conserve the natural assets for inter-generational equality.*

Sustainable development is a vision and a way of thinking and acting so that we can secure the resources and environment for our future generation. It will not be brought about by policies only it must be taken up by society at large as a principle guiding the many choices each citizen makes every day, as well as the big political and economic decisions that affect many. It is clear that environmental degradation tends to impose the largest costs on those generations that are yet to be born. Future generations are disadvantaged with regards to present generations because they can inherit an impoverished quality of life, share a condition of structural weakness in having no voice and representation among the present generation and so their interests are often neglected in present decisions and planning while it is very much needful that we think about our generation. We can only improve sustainable development when it will put an emphasis on involving citizens and stakeholders. Ultimately, the vision will become reality only if everybody contributes to a world where economic freedom, social justice and environmental protection go hand in hand, making our own and future generations better off than now.

UNIT IV

1. Protection: means and sanctions
2. Protection agencies: power and functions
3. Emerging protection through delegated legislation
4. Hazardous waste
5. Bio- medical waste



Measures Taken By the Indian Government for Protecting Our Environment

The strategy of prevention consists of raising public awareness, strict enforcement of laws, statutory assessment of environmental impact of projects and efforts to regenerate the productivity of ecosystems.

The raising of public awareness is effective in some cases in refraining people from harmful activities, once they are convinced of the dangers.

Strict laws, rigorously implemented, can prevent environmental destruction through stringent punitive measures making an undesirable action very expensive for the offender.

Statutory environmental impact assessment of all projects and activities before their implementation can prevent degradation through obligation on the executing agencies to undertake compensatory measures.

Destruction can also be prevented by regenerating nature and increasing the productivity of the ecosystems.

The strategy of regulation is best applicable where projects have come up. It requires that:

(i) A detailed report should be prepared identifying the sources of pollution by the project or activity and indicating in a realistic and time-bound manner the measures required to be taken;

(ii) A similar report should be prepared about domestic and agricultural pollution, especially from pesticides, locating sources and suggesting remedial measures;

(iii) Functioning of the Central and State Pollution Control Boards should be strengthened and be made more open;

(iv) Comprehensive and realistic standards should be formulated for environmental pollution and for procedures and standards for assessing environmental damage;

(v) Industries should be made to recognize, if necessary by a dialogue with the government the cost on economy of environmental effects and be persuaded to show greater leadership and responsibility by controlling pollution through built-in measures;

(vi) Public participation in prevention and control of pollution and environmental degradation should be facilitated by providing necessary technical help and by the governments setting up appropriate machinery for speedy response to investigation and disposal of public complaints;
(vii) For encouraging public vigilance, incentives should be offered for reporting instances of violation of laws relating to pollution, forests, wildlife and other environmental issues; and
(viii) The regulatory functions of the Government should be decentralised, especially in relation to pollution with essential training and equipment being provided to representatives of communities.

The legal and regulatory framework for environmental protection in India

Over the years, together with a spreading of environmental consciousness, there has been a change in the traditionally-held perception that there is a trade-off between environmental quality and economic growth as people have come to believe that the two are necessarily complementary. The current focus on environment is not new environmental considerations have been an integral part of the Indian culture. The need for conservation and sustainable use of natural resources has been expressed in Indian scriptures, more than three thousand years old and is reflected in the constitutional, legislative and policy framework as also in the international commitments of the country.
Even before India's independence in 1947, several environmental legislations existed but the real impetus for bringing about a well-developed framework came only after the UN Conference on the Human Environment (Stockholm, 1972). Under the influence of this declaration, the National Council for Environmental Policy and Planning within the Department of Science and Technology was set up in 1972. This Council later evolved into a full-fledged Ministry of Environment and Forests (MoEF) in 1985 which today is the apex administrative body in the country for regulating and ensuring environmental protection. After the Stockholm Conference, in 1976, constitutional sanction was given to environmental concerns through the 42nd Amendment, which incorporated them into the Directive Principles of State Policy and Fundamental Rights and Duties.
Since the 1970s an extensive network of environmental legislation has grown in the country. The MoEF and the pollution control boards (CPCB i.e. Central Pollution Control Board and SPCBs i.e. State Pollution Control Boards) together form the regulatory and administrative core of the sector.
A policy framework has also been developed to complement the legislative provisions. The Policy Statement for Abatement of Pollution and the National Conservation Strategy and Policy Statement on Environment and Development were brought out by the MoEF in 1992, to develop and promote initiatives for the protection and improvement of the environment. The EAP (Environmental Action Programme) was formulated in 1993 with the objective of improving environmental services and integrating environmental considerations in to development programmes.
Other measures have also been taken by the government to protect and preserve the environment. Several sector-specific policies have evolved, which are discussed at length in the concerned chapters.
This chapter attempts to highlight only legislative initiatives towards the protection of the environment.

Legislation for environmental protection in India

Water

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

Water (Prevention and Control of Pollution) Act, 1974

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

Section 2- Definitions.-

In this Act, unless the context otherwise requires. -

(dd) "outlet" includes any conduit pipe or channel, open or closed, carrying sewage or trade effluent or any other holding arrangement which causes, or is likely to cause, pollution;

(e) "pollution" means such contamination of water or such alteration of the physical, chemical or biological properties of water or such discharge of any sewage or trade effluent or of any other liquid, gaseous or solid substance into water (whether directly or indirectly) as may or is likely to, create a nuisance or render such water harmful or injurious to public health or safety, or to domestic, commercial, industrial, agricultural or other legitimate uses, or to the life and health of animals or plants or of aquatic organisms;

(f) "Prescribed" means prescribed by rules made under this Act by the Central Government or, as the case may be, the State Government;

(g) "Sewage effluent" means effluent from any sewerage system or sewage disposal works and includes sullage from open drains;

(gg) "Sewer" means any conduit pipe or channel, open or closed, carrying sewage or trade effluent;

(j) "stream" includes - (i) river; (ii) water course (whether flowing or for the time being dry); (iii) inland water (whether natural or artificial); (iv) sub-terranean waters; (v) sea or tidal waters to such extent or, as the case may be, to such point as the State Government may, by notification in the Official Gazette, specify in this behalf;

(k) "Trade effluent" includes any liquid, gaseous or solid substance which is discharged from any premises used for carrying on any industry; operation or process or treatment and disposal system other than domestic sewage. ….

Section 24- Prohibition on use of stream or well for disposal of polluting matter. -

(1) Subject to the provisions of this section, -

(a) no person shall knowingly cause or permit any poisonous, noxious or polluting matter determined in accordance with such standards as may be laid down by the State Board to enter (whether directly or indirectly) into any stream or well or sewer or on land; or

(b) no person shall knowingly cause or permit to enter into any stream any other matter which may tend, either directly or in combination with similar matters, to impede the proper flow of the water of the stream in a manner leading or likely to lead to a substantial aggravation of pollution due to other causes or of its consequence.

(2) A person shall not be guilty of an offence under sub-section (1), by reason only of having done or caused to be done any of the following acts, namely:-

(a) constructing, improving or maintaining in or across or on the bank or bed of any stream any building, bridge, weir, dam, sluice, dock, pier, drain or sewer or other permanent works which he has a right to construct, improve or maintain;

(b) depositing any materials on the bank or in the bed of any stream for the purpose of reclaiming land or for supporting, repairing or protecting the bank or bed of such stream provided such materials are not capable of polluting such stream;

(c) Putting into any stream any sand or gravel or other natural deposit which has flowed from or been deposited by the current of such stream;

(d) Causing or permitting, with the consent of the State Board, the deposit accumulated in a well, pond or reservoir to enter into any stream.

(3) The State Government may, after consultation with, or on the recommendation of, the State Board, exempt, by notification in the Official Gazette, any person from the operation of sub-section (1) subject to such conditions, if any, as may be specified in the notification and any condition so specified may by a like notification be altered, varied or amended.

Secton 25- Restrictions on new outlets and new discharges. -

(1) Subject to the provisions of this section, no person shall, without the previous consent of the State Board, -

(a) establish or take any steps to establish any industry, operation or process, or any treatment and disposal system or any extension or addition thereto, which is likely to discharge sewage or trade effluent into a stream or well or sewer or on land (such discharge being hereafter in this section referred to as discharge of sewage); or

(b) Bring into use any new or altered outlet for the discharge of sewage; or

(c) Being to make any new discharge of sewage:

Provided that a person in the process of taking any steps to establish any industry, operation or process immediately before the commencement of the Water (Prevention and Control of Pollution) Amendment Act, 1988, for which no consent was necessary prior to such commencement, may continue to do so for a period of three months from such commencement or, if he has made an application for such consent, within the said period of three months, till the disposal of such application. …

(5) Where, without the consent of the State Board, any industry, operation or process, or any treatment and disposal system or any extension or addition thereto, is established, or any steps for such establishment have been taken or a new or altered outlet is brought into use for the discharge of sewage or a new discharge of sewage is made, the State Board may serve on the person who has established or taken steps to establish any industry, operation or process, or any treatment and

disposal system or any extension or addition thereto, or using the outlet, or making the discharge, as the case may be, notice imposing any such conditions as it might have imposed on an application for its consent in respect of such establishment, such other or discharge.
(6) Every State Board shall maintain a register containing particulars of the conditions imposed under this section and so much of the register as relates to any outlet, or to any effluent, from any land or premises shall be open to inspection at all reasonable hours by any person interested in or affected by such outlet, land or premises, as the case may be, or by any person authorised by him in this behalf and the conditions so contained in such register shall be conclusive proof that the consent was granted subject to such conditions.
(7) The consent referred to in sub-section (1) shall, unless given or refused earlier be deemed to have been given unconditionally on the expiry of period of four months of the making of an application in this behalf complete in all respects to the State Board.

Section 26- Provisions regarding existing discharge of sewage or trade effluent. -
Where immediately before the commencement of this Act any person was discharging any sewage or trade effluent into a stream or well or sewer or on land the provisions of section 25 shall, so far as may apply in relation to such person as they apply in relation to the person referred to in that section subject to the modification that the application for consent to be made under sub-section (2) of that section shall be made on or before such date as may be specified by the State Government by notification in this behalf in the Official Gazette. ...

Section 43- Penalty for contravention of provisions of section 24. -
Whoever contravenes the provisions of section 24 shall be punishable with imprisonment for a term which shall not be less than one year and six months but which may extend to six years and with fine.
44. Penalty for contravention of section 25 or section 26. -
Whoever contravenes the provisions of section 25 or section 26 shall be punishable with imprisonment for a term which shall not be less than one year and six months but which may extend to six years and with fine. ...

Section 47- Offences by companies. -
(1) Where an offence under this Act has been committed by a company, every person who at the time the offence was committed was in charge of, and was responsible to the company for the conduct of, the business of the company, as well as the company, shall be deemed to be guilty of the offences and shall be liable to be proceeded against and punished accordingly:
Provided that nothing contained in this sub-section shall render any such person liable to any punishment provided in this Act if the proves that the offence was committed without his knowledge or that he exercised all due diligence to prevent the commission of such offence.
(2) Notwithstanding anything contained in sub-section (1), where an offence under this Act has been committed by a company and it is proved that the offence has been committed with the consent or connivance of, or is attributable to any neglect on the part of, any director, manager, secretary or other officer of the company, such director, manager, secretary or other officer shall also be deemed to be guilty of that offence and shall be liable to be proceeded against and punished accordingly.
Explanation: For the purposes of this section -
(a) "Company" means any body corporate and includes a firm or other association of individuals; and
(b) "Director" in relation to a firm means a partner in the firm.

Section 48- Offences by government departments. -
Where an offence under this Act has been committed by any Department of Government, the Head of the Department shall be deemed to be guilty of the offence and shall be liable to be proceeded against and punished accordingly:

Provided that nothing contained in this section shall render such Head of the Department liable to any punishment if he proves that the offence was committed without his knowledge or that he exercised all due diligence to prevent the commission of such offence.

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

This Act provides for a levy and collection of a cess on water consumed by industries and local authorities. It aims at augmenting the resources of the central and state boards for prevention and control of water pollution. Following this Act, *The Water (Prevention and Control of Pollution) Cess Rules* were formulated in 1978 for defining standards and indications for the kind of and location of meters that every consumer of water is required to install.

Air (Prevention and Control of Pollution) Act, 1981

Air

To counter the problems associated with air pollution, ambient air quality standards were established, under the 1981 Act. The Act provides means for the control and abatement of air pollution. The Act seeks to combat air pollution by prohibiting the use of polluting fuels and substances, as well as by regulating appliances that give rise to air pollution. Under the Act establishing or operating of any industrial plant in the pollution control area requires consent from state boards. The boards are also expected to test the air in air pollution control areas, inspect pollution control equipment, and manufacturing processes.
To implement the decisions taken at the United Nations Conference on the Human Environment held at Stockholm in June 1972, Parliament enacted the nationwide Air (Prevention & Control of Pollution) Act under Article 253 of the Constitution of India. The Act's statement of objects and reasons contained the governments' explanation of the contents and the scope of the law and its concern for the detrimental effect (air pollution) on the health of the people as also on animal life, vegetation and property.

