

Environmental Degradation Effects of Urbanization in Port Harcourt

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Abstract: This paper examined the effect of urbanization on the environment, specifically, the increasing pace of the degradation of our environment. In the face of global economic recession environmental degradation poses a great challenge to sustainable development. Rivers State and Port Harcourt metropolis specifically, is faced with climate change, which presently defines the life expectancy of people living in the region, due to the rapid pace of urbanization. Urbanization is the physical growth of urban areas as a result of rural migration and even suburban concentration into cities. Due to uncontrollable urbanization in Rivers State, environmental degradation has been occurring very rapidly and causing many problems like land security, worsening water quality, excessive air pollution, flood and problem of solid waste management. This paper emphasizes on the effect of urbanization on environmental components namely; deforestation loss of biodiversity, flooding and environmental pollution. Although it is impossible to restrict urbanization, but there is need to ensure that, urbanization proceeds in the right path, to reduce its impact on the environment. Conclusively, this paper recommended measure that could reduce the escalation of environmental degradation caused by urbanization in Rivers State.

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1. Introduction

There are many problems, challenges and opportunities associated with living in the environment today. The earth and its treasure base, is experiencing a siege from all aspects of human endeavours ranging from misuse, abuse and degradation of the environment that have become so easily spotted and there are disruptions every day and almost everywhere. Cultures, economic activities, cultural behaviours and livelihood practices are changing and changing fast as a consequence of the realization that when people have power to extract resources around them for a more fulfilling life, they sometimes unleashed such power with a sense of desperation to solve the increasing and mounting problems of survival and progressive improvement and this leads to environmental degradation.

Thus, the desperate quest for self, family or organizational improvement is no longer a future threat but real threat for the future. To look up to the future with optimism, depends to some reasonable extent on how we are able to set the stage for tackling environmental degradation problems of today. Generally, speaking problems with environmental degradation are often linked with process of development and therefore have effects on local,

regional, as well as global levels. These effects which are the result of human activities have devastating consequences on the environment and so are harmful on human beings, animals and plants and can be passed on to future generations (Danish International Development Agency, 2000; Kjellstrom and Mercado, 2008). Environmental degradation occurs when earth's natural resources (water, air, soil) are depleted. Some factors that could affect the environment are urbanization, population growth, economic growth and activities, intensification of agricultural activities, increase in the use of energy and transportation. Land, air and water are compromised when people exhaust and waste resources or release harmful chemicals. Urbanization can be described as the process of building towns and cities and making them bigger. The phenomenon of urbanization is a consequence of population increase and migration from rural to urban areas and growth-centres.

The urban growth rate in Nigeria today is put at 5.8% per annum (Draft NUDP, 2004). Rural economy is principally agrarian. But, under conditions of increasing population and diminishing rural resources, some contingent of rural population migrates to urban

areas for helpful job security, higher education, higher income, better health and longer life. The result usually is disappointment and disillusion as the poor in some cities have a better life than those in rural areas. It is a process by which settlements take on higher socio-economic and political responsibilities and perform central place functions to other settlements (Oredipe and Bakare, 2009). One of the areas in which urbanization had its impact on cities is in the alteration of environmental equilibrium in urban drainage basins particularly with regards to its hydrology and water resources (Olorunfemi and Jimoh, 2000). Since urban centres occupy water sheds, the process of building towns and cities has altered the hydrological regime of rivers and cause emergence of other environmental conditions in cities. Thus, exploitation of finite and renewable resources of the environment which was meant for sustained economic growth and development has turned out to be a curse.

However, with passage of time, teeming population, sophisticated technical progress and their overall impact and pressure on the environment, a rethink began to emerge. The challenge in the contemporary situation remained that of a clear need for regulated control of the living environment based on principles of sustainability. It has become evident that the paradigm shift from sustained development to sustainable development in the light of global environmental concerns becomes an imperative. The pressure of demands made on living and finite resources has risen to a height where the former development styles, processes and their products are now inappropriate and incapable of coping with long-term human demands.

