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***Review Article***

# EFFECT OF POLLUTION ON ENVIRONMENT DEGRADATION AND DISASTER MANAGEMENT IN INDIA

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## ABSTRACT
The basic thesis of growth is the economic growth of which is required for political, social and economic stability the quality environment normally assumes lower priority in planning proposals and long-term planning. Unlimited exploitation of nature by man disturbed the ecological balance between living and non-living components of the biosphere. The adverse conditions created by man himself threatened the survival not only of man himself but also other living organisms. Due to progress, industries, technology, chemicals, atomic energy, there are a number of industrial effluents and emissions of poisonous gases in the atmosphere and also added solid waste which has lowered the quality of environment. The pollution is a necessary evil for all development. Due to lack of development of culture of pollution control, there has resulted a heavy backlog of gaseous, liquid and solid pollution in our country. Thus, pollution control in our country is a recent environmental concern. There is a race in developed countries to exploit every bit of natural resources to convert them into goods for their use and comfort and to export them to other needy countries. The industrialized countries dump lot of materials in their environment which becomes polluted. The environmental pollution has lowered its quality

***Keywords:*** *Environment, Pollution, Energy*

## INTRODUCTION
Environmental pollution and degradation are used interchangeably by most of the people because both are concerned with the lowering of the quality of environment**.** There are two aspects (i) lowering the quality of environment (ii) deterioration of the quality of environment. The deterioration of the environmental quality refer the magnitude or intensity of the area covered.
Environmental pollution means lowering of the quality of environment means lowering of the quality of environment local caused by human activities for exploitation of resources.
Environmental degradation means deteriorating the environmental quality at global, regional and local levels by both natural processes and human activities. The adverse changes by human activities in the environmental quality at local level is generally called pollution, but sometimes the effects of human activities are so wide that the environment is degraded at global and regional level as well. Rapid population growth in a country like India is threatening the environment through expansion and intensification of agriculture, uncontrolled growth of urbanization and industrialization and destruction of natural habitats (Ray and Ray, 2011).
Pollution is an undesirable change in the physical, chemical and biological characteristics of air, water and soil that may harmfully affect the life or create a potential health hazard for any living organism. Pollution is thus direct or indirect change in any component of the biosphere that is harmful to living organisms and man, affecting adversely to the industrial progress, cultural and natural resources or general environment. Mankind is becoming ever more susceptible to natural disasters, largely as a consequence of population growth and globalization (Herbert *et al.*, 2006).
***Meaning of Pollutants:*** Any substance which causes lowering the quality of environment or pollution is called pollutant. A pollutant may be defined as any solid liquid or gaseous substance present in such a concentration that may have adverse harmful effects or may be injurious to the environment. Pollutants are the residues of things we make use or throw away. The rivers are polluted by wastes from factories, air, by gases, thermal power plants etc. In fact, in countries where there have been the greatest technical and industrial advances, the worst pollution occurs.

Every human society, be it rural, urban, industrial and most technologically advanced society dispose of certain kinds of by products and waste products which are injected into the biosphere in great quantities and they affect the normal functioning of ecosystems and have an adverse effect on plants, animals and man are called pollutants**:-** Climate change and disasters are fast emerging as the most significant challenges of the 21st century as global risks with impacts for beyond just the environment and implications on national security and development (Sajimon, 2010).

***Environmental Pollutants:*** The following are the main pollutants which pollute our environment or our air, water and land-

1. Deposited matter- dust, smoke, tar, grit etc.
2. Gases- Nitrogen, Carbon Mono oxide, Sulphur, Oxides
3. Solid waste
4. Radioactive waste
5. Noise
6. Complex organic substance- ether, acetic acid, benzene etc.
7. Metals
8. Fluorides
9. Photo Chemical Oxidants
10. Agrochemicals- Fungicides and Fertilizers

***Types of Pollution***

There are various types of pollutions which have been classified in different ways and on different criterion on the basis of the type of environment being polluted, may be classified in the following categories. Pollution is generally caused by human activities which can be divided into two broad categories-

