



ENVIRONMENTAL ISSUES AND THEIR REMEDIES IN INDIA

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ABSTRACT

Indian environment has been deteriorated remarkably in the past 50 years due to the rapid decline in natural resources and a severe increase in pollution level. Reduction of forests, population growth, vehicular productions, use of harmful chemicals and numerous other detrimental human activities are essentially responsible for this tarnished situation of environmental health in India. It is, in fact, representation extensive economic loss to the nation and warrants severe attention of policymakers, administrators, inventors and general public altogether to save the environment and humanity and to arrange for generational justice. This paper deals with the risk of environmental deprivation and recommends some possible remedial actions for eco-conservation in India. Now it is essentially advisable to become protector, producer and caretaker of natural resources and not the predator, polluter and consumer of the earth.

Key Words: Environment, Forest, Land Degradation, Green House Effect.

INTRODUCTION

India has completed fifty years of its independence full of desirable success scored through determined commitments and persistent efforts of the people and the government in economic, social, scientific and technological regions. A country which failed to manufacture even a spine in 1947 is feverishly engaged in agitating out space-crafts and rockets and misusing nuclear devices for peaceful purpose. During the earlier five decades, India's achievement in science and technology look to be very imposing which would disclose expertise built up in astronomical research, nuclear engineering, manufacture of steel,

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fertilizer, petroleum, chemical, machine tools, construction of big dams etc. The unbelievable achievement has been made in the agrarian production through Green Revolution throughout the last three decades, which changed India of the fifties, as an importer of food grain to that of an exporter. The technological development in agriculture is brought about through the improved production of new high firm multiplicities of crops by resources of the application of chemical fertilizers and pesticides. Bringing additional land under food crops for the forever increasing population has no doubt saved manhood from hunger and pestilence. On the other hand, numerous developing activities such as the building of huge dams, establishing power plants and industrialized units have changed the man-nature association. They have reformed not only the economic and socio-cultural life of the people but also their standards, systems, thoughts, views and indeed their whole lifestyle. Destruction of more jungles for extension of land for the agrarian purpose, for making houses, roads and other productions has led to the elimination of a number of plant and animal kinds and is also accountable of an ecological discrepancy. Apart from these, the indiscriminate disruption of the forest environment leads to trouble in a corresponding reprocessing system. The storm of industrialization and modernization has not only displaced man but in fact, has demolished his environment and surroundings. The growth in the release of toxic gases from the industrial divisions and carbon dioxide released from animals and human beings and from burning of remains fuels is as severe as the decrease in the discharge of oxygen by the trees and plants as an effect of which the biospheric equilibrium kept since long-established has been affected.

Today, conservation pollution is a rising risk to our nation and has become a collective occurrence being observed both in cities and rural areas of India. The hefty rush of a population from rural to urban areas has resulted in overcrowding of towns. Rapid urbanization and industrialization have led to a rise in pollution mainly in metropolitan cities. About 74% of the air pollution is due to vehicular emissions which are accountable for 12 time's high risk for breathing issues. In Delhi, about 12% of school children are suffering from asthma. More than two thousand crore litres of dirty water and about five thousand metric tons of trash are manufactured per day in the urban ranges which are polluting the surface and groundwater resources. Ganga, the holiest river and a sign of India's age-old culture and civilization, has become the most contaminated cultural river in the world. Industrial wastes having several pollutants (particularly toxic metals and pesticidal residues) are shattered to nearby lands and reduction the soil fertility (Singh, 1989). Plant bodies gradually accumulate these toxic elements in different parts (Ray, 1990) and thus disturb the human health condition. The metropolitan cities of India are considered as noisiest in the world due to lack of proper sound resistor system in our manufacturing plant and automobiles and also due to the blasting of high sounding horns. Our industrialisation, mechanisation and vehicles have elevated the level of sound in metro cities. According to a study conducted by

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All India Institute of Medical Sciences, New Delhi, the usual noise level in India's metropolitan cities is more than the recommended international limit. Noise level above 100 decibels will be intolerable and harmful to numerous body part of men such as brain, heart and eardrum. The terrific sonic booms of super sonic jet planes not only rattle window glasses and fencing walls but also affect heart beating, hearing organs, liver functioning, brain, eye etc.

