

POPULATION EXPLOSION AS A THREAT TO FOOD SECURITY IN INDIA

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Abstract: Population is the basic element of human geography. It is dynamic in nature. Due to dynamic character of population, it has been increasing at alarming rate day by day. On the other hand, food production is limited to meet people dietary needs as well as their food preferences. For this reason, the ever increasing rate of population leads to the development of food crisis. It deteriorates the economic development of any country. So, the present paper aims to analyze causes of rapid population growth of India and the impact of population explosion on food security. It is also an attempt to implement fruitful measures of food security by controlling population growth so that all people at all time have access to sufficient safe, nutritious food to maintain healthy life at affordable cost in rural and urban areas.

Keywords: Population Explosion, Food Security, Food Grain Production, Public Distribution System, Food Availability, The Indian National Food Security Act.

I. INTRODUCTION

Population refers to the numbers of people inhabiting in a particular area in a particular time. So, the number of people changes with the passage of time. The term population explosion indicates rapid growth of human population attended by ever shorter doubling times and accelerating rate of increase mainly, it is the rapid increase in the size of population caused by such factors as a decline in infant mortality or an increase in life expectancy.

The world Development Report, 1986 defined food security as a situation of access by all people at all times to enough food for an active healthy life. **The food and Agriculture Organization (FAO)** defined food security, 1986 as ensuring that all people at all time have both physical and economic access to basic food they need.

Economic Development is the positive interaction between population and resource. But, now a days population explosion is decreasing resource availability and creates a threat to food security. It results in chronic and widespread hunger amongst significant number of people.

II. POPULATION GROWTH OF INDIA

India is the second most populous country accounting for over 16% of the total population of the world. The demographic history of India during the twentieth century can be classified into four distinct phases:

1. Period of stagnant population (1901-1921): The population growth during this period can be turned more or less stagnant because high birth rate was counterbalanced by high death ratio. During this period, the population of India increased from 238 million to 251 million. The progressive growth ratio in 1921 over 1901 was only 5.75% but 1921 registered a negative growth rate of - 0.31% which happened only once throughout the demographic history of India due to epidemics of influenza, plague, cholera etc.

2. Period of Steady Growth (1921-51): During 1921-51, the population of India increased from 251 million to 361 million. This duration of 30years has this registered a growth of 47.3%. Therefore, this period is called the period of steady growth rate. The mortality rate started showing downward trend as a result of improvement in general health and sanitation condition.

3. Period of Rapid High Growth (1951- 1981): After 1951, there was a sleep fall in the mortality rate but the fertility remains stubbornly high. So, this period experienced very high rate of population growth and is referred to as the period of population explosion. The population of India increased from 361 million in 1961 to 683 million in 1981 recording on increase of 89.36% in a short span of thirty years.

4 .Period of high Growth rate with definite sign of slowing down (1981-2001): During 1981-2001, the population increased from 683 million to 1028 million. Although the rate of growth was very high but, it started decline after 1981. Average Annual exponential growth rate of 2.20% was recorded in 1981. It declined to 2.14% in 1991 and further to 1.95% in 2001.

III. PRESENT TREND

India's population is still increasing at alarming rate. The scale at which India's population is increasing is simply mind boggling. While total population of India was 683 million in 1981, it rose to 1210 million in 2011. According to one estimate, if the

Present trend continues, the population will be 1400 million in 2025 and in that year India may surpass the population of China achieving the first rank in the total population of world. At present, the growth rate of India's population is 17.64% (2011)

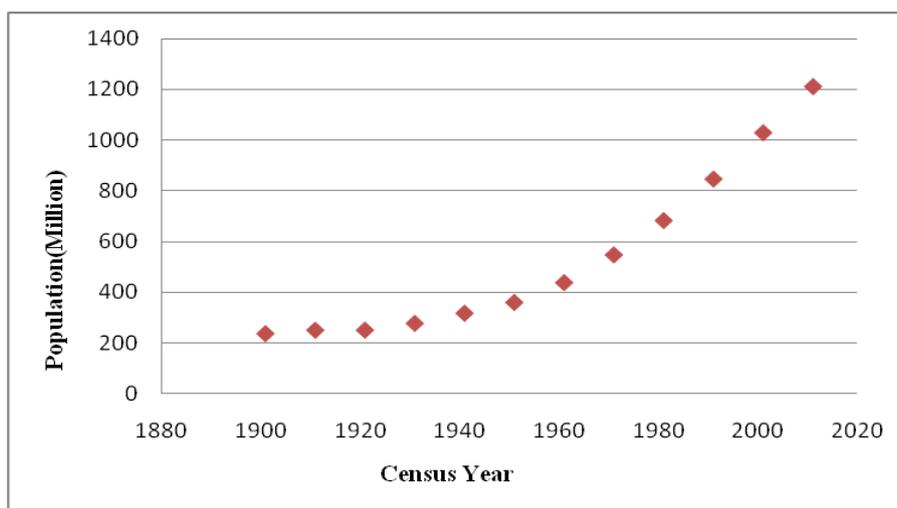


Fig.1 DECADAL GROWTH OF POPULATION OF INDIA

Source: Census of india, 2001

IV. CAUSES OF RAPID GROWTH OF POPULATION

Following are the main causes of rapid population growth:

