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Deforestation – Based Environmental Degradation as Obstacle to Nigeria’s Quest for Food Security

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Abstract

Environmental degradation through human activities has devastated Nigeria’s natural resources including land, air, water, forest, wildlife etc., plunging thousands of her citizens into poverty. Nigeria’s resources have continued to decline while her population keeps increasing, raising serious questions as to whether these dwindling resources could sustain the next generation. Arable land cultivated 50 years ago has now been taken over by the Sahara desert which has also caused the Lake Chad to shrink from 25,000 sq km in 1972 to 1,500 sq km in 2007 thereby causing serious water scarcity for millions of people in Nigeria and the Chad Republic. Crop yields from rain-fed agriculture have also declined over the years as a result of irregular and unpredictable rainfall pattern, which is being exacerbated by environmental degradation. The existence of some plants and animals species is being threatened while others have since gone into extinction due to loss of habitat.

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Carbon dioxide, a major gas implicated in global warming is continuously being added into the atmosphere as a result of severe deforestation. Massive afforestation programmes, agro-forestry practices as well as conservation strategies to tackle the menace of environmental degradation were recommended.

Key words: Environment, degradation, deforestation, food security

Environmental degradation is defined as the deterioration of the natural environment including the atmospheric bodies of water, air, soil, land and forest (Wikipedia). According to Encyclopedia Britannica Vol. 4, environmental degradation refers to a process that may act to force the condition of a part of the earth surface or it's surrounding to become unpleasant or less useful to man. Environmental degradation has led to shortage of food, clean water, shelter and other essential resources of life.

According to history, environmental degradation started when the early men who lived by hunting, wondering and gathering fruits finally ceased to be wanderers, got settled and began to construct shelter for themselves and their families. Forest was their main source of livelihood as they got both food and building materials from the forest. As their population increased so was the level of forest destruction. Although the level of forest destruction was insignificant initially, but it actually marked the genesis of environmental degradation. Today, the rapid increase in human population (put at 6 billion), coupled with advancement in technology and man's quest to live a better life have resulted in massive clearing of vegetation including some natural forest for agriculture, urbanization and industrialization. This has seriously destroyed the natural ecosystem, leading to environmental degradation with severe consequences such as flooding, soil erosion, air, water and land pollution as well as extinction of some plants and animal species in many parts of the world including Nigeria.

Causes of Environmental Degradation

According to Uchegbu, (2002) there are generally two main causes of environmental degradation – natural and artificial. Natural causes of environmental degradation include earthquake, volcanic eruption, landslide, mass movement, change in the atmospheric circulation etc, while the artificial causes of environmental degradation include human activities such as over-grazing, deforestation, mining, continuous farming etc.

In Nigeria and indeed the entire African continent, the occurrence of natural disasters is not common, hence the main causes of environmental degradation is human activities. Human activities causing or aiding environmental degradation in Nigeria as reported in Anon (2006) include:

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- a) Natural resource exploitation
- b) Deforestation
- c) Farming
- d) Population growth
- e) Fuel wood
- f) Over-grazing.

a) Natural Resource Exploitation

Exploitation of timber and mineral resources in Nigeria over the years is known to have caused a lot of damage to the environment. According to the Federal Department of Forestry (1988), Tin mining operation in Jos – Plateau, which began in 1904, is known to have destroyed about 560km² of farmland. Oil exploitation in Niger Delta is also largely responsible for the degradation of the Niger Delta environment.

Oils spills resulting from the activities of oil companies are the major causes of environmental degradation in the region. In 1998, a fire outbreak from an oil spill in Jesse killed a lot of people and destroyed properties worth millions of Naira. Also in September, 2007 an oil spillage destroyed farmland and a major river serving three communities of Opuama, Ekiwari and Aguobiri in southern Ijaw Local Government of Bayelsa State (Onoiribholo 2007).

Oils spills are common occurrences in the Niger Delta region resulting in the pollution of water, air and soil which often leads to colossal loss of terrestrial and aquatic lives, vegetation as well as general damage to the environment (Etuonovbe, 2009).