POPULATION GROWTH AND POLLUTION:

The pressure of population on the environment has become more acute during the past few decades. About 34 million people in 1947, the time of independence have swelled up to 86 million in 1991 and is likely to cross 100 million marks by the turn of this century and more than 200 crores by 2035 (Patel, 1994). An unbelievable bitter truth is that the Indian population explosion adds an Australia to the country every year. A concentration of people in the urban areas which are already polluted is becoming heavier. The hard-pressed economic requirements have unnoticed environmental phase overall. In our metropolitan cities where there is a heavy concentration of people, the water resource is deeply polluted because of lavatory refuse, waste-bin refuse and washing soap refuse. In spite of all-out efforts to curb it, the increase continues nearly unabated because of socio-religious factors.

The rapid increase in population and mismanagement has caused a severe decline in our natural resources between 1947 to 1997. The availability of fresh water has declined by two thirds. Soil degradation has enlarged to nearly 800 lakh hectare bringing doom for agricultural production. The livestock cropping in the forests has enlarged three times the needed level and refined plot per capita has become half as an outcome of population explosion. Over exploitation of groundwater is an acute problem in the agriculturally important districts. Class I and Class II cities of India are generating an enormous amount of sewage wastewater per day, but treat only a tenth. The entire manure generation from urban centres has grown six times in the past fifty years. The water necessity of major water-consuming industries has improved forty times, but they are not giving the huge wastewater generation from their personal. Production of municipal solid waste has grown 7-times while their collection, transport and disposal often remain unscientific and hazardous. Indoor and outdoor air pollution have caused about 2.5 million premature deaths since Independence.

DENUDATION OF FORESTS:

In spite of the target of having 100 million hectares of forest area i.e. 33 per cent of the total geographical area of the country as specified by the Forest Policy Resolutions, 1952, our forests continue to shrink which results in yet another problem of the short supply of fuel



wood and fodder in rural India. The requirement of fuel wood, according to the report of National Commission on Agriculture, is about 22 million cubic meters at the turn of 2000 A.D., while the expected output of fuel wood would be one-third of the requirement. During the last four decades of freedom, the greatest denudation of forests has been experienced. As the human and cattle population raised, forest parts have been vacant for agricultural and other domestic purposes. Again, railways, roadways etc., have expanded their network. Dams, projects, bridges and several other institutions have been constructed thereby decreasing the forest areas. At the rate of deforestation of 2.5 hectares of forest per minute, India will become a Sahara desert within 50-100 years.

LAND DEGRADATION:

Uncontrolled deforestation, intensive irrigation and mining activities are the major cause of land degradation. Deforestation on a huge scale has caused in an uncontrollable fast movement of water from upstream regions. The eroded soil has led to siltation of rivers which naturally have over-flown their banks with roaring speed. It has been assessed that about twenty-three billion tonnes of soil are missing each year. The Thar desert is increasing at the ratio of one km per year. Drought-prone parts have been continually increasing, as a result, certain of the districts in U.P. like Tehri and Uttarkashi, Bankura in West Bengal and huge areas of Rajasthan fell to severe shortage of water. Lakes, rivers and streams are drying day by day. The water part of Chilka (Orissa) has been condensed from 1165 sq km to 900 sq km. Loktak lake, the largest freshwater inland lake, has been reduced from 495 sq km to 390 sq km in ten years causing a serious ecological problem in Kashmir valley. The flawed drainage structure and infringement on Dal Lake and the termination of the Nallah are discouraging the flood channel concerning the Dal with the Jhelum. Soil destruction is a natural progression and is as old as the earth. But today it has increased to the point where it far exceeds the natural formation of new soil. In the face of continuously expanding the demand for agricultural products and an increase in pressure on land, soil erosion is accelerating. Indeed the agricultural land is losing its productive topsoil twenty to forty times faster than soil naturally can reform in thousands of years.

GREEN HOUSE EFFECT:

The greenhouse effect is one of the most hotly debated environmental issues of the current world. With the increase in greenhouse gases (carbon dioxide, water vapour, Methane chlorofluorocarbons etc.) in the atmosphere, the average temperature of the earth has been rising slowly but steadily. The adverse physiological effect of double atmospheric CO₂ on climate has been described by Sellers et al. (1996). If the current tendency is allowed to endure, as usual, the total temperature in 2050 may increase as high as 3.5-degree Celsius



