



Growth of Population in India and Its Impact on Natural Resources

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ABSTRACT

Increasing population growth and continuous economic development have caused serious environmental problems in the world. However, the recent experience is that the pace of environmental depletion and degradation is much faster in developing countries like India than the developed countries. Due to his technological and scientific advancement, man has made rapid development in all the sectors of economy, but unfortunately in this process of development, there has been much disruption of the functioning of surrounding natural environment. The present paper deals with general analysis of causes and impact of population growth on environment in India. The rapid economic development and expansion of urbanization in recants decade's leads environmental degradation in northern, southern and western parts of the country. Environment is degraded mainly due to the rapid population growth in the eastern, north eastern and central regions of India. India is the second most populous country in the world having 2.4% of global land and 17.5% of the world's total population. This rapid growth of population will lead more serious problems like environmental pollution, desertification, global warming, ozone depletion, if serious steps will not be taken to control the growing population of India.

KEYWORDS

Population, environmental degradation, urbanization, industrialization, economic development, pollution, deforestation, sustainable development.

OBJECTIVE:

- To highlight the trend and spatial variation of population growth in India.
- To examine the impact of population growth on natural environment.
- To analyze the changes that takes place in natural environment due to population growth and economic advancement.
- To provide some solution and suggestion for those people who are working for the conservation of environment?

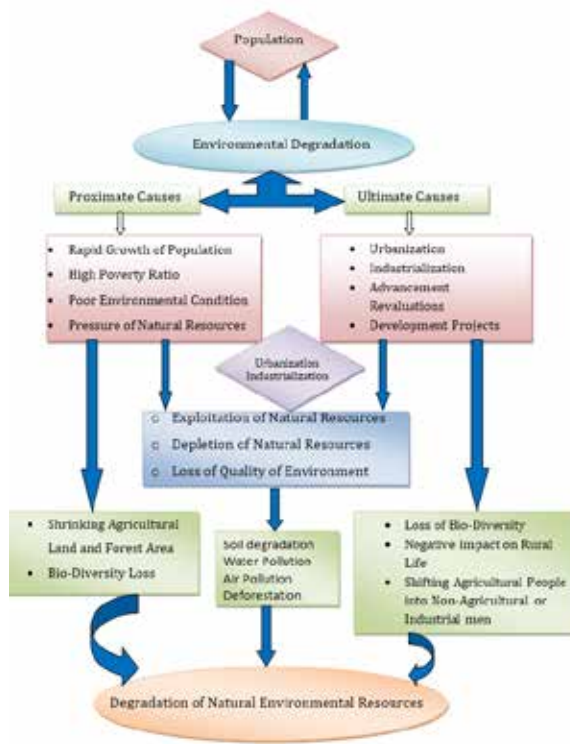
STUDY AREA –

The present study seeks to the impact of population pressure on India's environment with special reference to natural resources like land, air, water and forests resources and the resulted environmental problems in the different regions of India. The Study Area is categorized in to different regions having some common characteristics regarding population pressure, economic development and environmental loss.

DATABASE AND METHODOLOGY:

The assessment of increasing population impact on natural environment is the prime focus of this study. The study is based on the secondary data derived from census reports, statistical abstracts, world population data book, literature derived from the various books of environment and ecology, theses, journal and related websites. Demographic data such as population growth, population density, urbanization, and poverty ratio has been taken to make a link between population, economic activities, development and environment and ecology. The relationship between population growth and environmental aspects, present with the help of following diagram.

"PROCESS OF ENVIRONMENTAL DEGRADATION"



INTRODUCTION:-

In India, due to rapid growth of population and expansion of development activities, environment is adversely affected. Natural environment is degrading through uncontrolled growth of urbanization, industrialization, intensified agricultural activities of human being. The average change in the population resulting the difference of births over deaths and the balance of emigration and immigration is termed as population growth. The population growth is a factor in determining that how much pressure of the population on environment and natural resources. India is the second most populous country in the world having over 1.271 billion population (17.5%) of world's total population. In India the annual and decadal growth of

population was very high up to 1991, after that there is a little decline in the annual growth rate and decadal growth of population but due to high absolute growth, population still remain high that put pressure on environmental resources and cause serious environmental problems.

The population of India, in the beginning of the twentieth century, was only around 234.8 million. The population of India increased more than four times during the period of one hundred years to reach 1210 million in 2011. Interestingly, The population of India grew by one and half times in the first 50 years of the twentieth century while in the last fifty years it recorded a phenomenal three times increase in the population. Although there is a little decline in the population growth during the last three decades(1991-2011). The table shows the decadal growth of population of India during 1901-2011.

