

# Population Growth, Food Security, Biodiversity and Covid-19

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## ABSTRACT

India along with the world is facing problems caused by the strain of rising population. Rapid growth of population is not only causing deterioration in the environment and the exploitation of natural resources is reaching its limits, but the stress of urbanization, civil amenities and food security is also rising day by day. Though the condition of developed countries is also a matter of concern, but several developing countries of the third world are facing huge problems regarding food security as well as the crisis of malnourishment, lack of potable water and basic civil amenities. On 1st January 2020, about 300,000 children were born worldwide, out of which 67000 children were born only in India, which is more than 22% of the total children born on the given date. Over exploitation of natural resources worldwide has caused a threat to the environment and the biodiversity. Presently, 56 countries are facing malnourishment and lack of food. About 50 countries are facing serious issues related to the availability of potable water for their citizens. According to scientists, most of the South Asian countries including India shall face huge crisis due to rapid alterations in the climate. For India, it will be a special matter of concern because it owns only 2.42% of land and 4% of water resources while it is a home to about 18% of world's total population. In such conditions, to feed its huge population along with keeping pace with the safety of its biodiversity is a huge challenge for India. In the year 2020 the challenges caused by population growth in India were even intensified due to Covid-19. The present study deals with the issues of rising population, climate changes and food security. Some suggestions and solutions have also been provided for India which is fighting Covid-19 with its huge population.

**Key words** - Climate change, hunger index, malnutrition, natural resources.

## INTRODUCTION

The whole world including India is fighting the crisis of climate change and the problems caused due to global warming and population rise. Climatic changes are the cause of increasing level of green house gases in the environment, which is creating a number of environmental problems. All the countries of the world are feeling the impact of global warming and climate change since the last few decades. Carbon dioxide, methane, nitrous oxide and sulphur di oxide are among the vital gases of the green house gases group. Due to the rapid rise in population, the pressure on sectors like industries, energy, agriculture, transportation etc. is increasing globally day by day. This has led to the sudden increase of the emission of green house gases worldwide. Rapid rise in population has forced us towards the expansion of

industries, energy, housing and transport sectors. Loss of agricultural land, deforestation, water and air pollution etc. are among the major problems that are caused due to the industrial revolution and population explosion. India is the second most populated country in the world but it stands seventh when it comes to the total land area. India owns a meager 2.42% area of the total land of the world, but it is a home to more than 18% of the world's population. Thus, its huge population is the cause of a number of problems.

Environmental and biodiversity losses are among such major problems. Pressure of over exploitation of natural resources is increasing day by day. Rapid rate of urbanization, advance housing schemes, growth in industry, agriculture, means of transportation and communication, ever expanding roads and highways

are all because of ever increasing and uncontrolled population rise in India. The rate of exploitation of natural resources has multiplied several times the rate of population growth which has revealed the lack of natural resources to an extent. Demand of extra food, dwelling, means of transportation, health services and other vital items is increasing day by day because of the ever increasing population. Hence the exploitation of natural resources is also amplifying day by day. Agricultural lands are being used for construction of housing complexes. On the other hand, rise in deforestation has caused a huge loss to the natural abode of a number of animals and biodiversity is in danger.

A rise in population means alteration in the number of residents in a certain area in a certain period of time. This alteration can be positive as well as negative. For calculating the population growth, the population in the beginning year of the census is taken as a base and it is subtracted by the last year of the census and the growth or difference in population is calculated. If the population of the beginning year is less than that of the population of the final year, it is considered as a positive growth and vice versa. Negative growth in the population means fall in the number of residents in the area.

### **Negative impacts of population rise**

The ill effects of population rise can be understood by the fact that a masterplan named Vision-2028 that was prepared for New Delhi, the capital of India and included the standards for providing the city sufficient civil amenities, failed in 2018, about 10 years before the due period. This was because the postulation about the growth rate of the population of Delhi till 2028 has reached its peak in the very 2018. That means the planning of civil amenities and development in Delhi failed way before it was implemented. More or less, same is the condition of every city in India. All schemes of development and planning are ought to fail because of unprecedented increase in the population.

