IMPACT OF URBANISATION ON ENVIRONMENT

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ABSTRACT:
One of the largest social changes of the contemporary era is urbanisation, which is fueled by a number of social, economic, and environmental factors. Urbanisation has significant, varied effects on the environment that are felt locally, regionally, and globally. As a result, the constructed environment and natural elements combine to form the complex urban environment. The bulk of individuals migrate from rural areas to more developed areas (towns and cities) due to feelings of poverty and a backward or primitive lifestyle, which immediately leads to urbanisation. This typically aids in the development of land for use as commercial enterprises, housing, transportation, and social and economic support facilities. In the end, these activities lead to a number of urbanization-related difficulties, such as poor water and air quality, scarce water supplies, concerns with waste disposal, deforestation, and increased urban density and environmental demands. The physical location of an urban area, the volume and kind of human activity that occurs there, and the waste, pollutants, and ecological disturbances that the local population produces all have an impact on the quality of the urban environment. The rate at which civic amenities are extended and the pace at which an urban area sprawls determine the quality of life there. However, the growing trend of urbanisation in emerging nations has resulted in a variety of environmental, economic, and social issues because it is not in line with these nations' sustainable industrial and social growth. A more sustainable urban development is the result of closely observing environmental issues and urban development concepts. Furthermore, the tendency of urban development in cities has a direct impact on urbanisation, which may lead to an unfavourable shift in the economy. This essay focuses on how urbanisation affects the environment, specifically how it affects the biosphere, air and water pollution,

Key-words: Environment, Urbanization, Pollution

INTRODUCTION:

One of the largest social changes of the contemporary era is urbanisation, which is fuelled by a number of social, economic, and environmental factors. There are many different ways that urbanisation affects the environment, and these effects can be seen locally, regionally, and globally. As a result, the constructed environment and natural elements combine to form the complex urban environment. The bulk of people migrate from rural areas to more developed places (towns and cities) due to poverty and a primitive way of life; this leads directly to urbanisation. The term "urbanisation" describes both the overall rise in population and the degree of industrialization within a community. It involves a growth in both the quantity and size of cities. Three primary factors have contributed to the development trend in cities: immigration, the conversion of rural areas into cities, and the considerable increase in population growth and reproduction in cities. The country's growth is being driven by its urban centres. A state's economic prosperity has also entered a new era brought about by industrialization. This typically aids in the development of property for use as residential and commercial buildings, transportation, and social and economic support facilities. In the end, these activities lead to a number of urbanization-related concerns, such as waste disposal, air and water pollution, shortages of water, devastation of natural habitats, and pressures on the urban environment. Geographical location, the volume and kind of human activity, trash emissions, and ecological disturbances caused by locals all have an impact on the quality of the urban environment. The rate at which urban areas are spreading and expanding civic amenities is correlated with the quality of urban living.

The growing urbanisation tendency in developing nations has given rise to a number of environmental, social, and economic issues. Uncontrolled urbanisation in India has resulted in rapid environmental deterioration that is producing a number of issues, including noise pollution, increased air pollution, deteriorating water quality, land insecurity, and waste disposal issues. Finally, it has been demonstrated that environmental management, urban development, and construction engineering are typically seen as requiring knowledge of environmental challenges.

THEORETICAL BACKGROUND:

The processes of industrialization and urbanisation are two key factors that have the tendency to quickly alter the social structure of urban society. Urban economies, class structures, and urban ecology are all undergoing fast transformation in contemporary urban civilizations. Urban planners face challenges in formulating regulations and developing effective solutions to address concerns related to urban congestion, sustainability of cities, modern amenities, and the need for a goodquality of life. There are many different theoretical vantage points from which to view urban concerns and problems, including historical, ecological, and developmental ones. Through their perceptive writings, classic sociologists like Marx, Weber, Tonnies, and Simmel have enhanced this field of study. A number of models, including the sectors model, many nuclei model, concentric zone model, and exploitative model, have provided useful justifications for researching the composition and pattern of urban growth. Urban centres' structure and growth can be understood through the lens of these scholars' seminal ideas, which include Marx's idea of urbanisation under capitalism, Weber's notion of city and market economy and the importance of rational legal institutions to govern the modern city, and Simmel's money economy and its impact on social life. Louis Writh has argued for theoretical approaches to comprehend the myriad complexities of urban living. The character and intensity of a people's life style are determined by their larger, denser, and more diverse population, as demonstrated by Writh's theory on urbanism as a way of life. India's urbanisation movement began with the Harappan civilization, which left traces of urban living and urbanism. Since then, cities have grown, varying in size, shape, and nature. India's urbanisation process has gained new momentum due to improved transportation and communication infrastructure, revolutionary changes in ICT (information, communication, technology), and a rising tendency of rural-to-urban migration. One could see the increasing focus on the concept of the "smart city" as a move in this direction. The significance that smart cities are receiving is an indication of sustainable urban development—a place that offers a secure and healthy environment, complete with a water supply, sanitation, drainage system, and organised city administration. Examining the various effects of urbanisation on the environment and society is therefore relevant.

