



# Natural and Human Impacts of Overpopulation on the Economy

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**Abstract:** Overpopulation is an immensely dangerous problem that does not affect only individual countries but worldwide. It has many causes such as immigration; early marriages, poor medical access, and education are the main reasons to be indicated. While it has many reasons why the earth faces overcrowded, overpopulation's effects are considered a perilous crisis more than itself. In the past, researchers have explored how to stop this rising problem even though; they have tried several ways from mass sterilization to awarding families with no child. None of these approaches worked instead, people tend to have more children and take this dangerous risk. Therefore, depletion of natural resources, rise in pollution, epidemics, and other diseases are the main consequences of overpopulation which this literature review has discussed. Even though scientists and nature activists have argued about the effects of overcrowding on the earth, humankind, and health, there is no right solution taken by us: humans as a creator of this crisis. Furthermore, this research will concentrate on the possible effects of overpopulation on the earth, health, and human kind. Plus, it suggests some possible solutions. Significantly, it illustrates how overpopulation will impact natural resources and human health.

**Keywords:** Overpopulation, Dangerous Problem, Causes, Growth Rate, Pollution Effects

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## 1. Introduction

Overpopulation is one of the worldwide serious problems. For sure, Overpopulation is not the only problem on the earth, yet it has been the fountain of other problems. From the very beginning, scientists introduced the concept of overpopulation. Meanwhile, they have been concerned about its consequences as well as even they had invented solutions, birth control pills for instance. From prehistory, the concept of overpopulation was introduced and scientists predicted several of its cause and effect. For controlling the population through eugenics, Scientists invented the birth control pill.[1] Furthermore, after several types of research, scientists have indicated that immigration and early marriages as the causes of overcrowding. Due to this, they had many suggestions regarding controlling the population such as late marriages, inventing the control of birth pills, mass sterilization,

awarding families with no child, and punishing the family with more than two children. As can be seen, overpopulation has been seen as a serious and perilous crisis during different periods of time. In addition, Since the Earth has restricted space with delimited resources; population growth will lead to miserable risks. Some of the major consequences of overpopulation are depletion of natural resources, rise in pollution, and epidemics/diseases. While most people are concerned about this rising problem, yet without taking any right solution.

To begin with, as the population grows, the demand for using fossil fuel and forest resources will increase. Accordingly, air pollution increases with the use of fossil fuels and deforestation. This is because, with overpopulation, the need for food production, and the use of diesel, fuel, and gases (in cars) would increase. [2] illustrates this process when he declares: To be fair, the Summary for Policy makers make clear that increased agricultural demands are a big part

of the problem, and even occasionally note that population growth adds to the problem of increased demand. Here is an example, from section A6: The level of risk posed by climate change depends both on the level of warming and on how population, consumption, production, technological development, and land management patterns solve. Pathways with higher demand for food, feed, and water, more resource-intensive consumption and production, and more limited technological improvements in agriculture yields result in higher risks from water scarcity in dry lands, land degradation, and food insecurity. Yet increasing demand is never dealt with fundamentally way. Now here does the report say, straight forwardly, that our agricultural demands must be limited if we hope to avoid human hunger and mass species extinction in the future. At the same time, the more fossil fuels are used, the more carbon and greenhouse are released into the air which causes global warming. Moreover, there lease of greenhouse gas will lead to climate change, which affects weather patterns, water recourses, and the survival of animals, and plants many depend on as food sources. In [3] Cairolí noted that, when fossil fuels are burned to generate power, carbon dioxide is released. This greenhouse gas traps heat in the atmosphere and contributes to climate change, a process that affects weather patterns, water resources, and the survival of animals and plants many depend on as food sources. Several industrial processes release harmful chemicals into the air and water as well. Overall, it may be said that overpopulation will expand the demand for using gases, and fuels in factories and cars which increases air pollution, and will affect human health.