overhead the pre-industrial level which is well overhead the maximum of acceptability (Kelley, 1990) and snow covered mountains melt into water thereby raising the sea level by several kilometres. Rapid climatic change in the tropical Atlantic region also occurred during the last deglaciation (Overpeck et al., 1996). Recently, a bio-molecular model for environmental adaptations in animals has been proposed in order to cope up with the rapid climatic change in environment (Tripathi, 1997). Deforestation indirectly increases the amount of carbon-dioxide thereby increasing the atmospheric temperature. India is the world's six biggest producers of CO₂. The average climate of the Indian plain would become hotter and drier which would affect the agricultural yield due to increased weed infestations and insect attack (Das, 1991). Industrial and vehicular emissions have contributed their own share of harmful effects to the environment. Acidification is a common problem in industrialised countries. In India, vehicles contribute more than 30 per cent of the photochemical smog in the atmosphere. The major cities of the country have an average of more than 15,00,000 vehicles each. More than 2.5 million different kinds of transportation are running in Delhi. The usage of chlorofluorocarbon in refrigeration units and organochlorine pesticides in farming are producing severe harms to the environment. These chemicals release chlorine which enters into stratosphere region of the atmosphere and reduces the capacity of ozone letting more ultraviolet rays of the sun to infiltrate into the atmosphere which is exact injurious to human healthiness. The total emission and pollution of sulphur dioxide in India is estimated to be more than 4 million tonnes because of the tremendous increase in vehicles of all kinds. As a result, some of the oldest and rarest architectural, cultural and historical monuments and structures have been affected, corroded and mutilated. On 11th Dec. 1997, the delegates from 159 nations attending the "World Climatic Conference" in Kyoto (Japan) reached on an agreement that the industrialized nations (38 developed countries) will reduce their average annual emission of six greenhouse gases by 5.2 per cent from 1990 levels between the year 2008 and 2012. However, India didn't give any binding commitment to the conference to reduce the emission of greenhouse gases due to its poor economy and high population pressure.

RISKS OF CHEMICAL EXPLOITATION:

Pesticides are the greatest significant issue in improving agricultural manufacture predominantly in developing nations to sustain the superior supply of food, required to feed their growing population. Amount of hazardous chemicals used in India is very high. The usual per hectare pesticide ingesting has enlarged remarkably during the last three eras (Gupta, 1988). Less than 0.1 per cent of pesticides reach the target pest and remainder negatively affect humans, livestock and natural biota. This tendency to appearance at only advanced production abandoning the hazardous concerns of ecological disturbance has managed to severe environmental degradation rising from their usage. An indiscriminating



and full use of pesticides has adulterated the food grains, fruits, fodders, drinking water dairy products, vegetables, horticulture land and the living environment as a whole (Mehrotra, 1983). Water living species die as the pesticides washed down from the fields to rivers, tanks and other water reservoirs. Cosmetic pesticides are sprayed indiscriminately on fruits and vegetables in major cities of India to improve the look e.g., methyl parathion on cauliflower gives an extra white look, ladyfingers dipped in copper sulphate to look greener. Mainstream of synthetic pesticides are not simply degradable and incline to enter food chains. They spread their toxic effect through ecological cycling and biological magnification and cause serious health problems in human and animal subjects. Organo-chlorine and organo-phosphorus compounds are presently predominating in use. The former is stable under various environmental conditions. Chlorinated pesticides are the most prevalent toxicants in the Indian environment. The environmental half-life of such chemicals reported being ten years or more (Brooks, 1976). Use of these pesticides has also been excluded or low in developed nations as they produce numerous environmental and health hazards. Liver and kidney damages are observed in long exposure to organochlorine pesticides whereas organic phosphorous toxicity results decline of memory (Korsak & Sato, 1977), loss of appetite, tremors and psychic disorders and paralysis in exceptional cases. They may even result in a mutation of genes and these changes become prominent only after a few generations. In the most natural situation, the plants, animals and micro-organisms of the soil are absolutely essential for its fertility. The soil contains micro-organisms that are responsible for the conversion of nitrogen, phosphorous and sulphur to the forms available for plants. Identifying the fact that maximum of the complex physical and chemical progressions accountable for soil fertility are reliant on soil microorganisms, the environmental biologists are opposite to the ongoing treatment of soil with heavy dosages of deadly and obstinate toxicants. Sometimes our agricultural products are rejected in the international market due to high pesticidal content. Import of banned and carcinogenic pesticides and toxic wastes including lead, zinc and aluminium ash, plastic scrap and slag, at the rate of more than 60,000 metric tonnes per year still continues from developed countries at a cheaper rate. Under this alarming situation, Hon'ble Supreme Court of India has issued some directives on the import of hazardous wastes and to restrict the use of pesticides in Indian environment.

