

Environmental Science

Lecture 29

Wildlife Protection Act

If you look at the Wildlife Protection Act, as they were protection acts with respect to the environment, air, water and other pollution bodies that are completely entrapped under the environment board, Wildlife was another such thing that needed our protection even though we are the main cause of concern, we ourselves have to take measures to ensure that there is some authority or body to protect the wildlife within our country. This act was passed in the Parliament of India in 1972 to protect India's wildlife.

The main objective of this act was - Prohibition on hunting of specified wild animals, birds and plants, Setting up and management of national parks as well as wildlife sanctuaries, Control of trade and commerce in wildlife and wildlife related products. What happened at one point of time with respect to wildlife was, they were completely exploited for their skin, horns, tusks, in whatever way they could be used and exploited, they were completely utilised. It started with medicinal properties of the tiger or the Bison, they were certain medicinal and religious connotations attached to it. Then came the fashion industry that required a certain kind of animal prince, fuzzi; the bears, the polar bears and even the skunk was not spared. Every animal was utilized either for its bone, for its tusk, for the horns on the animal or for their skin. All of these were becoming hot commodities in the market in the export and import industry. Especially in our highly diverse country like India, we are considered to have one of the hotspots of biodiversity, this became a huge, attractive point. There was a lot of smuggling going on, a lot of these activities with respect to hunting was going on and at first a watch was not kept on these activities causing a number of species to be endangered. A number of these species have even become extinct. It was only once the wildlife protection act came into being, we could regulate and even penalize and punish the poachers who are creating such heinous crimes.

The Definitions of certain particular features under this act - 'animals' include amphibians, birds, mammals, and reptiles, and their young that includes eggs in the case of birds and reptiles. For example, the Ridley turtle, their eggs are considered to be extremely rare because they very rarely lay eggs and when they do lay them, they lay them on the shore or close to the beach which is again, one of the most polluted and populated areas. Right by the beach, under very shallow mud graves, they hide their eggs, so it becomes very easy to consume them, they are considered to be a delicacy and because they lay them in hundreds, very rarely do ten successful eggs hatch. It becomes a very imbalanced way of laying eggs as well as the number of turtles that do come out of these eggs. It not only protects the animals but animals include a number of the other subspecies, sub categories, as well as the young ones and eggs in certain

cases. Animal article means an article made from any captive or wild animal, other than vermin, this article or object in which the whole or any part of such animal has been used and an article is then made.

This includes tusks, wallets, belts, any particular fur, rug, sheepskin rug; any of these are considered to be animal articles. It doesn't have to only refer to a wild animal, it can even be an animal held in captivity. Hunting includes - capturing, killing, poisoning, snaring or trapping any wild animal or even attempting to do so. Even laying traps is illegal, irrespective of whether an animal gets caught in traps is secondary. Even laying them is highly illegal. Driving any wild animal for any of the purposes specified in the sub clause like; entertainment purposes, especially with the use of endangered species like particular types of elephants or bison. Injuring, destroying or taking any body part of any such animal, or in the case of wild birds or reptiles, disturbing or damaging the eggs or nests of such birds or reptiles. Any of these things, especially feathers that are a main attraction. Any of these particular creatures that have any part of their body or their eggs or meat is considered a delicacy, they are all considered to be consumed for any of the purposes and any of the ways via which these animals are trapped or killed is considered hunting. It doesn't have to be only particular species or mammals in the forest, it includes even amphibians, hunting certain types and varieties of fish, all of this get included in this Act.

The Act prohibits hunting of wild animals. No person shall hunt any wild animal specified in the schedules. However, there are certain exceptions to it and even though these exceptions are mentioned, these are widely exploited as well. This is what we discussed under the category of man and animal conflict. Once the animal harms a human being or a number of human beings in the village, then that animal can be put down or killed. There are a lot of these loopholes within this and some of these loopholes are used to kill the animal. An animal sanctuary is a facility where animals are brought to live and be protected for the rest of their lives. Unlike animal shelters, sanctuaries do not seek to place animals with individuals or groups, instead maintain each animal until his or her natural death. It is not like a zoo or an enclosure, rather completely open but the sanctuary does have certain boundaries but the boundaries we are talking about are not just within few sq feet but is spread across few sq km and sq hectares. Its a large area we are talking about but within the purview of some responsible body.

