

Environmental Changes in India

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Abstract : This study has been undertaken to study the environmental changes in India. The growth of population is a fundamental factor and its relationship to natural resources, environment and technology. Human beings are directly concerned with the environmental issues. His life also depends on social, political, economic, ethical philosophical and other aspects of social system. Infact, the life of human beings has shaped by his living environment. Hence, this study is important in today scenario.

IndexTerms – Environment, Pollution, Population, Biodiversity, Global Warming.

I. INTRODUCTION

Human beings cannot exist in isolation. Man's life is interconnected with various other living and non-living things. His life also depends on social, political, economic, ethical philosophical and other aspects of social system. Infact, the life of human beings has shaped by his living environment. Environmental economics teaches us how to promote economic growth of nations with least environmental damage. Classical and neoclassical school of thoughts underestimated the environmental issues of production and consumption, since they considered these issues merely as social issues. When the environmental goods are transferred into economic goods, the problems of environmental damage crop up, and therefore there is need and understand to interact with this research paper.

II-ENVIRONMENTAL ISSUES

Environmental issues are the harmful effects of human activities on the environment. These include pollution, over-population, waste disposal, climate change, global warming, greenhouse effect, etc. Various environment protection programs are being practiced at the individual, organizational and government levels with the aim of establishing a balance between man and environment.

There are many environmental issues in India. Air pollution, water pollution, garbage domestically prohibited goods and pollution of the natural environment are all challenges for India. Nature is also causing some drastic effects on India. India has made some of the fastest progress in addressing its environmental issues and improving its environmental quality in the world. Still, India has a long way to go to reach environmental quality similar to those enjoyed in developed economies. Pollution remains a major challenge and opportunity for India. Environmental issues are one of the primary causes of disease, health issues and long-term livelihood impact for India. Some of the key issues are-

1. **Pollution-** Pollution of the air, water and soil caused by toxins such as plastics, heavy metals and nitrates, caused by factors such as toxins and gases released by factories, combustion of fossil fuels, acid rain, oil spill and industrial waste. Urbanisations, private transport, crop fires, burning of fossil fuels for electricity and other factors have caused an increase in air pollution across the country.

As air and water pollution levels continue to grow across India and the excessive exploitation and depletion of natural resources continues, it is now more important than ever for the government to address these issues.

2. **Global Warming-** The emission of greenhouse gases due to human activity causes global warming, which in turn causes an increase in temperature that then leads to rising sea levels, melting of polar ice caps, flash floods and desertification.

The burning of fossil fuels, emissions from the automobiles and chlorofluorocarbons add to the greenhouse gases in the atmosphere. This has led to an increase in earth's temperature causing environmental changes. This increase in temperature across the globe is known as global warming.

3. **Overpopulation-**We are facing a shortage of resources such as food, water and fuel to sustain the rising global population, particularly in developing countries. Intensive agriculture attempting to lessen the problem actually leads to more damage through the use of chemical fertilizers, pesticides and insecticides.

4. **Waste Disposal-** An excessive amount of waste is produced and dumped in the oceans. Nuclear waste is particularly dangerous as well as plastics and electronic waste. Solid-waste management is defined as the discipline associated with the generation, storage, collection, transfer and transport, processing, and disposal of solid waste in a manner that it does not have a harmful effect on the environment.

5. **Ocean Acidification-** The increase in the production of carbon dioxide by humans causes the oceans' acidity to rise, which has a negative impact on marine life.

6. **Loss of Biodiversity-** Species and habitats are becoming extinct due to human activity. This causes an imbalance in natural processes like pollination and poses a threat to ecosystems – coral reef destruction is particularly affected. The ozone layer is a layer of concentrated ozone gas. It protects us from the sun's harmful ultraviolet rays. This very important layer is being destroyed by CFCs (chlorofluorocarbons), which are used in industries and everyday life.

The chlorine in these compounds destroys the ozone layer. The hole in the ozone layer leaves humans and wildlife exposed to the harmful UV rays resulting in several skin diseases including cancer.