*1. Physical Pollution:* It is caused by human activities due to lowering of the quality of physical components of the environment and this is further divided into three sub types-

(a) Air Pollution (b) Water Pollution (c) Land Pollution

*2. Social Pollution:* It is caused in different aspects of the society due to cumulative effects of extreme events/hazards and pollution. It may be further subdivided into several categories-

(a) Population Explosion (b) Sociological Pollution- Educational and Social backwardness etc. (c) Economic pollution- Poverty, devolution of currency, lower-per-capita income. Another way to classify the pollution is the nature of pollutants. The pollutants are broadly classified into two categories-

*(1) Non Degradable Pollutants:* These are the materials and poisonous substances like aluminium, mercuric salts, long- chain phenolics etc. Which do not degrade or degrade very slowly in nature. They are not cycled in ecosystem naturally.

*(2) Bio Degeradable Pollutants:* These are the domestic wastes that can be rapidly decomposed under natural conditions. They may create problems which they accumulate.

***Meaning of Environmental Degradation:***

Environmental degradation means overall lowering of environmental qualities because of adverse change brought in by human activities in the basic structure of the components of the environment to such an extent that these adverse changes affect adversely all biological communities in general and human society (Gautam and Sharma, 2012).

Environmental pollution and environmental degradation terms are used interchangeable but these are different concepts and have different meaning. Pollution is the cause for the degradation of air environment the degradation of environment is caused by pollution and hazards/disasters. The Hazards or disasters are sudden by natural processes or by human activities which require the immediate relief and prediction can be made for the safeguard. These hazards cause sudden and serve pollution. Environmental pollution is taking place due to slow and gradual human activities e.g. increase of human population, establishing factories and industries, development of transportation facilities etc. The pollution degrades the quality of the environment which can be protected by proper environmental management and assessment.

Environmental degradation leaves direct impact on the ecology and thus is caused ecological imbalance because of marked reduction in the ecosystem and ecological diversity (Kumar, 2012).

***Basic Causes of Environmental Degradation:***

The following are the basic causes for the environmental degradation:-

1. The development of modern technologies.
2. The increases in the human population.
3. Pressure on natural resources.
4. High rate of exploitation of natural resources.
5. Growing industries and factories.
6. Increasing settlement of urbanization.
7. Development of economic functions of man

***The Issues***

Climate change is one of the most complex challenges of our young century. No country is immune. No country alone can take on interconnected challenges posed by climate change, including controversial political decisions, daunting technological change and for reaching global consequences- Robert B., Zoleeick, President, the world bank group.

Indian economy is booming since 2003, it has been able to maintain its consists growth rate of over 7-8 percent of per annum and India is aspiring to even enhance it to 8-9 percent growth rate or even higher. The higher growth rate is very much need of the country to fight against unemployment and poverty amongst 354 million of the population, which is nearly 27 percent of the world's poor.

Growth of India's economy is led by good performance of the industrial sector, impressive growth in manufacturing sector which includes electronics and information technology, textiles, pharmaceuticals and basic chemicals.

Rapid economic growth have also influenced consumption pattern in the country. Over the years it has changed drastically.

This change has also influenced country's environment and natural resources capacity to carry out the higher growth rate. The pressure has already increased exponentially.

Hence, in the context of high population density, vulnerable, ecology, extreme climate and a significant dependence of the economy growth on the natural resource base environmental sustainability might be the greatest challenge along India's sustainable development path.

Thus, the goals of economic and social development must be defined in terms of sustainability in all the countries developed or developing, market oriented or centrally planned. Interpretations will vary, but must share certain general features and must flow from a consensus on the basic concept of sustainable development and on a broad strategic framework for achieving it.

***Warmest Decade***

According to the UN weather agency (world meteorological organization), climate change has accelerated in the past decade (2001 to 2010) and it was the warmest decade on record since records began in 1850. This period was marked by extreme levels of rain or snowfall, leading to significant flooding on all continents, while droughts affected parts of East Africa and North America.

The global land and sea surface temperatures estimated at 0.46 degree Celsius above the long term average of 14.0 $^{0}$C. The UN weather agency noted that the world is warming because of human activities and this is resulting in far- reaching and potentially irreversible impacts on our earth, atmosphere and oceans.