- i) High birth rate, low death rate.
- ii) Low age of marriage- over 65% of the girl get married before 15years of age at which they are not ready for marriage socially and emotionally.
- iii) High illiteracy – The over all female literacy is low. Family planning has a direct link with female education, general states of women their fertility, infant mortality.
- iv) Religious attitude towards family planning.
- v) Joint family system and lack of responsibility of young couples.
- vi) High rate of immigration.
- vii) Poverty

V. THE DEVELOPMENT OF THE ISSUE OF POPULATION EXPLOSION AND FOOD SECURITY

The issue of population explosion and food security was raised for the first time by Robert Malthus in his theory on population growth. According to Malthus, Availability of food, nutrition, healthcare, education would ultimately increase per capita G.N.P. Hence, death rate will fall dramatically due to improved medical facilities while birth rate would increase significantly as people would be able to afford large families. He said that growth of food production is in Arithmetical progression (like 1,2,3,4,5,6.....) on the other hand, population increases in geometrical ratio (like 2,4,8,16.....) So, gap between food production and population will increase a man's tendency to press upon the means of subsistence as growth of food production cannot keep pace with population growth. As a result, population explosion creates threat to food security at present day.

BASES OF FOOD SECURITY: Food security is economic access of food along with food production and food availability. It is built on three pillars-

- a) **Food Availability:** It refers to the supply of food through production, distributions and exchange on consistent basis.
- b) **Food Access:** Having sufficient resources to obtain appropriate foods for a nutritious diet.
- c) **Food Use:** Appropriate use based on knowledge of basic nutrition and care as well as adequate water and sanitation. Food safety impacts food utilization.

PHASES OF FOOD SECURITY: Adequate food availability is essential for food security and this is dependent upon food production. How much is produced and how much is consumed helps us for identifying the deficit and surplus and also helps us to identify the type of food consumed or nutritional status.

Phase 1: Ancient India is quite sufficient in food grain production and that time, balanced nutritional diet was available to all citizens. Erratic production in food grain started after the commercialization of agriculture during the British period in India. During this period, famine is more common and food insecurity was at the higher level. So, after the independence, India faced severe food shortage.

Phase 2: The beginning of plan period 1950s to 1960s was characterized by severe imbalance which is demand of food and domestic supply. Food grain import increased in an about 20% of the domestic availability had to be imported. This situation was overcome during the period of green revolution and the late 1980s, country achieved self sufficiency in the availability of food grain and there was an improvement of insecurity. So, from chronic shortage, India achieved food security and self sufficiency in food grain production. Food Corporation of India has accumulated 70 million tons of food grains as buffer stock. But, inspite of this huge buffer stock, food insecurity prevails not from the supply side but from the demand side.

Phase 3: The third phase of food production in India is represented by the post economic reform of the 1990s. Though there was macro-economic civilization and structural adjustment, the effect of the reforms on food economy was negative. The growth rate of food grain output was 1.7% per annum where as population growth was 1.9% per annum. So, food production could not keep pace with population growth. The rate of inflation was high at 10% rise in prices of food grains and consequently rises in poverty and inequality. So, during this period, public intervention in food grain market assumed a great significance and the procurement of food grain by the govt increased from 5% to 15% in the post1990s.

VI. TREND OF FOOD GRAIN PRODUCTION

From a mere 50 million tons(mt) of annual food grain production in 1950s, India this year(2011-12) has produced a record 252 mt of food grain mainly attributed to the significant jump in rice and wheat output.

The average growth rate of food grain production from 1950-2011 was 3.2% per annum. Overall, wheat was the best performer with production increasing from mere 6.6 mt in 1950-51 to 90 mt during 2011-12, a huge jump. Wheat was followed by rice which had a production increased from 20mt to 102mt at present.