The Air Act's framework is similar to the one created by its predecessor, the Water Act of 1974. To enable an integrated approach to environmental problems, the Air Act expanded the authority of the Central and State Boards established in the Water Act to include air pollution control. States which have not constituted the Water Pollution Boards were required to constitute Air Pollution Boards.

Under the Air Act, all industries operating within designated air pollution control areas must obtain consent (permit) from the State Boards.

Prior to its amendment in 1987, the Air Act was enforced through mild Court administered penalties on violators. The 1987 amendment strengthened the enforcement machinery and introduced stiffer

penalties. Now, the Boards may close down a defaulting industrial plant or may stop its supply of electricity or water. A Board may also apply to a Court to restrain emissions that exceed prescribed standards. Notably the 1987 amendment introduced a citizen initiative provisions into the Air Act and extended the Act to include Noise Pollution.

Object of the Air (Prevention & Control of Pollution) Act, 1981:

The object of the Act is stated in the Long Title of the Air Act, An Act to provide for the prevention and control of air pollution for the establishment with a view to carrying out the aforesaid purposes, of Boards for conferring on and assigning to such Boards powers and functions relating thereto and for matters connected there with.

Whereas decisions were taken at the United Nation Conference on the Human Environment held in Stockholm in June1972 in which India participated, to take appropriate steps for the preservation of the natural resources of the earth which amount other things include the preservation of quality of air and control of air pollution and whereas it is considered necessary to implement the decisions aforesaid in so far as they relate to the preservation of the quality of air and control of air pollution.

Key Definitions:

Sections 2 of the Air Act deals with the definitions, the important ones are as follows:

1. **Air Pollutant: Section 2(a)** Air Pollutant means any solid, liquid and gaseous substance including noise present in the atmosphere in such concentration as may be or tend to be injurious to human beings or other living creatures or plants or property or environment.
2. **Air Pollution: Section 2(b)** Air Pollution means the presence in the atmosphere of any air pollutant.
3. **Emission: Section 2(j)** Emission means any solid or liquid or gaseous substance coming out of any chimney, duct or flue or any other outlet.
4. **Occupier: Section 2(m)** Occupier in relation to any factory or premises means the person who has control over the affairs of the factory or the premises and includes in relation to any substance the person in possession of the substance.

Constitution of the State Air Pollution Control Board:

Section 5 of the Air Act gives the constitution of the State Air Pollution Control Board.

In any State in which the Water Act , 1974 is not in force or that Act is in force but the State Government has not constituted a State Board under Water Act, the State Government shall with effect from such date as it may be, by notification in Official Gazette, appoint, constitute a State Board for the prevention and control of air pollution under such name as may be specified in the Notification, to exercise the powers conferred on and perform the functions assigned to that Board under this Act.

A State Board under this Act shall consist of the following members namely:

a. A Chairman, having a special knowledge or practical experience in respect of matters relating to environmental protection, to be nominated by State Government. He may be whole time or part time as the State Government may think fit.

b. Such number of Officials, not exceeding five as the State Government may think fit, to be nominated by the State Government to represent that Government.

c. Such number of persons, not exceeding five as the State Government may think fit, to be nominated by the State Government from amongst the members of the local authorities functioning within the State.

d. Such number of persons, not exceeding three as the State Government may think fit, to be nominated by the State Government to represent interest of agriculture, fishery or industry or trade or labour or any other interest which in the opinion of that Government ought to be represented.

e. Two persons to represent the Companies or Corporations owned, controlled or managed by State Government to be nominated by that Government.
f. A full time Member Secretary having practical experience in respect of matters relating to environmental protection and having administrative experience, to be appointed by the State Government.
State Government shall ensure that not less than two of the members are persons having special knowledge or practical experience in respect of matters relating to the improvement of the quality of air or the prevention, control or abatement of air pollution.

A Board shall be:
1. Body Corporate with name by State Government
2. Perpetual Succession
3. Common Seal
4. Acquire and dispose of properties
5. Contract
6. Can Sue and be sued.

Powers and Functions :
Powers :
1. No person shall without the previous consent of the State Board, establish or operate any industrial plant in an Air Pollution Control Area.
2. State Board may make inquiry in respect of application for consent referred above.
3. State Board may grant or refuse the application referred above.
4. State Board shall have right to enter, at all reasonable times with such assistance as it considers necessary to any place.
5. State Board is empowered to call for any information from the occupier or any person carrying on any industry or operating any control equipment or industrial plant.
6. State Board shall have right to inspect the premises where industry, control equipment or industrial plant is being carried on or operated.
7. State Board has right to take, for the purposes of analysis, samples of air or emission from any chimney, flue or duct or any other outlet.

Functions:
a. To plan a comprehensive programme for the prevention, control or abatement of air pollution and to secure the execution thereof.
b. To advise the State Government on any matter concerning the prevention, control or abatement of air pollution.
c. To collect and disseminate information relating to air pollution.
d. To collaborate with Central Board in organizing the training of persons engaged or to be engaged in programmes relating to prevention, control or abatement of air pollution and to organize mass education programme relating thereto.
e. To inspect, at all reasonable times, any control equipment, industrial plant or manufacturing and to give, by order, such directions to such persons as it may consider necessary to take steps for the prevention, control or abatement of air pollution.
f. To inspect Air Pollution Control Areas at such intervals as it may think necessary, access the quality of air therein and take steps for the prevention, control or abatement of air pollution in such areas.
g. To lay down, in consultation with the Central Board and having regard to the standards of the quality of air laid down by the Central Board, standards for emission of air pollutants into the atmosphere from industrial plants and automobiles or for the discharge of any air pollutant into the atmosphere from any other source whatsoever not being a ship or an aircraft.

Provided that different standards for emission may be laid down under this clause for different industrial plants having regard to the quantity and composition of emission of air pollutants into the atmosphere form such industrial plants.

h. To advise State Government with respect to the suitability of any premises or location for carrying on any industry this is likely to cause air pollution.

i. To perform such other functions as may be prescribed or as may from time to time be entrusted to it by the Central Board or the State Government.

j. To do such other things and to perform such other acts as it may think necessary for the proper discharge of its functions and generally for the purpose of carrying into effect the purposes of the Act.

A State Board may establish or recognize laboratories to enable the State Board to perform its functions under this Section efficiently.

Critical Analysis:

As far as composition of the Board is concerned it is clear that an adequate representation of interests was not adhered to. In India the Environment Legislation regime is essentially backed up with a movement through the PIL regime as well as direct participation of people representation in the composition of the Board. This may in one way partly affect the very effective functioning of the Board.

When we look into some provisions which provide specific powers to the Board such as taking up sample and examination of emission standards are confined only to the Air Pollution Control Areas. This aspect may create a conflict at the time of enforcement of the provisions followed by the penal sanctions.

Air (Prevention and Control of Pollution) Amendment Act, 1987

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

The Air (Prevention and Control of Pollution) Rules, 1982

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

Complementing the above Acts is the *Atomic Energy Act* of 1982, which was introduced to deal with radioactive waste. In 1988, the *Motor Vehicles Act* was enacted to regulate vehicular traffic, besides ensuring proper packaging, labeling and transportation of the hazardous wastes. Various aspects of vehicular pollution have also been notified under the EPA of 1986. Mass emission standards were notified in 1990, which were made more stringent in 1996. In 2000 these standards were revised yet again and for the first time separate obligations for vehicle owners, manufacturers and enforcing agencies were stipulated. In addition, fairly stringent Euro I and II emission norms were notified by the Supreme Court on April 29, 1999 for the city of Delhi. The notification made it mandatory for car

manufacturers to conform to the Euro I and Euro II norms by May 1999 and April 2000, respectively, for new non-commercial vehicle sold in Delhi.

The Wildlife (Protection) Act, 1972, Amendment 1991

Forests and wildlife

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

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

This Act is an umbrella legislation designed to provide a framework for the co-ordination of central and state authorities established under the Water (Prevention and Control) Act, 1974 and Air (Prevention and Control) Act, 1981. Under this Act, the central government is empowered to take measures necessary to protect and improve the quality of the environment by setting standards for emissions and discharges; regulating the location of industries; management of hazardous wastes, and protection of public health and welfare.

Section 3- Power of central government to take measures to protect and improve environment

(1) Subject to the provisions of this Act, the Central Government shall have the power to take all such measures as it deems necessary or expedient for the purpose of protecting and improving the quality of the environment and preventing controlling and abating environmental pollution.
(2) In particular, and without prejudice to the generality of the provisions of sub-section (1), such measures may include measures with respect to all or any of the following matters, namely:--
(i) Co-ordination of actions by the State Governments, officers and other authorities--
(a) Under this Act, or the rules made thereunder, or
(b) Under any other law for the time being in force which is relatable to the objects of this Act;
(ii) Planning and execution of a nation-wide programme for the prevention, control and abatement of environmental pollution;
(iii) Laying down standards for the quality of environment in its various aspects;
(iv) Laying down standards for emission or discharge of environmental pollutants from various sources whatsoever:
Provided that different standards for emission or discharge may be laid down under this clause from different sources having regard to the quality or composition of the emission or discharge of environmental pollutants from such sources;
(v) restriction of areas in which any industries, operations or processes or class of industries, operations or processes shall not be carried out or shall be carried out subject to certain safeguards;
(vi) Laying down procedures and safeguards for the prevention of accidents which may cause environmental pollution and remedial measures for such accidents;
(vii) Laying down procedures and safeguards for the handling of hazardous substances;
(viii) Examination of such manufacturing processes, materials and substances as are likely to cause environmental pollution;
(ix) Carrying out and sponsoring investigations and research relating to problems of environmental pollution;
(x) inspection of any premises, plant, equipment, machinery, manufacturing or other processes, materials or substances and giving, by order, of such directions to such authorities, officers or persons as it may consider necessary to take steps for the prevention, control and abatement of environmental pollution;
(xi) Establishment or recognition of environmental laboratories and institutes to carry out the functions entrusted to such environmental laboratories and institutes under this Act;
(xii) Collection and dissemination of information in respect of matters relating to environmental pollution;
(xiii) Preparation of manuals, codes or guides relating to the prevention, control and abatement of environmental pollution;
(xiv) Such other matters as the Central Government deems necessary or expedient for the purpose of securing the effective implementation of the provisions of this Act.
(3) The Central Government may, if it considers it necessary or expedient so to do for the purpose of this Act, by order, published in the Official Gazette, constitute an authority or authorities by such name or names as may be specified in the order for the purpose of exercising and performing such of the powers and functions (including the power to issue directions under section 5) of the Central Government under this Act and for taking measures with respect to such of the matters referred to in sub-section (2) as may be mentioned in the order and subject to the supervision and control of the Central Government and the provisions of such order, such authority or authorities may exercise and powers or perform the functions or take the measures so mentioned in the order as if such authority or authorities had been empowered by this Act to exercise those powers or perform those functions or take such measures.

Section 4- Appointment of officers and their powers and functions

(1) Without prejudice to the provisions of sub-section (3) of section 3, the Central Government may appoint officers with such designation as it thinks fit for the purposes of this Act and may entrust to them such of the powers and functions under this Act as it may deem fit.

(2) The officers appointed under sub-section (1) shall be subject to the general control and direction of the Central Government or, if so directed by that Government, also of the authority or authorities, if any, constituted under sub- section (3) of section 3 or of any other authority or officer.

Section 5- Power to give directions

Notwithstanding anything contained in any other law but subject to the provisions of this Act, the Central Government may, in the exercise of its powers and performance of its functions under this Act, issue directions in writing to any person, officer or any authority and such person, officer or authority shall be bound to comply with such directions.

Explanation--For the avoidance of doubts, it is hereby declared that the power to issue directions under this section includes the power to direct--

(a) The closure, prohibition or regulation of any industry, operation or process; or

(b) Stoppage or regulation of the supply of electricity or water or any other service.

Section 6- Rules to regulate environmental pollution

(1) The Central Government may, by notification in the Official Gazette, make rules in respect of all or any of the matters referred to in section 3.

(2) In particular, and without prejudice to the generality of the foregoing power, such rules may provide for all or any of the following matters, namely:--

(a) The standards of quality of air, water or soil for various areas and purposes;

(b) The maximum allowable limits of concentration of various environmental pollutants (including noise) for different areas;

(c) The procedures and safeguards for the handling of hazardous substances;

(d) The prohibition and restrictions on the handling of hazardous substances in different areas;

(e) The prohibition and restriction on the location of industries and the carrying on process and operations in different areas;

(f) The procedures and safeguards for the prevention of accidents which may cause environmental pollution and for providing for remedial measures for such accidents.

Prevention, control, and abatement of environmental pollution

Section 7- Persons carrying on industry operation, etc., not to allow emission or discharge of environmental pollutants in excess of the standards

No person carrying on any industry, operation or process shall discharge or emit or permit to be discharged or emitted any environmental pollutants in excess of such standards as may be prescribed.

Section 8- persons handling hazardous substances to comply with procedural safeguards

No person shall handle or cause to be handled any hazardous substance except in accordance with such procedure and after complying with such safeguards as may be prescribed.

