

# A Comparative Study on Population Explosion in India with Respect to Global Scenario

Arnab Acharyya<sup>1</sup>; Dipra Mitra<sup>2</sup>; Suranjan Dhar<sup>3</sup>

Technique Polytechnic Institute, Hooghly, West Bengal, India<sup>1,2,3</sup>

*cst.arnab@gmail.com*<sup>1</sup>; *mitra.dipra@gmail.com*<sup>2</sup>; *suranjanjob@gmail.com*<sup>3</sup>

## ABSTRACT

*Population explosion is one of the major issues in a developing country like India. In this paper we have discussed all the possible area regarding awareness on population explosion. Not only India but also we have focused on this problem in global scenario. Throughout this paper we have tried to summarise the facts and the factors affecting population explosion. In this paper we have also shown the government effort to curve this problem. Our objective is developing awareness among the people so that we can get rid of this problem.*

**Keywords:** population, population explosion, employment, economy, growth

## 1. INTRODUCTION

Population Explosion refers the sudden and rapid rise in the size of Population. Population explosion is not only a problem in India; it has reached a menacing proportion all over the world, especially in the poorer countries.

The developed countries in the West or in countries like Japan which are rich enough to employ all their people according to their abilities the growth of population may prove to be a boon, for the rapid growth of industries and national wealth always need greater work-force to implement the programs of development in ever-expanding spheres.

But in developing countries like India, with a backward economy and little scope for fruitful employment, millions of people find no work to do. The unemployed, having nothing to do and without an ensured living, are left frustrated and demoralize, losing their faith in life itself. As it happens in India and several underdeveloped countries in Asia and Africa, the unemployed threaten the very process of

development and plunge the country in gloom. It is only natural. Those who are born with two hands consider it a curse when they are denied the simple right to work and earn a living. While their numbers go on multiplying and the growth rate becomes menacing, the fruits of development are found to be too inadequate to bridge the yawning gulf.

## 2. OBJECTIVE OF THE POPULATION STUDY

The significance of studying population lies mainly in estimating the total manpower available for production and total amount of goods and service required for their consumption. After this, the studying of population is very useful from various points of view:

1. By studying population, even after ten years, tell us the exact number of people in our country only by knowing the number of people living in our country. We can know where we are going and what steps we should take to avoid the coming catastrophe as a result of the unrestricted rise of population.
2. We can know the distribution of population in our country and where more emphasis is to be laid for the development and uplift of the area.
3. We can know the sex ratio in our country and take proper steps for the welfare of the weaker section of the society including both woman and girl-child.
4. We can know the age composition of the people and how much burden of the dependent population (children and old people) the working population has to bear.
5. We can know as to how many people are engaged in the primary, secondary and tertiary occupation and what steps we should take to

bring about a change in occupational structure of our country.

6. It is only by studying population that we can know the level of literacy in our country and think what steps we should take to remove illiteracy from our country.
7. It is only by studying the data of our population, which we can know how many adolescents (people in the age group of 10 to 19) are there in our country and what special steps we can take to bring them up so that they may prove good citizens for the country.
8. It is by only studying population that we can chalk out our National Population Policy and think of measures both for containing the rise of our population and take desired methods for its welfare.

### 3. FACTS REGARDING POPULATION EXPLOSION

Demographic transition explains a form of relationship between population and economic development. In the western countries it has been found that they have moved from a condition of high birth and death rates, to a condition of low birth and death rates which led to a slow rate of growth of population. This demographic change is known as 'Demographic Transition. In other words, demographic transition describes the passage through which countries move from high birth and death rates to low ones. This has been the experience of countries going through a process of modernizing economic and social development.

The growth rate of population is a function of migration, birth rate and death rate in a country. The change in population caused by net migration as a proportion of total population of the country is almost insignificant and, therefore, can be easily ignored. That leaves us with birth rate and death rate. The difference between the birth rate and the death rate measures the growth rate of population. The high population growth rates are due to high birth rate and fast declining death rates due to better sanitation and health facilities. However, the capacities to absorb increasing manpower are much weaker. Furthermore, the process of economic development tends to be more capital intensive under modern technological conditions, and hence, has less potential of employment generation in the short run. Since the total size of the population is already large, there is urgency for speedy achievement of

demographic transition from high birth rate to low birth rate resulting in lower population growth.