In China, there is a bus for every 1000 citizens, whereas in India not a single bus is available for 10000

citizens to travel. It is the rapid growth of population in India that has led to huge crowd everywhere. There are long queues of patients in government hospitals, several months long waiting lists for operations, ending of medicine stocks again and again are only a few examples of problems created by brisk rate of population growth in India. To add more, everyone in India must have seen the crowd in the general coaches of Indian railways and railway platforms.

A rise in the number of slums in cities and metropolitans is also just another effect of population rise. Highest number of malnourished children, highest number of illiterates, highest number of child laborers and the highest number of people living under the poverty line are all found in India. On scale of health, clean drinking water, sanitation and nourishment, India is behind several countries such as Sri Lanka, Nepal and even some African countries. All such crisis is caused due to the uncontrolled increase in population. Furthermore, various environmental problems are also caused because of population rise. Some major environmental problems are listed as under:

### **Over-exploitation of Natural Resources**

Due to uncontrolled increase in population, the pressure on natural resources has risen up to 10 times as compared to 1951. That means about 10 times more exploitation of natural resources. Hills, forests, rivers, ponds, lakes, cities, towns, villages, deserts, oceans, forest animals all are facing severe problems due to the rapid increase in human population. The ponds are speedily vanishing, lakes and forests shrinking, mountains cracking and forest life is endangered just because of rapid rise in human population.

### **Problems in Agriculture**

Due to continuous urbanization, human colonies are expanding day to day and housing complexes are being built on agricultural lands. Due to this, land development schemes of the government are not effective enough to help the farmers and residents. The land being developed under this scheme remains

always lesser than the land encroached by the urbanization schemes. To meet the rising demand of food crops, appropriate amplifications and alterations have to be made in various sections of farming. By the use of chemical fertilizers, the crop production of India has increased more than 20 times from 1951 to 2011. The quantity of pesticides used for prevention of crops has also risen about 60 times. Similarly, the usage of antifungal chemicals and insecticides has also increased multiplicably. Though there has been a very rapid increase in the total irrigated land, a vast area of agricultural land is dependent on monsoon in India. India grows 27% and 15% of the world's total rice and wheat production respectively. At 23%, it is the largest producer of pulses and it is also the largest milk producer of the world, but milk is not available to all its children.

#### **Migration of rural population towards cities**

In search of employment and civil amenities, the migration of rural population towards the cities is increasing day by day. Several rural and hilly regions in India are lacking access to proper education and health services and chances of employment. About 1000 villages in Uttarakhand are totally evacuated because villagers in huge numbers are migrating towards metropolitan cities and large towns in search of either higher education, employment or due to lack of proper and sufficient means of transportation facilities. In several villages, only very old persons have stayed there while all the young people have migrated somewhere else in search of education, employment or health services. Similar is the condition in several villages of Bihar, Jharkhand, Bundelkhand and eastern parts of Uttar Pradesh.

Due to abrupt migration of huge population from villages to cities and towns, a huge crowd is collected in a very small geographical region. This has a very bad impact on the environment of metropolitan cities and towns. Since it is not possible for every man to buy or borrow a home in a city, a number of slums grow in the middle of cities. This causes the pollution level to rise farther than acceptable levels.

Due to rapid rise in population, the pollution level in a

number of Indian cities such as Delhi, Kolkata, Mumbai, Kanpur, Pune, Agra, Saharanpur, Ghaziabad, Gurugram etc. has gone very high. Because of industrial effluents and domestic waste, several rivers such as Yamuna, Gomti etc. have turned into mere sewage carriers. If no control is being implemented on population rise, none of the world's city in the future will remain hospitable.

#### **Increase in transport**

Due to the continuous population rise, the number of vehicles or other means of transport is also increasing day by day. This is leading to a rise in noise pollution in our cities also. About 30 kilometers of highway and 100 kilometers of other roads are being built in India everyday. Accordingly, the widening of roads is also going on at a rapid rate. Due to this, millions of trees are cut down every year in India. It was only in the year 2018 that more than 2000 trees were cut down in Ghaziabad and Delhi for building or widening the roads. In Uttar Pradesh alone, more than 14000 trees were cut for widening of Grand Trunk Road.