Census year	Decadal Growth in %	Change in decadal growth %	Average annual exponential growth rate %
1901	-	-	-
1911	5.75	-	0.56
1921	0.31	-6.05	-0.03
1931	11.00	11.31	1.04
1941	14.22	3.22	1.33
1951	13.31	-0.91	1.25
1961	21.64	8.33	1.96
1971	24.80	3.16	2.20
1981	24.66	-0.14	2.22
1991	23.87	17.12	2.16
2001	21.54	10.54	1.97
2011	17.64	-0.47	1.64

Source: census of India 2011

It is significant that the decadal growth between 2001-2011 recorded sharp decline since independence. In 1991, decadal growth of India was 23.87% which declined 2.33% during next decades and recorded 21.54% in 2001. In 2011, the decadal growth of India has registered 17.64% with a further decrease of 3.90 percent.



Efforts of reducing population growth rate have been effective and impressive in India as shown by the declining trend of population growth. But it has not however been coupled with environmental conservation. The degree of environmental degradation varies across regions in accordance with characteristics such as poverty status, growth rate, economic development, industrialization and urbanization. There is much regional variation in the economic development and reduction in population growth across India. This unequal status of economic development in different regions of India leads inequality in socio-economic development which have grave implication for environmental issues. The central, eastern and north eastern parts of India still having large population which caused higher level of poverty (40% in central and 35% in eastern regions) and exploitation of the resources such as water, forest, land etc (Scott et al. 1997). Higher population, low living standard of people, inadequate level of socio-economic development are the main challenges faced by India regarding conservation of natural environment and natural resources. On the other side comparatively low population growth rate and high level of economic development leads environmental degradation in southern and western India. This paper deals with

the factors responsible for environmental degradation and its possible remedies in India.

POPULATION AND NATURAL ENVIRONMENT:

In the present time, environmental degradation has emerged as a major global problem. Man has made rapid developments in agriculture, industries, transportation and others area with the help of his technological and scientific skills. But in this process, man disturbing all the functioning of natural environment. The world commission on environment and development opines that "the future is to face ever increasing environmental decay, poverty, hardship and even more polluted world" (Alka Gautam 2007). Global 2000 report (1980) registered the truth that the earth will become crowded, more polluted, ecologically more disturbed, and more vulnerable than the world we live in present. Environmental degradation emerged as a most serious issue of concern not only in the developing world also in the developed countries. Rapid population growth and economic development leads overexploitation of natural resources such as land, water, air etc. uncontrolled growth of urbanization and industrialization, expansion of agricultural land puts pressure on natural environmental resources like forest which caused the destruction of natural habitats of wild life animals. India is the second most populous country in the world having over 1.271 billion population (17.5%) of world's total population but has no more than 2.4% of global land. The pressure of over population is much higher in the greater plain of India having 33% of the total population of India. The above mention fact indicates that in the northern plain main cause of environmental degradation is rapid growth of population that puts severe pressure on natural resources. On the other side comparatively low population growth and high economic development caused environmental degradation in the southern and western regions of India. The north eastern part of the country having low population are rich in natural resources (highly forested) because these regions are underdeveloped and very little movements of man.

POPULATION AND DEFORESTATION:-

Forests are an important component of natural environment of any area. Forests played an important role in improving the quality of natural environment by effecting the ecological balance, ecosystem and life supporting system (biosphere) by checking soil erosion, maintaining soil fertility, improving water quality, balancing amount of carbon dioxide and oxygen in the atmosphere, helpful in the circulation of biogeochemical cycle. India has 23.28% forest area of total geographical area against 33% remanded in national forest policy 1952 and 1988. In India, due to rapid growth of population and economic development, the area forest cover has decreased gradually as forests have been cleared for agricultural land, location of industries, housing and other developments like construction of dam, expansion of infrastructure development. People have been clearing forest cover to meet the food needs of ever growing population; forests are converted in to permanent settlements that reduce the chances of regeneration. Since independence India lost forest area in the following manner:

Purpose of forest use	Lost forest area (million hec.)
Non forestry purpose	4696
Cultivation	4.37
River valley projects	0.518
Industries and township	0.141
Transmission line and road	0.061

India lost 367 square kilometers area of forest cover in past two years. According to India state of forest report, 2011, presented by FSI, the total forest cover in India is now 6,92,027 square kilometers which accounts 21.05 % of the total geographical area. In India the northern plain of India including northern region (Rajasthan, Punjab, Haryana), central region (Uttar Pradesh), eastern region (Bihar and West Bengal) having more than 33% population having only 5% forest cover.

