

## **ENVIRONMENTAL ISSUES AND THEIR IMPACT ON NIGERIA RURAL COMMUNITIES**

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### **Introduction**

Nigeria has a total land area of 983,213 km<sup>2</sup> occupied by about 170 million people (National Population Commission, 2012). The interaction of these people with their immediate environment has created indelible mark on the land space. The mark in this regard include urbanization, deforestation, desertification, all kinds of pollution, overpopulation and some other resultant effects of man's interaction with his environment. Many of these phenomena occur as people attempt to acquire their endless desire for food, shelter, recreation and infrastructural facilities. Although the natural occurrences of some environmental crisis cannot be totally ruled out.

Rural areas in Nigeria are not exempted since they are equally densely populated with the attendant numerous activities geared toward development. Many rural communities are endowed with good soil that supports massive production of crops, yet; few crops are provided as environmental crisis had ravaged their land to the extent that no meaningful development can take place in such areas. Besides, the health implication of the environmental crisis is so alarming as it manifests in the number of patients found in hospitals managing health related problems caused by contaminated water and food, hazardous air pollutants and a host of other indices of environmental crisis.

To worsen the situation, the plight of the rural dwellers appears to remain the same as all efforts made by the governments to savage the rural areas had proved abortive. People in those affected rural communities find it difficult to cope with life, and they are left with no other options than to bear the pain or migrate to a more favourable land.

### **Concept of Environment**

The word environment is derived from the French word *Environ* which means surrounding. Environment is defined in different ways by different authors. Oxford Advanced Learner's Dictionary (2005) defined environment as the conditions that affect the behaviour and development of an organism. It is the physical condition that something or somebody exists in. Environment can also be considered as the natural world in which human beings, animal and plants live. It includes water, air, land and the interrelationships which exists among them, between them and human beings and other living creatures. However, from ecological point of view, Ojo (2004) defines environment as an ecosystem. Ecosystem is the basic functional unit in ecology. An ecosystem is any natural or artificial environment where living things (i.e biotic components) are interacting with non - living things (abiotic components). Our plant earth is an ecosystem and human beings within it are interacting with it and are dependent on other living things as well as physical chemical and socio-cultural aspects.

### **Concept of Rurality**

Rurality is a vague concept as people often base it on their own perception which at times may include low population density, abundance of farmland or remoteness from urban areas. This concept will continue to be subjected to intense debate and research. In actual sense, lack of shared interpretation and ambiguous definition have led to difficulty in application. This basically explains why an area defined as rural by certain policies may be perceived by the inhabitants as urban. Schuditt (2012) posited that rurality is best defined from the researcher's point of view in order to avoid ambiguity which is as a result of constant shift in the factors that determines rurality itself.

Many scholars have defined rurality as it appeals to them. Olisa and Obiukwu (1992) argued that the main features of rural areas are depression, degradation and deprivation. This scholar further elaborated that rural villages are immersed in poverty so palpable that the people are the embodiment of it. In most rural areas in Nigeria, basic infrastructure where they exist at all, are too inadequate for meaningful development. Chigbu (2013) maintained that rurality is a condition of place-based homeliness shared by people with common ancestry or heritage and who inhabit traditional, culturally defined areas or places statutorily recognized to be rural.

## **Historical background of Environmental Crisis in Nigeria Communities**

Industrial activities as we have today are relatively recent. In the pre-colonial period, Nigeria had considerable craft industries. However, the second world war changed the situation of things world over including Nigeria (Hinds, 2015). The economy of Nigeria changed tremendously and there were demands from Europe for industrial raw materials. These led to the exploitation of resources in the environment without planning and this actually led to environmental crisis.

Another historical background to the Nigeria environmental crisis is the discovery of crude oil in Nigeria. Prior to the discovery of crude oil in Olaibiri (an Ijaw town in the present day Bayelsastate) in 1956, agriculture was the mainstay (backbone) of the Nigeria economy, East, West, North and South (Grunewalder, 2013).

