

Environmental Degradation and its Catastrophic Effects on Common Resource: A Study of the Niger Delta Region of Nigeria

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Abstract

Environmental degradation can take various forms, from salinization to erosion, and to the overall depletion of organic matter. Nigeria, like many developing nations, has received her fair share of environmental problems, aggravated soil erosion, flooding disasters, salinization or alkalization and the desertification due to the effects of shifting agriculture on the common natural habitats, a forestation in flood areas, bush burning, pollution of water, air and land due to poor disposal of domestic and industrial wastes. Pollution resulting from oil spillage, noise pollution, urban proliferation and lack of open spaces to afford meaningful living. All these associated effects on human well-being. Women and children are the most endangered groups in all this. The socio-economic well-being of the people in Niger Delta in Nigeria in particular and the world in general. With the intensity and frequency of droughts and flooding increasing, consumer confidence and the ability of crops to reach yield goals are all threatened. This paper highlights the dimensions, nature and characteristic of these development and further examines the implications of environmental degradation on the good health and socio-economic well-being of the people in Niger Delta.

Keywords: Soil, erosion, salinization, climate change, environment, degradation, pollution, health

Introduction

The United Nations (UN) declared 2015 as “International year of soil”. The aim is to raise global awareness of the importance of the soil for food security, climate adaptability and ecosystem functioning. Environment is enunciated by the oxford dictionary as conditions/circumstances, affecting people’s lives.

This paper inspired by the (UN) soil declaration intends to expose the adverse effects of environmental degradations as relates to our soil and ecosystem with the increasingly significant

role that degradation will play as the global population rises, and resources are stressed by climate instability. It is the complex of physical, chemical and biotic factors that act upon an organism or an ecological community and ultimately determines its form and survival. Viewing the human environment from the point of economics, Odiette (1993) describes it as national, capital and analogous financial capital assets. Therefore, any damage done to the environment drains down capital, which will sooner or later deplete the value of recurrent deliverable services.

Degradation: A global phenomenon. Environmental degradation is the gradual and consistent deterioration of the environment through depletion of resources such as air, water and soil. The destruction of the ecosystem and the extinction of wild life. The expression of environmental degradation is varied and wide:

Environmental degradation is not isolated to one region or even one continent, it is a world problem. 11% of the earth's surface is occupied by agriculture and 25% is already highly degraded according to the UN's food and Agriculture organization.

When the environment becomes less valuable or damaged, environmental degradation is said to occur. There are many forms of environmental degradation. When natural habitats are destroyed or tempered with, biodiversity is lost or natural resources depleted, the environment is put to threat. Environmental degradation can occur as a result of human activities or naturally.

The greater concern at present is the loss of rain the forest, air pollution and smog, ozone depletion, climate change, flooding and the destruction of the marine environment. Some areas have experienced disastrous exposure to hazardous waste because of industrialization and urbanization. Oil spills have ruined the local environment at an abysmal level.

Activities of Human Beings on the Environment: Human activities and the environment are closely related. This is because every form of activity of man is done in the environment and the resultant effect is either positive or negative to man.

According to Uchegbu (1998), negative effects may arise from these economic and domestic activities. E.g, Agriculture requires pesticides that pollute the atmosphere or enter drainage systems via run off water and sewer.

Other forms of man made activities that lead to pollution are, burning of fossil fuel, exhaust fumes, thermal power station, refineries-petrochemical. All these emit toxic substances into the air such

as carbon monoxide, sulphur dioxide, etc. that causes global warming, acid rain and the malfunctioning of human hemoglobin as well as various types of cancers and respiratory diseases.

Ukpong (1994), listed human activities capable of causing environmental degradation as:

1. Logging activities
2. Uncontrolled mining and oil explorations.
3. Over grazing and over-cropping of arable lands.
4. Industrialization
5. Improper disposal of waste materials
6. Over utilization of non-degradable materials for packing and carriage

All these activities combined or in isolation have contributed negatively to the degradation of the environment in the Niger Delta. Adeneye (1996), postulates that the environment in which all these takes place is in the outer physical and biological systems of the earth in which man and other organisms live are very complex interwoven activities.

Holderness and Lambert (1982), claims that the physical environment is of air, water, and land. From all indications, human activities affect the environment, which as noted earlier, may positively or negatively affect man now and in the long run. However, the negative effects are the concerns of this paper, as it relates to continual degradation.

Highlights of Some Environmental Problems in the Niger Delta:

Pollution

In 2013 the concentration of greenhouse gases in our environment outpaced predictions and reached historically high levels. As the concentration of these heat-trapping gases has increased, so to have global temperature. According to international panel in climate change (IPCC), the period from 1983 – 2012 was the warmest three decades in the past 1400 years.