### 4. FACTORS CONTROLLING POPULATION DENSITY

Three kinds of factors control human population density - geographic, socio-economic and demographic.

#### 4.1 Geographic Factors

These factors include climate, availability of natural resources and means of transportation.

##### 4.1.1 Climate

The regions with favourable climate have a higher population density. Arctic and Antarctic regions are uninhabited by humans because they are extremely cold and unfit for agriculture. The desert areas are less populated due to hot, dry climate not conducive to agriculture. The tropical lands are well populated because their warm, moist climate is suitable for human beings as well as for agriculture.

##### 4.1.2 Availability of Natural Resources

The natural resources that effect population density include water, soil, fuel and minerals.

##### 4.1.2.1 Water

Human settlements are located near sources of water. Many cities are on the banks of river and lakes.

##### 4.1.2.2 Soil

The soils of river valleys are very fertile and most suitable for farming. This is the reason for high population density in the Indo-Gangetic plains and Indus valley.

##### 4.1.2.3 Fuel and Minerals

Industrial cities have come up in localities where fuel and minerals have been found. Bokaro, Bhilai and Rourkela are some of such cities.

#### 4.2 Means Of Transport

Means of transport affect human population in two ways

- i. They bring about redistribution and dispersal of population. People from one state migrate temporarily or permanently to other states or foreign countries for work. This practice may results in changes in population density or lead to new settlements.
- ii. They enable people to live in localities far away from the sites of natural resources. The latter can be made available to human population anywhere by transport.

#### 4.3 Socioeconomic Factors

Urbanisation and acquisition of land for public well fare are important socio-economic factor which change the pattern of population distribution, these factors create serious problems for mankind.

4.3.1 Urbanisation

People migrate from rural areas to cities because of better employment prospectus, educational facilities and have services. Increasing urbanisation has created a number of problems like environment, pollution, sanitation and sewage disposal, traffic problems, housing problems, disease, and mental health etc.

4.3.2 Use of Land for Public Well Fare

Use of agriculture land for roads, rail lines, canals, industries, educational institution, hospitals, offices, and houses etc [7].

4.4 Demographic Factors

The birth and death rates are the major factor that determines the population growth of a country. The birth rate is regwated in human socio-economic factors such as status of women, family composition, age of women of marriage etc. The death rate depends on public hygiene, nutritional status, type of employment, medical facilities etc. the birth and death rates vary from region to region and from time to time, depending upon environmental factors.

World population is projected to grow from 6.1 billion in 2000 to 8.9 billion in 2050, increasing therefore by 47 per cent. The average annual population growth rate over this half-century will be 0.77 per cent, substantially lower than the 1.76 per cent average growth rate from 1950 to 2000. In addition, growth is projected to slow the further the projections go. For 2000-2005, the annual growth rate is estimated at 1.22 per cent; by 2045-2050, it will be only 0.33 per cent.

Table 1: Top 10 Countries having large Population

Rank	Country	Population
1	China	1,355,692,544
2	India	1,236,344,576
3	United States	3188,92,096
4	Indonesia	2536,09,648
5	Brazil	2026,56,784
6	Pakistan	1961,74,384
7	Nigeria	1771,55,760
8	Bangladesh	1662,80,704
9	Russia	1424,70,272
10	Japan	1271,03,392

(Source: CIA World Factbook - Unless otherwise noted, information in this page is accurate as of January 1, 2014)

