



Review Article

Human Population Concept in Present Scenario

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Abstract: Human population is a group of people living in a particular area at a given time. All the human beings of the world are connected biologically by the act of marriage and interbreeding. The annual population growth rate is 2.9% in Africa, which is the fastest growing region in the world. In North America it is 1.1%, in USSR is 0.5%, in Europe is 0.3%. It is believed that by 2030 China will be a population giant having 1.5 billion people and India will have 1.4 billion people.

Human population is the most powerful factor in bringing about much change in the environment because of cultural evolution. Some of his activities disturb the environment. He himself tries to conserve the environment. Human population seems to be the most powerful agent in regulating the environment. The overpopulation in cities creates an ecological imbalance which leads to severe environmental crisis and shortfall of resources and environmental disturbances. This is not likely for maintaining a sustainable environment.

Keywords: Environment, Socio-economic conditions, Human health, Poverty, Literacy

1. Introduction

The human population predicament is very complex. In order to appreciate it, we must understand current population growth and how they are related to economic conditions.

In 2010, the world population is over 6 billion and by the year 2012, this is increased to just over 7 billion people. About 90% of this increase was in poor and developing countries. Much of this increase is occurring in Africa, Asia and Latin America, which already have nearly 80 percent of the world population. It is estimated that the total population of Africa, Asia and Latin America will increase from the current 4.4 billion to over 7 billion by 2012 when they will contain 83 percent of the world population.

At present, the world population is increasing by 2 people/Sec; 200,000 people/day; 8 million per month and 96 million/yr (Table 1).

Asia, Africa and Latin America, these regions not only have the highest population growth rates but also have the lowest per capita in an index that measures the total good and services generated within a country. This large difference in economic well-being is reflected in dissimilarity in the standard of living (Table 2).

Table 1. Growth of human population.

Year	Population
1850	1 billion
1925	2 billion
1965	3 billion
1980	4 billion
1990	5 billion
2000	6.35 billion
2003	6.85 billion

Table 2. Population growth in the world (2002).

Nos.	Area or countries	% of total populations	Annual percent increase	Double populations
1.	North America	5.2	0.8	92
2.	Latin America	8.4	1.9	36
3.	Europe	9.3	0.3	382
4.	Former USSR	5.2	0.6	123
5.	Middle East and Asia	59.2	1.7	40
6.	Australia	0.5	1.2	60

History of man is only about 50000 years old. In the course of human history, there have been three major changes in the environment. The first explosion occurred about 20,000 years ago. It was brought about by the use of tools that allowed improvement in hunting and food gathering methods. The second revolution

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occurred about 6,000 years ago and was brought by improvement in farming and the third revolution was brought about 300 years ago and caused by an improvement in food production, industry and medicine.

2. Reasons for rising in human population

The human population growth rates are determined and caused by several reasons. These reasons are:

- (i) Biological,
- (ii) Sociological,
- (iii) Economical and,
- (iv) Political.

In biological reasons, the birth rate is the prime factor, which is determined by the number of women in the population and the age of women and fertility. High birth rate and slow death rate causes rise in population.

In sociological reason since the number of children desired by the parent is important in setting the population rate. In an orthodox family as well as in society there is need of more children while in a well-educated family and society follows all modern norms of family planning and so that restricted to a limited number of children while poor, uneducated and orthodox society increase human population.

In economical factor, as in developed countries, women often have access to jobs, they marry later, and couples make decisions about the number of children they will have based on the economic cost of raising children. Conversely, in the less-developed world, women marry earlier and children have economic additional workers, future caregivers for the parent and as status for either or both parents.

In political reasons, government laws and policies are responsible for population increase or decrease. Governments often encourage or discourage population growth in several ways. They can have stated policies, that describe goals and pass laws that penalize those who fail to meet the goals or rewards those meet the goals.

In other political reason, the immigration policies of a country also have a significant impact on the rate at which the population grows. For example, in the United States, approximately one-third of the population increase experienced each year in the result of immigration.