However, the discovery of crude oil in Nigeria resulted to the oil boom in the 70s which led to tremendous increase in industrial activities. Thus, with financial resources available from oil and no development policy, unguided urbanization and industrialization too place. There were no appropriate environmental protection policies to guide development.

The result was the indiscriminate siting of industries, destruction of forest for industries and residential places, poaching increased and many animals were exploited, and the land was exposed to desertification without any consideration for environmental concern. It is very sad to note that even the new residential areas were not planned. The ministries (Federal and States) of urban and town planning were not proactive. It is still happening today. New settlements that are just springing up have no layout.

Increase in cattle requires more grazing land or alternative arrangement to provide pasture for the cattle. However, where there is no adequate planning, the result is the present crisis. The natural grazing vegetation has been reduced to bare ground due to overexploitation, hence there is need to think of alternative source of pasture for cattle.

## **Common Environmental issues and their impact on Nigeria rural communities**

### **Pollution**

Pollution refers to the addition of any substance (Solid, liquid or gas) or any form of energy (such as heat, sound or radioactivity) to the environment at the rate faster than it can be dispersed, diluted, decomposed, recycled, or stored in some harmless form. Pollution can be triggered by human activities and it can also occur naturally. Materials that pollute the environment can be classified in to two forms namely biodegradable and non-biodegradable. Biodegradable pollutants have the ability to break down into simple harmless substances by micro - organism. Examples of biodegradable pollutants are excreta, waste and all products of living

organism while non-biodegradable pollutants include glass, plastic, tin, can, metals e.t.c. the major types of pollution are classified by environment, these are .air pollution, water pollution and land pollution.

### **Air pollution**

The air we breathe is made up of oxygen, nitrogen, carbon(iv)oxide, noble gasses and water vapour. These elements constitute 99 percent of the chemical composition of the air. Air pollution occurs when harmful substances are released in to the air. A common type of air pollution occurs when people release particles in to the air from burning fuels.

Another common types of air pollutants are dangerous gases such as sulphur dioxide, carbonmonoxide, nitrogen oxides and chemical vapours. These can take part in further chemical reaction once they are in the atmosphere creating acid rain and smog. Other sources of air pollution can come within and such pollutant can be inform of smoke.

More so, air pollution can take the form of greenhouse gases such as carbon dioxide or sulphur dioxide which are warming the planet through the greenhouse effect. The greenhouse effect is when gases absorbed the infrared radiation that is released from the earth, preventing the heat from escaping. This is a natural process that keeps our atmosphere warm. If too many gases are introduced into the atmosphere, more heat will be trapped and this can make the planet warmer than before.

### **Water Pollution**

Water pollution happens when chemicals or dangerous foreign substances are introduced to water; including chemicals, sewage, pesticides and fertilizers from agricultural run off, or metal like lead or mercury. Most common contaminants are bacteria, phosphorus and nitrogen. Others include oil spillage, inappropriate location of lavatories, dumping of refuse in water and dumping of toxic materials in water.

### **Land Pollution**

Land pollution occurs due to dumping of toxic waste which can be in form of chemicals or other waste materials. Polluting the land by chemicals can lead to entry of pollutants into food chain. This is commonly caused by excess use of fertilizers in agriculture, indiscriminate disposal of industrial wastes, e.t.c. Even defecating in the open space also causes land pollution. Land pollution may pose a serious threat to human health as pollutants pass through plants to humans and animals. Other causes of land pollution include oil spillage as a result of burst pipes by hoodlums, dumping of vehicle scraps, empty storage cans, plastic, polythene bags and a host of other solid waste on land.

The effect of pollution in Nigeria rural communities could be devastating. The health hazard created by oil exploration and exploitation can be regarded as the major contributions to the disease burden in oil bearing rural communities in Nigeria. An average of 240,000 barrels of crude oil are spilled in the Niger delta every year; mainly due to unknown causes (31.85%), third party activity (20.74%), and mechanical failure (17.04%) (Achebe, Nneke&Anisiji, 2012).

The oil spills in Ogbodo rural community of River State contaminated the surface water, groundwater, ambient air and crops with hydrocarbon, including known carcinogens like polycyclic aromatic hydrocarbon and benzo(a)pyrene, naturally occurring radioactive materials, and trace metals that were further bioaccumulated in some food crops (Clinton, Ujagwung&Horsfall, 2009).