Essentially therefore, sustainable development has become the enigma for our common future. Pressure placed on the carrying capacity of the earth and its resources is reaching an alarming proportion and now at the front burner of development and environmental issues. In Nigeria for instance, the Federal Government of Nigeria (2008) National Policy on population for development also made the observation that “the present high rate of our population growth is already contributing substantially to the degradation of the ecology of the country. Thus, there is both cultural diversity and ecological diversity; with about 250 distinct ethnic nationalities, the ecosystems range from the southern mangrove swamps, rainforests to savannah woodlands, and semi-arid Sahel regions in the north.

The country is characterized by varied landscape, climate, soil, vegetation and regional dichotomies. There is rapid depletion of and degradation of the ozone layer, soil resources, as well as air and water pollution. Pollution and deforestation, soil erosion, oil spills, toxic dung and uncontrolled human activities

make the environmental situation a grave one. These environmental problems are products of development activities like urbanization. This paper therefore aimed at examining the effect of urbanization on environmental degradation in Rivers State, precisely in Port Harcourt metropolis. To achieve this purpose, the paper has been structured into six sections with the introduction as section one. Section two dealt with conceptual issues on environmental degradation. Section three briefly looked at an overview of urbanization. The section four discussed the environmental effect of urbanization. The section five dealt with the conclusion and section six is the summary and recommendations.

1.1 Conceptual issues on environmental degradation

1.1.1 Environmental Degradation

The environment as posited by Bayode, Emmanuel and Sogbon (2011), is made up of biophysical components and processes of natural environment of land, water and air. Expanding the above definition environment would also include all layers in the atmosphere, inorganic and organic matters, socio-economic components and processes of human endeavours. The elements mentioned here have a symbiotic relationship and any distortion of their natural state could affect economic activities. Emmanuel and Alakinde (2006), lending credence to the above asserted that land and associated resources, structures, sites, human health, nutrition and safety are also inclusive.

The environment can justifiably be said to be the natural habitat of man with several components within which various kinds of activities and processes occur. The unwise use of the natural environment due to ignorance, poverty, overpopulation and urbanization amongst others has led to the degeneration of the environment. The charges (degeneration) occur as Nigerians attempt to adjust their seemingly endless wants and desires for food, shelter, recreation, infrastructural facilities, and so on (NEST, 2002). These land use activities contribute to the overall development of the country but they equally produce negative impact on the environment.

1.1.2 An overview of Urbanization

Urbanization, simply defined as the shift from a rural to an urban society, is an essential corollary of industrialization that goes hand in hand with the role of human settlements as engines of growth in the economy and as promoters of scientific, socio-cultural and technological development. Furthermore, urbanization, can be defined as a radical shift from a rural to an urban society, is an essential corollary of industrialization that goes hand in hand with the role of human settlements as engines of growth in the economy and as promoters of scientific, socio-cultural

and technological development. Furthermore, urbanization can be described as the outcome of the social, economic and political development.

1.1.3 Causes of Urbanization

People migrate for several reasons and no single factor acts independently to influence prospective migrants' final decision to move.

(a) Rural-urban migration

Movement of people from the rural to the urban areas is the most important cause of urbanization in Nigeria. Added to this are the predominance of young adults and more or less equal proportions of males and females whose desire for large families is high.

(b) Urban bias development strategies

Pro-urban development strategies adopted by countries have left urban areas more developed than the rural areas. The greater opportunities cities offered in the urban areas in terms of employment, education, health and other facilities tend to attract the youth to the urban areas. Whilst the urban population is growing rapidly through natural increase (i.e. more births and deaths), immigration or migration from the rural to urban areas is also increasing.

(c) Search for greener pastures

In many countries, migrants move to urban areas mainly in response to better employment and income opportunities. Therefore true determinants of urbanization and spatial concentrations of population are found in the forces that determine the location of employment opportunities, such as the nature and pattern of industrialization, the pace of agricultural development, and the growth of transportation and communication networks.

The harsh socio-economic, insecurity of tenure and environmental conditions in the rural areas also push the youth out of agriculture in response, they move to urban areas for non-exiting white-collar jobs. The unavailability of basic economic and social infrastructure such as water, roads, electricity, health facilities, and the security of lives & properties due to inhabitants in the rural areas are possible causes of rural-urban migration.

1.2 The Urban Challenge

The major challenges to rapid urbanization and population growth include:

- i. Inadequate sanitation, air and water pollution.
- ii. Environmental degradation such as deforestation, soil erosion etc.