REVIEW OF LITERATURE:

A study is done about evaluating relationship between population growth environmental population and economic growth in the year 1346(1967) regarding casualty examination. It has been demonstration that there is a two way relationship between environmental effects and economic growth.

Al Soliman (1990) in his study on urban environmental attributes has found that the type of setting on lives influences the perception of a common environment. It becomes inevitable to the decision makers or town planners to standardise the living urban environment in terms of certain attributes for making it comparable with the respondent's perceived environment.

Behboudi and Barghi, have evaluated environmental effects of energy consumption and economic growth in Iran using time series data and regarding co-integration test. The result showed that 1% Increase in population leads to 0.92% increase in CO_2 gas production and environmental pollution.

Rabifaret.et.al, have studied about evaluation of urban sustainable development regarding environmental aspect and based on SWOT analysis. According to the results, opportunities cannot conquest threats still in spite of many environmental and social concerns.

Alam et.al.in 2007 has assessed some significant factors of environmental pollution such as total population growth, economic growth, energy usage and urbanisation on the environment of Pakistan for the years 1971--2005.The result of estimation model using Johansen-- Juselius method shows that energy intension and CO_2 emission coefficients in a model in which economic growth is a dependent variable, is positive. Moreover, it has been proven that population growth especially in urban areas, has a major effect on environmental pollution. Urbanisation, a global phenomenon characterized by the rapid migration of people from rural to urban areas, has long been interest to scholars (Grimm et al.,2008).Overtime, this transition has brought about significant changes to the environment, leading to concerns about sustainability (Seto et al.,2011)

OBJECTIVES:

The specific objectives of the study are-----

(1) To trace the important environmental issues due to rapid urbanisation.
(2) To analyse the relationship between Urbanisation and environmental degradation.
(3) To study the various criteria and requirements of sustainable urban development

METHODOLOGY:

Qualitative approach is the basic thrust in this study, moreover co relational approach has also been adopted as impacts of urbanisation on environment is the central theme of the study. The study used in this paper is collected only from the secondary sources like books, journals, internet etc.

DISCUSSION:

Compared to rural people, urban residents engage in more environmental interaction (Torrey, 2004). Urban residents' usage of food, energy, water, and land alters the ecosystem. Furthermore, the health and standard of living of the metropolitan populace are impacted by the contaminated urban environment. Regarding the connection between environmental contamination and the increase in urban population, there are two schools of thought. The first method shows that increasing population has a detrimental impact on the environment because of increased energy demand, transportation, and infrastructure due to urban development. According to the second strategy, creating an urban culture results in cities using energy more efficiently than villages do. Thus, there may be a positive or negative correlation between the increase in urban population and environmental contamination. Prior to delving into the issues posed by the unplanned, rapid growth of urban areas, we examine the numerous advantages of urbanisation.

POSITIVE IMPACTS:

A thriving national economy is contingent upon the presence of thriving towns and cities. Innovation and progress in business, research, technology, and industry are stimulated when economic and human resources are gathered in one location. People in cities have easier access to social services, healthcare, education, transportation, and cultural events than they do in rural areas. Due to improved access to healthcare, child survival rates are higher in cities than in rural areas (Mulholland et al., 2008).The density of urban populations makes it easier and less costly for the Govt. and utilize to provide essential goods and services (Brockerhoff 2000). For example, the supply of basic facilities such as fresh water and electricity can be achieved with less effort and less cost per person. To develop human resources school, colleges and universities are established in cities. A variety of educational and technical courses are available, offering students a wide choice for their future careers. People of many classes and religions live and work together in cities, which creates better understanding and harmony and helps break down social and cultural barriers. Cities also have advanced communication and transport networks. These numerous advantages of city living are not, however, available to everyone. Unplanned growth and rapid population growth lead to urban sprawl, which has detrimental effects on the environment, society, and economy. Air pollution, water

pollution, freshwater scarcity, climate change, and habitat degradation are the main environmental challenges covered.