Clinton, Ujagwung and Horsfall (2009) reported that the oil spills led to a 60% reduction in household food security and this automatically reduced the ascorbic acid content of vegetables by as much as 36% and the crude protein content of cassava by 46%. Clinton, Ujagwung and Horsfall (2009) further reported that these have resulted in a 24% increase in the prevalence of childhood malnutrition. The oil spills in the Niger delta region have acute and long term effect on human health as studies have indicated that contact with Nigerian crude oil could be hemotoxic, and could cause infertility and cancer (Uzoekwe&Achudume, 2011).

Air pollution is a significant risk factor for a number of health conditions including respiratory infections, heart disease, lung cancer and stroke. Rural communities that host industries and oil companies are in contact with gases released into the atmosphere by these companies. The Guardian Newspaper (2017) reported that many rural community members living in sub-urbs of Eket in AkwaIbom State are experiencing difficulty in breathing, asthma and worsening of existing respiratory and cardiac conditions. This is as a result of gas flaring carried out by the oil companies in the areas.

This effect can result in increased medication use, increased doctor or emergency room visit, more hospital admissions and premature death. The adverse effect of poor quality of air are far reaching, but principally affect the body's respiratory system and the cardiovascular system. Individual's reactions to air pollutants depends on the type of pollutant a person is exposed to, the degree of exposure and the individual health status and genetics.

Soil pollution is a widespread problem that influenced both human health and agricultural productivity. It causes irreparable damage to the earth and human health. It is these conditions that make environmental pollution a major concern to the developing countries of the world; especially Nigeria. Chigozie, Ibeji and Chikaire (2016) submitted that many rural communities in Niger Delta have lost much of their habitable environment due to environmental degradation and pollution, which destroys crops through the contamination of the soil.

There is also rampant mismanagement of the land resources and has significant negative consequences on crop yield and land productivity. This scenario further impoverish the already poor farmers in these areas. With the increasing soil infertility as a result of the destruction of soil micro – organisms and dwindling agricultural productivity, farmers have been forced to abandon their land and seek other alternatives of livelihood.

### **Erosion**

Soil erosion is a natural occurring process that affects all land forms. In agriculture, it refers to the wearing away of a field's top soil by the natural physical forces of water and wind or through forces associated with farming activities such as tillage. Erosion, whether it is by water, wind or tillage, involves three distinct actions which are soil detachment, movement and deposition.

Top soil, which is high in organic matter, fertility and soil life, is relocated elsewhere "on-site" where it builds up over time or is carried "off site" where it fills in drainage channels. Soil erosion reduces land productivity and contributes to the pollution of nearby water courses and lakes. Soil erosion can be a slow process that continues relatively unnoticed or can occur at an alarming rate, causing serious loss of top soil, soil compaction, low organic matter, loss of soil structure. Poor internal drainage, salination and soil acidity problems are serious soil degradation conditions that can accelerate soil erosion process. Other causes of soil erosion include overgrazing, deforestation, bush burning, continuous cropping, flooding and mining.

The most serious consequences of soil erosion is the threat to long term sustainability of agricultural productivity and hinderance to settlement development. Erosion could also lead to the development of rugged terrain and collapse of building. The destructive impact of erosion is felt in many developing countries of the African and Asian continents and in some countries of the developed world.

### **Types of Erosion**

These include: water erosion, wind erosion, sheet erosion, gully erosion, and rill erosion. Obi and Okekeoghu (2017) reported that many communities in Anambra state like Agbulu, Nanka, Oko and Ekwulobia had been ravaged by very deep gullies of about 120m depth and 2km width.

These scholars further highlighted the impacts of the erosion on the communities as listed....