GEOGRAPHICAL REGION	PERCENTAGE OF TOTAL FOREST OF INDIA
Himalayan region	18.00
The Great Plain of India	5.00
Peninsular plateau	57.00
Western Ghat and coastal plain	10.00
Eastern Ghat and coastal plain	10.00

Source: census of India, 2011.

On the other side north eastern mountainous region are highly forested with little population movement accounts 67.25% forests are of total geographical area. The peninsular plateau region of India having 50% of forest area of total forest area of India. In India forested area per person (0.06 hec.) is much lower than the world (1.08 hec) average per person forest area. Therefore, continuous deforestation caused tremendous ecological and socio-economic crises.

POPULATION AND SOIL DEGRADATION:

Advanced and modern farming activities arise negative impacts on the natural environment. Modern farming activities lead soil erosion, land salination and loss of nutrients. The invention of green revolution accompanied with over exploitation of land resource, water resource and use of chemical fertilizer and pesticides have increased many times that leads soil degradation. Intensive agriculture practice and irrigation leads land degradation particularly salination, alkalization and water logging. With growing population and development activities, most of the land is degraded that effect the both production and productivity. Out of total geographical area of the country, 175 million hectares area are considered as a land degraded. Degradation of land in the county shown with the help of following table.

Soil erosion and land degradation through various agents(million hectares)

Total geographical area	328.7
Land degradation by water and wind erosion	141.3
Water logged area	8.5
Alkali soil	3.6
Acid soil	4.5
Saline soil	5.5
Ravines and gullies	4
Shifting cultivation effected area	4.9

Source: economic survey of India, 2005-06, Government of India

Water and wind erosion are the major contributor with 141.3 million hec. To soil erosion while other factors like water logging, alkali soil, acid soil and saline soil contributes 8.5million hec, 3.6 million hec, 4.5 million hec and 5.5 million hec respectively. Ravines and gullies registered 4 million hectares land in land degradation. Thus due to increasing demand with growing population leads soil degradation.

IMPACT OF URBAN GROWTH ON NATURAL ENVIRONMENT:

Urban area places a strain on the natural environment. Although India is one of the less urbanized countries of the world having 31.68% urban population, but this country also facing a serious crisis of urban growth in the recent time. The flow of migration from rural area to urban centres has put heavy pressure on public utilities such as housing, sanitation, water, electricity, health and education. Urban sprawl is rapidly encroaching the fertile agricultural land. Rapid growth of urbanization in India caused tremendous problem regarding environmental degradation like environmental pollution (air, water, sound) increasing temperature. In India level of urbanization is increasing continuously. Table shows that in the cities of west region, there is a maximum concentration (31.33%) of urban population. The southern regions are on the first rank in concern to the number of cities but they are on second rank in concern to urban population having 20.01% urban population. So the northern and western regions of the country are under the tremendous pressure of population that increased the use of natural resources and caused environmental pollution. The southern and north eastern regions of the country having lower proportion of population than their geographical area. So in these regions population pressure on urban land and its impact on environment would be relatively low in comparison to the others regions.

RESULTS AND DISCUSSION:

Rapid growth of population counties to be a matter of concerns for the country as it leads so many serious environmental problems, one of the most important is environmental degradation. The study seeks that rapid population growth led to the exploitation of natural resources. In India all regions have been experiencing environmental degradation at various degree. The extent of environmental degradation is directly related to over population and development activities of human being. The problem of environmental degradation is severe in northern region due high population and population density. While in the western and southern India, natural resources are used unsustainably due to industrialization and economic development that leads eventual degradation of environment. Urbanization is another factor which effects natural environment. The effect of urbanization on natural environment is much higher in the western and northern parts of India than the others regions. The level of degradation is comparatively moderate in the central India and low in the north eastern parts of India. There is a need to control population growth in the country for the conservation of natural environment. Special efforts should be made for creating awareness among the general mass and local policy makers about the negative effect of large population on environment. Sustainable development approach focusing on economic growth and environmental conservation is the another way to sustain natural environment for long run. Implementing family planning effectively is also an important and effective methods of checking the population growth. But the above mention formulas are working impressively only when, when Government supports the organization which is working in this field.

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