5. GLOBAL SCENARIO OF POPULATION EXPLOTION

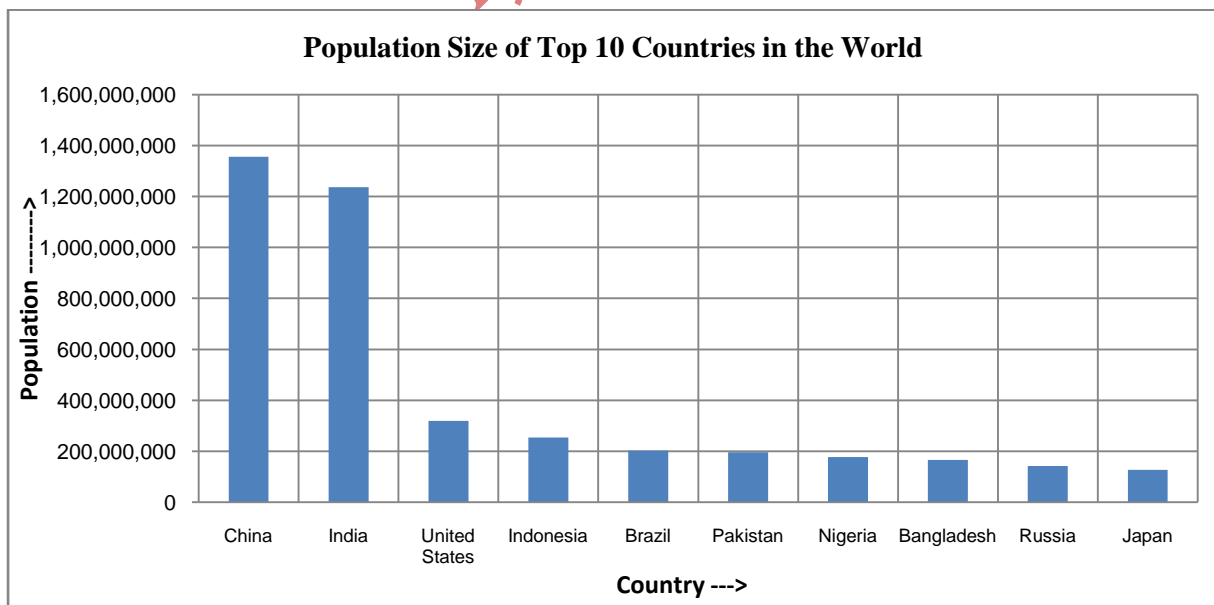


Fig 1: Country wise population

(Source: CIA World Factbook - Unless otherwise noted, information in this page is accurate as of January 1, 2014)

## 6. REPORT OF UNITED NATION ON THE GROWTH OF POPULATION

India is expected to surpass China to become the world's most populous nation by 2022, the United Nations said on July 29, 2015. China and India remain the two largest countries in the world, each with more than 1 billion people, representing 19 and 18 per cent of the world's population, respectively. "But by 2022, the population of India is expected to surpass that of China," said the report 'World Population Prospects: The 2015 Revision', released by the UN. Currently, among the ten largest countries in the world, one is in Africa (Nigeria), five are in Asia (Bangladesh, China, India, Indonesia, and Pakistan), two are in Latin America (Brazil and Mexico), one is in Northern America (USA), and one is in Europe (Russian Federation). Of these, Nigeria's population is growing the most rapidly. Consequently, the population of Nigeria is projected to surpass that of the US by about 2050. By 2050, six countries are expected to exceed 300 million: China, India, Indonesia, Nigeria, Pakistan, and the USA, the report said.

A significant ageing of the population in the next several decades is projected for most regions of the

world, starting with Europe where 34 per cent of the population is projected to be over 60 years old by 2050. In Latin America and the Caribbean and in Asia, the population will be transformed from having 11 per cent to 12 per cent of people aged over 60 years today to more than 25 per cent by 2050. Africa has the youngest age distribution of any major area, but it is also projected to age rapidly, with the population aged 60 years or over rising from five percent today to nine per cent by 2050. The current world population of 7.3 billion is expected to reach 8.5 billion by 2030, 9.7 billion in 2050 and 11.2 billion in 2100, the report said. "Understanding the demographic changes that are likely to unfold over the coming years, as well as the challenges and opportunities that they present for achieving sustainable development, is key to the design and implementation [6] of the new development agenda," said Wu Hongbo, UN Under-Secretary-General for Economic and Social Affairs[5]. Most of the projected increase in the world's population can be attributed to a short list of high-fertility countries, mainly in Africa, or countries with already large populations.