Furthermore, population growth means more people consuming recourses, so with a large population, natural resources decrease, and it leads to international hunger. As a study states that In 1989 Cornell University sociologists Frederick Buttel and Laura Reynolds published a careful study of population growth, food consumption, and other variables in ninety-three third world countries. Their statistical analysis found no evidence that rapid population growth causes hunger. What they did find was that the populations of poorer countries, and those countries where the poorest 20 percent of the population earned a smaller percentage of a nation's total income, had less to eat. In other words, poverty and inequality cause hunger [4]. In addition, recent research has shown that minerals, Gasoline, copper, and zinc production will end in the next 20 years. Overconsumption of Natural Resources, For example, minerals such as Gasoline, Copper, and Zinc production are estimated to decline in the next 20 years. Plus, oil mining continues to rise due to the upsurge in the number of petroleum engines, there by magnifying its depletion. We have reached a point where these resources are nearing a point of depletion or environmental catastrophe-if they are continued to be used. This is an ironic truth of resource depletion, as the resources that once allowed us to prosper may well lead to our demise [5]. The continuously growing population needs more resources to feed but in recent years more people suffering from hunger due to a lack of

coordination between development progress and rapid population growth. Consequently, the annihilation of a large number of people due to poverty will be one of the unfortunate impacts of overpopulation on earth.

## 2. Literature Review

Tonight, nearly 800 million people will go to bed not knowing where they will get their next meal [6]. Moreover, overpopulation is a door opener for contiguous and pandemic diseases. Indeed, health hazards related to population growth include water and food contamination, air pollution, and natural disasters. [7] Has claimed, having a big population can lead to new viral diseases because the unhygienic practices of mankind will have ripple effects. Due to rapid population growth, disease-carrying organisms can diffuse and spread faster in overpopulated areas. Some of these are viral [8]. Accordingly, diseases like; Malaria, skin Cancer (caused by air pollution), Tuberculosis, bronchitis, and diphtheria are transmitted through overpopulation. The same study from Cagudo has stated how these diseases will be caused due to overpopulation when he noted: Diseases that May Spread Due to Overpopulation are: Cholera: Cholera is an infectious and often fatal bacterial disease of the small intestine. Cholera is typically contracted from infected water supplies and causes severe vomiting and diarrhea. H-fever: Viral hemorrhagic fevers (VHFs) are a diverse group of animal and human illnesses in which fever and hemorrhage are caused by a viral infection. Typhoid fever: Typhoid fever is a serious disease that spreads due to contaminated food and water. Symptoms of typhoid include lasting high fevers, weakness, stomach pains, headache, and loss of appetite. The Flu: Influenza, commonly known as the flu, is an extremely contagious respiratory illness caused by the influenza A or B viruses. The flu frequently appears in winter [9]. Hence, the increase of the human population on earth has caused; the extinction of many human beings and other species, now that it is due to various diseases or international poverty.

America is a continent of 35 countries with a 964,920,000 population. It has been known as a third-populous continent. The most populated country in America is the United States with 32.41, Brazil with 20.82, Mexico with 12.32, and Colombia with a 4.99 population. America is a populous continent since developed countries have given a rise in population not just through births but through living for a long time. The improved medical treatments, on the other hand, save lives every day which shows the relationship between development and the rising population. As [10] has noted, the primary (and perhaps most obvious) cause of population growth is an imbalance between births and deaths. The infant mortality rate has decreased globally, with 4.1 million infant deaths in 2017 compared to 8.8 million in 1990, according to the World Health Organization (WHO). This is welcome public health news, of course. At the same time, lifespans are increasing around the world. Those of us who are alive today will likely live much longer than most of our ancestors. Global average life expectancy has more than doubled since 1900,

thanks to advancements in medicine, technology, and general hygiene. Falling mortality rates are certainly nothing to complain about either, but widespread longevity does contribute to the mathematics of increasing population numbers.

Moreover, the natural resources are going to be depleted so far. [11] has claimed that every individual has an equal right of utilizing natural resources however; as the population is approaching 8 billion it is hard. Even if everyone uses the low material standard of living, the earth going to get to its ecological breaking point. Likewise, the average person consumes over 50%, as well as the average person, consumes in the United States five times more which is above the sustainable level. But if we go through it deeply, overpopulation will cause it.

In [12] Cairoli noted that when fossil fuels are burned to generate power, carbon dioxide is released. This greenhouse gas traps heat in the atmosphere and contributes to climate change, a process that affects weather patterns, water resources, and the survival of animals and plants many depend on as food sources.

