

Urbanization: Human Impacts and the Development on the Environment

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Abstract- The term “urbanization” refers to the overall rise in population and the extent to which a town has been industrialized. It entails a growth in the number and size of cities. It represents the migration of people from rural to urban places. Urbanization is caused by a rise in the size and density of urban areas. Environmental deterioration has been developing at a rapid pace in India as a result of unregulated urbanization, generating several difficulties such as land insecurity, deteriorating water quality, excessive air pollution, noise, and waste disposal issues. The focus of this study is on the impact of urbanization on environmental components such as climate, biosphere, land, and water resources. A case study of urbanization in India and metropolitan cities was conducted, leading to a conclusion on the current sources of environmental harm caused by urbanization and preventative strategies to mitigate them. Although it is difficult to limit urbanization, it must be assured that it advances in the appropriate direction with the least possible impact on the environment.

key words: Urbanization, Population, Metropolitan, Industrialization, Environment, Prevention, Development.

The population movement from rural to urban regions, the consequent decline in the number of people living in rural areas, and the manner in which societies adjust to this transition are all examples of urbanization. It may also indicate population expansion in urban regions rather than rural areas. It is primarily the process by which towns and cities originate and grow in size as more people begin to live and work in core locations. Although the terms are frequently used interchangeably, urbanization and urban expansion should be separated. Urbanization is the fraction of the total national population that lives in urban areas, whereas urban growth is the absolute number of people that live in those regions. By 2050, it is expected that around 64% of the developing world and 86% of the developed world would be urbanized. This is expected to result in artificial scarcity of land, a shortage of drinking water, playgrounds, and other amenities for most city people. The projected urban population growth is comparable to nearly 3 billion people by 2050, with the majority of this expansion occurring in Africa and Asia. Notably, the United Nations recently forecasted that cities will account for virtually all global population increase from 2017 to 2030, with around 1.1 billion new urbanites over the next ten years. In the long run, urbanization is projected to have a detrimental influence on people’s quality of life.

Urbanization affects several areas, including urban planning, geography, sociology, architecture, economics, education, statistics, and public health. Globalization, modernization, industrialization, marketization, administrative/institutional power, and the sociological process of rationalization have all been related to the problem. Urbanization can be viewed as either a specific state at a given moment (e.g., the proportion of total population or area occupied by cities or towns) or as a growth in that condition over time. As a result, urbanization may be measured in terms of either the degree of urban development compared to the entire population or the rate at which the urban share of the population is expanding. Urbanization causes significant social, economic, and environmental issues, but it also provides a chance for sustainability by having the “potential to use resources much less or more efficiently, to create more sustainable land use, and to protect the biodiversity of natural ecosystems.” Current urbanization trends, however, reveal that enormous urbanization has resulted in unsustainable ways of life. Developing urban resilience and sustainability in the face of rising urbanization is central to international policy under SDG 11 “Sustainable cities and communities.”

Urbanization is a fast and historic alteration of human social roots on a worldwide scale, in which primarily rural culture is rapidly being replaced by mostly urban culture. Many thousands of years ago, the first major change in settlement patterns was the consolidation of hunter-gatherers into settlements. Common bloodlines, deep ties, and communal behaviour describe village culture, whereas distant bloodlines, unfamiliar relationships, and competitive behaviour characterize urban culture. This enormous flow of people is expected to continue and increase over the next few decades, mushrooming cities to sizes unfathomable only a century ago, and as a result, the world urban population growth curve has until recently followed a quadratic-hyperbolic trend.

Most of the main environmental challenges of the coming century will very certainly come from the continuance and amplification of present problems that are currently receiving insufficient political attention. In many nations, issues are not always spotted, or if they are, nothing is done despite the fact that the condition has been identified. Climate change, freshwater shortage, deforestation, freshwater pollution, and population growth are the most pressing challenges. These issues are extremely complicated, and their relationships are difficult to characterize. It is critical to assess problems through the lens of the social-economic-cultural system. Even while the links between environmental problems are now well understood, we still lack precise knowledge on how the issues are related, to what extent they interact, and what the most effective solutions are. One issue is integrating land- and water-use planning to ensure food and water security (UNEP 1999).