According to a government statement in the parliament, there is 1.29 millimeter rise in the sea level along the Indian coastline.

It is likely that in the future, we will experience several disasters per year that kill more than 10000 people. A calamity with a million casualties is just a matter of time. This situation is mainly a consequence of increased vulnerability.

Climate change may also be affecting the frequency of extreme wealth events as well as the vulnerability of coastal areas due to sea-level rise.

Disastrous outcomes can only increase unless better ways are found to mitigate the effects through improved forecasting and warning, together with more community preparedness and resilience. There are particular difficulties with extreme events which can affect several countries, while the largest events can have global consequences.

The hazards of super volcanic eruptions and asteroid impacts could cause global disaster with threats to civilization and deaths of billions of people.

Although these are very rare events, they will happen and require consideration. More frequent and smaller events in the wrong place at the wrong time could have very large human, environmental and economic effects. A sustained effort is needed to identify places at risk and take steps to apply science before the events occur.

[6]As the world continues its contemporary patterns of production and consumption, the future is at immense risk.

Climate change has the potential to alter the ability of the earth's physical and biological systems to provide goods and services essential for sustainable development.

Today, a number of main stream population and environment groups are claiming that population growth is a major cause of climate change and that lesser birthrates are the solution. If we cannot stabilize population, there is not an ecosystem on earth that we can save.

If developing countries cannot stabilize their populations almost immediately, many of then face the disintegration of ecosystem.

But in reality, even if we could today achieve zero population growth that would barely touch the climate problem- where we need to cut emissions by 50 to 80 percent by mid century. Given existing income inequalities, it is inescapable that over consumption by the rich few is the key problem, rather than over population of the poor many.

In the absence of any commitment in the next two decades, their economies would became locked into a trajectory of elevated emissions and unsustainable development, while the cost of reversing the trend will become prohibitively high.

***What is Disaster?***

Disaster is defined as a catastrophic situation in which the normal pattern of life or ecosystem has been disrupted and extra ordinary emergency interventions are required to save and preserve lives and or the environment (Ministry of Home Affairs, 2011).

The disaster management Act has included man-made disasters also and defines disaster as a catastrophe, Mishap, calamity or grave occurrence in any area, arising from natural or manmade causes or by accident or negligence which result in substantial loss of life or human sufferings or damages to, and destruction of, property or damage to or degradation of environment and is of such a nature or magnitude as to be beyond the coping capacity of the community of an affected area.

***The Indian Scenario:*** The Indian subcontinent is highly vulnerable to cyclones, droughts, earthquakes and floods. Avalanches, forest fire and landslides occur frequently in the Himalayan region of northern India.

Among the 35 total states/Union territories in the country, 25 are disaster prone. On an average about 50 million people in the country are affected by one or the other disaster every year, besides loss of property worth several millions (Table 1).

In the 1970s and the 80s droughts and famines were the biggest killers in India, the situation stands altered today.

It is probably a combination of factors like betters resources management and food security measures that has greatly reduced the deaths caused by droughts and famines. Floods high winds and earthquakes dominate (98 percent) the reported injuries with over increasing numbers in the last ten years. The period from 2001 to 2011 has been associated with a large number of earthquakes in Asia that have a relatively high injury to death ratio.

Floods, droughts, cyclones, earthquakes, landslides and avalanches are some of the major natural disasters that repeatedly and increasingly affect India (Table 2).