NEGATIVE IMPACTS:

A. Over Exploitation of Natural Resources:-Urban regions consume a lot of natural resources (such as electricity, water, fossil fuels, forest products, etc.) because of their high population density and affluent lifestyle. Misuse of natural resources also occurs, for which there is no easy way to get compensated right away. A few severe issues facing cities include a lack of drinking water, particularly from groundwater, a shortage of forest products, power outages brought on by excessive electrical use, etc.

B. Noise Pollution: The noise produced from automobiles, vehicles, social functions, industries etc. cause noise pollution in urban areas which causes psychological and physical ailments.

C. Air pollution: In recent years there has been an increasing concern towards the problem of air pollution in cities and Metropolitan cities. These concerned arise particularly when concentration of pollutants at certain places reach harmful levels. Air quality in towns and cities is frequently very poor as a result of air pollution from many different sources. These include:

- Vehicle exhausts.
- Output from factory chimneys,
- Diesel-powered generators.
- Dust from construction works and city streets.

Many urban dwellers' health is greatly impacted by poor air quality, which also causes an ugly and harmful layer of dust to accumulate on plants, buildings, and other surfaces. More immediately concerning than any other aspect of pollution is air pollution. The air quality in metropolitan areas is very bad due to the enormous number of motor vehicles and industrial emissions in a combined geographical space. The World Health Organisation (WHO) states that there shouldn't be more than 90 micrograms of suspended particles per cubic metre. However, this number is far higher in cities all over the world. For instance, in China, only 8 of the 74 largest cities passed the government's basic air quality test in 2014 (BBC 2015).High particle concentrations cause direct harm to human health, aggravating cardiac conditions and causing a variety of respiratory ailments (WHO, 2010).Research has indicated a link between rising pollution levels and respiratory-related deaths. Data from seven Indian cities revealed that air pollution was the cause of 24,000 premature deaths in the early 1990s and 37,000 by the mid-1990s (United Nations Environment Programme, 2002).The highest people at risk are urban dwellers in developing countries, especially India and China. In 2014, India admitted that New Delhi matched Beijing for air pollution affecting public health after a World Health Organisation declared the Indian capital had the dirtiest air in the world (The Guardian 2014). Once more, poor diet and less physical activity are results of urbanisation. According to **WHO** estimates, non-communicable diseases including heart disease would be responsible for 69% of fatalities in developing nations by 2020. Infectious infections are another danger associated with urbanisation. Travelling by air transmits viruses and bacteria from one nation to another. The release of pollutants from industry into the air, water, and soil results in unwanted changes to their physical, chemical, and biological properties. This is known as industrial pollution. Air pollution can occur when gaseous and nongaseous chemicals from different sectors combine with the air. Fossil fuels, like coal and petrol, are used by businesses worldwide to produce power. Emissions of greenhouse gases (GHGs) and air pollutants rise when these substances are burned. Due to their role in smog generation and acid rain precipitation, they pose a risk to human health and the environment. Global warming and climate change are mostly caused by GHG emissions from urban areas.

D. Water pollution: Surface water pollution can have a detrimental effect on human life quality because it alters the chemical and physical characteristics of water. Water becomes turbid and discoloured when sewage from homes and businesses, including organic waste, are released into the environment. Numerous urban waterways in developing nations resemble open sewers. Urban water

courses are significantly impacted by the absence of sewage and sanitation infrastructure. All of the waste from households, companies, and industries is dumped into the rivers by people. Human waste contains nutrients and organic stuff, while industrial wastewater is full of various hazardous pollutants. The infiltration area where ground water can occur is reduced by urbanisation, which replaces greenery with impermeable services. Consequently, more water will reach a stream more faster, increasing the frequency of more severe floods. Storm water carries possible pollutants with it, such as fertilisers, pesticides, bacteria from human and animal waste, metals, petroleum from leaking cars, and sediments. These damage fish as well as other aquatic animals and plants, making it dangerous for people to use the water for drinking or irrigation, among other uses. Because groundwater and surface water are connected through the water cycle, any modifications to the former's quality also have an impact on the latter. Therefore, contaminants from the surface will seep below and contaminate both the soil and the groundwater. An instance of urbanisation leading directly to water contamination is the Citarum River in Indonesia, where 30 million people depend on the water for household, personal, and agricultural purposes. However, since the industrialization of the area began in the 1980s, there has been unchecked factory growth, filling the river to overflowing with both industrial and human trash. The Citarum River is currently regarded as the world's most polluted river. Yallop (2014).