Several industrial processes release harmful chemicals into the air and water as well. On the other hand, urbanization as an effect of overpopulation is more commonly a big problem. South America now is one of the most urbanized regions in the world, following the industrially advanced areas. Although the rate of growth in larger cities has decreased since 1950, the urban population has continued to be concentrated in the larger districts: a large proportion of the urban, and in some cases of the total, the population lives in a single urban center. That situation prevails in Uruguay and Argentina [13]. Therefore, the effects of overcrowding on America are environmental threats, diminished natural resources, and urbanization.

### 3. Methodology

This study employed quantitative and comparative data to examine the consequences of overpopulation on nature, earth, health, and human survival. I use these methodologies since I believe it would verify the exact answers to my questions. Behind every question I set, there is logic of analysis to figure out the aim of every single word. Likewise, I wanted to be careful about this research as far as I wanted to know the reality of people's beliefs about overpopulation and discover the reason why humans are reckless about this crisis even if they are concerned about why they don't take any right action to solve this problem. Therefore, I would consider every question observing the feelings behind every answer plus my findings. Below are the 10 questions:

- 1) What is overpopulation?
- 2) What are overpopulation's effects on nature?
- 3) Do immigration affect nature?
- 4) What are greenhouse gases?
- 5) How do greenhouse gases affect nature?
- 6) Does Ozon layers can destroy nature?
- 7) What do you think about natural disasters, could they be

a nature destruction factor?

- 8) Is global warming the reason for the destruction of nature?
- 9) Do seismic waves destroy our nature?
- 10) What do you think about food and water scarcity, can it be another factor for nature destruction?

Africa is the second most populous continent with 1,408,173,244 populations. The most populous countries located in Africa are Nigeria with 2.58 %, Ethiopia with 2.57 %, Egypt with 1.94 %, and DR Congo with 3.19 % population. Africa is one of the continents whose countries' economies are growing quickly. As the economy is improving in this continent and escaping extreme poverty. On the other hand, as the economy grows, the population is growing in several countries in Africa. The issue of developing populations in Africa is environmental threats and natural resources. JJ Hidore in his research paper about the Population explosion in Africa has noted that A serious problem associated with the population explosion in Africa is the widespread degradation of vegetation and soils. Various factors such as climate, animal overgrazing, over-cultivation, fires, and soil erosion contribute to the social and economic impact in some areas. An increase in droughts due to a lack of precipitation has damaged grasslands. [14].

In addition, increased animal population due to animal disease control increased water supply, and social custom of measuring wealth in terms of herd size cause near wastelands from overgrazing. Also, over-cultivation of commercial crops due to an increasing population has accelerated soil erosion by allowing shorter fallow periods, which causes lower crop yields and soil deterioration. Firing woodlands and grasslands to suppress new woody growth is damaging soil as well as encouraging the growth of coarse grasses that have little value for grazing animals. The barren land due to firing causes soil erosion both by water and wind; the total estimated drift of dust from western Africa is 60 million tons/year. These conditions indicate that deterioration will continue resulting in lower carrying capacities and lower productivity from cultivated land. (Hidro, 1978, P, 1). In addition, as it has severally mentioned that development is the main cause of overpopulation in every continent, yet Africa has benefited from overpopulation. As development causes overpopulation, it increases the quality of life as well. One cause of overpopulation is actually positive for Africa as a whole. One of the major causes of population increase is actually increased quality of life.

More children surviving into adulthood and healthier adults have lowered the death rate in several African countries. [15].

In contrast, a brief note from the organization of African Unity (OAU) and Economic Commission for Africa (ECA) has noted, In recent years an increasing number of African people are being added every year this was not always the case these population increases are unprecedented in history. But the problem of population is not simply a problem of numbers it is a problem of human welfare and development

Rapid population growth can have serious consequences for the well-being of humanity worldwide. If development entails the improvement in people's level of living - their incomes, health, education, and general well-being - and if it also encompasses their self-esteem, respect dignity, and freedom of choice then the really important question about population growth is how does the contemporary population situation in many African countries contribute to or detract from their chances of realizing the goals of development, not only for the current generation but also for the future generations? Conversely, how does development affect population growth? (ECA & OAU, 1194).