3. Role of environment in rise of human population

Everything that affects an organism during its lifetime is collectively known as its environment. Environment is a broad concept, which includes all the physical, biological and socio-economic conditions which organisms face during its lifetime.

The physical conditions of the environment include all mediums such as air, water and soil. Climatic factors

include all the factors such as light, temperature, humidity, precipitation, wind etc. while chemical factors the third ones include minerals, nutrients, gases and ion concentration. These all the physical conditions of the environment directly or indirectly play a crucial role in the development of the living world, including human beings. Any adverse conditions of these factors lead to the serious effects of human population, while their favorite conditions such as optimum conditions of light and temperature, proper humidity and saturated quantity of rainfall favour human growth directly as well as indirect ways.

Similarly, biological conditions and factors induced the rise of human population. Plants that carry on photosynthesis, animals that eat other organisms, bacteria and fungi that cause decay. Some bacteria, viruses and other parasitic organisms that cause diseases are all part of an organism's biotic environment. Above all, these organisms may induce or reduce the human population.

Favorable conditions increase the population and growth of viruses, bacteria and parasitic organisms, and they cause several diseases may be endemic or epidemic causes profound loss of human life and human population. For example, plague, malaria and other new diseases such as recently outbreak disease SARS pneumonia, this causes great loss of human life all over the world. While favourable conditions for all biotic factors are favoured on the rise of human population.

The third aspect of the environment is the socio-economic conditions of the environment. These conditions play an important role in the growth of human population.

If there is a better socio-economic condition such as better food supply, better rehabilitation, proper health conditions, better sanitary conditions, proper economic growth, these all favours the human population rise.

Sometimes lack of education, orthodox attitude about family planning as well as about life and society also favoured in the rise of human population.

Government laws and policies, encouragement or discouragement of family planning also plays an important role in rising population. Besides urbanization, immigration also the same factor, this helps in rising population all over the world.

4. Human population and physical environment

Physical environment which includes all three mediums viz. air, water, soil along with climate as well as chemical factors are responsible for human population.

As human population increases, it slowly but spontaneously starts interfering in all the natural ecosystem to fill up its current requirements and from

here starts the pollution in every part whether it is air, water or soil.

Continuous growth of human population destroys all the parameters of water, such as physical, chemical or biological. Due to the establishment of industries, urbanization, domestic purposes and agricultural wastes completely disturbed the freshwater as well as marine sources of water. Minamata disease in Japan by mercury and oil spill in Alaska is few major tragedies in fresh water as well as ocean respectively.

Similarly, air is also highly polluted due to increased human activities in various sectors, such as industries pollution, automobiles, and luxurious items such as air conditioners due to releasing CFCs which cause depletion of the ozone layer. Several other gases also increase in atmospheres such as CO₂, CO, SO₂ and others. These gases cause global warming as a result of this, the temperature of the earth increases, and several new problems arise, such as melting of ice of the glacier which causes an increase in ocean water level.

Higher concentration of SO₂ in the atmosphere causes acid rain, which damaged vegetation's as well as other living beings. CO₂ concentration in the air also leads to imbalance of the air system.

Fouling of fresh air due to which increases unwanted gases in the air. And this leads to several respiratory diseases in human such as asthma, and other respiratory diseases.

5. Impact of population on environment

No organism under natural conditions is divorced from all other living things. Generally a number of different species will exert a direct or indirect effect on a particular individual because the vital processes such as growth, nutrition and reproduction depend upon the co-action or interaction with other members within the species (intra-specific interactions) or between individuals of different species (or populations) of the community of an ecosystem (intra-specific interactions). So, many of these interaction acts are regulated the density, climatic fluctuations and even change number of individuals of the population.

5.1 Man and human population

Man is not an animal, but more than that. He tries to control his environment, but he is a social being and it is impossible to think him without society because he has to depend on or more basic needs the society. For example, reproduction, shelter, protection and many more. But increasing the human population also creates several drawbacks on human beings such as competition for resources, increase density so resources become decrease.

One of his basic needs for survivals existence and perpetuation of its race requires, reproduction, so he or she needs its counterpart similarly man depends on society risk for his life as well his property from there.

