

# **POPULATION PRESSURE, AGRICULTURAL RESOURCES AND ENVIRONMENT: TEMPORAL AND SPATIAL ANALYSIS IN INDIA**

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## **Background**

Although, it has been a point of debate for long time as to whether the population growth deters or promotes development or vice-versa, many studies have unanimously expressed serious concerns about the negative impacts on natural resources, including forests, land, water, biodiversity, pollution, and other resources all over the world including India (World Commission on Environment and Development 1987; Ehrlich and Ehrlich 1990, John Pender, 1999). Rapid population, industrialization and urbanization in India are leading to life threatening deterioration of environment system by way of depletion of resources, ecological imbalances and increasing the pollution levels. The nature of relationship between population, environmental degradation and pollution is mediated by number of factors and understanding it requires an in-depth perusal of kind of threats to the ecosystems. In the process, the environmental pollution, apart from deteriorating environmental conditions, also have adverse effects on the health of people. India is arguably one of the most degraded environment countries in the world and it is paying heavy health and economic price for it. The linkages between such degradation and population growth depend on the distribution of population across regions and are intern affected by density of population.

## **Objectives**

This paper analyses the impacts of population growth on development and environment, and the associated health problems in India at national and regional levels. The paper also reviews the policies and programmes taken by the Government of India to protect environmental degradation and pollution. The impacts of population pressure, particularly on natural resource conditions, may be very different in different contexts, depending on the nature of local markets, institutions, and other factors. This paper will provide a strong empirical basis for formulating effective policies in reducing environmental pollution which has become a major concern across the globe recently.

## **Methodology**

The study is primarily based on secondary data sources, published by the Government India and various other agencies, during the last 50 years. The district level data on population and its component viz., size, structure, distribution and other characteristics were obtained from various census reports published during the period from 1951 to 2001. The time series data pertaining natural resources and land utilization, area, production, productivity of principal crops and the pattern of irrigation, fertilizers,

environmental pollution etc., were obtained from the Directorate of Economics and Statistics, Fertilizer Statistics, India Development Report and various economic surveys and other sources.

The data analysis will be carried out using triennium average, ratios, and compound growth rates across the states and different regions. Different regions will be formed based on rural population and poverty. The extent of population pressure on natural resources will be assessed using cross sectional data over different time period from 1951 to 2001.

## **Findings**

The analysis of the demographic data revealed that the population is growing rapidly with fluctuating growth rates in different decades during the last 50 years. The population at the time of independence was 342 million and increased from 361 million in 1951 to around 846 million in 1991 and to 1027 million in 2001, the population of India almost tripled during the period of 1951-2001. The urban population has increased three and half times, from 62.4 million in 1951 to 217.6 million in 1991 and it again increased to 288 million in 2001. The percentage of urban population increased from 17.28 percent in 1951 to 23.33 percent in 1981, 25.71 percent in 1991 and which further increased to 28 percent in 2001. The urban growth lead to an increase in the pollution levels and exposes population to serious environmental health hazards.

Rapid population growth continues to be a matter of concern for the country as it has manifold effects on other natural resources. Due to population pressure, a negative trend was noticed with respect to area under forest, barren and uncultivable land, cultivable waste land, permanent pastures and grazing lands, miscellaneous trees not included in net area sown, fallow land other than current fallow in the state. While, land put to non-agricultural use, net area sown and area sown more than once shown an increasing trend during the same period.

The deforestation has also led to the shrinking of forest cover, which eventually have adverse impact on human health. The considerable magnitude of air pollution in the country also pulls up the number of people suffering from respiratory diseases and many a times leading to deaths and serious health hazards. The situation is also similar for water pollution, as both ground water and surface water contamination leads to various water borne diseases. Even after fifty years of independence, India is unable to achieve the desirable standards of health for its population as consequences of environment degradation. Based on the analysis of the data, the paper suggests for special efforts to educating the general mass and local leaders about the adverse effects of large population through specially designed area-specific IEC (Information, Education and Communication) activities by encouraging community participation. It is the need of time to protect the environment for the present and future generation. Mobilizing India's immense human resources to bring about a suitable balance in the population-resource-environment equation through strong political and social commitment especially to ensure access to resources and health for all is the need of hour.