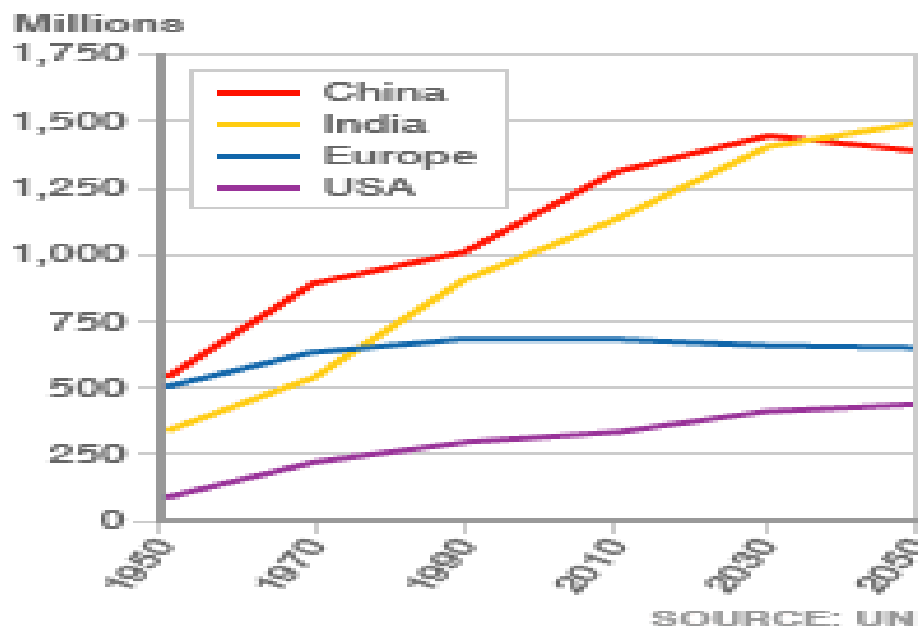


Fig 2: Population growth and Projections (Source: United Nations)

## 7. STATE WISE POPULATION OF INDIA

With a population of over 1.27 billion, India has witnessed a huge growth in its population in the last 50 years. According to estimates, India will become

