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Condition of environmental degradation in India

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Abstract
Environmental degradation simply means over all lowering of environmental qualities because of adverse changes brought in by human activities in the basic structure of the components of the environment to such an extent that these adverse changes adversely affect all biological communities in general and human society in particular. Environmental degradation leaves direct impact on the ecology and thus is caused ecological imbalance because of marked reduction in the ecosystem and ecological diversity. In fact, ecological imbalance is the indicator of environmental degradation directly in the initial stages. Adverse effects of environmental degradation are easily observable in biological communities.

Keywords: ecosystem, biological communities, environmental degradation

Introduction

Exploiting Nature resources in an unbalanced manner is environmental degradation. In the beginning it seemed that resource infinite and nature has the mystical potential to continually replenish. But, the scale of intervention grew and the destructive changes became alarmingly visible. Today the ecological problems embrace diverse aspects, ranging from the economic, social, psychological, human settlement, to conservation and more. The extinction of plants and animals speaks of the over exploitation and also reflect on the fate of the human race. Though we have woken up to its consequences, the movement towards restoration and environment movement is an uphill task.

It is inevitable that human beings have taken part in the process of development. But with judicious use of natural resources we can live and let live. Our motto is sustainable development. The journey from the United Nations Conference on Human Environment, 1972, through the historic UN Conference on environment and development (UNCED), 1992 to the WSSD, 2002 help to understand and evaluate the gravity of the problem so that corrective steps may be taken.

Aim of the Study

Present article mainly focus on the degrading environmental problem and focus on how to over come from it through mutual participation and sustainable way.

Environmental Condition in India

India is the world's seventh largest country and Asia's second largest nation stretching over 3.29 million square kilometers with a population of 1.23 billion (census2011). The main challenges are its size population and diversity. Since its independence, India has followed a planned approach towards development with specific objectives of growth. In this process conservation and sustainability have been managed harmoniously keeping in view the needs and aspirations of its people. The five year plans have been more or less a success in the development of India and its national growth. But in spite of all the growth we have experienced, an assessment of the environment which reveal environment degradation. It is the price we have paid for development.

The progress of a nation is measured in terms of development through industrialization and the standard of living. In the process of rapid industrialization without sustainable development, a direct impact is felt on the environment. The state of India's environment is grave and concerns are being expressed at every forum. Environment protection has become an important issue. The ever increasing demands of its enormous population lead to a pressure on the natural resources be it the forest cover, water or land. Environmental indicators reveal this high degree of neglect, misuse and over use of the natural resource, some of which beyond recovery. A number of legislation have been put in place for the conservation of natural resources and the protection of environment. The Indian forest Act, 1927. The Wild Life Protection Act, 1972, The Forest Conservation Act, 1980 and The Environment Protection Act, 1986 are just in them. But compliance to these rules and regulations is not satisfactory. Effective enforcement of these legislation and proper guidance would solve most of the environmental problems. But who cares? Extensive awareness needs to be created among the 1.23 billion population that inhabit this nation so that they save their natural resources and serve themselves at the same time.

Land Degradation

Land degradation can be either natural such as erosion, landslides etc. or man-made due to over exploitation or pollution. Most of the land degradation process is slow and takes time to be visible. India's geographical area of nearly 329 million hectares (ha) has two major land use: Agriculture about 142 million ha and Forests

about 63.7 million ha which includes both dense as well as open forest.

Large tracts of grassland, pastures, fallow land and in land waters regimes comprise of the rest of the land area. Of the 329 million hectare about 175 million hectare are considered to be degraded due to erosions, deforestation, over grazing, mining and irregular developmental activities. It has been estimated that more than 5000 million tons of topsoil are eroded every year. About 20 percent of the reported area has become a wasteland. Salinity, barren and rocky areas and water logged patches are inherent problems of land degradation.

One of the reasons for the land degradation is the extensive application of fertilizers for better yield and chemical pesticides for plant protection. The over use of nutrients from the soil also degrades the land at a faster rate. Today bio-pesticide is being explored and used to evade the harmful and toxic effects of the chemical pesticides. Natural organic manure is being applied in place of the chemical fertilizers. Bio-farming in general has been found to be an effective solution for combating with the land degradation process.