So, in aloofness, there is a threatening for his existence and that is why he has to depend on his society.

But increasing population also creates problems for his peaceful living existence. As population of man increases, greater amount of natural resources utilization increases. So, more pressure of human population on these resources and this demand pressure create several problems for human beings. For example, tremendous pressure of fresh water, food grains and many more amenities for living standard these overall activity increase competition, which is not any good symbol for man's existence as it develops certain psychological and physiological disturbance which is not anyway right for human civilization.

As we know that man is a social being and he not only depends upon his own species but also toothier species of plants, animals and certain microorganisms. And their presence or absence one or more ways effect his lifestyle.

5.2 Human population and flora

Increasing human population disturbs the ecological balance of nature. He cut the trees for his rehabilitation, cultivation new crops, industrialization, urbanization etc, and this leads to deforestation and extinction of many species of plants forever, but it is impossible for human beings to think about his existence without plants, man not only depends on the trees for fruits, woods, fuels, but also life maintaining O₂, without which he cannot think for short while, but this increasing population adversely affects floral life by disturbing their ecology, changing their environment in which they cannot floristically survive. Many plant species fail to produce seeds. The plants which generally grow on the sides of roads fail to develop their vegetation as well as reproduction phases partially or fully. So, human population also disturbs the ecology and environment of plants.

5.3 Human population and fauna

Not only man but also other fauna is seriously affected by increasing human population. Aquatic fauna gets altered due to changing physical and chemical conditions of their habitats. For changing the ecology and environment of the surrounding, the living (biotic) community suffered a lot. Human activities such as cutting of forest i.e. deforestation, for own benefits such as rehabilitation, industrial purpose, so the natural habitat of most of wildlife animals get disturbed and this leads to extinction of many animal species. To fill up increasing supply of human population, men started indiscriminate hunting of animals for food as well as various other purposes, such as poaching for meat, skin, fur, ivory, rhino horns, elephant for his teeth, even man supply many species to other parts of the world from their native place and from there they could not survive and dies.

Similarly, aquatic fauna also disturbed due to increasing pollution of water from various sources of development of human activities and this lead to changes in physical as well as chemical parameters of water ecosystem in which most of faunal communities die due to suffocation, pollution and food deficient conditions because of increasing microbial activities. The example is a Minamata disease in Japan, where not only man but also fishes, cats and dogs suffered a lot. Besides alternating their habitat by the increasing human population, food pressure consumes most of terrestrial and aquatic faunal species.

These increasing human activities basically in development sectors such as industry and energy sector cause profound effects on aquatic fauna. The industrial wastes finally run in river and then to large water body and this cause serious threat to aquatic fauna. Similarly, thermal power plants generally located on the riversides and this leads to rising water temperature in which local fauna could not survive. Sometimes radioactive decay of these plants causes lethal effects on their genetic constitution as well as lifespan.

Forest lands are continuously converted into agricultural and rehabilitation lands. This causes a disturbance of the natural habitat of many wildlife species and there is a serious threat to their likelihood and existence and this lead to extinction of many wildlife species.

Growing needs for food and supply of various dietary items are basically from seafood. This excessive consumption of sea faunal food causes a serious threat to aquatic fauna of sea and fresh water and this extinction of many aquatic faunal species which is not a good sign for future generations.

6. Human population and socio-economic conditions

Economic development is generally associated with the growth of urbanization. Some writers go so far as to assert that the acid test of development lies in the shift of population from the rural to the urban areas.

During the last few decades, an explosive growth of cities leading to a rapid metro-politicization has brought imbalance to the healthy man-land relationship over urban space and in the socio-economic and political system. The bliss of an urban ecosystem is being destroyed as a result of technological advancement and rapid industrialization. All metropolises in the third world now are overcrowded and they have come to a serious stage of physical and soil environmental degradation.