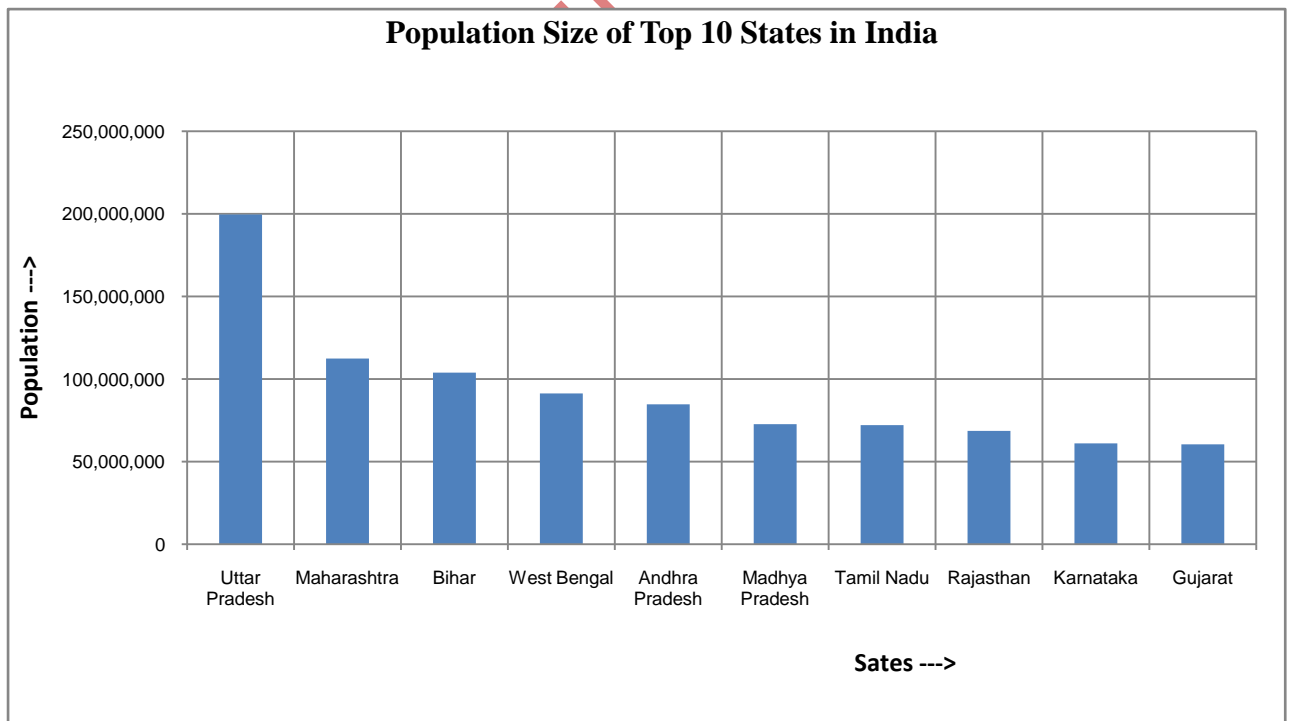
the most populated country in the world by 2030 leaving behind China. Population of some Indian states like Uttar Pradesh, Maharashtra and Bihar is more than many countries around the world. The states in India are very densely populated as compared to other places in the world, thus leading to danger of environment imbalances. Population growth rate of many highly populated states in India is 5% to 18% in a decade. This growth over the years brings an alarming sign for the whole nation as natural resources are limited in future. Government of India has taken several steps to check population growth in the states but with very little success. Nearly half of India's total population lives in five states of Uttar Pradesh, Maharashtra, Bihar, West Bengal and Andhra Pradesh [1]. The population in the states of India is further divided into districts, divisions, cities, towns and villages. According to Census of India, there are 641,000 inhabited villages in India. 72.2 percent of India's population lives in these villages which are spread throughout the country. Remaining 27.8% of population in India lives in 5,100 towns and 380 urban agglomerations. In the last 20 years [2], the country has witnessed a sharp rise in its urban population due to migration to

major cities. List of top states of India by Population is presented here:

**Table 2: State wise Population of India (Top 10 States)**

Rank	State	Population (2011 Census)	Density (per km <sup>2</sup> )	Sex ratio
01	Uttar Pradesh	199,581,477	828	908
02	Maharashtra	112,372,972	365	946
03	Bihar	103,804,637	1102	916
04	West Bengal	91,347,736	1029	947
05	Andhra Pradesh	84,665,533	308	992
06	Madhya Pradesh	72,597,565	236	930
07	Tamil Nadu	72,138,958	555	995
08	Rajasthan	68,621,012	201	926
09	Karnataka	61,130,704	319	968
10	Gujarat	60,383,628	308	918

(Source: 2011 Census, India)