A national park is a park in use for conservation purposes. Often it is a reserve of natural, semi-natural or a developed land that a sovereign state declares or owns.

Issues involved in enforcement of Environmental Legislation in India

We have seen the number of laws and protection acts that have been put into place but how well have these been enforced? How well have the people and the animals benefiting from this

is another story entirely. In pursuance of the Water Prevention and Control of Pollution Act 1974, the Central Government set up a Central Board for the Prevention and Control of Water pollution. The board actually oversees the activities of the Central board and oversees the activities of similar Boards that were set up in various states at different points of time when the Act was adopted by the State Legislatures. They have to ensure that, if at all there is a problem there is a particular hierarchy in which these problems are dealt with and if at all there are certain solutions, there are going to reach the grassroot level as compared to not having a particular way of channelising information or let it be information in both ways. Let the Board in the State or the Taluk or district know that this particular water pump is polluted, this particular river pond is polluted and that goes to the next level and finally reaches the Central Board to take action against the industry or give particular remuneration to people around that water body. Similar boards need to be set up at State level and there should be very good communication between the State level board for prevention and control and the Central. It doesn't have to deal only with pollution of water but other natural elements as well. With the enactment of the Environment Protection Act in 1986, basically an umbrella legislation i.e something like a tagline from the Central Government. The Central Government has a particular body that is in charge and can report to them but what is the scenario in all these places? Let's actually assume the overall responsibility of Environmental Protection and Improvement. Although the act empowers the government to designate authorities for specific tasks, separate machinery for enforcement of the Act was not set up or designated except the Central Groundwater Board which was designated as the Central Ground Water Authority. The basic idea of having these ancillary boards was to give them autonomous power where they can take some decisions on their own without going through the process of red tape. The main problem of any government legislation is the amount of red tape that's involved, especially in case of pollution, immediate action is to be taken. For instance, 400 families could be dependent on a particular water body in the village. Not only are the families involved but irrigation, as well as the Dairy. The animals in and around that area could be dependent on the water body. If there wasn't any particular authority in place, who was in charge of this problem and who could immediately solve this problem would cause the process to be too long and there would be no safe drinking water available which is definitely an immediate concern for these people and that has to be attended to right away.

It is only until recent times, empowered Authorities have been constituted for specific assignments, which include the following: Environment Pollution Authority for National Capital Region set up in January, 1998. NCR is Delhi and surrounding areas, it was declared as one of the highly polluted cities and so they decided to set up an authoritative board just for that area who will be in charge of monitoring the pollution rates and limitations of that area, coming up with suitable remedies, that are suitable for NCR alone. Loss of Ecology (Prevention of Pollution

and Payment of Compensation) Authority, Tamil Nadu. Coastal Zone Authority - this again is very useful when you have floods or a tsunami coming in, such authoritative boards are very useful. The Dahanu Taluka Environment Authority in Maharashtra; National Environmental Appellate Authority and Taj Trapezium Zone Pollution (Prevention and Control) Authority. Just because of 200 factories within the belt around Agra and Uttar Pradesh, Taj Mahal was noticed turning yellow because of the constant acid rain that happened in that area. They had to come up with a particular solution for this. Despite having an entire watchful authority like the Central Board for pollution, they decided that we need to have something specific for this area to look into the heritage building and the effects of different environmental aspects on these specific heritage buildings. Thus, came the Taj Trapezium Zone Pollution Authority. They look into the problems that the Taj Mahal faces and what restrictions can be placed on the people on consumption of certain products or on certain resources.