TABLE 1: India’s Food Grain (rice, wheat, coarse grain and pulses) Production Trend

Year	Food Production(mt)
1950-51	50.8
1960-61	82
1970-71	108.4
1980-81	129.6
1990-91	176.4
2000-01	196.8
2011-12	252

Source: Ministry of Agriculture, India

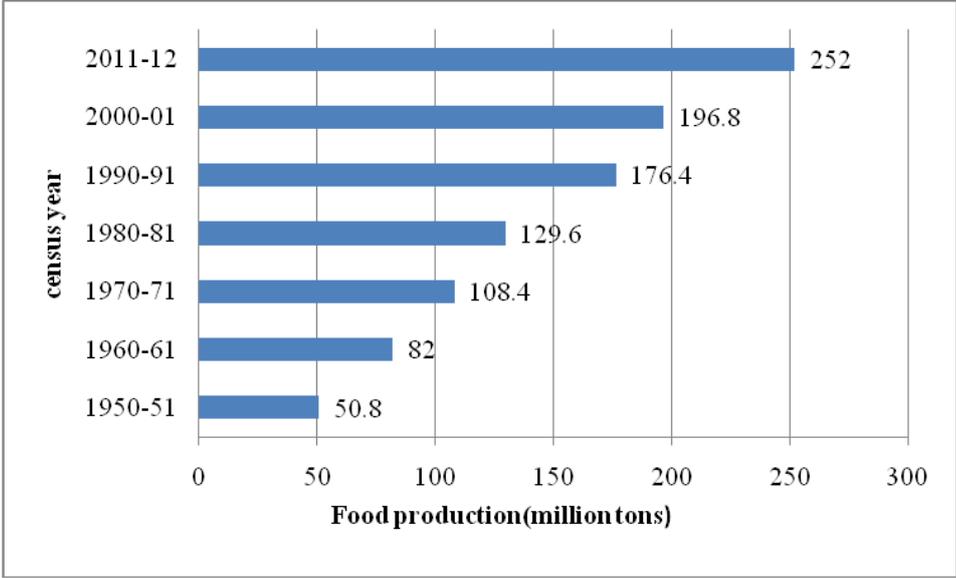


Fig.2 TREND OF FOOD GRAIN PRODUCTION

Source: Ministry of Agriculture, India



FOOD GRAIN PRODUCTION

TABLE 2: Per Capita Availability of Food Crops (Per day in Grams)

Year	Cereals	Pulses	Total
1950-51	334.2	60.7	394.9
1960-61	399.7	69	468.7
1970-71	414.6	51.2	465.8
1980-81	417.3	37.5	454.8
1990-91	468.5	41.6	510.1
2000-01	366.2	30	416.2
2011-12	390.9	31.5	422.4

Source: Food and Agricultural Organization

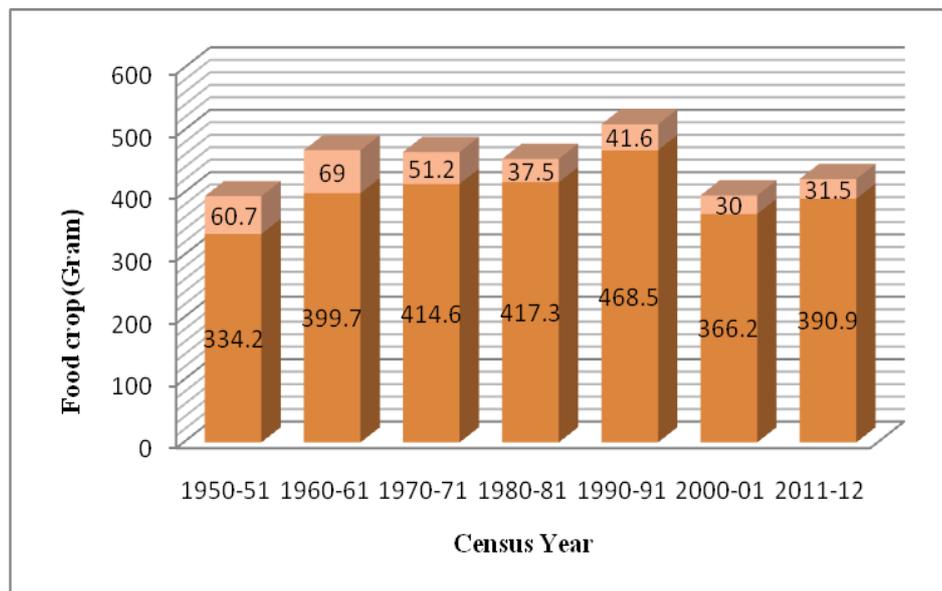


Fig.3 PER CAPITA AVAILABILITY OF FOOD CROPS (Per day in Grams)

Source: Food and Agricultural Organization

Total availability of crops depends on import of crops. But, Net import of cereals is decreasing day by day because, India become self sufficient for food grain production after green revolution. But still, there are several problems related to food security and food production in India because, increasing demand of food and increasing demand of land for development of activities lying spread of urban area.