People in cities interact with their surroundings. People in cities impact the environment by consuming food, energy, water, and land. In consequence, the polluted urban environment has an impact on the urban population's health and quality of life. People who live in cities have quite different consuming habits than those who live in rural areas. Urban people, for example, use far more food, energy, and durable goods than rural communities. During the 1970s in China, urban inhabitants consumed more than twice as much pork as rural communities who raised the pigs. With economic progress, the disparity in consumption shrank as rural communities ate healthier meals. Even a decade later, urban residents consumed 60% more pork than rural populations. In Beijing, rising meat consumption indicates rising prosperity; in India, where many urban people are vegetarians, rising milk consumption indicates more income. Not only do urban inhabitants eat more food, but they also consume more durable items. In the early 1990s, urban Chinese households were twice as likely as rural households to own a television, eight times more likely to own a washing machine, and 25 times more likely to own a refrigerator. Increased consumption is caused by metropolitan labour markets, earnings, and household structure. Electricity, transportation, cooking, and heating all consume far more energy in cities than in rural settlements. For example, metropolitan communities have many more vehicles per capita than rural people. In the 1930s, the United States had nearly all of the world's automobiles. In the United States today, there is one automobile for every two people. If this became the standard, there would be 5.3 billion automobiles on the road by 2050, all of which would be powered by electricity.

In China, per capita coal consumption in towns and cities is more than three times that in rural regions. Changes in global energy consumption per capita and GDP are positively associated, but they may not change at the same rate. As countries transition from non-commercial to commercial energy sources, the relative price of energy rises. As a result of technological developments and changes in consumer behaviour, economies frequently become more efficient as they evolve. Despite savings and new technology, global urbanization will increase aggregate energy use. Furthermore, increased energy usage is expected to have negative environmental consequences.

Urban energy use contributes to the formation of heat islands, which can alter local weather patterns and weather patterns downstream from the heat islands. The heat island effect occurs when cities reflect heat back into the atmosphere at a rate that is 15% to 30% lower than rural regions. Cities are warmer than rural regions (0.6 to 1.3 C) due to greater energy usage and differences in albedo (radiation). And these heat islands act as traps for atmospheric pollutants. Cloudiness and fog occur more frequently. Precipitation is 5% to 10% greater in cities; thunderstorms and hailstorms are significantly more prevalent, although snow days are less common. The larger regional habitats are also impacted by urbanization. Downwind of big industrial complexes, there is also an increase in precipitation, air pollution, and the frequency of days with thunderstorms. Urban areas influence not just weather patterns, but also water runoff patterns. Although cities create more rain, they also limit water infiltration and lower water tables. This means that with higher peak flows, runoff occurs more quickly. Flood volumes rise, as do floods and downstream water pollution. Many of the environmental consequences of metropolitan areas are not always linear. Greater urbanization does not always result in greater environmental concerns. And even little cities may generate major issues. Much of the intensity of the environmental repercussions is determined by how urban people behave — their consumption and living patterns — rather than their size.

The urban environment is a significant aspect in defining the quality of life in cities as well as the urban area's influence on the larger environment. Inadequate water and sanitation, a lack of waste disposal, and industrial pollution are all examples of urban environmental issues. Unfortunately, addressing the issues and lessening their impact on the urban population is costly. Respiratory infections and other infectious and parasitic disorders are among the health consequences of these environmental issues. Capital expenses for enhanced environmental infrastructure, such as investments in a cleaner public transportation system, such as a subway, and for the construction of additional hospitals and clinics, are greater in cities, where incomes outstrip those in rural regions. Because of the rivalry for space, urban land prices are substantially higher. However, not all metropolitan places have the same environmental or health issues. According to some study, markers of health concerns, such as new-born mortality rates, are greater in cities that are fast increasing than in those that are slowly rising.