E. Development of slums: Roughly one-third of urban residents in developing nations reside in destitute slums and squatter settlements (UN-Habitat-2012).Urban living comes at a very high expense. Slums and squatters reflect the spread of illegal resident settlement when this is coupled with erratic and unanticipated growth and unemployment. Fast-paced industrialization, a scarcity of developed land for housing, a big influx of rural immigrants seeking a better life in the cities, and high land prices beyond the grasp of the urban poor all contribute to the creation of slums and squatter communities in urban regions.

SLUM AREAS TYPICALLY SUFFER FROM:

i) Poor housing with small, over crowed houses built very close together using inadequate materials and with uncertain electricity supply.

ii) Inadequate health care facilities which, coupled with the poor living conditions, increases sickness and death rates.

iii) Restricted access to water supplies.

iv) Little or no sanitation/latrine facilities and no solid waste disposal, which leads to a polluted and degraded local environment.

v).Insecure living conditions--slum dwellers may be forcibly removed by land owners or other authorities.

Many low income families gravitate to these informal settlements that proliferate in and around towns. Poverty is one of the most critical issues facing urban areas. Urban poverty degrades both the physical and social environment.

In India total slum population according to size/class of towns during 1991shows that 41% of the total slum population was residing in million plus cities, where 27%of total population of India resides.

Table-I

Parentage of Slum Population in the four Metropolitan cities of India, 1981-2011

Metropolitan cities	1981	1991	2001	2011
Greater Mumbai (UA)	30.8	43.2	48.9	41.3
Kolkata (UA)	30.3	36.3	32.6	29.6
Delhi Municipal Corp.(UA)	18.0	22.5	18.9	14.6

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Chennai (UA)	13.8	15.3	17.7	28.5

Sources: 1.Census of India 1981, 1991, 2001.ii) Times of India, March 22, 2013

Table-II

Slum population as percentage of population of cities/towns reporting slums- census 2011

State/union territory	Population of cities/town reporting slums	Total slum population	Slum population as (%)	State/ Union territory	Population of cities/town reporting slums	Total slum population	Slum population as (%)
Meghalaya	595450	57418	9.64	Delhi	16368899	1785390	10.91
Maharashtra	50818259	11848423	23.32	Rajasthan	17048085	2068000	12.13
Haryana	8842103	1662305	18.80	Andaman & Nicobar Island	143488	14172	9.88
Andhra Pradesh	28219075	10186934	36.10	Tripura	961453	139780	14.54
Chhattisgarh	5937237	1898931	31.98	Gujrat	25745083	1680095	6.53
West Bengal	29093002	6418594	22.06	Pondicherry	852753	144573	16.95
Madhya Pradesh	20069405	5688993	28.35	Chandigarh	1026459	95135	9.27
Odisha	7003656	1560303	22.28	Karnataka	23625962	3291434	13.93
Uttar Pradesh	44495063	6239965	14.02	Jharkhand	7933061	372999	4.70
Punjab	10399146	1460518	14.04	Bihar	11758016	1237682	10.53
Tamil Nadu	34917440	5798459	16.61	Goa	906814	26247	2.89
Uttar Anchal	3049338	487741	15.99	Assam	4398542	197266	4.48
J&K	3433242	662062	19.28	Kerela	15934926	202048	1.27
Arunachal Pradesh	317369	15562	4.90	Mizoram	571771	78561	13.74
Jharkhand	7933061	372999	4.70	Nagaland	570966	82324	14.42
Manipur	834154	NS	NS	Sikkim	153578	31378	20.43
A & N Islands	143488	14172	9.88	Daman & Diu	182851	NS	NS
India	377106125	65494604	17.37				

Sources: Office of the Register General and Census Commissioner, India, 2011

As Per census of India 2011, Andhra Pradesh has the highest proportion(36.1%)of slum population to the total population of cities/towns reporting slums in the state, followed by Chhattisgarh (31.98%),Madhya Pradesh(28.35%), Odisha (22.28%)and Sikkim(20.43%). In Jammu and Kashmir,

Haryana, Pondicherry, Tamil Nadu and Uttarakhand more than 15% of the city population lives in slums. Some states like Jharkhand (4.7%), Arunachal Pradesh (4.9%), Assam (4.5%), and Goa(2.89%) have less than 5% of the city population living in slums. Kerala (1.3%) has the lowest proportion of city population living in slums.