**Fig 3: State wise population in India (Source: 2011 Census, India)**

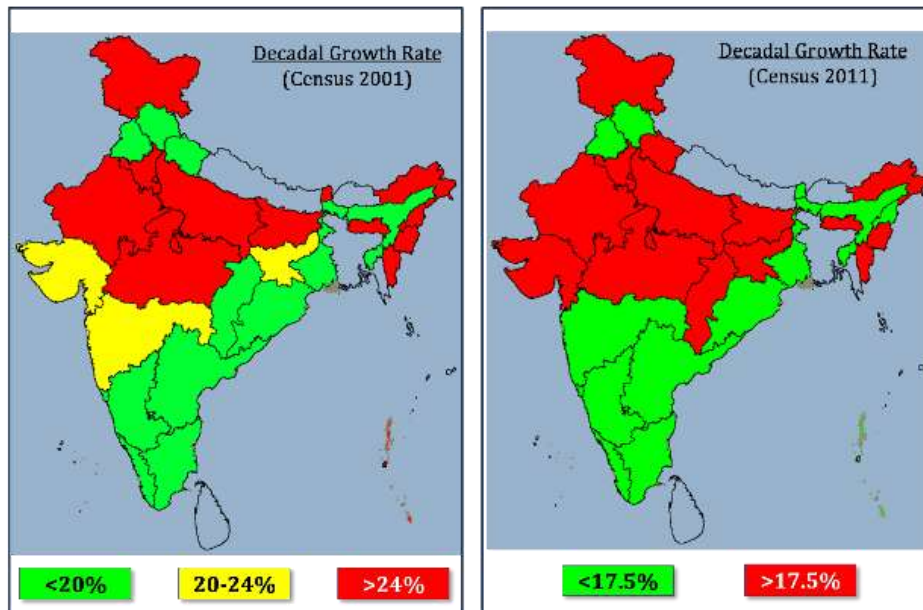


Fig 4: State wise decadal population growth in India (Source: 2011 Census, India)

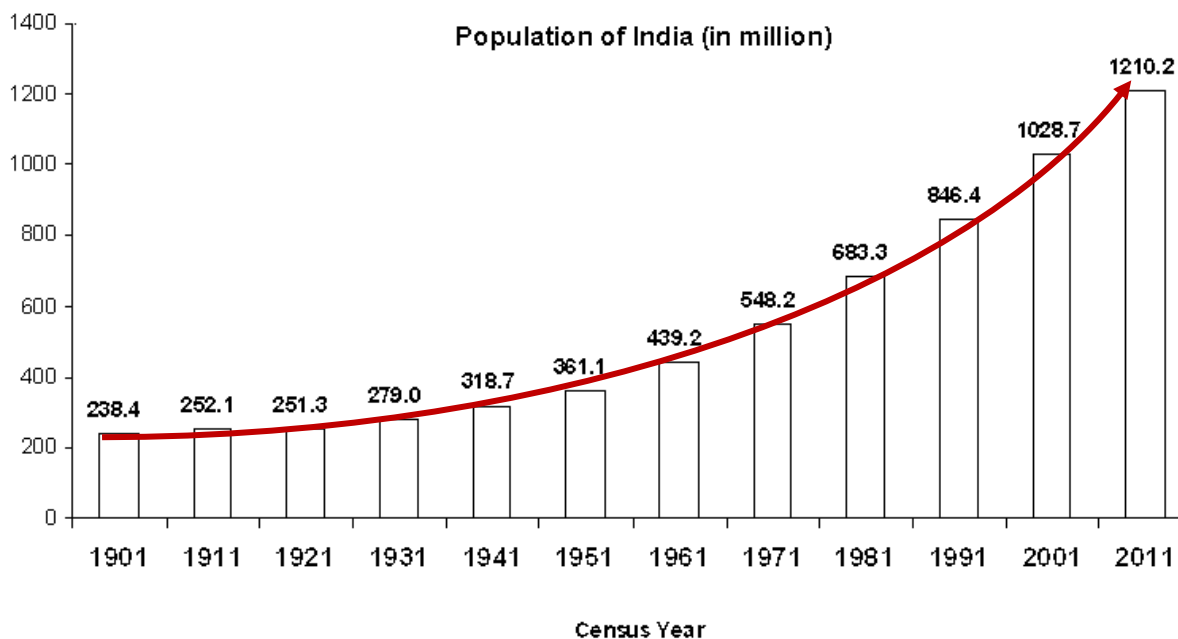


Fig 5: Year wise population growth of India (Source: 2011 Census, India)