Most recently, while Chennai was praying for some rain, Mumbai was facing a severe deluge. In 2018-19, as many as 2,400 Indians lost their lives to natural disasters such as floods and cyclones, according to the environment ministry. These events did not occur solely as a result of nature's vagaries, it has been proved that climate change is playing a major role here. Climate change has led to disruption of ecosystem services, loss of biodiversity and breakdown of traditional livelihood systems across different geographies and regions of the country. It is also adversely affecting food production, as well as water and energy security across India, threatening to disrupt the current pace of social and economic growth enjoyed by the country.

7. **Deforestation-** To accommodate our increasing population, vast areas that once had trees cover have experienced deforestation. This shows the extent of deforestation in the Sonitpur district of Assam between 1988 and 2018. The forestlands covering thousands of square kilometres have been converted to agricultural lands and settlements.

Loss of trees in order to make space for residential, industrial or commercial projects means that less oxygen is produced, and temperature and rainfall are affected. Deforestation is the depletion of trees and forests at an alarming rate. The trees provide us with oxygen, several raw materials and also maintain the temperature of the earth. Due to the depletion of trees for commercial purposes, there has been a drastic change in the earth's climate.

Forests are an abode to a large number of wild animals and plants. Destruction of forests has led to the elimination of a large number of plants and animal species affecting the biodiversity.

8. **Ozone Layer Depletion-** Pollution caused by chlorofluorocarbons (CFCs) in the air creates a hole in the ozone layer, which protects the earth from harmful UV radiation.
9. **Acid Rain-** Pollutants in the atmosphere such as sulfur dioxide and nitrogen oxides cause acid rain, which has negative consequences for humans, wildlife and aquatic species.
10. **Public Health Issues-** Lack of clean water is one of the leading environmental problems currently. Pollutants in the air also cause issues such as respiratory disease and cardiovascular disease. The introduction of harmful substances into rivers, oceans, lakes and ponds, which changes the physical, chemical or biological condition of the water is called water pollution. The polluted water lacks oxygen and therefore the organisms die.

Water is the main source of life and therefore it is our prime duty to prevent it from any kind of pollution. The World Bank estimates that 21 per cent of communicable diseases in India are linked to unsafe water and a lack of hygiene. Over 500 children under the age of five die every day from diarrhoea alone.

In 2005, the government established the National Health Mission and introduced structural reforms to strengthen health care and sanitation. The National Health Policy 2017 also spells out the government's commitment to reforming the health sector and achieving universal health coverage by proposing an increase in the health budget to 2.5 per cent of the total gross domestic product (GDP). The policy also sets targets for disease elimination, reduction of premature and preventable mortality, systems strengthening and improving health services.

The last two decades have seen a rampant rise in environmental challenges in India as well as in world. In India, challenges related to air pollution, waste management, scarcity of water, conservation of natural resources, and loss of biodiversity have been increasing.

III- SOLUTIONS TO ENVIRONMENTAL ISSUES

Following are some of the most common solutions to the environmental issue:

1. Replace disposal items with reusable items.
2. The use of paper should be avoided.
3. Conserve water and electricity.
4. Support environmental friendly practices.
5. Recycle the waste to conserve natural resources.

IV- POPULATION AND ENVIRONMENTAL CHANGES

It is a fact that human beings are both the agents and victims of environmental changes. Population, technological changes and economic growth are the key factors of economic changes. Foremost among the determinants is the unprecedented growth in the world population. A rapidly increasing population necessitates an increased demand for energy consumption. While increased

population demands for more environmental qualities, the rate of use of environmental qualities enhances, which necessarily leads to more environmental damages.

Environmental economists therefore found a one to one correspondence between population growth and environmental damages. This was the general tendency upto 1970s. Later, environmentalists in the world over realised that the rate of increase in environmental damages is relatively higher than the rate of growth of population. It prompted these people to suggest a suitable development planning which would economic development, but at the same time contributes lists towards environmental changes. We found that the rate of change in environmental damage is greater than that of population changes in the past seventies period.

We know that rich and poor alike contribute to environmental changes; however, it is the poor who bear the brunt of the costs of environmental damages. Poverty, population growth and environmental changes are mutually reinforcing. The rate of growth of population and the level of poverty are relatively higher in developing countries, and therefore these countries are subject to severe environmental damages.