Over the years, the pollution control boards have been assigned the responsibilities for enforcement of various environmental regulations. In addition to the acts relating to water and Air pollution control. With the increasing expectations from general public and judiciary, as reflected through Public interest litigations. The pollution control board is required to play the lead role by conducting investigations, by providing suitable suggestions for remedial measures as well as to monitor the implementation of those remedial measures. We have to have a very active general public and non-governmental organizations because most PILs (Public Interest litigations) are raised by non-governmental organizations. They could notice a particular trend in a particular area where children are getting asthmatic and many bronchial infection cases are rising and then there could be a study on what are the different levels of particulates per matter like carbon dioxide, monoxide and other gases in the air. If something is on a spike or on a higher level and if there is a sudden influx of many industries and many affluents are not getting monitored, all of these have to be brought to the front and told to the pollution control board, so that they may do the needful. The pollution control boards are hardly equipped with necessary support with which these tasks seem highly daunting since we are talking about a very high populated area, highly polluted area with many different variants on pollution. It is just not air, its air, water, noise; it is in different realms on different levels that they have to look into. You need professional manpower, laboratory infrastructure for pollution monitoring and especially if remedial measures are given, a particular authority has to be present to ensure those remedial measures are performed. The boards are very dismally short of such facilities because of dwindling budgetary support and restrictions imposed on recruitment of personnel besides lack of training and career opportunities for the existing staff. It's not sufficient that we just have a board in place. We need to have educated people in the same zone and vicinity so that they are aware of the problems that they are facing cause of the environment and pollution of the environment. Another important thing here we need to look into is what kind

of training can be provided to the people, can laymen also be involved, can some specialized short term training be given or is it something that must be acquired through studying and only upon achieving a certificate can they join this? If it is going to be something that's very tedious and time consuming, we might not have many takers for these kind of jobs. We have to come up with solutions where we have ready packages that can be taught to batches of people who can take up these set of jobs.

Public Awareness to protect the Environment

After the scientific and industrial revolution in the recent past, there has been immense impact of man on his environment and on man himself. The balance of the ecosystem as such has completely changed with respect to the environment. Industrialization, urbanization, deforestation, use of insecticides, pesticides, improper use of fertilizers and chemicals in the environment; are some contributing factors that have challenged the life of man, animals, especially birds and certain other organisms which are very important for the healthy movement of the food chain. Human activities are causing many kinds of environmental pollutants for which public awareness is necessary. The Active cooperation of everyone, at every level of social organizations is needed for issues concerning the environment. Like we just saw, when talking about the pollution board, it is not just enough that we have an authority or the Central government has an authority or a board in place. We must have people submitting information to the board because it is not physically possible for them to go and check water bodies, the level of pollution in water bodies, the air quality, the smog quality, all of that cannot be done by one organization. It has to be taken up by the public because it actually affects them directly. It is for completely selfish reasons that the public has to be aware of the environment and the level of pollutants in the environment.

Over exploitation of natural resources is a basic concern for everybody. We should try to accept the family planning schemes that will not only reduce the population but also solve problems of food as well as rehabilitation. There must be a plan about the effects and control measures of environmental pollution. The government should initiate and help via awareness campaigns to save the environment or at least empower certain non governmental organizations or NGOs so that they may conduct the same. They should be an integral part of our educational programs. This is not something that should be taught as a separate lim. Such information should be integrated as a part of primary school level education because right from a very young age children should be taught certain things. We should discourage the use of fuel vehicles until it is completely unavoidable. Overuse of water for cleaning and other purposes should be decreased. Rain water harvesting is another example where rainwater can be utilized to the maximum rather than just letting it go waste. Any government at its own level cannot achieve the goals of sustainable development until the public has an important participatory role in it. It

is not sufficient that we just have agendas in place, we must have people who not only follow these policies but also help create them. It is only possible when the public is aware about ecological and awareness issues. We have to tell them how bad it is when you light up plastic and polythene bags. It is not sufficient you tell them the place looks ugly. It has a huge impact on the environment. Grazing animals like cows and goats eat, they aren't able to digest it and they collapse. Our milk consumption is again completely dependent on the cows, it is going to harm the humans eventually. Public should also understand the fact that we are degrading our environment and essentially harming ourselves for the future. This is the duty of the educated people to educate others about the adverse effects on the environment. When we talk of educated people, it isn't sufficient if they just know English and have a degree. Educated people are people who are aware that these are the things that the environment requires and these are the things that we can do to save the environment and make sure that these are propagated to everyone in the village. These people could be common people like farmers. They could be common people like people who sweep the roads. They can also help educate others on how to segregate the trash, how do you make sure that plastics are not strewn on the ground when animals are around like grazing animals, these things are required to reach the grassroot level, students, children and people in the general sense. Government alone cannot do anything unless every citizen is aware of the pollution that is being caused and the effects of the pollution. Everyone needs to be aware and motivate each other for consciousness regarding the environment.