Section 9- Furnishing of information to authorities and agencies in certain cases

(1) Where the discharge of any environmental pollutant in excess of the prescribed standards occurs or is apprehended to occur due to any accident or other unforeseen act or event, the person responsible for such discharge and the person in charge of the place at which such discharge occurs or is apprehended to occur shall be bound to prevent or mitigate the environmental pollution caused as a result of such discharge and shall also forthwith--

(a) Intimate the fact of such occurrence or apprehension of such occurrence; and

(b) Be bound, if called upon, to render all assistance, to such authorities or agencies as may be prescribed.
(2) On receipt of information with respect to the fact or apprehension on any occurrence of the nature referred to in sub-section (1), whether through intimation under that sub-section or otherwise, the authorities or agencies referred to in sub-section (1) shall, as early as practicable, cause such remedial measures to be taken as necessary to prevent or mitigate the environmental pollution.
(3) The expenses, if any, incurred by any authority or agency with respect to the remedial measures referred to in sub-section (2), together with interest (at such reasonable rate as the Government may, by order, fix) from the date when a demand for the expenses is made until it is paid, may be recovered by such authority or agency from the person concerned as arrears of land revenue or of public demand.

Section 10- Powers of entry and inspection

(1) Subject to the provisions of this section, any person empowered by the Central Government in this behalf shall have a right to enter, at all reasonable times with such assistance as he considers necessary, and any place-
(a) For the purpose of performing any of the functions of the Central Government entrusted to him;
(b) for the purpose of determining whether and if so in what manner, any such functions are to be performed or whether any provisions of this Act or the rules made there under or any notice, order, direction or authorization served, made, given or granted under this Act is being or has been complied with;
(c) for the purpose of examining and testing any equipment, industrial plant, record, register, document or any other material object or for conducting a search of any building in which he has reason to believe that an offence under this Act or the rules made there under has been or is being or is about to be committed and for seizing any such equipment, industrial plant, record, register, document or other material object if he has reason to believe that it may furnish evidence of the commission of an offence punishable under this Act or the rules made there under or that such seizure is necessary to prevent or mitigate environmental pollution.
(2) Every person carrying on any industry, operation or process of handling any hazardous substance shall be bound to render all assistance to the person empowered by the Central Government under sub-section (1) for carrying out the functions under that sub-section and if he fails to do so without any reasonable cause or excuse, he shall be guilty of an offence under this Act.
(3) If any person willfully delays or obstructs any persons empowered by the Central Government under sub-section (1) in the performance of his functions, he shall be guilty of an offence under this Act.
(4) The provisions of the Code of Criminal Procedure, 1973, or, in relation to the State of Jammu and Kashmir, or an area in which that Code is not in force, the provisions of any corresponding law in force in that State or area shall, so far as may be, apply to any search or seizures under this section as they apply to any search or seizure made under the authority of a warrant issued under section 94 of the said Code or as the case may be, under the corresponding provision of the said law.

Section 15- Penalty for contravention of the provisions of the act and the rules, orders and directions

(1) Whoever fails to comply with or contravenes any of the provisions of this Act, or the rules made or orders or directions issued there under, shall, in respect of each such failure or contravention, be punishable with imprisonment for a term which may extend to five years with fine which may extend to one lakh rupees, or with both, and in case the failure or contravention continues, with additional fine which may extend to five thousand rupees for every day during which such failure or contravention continues after the conviction for the first such failure or contravention.

(2) If the failure or contravention referred to in sub-section (1) continues beyond a period of one year after the date of conviction, the offender shall be punishable with imprisonment for a term which may extend to seven years.

The Environment (Protection) Rules, 1986

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

The National Environment Appellate Authority Act, 1997

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

Coal Mines (Conservation and Development) Act (1974)

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

Factories Act, 1948 and its Amendment in 1987

The Factories Act, 1948 was a post-independence statute that explicitly showed concern for the environment. The primary aim of the 1948 Act has been to ensure the welfare of workers not only in their working conditions in the factories but also their employment benefits. While ensuring the safety and health of the workers, the Act contributes to environmental protection. The Act contains a

comprehensive list of 29 categories of industries involving hazardous processes, which are defined as a process or activity where unless special care is taken, raw materials used therein or the intermediate or the finished products, by-products, wastes or effluents would:

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

Public Liability Insurance Act (PLIA), 1991

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

National Environment Tribunal Act, 1995

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

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

The extent of the environmental legislation network is evident from the above discussion but the enforcement of the laws has been a matter of concern. One commonly cited reason is the prevailing command and control nature of the environmental regime. Coupled with this is the prevalence of the all-or nothing approach of the law; they do not consider the extent of violation. Fines are levied on a flat basis and in addition, there are no incentives to lower the discharges below prescribed levels.
Some initiatives have addressed these issues in the recent past. The Government of India came out with a Policy Statement for Abatement of Pollution in 1992, before the Rio conference, which declared that market-based approaches would be considered in controlling pollution. It stated that economic instruments will be investigated to encourage the shift from curative to preventive measures, internalise the costs of pollution and conserve resources, particularly water. In 1995, the Ministry of Environment and Forest (MoEF) constituted a task force to evaluate market-based instruments, which strongly advocated their use for the abatement of industrial pollution. Various economic incentives have been used to supplement the command-and-control policies. Depreciation allowances, exemptions from excise or customs duty payment, and arrangement of soft loans for the adoption of clean technologies are instances of such incentives. Another aspect that is evident is the shift in the focus from end-of-pipe treatment of pollution to treatment at source. The role of remote sensing and geographical information systems in natural resource management and environmental protection has also gained importance over time.

An important recent development is the rise of judicial activism in the enforcement of environmental legislation. This is reflected in the growth of environment-related public litigation cases that have led the courts to take major steps such as ordering the shut-down of polluting factories.
Agenda 21 highlights the need for integration of environmental concerns at all stages of policy, planning and decision-making processes including the use of an effective legal and regulatory framework, economic instruments and other incentives. These very principles were fundamental to guiding environmental protection in the country well before Rio and will be reinforced, drawing on India's own experiences and those of other countries.

Hazardous wastes

Hazardous wastes are considered highly toxic and therefore disposal of such wastes needs proper attention so as to reduce possible environmental hazards. Industrial growth has resulted in generation of huge volume of hazardous wastes in the country. Scientific disposal of hazardous wastes has become a major environmental issue in India.
Environmental management of hazardous wastes has become a major concern in India as haphazard dumping of hazardous wastes results in severe environmental impairment. The adverse effects of hazardous wastes as well as the significant potential risks posed by them to the life and its supporting systems are increasingly recognized. Rapid growth of industries in India has resulted in generation of increasing volume of hazardous wastes. Both indigenously generated and imported from other countries for recycling or reprocessing need scientific treatment and disposal. However, only a few secured landfill sites are available in the country for disposal of hazardous wastes in an environmentally sound manner. An illegal dumping of hazardous wastes by the industries may cause severe environmental pollution.

The Ministry of Environment and Forests (MoEF) has promulgated Hazardous Wastes (Management & Handling) Rules, 1989 and amended the same in 2000 and 2003 for proper management and handling of hazardous wastes in the country.

These rules also deal with the ban for importing a few categories of hazardous wastes. India has also ratified the Basel Convention on trans boundary movement of hazardous wastes in 1992, which is a significant tool for controlling and monitoring of import and export of hazardous wastes and its proper management.

However, various issues and the regulatory framework for hazardous wastes management in the country should elaborately be understood in proper perspectives by the regulatory agencies and industries to help the Government to develop environmentally sound management system. In this paper, an attempt has been made in this direction to highlight such aspects, which will help policy planners, decision makers, researchers etc. of the country.

Characteristics of hazardous wastes Hazardous wastes, which may be in solid, liquid or gaseous form, may cause danger to health or environment, either alone or when in contact with other wastes .

Hazardous wastes can be identified by the characteristics that they exhibit viz., ignitability, corrosivity, reactivity, or toxicity.

Various agencies have defined hazardous wastes in different ways and as such, there is no uniformly accepted international definition so far. It is presumed that about 10 to 15 percent of wastes produced by industry are hazardous and the generation of hazardous wastes is increasing at the rate of 2 to 5 percent per year. Process wastes Hazardous wastes in India can be categorized broadly into two categories, viz.,

i) Hazardous wastes generated in India from various industries, and
ii) Hazardous wastes imported into or exported to India. Hazardous wastes are being generated in the country by various industries.

Inventorisation of hazardous wastes generating units and quantification of wastes generated in India are being done by the respective State.

Hazardous characteristics Potential hazards on living animals / environment:-

1. Flammable/ explosive this type of waste may cause damage to the surroundings by producing harmful gases at high temperature and pressure or by causing fire hazards.
2. Oxidizing Type of wastes that may yield oxygen and thereby cause or contribute to the combustion of other materials.
3. Poisonous (Acute) these wastes have high potential to cause death, serious injury or to harm health if swallowed, inhaled or by skin contact.
4. Infectious substances Hazardous wastes containing micro-organisms and their toxins, and responsible for diseases in animals or humans.
5. Corrosives These wastes are chemically active and may cause severe damage to the flora and fauna or to the other materials by direct contact with them.
6. Eco-toxic these wastes may present immediate or delayed adverse impacts to the environment by means of bioaccumulation and/or toxic effects upon biotic systems.
7. Toxic (Delayed or chronic) these wastes, if inhaled or ingested or if they penetrate the skin, may cause delayed or chronic effects, including carcinogenicity.
8. Organic peroxides these are organic waste containing bivalent-O-O- structure and may undergo exothermic self-accelerating decomposition.

Basel Convention on Trans boundary Movement of Hazardous Wastes, 1989

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

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

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

Pollution Control Boards (SPCBs) or Pollution Control Committees (PCCs).

Depending on the physical and chemical characteristics of hazardous wastes, these may be categorized into three categories, viz,

a. Recyclable- The hazardous wastes may be categorized as recyclable when resource recovery is possible by reprocessing the waste.
b. Incinerable- when it is possible to incinerate the wastes for destruction and energy recovery.
c. Landfill- waste when this is not suitable either for resource or energy recovery, but suitable for dumping with or without any treatment.

The processes of inventorisation of hazardous wastes generating industries and quantification of hazardous wastes in India are in progress. In many cases, it is difficult to procure reliable data on quantification of hazardous wastes and the SPCBs have to rely on the figures produced by the industries, which may not have adopted scientific methods for quantification of different categories of hazardous wastes. While observing data from various sources, the rate of generation of hazardous wastes in India could be above 6.7 MT/ year.

Apart from the above institute hazardous wastes generation in the country, import of hazardous wastes is a matter of concern for India. Various types of hazardous wastes are being imported, mainly from the developed countries. Proper record of the same is still difficult to maintain in spite of due attention drawn by the Supreme Court Monitoring Committee (SCMC) on Hazardous Wastes. These wastes are being imported for recycling. Therefore, there is need to keep an authentic record of whether the hazardous wastes are recycled or dumped elsewhere, as such types of imported recycled wastes are highly concentrated.

Biomedical waste is waste that is either put rescible or potentially infectious. Biomedical waste may also include waste associated with the generation of biomedical waste that visually appears to be of medical or laboratory origin (e.g., packaging, unused bandages, infusion kits, etc.), as well research laboratory waste containing biomolecules or organisms that are restricted from environmental release. Discarded sharps are considered biomedical waste whether they are contaminated or not, due to the possibility of being contaminated with blood and their propensity to cause injury when not properly contained and disposed of. Biomedical waste is a type of biowaste.

Biomedical waste may be solid or liquid. Examples of infectious waste include discarded blood, sharps, unwanted microbiological cultures and stocks, identifiable body parts, other human or animal tissue, used bandages and dressings, discarded gloves, other medical supplies that may have been in contact with blood and body fluids, and laboratory waste that exhibits the characteristics described above. Waste sharps include potentially contaminated used (and unused discarded) needles, scalpels, lancets and other devices capable of penetrating skin.

Biomedical waste is generated from biological and medical sources and activities, such as the diagnosis, prevention, or treatment of diseases. Common generators (or producers) of biomedical waste include hospitals, health clinics, nursing homes, medical research laboratories, offices of physicians, dentists, and veterinarians, home health care, and funeral homes. In healthcare facilities (i.e., hospitals, clinics, doctors offices, veterinary hospitals and clinical laboratories), waste with these characteristics may alternatively be called medical or clinical waste.

Biomedical waste is distinct from normal trash or general waste, and differs from other types of hazardous waste, such as chemical, radioactive, universal or industrial waste. Medical facilities generate waste hazardous chemicals and radioactive materials. While such wastes are normally not infectious, they require proper disposal. Some wastes are considered *multihazardous,* such as tissue samples preserved in formalin.

Risk of Biomedical Waste to Human Health

Disposal of this waste is an environmental concern, as many medical wastes are classified as *infectious* or *biohazardous* and could potentially lead to the spread of infectious disease.

A 1990 report by the U.S. Agency for Toxic Substances and Disease Registry concluded that the general public is not likely to be adversely affected by biomedical waste generated in the traditional healthcare setting. They found, however, that biomedical waste from those settings may pose an injury and exposure risks via occupational contact with medical waste for doctors, nurses, and janitorial, laundry and refuse workers. Further, there are opportunities for the general public to come into contact medical waste, such as needles used illicitly outside healthcare settings, or biomedical waste generated via home health care.