Similarly, excessive timber exploitations in Nigeria over the years have resulted in the depletion of the nation’s forest resources.

b) Deforestation

Deforestation has seriously depleted the Nigeria forest resources for the past decades. Between 1980 and 1990, Nigeria’s forest area declined from 14.9 million hectares to 10.1 million hectares; translating to the loss of between 350,000 to 400,000 hectares per annum or 3.5% per annum (Anon, 2006). Also, Popoola (2009), reported that the total land area of forest reserve put at 10% of the total land of Nigeria in 1970 has been reduced to just 5% in 1999. This calls for serious attention, otherwise, the fear that the remaining Nigeria’s forest would disappear in the next three decades might become a reality.

c) Farming

Farming is described as a leading factor responsible for a decline in forest resources in Nigeria. Clearing of land for farming accounts for over 80% of the total forest area destroyed every year. Majority of farmers in Nigeria (about 20 million) practise shifting cultivation whereby each farmer cultivates a plot of land for two to three years after which he or she moves to another plot to allow the previous one to fallow and regain its fertility. As these farmers move to a new plot, trees are felled or killed, the fertility of the new plot soon depletes and the farmer continues to look for fertile land, probably forested areas sometimes even reserves where the fertility of the soil is high, hence causing wide scale deforestation.

d) Population Growth

Increase in human population has resulted to a corresponding increase in human activities here on earth. As population increases, new settlements spring up to accommodate new families. Existing towns grow into major urban centers thereby swallowing up adjoining farmlands and hence destroying the forest. Forests are also cleared to pave the way for the establishment of new infrastructures such as industrial estates, markets, telephone and power lines.

The overall effect of these is the destruction of the forest thus, setting the pace for environmental degradation.

e) Fuel Wood

Demand for fuel wood in Nigeria is on the increase. Anon (2006) revealed that 80% of Nigeria's total population depends on fuel wood for their daily energy needs. The use of trees as fuel wood in Nigeria has taken a dangerous dimension. In the past only dead trees were cut for this purpose, but today, the situation has changed. Fresh or live trees are cut and burnt into charcoal or allowed to dry. This charcoal is then put in bags for sale.

The increase in demand for fuel wood in Nigeria is as a result of population growth, increased poverty among the citizenry coupled with a persistent increase in price of kerosene which has put the price of the product beyond the reach of many families who now resort to charcoal or firewood for cooking. For example, a housewife, Mama Terfa of Wadata, Makurdi was asked why she had abandoned her kerosene stove in preference of charcoal for cooking and she said "cooking with charcoal is cheaper, a N100 worth of charcoal would be enough to cook a meal for the family of seven, whereas kerosene of same worth would not serve the purpose".

Economic Damage Caused by Environmental Degradation

Economic damages caused by environmental degradation in Nigeria are huge and difficult to quantify in monetary terms. The damage is either to land, water, air, forest or lives and properties.

Land:– One of the major consequences of environmental degradation in Nigeria is the loss of vast agricultural land caused by some of the factors mentioned earlier. As earlier reported, desertification and its twin brother deforestation have swallowed about 35% of land cultivated 50 years ago in eleven northern states and are said to be moving southward at the rate of 1km per annum. Since agriculture employs about 80% of Nigeria’s total population, loss of agricultural land will render many jobless, increase competition for the remaining lands resulting to conflict over land. Total food production may also decline leading to hunger, diseases and deaths among the citizenry.

Water: – Environmental degradation has seriously affected resources in Nigeria. Most of our water bodies are today being polluted due to human activities while others are drying up like the case of Lake Chad, which has shrunk from 25,000 sq km in 1972 to just 1,500 sq km in 2007. The implication of Lake Chad drying up is that there is increased water scarcity for millions of people in Nigeria and the Republic of Chad who depend on this lake for their daily water needs. Dry season farming activities along the lake have seriously declined over the years as a result of this situation. Worried by this development, then President Olusegun Obasanjo, in 2005 summoned a regional meeting of countries bordering the lake. The aim was to stop further siltation of the lake, which is a source of livelihood to millions of people from the region.

