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# Ecological Problems in the Niger Delta: The Port Harcourt Experience 1913 – 1998

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## **Abstract**

*Cultural historians and other scholars have made attempts to trace the influence of man on society to reveal burdens and degradation and set proposals for planning. Accordingly, the most significant factor influencing society is man, who constantly alter society in the form of building development, industrial production, traffic, leisure and other activities, consequently inflicting damage upon the inanimate and animate environment, including himself. This paper examines the impact of human activities on Port Harcourt City between the period 1913-1998. Port Harcourt is the most industrialized and one of the fast expanding cities of the Niger Delta in Nigeria. It also examines the environmental consequences, and posits that better environmental management is necessary to sustain the ecology of the region.*

## **Introduction**

A city cannot be considered in isolation, thanks to the high mobility of man. Cities like Port Harcourt, Lagos and Abuja must be analyzed in the context of its natural, political, social and economic conditions. Port Harcourt lies within the mangrove rain forest. Established in 1913, Port Harcourt symbolized the triumph of British imperialism. It signified the final penetration of the Niger Delta and the establishment of direct contact with the hinterland producers during the Atlantic trade. Due to its centrality to the palm produce business in the interior and the waterways of the Delta city – states, Port Harcourt was linked by railway and roads. (Ejituwu and Kpone-Tonwe 1989:124). Thus Port Harcourt represents the Delta City – states as the Centre of distribution of goods in the Niger Delta and a major contact point with the hinterland Nigerian Communities. Today it is no doubt the most industrialized city in Nigeria, especially with the re-location of the oil and gas companies.

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**Urban Growth: Process and Consequence or the Environment**

The urban – industrial ecosystem is closely linked with the environment especially as water, fuel, industrial raw materials and consumer goods are “imported” while sewage water and polluted air are “exported” into the same environment. The environment simply means man’s surroundings and includes all things-living and non-living, whose quality determines the quality of human life. People live on the surface of the earth in a physical environment that is extraordinarily complex, extremely diverse, infinitely renewable and yet fragile. This fragility, coupled with its diverse and complex nature has made the issues of the environment to be topical throughout the world. The implication of this is that ecological problems should not be considered without regard to the particular conditions of the city or country. Because of the need to satisfy basic needs and requirements, economic development tends to enjoy absolute priority while environmental protection tends to be relegated and regarded as obstacle to industrial and economic development. However, where the political will exist, financial limitation effects investments in the environment in spite of the long-term environmental consequences, for in the words of Torado and Smith (2004:404).

*Damage to soil, water supplies, forests, resulting from sustainable methods of production can greatly reduce long-term national productivity but will have a positive impact on current GNP figures. It is very important that the long-term implications of environmental quality be consider in economic analysis. Rapid population growth and expanding economic activity in the developing world are likely to do extensive environmental damage unless steps are taken to mitigate their negative consequences.*

In deed, one major culprit in the deteriorating environmental problems in many nations the growth of industrial. Let us examine the growth and consequences of this development.

The socio-economic and ecological situation of Port Harcourt was decisively marked by the way urbanization took place. The paradox of the fast pace of industrialization is the attendant disfiguring of the earth’s surface and upsetting of the delicate balance of nature by man, creating environmental problems. Modern technology provides man with bountiful supply of food with industrial power, modern transportation etc. But also with by-products whose entry into the natural environment produces effects of pollution greater than the amount that can be controlled by the natural self-purification capacity of the ecosystems. The essence of technological pursuits is constantly clashing with fundamental ecological principles (Imevbore 1972). In most countries, urbanization took a breakneck spread over a few decades; Venezuela and Argentina are good example.