Management

Biomedical waste must be properly managed and disposd of to protect the environment, general public and workers, especially healthcare and sanitation workers who are at risk of exposure to biomedical waste as an occupational hazard. Steps in the management of biomedical waste include generation, accumulation, handling, storage, treatment, transport and disposal.[3]

On-site Versus Off-site

Disposal occurs off-site, at a location that is different from the site of generation. Treatment may occur on-site or off-site. On-site treatment of large quantities of biomedical waste usually requires the use of relatively expensive equipment, and is generally only cost effective for very large hospitals and major universities who have the space, labor and budget to operate such equipment. Off-site treatment and disposal involves hiring of a biomedical waste disposal service (also called a truck service) whose employees are trained to collect and haul away biomedical waste in special containers (usually cardboard boxes, or reusable plastic bins) for treatment at a facility designed to handle biomedical waste.

Generation and Accumulation

Biomedical waste should be collected in containers that are leak-proof and sufficiently strong to prevent breakage during handling. Containers of biomedical waste are marked with a biohazard symbol (pictured). The container, marking and/or labels are often red.

Discarded sharps are usually collected in specialized boxes, often called *needle boxes.* Specialized equipment is required to meet OSHA 29 CFR 1910.1450 and EPA 40 CFR 264.173 standards of safety. Minimal recommended equipment includes a fume hood and primary and secondary waste containers to capture potential overflow. Even beneath the fume hood, containers containing chemical contaminants should remain closed when not in use. An open funnel placed in the mouth of a waste container has been shown to allow significant evaporation of chemicals into the surrounding atmosphere, which is then inhaled by laboratory personnel, and contributes a primary component to the threat of completing the fire triangle. To protect the health and safety of laboratory staff as well as neighboring civilians and the environment, proper waste management equipment, such as the Burkle funnel in Europe and the ECO Funnel in the U.S., should be utilized in any department which deals with chemical waste. It is to be dumped after treatment.

Handling

Handling refers to the act of manually moving biomedical waste between the point of generation, accumulation areas, storage locations and on-site treatment facilities. Workers who handle biomedical waste should observe *standard precautions.*

Treatment

The goals of biomedical waste treatment are to reduce or eliminate the waste's hazards, and usually to make the waste unrecognizable. Treatment should render the waste safe for subsequent handling and disposal. There are several treatment methods that can accomplish these goals.

Biomedical waste is often incinerated. An efficient incinerator will destroy pathogens and sharps. Source materials are not recognizable in the resulting ash.

An autoclave may also be used to treat biomedical waste. An autoclave uses steam and pressure to sterilize the waste or reduce its microbiological load to a level at which it may be safety disposed off. Many healthcare facilities routinely use an autoclave to sterilize medical supplies. If the same autoclave is used to sterilize supplies and treat biomedical waste, administrative controls must be used to prevent the waste operations from contaminating the supplies. Effective administrative controls include operator training, strict procedures, and separate times and space for processing biomedical waste.

For liquids and small quantities, a 1-10% solution of bleach can be used to disinfect biomedical waste. Solutions of sodium hydroxide and other chemical disinfectants may also be used, depending on the waste's characteristics. Other treatment methods include heat, alkaline digesters and the use of microwaves.
For autoclaves and microwave systems, a shredder may be used as a final treatment step to render the waste unrecognizable.

Regulation and Management by Country

United Kingdom

In the UK, clinical waste and the way it is to be handled is closely regulated. Applicable legislation includes the Environmental Protection Act 1990 (Part II), Waste Management Licencing Regulations 1994, and the Hazardous Waste Regulations (England & Wales) 2005, as well as the Special Waste Regulations in Scotland.

United States

In the United States, biomedical waste is usually regulated as medical waste. In 1988 the U.S. federal government passed The Medical Waste Tracking Act which set the standards for governmental regulation of medical waste. After the Act expired in 1991, States were given the responsibility to regulate and pass laws concerning the disposal of medical waste. All fifty states vary in their regulations from no regulations to very strict.
In addition to on-site treatment or pickup by a biomedical waste disposal firm for off-site treatment, a mail-back disposal option exists in the United States. In mail-back biomedical waste disposal, the waste is shipped through the U.S. postal service instead of transport by private hauler. While currently available in all 50 U.S. states, mail-back medical waste disposal is limited to very strict postal regulations (i.e., collection and shipping containers must be approved by the postal service for use) and only available by a handful of companies.

India

In India, the Bio-medical Waste (Management and Handling) Rules, 1998 and further amendments were passed for the regulation of bio-medical waste management. Each state's Pollution Control Board or Pollution control Committee will be responsible for implementing the new legislation.
In India, there are a number of different disposal methods, yet most are harmful rather than helpful. If body fluids are present, the material needs to be incinerated or put into an autoclave. Although this is the proper method, most medical facilities fail to follow the regulations. It is often found that biomedical waste is put into the ocean, where it eventually washes up on shore, or in landfills due to improper sorting when in the medical facility. Improper disposal can lead to many diseases in animals as well as humans. For example, animals, such as cows in Pondicherry, India, are consuming the infected waste and eventually, these infections can be transported to humans through eating of the meat.
Many studies took place in Gujarat, India regarding the knowledge of workers in facilities such as hospitals, nursing homes, or home health. It was found that 26% of doctors and 43% of paramedical staff were unaware of the risks related to biomedical wastes. After extensively looking at the different facilities, many were undeveloped in the area regarding biomedical waste. The rules and regulations in India work with The Bio-medical Waste (Management and Handling) Rules from 1998, yet a large

number of health care facilities were found to be sorting the waste incorrectly. Worldwide, there are specific colored bags, bins and labels that are recommended for each type of waste. For example, syringes, needles and blood-soiled bandages should be all disposed of in a red colored bag or bin, where it will later be incinerated.

UNIT V

Forest and wildlife Protection

1. Greenery conservation laws
2. Forest conservation laws
3. Conservation agencies
4. Prior approval and non-forest purpose
5. Symbiotic relationship and tribal people
6. Judicial approach Deforestation
7. Wild life - Sanctuaries and national parks
8. State monopoly in the sale of wild life and wild life articles - Licensing of zoos and parks
9. Offences against wild life

Bio- diversity

1. Legal control
2. Control of eco-unfriendly experimentation on animals, plants. seeds and micro-organisms

Greenery conservation laws

National Green Tribunal Act

National Green Tribunal Act, 2010 (NGT) is an Act of the Parliament of India which enables creation of a special tribunal to handle the expeditious disposal of the cases pertaining to environmental issues. It was enacted under India's constitutional provision of Article 21, which assures the citizens of India the right to a healthy environment.

Definition

The legislate Act of Parliament defines the National Green Tribunal Act, 2010 as follows,
"An Act to provide for the establishment of a National Green Tribunal for the effective and expeditious disposal of cases relating to environmental protection and conservation of forests and other natural resources including enforcement of any legal right relating to environment and giving relief and

compensation for damages to persons and property and for matters connected therewith or incidental thereto".

The Tribunal's dedicated jurisdiction in environmental matters shall provide speedy environmental justice and help reduce the burden of litigation in the higher courts. The Tribunal shall not be bound by the procedure laid down under the Code of Civil Procedure, 1908, but shall be guided by principles of natural justice. The Tribunal is mandated to make and endeavor for disposal of applications or appeals finally within 6 months of filing of the same. Initially, the NGT is proposed to be set up at five places of sittings and will follow circuit procedure for making itself more accessible; New Delhi is the Principal Place of Sitting of the Tribunal and Bhopal, Pune, Kolkata and Chennai shall be the other 4 place of sitting of the Tribunal.

Origin

During the *Rio De Janeiro* summit of United Nations Conference on Environment and Development in June 1992, India vowed the participating states to provide judicial and administrative remedies for the victims of the pollutants and other environmental damage.

There lie many reasons behind the setting up of this tribunal. After India's move with Carbon credits, such tribunal may play a vital role in ensuring the control of emissions and maintaining the desired levels. This is the first body of its kind that is required by its parent statute to apply the "polluter pays" principle and the principle of sustainable development.

This court can rightly be called 'special' because India is the third country following Australia and New Zealand to have such a system.

Members

The sanctioned strength of the tribunal is currently 10 expert members and 10 judicial members although the act allows for up to 20 of each. The Chairman of the tribunal who is the administrative head of the tribunal also serves as a judicial member. Every bench of the tribunal must consist of at least one expert member and one judicial member. The Chairman of the tribunal is required to be a serving or retired Chief Justice of a High Court or a judge of the Supreme Court of India. Members are chosen by a selection committee (headed by a sitting judge of the Supreme Court of India) that reviews their applications and conducts interviews. The Judicial members are chosen from applicants who are serving or retired judges of High Courts. Expert members are chosen from applicants who are either serving or retired bureaucrats not below the rank of an Additional Secretary to the Government of India (not below the rank of Principal Secretary if serving under a state government) with a minimum administrative experience of five years in dealing with environmental matters. Or, the expert members must have a doctorate in a related field.

Jurisdiction

The Tribunal has Original Jurisdiction on matters of "substantial question relating to environment" (i.e. a community at large is affected, damage to public health at broader level) & "damage to environment due to specific activity" (such as pollution). However there is no specific method is defined in Law for determining "substantial" damage to environment, property or public health. There is restricted access to an individual only if damage to environment is substantial. The powers of tribunal related to an award are equivalent to Civil court and tribunal may transmit any order/award to civil court have local jurisdiction. The Bill specifies that an application for dispute related to environment can be filled within six months only when first time dispute arose (provide tribunal can accept application after 60 days if it is satisfied that appellant was prevented by sufficient cause from filling the application).

Also Tribunal is competent to hear cases for several acts such as Forest (Conservation) Act, Biological Diversity Act, Environment (Protection) Act, Water & Air (Prevention & control of Pollution) Acts etc. and also have appellate jurisdiction related to above acts after establishment of Tribunal within a

period of 30 days of award or order received by aggrieved party. The Bill says that decision taken by majority of members shall be binding and every order of Tribunal shall be final. Any person aggrieved by an award, decision, or order of the Tribunal may appeal to the Supreme Court within 90 days of commencement of award but Supreme Court can entertain appeal even after 90 days if appellant satisfied SC by giving sufficient reasons.

Notable orders

Yamuna Conservation Zone

On 25 April 2014, The NGT said that the health of Yamuna will be affected by the proposed recreational facilities on the river. The NGT also recommended the Government to declare a 52 km stretch of the Yamuna in Delhi and Uttar Pradesh as a conservation zone.

Coal Blocks in Chhattisgarh Forests

The National Green Tribunal has cancelled the clearance given by the then Union Environment and Forests Minister, Jairam Ramesh, to the Parsa East and Kante-Basan captive coal blocks in the Hasdeo-Arand forests of Chhattisgarh, overruling the statutory Forest Advisory Committee.

The forest clearance was given by Mr. Ramesh in June 2011, overriding the advice of the Ministry's expert panel on the two blocks for mining by a joint venture between Adani and Rajasthan Rajya Vidyut Utpadan Nigam Limited. The blocks requiring 1,989 hectares of forestland fell in an area that the government had initially barred as it was considered a patch of valuable forest and demarcated as a 'no-go' area.

The order is bound to have a more far-reaching impact, with the tribunal holding that "mere expression of fanciful reasons relating to environmental concerns without any basis, scientific study or past experience would not render the advice of FAC a body of experts inconsequential. Under the Forest Conservation Act, 1980, the FAC is required to appraise projects that require forestlands and advise the Environment Ministry to grant approval or reject the proposals.

But in this case, the NGT noted, the Minister had taken all of one day and relied upon his "understanding and belief" without any "basis either in any authoritative study or experience in the relevant fields." The Minister, while clearing the coal blocks, had given six reasons for doing so, including that the coal blocks are linked to super-critical thermal power plant, which is imperative to sustain the momentum generated in the XI Plan for increasing power production. These 'anthropocentric' considerations, the NGT held, were not valid to evaluate the project.

Forest (Conservation) Act, 1980

Forest (Conservation) Act, 1980 with Amendments Made in 1988

An Act to provide for the conservation of forests and for matters connected therewith or ancillary or incidental thereto.

Section 2- Restriction on the dereservation of forests or use of forest land for non-forest purpose.

Notwithstanding anything contained in any other law for the time being in force in a State, no State Government or other authority shall make, except with the prior approval of the Central Government, any order directing-

(i) That any reserved forest (within the meaning of the expression "reserved forest" in any law for the time being in force in that State) or any portion thereof, shall cease to be reserved;

(ii) That any forest land or any portion thereof may be used for any non-forest purpose;

(iii) that any forest land or any portion thereof may be assigned by way of lease or otherwise to any private person or to any authority, corporation, agency or any other organization not owned, managed or controlled by Government;

(iv) that any forest land or any portion thereof may be cleared of trees which have grown naturally in that land or portion, for the purpose of using it for reforestation.

Explanation - For the purpose of this section, "non-forest purpose" means the breaking up or clearing of any forest land or portion thereof for-

(a) The cultivation of tea, coffee, spices, rubber, palms, oil-bearing plants, horticultural crops or medicinal plants;

(b) Any purpose other than reforestation;

but does not include any work relating or ancillary to conservation, development and management of forests and wildlife, namely, the establishment of check-posts, fire lines, wireless communications and construction of fencing, bridges and culverts, dams, waterholes, trench marks, boundary marks, pipelines or other like purposes.