Indiscriminate disposal of untreated industrial wastes on land also leads to the degradation of land and contamination of soil. Wastes generated from industries are invariably dumped on land without realizing the consequences. The toxic and hazardous constituents leaching out of the waste dumpsite or a blast due to violent reaction of non-compatible wastes at the dump site are witnessed frequently. What is not visible however is their reversible damage to the soil and the water table that carries the effect of the wastes far and in term leads to death of plants Animal and Human being. Heavy metal accumulation in vegetables and crops through irrigation with contaminated water sources has become a serious problem responsible for causing devastating effects on consumer health (Kumar V., Thakur R.K., & Kumar P. 2019b) [7].

Forest Cover

About one fifth of the total land area of India is under Forest Cover. About 37 million ha comprises of dense forests while about 25 million ha is open forest. By and large forests livelihood for those living in forest fringes especially the tribal community and the rural population draw their resources form the forest.

The environmental benefits derived from the forests are innumerable. Besides being a stable ecosystem which harbors variety of plants and animals, forests provide for the conservation of biological diversity and preservation of the valuable gene pool. Other benefits include water shed protection, purification of run-off and a large carbon sink. It also provides recreational service and adds aesthetic value.

Deforestation has been one of the major reasons for diminishing forest cover leading to land degradation and loss of biological diversity. Annual withdrawal of forest products such as timber, fuel wood, and fodder, medicinal and economically valuable plant is much beyond the carrying capacity of the forest. It has been estimated that 235 million cubic meters of forests are being denuded against sustainable capacity of 48 million cubic meters amounting to five times the sustainable capacity. The Indian Forests Act, 1927 and Forest (Conservation) Act, 1980 framed laws that were to protect the forests from being destroyed.

The notification of the protected areas such as the National Parks and Sanctuaries prevent the removal of forest resources from these areas. This has been the major step towards the protection of the forest resources. There are 89 National parks and 497 Wild Life Sanctuaries notified so far. An area of 1.56 lakh square kilometer has been demarcated as protected area. Apart from this the Tiger Reserves and Elephant Reserves provide protection for these animals. The National Forest Policy 1998 envisages people's involvement in the development and protection of forests. The forests used as a source of fuel wood and fodder for the local community that in turn will provide for the necessary sustenance and prevention of use of forest resources.

Loss of Bio-Diversity

The expansion of agricultural activity produce more food has been identified as one of the main reasons for losing our biological reserves. Biological diversity depends on its natural surroundings for its survival and disturbing it may lead to its extension. The other major factor that leads to loss of bio-diversity is the impoundment of land for mining and other developmental projects. The exploitation and loss of habitat have led to the extinction, endangerment and threats to 1500 medicinal plants species of plants and animals.

Waste Disposal

One of the major burdens on environment is the waste generated from various human activities. These wastes require disposal and thus places stress on the environment. Wastes can be broadly classified into hazardous and non-hazardous wastes. Exponential growth of chemical industries and production of variety of chemicals has led to the release of the huge quantities of wastes into the form of solids, liquids and gases. A substantial amount of these wastes are potentially hazardous to the environment and to all living organisms including humans. Owing to the indiscriminate discharge of these wastes on land and water bodies, large number of toxic compounds, hitherto unknown has been detected in the sewage and water supplies. Potential risk to human health due to contamination of surface and ground water supply has been invariably linked with the chemical leaching of hazardous wastes from dumpsites. Diseases and chemical poisoning missed such as cyanide, mercury poising etc. may wipe out communities altogether. While other impacts of contaminated food and water, such as cardiac abnormalities, cancer and genetic disorders can affect us insidiously. It has been estimated that 4.4 million tonnes of hazardous wastes are generated in India every year. Unless and until technologies are improved to reduce waste generation and appropriate treatment and safe disposal practices are followed, the adverse effects will aggravate day by day. The waste generated from hospitals and medical health institutions are a major source of environmental and public health problems requiring safe handling and secured disposal.The primary cause of environmental degradation in India are attribute to the rapid growth of population in combination with economic development and over use of natural resources (Rajiv Chopra 2016) [5].

The waste generated in these institutions essentially comprise of solid and liquid wastes. It has been estimated that more than 80-85 percent of the waste generated in the hospitals are not hazardous, while the rest 15-20 percent are hazardous and/or infections. The waste stream from medical institutions may contain live pathogens and thus needs special treatment and disposal. In stressed country like ours the indiscriminate disposal of wastes generated from medical institutions can have serious repercussions and also lead to epidemics. The climate and the

organic constituents in the waste provide suitable substrate for the pathogens to grow and multiply. The amount of waste generated in hospital and medical institutions is increasing with the disposable items or single use items. Most of the glass used in the medical profession has now been replaced by plastic viz. syringes, intravenous pouches, catheters, medicine containers and wrappers. The glass items used earlier were sterilized and reused, while the plastic replacement is not fit for reuse thus requires disposal.