The rate of urbanization, the socio-economic background of immigrant and the rate of population increase determine the extent and mode of settlement pattern and therefore, the environmental situation. It is difficult to make sufficient space available for building, resulting in the development of illegal or semi-legal settlements mostly without basic infrastructure and often on the riverbanks and slopes threatened by erosion or other areas posing threat to health. Examples of such illegal development are the Bundu waterside, marine base and Ndoki waterfronts and some

parts of Diobu threatened by erosion. The latest in these illegal structures is the construction of shops on fences and buildings in GRA and other low density residential areas. This has turned Port Harcourt into one mega-shopping town, thus, defacing the city known as garden city. Most of the culprits are middle class families desirous to increase family income from rents from these added structures. Other illegal buildings and shanties built in Bundu waterside etc. Were put up mostly by the poor and low-income earners who cannot afford to rent houses but built poorly ventilated shanties that impede vehicular movement for the supply of infrastructure, like light water etc. The result is lack of access for refuse disposal vehicles and the direct damage of extensive areas of the ecology. Because they are the very poor, they continue to depend on biomass fuels such as wood, straws and manure. The burning of biomass fuels for cooking and the boiling of water only result in dangerous high levels of indoor pollution to which 60 to 90 million people mostly women and children are exposed annually. These conditions contribute enormously to the large number of chronic respiratory ailments. What then is the result of this population explosion and industrial expansion in Port Harcourt? This we shall examine in detail.

### **Development and Ecological Problems**

As already noted above, the difficult environmental situation is aggravated by the extreme expansion of the city over a wide area. Torado and Smith (2004) also argued that the most devastating environmental challenges in the developing countries like Nigeria are caused by poverty. These include health hazards created by lack of access to clean water and sanitation, indoor air pollution from business concerns, deforestation and severe soil degradation. These are common where household lack economic alternative to unsustainable pattern of living. These environmental damages are diverse and severe. They include water pollution, water scarcity, air pollution, solid and hazardous wastes, soil degradation, deforestation, loss of bio-diversity and atmospheric changes.

Pollution simply means the release of substances or energy to the environment by man in quantities that damage either the health or resources (Obafemi 2004:90). This definition is seriously concerned with how widely man views his resources and how far – sighted he is in predicting his responsibilities and needs for the future (Imevbore and Odu 1985:133). The increased demand for space has led to intensive utilization of areas near the city. The demand for accommodation primarily by those in the informal sectors of the economy had led to un-enforced land policies by city authorities. In the Port Harcourt main city, about 145Km are not utilized according to plan, and more than one third of the houses have been built illegally. Moreover, developments are executed at the expense of urgently needed space for plants and animals. The effect of this is the lack of appropriate spaces for the size of the population within short distance.

Port Harcourt metropolis is expanding at such a speedy rate that it will soon link up with adjoining communities like Oyigbo, Aluu, Rumudomanya, Woji, and Igwuruta etc. Urban waterways have either been built on or have been left to degeneration into open sewage channels. Flooding results in most places. Other large places close to nature no longer exist in the city except one includes such places as

graveyards. In essence, space has become of great concern for Port Harcourt City as potential recreation area like Field 1, 2 and 3 are reduced or built on which in turn has adverse effect upon people's well being. The Odili government recently (2005), developed parts as recreational facilities for children and youths along Azikiwe Road. This is under utilized and have been overrun by weeds.

Another problem area results from the great distance between private and public owned housing where they exist and the location of inhabitant's workplace. The poorly developed transport system and the resulting bad/congestion of the roads lead to greater distance for individuals and thus, to increased air pollution from vehicular emissions. Since urbanization was not only due to population increase but also industrial development, environmental damage caused by industrial activities especially air borne pollutants must be emphasized, because of its effects on the health of the citizens. Obafemi (2004:94) described air pollutant as:

*Any substance in air, which could, if in high enough concentration, harm man, other animals, vegetation, or material pollutants may include almost any natural or artificial composition of matter capable of being airborne. They may be in the form of solid particles, liquid droplets, gases or airborne, or in combinations of these forms... exclusive of pollen, fog and dust which are natural.*

About 100 contaminants have been identified and they fall into the following categories: Sulphur compounds, volatile organic chemicals, nitrogen compound, oxygen compounds and odours.

