

Human Population and the Environment of North East India

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ABSTRACT

The size and growth of population is a very vital factor to determine the feasibility of economic development of a country. While a growing population is advantageous to the under populated developing country but the same growing population acts as a serious drag on economic development of an over populated developing country. Rate of growth of population in the over-populated country still remains high despite their poor rate of economic growth. Assam being a state of Indian union is also subjected to high rate of population growth as that of the other states in the North-East India. Out of total population of North-East India of 449.78 lakhs, the population of Assam stood highest at 311.69 lakhs as compared to the other states, followed by Tripura at 36.71 lakh.

Assam has predominantly rural population with majority of the total population living in the rural areas. Although the size of urban population in Assam was very minimum but it started to show a gradual increasing trend since 1951. Accordingly, total urban population of Assam rapidly increased from 3.44lakh in 1951 to 7.81lakh in 1961, 12.89 lakh in 1971 and then to 33.89 lakh in 2001. There are various factors responsible for higher rate of growth of *Urban Population* in Assam. There was a sharp increase in the urban population of the state as well because of natural increase of population as a result of excess of births over deaths on the one hand, and migration from rural areas on the other hand.

Much of the concern over environmental issues arises from the fear that we may reach a limit to the number of people whose needs can be met by the earth's finite resources. A slowing down of population growth rates would help in easing the intensification of many environmental problems. Human resources are an important factor in economic development. Man provides labour power for production and if in a country labour is efficient and skilled, its capacity to contribute to growth will decidedly be high.

1. Introduction

1.1. *Economic and Geographical background of North East India*

The North East of India has got its definite identity due to its peculiar physical, economic and socio-cultural characteristics. The economy of north east India is full of potentialities as different valuable natural resources are within the possession of this region. But due to curse of

nature and lack of proper attention, this region could not flourish with its resources. The north east India is composed of seven states, namely- Assam, Arunachal Pradesh, Meghalaya, Manipur, Mizoram, Nagaland and Tripura (Sikkim is excluded). The North-East region is situated at the North-Eastern Himalayan sub-region of India. The region is located in the remote eastern corner of Indian union. The entire region is connected with the rest of the country through a narrow strip of land in West Bengal linking Assam. The region (NER) is bounded by Tibet and China in the north and east, Bangladesh in the south, Burma in the south-east and Bhutan in the west.

The total geographical area of the north-eastern region is 2,55,083 sq. kms. as against the country's total area of 32,87,263 sq. kms.. Thus the region (NER) constitutes nearly 7.76 percent of the total land area of the country. The following table shows certain basic geographical and economic information about all the seven states of North-Eastern Region.

Table 1.1.a. Basic physical information of North-Eastern States

States	Geographical Area (1997) (sq. Kms.)	Forest Area (1999) (sq.Kms.)	Percent Area covered by Forest (%)	Number of District (2004)	Inhabited Villages (1995)	Total Population (in lakhs) (1991)	Total Population (in lakhs) (2001)	Total Population (in lakhs) (2011)
1. Arunachal Pradesh	83,743	68,847	82.2	13	3649	8.64	10.91	13.82
2. Assam	78,438	23,688	30.2	26	25,590	224.15	266.38	311.69
3. Manipur	22,327	17,384	77.8	9	2212	18.37	23.88	27.21
4. Meghalaya	22,429	15,633	69.7	7	5629	17.74	23.06	29.64
5. Mizoram	21,081	18,338	86.9	8	785	6.89	8.91	10.91
6. Nagaland	16579	14,164	85.4	8	1225	12.09	19.88	19.80
7. Tripura	10,486	5745	54.7	4	856	27.57	31.91	36.71
8. N.E. Region	2,55,083	1,63,799	64.3	75	39,946	315.45	384.94	449.78

Source:- North-Eastern region at a glance, 1995, NEC and Provisional census report 2001. Basic Statistics NER,2002, censusindia.gov.in/2011-prov.../india/Final_PPT_2011

The above table shows that the geographical area of Arunachal Pradesh is the highest at 83,743 sq. kms., followed by Assam at 78,438 sq. kms.. But the population of Assam stood highest at 311.69 lakhs as compared to the other states. Due to the limited geographical area of Assam, the population has been increasing tremendously. It seems to be a major problem of Assam in the future. The paper thus focuses on the human population and their environment basically in the North-Eastern Region.