Economic, political, and social challenges combine with modernizing situations to drive individuals to migrate from rural to urban locations. Among the causes of urbanization are:

- **Industrial Growth:** An increase in industry and manufacturing firms inside a certain metropolitan region creates additional job possibilities, which is another aspect of urbanization.
- **Social Factors:** Many urban regions provide higher living standards, such as greater educational facilities, improved access to healthcare, modern housing, and more recreational opportunities.
- **Employment:** Agricultural activities are frequent in rural regions. Jobs that pay more, are more diversified, and may be less physically demanding are created as a result of urbanization and industrial expansion.
- **Economic Problems:** Many individuals may opt to migrate from a global location since it is not as economically stable or prosperous as a thriving urban centre.
- **Modernization:** New technology is improving urban infrastructure. Better connectivity, medical facilities, and other social benefits may entice people to relocate from rural regions.
- **Political Turmoil:** War, civil unrest, and other types of political disturbance are frequently problems in emerging countries. This volatility — and probable danger — may make anybody want to flee. Many of the elements that drive urbanization interact with and give birth to one another. When a rural city becomes urbanized, it may begin to prosper from a variety of advantageous qualities, the majority of which are what draws more people to it.

Some advantages of urbanization include:

- Solving the problem of unemployment
- High transportation facilities
- More education opportunities
- Recycling process
- Internet connections
- More modernized equipment
- Higher wages in cities on average

Urbanization may have a variety of detrimental environmental effects, including:

- **Weather patterns:** Urbanization may have an impact on weather patterns as well as water runoff patterns.
- **Regional environments:** Urbanization can have an impact on the larger regional environment, such as increased precipitation and the frequency of thunderstorm days.
- **Waste disposal:** Waste disposal issues might arise as a result of urbanization.
- **Deforestation:** Deforestation and habitat loss can be caused by urbanization.
- **Biodiversity:** Urbanization has the potential to reduce biodiversity and change species relationships.
- **Air pollution:** Urbanization can raise air pollution and noise levels.
- **Water quality:** Urbanization can lead to poor water quality and scarcity of water.
- **Soil pollution:** Urbanization can result in soil contamination and loss.

Urbanization has a range of effects on the Earth system, including:

- Causes habitat loss and deforestation, which can reduce species numbers, ranges, biodiversity, and disrupt biological interactions.
- Paving ground with concrete can lead to increased water flow, erosion, and soil degradation. This can also have a negative impact on water quality by increasing the amount of silt and pollutants in rivers and streams.
- Changing the amount and rate at which water circulates through the biosphere and atmosphere. Trees and other plants, via a process known as transpiration, return a considerable part of precipitation to the atmosphere. As a result, decreasing plant productivity and biomass reduces the quantity of water cycling through the biosphere and atmosphere, whereas increasing plant productivity and biomass increases the amount of water cycling.
- The development of life cycles and features that aid in the survival and reproduction of organisms in disturbed or changed habitats. Some urban bird populations, for example, have adapted their beak morphology to better successfully consume the seeds in man-made bird feeders.
- The spread of infectious illnesses. Humans living in highly populated locations may swiftly spread illnesses within and across communities due to the accessibility and volume of transit.

- Increasing the planned or unintentional transfer of invasive species as people travel and import and export commodities in and out of cities. Invasive species typically thrive and outcompete native species in disturbed ecosystems created by urbanization. Many invasive plant species, for example, thrive along land strips adjacent to roadways and highways.
- Temperatures in the region are rising. In metropolitan locations, the usage of asphalt and other dark-coloured materials increases the quantity of sunlight absorbed. As a result, cities endure greater temperatures than surrounding areas, resulting in urban heat islands.

CONCLUSIONS:

- Urgent emphasis should be paid to reducing solid waste creation at the source through obligatory standards, regulation fee and tax incentives, education, and voluntary compliance.
- If proper actions are not done to minimize pollution and enhance the quality of life by providing more social facilities, the lives of India's urban people may become unhappy, perhaps leading to health problems and worse damage.
- We may deduce from this that some of the reasons of environmental degradation caused by urbanization are found in the country's legislation and regulatory authorities.
- In today's cities, a lack of administration has led in the expansion of informal settlements and slums, which create a hazardous living and working environment.
- Serious consideration should be given to the need to improve urban initiatives that enhance resource efficiency.
- Controlling vehicular pollution in major cities and other urban areas should be a primary concern.

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