Imevbore and Odu (1985:134) explained further: According to them pollutants are:

*"Substances released into the environment in sufficient concentration as to produce a measurable effect on the soil, plant, animals, human and material".*

They are dispersed in air and water. When we consider air pollution, we are generally concerned with their effects on territorial communities. When we consider water pollution we are not concerned only with its effect on aquatic communities in rivers, lakes, estuaries and seas, but also with its effect on territorial communities. Torado and Smith's (2004:404) study in the less developed countries easily apply to the Port Harcourt situation. They argued that the most far-reaching environmental challenges in developing countries are caused by poverty. These include health hazards created by lack of access to clean water and sanitation, indoor air pollution from business stoves, and deforestation and severe soil degradation. All these are common among low income earners where households lack alternatives to unsustainable patterns of living.

The table below show the principal health and productivity consequences of environmental damage in less developed countries and this aptly apply to Port Harcourt as it becomes more cosmopolitan and more complex. The damage is divided into seven categories namely, water pollution and water scarcity, air pollution, solid and hazardous wastes, soil degradation, deforestation, loss of biodiversity and atmospheric changes (Akpan 2007:225).

**Table 1:** Principal Health and Productivity Consequences of Environmental Damage

<b>Environmental Problem</b>	<b>Effect on Health</b>	<b>Effect on Productivity</b>
Water pollution and water scarcity	More than 2 million deaths and billions of illnesses a year attributable to pollution; poor household hygiene and added health risks caused by water scarcity.	Declining fisheries; rural household time and municipal costs of providing safe water; aquifer depletion leading to irreversible compaction; constraint on economic activity because of water shortages.
Air pollution	Many acute and chronic health impacts: Excessive urban particulate matter levels are responsible for 300,000 to 700,000 premature deaths annually and for half of childhood chronic coughing; 400 million to 700 million people, mainly women and children in poor rural areas, affected by smoky indoor air.	Restrictions on vehicle and industrial activity during critical episodes; effect of acid rain on forests and water bodies.
Solid and hazardous wastes	Diseases spread by rotting garbage and blocked drains; risks from hazardous wastes typically local but often acute.	Pollution of groundwater resources.
Solid degradation	Reduced nutrition for poor farmers on depleted soils; greater susceptibility to drought.	Field productivity losses in range of 0.5% to 1.5% of gross national product (GNP) common on tropical soils; offsite situation of reservoirs, river-transport channels, and other hydrologic investments.
Deforestation	Localized flooding, leading to death and disease.	Loss of sustainable logging potential and of erosion prevention, watershed stability and carbon sequestration provided by forests.
Loss of biodiversity	Potential loss of new drugs.	Reduction of ecosystem adaptability and loss of genetic resources.
Atmospheric changes	Possible shifts in vector borne diseases; risks from climatic natural disasters; diseases attributable to ozone depletion (perhaps 300,000 additional cases of skin cancer a year worldwide; 1.7 million cases of cataracts).	

## **Garbage and Environmental Degradation**

One problem posed by urbanization is the steadily growing mountains of refuse in developing countries like Nigeria. The prevalence of unsanitary conditions created by lack of clean water and poor environmental sanitation had provoked the spread of infectious diseases. It is estimated that water borne pathogens that contribute to typhoid, cholera, amoebic infections, bacillary dysentery and diarrhoea account for more than 70% of all diseases in Nigeria.

Disposal of garbage from household and urban commercial activities is a threatening environmental problem. Heaps of garbage literally eat up available space and people could soon be “buried in solid waste”. The basic problem is that matter is indestructible. By treating garbage, its form is changed – from solid to liquid, to gas or vice versa or energy can be produced or converted for use. But the residuals are still there in one form or another to be discharged into the environment where they pollute the air, water or soil. Garbage burning is common in open dumps giving off gaseous irritating pollutants with foul odours. The smoke can also pose a real danger by obstructing vision. The by-product of burning dumps are the deadly gases such as chlorine and fluorine emitted. These are released from burning of plastics and tyres, materials that are not biodegradable (Imevbore and Odu 1985). Moreover, the problem of refuse seems to have met with little scientific response and solution from scientist/environmentalist.

The illegal refuse dumps and polluted rivers with their potential for disease-causing agents not only present a permanent threat to the health of the immediate neighbours but also, for the entire town. The danger can be aggravated by human excreta among the refuse or by toilet paper left to fly about, which are deposited with other domestic refuse bins for fear of blocking the sewage system.