1.2 *Meaning of Environment*

Environment means surroundings. The environment includes both physical or non-living (a biotic) and living (biotic) environment. The environment thus defines as the sum total of air, water and land and the interrelationships that exist among them and with the human beings, other living organisms and property.

Environment includes physical surroundings (a biotic) like:-

- a) Force of nature like wind and gravity.
- b) Conditions like time factor, temperature and light.
- c) Non-living materials like soil and water.

Physical and chemical natures of abiotic components are understood with the help of Physics, Chemistry, Geology, Atmospheric science, Oceanography and Geography. Along with above branches, Mathematics, Statistics and Computer science also help in modelling and management of environment.

Living environment (biotic) includes biological surroundings. They undergo reactions, interactions and inter-related action. Botany, Zoology, Microbiology, Genetics, Biochemistry, Biotechnology are some of branches of life science which help in understanding the environment.

1.3 *Meaning of Population and Demography*

Population is defined as the total number of individuals of a species present in a particular area and are capable of exchanging the genetic information. The members of a population have some common characteristics, share a common gene pool and are capable of interbreeding among themselves to produce fertile off springs under natural conditions.

The scientific study of human population is called demography. It deals with following phenomena:-

- a) Changes in population size of a specific area.
- b) Characteristics of the population like age composition, sex ratio etc.
- c) Distribution of population in space.

2. Impact of rapid growth of population on the economy of Assam

Assam being a state of Indian Union is facing a formidable problem of alarming growth of its population. Since 1901, Assam had the distinction of recording one of the highest growth rate of population among all the states. Since 1951 to 1991, the size of population in Assam has increased from 80 lakhs to 224 lakhs. This increase in population in Assam creates a serious impact on economy. The following are some of the important impact of high rate of growth of population on the economy of Assam:-

- a) The per capita income in Assam could not achieve its expected growth due to slow pace of its state income and high rate of growth of population.
- b) It creates the problem of poverty. The growth of assets could not keep pace with its growth of population leading to increase in the problem of poverty day by day.
- c) With the increase in the size of population along with the increase in their income, the demand for food products are increasing and, therefore, prices of food articles along with goods increased in Assam and it has created food problem in the state.
- d) In Assam, increase in the number of employment generated could not keep pace with the high rate of growth of population. This has resulted unemployment problem in the state.
- e) High rate of growth of population has also created various types of social problems like education, health, housing, land, water supply etc.
- f) High rate of growth of population has retarded the capital formation in Assam. Capital is formed out of savings. But high rate of growth of population has retarded the pace of growth in Assam.
- g) High rate of growth of population in Assam has widened the inequality in the distribution of income and wealth.

Due to all these reasons, the increasing pressure of population in Assam has been increasing the economic problem day by day.

3. Factors Affecting Population

There are many factors which affect the population growth. These are -

a) Birth or Natality rate:- It is the number of births per 1000 individuals of a population per year. It increases both population size and population density. According to 2001 census, birth rate of Indian population was 26 per 1000.

b) Death or Mortality rate:- It expressed as the number of deaths per 1000 individuals of a population per year. According to 2001 census, death rate in India was 8 per 1000.

c) Immigration:- It is the entry of more individuals into a local population of a species in a specific area from outside due to more favourable conditions in that area. It increases population size of that area.

d) Emigration:- It is the departure of some individuals from a local population of a specific area to another area due to unfavourable conditions in the former. It decreases population size of that area.

e) Environmental resistance:- It is the sum of all the inhibitory factors which prevent the biotic potential to be realized so does not allow a population to soar towards infinity. It includes various harmful environmental factors like scarcity of food and shelter; natural calamities like floods etc. and certain biotic factors like pathogens, parasites, predators etc.