#### **Shrinking forests and destruction of biodiversity**

As a result of human activities, not only the forests are shrinking day by day, the biodiversity is also being destroyed and the number of endangered species of plants and animals is also increasing everyday. The natural habitat of animals is being diminished continuously. The ponds and lakes are filled with garbage and huge colonies and flats are being developed and constructed. Due to this, the incidents of wild animals entering and attacking humans are also increasing as never before.

In Odisha, Jharkhand, Kerala and several states of the northeast, the incidents of humans being attacked by elephants and rhinoceroses are becoming headlines in the newspaper more often. Similarly, incidents of attacks by hippopotomas, crocodiles and tigers have also increased in Sundarbans, Madhya Pradesh and several north eastern states. Rural areas of Lucknow, Bengaluru, Bijnor, Meerut, Jaipur, Delhi, Ghaziabad, Unnao, Kanpur etc. are also facing very similar conditions where attacks on humans by leopards are becoming very common and are often published in

daily newspapers. The encroachment by humans into the natural habitat of animals is considered one of the main reasons behind such animal attacks on humans. The area of hunting and natural habitat of wild animals is shrinking rapidly. This is the main reason behind bear attacks on humans in forest areas of Chattisgarh.

Cutting down of trees is also responsible for shrinking of natural habitat of birds. There is a lack of natural places for birds to make their nests. It is also becoming hard for them to find food. This has resulted in sudden decline in the population of birds.

### **Population rise and food security**

At present, the human population worldwide has gone beyond 7.6 billion. Providing food and nutrition to such a huge population is a very tough task. A lot of scientific and technological progress along with the global efforts at government level and several food security programmes is also not capable of meeting this mountaineous task. According to World Food and Agriculture Organization, more than 800 million children are undernourished and suffer dwarfism in 2016. As per a global report on food crisis, about 120 million people worldwide were facing serious food crisis in the year 2017. Similarly, about 800 million people lack enough food for living a healthy and active life, while about 2 billion people worldwide is facing lack of nutrition in food items.

According to Global Hunger Index, an organization that keeps an eye on the nutrition of food available to the people in several countries of the world, hunger was found to be a serious crisis in 44 countries, while in 8 countries; the level of hunger was at very dodgy. Consequently, the UNO report on population presents a very perilous situation about the population rise across the world. According to this report, the world's total population will grow up to about 8.5 billion till 2030, which is supposed to grow up to 9.7 billion till 2050. And at this rate, the total population of the world is bound to leap to 11 billion. This means that to feed such a huge population in 2050, the crop production of the world will have to be increased by 60-70% as compared to it in 2010, which

is nearly an impossible task. Even if this goal is achieved, more than 3 billion people will remain undernourished.

### **Population growth and food security in India**

Talking about India, it is already known that according to 2011 census, the population of India was 1.25 billion which is supposed to be about 1.38 billion in the present year 2020. It is assumed that by the year 2050, India will surpass China in terms of its population which is supposed to reach 1.59 billion by that time. In such conditions, feeding its huge population will be a nearly impossible task for India which stands 103rd at World hunger scale. Meteorologists around the world are saying that the most affected region by climate changes in the world will be South Asia, which is also the most densely populated area on the globe. According to the scientists of Nature Climate Change, the total crop production of the world would decline by 10-15% till the year 2050. In Asia, the wheat and rice production is supposed to decline by 50-60% and 10-20% respectively till 2050, just because of climate change. This will surely amplify the food crisis of the world.

Another visage related to food crisis is that the objective set by United Nations, under which the number of people suffering from hunger and malnutrition was to be halved till 2015, has failed. The number of people suffering from food crisis is doubled by now, instead of being cut by half. Poverty is another face of hunger and malnutrition because of which a large part of the population lacks enough money to buy food items in order to fight hunger and malnutrition.

### **Population growth, social distancing and Corona**

India has become the third most Corona affected country in the world after USA and Brazil. Hence, the possibility of India becoming the most Corona affected country in the world in the coming 2-3 months cannot be denied.

Though lot of steps have been taken to contain Corona infection in India which is a country of dense population with limited resources, but all these efforts sometimes feel insufficient for a hugely

populated country like India.