Traffic congestion, water, air and noise pollution and their hazardous effect on the health of human beings on the urban ecosystem are too serious in terms of the scale and intensity. The urban landlessness and poverty has increased many folds. The inflated urban land prices have thrown the poor and lower income

urban dwellers to live in slum and squatter settlements. This mushroom haphazard growth of slums and squatter settlement has been growing at a rate of 15 to 20% per annum in large cities.

6.1 Population and poverty

The most immediate problems, which the developing world is facing one certainly comes across the problem of poverty and hunger. The problem of poverty i.e. absolute poverty, from a holistic viewpoint comprises a list of variables of which the hunger is main. Thus, the problem of hunger cannot be isolated from that of poverty. In a way, both are mutually exclusive and hence interdependent.

In general, the 'geography of hunger and poverty' ventures to explore the relationship between man, environment and development. It is not merely a description or interpretation of the extent and magnitude of problems by geographical regions but is an inquiry, a study of causes, an attempt to find out why and how all these facts go to identify most in the world.

Population, poverty and environment are interrelated India, often described a rich land with poor people. The nexus between poverty and environmental degradation can hardly be overemphasized. This is a major issue and the biggest challenge. The vast majority of our people are directly dependent on the natural resources of the country for their basic needs of foods, fuel, shelter and fodder.

Rural-urban population below poverty line 1998-99.

Regions/country	Population below poverty line (%)	
	Urban	Rural
Sub Saharan Africa	25	62
East Asia and Oceania	23	17
South Asia	33	39
Latin America and Caribbean	18	49
Least developed countries	55	70
All developed countries	26	33

About 40% of our people are still below the poverty line. Environmental degradation has adversely affected the poor who depend upon the resources for their immediate surroundings.

Thus, the challenge of poverty and the challenge of environmental degradation are not two different challenges, but two facets of some challenge poverty and need are the greatest polluters. The relationship between poverty and population growth is better understood now. It is widely recognized that population growth is essentially a function of poverty. For the very poor, every child is an earner and helper; global concerns have little relevance for him.

6.2 Human health and environment

Throughout human evolution, the three causes of death have been famine, disease and war. The loss of life from the latter cause is almost negligible compared with the other two. In the past, famine has caused

devastating loss of life and even today, there are large areas of the world where it is still a notable cause of premature death. Modern scientific agricultural, better distribution and storage of surpluses could eradicate famine for all time.

Disease is somewhat difficult to define. If we mean any departure from the normal condition of the body, then we have to define this normal condition. There are few people who have abounding and persistent health throughout their whole lives. It is, however, customary to define disease as some malevolent change in the tissues of the body, through this definition excludes certain mental disorders where no tissue change is demonstrable.

The accent in medicine is mainly on cure though there are signs that in epidemic disease, at least, there is a considerable success in prevention by means of vaccines. A great deal of time and money is spent on research in chemotherapy, radiotherapy and dietetics.

With the advent of atomic bombs and the realization they may cause genetic damage, if not death, there worldwide concern over test nuclear explosion. It is certain that all types of ionizing radiation can cause chromosome and gene mutation as well as immediate damage such as radiation sickness. Apart from man-made sources of radiation such as X-rays and radioactive isotopes, we know that the human body is constantly exposed to radiation from cosmic rays and from natural radioactive substances. Of more importance is the effect of direct radiation of the gonads for diagnostic purposes and the production of radioactive strontium by hydrogen bomb tests. Strontium can replace calcium in bones and radioactive can have serious effects on Erythropoiesis and Leukopoiesis.

Besides above, there certain inherited dietary deficiency e.g. Scurvy and rickets. Infection by pathogenic organisms includes all the epidemic and endemic diseases, e.g. Poliomyelitis, Influenza, Amoebic dysentery, Malaria, Sleeping sickness, Hookworm disease, Schistosomiasis etc. causes great damage to human health and pose a serious threat to health conditions. Most health problems are due to disturbance of environmental conditions that prevailing there which increases the pace of health hazards.

6.3 Human population and malnutrition

The enormous increase in the population of human beings needs a greater amount of food grains, low level of productive efficiency due to inadequate and malnutrition. The nutrition influences economic development by raising the level of production, efficiency and intelligence of the community.

