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Urbanization and the environmental bottlenecks in India

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Abstract
The urbanization in India is progressing at a progressive pace. The environmental degradation as a consequence is something to be introspected. However, according to World Bank experts, between 1995 through 2010, India has made one of the fastest progresses in the world, in addressing its environmental issues and improving its environmental quality. To address environmental problems, a broad-based program of environmental policies and regulations is needed. Such programs require that we collect and compile authentic environment data for use by government officials and other decision-makers. Data relating to existing environmental conditions is crucial for environmental planning and decision making. India is in the path of a rapid economic development and will therefore need to vigorously collect and collate environment statistics.

Keywords: Urbanization, environmental bottlenecks

Introduction
The first phase of urbanization seen in India can be traced back to Harappa civilization of the Indus Valley. There has been steady increase in the proportion of people migrating to urban areas ever since independence. It has brought about many changes in dimensions of urban life, like the social, psychological, physical and cultural aspects. The factors that mainly affect urbanization are industrialization and modernization. The reason for this shift from the rural to the urban land can be attributed to benefits such as better employment opportunities, educational facilities, greater standard of living and access tohealth care facilities. This process of movement also negatively affects the people and environment. It leads to over population, increased crime rates, higher cost of living and degradation of environment.

Review of literature
S.Uttara, Nishi Bhuvandas, Vanita Aggarwal (February 2012), Impacts of Urbanization on Environment emphasizes on the effect of urbanization on the environmental components like the climate, biosphere, land and water resources. It conducts a case study of urbanization in India and metropolitan cities. According to the research there was only 1 million plus city in India in the year 1901 and the number increased to 35 according to the 2001 census. On average there is 10% increase each year in the number of motor vehicles, which is of a major concern for air pollution. It also provides for the preventive measures to keep a check on the causes for damage. The study concludes that the damage which is caused to the environment is due to the improper legislations and regulations of the country and improper governance has led to informal settlements and creation of slums and related problems. Control of vehicular pollution should be the top priority of the governing body and steps should be taken to control pollution and improve the quality of life.
Neelmani Jaysawal, Sudheshna Saha (2014), Urbanization in India: An Impact Assessment. The purpose of the study was to find out the effects of fast growing urbanization in Indian society through the analysis of its multidimensional impact. The study is a descriptive study, which gathers data through secondary sources like Government records, books, articles and web based journals. It shows data which is collected from the census report of India from 1901-2001, showing the total, rural and urban population during the years. The negative effects of urbanization are growth of slums and associated problems, transportation system, sewerage and garbage problems, water supply and other related environmental problems.

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It concludes that, to avoid theover-congesting and over-crowding of the cities it is required to build a strong economic sector and the investments growth efforts should be directed towards small cities. Proper urban planning in cities should be a must.

Praddep K Naik, Jivesh A Tambe, Biranchi N Dehury, Arun N Tiwari (2008), Impact of urbanization on the groundwater regime in a fast growing city in Central India. The purpose of the study is to show the impact of urbanization on the ground water regime. The study is conducted in Solapur, a city in central India. The objective of the study was to appraise the impact of urbanization on the ground water regime in a fast growing developing country. It says that the groundwater quality has deteriorated over the last ten years due to misuse of structures (dug wells) and poor circulation of groundwater. The study also collects 24 water samplesfrom various sources for the analysis of chemical content in them. Surfaces like road, rooftops and pathways reduce direct infiltration of rain water and also provides for status of groundwater quality for drinking purpose. It concludes that in two decades there has been a decrease of 6-8% in groundwater recharge from rainfall.

Urbanization in India and its impact on environment (2005). The focus of the study is the growing population levels in India and the measures taken by the government to tackle this problem. The objective of the study was to find out the reasons for the increasing levels of population. The study concludes that the urban areas are more industrialized than the rural area and due to this there is great pressure on transport, housing and drainage facilities which in turn results in wastage and pollution.

Need for The Study
Though the growth of urbanization is favorable for economic development of the country as a whole, the aftermath of the same is harmful for the environment. The present study is theoretical in nature. It discusses the positive and negative impacts of environment on the nature.

Objectives of the study
- To review the literature on the topic
- To find out the various positive and negative impacts of urbanization on the environment.

Discussion
Positive impacts
The first and the foremost positive impact urbanization has on the environment is that it increases the productivity due to economies of scale and positive externalities. Fewer resources along with urban agglomeration contribute in producing the same level of output. The service sector which promotes urbanization has minimal adverse effect on the environment as compared to the manufacturing sector.

With the growth in urbanization there has been development of environment-friendly infrastructure and services for public such as sanitation, piped water and waste management. It becomes economical and easy to operate and maintain such facilities in the urban setup. More people can access these facilities and benefit from them at an affordable price. It also drives innovation which uses green technologies which is a major determinant for the future of the green economy by using environment-friendly equipment, machines, vehicles and utilities. In India, the government promotes the use of electric vehicles which run on batteries, which would in turn reduce the emissions of carbon dioxide and other air pollutants. This will reduce the ever increasing consumption of fuel and help protect the natural habitat as it would lead to cutting down on the mining activities, limit global warming and avoid the worst effects of climate change.