This note has indicated that if overpopulation is a positive point for improving the quality of living in Africa, will Africa be able to control the overcrowding and provide facilities as now in the future? As the population grows the needs for food, housing, job, and healthcare will increase. Moreover, as a consequence of overpopulation, Africa is urbanizing quickly will be indicated. [16] Has claimed that around 80 percent of Africa's massive population growth will occur in cities. This is in addition to the massive rush to urbanization that has already occurred in Africa. While Africa may not be lacking land, its population is crowded into cities. In 2010, 90 percent of the continent's population was living on only 21 percent of the land. (Junker, 2020, p. 6). It means that Africa will encounter health problems resulting from urbanization including poor nutrition, pollution-related health conditions, communicable diseases, poor sanitation, housing conditions, and related health conditions. Hence, health, housing, food, and environmental threats are the consequences of overpopulation in Africa.

## 4. Results

I have conducted research on random ten persons, and what I have found from the responses is that everyone looks at overpopulation as a serious crisis, and they believe that overcrowding impresses nature. Furthermore, since nature can be affected by the rise in population, the main dangerous point is that climate change is caused by releasing greenhouse gases. In a big image, we can see that all of these problems are caused by overpopulation, and mainly it is the reason for human extinction. Likewise, the data I have collected shows that climate change, polluted environment, diminishing of opportunity, human death by poverty, and human extinction would be the massive crisis caused by overpopulation. The world's development, on the other hand, gives a rise in population. Therefore, the suggested solution I have found is to prevent the possible consequences by controlling the population as well as by planning for one or two children per family.

Tables 1 and 2 show the result of the data obtained from the UN World population prospect (2022) showing a significant increase in the overall global population growth rate from 1950 to 2022. Six countries are compared to ascertain the rate of population growth over a period of time. The summary of the data shows an average growth rate of

2.457 in Nigeria. This is the highest growth rate among the six countries compared. It is followed by Egypt, Mexico, India, Indonesia, and the USA, with average growth rates of 2.298, 2.122, 1.908, 1.905, and 1.137 respectively.

In table 1, the mean, median, quartiles, and maximum of the population rate for the three countries: Nigeria, India, and the USA are displayed. The first quartile population growth rate in Nigeria is 2.190. While that of India and USA are 1.620 and 0.960 respectively. It shows that the average population growth rate in Nigeria from 1968 till 1986 is higher than in India and USA. As well as it can be seen that the median population growth rate in India is 2.190 and 1.080 in the USA. In contrast, in Nigeria, the median population rate is 2.560 which indicates that Nigeria's population growth rate is high than India and USA. Hence, till the max population growth rate, the average population growth rate is high in Nigeria. It points out that from 1950 till 2022 Nigeria has the highest population growth rate than India and USA.

Table 2 has shown the mean, median, quartiles, and maximum population rates for Mexico, Indonesia, and Egypt. As you can see, the first quartile population growth rate in Mexico is 1.440. While that of Indonesia and Egypt are 1.310 and 2.110 respectively. It shows that the average population growth rate in Egypt from 1968 to 1986 is higher than in Indonesia and Mexico. As well as it can be seen that the median population growth rate in Indonesia is 1.940 and 1.950 in Mexico. In contrast, in Egypt, the median population rate is 2.320 which indicates that Egypt's population growth rate is high than Indonesia and Mexico since 1986. However, the population growth rate from the third quartiles has differed. In the third quartile, the population growth rate in Mexico is 2.990, As well as the Indonesia and Egypt, which are 2.520 and 2.580. It is showing that the Mexican population growth rate has been growing. Since the third quartile still the max population growth rate the average population growth rate is high in Mexico which is means that this country has the highest population growth rate than Indonesia and Egypt.

**Table 1.** Population Growth Rate in USA, India and Nigeria 1950-2022.

Year	Nigeria	India	USA
Min.:1950	Min.:0.000	Min.:0.000	Min.:0.000
1stQu.:1968	1stQu.:2.190	1stQu.:1.620	1stQu.:0.960
Median:1986	Median:2.560	Median:2.190	Median:1.080
Mean:1986	Mean:2.457	Mean:1.908	Mean:1.137
3rdQu.:2004	3rdQu.:2.730	3rdQu.:2.260	3rdQu.:1.300
Max.:2022	Max.:3.110	Max.:2.340	Max.:1.920