Water Pollution

India's water resources comprise of 113 river basins of which 14 are major basins accounting for 80 percent of water resources. Large-scale diversions, increased human and industrial activities along the banks of the rivers have made most of the rivers polluted rendering them unfit for designated use. The river pollution may be due to point source discharges such as sewage and industrial effluents, which contain organic pollutants, chemicals and heavy metals. While the non-point source of pollution such as run-off from agriculture and irrigated land, leaching from waste dump sites, open defecation areas also contributes to the pollution load significantly. The water quality-monitoring programme was started in 1976 so on after the Water Prevention and Control of Pollution Act, 1974 was brought into force.

This programme has been able to keep as check on the water quality in the various water bodies. The Ganga Action Plan (GAP) was evolved as a model for assessing the pollution loads on river and to plan the pollution abatement work.Microbe contamination og ground water due to sewage outfalls and high concentration of nutrients in marine and coastal water due to agricultural runoff are among the most serious threats (Swati Tyagi, Neelam Garg and Rajan Paudel, 2014) [6]. The National River Conservation Plan (NRCP) has been launched to provide planned programme for the conservation of all rivers in the country. A National River Conservation Directorate has been set up. A collective effort of the Government, researchers local bodies the public and NGO's is being together to clean up the rivers, previous pollution and provide adequate water resources. The water quality assessment indicate organic and bacteria contaminants to be the critical aquatic pollutants from domestic waste water. On the other hand industrial effluents contribute mainly to the dissolved chemical load, suspended particulate and heavy metal content in the water. They are as having high load on pollution in the water bodies and on land are identified as 'critically polluted areas' and future individual activity in these areas is prohibited.

Air Pollution

Toxic emissions are the potential of air pollution leading to degradation of atmosphere and the air we breathe. The factors contribute to the air pollution are but essentially it is the proliferation of industries, growing increasing traffic, rapid development and level so energy consumption. The visible increase in the population places an additional load on the environment by contributing Green House Gas emissions. Through contributes only 5 percent of the Global CHG compared to 60 percent of developed countries, the uncontrolled growth particular population may lead to many fold increase in this emission. There has been world- wide concern about increase in the emissions of Green House Gases (Gs) from human activities such as power generation, industrial emission and deforestation. Naturally occurring GHG comprises essentially of carbon-dioxide (CO2) methane (CH4) and oxides of Nitrogen (N2O) which trap the radiation emitted by the earth, leading to rise in temperature of the earth's surface. This in turn affects the precipitation pattern and raises the sea level due to glacial melt. Climate change is determined by the total stock of GHG in the atmosphere and annual emissions of GHG.

The release of ozone depleting substances (ODS) into the atmosphere also aids in degradation of the environment. The ozone layer in the stratosphere is at risk from compounds containing different combinations of chlorine, fluorine, bromine, carbon and hydrogen. These compounds used in refrigeration, aerosol propellants, foam blowing, industrial solvents and more, react with the stratospheric ozone forming a black hole that allows the penetration of the sun's harmful UV rays. Recent findings, however indicate a global decrease in ODS and reduction in the black hole.

Findings

Some of the finding through this article is as follows.

1. Development of pollution feet technologies
2. How to reduce the exploitation of natural resources
3. Large scale effort to replenish the depleted forests through afforestation,
4. To limit the use of chemical fertilizers, pesticides and insecticides and to increase the use of natural fertilizers.
5. To heal the degraded land caused by rill and gully erosion.
6. To limit the production of those items (Such as refrigerators, air conditioners etc. and cosmetic goods) which release ozone depleting gases like chlorofluorocarbons halos etc.
7. To limit the use of hydrocarbons to reduce their lease of greenhouse gases like (Co2),
8. To stop the production of nuclear weapons.'
9. To educate the people about the environment etc.

Conclusion

Environmental Degradation is a global phenomenon and is being addressed under various international conventions of the United Nations Environment Programme (UNEP). The trans boundary movement of chemicals, wastes, emissions, etc. is an area of great concern. UNCED Agenda 21 was to prepare the world to face the 21 st century and the same has been reinforced in the WSSD towards a world order for Sustainable Development. Retrospection is important if we wish to make corrections. It is never too late to begin the process of remediation and recovery. The damage done so far to the environment would appear minor only if steps are taken to rectify the same without any further delay. A planned sustainable development for the future would usher in a new era.

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