V-POPULATION GROWTH AND URBANIZATION

The earth's population is increasing drastically. It is estimated to be more than seven billion. The increasing population has led to a shortage of resources. If this continues, it will be very difficult to sustain such a huge population. The other environmental issues including pollution, waste management, deforestation, climate change and global warming are all associated with over-population.

Population growth exacerbates environmental degradation; it increases the demand for goods and services and if practices remain unchanged, will lead to increased environmental damage. Overpopulation both in rural and urban areas exerts additional pressure on natural resources. By mid 20th century the rate of population growth in developing countries had risen to unprecedented levels and mortality declined and life expectancy increased.

The world population growth rate was 2.1% per annum during 1965-70 periods. Later this rate has declined to 1.7% due to higher levels of awareness about the need for a smaller family. The rate of growth of population varies between developed and developing countries. Countries with excessive population have experienced faster conservation of land for agricultural and other like purposes; which contributes to the disappearance of natural habitation. General studies revealed that in Latin America countries expansion of population has resulted in increased conservation of agricultural land for other purposes. This is also the case of Asian countries and particularly in India.

The spatial distributions of population between urban and rural areas also lead to environmental damages. It is reported that by the next generation about 90% of the world population would live in towns. By 2025, the urban population would be twice the size of rural population.

In the year 1950, 71% of total world population lived in rural areas. By 2005, this percentage has declined to 50.8%. Corresponding to this, the world urban population which was 29% in 1950 rose to 49.2%. By 2015, the urban population would be around 54% of world population. It means that more than 50% of the world population would move to urban settlements, which would definitely aggravate urban environmental issues unless proper environmental management policies are initiated.

Urbanisation is always treated as one of the determinants of urban environmental challenges. The problems of sanitation will be the foremost one. Similarly, the problems of drinking water, solid waste management, etc. become critical issues in urban conglomerations. How to deal with these issues mentioned above has become the important topic in international discourses. The problems of sanitation, portable water and solid waste management are to be viewed seriously. Through people's involvement only, these issues can be mitigated, for which people are to be educated about better environmental situations.

Table: Changes of the world population in favour of urbanisation

S. No.	Year	% of rural	% of urban	World population (in Million)
1	1950	70.9	29.1	2535
2	1960	67.1	32.9	3032
3	1970	64.0	36.0	3699
4	1980	60.8	39.2	4451
5	1990	56.8	43.2	5294
6	2000	52.9	47.1	6124
7	2005	50.8	49.2	6515
8	2010	48.7	51.3	6907
9	2015	46.4	53.6	7295
10	2020	44.1	55.9	7875
11	2025	41.8	58.2	8185

Source: UN secretariat: world population prospects

VI- POVERTY AND ENVIRONMENTAL CHANGES

It is generally viewed that poverty is the both cause and consequence of environmental changes. Poverty is a cause of environmental damage, since there will be over use of natural resources and the resultant environmental changes. Poverty is also considered as a consequences of environmental damages, because, poverty-stricken people are not obliged to environmental protection. It is observed that about half of the world's poor live in rural areas that are environmentally fragile. More and more

acres of lands will be converted for agricultural purpose resulting in destruction of otherwise preserved areas of lands. Thus, it is stated that poverty is both the cause and consequence of environmental degradation. Environmental degradation has three damaging effects to people's well-being. It harms human health especially of poor who are more vulnerable in terms of exposure to pollution such as unclean water, polluted air etc.

Ill health and disease-prone situations are always a threat to the poor, since they decrease the productivity of both human labour and natural resources. Thus, the three effects of environmental degradation viz-

1. Affects on human health,
2. Effects on economic productivity, and
3. Loss of the amenities

Loss of amenities means the many other ways in which people benefit from the existence of unspoiled environment. All these three effects reduce people's welfare. Besides the direct effect on health and productivity, a wide range of indirect effects is also there. Rural poor have to travel a long distance to fetch a pot of water, or to get a bundle of firewood.

Environmental damage from any one source normally affects all three of the principal components of air, water and soil. Use of polluted water for drinking is one of the reasons for infectious water borne diseases. Diarrhoea and intestinal worms' infections are the results of unsafe drinking water.