**Table 2.** Population Growth Rate in Egypt, Indonesia and Mexico 1950-2022.

Year	Mexico	Indonesia	Egypt
Min.:1950	Min.:0.000	Min.:0.000	Min.:0.000
1stQu.:1968	1stQu.:1.440	1stQu.:1.310	1stQu.:2.110
Median:1986	Median:1.950	Median:1.940	Median:2.320
Mean:1986	Mean:2.122	Mean:1.905	Mean:2.298
3rdQu.:2004	3rdQu.:2.990	3rdQu.:2.520	3rdQu.:2.580
Max.:2022	Max.:3.400	Max.:2.830	Max.:2.790

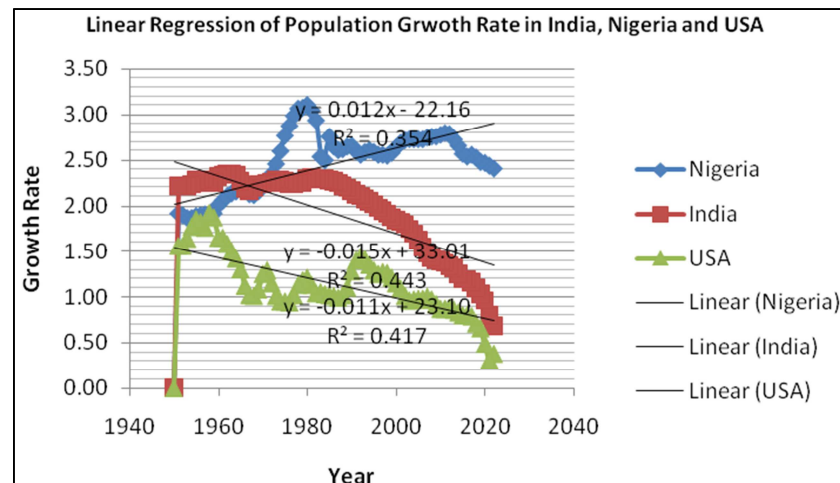


Figure 1. Trend of Population Growth Rate in India, Nigeria and USA.

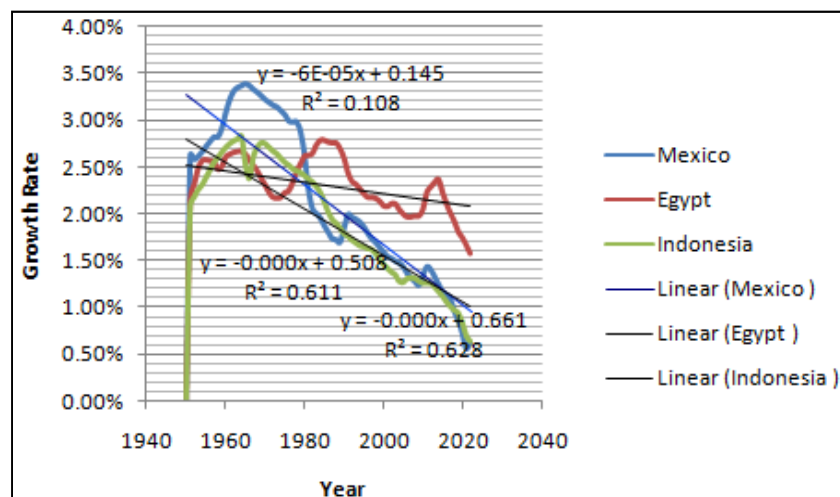


Figure 2. Trend of Population Growth Rate in Mexico, Indonesia and Egypt.

## 5. Discussion

In spite of what has been discussed about the consequences of overpopulation, the rise in population has caused the diversity of culture and technology or in a big image, it has improved living standards. If we go deep inside, increasing the human population is extremely effective as well. More human has meant that there are more scopes for innovation, invention, and creative genius. [17] Has written that more people leads to greater human capital. If there are more people, the probability of finding a genius like Einstein, Marie Curie, and Beethoven increases. These exceptional people can lead to technological and cultural masterpieces which enrich our lives. The past 200 years have shown exponential growth in technical development and innovation. There are many factors behind this, but the world's growing population means we have a bigger pool of human capital, and the possibility of these cutting edge discoveries increases. Moreover, the human population leads to higher economic growth. More humans demand in the industry. Pettinger also

mentioned that Population growth will lead to economic growth with more people able to produce more goods. It will lead to higher tax revenues which can be spent on public goods, such as health care and environmental projects.