Assam has predominantly rural population with majority of the total population living in the rural areas. Although the size of urban population in Assam was very minimum but it started to show a gradual increasing trend since 1951. Accordingly, total urban population of Assam rapidly increased from 3.44lakh in 1951 to 7.81lakh in 1961, 12.89 lakh in 1971 and then to 33.89 lakh in 2001. There are various factors responsible for higher rate of growth of *Urban Population* in Assam. The following are some of those factors:

a) Growth of urban area:- The total number towns in Assam has been increasing from 23 in 1951 to 53 in 1961, 73 in 1971, 78 in 1981 and 94 in 1991. This shows that as the sizes of urban areas are expanding with the increase in the number of towns, the increase in the size of urban population is obvious.

b) Migration of population from rural areas of the State: In Assam, there is huge shift of population resulting from migration from rural to urban areas in search of better employment opportunities and better social services like education, health etc.

c) Migration from other States: With the growing industrialisation and expansion of trade and commerce in the urban areas of Assam, a huge number of population has migrated to the urban areas of the state from other states of India.

d) Immigration: Large scale immigration of population from the neighbouring countries like Bangladesh, erstwhile East Pakistan, Nepal etc. causes a high rate of growth of urban population in Assam. Such immigration was very high during 1961-71.

e) Natural factors: With the growth of medical facilities in the urban areas, death rate declines significantly but birth rate in the urban did not fell commensurately.

f) Neglect of the village economy: Although Assam is an agricultural state but the development of the agricultural sector in the state has been totally neglected. Agricultural operation in the state basically in the rural areas has not yet been modernised. Thus, there is continuous outflow of rural population to the urban areas in search of gainful employment.

4. Causes of increase in Human Population

There are two primary causes for the increase in human population. These are:

- a) Decline in death rate.
- b) Increase in longevity.

Various factors contributing to decrease in death rate and increase in longevity are:

a) **Control of several bacterial** (e.g. cholera, plague, Tuberculosis, etc.) and **viral diseases** by the advances made in the field of medicine (e.g. discovery of antibiotics and vaccination) and **surgery**.

b) **Decrease in infant mortality** due to better public health care.

c) **Increase in life span** from 50 years during 1970-71 to 64 years in 2001 due to better sanitation and community health schemes.

d) **Improved agriculture** due to mechanization of agriculture; use of disease free and high-yielding seed varieties; use of fertilizers and pesticides; etc. This has increased the food production which had guaranteed adequate food for all. Similarly, food production of animal origin (e.g. milk, egg and meat) has also increased by artificial breeding and hybridisation.

e) **Better storage facilities** like warehousing, etc. have decreased the loss of food by pests, rain etc. which have enabled the availability of food at all the times.

f) **Better means of transport** have declined the number of deaths due to natural calamities like famines, flood etc.

g) **Increased protection of life from natural** risk like adverse climatic conditions, diseases and wild animals due to their living in well protected houses in cities and towns with better hygienic conditions.

h) **Removal of misbeliefs in large family norms** due to spread of education by opening schools and colleges even in the rural areas.

5. Control of Human Population

The problem of high rate of population growth should be tackled carefully. We shall have to approach the whole problem both from the production and population sides. The following are some suitable for checking the rate of growth of population in Assam.

- a) Modernization by agriculture: In Assam, the primitive method of agriculture is still being followed which must be replaced by better methods. The application of fertilisers and pesticides in irrigation is very useful in this regard.
- b) Industrial Development: Assam is lagging behind other states in regards to industrial development. As Assam is having sufficient industrial potential, so necessary industries be developed so that increased pressure of population be balanced with increased production and creating better employment opportunities.
- c) Age of marriage: Age of marriage should be raised. Demographers explained that postponement of marriage age from 18years to 20 or 22 years can bring down the birth rate by 20 to 30 percent.
- d) Limitation of the size of family: The most important measure to check population growth is to limit the size of families through family planning. The Health Department of the state must put much emphasis on setting up family planning clinic throughout the state.
- e) Spread of Education: Education and general enlightenment of the people creates desire for smaller families. Thus necessary steps be taken for general spread of education in Assam.
- f) Increasing employment of women and improvement of their social status can reduce the birth rate of population in the state.
- g) Family planning Programme: India was the first country to adopt family planning (in 1951) through the Government-sponsored programme. The Family Welfare Programme

of the state government aims at promoting responsible parenthood with a two children family norms and the programme in Assam was started in 1956.