The main element of water contamination is human excretion. Water qualities in developing countries are deteriorated mainly due to defecation in the open. In addition to human health, water is also increasingly contaminated with other pollutants like industrial effluents, agricultural pesticides, etc.

VII-ENVIRONMENTAL PLANNING AND MANAGEMENT

Environmental management is a recently developed concept, which states that our environment is to be effectively managed. Effective, efficient, and earnest use of scarce resources is the primary concern of environmentalists.

Environmental management is not simply an individualistic effort. The stakeholders of the environmental resources are the society as a whole, and therefore the society as a whole shall take up the challenges of environmental management. The role being played by each strata of the society is to be clearly specified. Similarly, institutions and organisations do play a major role in environmental management. The role of the local bodies, the government, the voluntary organisations, the various forms of people movement etc. is also to be accounted for the effective coordination and management of scarce natural resource including environmental qualities. The tools of environmental management like-

1. Total quality management
2. ISO certification
3. Pollution strategies, etc would help a certain extent to bring down resource waste in economy.

Since environmental planning is an interdisciplinary one, the success of planning depends on how effectively and systematically we apply different branches of knowledge. Many have pointed out that environmental planning is the only discipline, which applies all the tools and concepts found in different disciplines. Therefore, its accuracy is always disputed.

The application of environmental planning differs from areas to areas or region to region. The gravity of environmental issues found in rural and urban areas differ in several contexts. Rural environmental problems are more detrimental than urban. In the urban context, environmental issues are basically pollution issues which affect human health. Whereas in the rural areas, the major environmental problems are-

1. Deforestation
2. Soil erosion
3. Extinction of resources,
4. Destruction of agricultural land, etc

From the above, we can say that the urban environmental planning is more difficult than rural. The urban issues like air pollution, water pollution, slums, solid waste problems etc are human made, and therefore environmental planning along with population planning is required.

State wise environmental planning and nation wise environmental planning are the other two methods being followed. Each state prepares a master plan for environmental management depending on the crucial environmental issues identified. At the national level, suitable policies and programmes are to be identified for the effective utilization of resources leaving behind minimum or zero level of pollution. Various environmental laws are helpful to preserve the most valuable and hereditary resources of the nation.

VIII- SIGNIFICANCE OF ENVIRONMENTAL PLANNING

Environmental planning is a key feature of environmental management. Lack of proper environmental planning would result in sub-optimal level of utilization of resources. Proper environmental planning is always facilitated by the functions of environmental institutions, education, training, public participation and legal awareness.

It helps in the estimation of other competing demands on the resources to identify those that can lose for a long period. Thus, through proper planning it would be possible to convert deteriorating environment into an ideal and safe place to live in. Following process could be help to make the environment better-

1. Identification of environmental issues
2. Formulation of objectives
3. Identification of alternative strategy and modeling
4. Evaluation and choice of alternatives
5. Implementation, strategies and activities
6. Review of problems and strategy

IX- CONCLUSION

The rapid population growth and economic development in country are degrading the environment through the uncontrolled growth of urbanization and industrialization, expansion and intensification of agriculture, and the destruction of natural habitats. One of the major causes of environmental degradation in India could be attributed to rapid growth of population, which is adversely affecting the natural resources and environment. The growing population and the environmental deterioration face the challenge of sustained development without environmental damage. The increasing population numbers and growing affluence have already resulted in rapid growth of energy production and consumption in India and this trend can only be expected to accelerate in the future.

The environmental effects like air pollution and global warming are of growing concern owing to increasing consumption levels. However, environmental pollution not only leads to deteriorating environmental conditions but also have adverse effects on the sustainable development and health of people. The considerable amount of both ground water and surface water contamination due to chemical fertilizers and insecticides in the country leads to various water borne diseases. The growth of population is a fundamental factor in its relationship to natural resources, environment and technology. To sum up, there is an urgent need to control population and poverty, conserve and protect natural resources and the environment for healthy human beings. Environmental issues are a warning of the upcoming disaster. If these issues are not controlled, there will soon be no life on earth.

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