The obvious evaluation is to say, the crucial thing is not GDP, but GDP per capita. If economic growth is at the same rate as population growth, average living standards will not increase. However, it is possible population growth can also improve per capita incomes. As the population increases, the economy can benefit from a bigger talent pool, economies of scale, and greater specialization. All this can enable higher per capita income, which we have seen in major developed economies. The benefits of overpopulation to economic growth can be seen in China and India, which are economically flourishing despite their large populations.

Furthermore, we can logically deduce that populous countries have a higher demand for certain industries. As far as North America is a consumerist and capitalist society, people see this as a positive impact of overpopulation. As long as its output is sufficient to fulfill demand. A business that sells a good or service with high demand will

undoubtedly enjoy great success. But even if demand may not be limited, resources are, so this is a precarious path. In a short term, one serious advantage of overpopulation is Cheaper and More Readily Available Products.

In Washington Post has noted the positive impact of overpopulation like this, the bigger a population in a country, the bigger the domestic market of that country. More people are able to work, which means that products are manufactured at cheaper costs and labor costs are lower, which in turn makes these products more affordable to the general population. This creates economies of scale because volume increases and cost per unit decreases. Likewise, urbanization has been known as an advantage and disadvantage of overpopulation. If we analyze it deeply, urbanization is one of the most significant consequences of human crowding which ensures evolved the country's business sectors. Dylan Taylor in the benefits of urbanization as consequences of overpopulation has claimed that Urbanization advances the country's business sectors by providing more jobs and a more diverse economy. A vast network of goods and services has helped develop modern commercial institutions and exchanges that have empowered the growth of urban areas. Commercialization and trade offer towns and cities better business opportunities and returns compared to rural areas. Rural citizens come to urban places with their goods and needs for products and services only available in urban areas.

According to [18], generally, it is expected that a fit model should be able to adequately approximate the true situation in the model form. Any regression model that explains the standard errors of the dependent and independent variables in a model is considered to be normal. There are assumptions which every researcher should have in mind while formulating, analyzing and interpreting any estimated regression model. Figures 1 and 2 mean that there is a relationship between the changes in years from 1950 to 2022. There are determinants of the positive changes in the population growth rates as shown in the linear regression trends of the six selected countries. Health issues have being a great obstacle in containing overpopulation; because when the citizens are not sound psychologically, the rate of birth is high due to indiscriminate involvement is unlawful sexual activities. [19].

It is overwhelmingly clear that the population of the world has continued to maintain a constant increase owing to the nature of lifestyle, values, and culture man practices in society and the world at large. The relationship between overpopulation and human impacts cannot be overemphasized because they are often interrelated and complex. The quest for man to survive has enormously impacted severely the ever-increasing population which has had its toll on the available resources in the world.

Over the years, housing has been impactful on overpopulation and has taken man to his knees most especially in developing countries filled with low-income classes who struggle to have accommodation. This in turn has placed the environment under siege of global warming as a result of incessant man-imposed actors. This throws its

weight in the building industry where deforestation is the avenue for sourcing timber for building construction. Deforestation in turn leads to a reduced ability to capture CO<sub>2</sub>, thus exasperating the greenhouse gas problem. Deforestation is also strongly associated with loss of habitat and extinction. Human population growth and climate change have grown hand in hand as the use of fossil fuels has exploded to support industrialized societies. The real property market has been profitable to a particular class who now controls the market and all efforts put in place to curb this by the government at all levels have proven abortive. This value of land and building has tremendously increased as a result of the unavailability of land in the urban areas and this has put pressure on the rural areas. Studies have shown that most families affected by this now live in congested apartments thus may lead to diseases of different kinds.

## 6. Conclusion

It is noteworthy that population growth in the world is more dangerous than we used to think. In this study, we come across a very wide spectrum of consequences of overpopulation, which keep on threat around the world over the years. However, the element-based analysis brings out a number of interesting clear facts regarding each case of overpopulation around the world. Overpopulation has impressed the whole world. Nevertheless, these impressions made by overpopulation are not just negative. It is obvious that overpopulation affects natural resources, health, humankind, and the earth. In contrast, overpopulation has caused improvement in the economy, technology, and standard of living. The positive consequences of overpopulation can point out to urbanization and high demand in the industry. Overpopulation, in the true sense, is; Increased demand for food and overuse of natural resources. In brief, population growth means the gradual death of nature and the earth.

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