The problems posed by improper refuse collection are enormous, requiring serious attention, especially in the area of refuse treatment. There is the need to consider the adoption of re-cycling and compositing measures in refuse management. Furthermore, unrecyclable refuse can be utilized for energy generation while residual waste can be safely deposited. In Nigeria however, the concept of waste management is still very much in its initial stages, and possibilities of avoiding refuse dumps ought to occupy the prime position in such a concept.

As far as recycling is concerned, it must be stated that positive examples do exist. Paper, cardboard and glass are first in line for recycling as has been demonstrated in Aba, Abia State. In most parts of Nigeria today, the collection of metal and plastic waste is increasingly playing an important role in the recycling of raw materials and the protection of the environment in cities. The employees of the informal sector – (collectors and buyers) are of special significance as 25% of the reduction of the “refuse mountain” is due to their efforts thereby, affording considerable relief to the budget of the cities.

In the major cities and state capitals, efforts are made since about 75% of the population regularly ensure that wastes are deposited at collection centres for collection. Admittedly, in the remaining localities of the metropolitan towns, efficiency in waste disposal is considerably lower, and it is evident that the lower social class, and the marginal population in the peripheral areas, suffer especially

from the consequences of inadequate waste disposal, as they do in other Nigeria cities. Another area of concern is industrial wastes as no special method of treatment is provided. They are dumped together with domestic wastes despite its known hazardous content. In Port Harcourt, the environmental authority has been engaged since 1990 in developing a control system, and in working out ways of dealing with a daily recurring quantity of hazardous industrial wastes though with little success. This could be due to poor finance, inadequate legal backing and lack of suitable areas in the metropolitan city for deposition.

A lasting solution to the environmental challenges of Nigerian cities cannot be achieved by merely adopting ecological rehabilitation measures or such other efforts at the level of the city only.

The approach must be holistic, embracing, an integrated ecologically oriented development concept for the city. The state also needs a long term integrated ecologically-oriented urban development blueprint as a matter of importance. It economic and social policies, should be tailored towards ensuring greater quality content in the living conditions of the citizens. When this is achieved, rural - urban migration will be drastically reduced thereby ensuring that population explosion do not wipe out successes recorded by environmental policies or urban management.

It is a primary responsibility of states to provide the legal framework for environmental protection; such legislations should regulate industrial emission and exhaust fumes among others. This is particularly important because an Environmental Impact Assessment (EIA) is a sine-qua-non towards ensuring that industrial establishments impact positively on the socio-economic lives of host communities and the citizenry at large.

It is envisaged that, priority should be placed on the provision of social amenities such as potable water, decent sewage system, effective refuse management and transportation to promote a healthy environment in all parts of the town.

In most cities, the necessity to modernize both private and public toilet facilities have been fully realized. In Port Harcourt metropolis, for instance, government in 1996 directed landlords, especially in the Diobu area, to modernize their toilet facilities by adopting the water cistern in place of the obsolete pail system. Regrettably, in 2010, 14 years since this directive was given, there still exists, pockets of areas where the pail system is still in use.

## **Conclusion**

This examination of the ecological problems of Port Harcourt is in no way exhaustive, but it exposes us to the inevitable consequences of inadequate planning and development. In view of the worrying environment situations in Port Harcourt and indeed in Nigerian cities and the wide range of knowledge of the interrelationship between people and environment now available, there is the urgent need for government to take environment concerns more seriously when taking decision. Moreover, all the strategies for improving ecological condition in towns must be based on the recognition that the international conditions for an ecologically – orientated development are right and achievable.

The lack of success so far in reducing environmental pollution can be summarized as follows:

- a) The legal loopholes existing in the laws and prescriptions are not tightened because authorities are unable to enforce them.
- b) Fines and penalties for infringements of environmental laws are too low and as such, some firms are willing to pay such penalties instead of stopping production and insure loses which costs much more.
- c) For political and financial considerations, some national and urban authorities compromise international best practices for ecologically – compatible development.
- d) The importance of environmental protection and environmental education has not been recognized. Moreover, the public are not properly informed about ways in which individuals can contribute to the protection of environment. The NGOs are also not supportive in this direction.

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