Section 3- Constitution of Advisory Committee

The Central Government may constitute a Committee consisting of such number of persons as h may deem fit to advise that Government with regard to-

(i) The grant of approval under Section 2; and

(ii) Any other matter connected with the conservation of forests which may be referred to h by the Central Government.

Section 3A- Penalty for contravention of the provisions of the Act

Whoever contravenes or abets the contravention of any of the provisions of Section 2, shall be punishable with simple imprisonment for a period which may extend to fifteen days.

Section 3B- Offences by the Authorities and Government Departments

(1) Where any offence under this Act has been committed -

(a) By any department of Government, the head of the department; or

(b) By any authority, every person who, at the time the offence was committed, was directly in charge of, and was responsible to, the authority for the conduct of the business of the authority as well as the authority;

Shall be deemed to be guilty of the offence and shall be liable to be proceeded against and punished accordingly:

Provided that nothing contained in this sub-section shall render the head of the department or any person referred to in clause (b), liable to any punishment if he proves that the offence was committed without his knowledge or that he exercised all due diligence to prevent the commission of such offence.

(2) Notwithstanding anything contained in sub-section (1), where an offence punishable under the Act has been committed by a department of Government or any authority referred to in clause (b) of sub-section (1) and it is proved that the offence has been committed with the consent or connivance of; or is attributable to any neglect on the part of any officer, other than

the head of the department, or in the case of an authority, any person other than the persons referred to in clause (b) of sub-section (1), such officer or persons shall also be deemed to be guilty of that offence and shall be liable to be proceeded against and punished accordingly.

Section 4- Power to make rules

(1) The Central Government may, by notification in the Official Gazette, makes rules for carrying out the provisions of this Act.

(2) Every rule made under this Act shall be laid, as soon as may be after it is made, before each House of Parliament, while it is in session, for a total period of thirty days which may be comprised in one session or in two or more successive sessions, and if, before the expiry of the session immediately following the session or the successive sessions aforesaid, both Houses agree in making any modification in the rule or both Houses agree that the rule should not be made, the rule shall thereafter have effect only in such modified form or be of no effect, as the case may be; so, however, that any such modification or annulment shall be without prejudice to the validity of anything previously done under that rule.

Section 5- Repeal and saving

(1) The Forest (Conservation) Ordinance, 1980 is hereby replaced.

(2) Notwithstanding such repeal, anything done or any action taken under the provisions of the said Ordinance shall be deemed to have been done or taken under the corresponding provisions of this Act.

Wildlife Conservation agencies

World Conservation Union or International Union for the Conservation of Nature and Natural Resources (IUCN)

This is an international organization dedicated to natural resource conservation. Founded in 1948, its headquarters is located in the Lake Geneva area in Gland, Switzerland. The IUCN brings together 83 states, 108 government agencies, 766 NGOs and 81 international organizations and about 10,000 experts and scientists from countries around the world. IUCN's mission is to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable. The Union has three components: its member organizations, its 6 scientific commissions and its professional secretariat.

The six Commissions that assess the state of the world's natural resources and provide the Union with sound know-how and policy advice on conservation issues are:

1. Commission on Ecosystem Management (CEM): It provides expert guidance on integrated ecosystem approaches to the management of natural and modified ecosystems. Members: 400.
2. Commission on Education and Communication (CEC): It champions the strategic use of communication and education to empower and educate stakeholders for the sustainable use of natural resources. Members: Over 500.
3. Commission on Environmental, Economic and Social Policy (CEESP): It provides expertise and policy advice on economic and social factors for the conservation and sustainable use of biological diversity. Members: 500.
4. Commission on Environmental Law (CEL): It advances environmental law by developing new legal concepts and instruments, and by building the capacity of societies to employ environmental law for conservation and sustainable development. Members: 800.
5. Species Survival Commission (SSC): It advises the Union on the technical aspects of species conservation and mobilizes action for those species that are threatened with extinction. It produces the IUCN Red List of Threatened Species. Members: 7000.
6. World Commission on Protected Areas (WCPA): It promotes the establishment and effective management of a worldwide representative network of terrestrial and marine protected areas. It consists of over 1300 protected areas experts worldwide.

The IUCN Red List of Threatened Species (also known as the IUCN Red List or Red Data List), created in 1963, is the world's most comprehensive inventory of the global conservation status of plant and animal species. The IUCN Red List is set upon precise criteria to evaluate the extinction risk of thousands of species and subspecies. These criteria are relevant to all species and all regions of the world. The aim is to convey the urgency of conservation issues to the public and policy makers, as well as help the international community to try to reduce species extinction.
Species are classified in nine groups, set through criteria such as rate of decline, population size, area of geographic distribution, and degree of population and distribution fragmentation.

1. Extinct (EX): In biology and ecology, extinction is the cessation of existence of a species or group of taxa, reducing biodiversity. The moment of extinction is generally considered to be the death of the last individual of that species (although the capacity to breed and recover may have been lost before this point). eg. Thylacine, Dodo, Passenger Pigeon
2. Extinct in the Wild (EW) : This is a conservation status assigned to species or lower taxa, the only living members of which are being kept in captivity or as a naturalized population outside its historic range. Examples of such animals include: Barbary Lion, Dromedary, Spix's Macaw etc.
3. Critically Endangered (CR): Organisms with a conservation status of critically endangered have an extremely high risk of becoming extinct in the wild in the immediate future. eg. Ivory-billed Woodpecker, Arakan Forest Turtle, Javan Rhino
4. Endangered (EN): An endangered species is a population of an organism which is at risk of becoming extinct because it is either few in number, or threatened by changing environmental or predation parameters. The IUCN has calculated the percentage of endangered species as 40 percent of all organisms based on the sample of species that have been evaluated through 2006. eg. Elephant, Tiger, Snow Leopard
5. Vulnerable (VU): A vulnerable species is a species which is likely to become endangered unless the circumstances threatening its survival and reproduction improve. eg. Gaur, Lion
6. Near Threatened (NT): This is a conservation status assigned to species or lower taxa which may be considered threatened with extinction in the near future, although it does not currently qualify for the threatened status. eg. California Red-legged Frog, Silvery Woolly Monkey
7. Least Concern (LC): This is an IUCN category assigned to species or lower taxa which have been evaluated but do not qualify for any other category. As such they do not qualify as threatened, nor Near Threatened eg. Norway Rat, Nootka Cypress

8. Data Deficient (DD): This is a category applied by the IUCN to a species when the available information is not sufficient for a proper assessment of conservation status to be made. This does not necessarily indicate that the species has not been extensively studied; but it does indicate that little or no information is available on the abundance and distribution of the species.
9. Not Evaluated (NE): A tax on is not evaluated when it has not yet been assessed against the criteria.

When discussing the IUCN Red List, the official term "threatened" is a grouping of three categories: Critically Endangered, Endangered, and Vulnerable.

Trade Record Analysis of Flora & Fauna in Commerce (TRAFFIC) International

This is an international network for monitoring wildlife trade. It is established in 1976 as a joint program of World Wide Fund for Nature (WWF) and World Conservation Union (IUCN). Based in Cambridge, Great Britain and having offices in Africa, Asia, the Americas, Europe and Oceania. The Organization is sponsored by charitable foundations, private persons and other donors. TRAFFIC's vision is of a world in which trade in wild plants and animals will be managed at sustainable levels without damaging the integrity of ecological systems and in such a manner that it makes a significant contribution to human needs, supports local and national economies and helps to motivate commitments to the conservation of wild species and their habitats.

The declared objectives of TRAFFIC International include:

- protecting wild animal and plant species from endangerment by trade,
- safeguarding priority eco regions from the negative effects of wildlife trade,
- conserving particularly valuable wildlife resources for human needs,
- promoting international agreements and policies that encourage sustainability in wildlife trade.

Wildlife Enforcement Monitoring System (WEMS)

This is a GIS based model developed to monitor wildlife law enforcement in the Asian region. It was started as a joint initiative by the United Nations University and the Asian Conservation Alliance. It is also supported financially by the International Fund for Animal Welfare.

World Wide Fund for Nature (WWF)

It is an international non-governmental organization for the conservation, research and restoration of the natural environment, formerly named the World Wildlife Fund. It is the world's largest independent conservation organization with over 5 million supporters worldwide, working in more than 90 countries, supporting 15,000 conservation and environmental projects around the world. It is a charity, with approximately 90% of its funding coming from voluntary donations by private individuals and businesses. The group's mission is "to halt and reverse the destruction of our natural environment". Currently, much of its work focuses on the conservation of three biomes that contain most of the world's biodiversity: forests, freshwater ecosystems, and oceans and coasts. Among other issues, it is also concerned with endangered species, pollution and climate change. The organization runs more than 1,200 field projects worldwide in any given year. The organization was formed by Julian Huxley and Max Nicholson and registered as a charitable trust on 11 September 1961, in Morges, Switzerland.

World Association of Zoos and Aquariums (WAZA)

It is the "umbrella" organization for the world zoo and aquarium community. Members of WAZA include leading zoos and aquariums, regional and national Associations of Zoos and Aquariums, and some affiliate organizations, such as zoo veterinarians or zoo educators, from all around the world. In 1935, the International Union of Directors of Zoological Gardens (IUDZG) was founded at Basel, Switzerland. During World War II this organisation ceased to exist, but in Rotterdam (the Netherlands) a new IUDZG was founded by a group of zoo directors from allied or neutral countries in 1946. In 2000, the IUDZG was renamed as World Association of Zoos and Aquariums (WAZA) to reflect a more modern and global institution.

Indian agencies

- Wildlife Trust of India (WTI)
- Wildlife Protection Society of India (WPSI)
- Bombay Natural History Society
- Zoo Outreach Organization (ZOO)
- Central Zoo Authority of India (CZA
- Indian Board For Wildlife (IBWL)
- Ministry of Environment & Forests (MoEF)
- Wildlife Institute of India (WII)

Ministry of Environment & Forests (MoEF)

It is the nodal agency in the administrative structure of the Government of India for the planning, promotion, co-ordination and overseeing the implementation of environmental and forestry programmes. The Ministry is also the Nodal agency in the country for the United Nations Environment Programme (UNEP). The principal activities undertaken by Ministry of Environment & Forests, consist of conservation & survey of flora, fauna, forests and wildlife, prevention & control of pollution, afforestation & regeneration of degraded areas and protection of environment, in the frame work of legislations. The main tools utilized for this include surveys, impact assessment, control of pollution, regeneration programmes, support to organizations, research to solve solutions and training to augment the requisite manpower, collection and dissemination of environmental information and creation of environmental awareness among all sectors of the country's population.

Indian Board for Wildlife (IBWL)

It is the apex advisory body in the field of Wildlife Conservation in the country and is headed by the Honorable Prime Minister of India. The IBWL has been reconstituted w.e.f. 7.12.2001. The XXI meeting of the IBWL was held on 21.1.2002 under the Chairmanship of the Honorable Prime Minister of India at New Delhi. Following resolutions were adopted as part of the Wildlife Conservation Strategy 2002:-

1. Wildlife and forests shall be declared priority sector at the national level for which funds should be earmarked.
2. Law enforcement agencies must ensure that those engaged in poaching, illicit trade in wildlife and wildlife products, destruction of their habitat, and such other illegal activities are given quick and deterrent punishment.
3. We should fully tap the potential in wildlife tourism and at the same time take care that it does not have adverse impact in wildlife and protected areas. The revenue earned from increased tourism should be used entirely to augment available resources for conservation.
4. Protecting interests of the poor and tribals living around protected areas should be handled with sensitivity and with maximum participation of the affected people. They should have access to the minor forest produce, in the forest outside of national parks and sanctuaries. Employment and means generation for these people is crucial for maintaining symbiosis between the forests, wildlife and the people. People should be encouraged to take up afforestation and conservation in new areas.
5. While strengthening protective measures against traditional threats to wildlife, we should also respond to newer threats such as toxic chemicals and pesticides.
6. There should be greater governmental as well as societal recognition and support for the many non-governmental organizations engaged in wildlife conservation. Mainstream media to better highlight their activities as also successes of governmental initiatives that have worked.
7. Creatively produced Television Programmes on wildlife and ecology are widely appreciated by young and old as seen from the popularity of dedicated T.V. channels like Discovery, National Geographic and Animal Planet. It is proposed that Prasar Bharati and our private channels along with agencies like WWF for Nature should collaborate and increase original Indian content in different languages on our television.
8. No diversion of forest land for non-forest purposes from critical and ecologically fragile wildlife habitat shall be allowed.
9. Lands falling within 10 km. of the boundaries of National Parks and Sanctuaries should be notified as eco-fragile zones under section 3(v) of the Environment (Protection) Act and Rule 5 Sub-rule 5(viii) & (x) of the Environment (Protection) Rules.
10. Removal of encroachments and illegal activities from within forest lands and Protected Areas.
11. No commercial mono-culture to replace natural forests.
12. The settlement of rights in National Parks and Sanctuaries should not be used to exclude or reduced the areas that are crucial and integral part of the wildlife habitat.
13. Every protected area should be managed by forest officers trained in wildlife management.
14. Mitigation measures for human-animal conflict and mechanism for crop insurance as also expeditious disbursements of ex-gratia payments should be instituted by States.
15. Forest Commission should be set up to look into restructuring, reform and strengthening the entire forest set up and affiliated institutions in the country.
16. A working group shall be constituted to monitor implementation of Wildlife Action Plan.