RESTORATIVE ACTIONS:

Environmental safety vis-a-vis development is an excessive task we face today. Conditions like population growth, poverty, unemployment and underdevelopment supplemented by the negative effects of badly planned development over the last five decades have landed us today in a vicious circle. The implication of some regulatory measures may control vehicular and industrial emissions. It should be tested severely whether factories and industrial divisions did not violate the standards set by various significant acts and laws. There is also a

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necessity to introduce eco-friendly refineries and eco-friendly thermal power plants to decrease pollution in the localities. In addition to direct control of the population growth, there is a need to provide health care, improve female literacy, sex education, job opportunities for woman and above all to motivate priest and religious preachers to induce people to take up family planning. Involvement of voluntary organization in social education and effective communication for promoting contraceptive methods may also be effective in this mission. Some significant caring measures should be taken up for the protection of forests and wildlife in India. Forest areas may be maintained for certain objectives like protection of mountain slopes and catchment areas, protection against windblown sand and erosion and ravine formation, protection for pastures, Roadside Avenue, aesthetic value and recreation. In order to conserve wildlife, programs like the creation of more national parks, sanctuaries and reserved areas should be encouraged. Better forest safeguard and supervision can progress agriculture, flood control, irrigation and power and avoid silting of lakes and reservoirs.

To meet the food demand for a growing population, the rise in agricultural production is of utmost importance and hence pesticides are indispensable. The use of pesticides should be managed in such a way that it will not pose any threat to the environment and human life. The problem of hazardous consequences of the use of chemical pesticides for controlling pest and diseases can be solved effectively by developing and practising plant-based pesticides. A huge number of diverse plant species hold natural insecticidal material. Some of these have been used by man as an insecticide since very early times. There are around 600 plant species from all over the world which have been originating to show biocidal activity and specificity of the plant products have been suggested for the regulator of pest and infections of various agricultural, horticultural, fruit and another commercial produce. The easy availability, biodegradability, non-toxicity to living beings, eco-friendliness and broad-spectrum activity of plant-based pesticides provide an eco-friendly approach for effective pest control. Botanical pesticides have the potential to replace chemical pesticides and are good hope for a healthier environment in future. A biological switch is a fundamental ecological development, though the usage of biological supervisors in the control of plant pathogens is still poorly implicit and deserves a thorough assessment before it is improved in agricultural follows. All the similar, biological causes can offer non-polluting resolutions to intractable difficulties in agriculture when poorly used (Ford, 1992). Organic waste management for fertilizing production and establishing of biogas divisions to produce energy will be identical promising in reducing environmental pollution. The release of pesticide excess residues and other toxicants, which give to environmental pollution subsequent to their water run-offs from yields, can be degraded by inherently engineered microorganisms. Popularizing the sericulture technology for handling organic excess resources will be exact effective in forming a sustainable environment in India (Tripathi et al., 1995).



The foremost obstacle provoking the environmental protection in India today is that there is an absence of scientific information and wish to act in this direction. The NCERT has arranged and advanced syllabus, textbooks and other essential materials in conformism with the new training policy to highlight the environmental concerns. UGC has introduced research projects to further encourage environment learning in universities. Forestry as a subject has been educated for the previous few years in eight agricultural universities. On the initiative of the Ministry of Environment and Forest topics like pollution control, soil degradation, wildlife management, meteorology, Jhoom cultivation have been introduced in formal education.

A great national effort has been directed towards environmental awareness through the enactment of various Acts viz., National Forest Policy, 1952; Forest Conservation Act, 1980; National Committee on Environmental Planning and Coordination, 1972; Environmental Protection Act, 1986 ; Wildlife Protection Act, 1974; Prevention and Control of Air Pollution Act, 1981; Water Pollution Control Act, 1974; etc. Unfortunately, due to the absence of appropriate implementation of all these rules as well as stringent enforcement of acts, the deprivation of forest and environment remains unchecked. For the survival of the rapidly growing population, we have to ensure the conservation of resources on scientific lines to provide food, clothing and shelter for our millions. We have to plan our development efforts in such a way that a harmonious balance is maintained between man and his environment. Any procedure of planning should be built on the principle of Progress without Obliteration. Social workers and environmentalists should create public opinion and mobilise corrective and preventive action against this threat. The society and all worried need to be induced by the prominence of the environment and we have to understand the fact that the way how to live today will affect tomorrow.

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