## 8. EFFECT OF POPULATION EXPLOSION

During 2015-2050, half of the world's population growth is expected to be concentrated in nine countries: India, Nigeria, Pakistan, Democratic Republic of the Congo, Ethiopia, United Republic of Tanzania, the United States of America, Indonesia and Uganda, listed according to the size of their contribution to the total growth, the report said. Let

us list effects of the rapid population growth in India. They are:

### 8.1 Providing employment to growing population

This is so because in developing economies majority of the population is illiterate. The burden of school age population has already shown signs of becoming unbearable. The proportion of children in schools is increasing fast and, vast numbers are still not covered. The absolute number of illiterate persons

increases every year. This is only an indication of the wastage of human resources for want of appropriate development opportunities [7].

### **8.2 Problem of utilisation of manpower**

Better educated manpower aspires for occupations of greater prestige, which are opened up by the new development efforts. Because of its capital intensive nature, the ability, of the new economy for employment generation becomes restricted. Simultaneously, it renders many of the old occupations out of day and redundant. As a result, under-employment and unemployment, including unemployment of educated persons, increases. There is thus wastage of even developed human capital.

### **8.3 Over-strained infrastructure**

Facilities such as housing, transportation, health care, and education become inadequate. The worst symptoms of congestion in every aspect of living conditions are manifested in the urban areas. In countries such as India, a situation of "over urbanisation", prevails which puts unbearable strain on urban amenities. Overcrowded houses, slums and unsanitary localities, traffic congestion and crowded hospitals have become common features in the developing countries.

### **8.4 Pressure on land and other renewable natural resources**

Common properties such as forest and water are over-exploited. This results in deforestation and desertification with permanent damage to the renewable resources.

### **8.5 Increased cost of production**

Human ingenuity and technological advancement makes it possible to increase production of goods and services. But, it must be kept in mind that, the cost of production of the basic necessities of life, such as food, increases when the population is growing fast and worse lands are brought into cultivation with costly irrigation etc.

### **8.6 Inequitable distribution of income**

Both at the international and national levels income disparities increase. The increase in gross national product (GNP) is greatly reduced in per capita terms on account of the rapidly growing population. In the face of a rapidly growing population, the major concern of a developing country tends to be focused more on economic growth as such. Considerations of unequal distribution of income are pushed to background. So inequalities within the country tend to widen further.

## **9. GOVERNMENT PLANNING TO CURVE POPULATION EXPLOSION**

It may sound funny, but the law is that the poorer a country the greater is the growth rate of its population. India, caught in the morass of her age-old poverty, finds herself in the midst of a population explosion. The population that was less than 400 million in the forties was found to be about 120 billion in 2013. As a result of this even the six plans completed by now have so far failed to cope with the enormous problem of unemployment [3][4].

Whatever our plans might have achieved in some sixty-five years is found to be too little to eradicate poverty. More than seventy percent of Indians live in villages and most of them languish in their dark, dreary nooks; the fruits of our plans have not quite reached them. And having no other occupation their only pleasure lies in producing children. In the towns too the poorer sections always have bigger families, while the rich and well-off sections live comfortably with small families. The poor in India are ignorant and superstitious, and so they do not see the advantages of planned family. Many of them never think of going against the law of nature and the will of their God; so they never refrain from breeding children, though they know that they cannot even feed them and keep them away from the curse of poverty and ignorance. Perhaps the sickening monotony of living in their world of despair leads them to torment their women with a vengeance and seek as much pleasure as they can. These poor people do not have the education necessary for planning their present with a view to ensuring a better future. This is why while their hope wears off they leap in the dark and break their neck, making things grimmer for their world. The millions of famished, under-nourished and naked children everywhere in India show the chaos this country is in.

But whatever the poor may be driven to do, the government cannot ignore or shelve the problem of population explosion, for it is a rot and entire development of the country depends on how effectively it is stemmed. This awareness made our governments, both at the centre and in the states, to think about the adopt official programme to educate public opinion and reduce the birth rate so that the population can fit in well with the evolving pattern of developing economy [4].

