Asian Resonance

Environmental Degradation and It's Effects on Human Health

Shyam S.Khinchi
UGC Teacher,
Research Fellow
Department of Geography
Govt. College, Ajmer
(Rajasthan)

Sunil Kumar Verma
Assistant Professor in Geography,
G.B. Podar PG College,Nawalgarh,
Dist. Jhunjhunu
(Rajasthan)

Abstract

Environmental degradation is an extensive problem which arises through depletion of natural resources, destruction of ecosystems and the extinction of wildlife. Its influence on the health of human populations is great. This paper presents a minute observation about the causes and effects of environment degradation, in the perspective of natural and human factors leading to air, water and soil pollution, on human by diseases and problems. The present Study explores that these kinds of destructions and depletion of natural resources critically affect both human health and the wildlife. The author is of the view that still there is time left in the hands of global organizations, governments and local bodies to use the advance resources to check it and balance the environment for living. The effective reply to such issues is largely based on human appraisal of the problem from every age group and control program evolved as a nationwide fixed cost-sharing efforts relying upon voluntary participation (Sharp & Bromley, 1979).

Keywords: Environment Degradation; Natural Factors; Human Factors; Human Health

Introduction

The living organisms depend upon environment for their existence. The environmental degradation is a process through which the natural environment is compromised in some way reducing the biodiversity and the general health of the environment. It can be simply defined as the deterioration of the environment through depletion of natural resources such as air, water and soil, destruction of ecosystems and the extinction of wide life. The process can be entirely natural in origin or it can be accelerated or caused by the anthropogenic activities. The natural factors include storms on sea, land and desert, drought, hurricanes, tornadoes, katrina, tsunami and volcanic eruptions leading to land degradation caused by erosion. While the anthropogenic factors include pollution, urbanization, deforestation, industrialization leading to pollution of air, water and soil. The largest area of concern, at present, is the loss of rain forest, air pollution and smog, ozone depletion and destruction of marine environment. The paper mainly deals with the human factors. Following are the foremost objectives of this study:

- The primary objective of the study is to get evidences of the current status of environmental degradation.
- To highlight the effects of mainly anthropogenic activities on environment.
- To point out the impact of environment degradation or pollution on the health of human.

Materials and methods

For the present study data set compiled from various secondary sources were used to evaluate the anthropogenic activities and its impact on environment degradation leading to pollution. The demographic data have been taken from Census Publication (Registrar general Of India) for different time periods for study. All the required information was collected from journals, reports and published papers.

Observations and Result

Pollution

Pollution is main cause of environment degradation. The environment pollution means that toxic substances have rendered it unhealthy. The Pollution can occur from a variety of sources including air pollution, water pollution, soil pollution, vehicle emission, agriculture run off, accidental chemical released, from factories and poorly managed harvesting of natural resources. The pollution is occurring all over the world and poisoning the planet. However, even in the remote areas, the effects of local destructions are obvious. In some areas the natural environment has

been exposed to hazardous waste. Improper management of solid waste is one of the main causes of environmental pollution (Kimani, 2007; Khan, 2004). World Bank (2002) found Particulate matter is the most serious pollutant in large cities in South Asia. While in other places, major disasters such as oil spills have ruined the local environment. The excessive use of non biodegradable products like plastics, and many more have degraded the land and water. The use of chemicals in land, water and in other fields have degraded the environment and caused serious disease problems in human. The over use of pesticides and insecticides have degraded the soil. The agricultural products has been decreased which may result in scarcity of food in the future, if the wise utilization of various chemicals is not done. The leakage of sewage to the water resources has polluted most of the water resources. The nuclear tests done on land and ocean by the developed countries have destroyed the environment.

However, some of the natural calamities like flood, earthquake, soil erosions and many more are also responsible for degradation of the environment. The natural factors have destroyed the physical structure of the soil, the human properties, habitats of plants and animals, wild life and human beings creating imbalance in the eco systems.