In India, the first Corona positive case was reported in Kerala on 30th January 2020. Corona was not declared as a pandemic back then. The World Health Organization declared Corona a pandemic on 11th February 2020 and issued some instructions and guidelines to prevent Corona from spreading across the masses. Till then in India, the only Corona testing lab with the capacity of just 500 tests per day was situated in Pune. Due to huge and immediate steps taken by the Government of India, 1316 Corona testing labs were established in India till 30th July 2020. Out of these, 906 labs are government operated and the rest 410 are private. Within a small period of 4-5 months, establishment of Corona testing labs of standard quality in such a huge number is a world record. Consequently, everyday Corona testing capacity in India has risen to 5,15,000. Hence, India has become the second country in the world after USA to have such an enormous capacity for testing Corona infection. The Government of India had set a target to raise this capacity up to 1 million per day till 15th August. By achieving this target, India will become the largest country in the world in terms of Corona testing capacity. A matter of concern regarding this is that the number of Corona infected patients is also increasing day by day with the number of Corona testing capacity.

Similarly, on 11th February 2020, when the WHO declared Corona as a pandemic, India used to import or buy Personal Protective Cover or PPE Kit from other countries. Same was the condition with a number of items such as masks, surgical gloves, ventilators, sanitizer etc. which were imported from other countries.

Within a short span of 4-5 months, India has become not only self-reliant in terms of producing PPE Kits, masks, surgical gloves and caps, sanitizer, but is now an exporter of all these items in huge quantities. India has become the 2nd largest PPE kit producer in the world. India has successfully conducted the world's largest food security programme by providing food grains to more than 800 million people during the

Covid-19 crisis. This has brought India from 103 to 94th place on the Global Hunger Index in the world.

Similarly, the Indian manufacturers started manufacturing the ventilators within the short span of time. Today, ventilators for all Corona infected patients are available in sufficient numbers. Along with meeting its own demand by producing cheaper ventilators and PPE kits, India is also exporting them to several other countries. In the beginning phase, there were no sufficient beds for Corona patients, but today there are 1 million beds reserved only for Corona infected people. Till 31st July 2020, there were about 1.9 million corona patients in India, out of which about 1.2 million people have recovered. Though, even after such huge efforts, some shortcomings are seen which are putting a question mark on the steps taken by the Government of India. This means that sufficient steps have not been taken by the authorities to prevent Corona infection from spreading. Contrarily, this is a fact that the entire population of most corona affected country USA is only 300 million and the second most affected country Brazil is 310 million. The total population of ten most corona affected countries America, Brazil, Russia, South Africa, Italy, Spain, England, Germany, Iran, France is lesser than the total population of India only, while the total land area of all these countries is 20 times to that of India.

Since it is a perception that several countries like China, Iran and Pakistan have not revealed correct data about the spread of Corona cases, the information related to these countries are not considerable. The population density of India is more than all of these countries, and this is the main cause behind the reason why social distancing could not be maintained in India as it should be.

### **Conclusion**

According to an assumption, India will surpass China in terms of high population by 2050, only to become the most populated nation in the world and a home to 1.6 billion people. Thus, to meet the demands of food, shelter, drinking water and health services for a huge population will be next to impossible for a

comparatively small country like India. It is a well known fact that the quality of people is more crucial for the development and progress of a country rather than the number of people living there. These quality standards include literacy, nutrition, civil amenities such as services related to health, sanitation, drinking water etc. India is far behind than the developed countries in all these scales.

Preserving its nature and nature gifted wildlife, birds and plants and forests will be essential for India along with holding the pressure of ever increasing population.

Hence, hunger and malnutrition is going to be a huge problem for India and the world that is going to be tougher and tougher with time passing by, because of the ever increasing population and other socio-economic problems.

According to a research conducted by IIT Guwahati, About two third area of India will be affected by climate change. Rising temperature, random rains, decline in the crop quality, loss in crop production, loss in ecological system, heavy rains etc. are some of the ill effects of such climate change.

Population growth around the world, increasing urbanization, climate change and decline in ecology is mainly responsible for all these problems. In fact, all the issues related to climate change and food security are connected to the increasing pressure of population growth. Thus, population control, environment friendly development, proper usage of natural resources and their conservation are the main tools that can make a balance between population growth, food security and environment conservation. For a better management during Corona crisis, population control is very important.

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