In India, it is estimated that about 56% of the urban population and about 49% of rural population suffer from inadequate nutrition. The level of malnutrition in all expenditure groups was higher in urban areas than in the rural areas. This is partly due to the relatively lower

prices of food particles and their relatively easy availability in the rural area.

Malnutrition has been defined as “a pathological state resulting from relative or absolute deficiency or excess of one or more essential nutrients.” It consists of four forms i.e. under-nutrition, over-nutrition, imbalance and specific deficiency malnutrition.

But increasing human population needs a proper supply of nutritious food products to save from the nutritional problems such as Marasmus, Kwashiorkor etc.

Actually, malnutrition is the byproduct of poverty. Ignorance, insufficient education, lack of knowledge regarding nutrition, but human population pressure also creates another factor that increases the gravity of the situation.

6.4 Population and literacy

The quality of the population can be judged from the life expectancy, the level of literacy and the level of technical training attained by the people of a country. Up to 1981, it was customary to exclude the children in the age group 0-4 and then calculate the rate of literacy. However, the census of 1991 has redefined the concept of literacy. It uses the term “literacy rate” related to population aged seven years and above.

But on a global scale, the illiteracy has remained a major problem. This illiteracy leads to several other problems related directly or indirectly to human environment.

On the national as well as international level the people start to think and eradicate the illiteracy from their areas. As we know that, the people who generally illiterate become a problem for society. They directly or indirectly suffered itself as well as this society. Generally, his living standard is not up to the mark. His thinking style is of the orthodox type.

Literacy rate in India

Year	Persons	Males	Females
1951	18.3	27.2	8.9
1961	28.3	40.4	15.3
1971	34.5	46.0	22.0
1981	43.5	56.5	29.5
1991	52.2	64.1	39.3
2000	65	72	58

Source: Census of India, 2000

The person generally lacks education, also suffered so many kinds of socio-economic problem, malnutrition, over-nutrition, poverty and other ones. Such a person becomes a problem to the society through his ideas, living conditions and problematic approach to societal issues.

Every year on international as well as national level, large amount of money invests to reduce the illiteracy from every corner of the world and make every individual better for combating the existing problems of his living effectively. So that he/she plays a

crucial role in various social as well as international matters of the global society.

7. Population growth and living standards of life

Population growth presents an obstacle to the rising of living standards. It acts as a barrier to capital accumulation and lack of capital retards the rate of productivity growth and in general, adds more to the numbers to be supported than to the levels of output.

In the context of Indian experience, Ansley Johnson Coale has pointed out that while the greater number in the labor force add to the total product, faster growth of the labor force implies a lower output per laborer then slows the growth. Population growth helps the process of development in certain ways. This is because of the relationship between population growth and economic development is intricate, complex and interacting.

A growing population within a limited geographical area usually puts heavy pressure in the existing factor endowment, especially natural resources of the community. Moreover, if the society has a limited capital, labor may have to be substituted for capital in which case of productive function until exhibit the laws of diminishing returns. This occurs if the variable factor is labor, while capital is fixed factor.

Diminishing returns may become a serious problem, if population growth is rapid and there occurs practically no or best a marginal increase in natural resources (land) or man-made resources (capital goods).

Countries have witnessed a fall in the death rate and consequent growth of population in today's economically advanced countries. The birth rate has also fallen. Economic development brought in its wake higher standards of living, better food, adequate clothing and shelters as also protection from natural disasters of drought and famine. There also occurred improvement in a medical facility and health care. All these led to a fall in infant mortality and healthier people and longer life expectancy. They were closely related to the economic progress that these countries were making.

Human population and environment and this cause various new problems and challenges to not only human but also other surrounding lives.

Socio-economic indicator of standard of living.