Human Population Growth and the Problem of Biodiversity

Human population has increased at an exponential rate. With this growth comes an increase in demand for land, food, water, energy and other resources. As human numbers grow, species and their habitats diminish simultaneously because we go about clearing forests either for agricultural purpose or for town planning purpose and once we clear out the land, the species indigenous to that land also grow slowly, die away and become extinct and if at all they become extinct they are not able to adapt as fast as humans tend to do.

This is where we are currently. We are around 6 to 8 billion in population and 2050 we are looking to be at 12, nearly double where we are and that's somewhere we really don't want to be because at the rate at which it's going, we need to ensure that our current consumption is at least brought under control, the carrying capacity i.e demand vs supply is matched with respect to all resources, not just natural resources. Even resources like food, air, water; are going to completely get altered.

Biodiversity is basically variety of all life forms throughout an ecosystem. High rates of extinction are quickly reducing biodiversity especially in areas of the world with high human population density and growth. The direct and indirect effects that humans have on biodiversity

is exceedingly challenging as you can see in the following flow chart. You have the human population here, human enterprises basically include Agriculture, Industry, Recreation and International Commerce. Then you have Land Transformation, Global Biogeochemistry, Biotic Additions and Loss like Invasion, Hunting and Fishing which is basically how do you go about satisfying human needs. In Geochemistry you have Carbon, Nitrogen and Water cycles. Transformation of Land incorporates Land Clearing, Forestry, Grazing and Intensification. Finally because of these as effects, you have Climate Change - Enhanced temperatures, Greenhouse gases, Aerosols and decreased Land cover of arable land cover which can be used. Loss of Biological Diversity comprises of Extinction of species and populations, loss of entire ecosystems.

If you look at the human change of Earth expressed as % of change, you can see the Marine fisheries, bird extinction, all of this is on a steady increase. The percentage of change is always increasing, CO₂ concentration is quite high currently, land transformation is very high close to 50%, where we are converting constantly good forest land either for agricultural purposes or for planning of human communities. We have to discuss the relationship people have on biodiversity. What people don't realize is, as they go about invading other animal's territory, its eventually going to come and bite us back. There are places on Earth with some of the greatest diversity especially South America, equatorial Africa, India, Indonesia and Coastal regions. They also show the greatest density and fastest rate of growth of people as well. There is obviously a connection here but we need to ensure that this connection isn't negative and it does not hamper the biodiversity of the place.

Extinction is the natural order. In fact, of all the species which have ever existed 99.9% are now extinct! The current extinction rates, however, may be as much as 40-100 times the normal 'background' or natural rate for extinction. When we think of extinction, we always look at it in a negative aspect. It is for most cases but we should not be able to see the extinction of a species or a sub species within a lifespan of a human being. It should take 100 of years for such an occurrence to happen but because of such fast rated industrialization, urbanization and other ancillary factors that have come into being, extinction of species has grown faster. We have seen species going extinct within our lifetime and that is a very negative impact. 25% of the Earth's bird species have been driven to extinction by humans especially on islands. Threatened with extinction, you have 11% of birds, 18% of mammals, 5% of fish, 8% of plants. If you look at the extinction rate since the 1800, you can see how slow it has been here and since the industrial revolution, there has been a steady growth in the extinction rate and that is the main cause of concern. Species going extinct is not wrong but at the rate in which they are going extinct is what we have to be concerned about.

The Oceans and the Coast - globally the number of people living within 100 km of the coast increased from roughly 2 billion in 1990 to 2.2 billion in 1995 (39% of the world's population). Coast is again the most hampered part of the environment because we keep intruding into the sea, there's landfills and the coast and shoreline gets completely eroded.