This phenomenal change, occurs whenever potentially harmful substances are released into the environment, pollution wholelistically is caused by human activities, though it can also be natural.

It is categorized thus, by receiving agent:

Air - emission

- Water - effluent
- Land - dumps and disposal (Ukpong, 1994)

Pollution can be classified into three major types; air pollution, water pollution and noise pollution.

Air Pollution

When the atmosphere condition which favours the well being of human is affected by the introduction of impurities in the air, we refer to this as air pollution. When the air is contaminated by unwanted gases, smokes, particles and other substances. The resultant waste from the activities of human when generating energy/heat and production of goods and services gives rise to air pollution.

According to world Bank reports (1980), air pollution is the presence in the atmosphere of one or more contaminants such as dust, fumes, gas, mist, odour, smoke or vapour in such qualities, characteristics and duration as to make it actually harmful or potentially injurious to human, plant, or animals life or property, or which unreasonably interfere with the comfortable enjoyment of life and property.

Air pollution arises from the continued human activities, Domestic or external such as agriculture, which the increasingly human population in trying to match up in food production. Thereby leading to serious environmental degradation in the Niger Delta.

Pesticides that pollute the atmosphere are introduced daily into the air, or enters the water system via run off, as well as sewage industrial activities are all responsible for a wide range of pollution. Thermal power stations, petrochemical refineries, burning fossil fuels and moving vehicles emit harmful pollutants like sulphur dioxide in nitrogen dioxide that all combine to cause acid rain, global warming and distortion in human/annual hemoglobin's.

The Niger Delta region because of its oil rich deposit has a lot of pollution to contend with because of unregulated and non-environmental friendly policies of exploration companies to the detriment of the region.

Water Pollution

Okorie (1992) identified water pollution as the distribution of unchecked gully erosion as a source of water pollution in Nigeria, thus: 600 in Anambra State; 300 in Imo State: 59 in Akwa- Ibom State and 130 in Cross River State. According to Okorie (1992), gully erosion has destroyed vast arable land for Agriculture and developmental projects.

Furthermore, Mba (1996) identified the major sources of water pollution in Nigeria to also include industrial plants, decomposed waste, solid mineral mining activities as well as petroleum exploration. Consequently, flooding has been considered a major environmental degradation with tremendous adverse effects. According to the UNDP (1995), Lagos flooding arises because of rivers and streams overflowing their banks.

In 2012, 2015 and 2017 Benue, Kogi, Delta, Anambra and Imo States respectively experienced massive flooding which resulted in loss of more than 200 human lives and property valued in billions. Rainfall is the major causative agent of flooding. The occurrence is seasonal and is usually during and after the raining seasons, between the months of April – October every year.

Noise Pollution

Noise is usually measured in decibels (dB). Noise is usually defined as any unwanted sound. Urban areas are prone to more high-density levels of noise, also industrial estates whose development is caught up with making residential areas adjoining or encircling large industrial layouts as occasioned in Lagos, Port Harcourt, Kano and other developed cities in Nigeria.

Other forms of environmental degradation which affect humans and human health in particular and other socio-economic well being of the people in the Niger Delta and Nigerians at large are: Water Hyacinth, desertification and deforestation, global warming, ozone layer depletion, loss of bio-diversity. These issues are remarkably affecting the Niger Delta region of Nigeria negatively in their socio-economic lives.

Other Sources Of Environmental Degradation

Solid Waste

Solid waste poses a serious environmental problem to the Niger Delta region and Nigeria in general. With its attendant effects on pollution of water, air and land. Presently, all major cities and towns across the country are faced with the problem of solid waste management. Lagos State annually generates more than 3,000,000 million cubic of solid waste daily as against the capacity of 1.5 million per day evacuation. This shortfall leads to narrower roads and offensive odour in the major cities. Communicable diseases such as Typhoid, dysentery, cholera etc. are all associated with dirty and improper solid waste disposal.

Oil Pollution

It is no news that the Niger Delta region is constantly being polluted as a result of oil exploration. The level of ecological and human damage done to this region is almost irreversible. With several government of the day making ecological policies and no political will to implement, oil pollution in the Niger Delta is alarming and urgent step should be taken to address this.

Oil spillage is a potential hazard in this region. The indigenes constantly live with the adverse effects of these oil spills as the oil exploitation companies (IOC) and the federal government seems to be colluding to technically put the inhabitants of this region into extinction.

The vast majority of Nigeria's oil and gas is produced in the Niger Delta. Whilst Federal Government of Nigeria (FGN) generates billions of dollars from this region, it causes environmental problems for the inhabitants and ecosystem. Drinking water is polluted, mangrove forest, and the tropical rain forest are all endangered.