Urbanization

Population and environment are closely related in a complex and dynamic manner. This relationship is mediated by various social, economical, cultural, political and developmental issues. Their role also varies from one context to other (Richards, 1986; Mohanty, 2010). The urbanization involves a change in human settlement. This is most important social transformation resulting in physical growth of rural or natural into urban areas or even of existing urban areas. However, the degree of urbanization varies considerably depending on a number of factors. According to census report (Table-1 and 2), the population of India increased from 361.1 million in 1951 to 1028.6 million in 2001 while the urban population increased from 62.4 million in 1951 to 285.3 million in 2001(Census Report,1991,2001). The increase in population is also seen even in relatively land abundant and semi- arid states such as Rajasthan and Gujarat. The urban population has increased to almost five times during last fifty years.

Table 1: Trends of Population Growth in India, 1951-2001

Census Year	Population in Million			Growth rate of Population	Population Density
	Total	Rural	Urban		
1951	361.1	298.7	62.4	-	117
1961	436.4	360.3	77.8	1.96	142
1971	547.9	439.1	109.0	2.20	173
1981	685.1	523.9	159.7	2.22	216
1991	838.5	628.7	215.7	2.14	267
2001	1028.6	741.7	285.3	1.93	312

Source: Census of India, 2001.

Table 2: Trend of Urbanization in India, 1951-2001

Census Year	Number of UAs/Town	Urban Population (in million)	Percent Urban	Decennial Growth rate of urban population	Tempo of Urbanization		
					Annual exponential growth rate	Annual gain in percent urban	Annual rate of gain in percent urban
1951	2,843	62.44	17.29	41.42	3.47	0.34	2.48
1961	2,365	78.94	17.97	26.41	2.34	0.07	0.39
1971	2,590	109.11	19.91	38.23	3.24	0.19	1.08
1981	3,378	159.46	23.34	46.14	3.79	0.34	1.72
1991	3,768	217.18	25.72	36.19	3.09	0.24	1.02
2001	4,378	286.12	27.86	31.74	2.76	0.21	0.83

Source: Census of India, 2001

The Urban areas or cities are such places where money, services and wealth are centralized creating greater economic opportunities and resulting into social mobility and increase in diversity. But the negative effects are also visible. The cost of living increases, more resources are required to meet basic needs and all types of pollution increases putting enormous stress on the environment. This ultimately causes degradation of environment.

Urban Poverty

Poverty is described as a multi dimensional situation and process of serious deprivation. Rather it is lack of resources and materials necessary for living within minimum standard conducive to human life or dignity (Andrew et al, 2012). It is also a situation where basic requirements of man are either absent or available in negligible amount. The factors responsible for such urban poverty include low income or under employment or unemployment, low educational background or no education, lack of skilled man power or skill, rapid population growth, very poor quality and insufficient residential facilities, problems of sanitation and waste disposal facilities and family population pressure.

The urban poverty prevails in slums or near industrial areas. These areas are thickly populated by housing units. They are deprived of adequate domestic and recreation facilities. The household wastes are deposited in numerous forms near residential and non residential areas. In these places communal utilization and over uses ensues. This ultimately results in environment degradation or pollution. The low income areas need development of low-cost housing programme, provision of low-interest

house loan, strict building regulations, adequate domestic and recreation facilities and better waste management strategies.

Moreover, the rapid increase in urbanization has reached an unprecedented level as distribution of income and household quality and this is increasing continuously, thus becoming major point of concern and results into environment degradation. The local management, industrial management and even government pay less attention to implement appropriate housing policies with required facilities and adequate monitoring with practical approaches (Andrew et al, 2012).

Deforestation

The deforestation is cleaning Earth's fossils on a massive scale, often resulting in damage to the quality of the land. Forests still cover about 30% of the world's land area (National Geography).According to the United Nation's Food and Agriculture Organization (FAO), about 7.3 million hectares of forest are lost every year and word's rain forests could completely vanish in a hundred years at the current rate of deforestation. Forest loss contributes between 12% and 17% of annual global greenhouse gas emissions (World Resource Institute).