VII. PUBLIC DISTRIBUTION SYSTEM AND MASSIVE PILFERAGE OF FOOD GRAIN

The Public Distribution system with its focus on distribution of food grain in urban scarcity areas had emanated from critical food shortage of 1960s. In a bid to ensure focus of PDS towards the poor and in an attempt to stop pilferage and diversion of food grains to the open market, a revamped public distribution system was launched in June 1992. The Targeted Public distribution system was introduced from June 1997 which envisaged subsidized distribution of food grain to poor families (B.P.L) and above poverty level (A.P.L) and poorest of the poor family identified as Antyodaya Anno Yojona (A.A.Y)

VIII. IMPACT OF POPULATION EXPLOSION ON FOOD SECURITY

In India, the population growth after independence exceeded the agriculture growth. In order to maintain a balance between food and population, the annual agriculture growth should be over 4.5% and over all economic growth over 7%. At present, the annual agriculture growth is much lower being only 2 percent. Under the impact of rapid growth of population, the average size of holding has decreased to less then 1.5 hectares. The per capita availability of food has been decreasing day by day.

International Journal of Novel Research in Humanity and Social Sciences

Vol. 2, Issue 4, pp: (56-62), Month: July - August 2015, Available at: www.noveltyjournals.com

Population Explosion is the most challenging problem, the country is facing. Today the food security system is near collapse. At against, the total requirement of 25 million tones of food grain for buffer stock and public distribution system together, the public stock over 60 million tones. A substantial share of this is not even properly stored and may not be suitable for human consumption. The PDS system has virtually collapsed. Recognizing that huge amount of food grains are getting diverted to private market. The Poor people can not afford the so-called economic price of food grain available in the public Distribution system. The Supreme Court asked government to computerize the entire PDS operations in the country so as to track the movement of subsidized food grains from granaries to individual ration card holders. Gradually, ration cards will be replaced by smart cards.

IX. FRUITFUL MEASURES

Food security is a complex sustainable development issue linked to health through malnutrition but also sustainable economic development .So, the population explosion and the food security problems need to be tackled by taking the following steps:-

- 1) Delay in the marriageable age – 21years for bride and 24 years for bride groom.
- 2) Implementation of strict two child policy.
- 3) Implementation of an efficient public distribution system.
- 4) Ensuring sustainable agriculture.
- 5) Diversification of agriculture.
- 6) Increasing domestic production to meet the growing needs of population and also, reduce under nutrition among the major section of population.
- 7) Promoting minimum support price procurement and storage of food item.
- 8) Check urban and industrial encroachment.
- 9) Reducing trade liberalization to maintain agriculture employment level.
- 10) Food Security system in any country should maintain a buffer stock to meet natural calamities which may result in temporary shortage of food grains.
- 11) National, international political actions seems to require the identification of simple deficit that can be the basis for setting of targets necessity the adaptation of single indicator for policy analysis.
- 12) Central Govt will be provided funds to the State in case of short supplies of food grain.

X. GOVT TAKEN SCHEME AND PROPOSED FOOD SECURITY LAW

1. **Child and Mother Welfare Scheme:** It is taken by 1960s and include over on milk product, pulses, sugar were given to pregnant women and children below the age of five year.
2. **The Indian National Food Security Act, 2013:** It was signed into law September 12, 2013 retroactive to July 5, 2013. The law aims to produce subsidized food grain to approximately two third of India's 1.2 billion people under the provision of the bill, beneficiaries are to be to purchase 5 Kilogram per eligible person per month of cereals at heavily subsidized prices, Rs-2 per kg for rice, Rs-3 for wheat and Rs-1 for coarse grain. In case of urban centres, out of the 50% of the total household to be covered under scheme, 28% would get priority status. This will expand at the base of TPDS to around 600 million people which is expected to create enormous pressure on the Govt's existing and insufficient food grain delivery system to economically weaker section of the population.

XI. CONCLUSION

The whole discussion reveals that population explosion is responsible for food crisis in case of India. India experiences ongoing food shortage and distribution problem. This results in chronic and widespread hunger amongst significant number of people. So, to check food crisis, population growth should be controlled and Public Distribution system is to be reformed in such a way so that all people at all time have access to sufficient safe, nutritious food to maintain healthy life. WTO member states to cultural agreement allow developing countries to re-evaluate and raise tariff on key product to

International Journal of Novel Research in Humanity and Social SciencesVol. 2, Issue 4, pp: (56-62), Month: July - August 2015, Available at: www.noveltyjournals.com

protect food security and employment. Planning commission of India had admitted that even though self sufficiency in food production has been achieved, the population still lacks access to balanced food. Though cereal production and average per capita intake of cereal have remained satisfactory, there has been a fall in per capita consumption of pulses. It is important not only to improve pulse production but also make them available at affordable cost. So, specific efforts have to be made to improve access to food grain and vegetable at affordable cost in rural and urban areas.

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