Central Zoo Authority of India (CZA)

In India, functioning of zoos is regulated by an autonomous statutory body called Central Zoo Authority which has been constituted under the Wild Life (Protection) Act. The Authority consists of a Chairman, ten members and a

Member Secretary. The main objective of the authority is to complement the national effort in conservation of wild life. Standards and norms for housing, upkeep, health care and overall management of animals in zoos has been laid down under the Recognition of Zoo Rules, 1992.

Every zoo in the country is required to obtain recognition from the Authority for its operation. The Authority evaluates the zoos with reference to the parameters prescribed under the Rules and grants recognition accordingly. Zoos which have no potential to come up to the prescribed standards and norms may be refused recognition and asked to close down. Since its inception in 1992, the Authority has evaluated 347 zoos, out of which 164 have been recognized and 183 refused recognition. Out of 183 zoos refused recognition, 92 have been closed down and their animals relocated suitably. Cases of the remaining 91 derecognized zoos are currently under review. The Authority's role is more of a facilitator than a regulator. It, therefore, provides technical and financial assistance to such zoos which have the potential to attain the desired standard in animal management. Only such captive facilities which have neither the managerial skills nor the requisite resources are asked to close down.

Apart from the primary function of grant of recognition and release of financial assistance, the Central Zoo Authority also regulates the exchange of animals of endangered category (Listed under Schedule-I and II of the Wildlife Protection Act) among zoos. Exchange of animals between Indian and foreign zoos is also approved by the Authority before the requisite clearances under EXIM Policy and the CITES permits are issued by the competent authority. The Authority also coordinates and implements programmes on capacity building of zoo personnel, planned breeding programmes and ex-situ research including biotechnological intervention for conservation of species for complementing in-situ conservation efforts in the country. Some of the major initiatives undertaken by the Authority since its inception include Establishment of Laboratory for Conservation of Endangered Species at Hyderabad for carrying out research in biotechnology, planned breeding of Red Panda and its restocking into the wild, upgradation of diagnostic facilities for disease diagnosis at selected veterinary institutions and their networking with zoos on regional basis for better health care of animals

Wildlife Institute of India (WII)

It is a government institution run by the Indian Council of Forestry Research and Education which trains wildlife managers and wildlife researchers. Trained personnel from WII have contributed in studying and protecting wildlife in India. WII has also popularized wildlife studies and careers. The institute is based in Dehradun, India. It is located in Chandrabani, which is close to the southern forests of Dehradun. The mission of the Wildlife Institute of India is to:

- Train managers and biologists for protected area management and wildlife research
- Train education and extension specialists for those involved in land use management.
- Provide orientation courses for those involved in land use management
- Conduct and coordinate applied wildlife research and evolve relevant techniques suited to Indian conditions
- Create a database for building up a wildlife information system employing modern computerized analytical techniques; and
- Provide advisory and consultancy services to central and state governments, universities, research institutions and other official and non-official agencies.

Zoo Outreach Organization (ZOO)

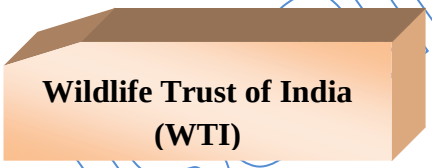
This started off as an NGO primarily focusing on training Zoo staff and bettering the circumstances of captive animals in Indian zoos. It has since evolved into an overall nature and wildlife conservation NGO. Zoo Outreach Organisation (ZOO) was so named because its initial activity involved primarily zoos, and its purpose was to "reach out" and involve more people with zoos. Also its acronym itself is "Z.O.O." in order to make a strong statement of support of zoos and their potential. ZOO was founded in 1985 with funds and mandate from the then Department of Environment, Government of India, to provide technical and educational support for zoos, enhance the public image of zoos, and liaise between local, national, international interests for the benefit of Indian zoos. It also lobbied for organizations and legislation affecting zoos and animal welfare in zoos.

Zoos are not just captive wildlife, however and ZOO is not just about zoos. In order for zoos to be relevant to conservation they must have extensive knowledge of wildlife in the wild. Field personnel and policy makers need to know what zoos can do for them. Therefore Zoo Outreach Organization concerns in situ conservation as much as ex situ. Zoo personnel were not in communication with one another, with field personnel or with their colleagues in the rest of the world. There was not much published information or training going on. It's publications and networks have addressed this problem for the last 15 years: The Magazine and Journal are generated and edited in- house as well as all the newsletters and compendiums. ZOOS' PRINT magazine (ZP) starts 19 years of regular publication this year. ZOOS' PRINT is the oldest and the only regular zoo publication in all of Asia.

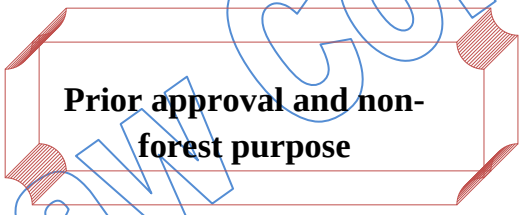
Bombay Natural History Society

It is today the largest non-government organization (NGO) in the Indian sub-continent engaged in nature conservation research. Since its establishment in 1883, its commitment has been, and continues to be, the conservation of India's natural wealth, protection of the environment and sustainable use of natural resources for a balanced and healthy development for future generations. The Society's guiding principle has always been that conservation must be based on scientific research - a tradition exemplified by its late president, Dr. Sálim Ali. Realising the importance of the Bombay Natural History Society's vital role in documenting and conserving India's natural heritage, the Government of India agreed to fund the building of 'Hornbill House' to house the Bombay Natural History Society and its valuable collections of

It was founded in 1994 by Belinda Wright, its Executive Director, who was an award-winning wildlife photographer and filmmaker till she took up the cause of conservation. From its inception, WPSI's main aim has been to bring a new focus to the daunting task of tackling India's growing wildlife crisis. It does this by providing support and information to government authorities to combat poaching and the escalating illegal wildlife trade - particularly in wild tigers. It has now broadened its focus to deal with human-animal conflicts and provide support for research projects. It is a registered non-profit organisation, funded by a wide range of Indian and international donors.



It is a nonprofit conservation organization based in New Delhi. Its principal concerns are crisis management to prevent destruction of India's wildlife and the provision of quick, efficient aid to those areas that require it the most. In the longer term it hopes to achieve, through proactive reforms, an atmosphere conducive to conserving India's wildlife and its habitat. WTI was formed in November 1998 in response to the rapidly deteriorating condition of wildlife. WTI is a registered charity in India



Procedure for seeking prior approval for diversion of forest land for non-forest purposes for facilities managed by the Government under Section 3(2) of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006

1. Sub-section (2) of Section 3 of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 provides that notwithstanding anything contained in the Forest (Conservation) Act, 1980, the Central Government shall provide for diversion of forest land for certain facilities managed by the Government, as specified in that Section, which involve felling of trees not exceeding seventy-five trees per hectare, provided that such diversion of forest land shall be allowed only if, -

(i) the forest land to be diverted for the purposes mentioned in the said sub-section is less than one hectare in each case; and

(ii) the clearance of such developmental projects shall be subject to the condition that the same is recommended by the Gram Sabha.

2. For implementation of the provisions of sub-section (2) of Section 3 of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, the Central Government hereby lays down the following procedure:-

2.1 Definitions.- In the procedure, unless the context otherwise requires:-

(a) "Act" means the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 (2 of 2007);
(b) "District Level Committee" shall mean the Committee constituted under Rule 7 of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights), Rules, 2008;
(c) "Forest Land" shall have the same meaning as defined in Section 2(d) of the Act;
(d) "Gram Sabha" shall have the same meaning as defined in Section 2(g) of the Act;
(e) "Nodal Officer" means any officer not below the rank of Conservator of Forests, authorized by the State Government to deal with matters relating to diversion of forest land under the Act; (f) "Section" means a section of the Act;
(g) "User Agency" means a Department of the Central or State Government or a District Panchayat making a request for diversion of forest land for developmental projects managed by the Government as specified in sub-section (2) of Section 3 of the Act;
(h) "Village" shall have the same meaning as defined in Section 2(p) of the Act. 2.2 Submission of the proposals seeking approval for diversion of the forest land under subsection (2) of Section 3 of the Act.-

(i) Every User Agency, that wants to use any forest land for any developmental project, specified in Section 3(2) of the Act, shall make a proposal in the appropriate Form appended, i.e. Form 'A', and place it before the general assembly of the concerned Gram Sabha for adopting a resolution to that effect.

(ii) A quorum of atleast half the members of the Gram Sabha should be present for adopting a resolution recommending the diversion of forest land.

(iii) On receipt of a recommendation of the proposal by the Gram Sabha, the User Agency will submit the proposal to the concerned Range Forest Officer (RFO) of the area, along with the resolution adopted by the Gram Sabha.

(iv) The Range Forest Officer (RFO) concerned will carry out site inspection of the proposed area to opine on the acceptance of the proposal.

(v) The Range Forest Officer (RFO) concerned will submit the proposal and his recommendation to the concerned Divisional Forest Officer (DFO) in Form 'B' appended, along with his site inspection report and his opinion within three weeks from the date of receipt of complete proposal from the User Agency.

(vi) The Divisional Forest Officer (DFO) concerned will consider the proposal, and if he agrees, he will accord his approval and communicate his decision to the Range Forest Officer (RFO) concerned with a copy to the Chairperson of the District Level Committee, within four weeks from the date of receipt of the proposal from the RFO.

(vii) After receipt of the approval from the concerned DFO, the RFO will demarcate the area of the forest land approved for diversion and hand over the same to the User Agency under the supervision of the Gram Sabha.

(viii) If the Divisional Forest Officer (DFO) concerned does not approve the proposal submitted by the User Agency through the Range Forest Officer (RFO), he shall forward the proposal to the District Level Committee for a final decision.

(ix) The District Level Committee will meet and take a final decision, with at least 1/3 quorum, and convey the decision to the DFO for implementation and correction of records and map if the proposal is accepted.

(x) The approval for diversion of the forest land by the Divisional Forest Officer (DFO) or by the District Level Committee, as the case may be, shall be accorded subject to the condition that the land diverted for a specific purpose shall not be allowed to be used for any other purpose and the diverted land would be appropriated by the Forest Department if the activity for which the land was diverted is not started within one year of handling over the land to the User Agency.

(xi) The DFO concerned will submit a quarterly report of the approvals accorded for diversion of forest land under Section 3(2) of the Act to the Nodal Officer of the State who, in turn, will furnish the consolidated information quarterly to the Secretary, Tribal Welfare Department who will, in turn send the consolidated report to the Ministries of Tribal Affairs and Environment & Forests.

(xii) The Nodal Officer will also monitor the progress**.**

Symbiotic relationship and tribal people

For thousands of years, forest and indigenous populations have evolved in symbiosis. Forest plays an important role in enhancing livelihood requirements for rural community and in maintaining ecological balance. Over 53 million tribal people in India, about 60% of the rural communities directly rely on forest for their day-to-day requirement. The biocultural knowledge of these 'ecosystem people' has made them sustain their life through the ages. However, the ethnic minorities (STs) in rural India are characterized by geographic isolation as well as strong sense of socio-cultural exclusion. Their livelihood highly depends on utilizing timber as well as non-timber forest products (NTFPs) for various purposes, e.g. medicine, food, economic and other socio-religious purposes. However, it has gained importance in recent years in policy strategies of Government owing to its significance in life support substance to large number of forest dwelling communities.

According to National Forest Policy, 1988, under section4.6- Tribal People and Forests

Having regard to the symbiotic relationship between the tribal people and forests, a primary task of all agencies responsible for forest management, including the forest development corporations should be to associate the tribal people closely in the protection, regeneration and development of forests as well as to provide gainful employment to people living in and around the forest. While special attention to the following:

- One of the major causes for degradation of forest is illegal cutting and removal by contractors and their labor. In order to put an end to this practice, contractors should be replaced by institutions such as tribal cooperatives, labor cooperatives, government corporations, etc. as early as possible.
- Protection, regeneration and optimum collection of minor forest produce along with institutional arrangements for the marketing of such produce;
- Development of forest villages on par with revenue villages;
- Family oriented schemes for improving the status of the tribal beneficiaries; and
- Undertaking integrated area development programmes to meet the needs of the tribal economy in and around the forest areas, including the provision of alternative sources of domestic energy on a subsidized basis, to reduce pressure on the existing forest areas.
-

The Wildlife Protection Act, 1972

The Wildlife Protection Act, 1972, provides for protection to listed species of flora and fauna and establishes a network of ecologically-important protected areas. The Act consists of 60 Sections and VI Schedules- divided into Eight Chapters. The Wildlife Protection Act, 1972 empowers the central and state governments to declare any area a wildlife sanctuary, national park or closed area. There is a blanket ban on carrying out any industrial activity inside these protected areas. It provides for authorities to administer and implement the Act; regulate the hunting of wild animals; protect specified plants, sanctuaries, national parks and closed areas; restrict trade or commerce in wild animals or animal articles; and miscellaneous matters. The Act prohibits hunting of animals except with permission of authorized officer when an animal has become dangerous to human life or property or as disabled or diseased as to be beyond recovery.