- Destruction and removal of trees and natural vegetation
- Removal of fertile agricultural top soil and other parts of upper layers of soil
- Loss of lives of rural population in Nanka, Oko and Ekwulibia

- Loss of hectares of valuable land and priceless ancestral properties e.g ancestral land and homes at Umuachiana and Ekwulibia communities
- Nanka community is at the verge of losing fifty homes which is approximately 23256 square meters of land
- Reduces the limited land resources, renders some of the rural communities homeless
- Leads to destruction of farmland and economic trees as well as collapsing of building due to high rainfall and high soil erodibility.

### **Landslide**

The term landslide refers to several forms of mass wasting that include a wide range of ground movements, such as rockfalls, deep-seated slope failures, mud flows and debris flows (Easterbrook, 1999). Landslides can occur under water, in which case they are referred to as submarine landslides, and in coaster and onshore environments. Although the action of gravity is the primary driving force for a land slide to occur, there are other contributing factors affecting slope stability. Other causes of a change in the stability of a slope include:

- (i) Groundwater pressure which destabilizes the slope.
- (ii) Loss or absence of vertical vegetative structure, soil nutrients, and soil structure (e.g after a wide fire that lasted for 3 to 4 days.
- (iii) Erosion of the toe of a slope by river or ocean waves.
- (iv) Weakening of the slope through saturation by snow melting, glaciers melting, or heavy rain.
- (v) Volcanic eruption.
- (vi) Earthquakes.

More so, landslides are aggravated by human activities like deforestation, cultivation, construction, vibration from machinery, blasting and removal of deep rooted vegetation that binds colluvium to bedrock (Chen & Wang, 2007). Chukundi (2018) reported that two minor landslides have hit Nanka community of Aguata Local Government Area, Anambra State sending indigenes and residents of the community into panic. It was gathered that the landslide happened in a section of the community that had been abandoned by indigenes as a result of gully erosion in the area. These landslides were likely occasioned by the heavy rainfall. According to the report, people of the community had suffered untold hardship as a result of the incident, and this time, they were faced with even bigger threats, judging by the intensity of the rainfall.

Presently, Nanka community dangles on the verge of another catastrophic landslide should government failed to take immediate action. It happened in the village UbahuNanka dividing the village in to two halves without access road. More so, premium times recorded that more than one hundred and fifty people have been rendered homeless in Oko community of the state while Obosi, Ozobulu and other community had also been ravaged by landslide. Akintayo (2016) reported that six people were killed by landslide in illela – kalmalo village of illela Local Government Area of Sokoto State. According to the report, the incident occurred while victims were excavating sand as part of community effort to build a house for a friend planning to get married.

The Nation (2016) affirmed that Okoloba community in Kolokuma – Opokuma Local Government Area of Bayelsa state may cease to exist as a significant part of Okoloba lies in ruin. According to the reports, about four compounds consisting of over ten houses are buried in rubbles with their occupants displaced. Fishing nets, canoes and other items worth millions of naira have been swallowed by the earth in the landslide.

### **Flooding**

Floods are major disasters affecting many countries of the world especially in most flood plain area. Floods in Nigeria rural communities do not only damage properties and endanger the lives of human and animals but also produce other secondary effects like outbreak of diseases such as cholera and malaria as well. Flooding is commonly caused by heavy down pours of rain on flat ground, reservoir failure, volcano, melting of snow or glaciers e.t.c.

Flood risk is not just based on history, but on a number of factors ranging from rainfall, river flow and tidal surge data, topography, flood control measure, changes due to construction of building and development on flood plain areas. Flooding is caused by several factors and it is invariably preceded by heavy rainfall. The other causes of flooding are moderate to severe winds over water, unusual high tides, tsunamis due to undersea earthquakes, breaks or failure of dams, lakes and other infrastructure that retain water. Flooding in rural areas can be aggravated by impervious surfaces or by natural and man-made hazards which destroy soil and vegetation that can absorb rainfall. Although flooding is a natural occurrence; yet man-made changes to the land can also be a factor. Development does not cause flooding but can make it worse.