From ancient times, since most major human settlements were established near natural resources, lot of resources are available in and around cities and the facilities to exploit these resources mostly also exists only in cities. The government grants permission for new industries to be opened on the outskirts of the cities, which leads to urbanization by widening the city borders and at the same time, helps the industries to have a closer proximity to the required resources which in turn reduces the transportation of supplies and related problems.

Negative Impacts
Urbanization yields positive effects if it takes place up to an advisable limit. Extensive urbanization or haphazard growth of cities may result in adverse effects. There is a significant difference in the air quality between the rural and urban area. Urbanization leads to air pollution to the greatest extent as it causes changes in air quality due to emission of harmful gases like carbon monoxide, carbon dioxide, sulphur oxides, nitrogen oxides, lead and many other pollutants by factories and vehicles and also leads to significant changes in patterns of precipitation.

The suspended particles in the air cause allergies, respiratory problems, lung related problems such as pneumonia and tuberculosis. The increase in the level of greenhouse gas concentration leads to global warming resulting in the melting of snow glaciers and increasing the water levels at an alarming rate. The World Bank reported that 40.000 people die in India every year due to air pollution and has doubled since 1990's.

The pollution from increasing number of vehicles and factories causes acid rain. The chemicals like sulphur dioxide and nitrogen oxides are released into the air due to burning of fossil fuels such as coal or oil. These chemicals when released into the air in large quantities combine and return in the form of acid rains causing damage to forests, lakes, buildings and also severely affect our health.

Water pollution is yet another major problem in the urban area. The water which falls in the form of rain is tunneled into the run-off system where it picks up ground pollutants such as concrete, brick, asphalt and other absorbent surfaces instead of undisturbed soil and natural vegetation and this flows directly into the river channels. As people have less regard for the environment, they dispose of the waste and litter around which is channeled into the water system combined with the industrial waste without being treated. A majority portion of the sewage which is taken from the sewer lines is untreated which is directly led into the sea, as in Mumbai, Kolkata and Chennai, killing the marine life along the coast of India.

Urbanization has also degraded the water quality. People in urban areas are more prone to diseases by consuming this water when compared to people residing in the rural parts. The water in the urban setup is contaminated and contains disease causing germs and chemicals, harmful for human consumption. Hence, urbanization has a negative impact in terms of water pollution.

Destruction of flora and fauna is another negative effect of urbanization. As urbanization requires more land for development of infrastructure, the environment is being cleared for the same, this means destruction of whatever existed previously. When the land is being cleared out, the ecosystem is lost and any species which is dependent on this ecosystem loses its natural habitat. It leads to modification of habitat. The increased use of fertilizers which flow into the water bodies leads to the growth of water plants at the expense of fish. This waste dumped in water lowers the level of oxygen leading to death of plants and animals. There is also creation of new habitats because of urbanization. Man-made habitat is created for certain species like pigeons, sparrows, rats etc. It also leads to growth of disease causing insects like mosquitoes and flies.

Transportation, another major concern of today's time is the result of ever increasing population. As more and more people are migrating to the urban area, the transportation system has been expanding. Due to this reason the demand for fuel has risen, in turn deteriorating the environment. There is huge traffic jam during peak hours in the cities leading to more wastage of petroleum products. The burning of these fossil fuel leads to emission of harmful gases into the air which causes Global Warming. It also causes noise pollution leading to auditory problems such as deafness and fatigue in human beings. In India, Delhi is the most highly polluted city, with problems related to transportation leading to very high levels of air and noise pollution.

In India with the growth of urbanization there has been problems related to disposal of trash. Most of the cities do not have proper facilities for garbage disposal. The landfills for disposal are full with wastes like plastic containers, hospital waste, building material and kitchen waste. Most of these urban cities do not have proper let out facility for sewage. These garbage disposal sites become breeding ground for disease causing germs causing deadly diseases like malaria, jaundice, typhoid and other problems.

In India, more than 23 cities have crossed the danger limit of industrial emission and auto exhausts. There are both merits and demerits to urbanization, which cannot be avoided but these adverse effects can be controlled.

Conclusion

As per the study, it can be concluded that the growth of urbanization adversely affects the environment more than benefiting from such industrialization and modernization activities. It degrades the quality of land, air and water. It destroys the habitat for a few species and creates new habitat for a few. Disposal of trash, improper waste management and sewerage problems also add onto the negative impacts.

The government of India should implement necessary measures to keep the urbanization in control. They can come up with the concept of smaller cities and rural economies. They should also spread awareness among people regarding pollution and its adverse effects and encourage the use of green technologies by providing financial assistance.

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