The Act underwent many amendments. An amendment to the Act in 1982, introduced provisions permitting the capture and transportation of wild animals for the scientific management of animal population. An amendment in the year 1991 resulted in the insertion of the special chapters dealing with the protection of specified plants and the regulation of zoos. This also recognized the needs of tribal and forest dwellers and changes were introduced to advance their welfare. The near-total prohibition on hunting was made more effective by the Amendment Act of 1991

Widespread changes have been made by the Wildlife (Protection) Amendment Act, 2002 and a new chapter has been incorporated as Chapter VI-A to deal with the forfeiture of property derived from illegal hunting and trade. Further, this amendment Act also introduced the concept of co-operative management through conservation reserve management committee and community reserve committees.

With this introduction now let us discuss the Wildlife (Protection) Act, 1972 in a detailed way.

1. Evolution and Development of the concept of Wildlife Protection in India

India is endowed with an immense variety of natural resources in its rich animal and plant heritage. Wildlife is one of our basic and natural resources that satisfies the needs or wants of civilization. Therefore, this resource must be conserved, preserved and protected for the existence of mankind. Now let us see the chronological development of wildlife protection in India in different periods.

1.1 Wildlife Protection in Ancient India

In ancient India the environmental protection was a moral duty which is imposed on people by religious scriptures, seers, and other agencies. The scriptures of Hindu religion emphasize the protection of the environment and the living creatures. Some of the animals were considered as the vehicles of gods. Matsya was considered as the go since it is the first living organism existed in earth. Cowwas considered as god. Certain birds and animals were considered as the vehicle of gods. Certain trees like Banyan, Tulsi etc. were considered as the dwelling place of the gods. Kautilya, one of the great political philosophers and the author of The Arthasasthra, prohibited and prescribed penalties for the killing of animals, cutting of trees and the excess exploitation of the natural resources.

The great Maurya king Ashoka banned the killing of wild animals, and later prohibited the killing of certain species of animals.
In the words of St. Thukharam, animals and plants are the kin and kith of human beings. These are some specimens to show the manner in which the ancient Indians took care for the protection of wildlife. Though it was a moral duty in the beginning later the kings started to impose it as a legal duty. In ancient India, as the moral duty, the destruction of heritage and richness of environment and the biodiversity was considered as an injury and insult to Gods. And now the wildlife protection is a legal duty.

1.2 Wildlife Protection in India during British period

In the pre-constitutional period, there were a few legislations which are enacted to protect the wildlife from exploitation. The Cattle Trespass Act, 1871; The Elephants Preservation Act, 1879; some sections of Indian Penal Code, 1860; wild Birds and Animals Protection Act, 1912, The Indian Forest Act, 1927 are some pre-constitutional enactments on wildlife protection.
The Elephants Preservation Act prohibited killing, injuring or capturing, or any attempt at the same, unless it is in self-defense, permitted by a license, or when the elephant is found damaging house or cultivation, or immediate vicinity of public road, railway or canal. The Indian Penal Code, 1860, though it has no specific provision relating to wildlife, but it defines the term animal in Section 47 and declares maiming, killing of animals as an offence and punishable under Sections 428 and 429.
The Indian Forest Act, 1927 also included certain provisions for restricting hunting in reserved and protected forests and other authorized establishments or Sanctuaries. Under this Act, hunting, shooting, fishing, poisoning water or setting traps, etc. is an offence. These are the some of the wildlife protection legislations enacted in the British period.

1.3 Wildlife Protection in India after Independence

The Post- independence era witnessed a lot of changes in the policies and attitudes of the Governments with respect to environmental protection. There were many enactments to protect the Forest, Environment, Water, Air and Bio-Diversity. All these Acts are directly or indirectly give provisions to the protection of the wildlife. But let me specifically emphasis on Wildlife protection, since my topic is wildlife protection.
The Indian Constitution gives ample provisions to protect the wildlife in its territory. Though there are many implied provisions on wildlife protection in the constitution like Art.21,Union , State and Concurrent list, the main Articles which specifically protects the wildlife are Art.48-A and Art. 51-A(g). Art. 48-A says that the state shall endeavor to protect and improve the environment and to safeguard the forest and wildlife of the country. Art. 51A (g) imposes fundamental duty on the every citizen of India to protect and improve the environment and have compassion for living creatures.
The Wildlife Protection Act, 1972 is the major legislation which specifically enacted for the protection of the wildlife in India. We will discuss this Act in detail in the following pages. Besides this, there are much legislation enacted for the protection and preservation of the wild life. Let us see them in a glance. They are The Wildlife Protection Act, 1972; The Wild Life (Transactions and Taxidermy) Rules, 1973; The Wild Life (Stock Declaration) Central Rules, 1973; The Wild life (Protection) Licensing (Additional Matters for Consideration) Rules, 1983; The Wild Life (Protection) Rules, 1995; The Wild Life (Specified Plants - Conditions for Possession by Licensee) Rules, 1995; Forest Conservation Act, 1980; Forest (Conservation) Rules, 1981; National Forest Policy, 1988; Biological Diversity Act, 2002; Besides these Acts, there are many legislations on Air, Water, Environment, Hazardous substance management, Solid waste management, Noise Pollution prevention, and so on. Such laws also have the provisions to protect the wildlife.
In 1973, a centrally sponsored scheme Project Tiger was launched to ensure the maintenance of the population of tigers in India. In 1991-92, The Project Elephant was launched aiming at ensuring long

term survival of identified viable population of Elephants and tackling the problematic decrease of the elephant population. This is the comprehensive description on the evolution and development of wildlife protection in India. Now let me to explain the Wildlife (Protection) Act, 1972 in a detailed way. The major provisions of the Wildlife (Protection) Act, 1972 are as following.

2. Territorial Jurisdiction of Wildlife (Protection) Act, 1972

Wildlife (Protection) Act, 1972 has been accepted and adopted by all the states except Jammu and Kashmir. This is the first comprehensive legislation relating to protection of wild life was passed by the Parliament and it was assented by the President on 9th September, 1972 and came to be known as The Wild Life (Protection) Act, 1972 (53 of 1972).

3. Definition of Wildlife

The Section 2(37) of the Act defines wildlife as wildlife includes any animal, bees butterflies, crustacean, fish and moths; and aquatic or land vegetation which forms part of any habitat. So the meaning of the wildlife in this Act is very wide and inclusive of all kinds of flora and fauna.

4. Authorities Constituted Under Wildlife (Protection) Act

As per the Sec. 3 of the Act, the Central Government may appoint a Director of Wildlife Preservation, Assistant Directors of Wildlife Preservation and such other officers and employees as may be necessary. As per the Sec. 4, the State Government may, for the purpose of this Act, appoint Chief Wildlife Warden, Wildlife Warden, Honorary Wildlife Wardens and other officers and employees as may be necessary. As per Sec. 6, the State Governments and the Administrators in Union Territories shall constitute a Wildlife Advisory Board.

5. The Wildlife Advisory Board (Sec. 6)

The Sec. 6 of this Act enforces and enables the state governments and the administrators of the Union Territories to constitute a Wildlife Advisory Board in each states and union territories. In WWF v. Union of India, Supreme Court directed the states which didn't constitute the Wildlife Advisory Board, to constitute within 2 months.

5.1 The members of the Wildlife Advisory Board

It shall consist of the Minister in charge of Forests in the State or Union territory as the Chairman. If there is no such minister, then the Chief Secretary will be the Chairman of the Board. The other members are, two members of the State Legislature or Legislature of Union Territory; Secretary to the state government or the government of the union territory, in charge of forests; the Forest Officer in charge of the State Forest Department; an officer nominated by the Director of Wildlife Preservation; Chief wildlife warden; officers of the state government not exceeding 5; and such other persons, not exceeding 10, who in the opinion of the state government, are interested in the protection of wildlife, including the representatives of tribals not exceeding 3.

5.2 Duties of Wildlife Advisory Board (Sec. 8)

The Wildlife Advisory Board mainly constituted to advise the state government in the following matters.

a) In the selection of areas to be declared as Sanctuaries, National Parks and Closed areas and the administration thereof;

b) In formulation of the policy for protection and conservation of wildlife and specified plants;

c) In any matter relating to the amendment of any schedule;

d) In relation to the measure to be taken for harmonizing the needs of the tribals and other dwellers of the forests with the protection and conservation of wildlife;

e) In any other matter connected with the protection of wildlife which may be referred to it by the state government.

6. Hunting of Wild Animals (Sec. 9)

Sec. 2(16(a) (b) (c)) defines the word hunting as follows Hunting, with its grammatical variations and cognate expressions, includes; capturing, killing, poisoning, snaring, and trapping or any wild animal and every attempt to do so; driving any wild animal for any of purposes specified in sub clause; injuring or destroying or taking any part of the body of any such animal, or in the case of wild birds or

reptiles, damaging the eggs of such birds or reptiles, or disturbing the eggs or nests of such birds or reptiles;

Sec. 9 of the Act prohibits hunting of any wild animal specified in Schedules 1, 2, 3, and 4. Any person who hunts any wild animal shall be punishable with imprisonment for a term which may extend to 3 years or with fine which may extend to Rs. 25000/- or with both. However if any person commits the offence in the sanctuary or national park, with respect any animal specified in Schedule 1, he shall be punishable with imprisonment which shall not be less than 1 year but may extend to 6 years and also with fine which shall not be less than 5000/-.

6.1 Hunting of Wild animals to be permitted in certain cases

The Chief Wildlife Warden may permit hunting of wild animals in certain situations. They are;

(a) The Chief Wildlife Warden may, if he is satisfied that any wild animal specified in Schedule 1 has become dangerous to human life or is so disabled or diseased as to be beyond recovery, by order in writing and stating the reasons therefore, permit any person to hunt such animal or cause animal to be hunted;

(b) The Chief Wildlife Warden or the authorized officer may, if he is satisfied that any wild animal specified in Schedule. II or III or IV has become dangerous to human life or to property (including standing crops on any land) or is so disabled or diseased as to be beyond recovery, by order in writing and stating the reasons therefore, permit any person to hunt such animal or cause such animal to be hunted.

(c) The killing or wounding in good faith of any wild animal in defense of oneself or of any other person shall not be an offence; Provided that nothing in this sub-section shall exonerate any person who, when such defense becomes necessary, was committing any act in contravention of any provision of this Act or any rule or order made there under.

(d) Any wild animal killed or wounded in defense of any person shall be Government property.

6.2. Grant of permission for hunting for special purposes.

The Chief Wildlife Warden, permit, by an order in writing stating the reasons therefore, to any person, on payment of such fee as may be prescribed, which shall entitle the holder of such permit to hunt, subject to such conditions as may be specified therein, any wild animal specified in such permit, for the purpose of,

(a) Education;
(b) Scientific research;
(c) Scientific management; means and includes
  (i) translocation of any wild animal to an alternative suitable habitat; or
  (ii) population management of wildlife, without killing or poisoning or destroying any wild animals.
(d) Collection of specimens
  (i) for recognised zoos subject to the permission under section 38-1 or
  (j) for museums and similar institutions;
(e) derivation, collection or preparation of snake-venom for the manufacture of life saving drugs .

7. Protection of Specified plants

Sec. 17A of the Act prohibits picking, uprooting, etc., of specified plants as otherwise provided in this Chapter, no person shall:

(a) Willfully pick, uproot, damage destroy, acquire or collect any specified plant from any forestland and area specified, by notification, by the Central Government,

(b) Possess, sell, other for sale, or transfer by way of gift or otherwise, or transport any specified plant, whether alive or dead, or part or derivative thereof:

Provided that nothing in this section shall prevent a member of a scheduled tribe, subject to the provisions of Chapter IV, from picking, collecting or possessing in the district he resides any specified plant or part or derivative thereof for his bonafide personal use.

The Chief Wild Life Warden may with the previous permission of the State Government, grant to any person a permit to pick, uproot, acquire or collect from a forest land or the area specified under section 17A or transport, subject to such conditions as may be specified therein, any specified plant for the purpose of education; scientific research., collection, preservation and display in a herbarium of any scientific institutions; or propagation by a person or an institution approved by the Central Government in this regard.

8. Sanctuaries

Section 18 provides that the State Government may, by notification, declare its intention to constitute any area other than area comprised with any reserve forest or the territorial waters as a sanctuary if it considers that such area is of adequate ecological, faunal, floral, geomorphological, natural or zoological significance, for the purpose of protecting, propagating or developing wildlife or its environment. For the purposes of this section, it shall be sufficient to describe the area by roads, rivers, ridges, or other well-known or readily intelligible boundaries.