The deforestation is not intentional in all cases. In some cases, it is combination of human and natural factors like wildfires and subsequent over grazing which may prevent the growth of young trees. However, the basic causes of deforestation are expansion of agriculture to meet the increasing demand, shifting cultivation by cleaning and burning a small patch of forest, fire wood collection, logging operations, grazing livestock, illegal cutting for economic gain, cultivation on hill slopes, construction of road, railway track and dam or hydropower projects, industrialization and of course growing urban sprawl.

The important massive effects of deforestation and tree-cutting activities are soil erosion, destruction as a result soil moisture dried up, bacteria are destroyed, and soils never get full potential back, water bodies and water cycles are affected and loss of biodiversity. It is considered to be one of the significant factors to global climate change. Forest/trees absorb green house gases and carbon emissions and use it to produce food and oxygen. Deforestation stops this and changes the climate. Cool climate may get hotter and hot climate may get cooler. It also perpetuates the water cycle by releasing water vapours in the atmosphere. Without forest or trees, forest land can quickly become barren land. To check deforestation and regain forests, all the countries of the world have to strengthen their capacity in all forest inventory disciplines in support of sound forest land use and management

Industrialization

It is evidently exposed from many studies that industrialization requires larger input of energy, row materials and generates huge amount of waste by products. Increase in extraction of natural resources, accumulation of wastes and concentration of pollutants put its adverse effects on environment and results into its degradation.

The industries are highest user of fossil fuels through its use of electricity and provability through heating and production. The carbon-dioxide is a powerful green house gas and is thus added to the atmosphere causing the enhanced greenhouse effects. About 80% carbon mono oxide is emitted by human transportation and the high concentration of this gas is scene in highly populated urban areas. Thus air pollution is primarily caused by exhaust of auto mobiles and the combustion of fossil fuels, while water pollution is the result of industrial waste and environmental accident. However, the emission of harmful gases like carbon mono oxide, carbon dioxide and other effluents into the atmosphere causes acid rain which is responsible for various health problems. Moreover, the industrial smoke affects the surrounding environment and damages flora and fauna of that area.

It has been also observed in many cases that the industrial activities do not comply with the regulatory norms for prevention and control of environmental degradation or pollution. It is also imperative to go beyond compliance through adaptation of clean technologies and improvement in management practices. The honest commitment and voluntary initiatives of industries for responsible care of environment may help in controlling environment degradation.

Effects on human health

Worldwide, we have serious environmental resource problems of water, land and energy. Environment dying is global perilous point. Diminishing quality of air, water and soil have increased diseases which affect health of human and other animals and plants. About 40% of deaths in the world are caused by air, water and land pollution. Almost 4 million children worldwide die every year due to acute respiratory infections- linked with air pollution. Moreover, it is estimated that about 1.2 billion people lack clean water in the world and about 80% infectious diseases are waterborne. The atmospheric pollution and depletion of ozone layer may cause an increase in natural disasters. The table 3 and 4 clearly reveal that pollution of all kinds, resulted from environment degradation, affects human health and causes diseases like eyes , lungs, and throat irritation, starves body of oxygen, bronchitis , lower resistance to influenza, obstructs breathing, cellular and heart damage, induce coughing, abdominal pain, headache, diarrhoea, haemolysis, chest anaemia, vomiting, loss of appetite, convulsions, damage of brain, liver and kidney , growth retardation, bone deformation, testicular atrophy, anaemia, injury of central nervous system and liver, hypertension ,disturbed peripheral circulation, mental disturbance, liver cirrhosis, hyperkeratosis, lung cancer, ulcers in gastro-intestinal tract, pulmonary disorder, dermatitis, respiratory disorders including cancer , renal damage, cramps ,excessive salivation, paralysis, colic pain etc (Ries et al. 1999; European Public Health Alliance, 2009, Khan and Ghouri,2011; Blaxill 2004; Landrigan

et al. 2002; Mendola et al. 2002; Schettler 2002; Stein et al. 2002.)