SOLID WASTE:

In many towns and cities solid waste management is inefficient or non-existent. Solid Waste management means the proper collection, transfer, recycling and disposal of all the solid material we throw away, including plastics, Paper and cardboard, food waste, electrical waste etc. It also includes industrial, hospital and institutional wastes which often contain pathogens as well as hazardous and toxic chemicals which need special care.Unlawful dumps of urban waste frequently wind up on streets, in public areas, in waste-lands drains, or in rivers. Due to their accessibility from central urban centres and plenty of open space, peri-urban areas are ideal for disposing of trash. However, this is often not the case. This has the potential to contaminate surface and groundwater resources that could be used to produce drinking water.

NATURAL HABITATS:

There is a strong correlation between increasing urbanisation and declining bio-diversity (Paucharda et.al. 2006). The increasing Population is a catalyst for the expansion of urban areas, which in turn increases the demand for natural resources. Cities' ecological and environmental footprints get larger as they are bigger in terms of population, land area, and density. The removal of habitat, deterioration of the environment, and fragmentation of the landscape are the results of urban development into forests, wetlands, and agricultural systems. Increased levels of air, water, and soil pollution are a result of urban lifestyles, which are often consumptive, resource-intensive, and waste-producing. Habitat degradation is the inevitable outcome of this.

CRITERIA & NEEDS OF URBAN SUSTAINABLE DEVELOPMENTS:

Instead of being based on domination, a sustainable city is constructed on democracy. The idea that technology cannot take the place of natural resources is the foundation of the sustainable development methodology. Furthermore, by the time these conditions are met, urban sustainable development can be feasible.

1. Developing social equality for citizenry.
2. Improving Communion and social correlation of citizens.
3. Improving social and familial basis.
4. Strategic approach for urban sustainable development.
5. Developing urban culture for urbanized societies.
6. Increasing efficiency of urban Policies.
7. Developing citizen rights and urban legislation.
8. Developing urban education for citizens.
9. Requesting citizenry for continuous evaluation of urban management system.
10. Paying careful attention to environmental Concerns.

CRITERIA OF URBAN SUSTAINABILITY:

World Commission on Environment and development suggests these Principles as essential features of a sustainable city:

1. Increasing economic and social opportunities for all citizens.
2. Decreasing energy contribution in urban growth trend.
3. Optimum usage of water, earth and other vital resources.
4. Minimizing garbage and waste water Production and maximising recycling.

5. Developing management systems in a more efficient and streamlined way for reaching economic, social and environmental Purposes.
6. Directing technologies, used in the city, to sustainable development goals.
7. Strengthening and consolidating different regions of the city in order to Prevent and respond to social, environmental and economic threats, caused by human or natural resources.

FINDINGS:

The main findings of this study are:

1. Urbanisation is a global trend reflecting the growing population of the world. The urban populations in developing countries are currently increasing at a faster rate than those of more developed countries.
2. Urbanisation results from a natural increase in the population and rural to urban migration.
3. Urban living is associated with better employment and education opportunities, better health and greater access to social services and opportunities for social and cultural activities.
4. Uncontrolled migration and rapid urban growth are associated with increasing urban poverty and inequality and rises in slum and squatter populations. These people usually have inadequate water supply and sanitation services.
5. Urbanisation growth has caused increase in water using and this has led to endangering ground water resources and water pollution.
6. Urbanisation growth causes increase in transportation rate and fuel consumption which leads to air and noise pollution.
7. Urbanisation and urban career growth and consequently industrial production increase has led to increase in greenhouse gas and CO2 emission.

CONCLUSION:

Different laws and regulations apply to living in cities than in other places since they are more complex and dynamic than other types of places. It is common knowledge that in order to improve living conditions, urban development must keep up with population increase and corresponding needs. Because of its significance and intricate features, managing and developing a city requires precise planning and organisation. Slums and informal settlements have grown in number in today's cities due to poor administration, creating unhygienic living and working conditions. Consequently, the necessity of enhancing urban measures that encourage resource efficiency should get careful consideration. Once more, emphasis needs to be placed on reducing the production of solid waste at the sources through the use of regulations, fees, taxes, mandated standards, and voluntary compliance. Improving rural infrastructure and deterring rural immigration are important strategies for managing urban population growth. Finally, the lives of India's urban people may become increasingly unpleasant if sufficient measures are not made to minimise pollution and enhance the standard of living by adding more social amenities. This might lead to health risks and worst-case destruction.

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