- h) Literacy rate should be increased: It is so as the Indian states having low literacy rates like Rajasthan, Bihar, U.P. and M.P. have high population growth rates. The increase in the literacy rate decreases the growth of population in Assam.
- i) Providing facilities like contraceptives, Intra-uterine devices, birth control pills, sterilization etc. for controlling the increase of human population.

Thus, the population problem of Assam should be tackled both through the policy of increasing production and population control.

6. Population – Environment Linkage

Much of the concern over environmental issues arises from the fear that we may reach a limit to the number of people whose needs can be met by the earth's finite resources. Some economists have argued that this fear is unfounded as technological innovations and progress can fulfil the needs of the growing population. For instance, during the 1950s and 1960s it was widely believed that the developing countries- particularly China, India and Indonesia- would not be able to face their rapidly growing populations. However, thanks to *green revolution* in agriculture, the dooms day scenario of famines and starvations did not materialise in these overpopulated, developing countries. A slowing down of population growth rates would help in easing the intensification of many environmental problems.

During the last fifty years, the world's population increased by more than 3.5 billion and 85 percent of this increase was in the developing and transition economics. The number of people living in fragile rural areas in developing countries doubled posing a serious threat to the rural environment. There was a sharp increase in the urban population of these countries as well because of natural increase of population as a result of excess of births over deaths on the one hand, and migration from rural areas on the other hand. Both, pull factors and push factors have operated together to swell the flow of people from rural areas to urban areas. The 'pull factors' include the promise of better employment opportunities in urban areas, better income, better education and health facilities, and in general, a better life style. The 'push factors' include low levels of agriculture productivity in rural areas, widespread open and disguised unemployment, and wide disparity between urban and rural levels of income. As a result of all these mutually dependent and mutually reinforcing factors, the growth of population in urban areas has increased considerably putting severe pressure on urban facilities and resulting in environmental degradation in the form of water pollution, air pollution, noise pollution, increased accumulation of solid wastes, garbage, polythene

bags, chemicals, toxic elements etc. in urban areas. According to World Development Report, 2003, in the next 30 to 50 years, the world population is expected to increase by 2 billion to 3 billion and this increase will almost be exclusively in developing and transition economies. Moreover, this entire increase is expected to be in the urban areas.

Again the human population is concerned, the damage to the environment has three potential costs to present and future human welfare: 1) it harms human health, 2) it reduces economic productivity, and 3) it leads to loss of 'amenities'- a term that describes the many other ways in which people benefit from the existence of an unspoiled environment.

1) *Environment degradation harms human health*: As noted by World Development Report, 1992, human welfare is reduced by ill health and premature mortality caused by degradation of air and water quality and by other environmental risk.

2) *Environmental degradation reduces economic productivity*: Impaired health may lower human productivity, and environmental degradation reduces the productivity of many resources used directly by people.

3) *It leads to loss of amenities*: Amenities include values that range from those associated with recreation to those associated with deeply held spiritual views about the intrinsic worth of the natural world. Environmental degradation leads to the loss of these amenities.

Environmental protection is one area in which government must maintain a central role to reduce the environmental degradation.

7. Conclusion

It is to be concluded that the Environmental concern in developing countries like India rests not as much on health consideration as on survival and livelihood grounds. No doubt health considerations are important for the people in developing countries but livelihood issues which are directly connected with economic growth are far more important for the vast majority in these countries. Human resources are an important factor in economic development. Man provides labour power for production and if in a country labour is efficient and skilled, its capacity to contribute to growth will decidedly be high.

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