Table 3:
Metal toxicity and its effects on human health

Metal	Source	Pathological effects on man
Mercury	Industrial discharge vapour	Abdominal pain, headache, diarrhoea, haemolysis, chest pain.
Lead	Industrial waste, dust, polluted food, paid	Anaemia, vomiting, loss of appetite, convulsions, damage of brain, liver and kidney
Cadmium	Industrial discharge, dust, fumes, medicinal use	Diarrhoea, growth retardation, home deformation, kidney damage, testicular atrophy, anaemia, injury of central nervous system and liver, hypertension
Arsenic	Polluted water, industrial waste, medicinal use	Disturbed peripheral circulation, mental disturbance, liver cirrhosis, hyperkeratosis, lung cancer, ulcers in gastro-intestinal tract, kidney damage
Nickel	Aerosols, industrial dust	Pulmonary disorder, dermatitis etc.
Copper	Industrial	Hypertension, uremia, coma, sporadic fever
Chromium	Industrial waste, fumes	Respiratory disorders including cancer
Zinc	Industrial	Vomiting, renal damage, cramps
Barium	Industrial	Excessive salivation, vomiting, diarrhoea, paralysis, colic pain
Cobalt	Industrial	Diarrhoea, low blood pressure, lung irritation, bone deformities, paralysis
Tin (organic and in organic)	Industrial dust, and medicinal use	Central nervous system disorder vision and pneumoconiosis

Source: Kimani, N.G. (2007) Environmental Pollution and impacts on Public Health.

Table 4:
Non metal toxicity and its effects on human health

Non metal	Source	Pathological effects on man
Smog	Air pollution	Eye and throat irritation, reduces solar radiation
MIC (Methyl Isocyanate)	Air pollution	Caused 2500 deaths and affection of 100,000 people in Bhopal and still suffering from diseases
Carbon Monoxide	Air pollution	Starves body of oxygen and damages heart
Nitrogen dioxide)	Air pollution	Causes bronchitis and lower resistance to influenza
Sulphur dioxide	Air pollution	Obstructs and breathing irritate eyes
Silicon Tetra fluoride	Air pollution	Irritates lungs
Nitric / Nitrous / Sulphuric Acid	Air pollution	Causes respiratory diseases
Radiation	Radio active pollution	Causes cellular damage
Aldehydes	Thermal decomposition of facts, oil or glycerol	Irritate nasal respiratory tract
Chlorines	Bleaching cotton and lour	Attack entire respiration, mucous membranes of ice
Carbonyl Chloride	Chemical dye manufacturing	Induce coughing, irritation

Source: Kimani, N.G. (2007) Environmental Pollution and impacts on Public Health.

Conclusion

To sum up it is discovered here on the basis of the above mentioned critical views that due to anthropogenic activities, environment is degrading in an alarming rate. It has created many environment problems such as air, water and land pollution, global warming, ozone layer depletion, greenhouse effects, rising sea level, in proper monsoon and acid rain. The economic growth is based on industrialization – is a wrong myth the progress of developed or developing countries have been done on the cost of environment and poor developing countries.

A number of legal and social resources are involved in environment degradation, ranging from the need to provide leaving space for humans, agriculture and industrialization for economic development. Now the question is “who is responsible for environment cleanup?”

Many international organizations recognized environmental degradation as one the major threats facing the planets. Still there is time left in the hands of global organizations, governments and local bodies to use the advance resources to check it and balance the environment for living. The effective reply to such issues is largely based on human appraisal of the problem from every age group and control program evolved as a nationwide fixed cost-sharing efforts relying upon voluntary participation (Sharp & Bromley, 1979). The policymakers of developing countries need

to design programs, set standards, and take action to mitigate adverse health effects of environment degradation or pollution. The societal beneficial efforts need to carefully utilize available knowledge from other settings, keeping in mind the differences in pollutant mixtures, concentration levels, exposure patterns, limit of anthropogenic activities and various underlying population characteristics

To control or check this practice of environment degradation and also to have sustainable global environment the people of the world particularly poor developed or under developed or even developing countries like India should empower people with essential knowledge and information. Since healthy human resources are the main object of any successful country and human have only been given one earth to work with and even the environment becomes irreparably compromised, it could mean the end of the human existence.