According to the United Nations (UN) survey, Nigeria is one of the countries with the highest level of gas flaring in the whole world. Asthma, cancer, respiratory diseases are the bane of the residents of this region. The gas flaring produces acid rain in the Niger Delta, which is toxic and harmful to the vegetation and crops. The smoke is also a major contributor to greenhouse gases.

Not only does oil spillage cause effects similar to those caused by gas flaring, but it has resulted in numerous deaths of aquatic and wide life population. Human lives are lost as a result of pipeline

explosion and fire, as well as oil spillages. Leaking pipelines running through the creeks and villages in the Niger Delta are a major source of pollution, sicknesses and economic ruins.

Global Warming

Because the changes in the atmospheric conditions is not sudden/constant but occurs slowly, often taking 2–3 generations to be noticed, people are not cognizant of the geological transformation taking place.

Global warming is the gradual built up of greenhouse gases in the ozone layers. These gases are; carbon dioxide, methane, nitrous oxide, and chlorofluorocarbon, inhibit some of the heat radiated for the earth to cause a greenhouse effect. According to Inter-Governmental Panel on Climate Change (IPCC), the last two decades of the 20th century were the hottest on record (UN, 1998). Causative agents are the burning of fossil fuel for energy and transport, clearing of forest which reduces carbon dioxide absorption, and technologies that pollute. Global warming leads to rise in sea water level, soil erosion and flooding.

Ozone Layer Depletion

The ozone layer provides a protective layer which prevents the direct penetration of the sun's harmful ultra violet rays. It lies at a height of about 20 – 30 km above sea level.

The gradual and constant pollution of the environment through the release of chlorofluorocarbon (CFCS) gases causes the depletion of the ozone layer and this result in environmental degradation. Ukpong (1994), stressed that most skin diseases and low agricultural yield are as a result of ultra violet rays released into the atmosphere.

It affects water bodies, aquatic live, which supports the food chain and the resultant death of fishes which humans depend on greatly.

Land Degradation

According to the Nigeria Metrological Agency (NIMET), over 50 million are affected as a result of land degradation in Nigeria. It is feared that the damage by drought and population pressure may have resulted in the genetic loss of a vast array of valuable plant species. The intensification

of the use of fragile and marginal ecosystem has led to a progressive degradation and continuous intensification of marginal agricultural land, even the years of normal rainfall.

Ukpong (1994), noted that the following as risk factors in land degradation:

- Destructive logging
- Strip mining and oil exploration
- Compromised resource management
- Flooding and erosion menace
- Landslides
- Law reclamation for development

Flooding

Flooding occurs throughout Nigeria in three main forms; coastal flooding, river flooding, and urban flooding. Along the coast, coastal flooding occurs in the low-lying belts of the mangrove. River flooding occurs in the floor plains of the larger rivers i.e. the River Niger and Benue, while the sudden and heavy downpours causes flash floods that are peculiar with rivers in the inland areas. Heavy rainfall causes these rains to be destructive.

Nigerians are exposed to disasters, natural or man made just like every other country in the region and in the globe. Every year, flash floods wash away thousands of hectares of farmlands. Tropical storms claim lives and properties worth billions of naira across Nigeria. Between July and September 2015-2017, a total of 256 people died and 18,000 houses were destroyed while 15,000 farmlands were swept away when the Lago dam was opened in Cameroon in 2015.

Effects of Air Pollution in the Niger Delta

The quality of the air we breathe is gradually fading away each day. Overcrowding, traffic, congestions and urban degeneration all sum up to affect quality of air available.

Sources of air pollution:

- Pollen grains
- Smoke from Refinery

- Fungus spores
- Automobile fumes

Problems and Effects of Air Pollution

Air pollution degrades the environment, increases the number of visits to the hospitals, man hour loss in production and an increase in mortality.

Conclusion

The solution to some of the environmental problems enunciated above is the adoption of a sustainable development policy. Sustainable development is a carefully planned development that meets the needs of the present without compromising the ability of the future generations to meet their needs (UN 1990). To survive our environmental degradation and maintain a healthy balanced earth for habitations, we must reduce the massive pollution of the biosphere.

The reduction of the massive pollution and the control of air pollution can be achieved thus:

- Gravity
- Degradation
- Smokeless fuels
- Wet collectors
- Incineration
- International/National legislation
- Tree planting/surface sink

Remarkably, Nigeria stands to lose both financially and in manpower resources, if it maintains an unhealthy working environment especially in the Niger Delta regions. Therefore we all have to make concerted efforts to see that policies are geared towards revitalizing the environment as sustained and not wasted.

Federal government should enforce International best practices and standards in the oil regions, were the exploration is carried out. Environmental protection agencies should be strengthened by laws to enable prosecutions.

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