The significance of the year 2012 flood disaster in Nigeria communities lies in the fact that they were unprecedented in the past forty years. Most parts of the central states of Nigeria and other adjoining states along the River Niger and Benue were devastated by these floods causing huge destruction to the rural and urban infrastructure (farmlands / crops, roads, building, bridges, power lines e.t.c) and socio – economic lives of the areas. Reuters (2016) submitted that thirty of

Nigeria's thirty six states were affected by the floods. The floods were termed as the worst in forty years and affected an estimated total of seven million people. The estimated damage and loses caused by the floods were worth N 2.6 trillion (Punching.com, 2012).

Nigeria has a rainy season and suffers from seasonal flash floods. These flash floods are sometimes lethal, especially in the rural areas or overcrowded slums, where drainage is poor or does not exist at all. On July 2, 2012, many Nigeria rural coastal communities experienced heavy rain and residents of Esutemeta suburbs were gasping for breath due to the flooding (The Guidian, 2012).

In the mid - July 2012, flooding in Ibadan suburbs like Oke Ayo, Eleyelee.t.c make people to flee from their residents and save their lives. The Nigerian government said that certain structures on water ways had to be demolished as a result of the flooding (Ajayi, 2012). Recently, precisely July 14, 2018, the Tribune newspaper reported that flood wreaked havoc in Wasismi community in Ogun State. It was gathered that many lives were lost following a torrential rain that resulted in to a flood. Properties worth millions of naira were not spared by the flood as many houses, vehicles and household items were lost to the flood. Many of the residents were seen counting their losses, while those who were searching for their dear ones were at the feet of the river that crossed the town to recover their relatives. It was also confirmed that two children of the same mother loss their lives in the flood.

### **Desertification**

This is the spread of desert like conditions in arid or semi-arid regions. A dry area of land becomes arid and typically losing its body of water as well as vegetation and wild life. This phenomenon is caused by low level of precipitation, hence constant heat is observed. Desertification is rampant in the Northern region of Nigeria; but it can be classified as moderate, heavy and intermediate depending on the area. Desertification is often caused by overgrazing, loss of agricultural productive soil and climate change. The major concern about desertification is that the soil becomes unfit to support the growth of plants.

More so, the plain land is exposed to the action of water and wind which may eventually lead to natural disaster like erosion. Desertification affects top soil, groundwater reserves, surface run off, human, animal and plant population. Water scarcity in dry lands limit the production of woods, crops, forage and other services that ecosystem provides to our community. Desertification is common in rural communities of the northern part of Nigeria. Farmers in this region spend a huge amount of capital on irrigation in order to sustain the growth of their crops.

## **Conclusion**

Environmental problems in Nigeria rural communities have wrecked unimaginable havoc ranging from displacement of rural community dwellers, promoting scarcity of resources like water, destruction of lives and properties, accelerating the spread of diseases and ailments, disruption of the eco system, formation of deadly militancy groups to unbearable economic hardship.

## **The way forward**

In order to check these problems, a drastic step must be taken. Functional environmental education must be acquired by the rural community members. Environmental education is a permanent process in which individuals and the community gain awareness of their environment and acquire the knowledge, value, skills, experience and also the determination to act individually and collectively to solve environmental problems (Hungerford & Peyton, 1994). The teaching of environmental education should be permanent as it is believed that the subject should be the concern of every one irrespective of discipline or level of education. Oduwaiye (1997) suggested that multidisciplinary approach should be used in teaching environmental education.

To this end, environmental education content should be infused into all subject at all levels of education. The National Commission for Colleges of Education should take this into consideration in the ongoing curriculum review. Environmental education objectives should be clearly stated in each subject curriculum. There should be training workshops on the implementation of the curriculum which could be at the geopolitical level, laying emphasis on the main objectives of intervention courses in the programme. Such courses must include environmental education, population education and family life education. Noibi (1994) argued that the teaching of environmental education only encourages rote learning of names of plants and animals. Eguabor (2012) also concurred by stating that the teaching is with little or no emphasis on attitudinal change.

This form of education is indispensable as it increases people's knowledge and awareness about the environment and associated challenges, develop the necessary skills and expertise to address the challenges and foster attitude, innovations and commitments to make informed decisions and take responsible action. It also teaches about how natural environment functions and particularly how human beings can manage their behaviour and ecosystem in order to live sustainably.

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