References

1. Andrew,E.,Elizabeth,E., and Akintoye, O.A. (2012) Urban Poverty and Residential Environment Degradation in Calabar Area of cross River State, Nigeria. Global Journal of Human Social Science, vol.-12 and issue-6.
2. Blaxill, M. F. (2004). What's going on? The Question of Time Trends in Autism. Public Health Reports, 119(6), pp. 536-551.
3. Census of India (1991): Final Population Totals: Series-1, Registrar General and Census Commissioner, India
4. Census of India (2001): Series-1, India, Paper-2 of 1991, Provisional Population Totals: rural-urban Distribution, Registrar General and Census Commissioner, India
5. European Public Health Alliance, (2009). Air, Water Pollution and Health Effects. Retrieved from.
6. Khan, S.I. (2004). Dumping of solid Waste: A threat to Environment, The Dawn, Retrieved from ttp://66.219.30.210/weekly/science/archive/040214/science13.htm
7. Khan, M.A. and Ghouri, A.M. (2011). Environmental Pollution: Its Effects on Life and Its Remedies. International Referred Research Journal, Vol-II, Issue-April.
8. Khinchi, Shyam S., Pachori, Sunita & Kannan, Monica. Sustainable Use Of Water In The Rural Heart Of India: Asian Resonance, Vol-II, Issue-III, pp138-140 (July2013).
9. Kimani, N.G. (2007). Environmental Pollution and impacts on Public Health: Implications of the Dandora dumping site Municipal in Nairobi, Kenya, united nation Programme,pp 1-31
10. Landrigan, P. J., Schechter, C. B., Lipton, J. M., Fahs, M. C. & Schwartz, J. (2002).Environmental Pollutants and disease in American Children: Estimates of Morbidity, Mortality, and Costs for Lead Poisoning, Asthma, Cancer, and Developmental disabilities, Environmental Health Perspectives, 110(7), pp. 721-728.
11. Lanly, J.P. (1982). Tropical forestry resources. FAO Study: Forests 30. Rome. 113 pp.
12. Lanly, J.P. (2003). Deforestation and Forest Degradation Factors. This is the original unedited version of a paper submitted to the XII World Forestry Congress. Quebec City Canada. www.fao.org/docrep/article/wfc/xii/ms12a-e.htm.
13. Mendola, P., Selevan, S. G., Gutter, S. & Rice, D. (2002). Environmental Factors Associated with a Spectrum of Neurodevelopmental Deficits. Mental Retardation and Developmental Disabilities Research Reviews, 8(3), pp. 188-197.
14. Mohanty, S. 2010. Population Growth Changes in Land Use and Environment Degradation in India. iussp2009.princeton.edu/papers/91994
15. Ries, L. A. G., Smith, M. A., Gurney, J. G., Linet, M., Tamra, T., Young, J. L. & Bunin, G. R.(eds) (1999). Cancer Incidence and Survival among Children and Adolescents: United States SEER Program 1975-1995, Bethesda, MD, National Cancer Institute, SEER Program.
16. Richards,J.F. (1986). "World Environment History and Economic Development" in Sustainable Development of the Biosphere. (eds) W.C.Clark and .E.Munn.Laxenburg, Austria: International Institute for Applied Systems Analysis.
17. Schettler, T. (2002). Changing Patterns of Disease: Human Health and the Environment,.San Francisco Medicine, Retrieved from NTID=1643&TEMPLATE=/CM/HTMLDisplay.cfm http://www.sfms.org/AM/Template.cfm?Section=Home&SECTION=Article_Archives&CONTE
18. Stein, J., Schettler, T., Wallinga, D. & Valenti, M. (2002). In Harm's Way: Toxic Threats to Child Development, Journal of Developmental & Behavioral Pediatrics, 23(0), pp. S13-S22.