The Chief Wildlife Warden may, on an application, grant to any person a permit to enter or reside in a sanctuary for the following purposes;

a) Investigation or study of wildlife and any purpose ancillary or incidental thereto;
   b) Photography
   c) Scientific research
   d) Tourism
   e) Transaction of lawful business with any person in the sanctuary

Only a public servant on duty or permit holder or a person having a right over immovable property within the limits of a sanctuary, person passing through pathway in the sanctuary and dependants of the above can also enter or reside in the sanctuary.

In Gujarat Navodaya Mandal V. State , the Gujarat High Court observed that there is nothing illegal in giving permission to lay down pipeline in and through the Marine National Park/ Sanctuary, Jamnagar. Because all the possible measures are taken to protect the ecology and environment. An more over there were conditions on permission to proper management as well as for the improvement of wildlife.

9. National Park

The state government, for the purpose of protecting, propagating or developing wildlife may by a notification declare that an area, by reason of its ecological, faunal, floral, geomorphological or zoological association or importance, needed to be constituted as a National Park. Once a National Park is declared, no alteration of the boundaries shall be made except on the resolution passed by the legislature of the state. In a National Park, the following activities are strictly prohibited;

a) Destroying, exploring or removing any wildlife,
b) Destroying, damaging the habitat of any wild animal,
c) Deprive any wild animal of its habitat,
d) Grazing of any livestock

In Animal and Environment Legal Defence Fund V. Union of India , which was a writ petition came to Supreme Court, the petitioners filed the petition challenging the validity of granting permits for fishing to 305 tribal families in reservoirs within the Pench National Park (Madya Pradesh). But the Supreme Court adopted humanitarian approach keeping in mind the economic sustainability and environment protection. The Supreme Court directed the forest authorities and wildlife authorities to take adequate measures to protect the environment and at the same time keep watch on the villagers. The villagers were also directed not to enter other areas other than the reservoir.

10. Central Zoo Authority and Recognition of Zoos

The central government shall constitute the Central Zoo Authority, consisting of a chair person, tem members and a member secretary. They shall hold office for a period of three years. The Central Zoo Authority shall perform the following functions

(a) Specify the minimum standards for housing, un keep and veterinary care of the animals kept in a zoo;
(b) Evaluate and assess the functioning of zoos with respect to the standards or the norms as may be prescribed;
(c) Recognize or derecognize zoos;
(d) Identify endangered species of wild animals for purposes of captive breeding and assigning responsibility in this regard to a zoo;
(e)Co-ordinate the acquisition, exchange and loaning of animals for breeding purposes;
(f) Ensure maintenance of stud-books of endangered species of wild animals bred in captivity;
(g) Identify priorities and themes with regard to display of captive animals in a zoo;
(h) Co-ordinate training of zoo personnel in India and outside India;
(i) Co-ordinate research in captive breeding and educational programmes for the purposes of zoos;
(j) Provide technical and other assistance to zoos for their proper management and development on scientific lines;

(k) Perform such other functions as may be necessary to carry out the purposes of this Act with regard to zoos.

11. Trade or commerce in wild animals, animal articles and trophies

The term trophy means the whole or any part of any captive animal or wild animal, other than vermin, which has been kept or preserved by any means, whether artificial or natural, and includes, rugs, skins, and specimens of such animals mounted in whole or in part through a process of taxidermy, and antler, horn, rhinoceros horn, feather, nail, tooth, musk, eggs, and nests. And uncured trophy means the whole or any part of any captive animal, other than vermin, which has not undergone a process of taxidermy, and includes a [freshly killed wild animal ambergris, musk and other animal products];
Sec. 39 of the Act, declares that every wild animal other than vermin, which is hunted or kept or bred in captivity or found dead or killed by mistake, shall be the property of the State Government. Likewise, animal articles, trophy or uncured trophy, meat derived from any wild animal, ivory imported to India, article made from such ivory, vehicle vessel weapon, trap or tool that has used for committing an offence and has been seized shall be the property of the state government. If any of the above is found in the sanctuary or a National Park declared by the Central Government then it shall be property of the Central Government. In Rajendra Kumar V. Union of India, the petitioner challenged thieves of the above clause which imposed a complete ban on import of ivory and articles made form it. It affected his livelihood and freedom of trade and business provided under Article 19(1). Moreover, he contended that ivory derived from a mammoth was not ivory derived from a scheduled animal, therefore, any article made out of such fossil ivory could not be brought within the purview of the Act. But the Court observed that, the Chapter V-A of this Act, is incorporated in accordance with the direction of Convention on International Trade in Endangered Species of Wild Fauna and Flora [CITES]. The object and reasons of the Amendment Act, 1991 make it amply clear that trade in African ivory is proposed to be banned after giving due opportunity to traders to dispose of the existing stocks. So this Section cannot be void.

12. Prevention and Detection of Offences

Sec. 50 of this Act confers power of entry, search, arrest and detention on the Director or any other officer authorized by him or the chief wildlife warden or Officer authorized by him or any Police Officer not below the rank of Sub-inspector. Officer not below the rank of Assistant Director of Wildlife Preservation or Wildlife Warden shall have the powers to issue a search warren, to enforce the

attendance of witnesses, to compel the discovery and production of documents and material objects and to receive and record evidence.

13. Cognizance of Offence

No court shall take cognizance of any offence against the Wildlife Protection Act except on a complaint by: The Director of wildlife preservation or any other officer authorized in this behalf by the Central Government or; The Chief Wildlife Warden or any other officer authorized by the State Government; or, any person who has given notice of not less than 60 days, in the manner prescribed, of the alleged offence and of his intention to make a complaint to the Central Government or the State Government or the officer authorised as aforesaid.

14. Punishments

Provided that where the offence committed is in relation to any animal specified in Scheduled I or Part II of Schedule. II, or meat of any such animal, animal article, trophy, or uncurled trophy derived from such animal or where offence [relates to hunting in, or, altering the boundaries of] a sanctuary or a National Park, such offence shall be punishable with imprisonment for a term which shall not be less than [one year] but may extend to six years and also with fine which shall not be less than five thousand rupees. Provided further that in the case of a second or subsequent offence of the nature mentioned in this sub-section, the term of imprisonment may extend to six years and shall not be less than two years and the amount of fine shall not be less than ten thousand rupees .Any person who contravenes any provisions of Chapter VA, [Prohibition of Trade or Commerce in Trophies, Animal Articles, etc. derived from Certain Animals.] shall be punishable with imprisonment for a7 term which shall not be less than one year but which may extend to seven years and also with fine which shall not be less than five thousand rupees.

Any person who contravenes the provisions of Section 38J [tease, molest, injure or feed any animal or cause disturbance to the animals by noise or otherwise, or litter the grounds in a zoo] shall be punishable with imprisonment for a term which may extend to six months or with fine which may extend to two thousand rupees, or with both. Provided that in case of second or subsequent offence the term of imprisonment may extend to one year or the fine may extend to five thousand rupees As per section 52, whoever attempts to contravene, or abets the contravention of, any of the provisions of this Act or of any rule of order made hereunder shall be deemed to have contravened that provision or rule or order, as the case may be.

If any person, exercising powers under this Act, vexatiously and unnecessarily seizes the property of any other person on the pretence of seizing it for the reasons mentioned in sec. 50, he shall, on conviction, be punishable with imprisonment for a term which may extend to six months, or with fine which may extend to five hundred rupees, or with both.

15. **Forfeiture of Property Derived from Illegal Hunting and Trade**

A new chapter, Chapter VI-A, had been incorporated by the Wildlife (Protection) Amendment Act of 2002. According to this new chapter, if any person or associate of persons or trust acquires property from illegal hunting or trade of wildlife, it shall be forfeited to the State Government by the competent authority. Such property can be forfeited after taking all necessary steps (inquiry, investigation or survey in respect of any person, place, property, documents institution, etc.) and after tracing and identifying any such property.

During the investigation and proceeding of forfeit the property, if the competent authority finds that only a part of the acquired property is proved illegal, the authority shall make orders, giving an opportunity to the person affected, to pay a fine equal to the market value of such part of property in lieu of forfeiture.

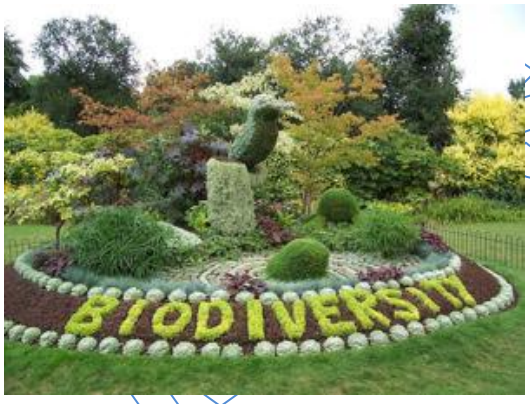
Conclusion

The key environmental challenges that the country faces relate to the nexus of environmental degradation with poverty in its many dimensions, and economic growth. These challenges are intrinsically connected with the state of environmental resources, such as land, water, air, and their flora and fauna. The proximate drivers of environmental degradation are population growth,

inappropriate technology and consumption choices, and poverty, leading to changes in relations between people and ecosystems, and development activities such as intensive agriculture, polluting industry, and unplanned urbanisation. The status of wildlife in a region is an accurate index of the state of ecological resources, and thus of the natural resource base of human well-being. This is because of the interdependent nature of ecological entities, in which wildlife is a vital link.

Moreover, several charismatic species of wildlife embody Incomparable Values, and at the same time, comprise a major resource base for sustainable development. Conservation of wildlife, accordingly, involves the protection of entire ecosystems.

We have to keep these perspectives in mind while going through the Wildlife (Protection) Act 1972. Since the wildlife is a vital link in the web of lives, it is our utmost duty to preserve and protect the richness of wildlife as it can be made available to generations. So the endangered species of flora and fauna should be protected. The Wildlife (protection) Act, with timely amendments, facilitates the protection of wild life in India. With these observations, I conclude my topic on Wildlife (Protection) Act, 1972.



Definitions

In the biological diversity act, 2002, unless the context otherwise requires,-

(a) "benefit claimers" means the conservers of biological resources, their byproducts, creators and holders of knowledge and information relating to the use of such biological resources, innovations and practices associated with such use and application;

(b) "biological diversity" means the variability among living organisms from all sources and the ecological complexes of which they are part, and includes diversity within species or between species and of eco systems;

(c) "biological resources" means plants, animals and micro organisms or parts thereof, their genetic material and by products (excluding value added products) with actual or potential use or value, but does not include human genetic material;

(d) "bio survey and bio utilization" means survey or collection of species, subspecies, genes, components and extracts of biological resource for any purpose and includes characterization, inventorisation and bioassay;

(d) "Chairperson" means the Chairperson of the National Biodiversity Authority or, as the case may be, of the State Biodiversity Board;

(e) "commercial utilization" means end uses of biological resources for commercial utilization such as drugs, industrial enzymes, food flavours, fragrance, cosmetics, emulsifiers, oleoresins, colours, extracts and genes used for improving crops and livestock through genetic intervention, but does not include conventional breeding or traditional practices in use in any agriculture, horticulture, poultry, dairy farming, animal husbandry or bee keeping;

(f) "fair and equitable benefit sharing" means sharing of benefits as determined by the National Biodiversity Authority under section 21;

(g) "local bodies" means Panchayats and Municipalities, by whatever name called, within the meaning of clause (1) of article 243B and clause (1) of article 243Q of the Constitution and in

the absence of any Panchayats or Municipalities, institutions of self government constituted under any other provision of the Constitution or any Central Act or State Act;

(h) "member" means a member of the National Biodiversity Authority or a State Biodiversity Board and includes the Chairperson;

(i) "National Biodiversity Authority" means the National Biodiversity Authority established under section 8;

(j) "prescribed" means prescribed by rules made under this Act;

(k) "regulations" means regulations made under this Act;

(l) "research" means study or systematic investigation of any biological resource or technological application, that uses biological systems, living organisms or derivatives thereof to make or modify products or processes for any use;

(m) "State Biodiversity Board" means the State Biodiversity Board established under section 22;

(n) "sustainable use" means the use of components of biological diversity in such manner and at such rate that does not lead to the long term decline of the biological diversity thereby maintaining its potential to meet the needs and aspirations of present and future generations;

(o) "value added products" means products which may contain portions or extracts of plants and animals in unrecognizable and physically inseparable form.

Functions and Powers of the National Biodiversity Authority

1. It shall be the duty of the National Biodiversity Authority to regulate activities referred to in sections 3, 4 and 6 and by regulations issue guidelines for access to biological resources and for fair and equitable benefit sharing.
2. The National Biodiversity Authority may grant approval for undertaking any activity referred to in sections 3, 4 and 6.
3. The National Biodiversity Authority may-
   (a) advise the Central Government on matters relating to the conservation of biodiversity, sustainable use of its components and equitable sharing of benefits arising out of the utilization of biological resources;
   (b) advise the State Governments in the selection of areas of biodiversity importance to be notified under sub section (1) of section 37 as heritage sites and measures for the management of such heritage sites;
   (c) perform such other functions as may be necessary to carry out the provisions of this Act.
4. The National Biodiversity Authority may, on behalf of the Central Government, take any measures necessary to oppose the grant of intellectual property rights in any country outside India on any biological resource obtained from India or knowledge associated with such biological resource which is derived from India