Country	Per capita daily intake			Population per	
	Fats (gms)	Protein (gms)	Calories	TV sets	Physician(2000)
India	38	55	2395	2.0	2440
China	46	64	2729	4.3	730
Japan	81	95	2921	2.1	610
Germany	147	101	3472	1.8	370
USA	154	110	3642	1.3	420
UK	142	94	3270	2.2	710

Source: statistical outline of India (1999-2000)

The term environment means in broader prospects all the surrounding in which organism come into contact. It includes all physical, chemical, biological and socio-economic aspects of life.

Physical aspects of environment, we include all the physical factors of the environment such as air, water, soil, temperature, light, humidity, precipitation etc. and their effects of living components of the environment including human population. Similarly, chemical aspects include various gases, minerals, nutrients etc. and in biological aspects various biotic communities such as man itself, faunal and floral communities etc.

When we study physical aspects of the environment and human population, then we try to know what effects of human population on these very factors of the physical environment. Consider first of all temperatures. Increase in human population, temperature increase due to various activities of human beings such as industrial and domestic purposes, increase different types of gases such as CO₂, CFCs and other ones.

8. Urbanization stress and health

Industrial stress expansion results in congestion. The pressure is building up on big cities in the developed world but the process is more complicated in third world countries. Particularly tropical ones as ours, where bacterial diseases flourish are in an epidemic form.

Congestion of cities leads primarily to air and water pollutions that are starting points for many diseases. Due to the congestion quality of air and is greatly affected, becoming unfit for human consumption. The unfortunate outcome of industrial growth has been the stress on urban areas due to the migration of rural population. Slum settlement arises in metropolitan cities due to acute shortage of housing. Due to influx of rural poor in urban areas in search of some means of subsistence livelihood, they are not able to find a dwelling. The dwelling has no civic facilities of water supply, drainage, roads, transport etc. that leads to many social evils and ill health.

Slums are not only overcrowded but the present environment of in-sanitation that breeds social complications, health and economic problems. According to a survey of the National Building Organization, there are about 25 million people in the slum settlement of which 40% live in metropolitan cities of Ahmadabad, Pune, Bombay, Nagpur, Madras, Calcutta, Lucknow, Kanpur, Delhi and Jaipur. About 67% of population in Calcutta and 45% in Bombay are slum dwellers.

Slum dwellers face environmental, social, economic, health, educational and cultural problems. The most prone elements are the children on account of poverty, malnutrition, poor drinking water and

unsanitary environment together with sickness and disease and lack of education.

Housing should not be taken as an isolated issue, but it is interested in many aspects. The unchecked growth of metropolitan and other big cities needs to be drastically cut down. There is a need to work out carrying capacity of urban area not only in term of physical space but also with reference to services, supplies (food, water etc.), transport and shelter etc. A scheme for Environment Improvement of Urban Slums (EIUS) was launched in 1972 that envisaged one tap per 150 people, one lavatory seat for 20.50 people.

9. Future prospects and rise in human population

As the human population continues to increase, the pressure of the necessities of life will be greater. The difference in standard of living between developed and less developed countries will remain great because most population increase will occur in less developed countries. The supplying of fuel and other resources is dwindling. The pressure for these resources will intensify as the industrial countries seek to maintain their current standard of living. The people in less developed countries will continue to seek more land to raise the crops needed to feed themselves unless major increase food production per hectare occurs.

In tropical areas, most people used the tropical forest as farmland often causes erosion or alternation of the soil, which no longer support either forest or crops. This could cause profound changes in the world ecosystem as a natural ecosystem converted into agricultural ecosystem.

It seems that as world population increase, the less developed areas will maintain their low standard of living. It is difficult to see their low standard of living

could get much lower since some of the people are already starving to death. Developed nations will probably see their lifestyle become less consumption-oriented what some view as current necessities become luxuries.

Many people who enjoy the freedom of mobility associated with the automobile will have their travel limited as public transportation replaces private transportation. Recreation may not involve expensive energy demanding machines but will emphasize such activities as hiking bicycling and riding. These changes will not come quickly unless some catastrophic political or economic forces cause major worldwide adjustments. Most likely, many changes will occur only as economic pressures affect families. As a result, we may be healthier, under less pressure and certainly more in balance with the rest of the world in the future.

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