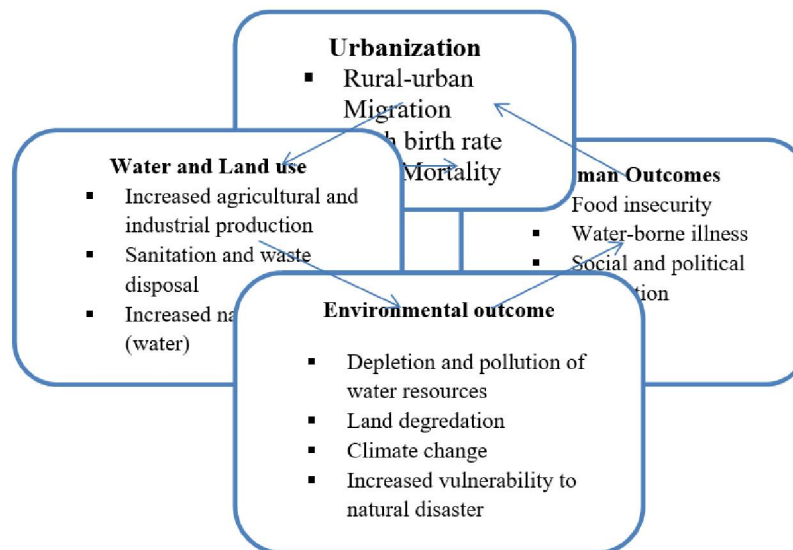


Figure 1: Human and Environmental Outcomes of Rapid Urbanization

1.3 Environmental Effect of urbanization

Firstly, as urban areas grow, demand for land for housing, agriculture and urban infrastructure increases leading to increased pressure on farmlands, forests and water resources. Secondly, rapid urbanization accelerates desertification and environmental change, leading to water scarcity, soil erosion, and climate change. Environmental conditions in cities have gradually deteriorated due to the rapid growth of the cities and the attendance inability of social services and infrastructures to keep pace with the rate of

growth. Inadequate storm drains, dumping of refuse in drainage lines and construction of houses close to and even on the natural water channels have been shown to be responsible in that order for the increasing cases of flood in the urban centres. Environment problems associated with the increasing growth of urban slums including overcrowding in squalid housing conditions, poor quality or unavailability of basic infrastructures and social services, such as water and sewage facilities and even lack of access routes (NEST, 2002).

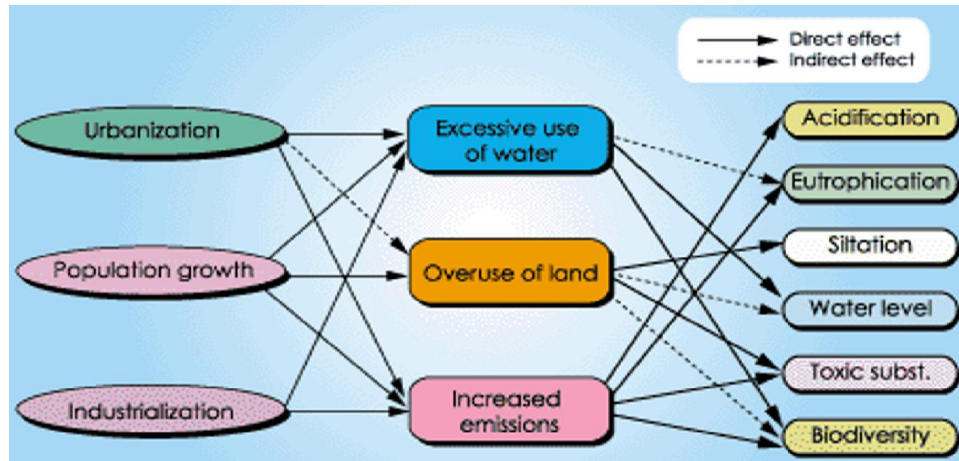


Figure 2: Implication of urbanization to the environment

1.3.1 Deforestation

Urbanization leads to changes in land cover, Rapid urbanization has increased demand for timber and fuel wood, resulting inland degradation, changes in climate and hydrological cycle, and food insecurity. Deforestation is the clearance of forests by logging and/or burning. Deforestation occurs for many reasons: trees or derived charcoal are used as, or sold, for fuel or as a commodity, while cleared land is used as pasture for livestock, plantations of commodities, and settlements. Deforestation also adds to the decay of a safe environment and the effects of environmental

degradation are not farfetched as they stare us right in the face.