**Table 1: People Affected, Lives Lost and Economic Damage due to Disasters in India During 1980 to 2010**

| Year | Type of Disaster | People Affected | Life Lost | Economic Damage (USD x 1000) |
|---|---|---|---|---|
| 1980 | Flood | 30,000,023 | | |
| 1982 | Drought | 100,000,000 | | |
| | Flood | 33,500,000 | | |
| 1984 | Epidemic | | 3290 | |
| 1987 | Drought | 300,000,000 | | |
| 1988 | Epidemic | | 3000 | |
| 1990 | Storm | | | 2,200,000 |
| 1993 | Flood | 128,000,000 | | 7,000,000 |
| | Earthquake | | 9,748 | |
| 1994 | Flood | | 2001 | |
| 1995 | Flood | 32,704,000 | | |
| 1996 | Storm | | | 1,500,300 |
| 1998 | Storm | | 2871 | |
| | Extreme Temp | | 2541 | |
| | Flood | | 1811 | |
| 1999 | Storm | | 9,843 | 2,500,000 |
| 2000 | Drought | 50,000,000 | | |
| 2001 | Earthquake | | 20,005 | 2,263,000 |
| 2002 | Drought | 300,000,000 | | |
| | Flood | 42,000,000 | | |
| 2004 | Flood | 33,000,000 | | 2,500,000 |
| | Earthquake | | 16,389 | |
| 2005 | Flood | | | 3,330,000 |
| | Flood | | | 2,300,000 |
| 2006 | Flood | | | 3,390,000 |
| 2009 | Flood | | | 2,150,000 |

**Table 2: Year Wise Damage Caused due to Floods, Cyclonic Storms, Landslides etc. During Last Ten Years in India**

| Year | Live Cost Human (in No.) | Cattle Cost (in No.) | Houses Damaged (in No.) | Cropped Areas Affected (in Lac Hectares) |
|---|---|---|---|---|
| 2001-02 | 834 | 21269 | 34687 | 18.72 |
| 2002-03 | 898 | 3729 | 462700 | 21.00 |
| 2003-04 | 1992 | 25393 | 682209 | 31.98 |
| 2004-05 | 1995 | 12389 | 1603300 | 32.53 |
| 2005-06 | 2698 | 110997 | 2120012 | 35.52 |
| 2006-07 | 2402 | 455619 | 1934680 | 70.87 |
| 2007-08 | 3764 | 119218 | 3527041 | 85.13 |
| 2008-09 | 3405 | 53833 | 1646905 | 35.56 |
| 2009-10 | 1677 | 128452 | 1359726 | 47.13 |
| 2010-11 | 2310 | 48778 | 1338619 | 46.25 |

***National Disaster Management System in India:*** Indeed concurrent to these occurrences, the government at various levels too, has responded by taking appropriate measures for prevention and mitigation of the effects of disasters, while long term preventive and preparedness measures have been

taken up, the unprecedented nature of the disasters has called in for a nationwide response mechanism wherein there is a pre-set assignment of roles and functions to various institutions at centre, state and district level.[7]

## CONCLUSION

Disaster management should be included in the curriculum of schools and colleges to inculcate the culture of safety and prevention among the children. Setting up of suitable early warning systems is probably the best intervention. System for weather forecasting, though have improved over the last five years, still needs higher investments, equipments and man power. It should be possible to warn communities in any part of the country about extreme weather conditions substantially well in advance to enable them to save the lives and property. In the event of actual disasters, the community, if well aware of the preventive actions it is required to take can substantially reduce the damage caused by the disaster. Awareness and training of the community is particularly useful in areas that are prone to frequent disasters.

## REFERENCES

**Gautam HR and Sharma HL (2012).** Environmental Degradation, Climate change and Effect on agriculture. *A Journal on Rural Development* **60**(8) 3-5.

**Ray S and Ray IA (2011).** Impact of Population Growth on Environmental Degradation: Case of India. *Journal of Economics and Sustainable Development* **2**(8).

**Huppert HE, Stephen R and Sparks J (2006).** Extreme Natural Hazards: Population Growth, Globalization and Environmental Change. *Philosophical Transactions Royal Society* **364**(1845) 1875-1888.

**Sajimon PP (2010).** Differentiated Responsibilities on Population Explosion and its Impact on Environment: A corridor for the Crossing. *Journal of Global Economy* **6**(2) 105-115.

**Sharma VK and Kaushik AD (2012).** Natural Disaster Management in India. *Yojana: A Development Monthly* 30-36.

**Kumar S (2012).** Environment, Development and Disaster: The Panchtatva Equilibrium. *Yojan: A Development Monthly* 13-17.