The Family Planning as an official programme was launched with much fanfare in 1952. The

government is still trying to educate the people. All government agencies and institutions mobilized all their resources to attain the goal of planned families. The propaganda machinery was geared up with the help of public media. The people were reminded of the advantages of small families, of healthy and happy children and of the need for eradicating the age-old poverty. The parents were persuaded to go in for sterilization after the births of two children, for the contraceptive were not always found to be safe and fool-proof. Many parents, especially the educated, came forward to see things in the new light and were amenable to persuasion. But many others resisted, at places quite violently, and refused to see reason. The government was very serious about making the programme a success. The state governments also came forward to help the centre in its bid to achieve success. Cheap contraceptives were distributed in even the remotest villages, sex education was popularized, vasectomy operations were conducted and abortion was legalized [4].

But even then family planning has a lot more to achieve, for the population in India has already become about 120 billion and at this rate of growth it may very soon become 150 billion and then 200 billion and so on. As one of the poorest countries in the world India cannot survive this challenge and in face of such explosion all her plans would be an exercise in futility.

## 10. CONCLUSION

The rapid population growth in many third world countries and persistence of poverty has given rise to the view of over-population possibility. There is, therefore, a major move throughout the world to bring down the growth rate of population. Development experience of recent years shows that there is a long run trend towards slow growth of population in a country. This is secured by balance between birth and death rates. Before the commencement of modern economic development, countries were in the first stage of demographic transition. At that time countries had slow population growth because of a balance between high birth and death rates. But, as a result of economic development, developed countries have again attained slow growth in their population. Birth and death rates in these have become quite low. Such features have been noticed during the third stage of demographic transition. However, the balance between birth and death rates is upset during the

second phase of demographic transition because of the death rates declining faster than the birth rates.

The present day developed countries faced the problem of explosive increase in population which has been put under the second phase of demographic transition. It happened more easily because of congenial circumstances such as vast sparsely inhabited areas existing in those times. But today's developing countries are experiencing a much faster growth in their population under conditions different than those faced by the developed countries. Thus they are faced with huge problems of imparting education, employment, urban development and environmental degradation. The need to tackle these problems has led to the necessity a clearer understanding of the relationship between population and development.

The major problem faced by the developing countries is to bring down their birth rates, i.e. fertility. Therefore, understanding of the relationship between development and fertility becomes very significant. There are experts who think that unless fertility is first restricted, sustained economic development is not possible. At the other extreme there are others who assume that fertility is dependent upon economic development. This means that we should concentrate our efforts on development planning, which would, in turn, reduce fertility. Thus, it seems that the nature of the relationship between fertility and development is reciprocal. As the exact nature of this relationship is yet to be fully established, the proper course for a developing country would be to follow integrated policies in regard to both population and development.

## 11. ACKNOWLEDGEMENT

At first we would thank R&D cell of our Institute for the correspondences. We also thank the management of the Institute for their encouragement. We would like to thank Mr. Sudipta Biswas for Library support and Mrs. Bijaya Acharyya for helping us in collection of data and other facts.

## 12. REFERENCES

- [1]. Census of India (1991): Series-1, India, Paper 2 of 1991, Provisional Population Totals: Rural-Urban Distribution, Registrar General and Census Commissioner, India.



- [2]. Census of India (2001): Final Population Totals, Series 1: India, Registrar General and Census Commissioner, India.
- [3]. Chatterjee, B. (2002): Environmental Laws Implementation Problems and Perspectives, Deep and Deep Publication Pvt. Ltd., New Delhi.
- [4]. Ministry of Environment and Forest (2006): National Environmental Policy 2006, New Delhi: MoEF, Government of India.
- [5]. United Nations (2001): Population, Environment and Development: The Concise Report, New York
- [6]. United Nations (2001): World population prospects: the 2000 revision, highlights, ESA/P/WP.
- [7]. Brandon Carter and Kirsten Honmann, (1991-92), "Valuing Environmental Costs in India: The Economy Wide Impact of Environment Degradation", World Bank, mimeo.

IJournals