The removal of trees without sufficient reforestation has resulted in damage to habitat, biodiversity loss and aridity. It has adverse impacts on bio-sequestration of atmospheric carbon dioxide. Deforested region typically incur significant adverse soil erosion and frequently degrade into wasteland. These activities have accelerated soil fertility decline, loss of bio-diversity, and leaching of soil nutrients that pollute rivers and streams in the urban and peri-urban areas.



Figure 3: Fuel wood collection and annual bush fire menace

1.3.2 Loss of biodiversity and endangering of plants and animal Species

The Intensification of urban land use has caused serious and extensive deforestation. The overall effect of the process of deforestation calls for serious concern. This is because forest reserves are supposed to be protective of the immediate environment in which they are located. The forest is supposed to serve as shield for soils beneath, especially from direct impact of downpours, high temperatures and destructive winds.

The ecological consequences can be seen in erosions, floods, environmental degradation and instability. In relation to the loss of biodiversity, the World Fact Book (2005) identified Nigeria's 3.3 percent as one of the highest forest loss rates in the world. The world fact book further stated that since 1990, Nigeria has had to loss some 6.1 million hectares or 35.7 percent of its forests. The statistics went on to show that Nigeria's most biodiversity ecosystems are fast depleting at an alarming rate.

From 1990 to 2005, Nigeria lost a unimaginable 79 percent of her forests and thus Nigeria has consistently faced environmental sustainability challenges. The various species of plants and animals that are required to maintain ecological balance in the food web and chains have been devoured without replacement which poses a threat to man and the environment.

1.3.3 Flooding

A major environmental problem in many parts of Rivers State today is flooding. According to The UNDP (2005), flooding arises from rivers and streams overflowing their banks. The change in the land use pattern due to rapid urbanization adversely affects the hydrological processes in a catchment, leading to a deteriorating environment. The increase in impervious areas disrupts the natural water balance. Reduced infiltration increases runoff and leads to higher flood peaks and volumes even for short duration low intensity rainfall. In urban areas, land surface has been covered by roads and building, hence the soil has less capacity to store rainfall.



Figure 4: Cross section of the human activities caused by urbanization that result to loss of biodiversity



Figure 5: Flooded ravage area in Port Harcourt

1.3.4 Environmental Pollution

Most of the planet's natural environments have been destroyed and a large portion is under huge threat due to the toxic substances and chemicals emitted from fossil fuel combustions, industrial wastes, and homemade utilities among other industry processed materials such as plastics. Land, air, and water

pollution pose long-term cumulative impacts on the quality of the natural environments in which they occur. Seriously polluted environments have become insignificant in value because pollution makes it harsh for the sustainability of biotic and abiotic components.



Figure 6: Solid waste dump sit in Port Harcourt metropolis

1.4 Conclusion

In Rivers State, urbanization process has created severe negative environmental impacts, such as pollution, deforestation and wetland destruction, erosion and flooding, urban sprawl, slum and squatter settlement, heat island and aesthetic degradation, which have had dire consequences on both human and other living organisms. Therefore, humans bear an ethical and moral responsibility for the survival of the environment. All the elements – plants, animals, rivers, natural resources, water, and air are equally important for maintaining the status quo. Any change of the elements disrupts the balance and destruction is caused.

1.5 Recommendations

Based on the identified effect discussed in this paper, the following recommendations are made thus:

1. Since, urbanization is a continues process and the deforestation of the natural forest reserves is inevitable, policies and measures should be ensure that our forest are reforestation of our forest reserves.

2. There should be public sensitization on the need and benefits of maintaining and protecting our habitat and decrease threats to biodiversity.

3. In other to tackle the issue of flooding in Rivers State, there is need for the government to introduce ‘planting trees strategy’ as this approach will help reduce the impact of climate change on flooding.

4. Environment pollution can be tackled by the provision of storage facilities for solid waste in strategic areas in the city.

5. In order to be on the desirable path to sustainable environmental management, urbanization process should be controlled and managed effectively, without exceeding the carrying capacity of urban centres, by establishing industries and government establishments in rural areas.

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