Air: – Air pollution is one of the environmental challenges facing Nigeria especially in the Niger Delta where gas flaring from oil companies pollutes the air thereby causing acid rain. Air pollution is also a problem in major cities like Lagos, Kano, Ibadan etc. where high vehicular movement often lead to discharge of carbon-monoxide and carbon-dioxide in high proportion into the atmosphere. High proportion of carbon-monoxide in the atmosphere can cause health problems.

Forest: – Nigeria has lost most of her forest resources over four to five decades due to some of the factors enumerated earlier.

The economic implication of Nigeria losing most of her forest resources is increased poverty, especially among the rural populace most of whom depend directly on forests for their livelihood. Thus diminishing forest affects their lives negatively. Forests also protect water catchment areas, maintain soil fertility, absorb water from excessive rain and many pollutants. So loss of forest means increased pollution, soil erosion, massive flooding etc. which are being witnessed in many parts of the country

today. There is also a link between vegetation cover and amount of rainfall of a particular place. This is explained by a process known as the “Charney Effects”. Places with high vegetation cover tend to have more rain than those with low vegetation cover. This explains why the amount of rainfall increases as one moves from North to South in Nigeria.

Loss of Lives and Properties: – Another economic consequence of environmental degradation in Nigeria is loss of lives and properties due to environmentally related disasters such as flooding, drought, soil erosion, etc. From North to South, East to West, there have been reports of floods and erosions causing damage to lives and properties. In April, 2009 flood rendered about 500 people homeless in Abakaliki, Ebonyi State with properties worth millions of Naira destroyed. August, 2007, flood claimed two lives in Gombe, and over 100 houses and properties worth billions of Naira destroyed (Ishola, 2007). This same year erosion sacked many families and destroyed several properties in Lagos and Abeokuta.

Similarly, government at various levels keep sinking huge sums of money in tackling one environmental problem or the other that would have been used in other sectors of the economy. For instance, Alhaji Yahaya, Director Food and Erosion Control, Federal Ministry of Environment was quoted to have said that the Federal Government has spent more than 6 billion since 1999 for the control of coastal erosion which has affected about 30 million Nigerians, with Lagos, Port Harcourt, Calabar, as worst hit areas. About 22 billion Naira is said to be required in tackling erosion in Anambra State.

Conclusion

Environmental degradation has, and will continue to hinder Nigeria’s economic growth, unless concerted efforts are made to tackle the menace. As Nigeria continues to loose her fertile agricultural land, water and forest resources, a good number of her citizens especially those who depend directly on these resources are continuously being plunged into poverty as they loose their means of livelihood. Crop yields from rain fed agriculture have declined and will continue to decline as rainfall pattern becomes increasingly irregular and unpredictable.

Some plants and wildlife species are threatened while others have since gone into extinction due to loss of habitat. Mass importation of wood resources to meet the local demand is on-going leading to capital flight which normally results in depreciation of the Naira, thereby decreasing its purchasing power. There is mass migration of people and their animals due to loss of available land especially in some parts of Northern Nigeria where about 35% of available land has now turned into desert over the past 50 years.

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Water scarcity has continued to hit many parts of the country as volume of water in our rivers, streams, lakes etc. decline due to siltation and sedimentation. Environmental degradation is also one of the main causes of the current crisis in the Niger Delta between militant youths and government security forces. This has caused the nation billions of Dollars as a result of a sharp drop in crude oil production and loss of lives as well as property. Crude oil exploration in the Niger Delta for the past 50 years has destroyed the basic resources of life such as water, soil, forest and even air making life difficult for the people of Niger Delta, who now resort to militancy as a means of checking the degradation of environment and other perceived injustices inflicted on them.

Recommendations

In order to arrest the situation and put the Nigerian economy on the right track for the race towards Vision 2020, the following measures have to be taken:

1. Since environmental degradation (land) begins when there is total and complete removal of vegetation cover, massive afforestation, reforestation and regeneration programmes be carried out to replace the lost vegetation. The trees will help stabilize soil conditions by protecting the soil against agents of erosion such as wind and water. Soil fertility will also increase litter fall and decay, nitrogen fixation and increased water infiltration.
2. Farmers should be encouraged to engage in Agro-forestry practices to maximally utilize the increasingly scarce land, instead of the traditional shifting cultivation practiced in many parts of the country which normally leads to deforestation.
3. Stringent environmental laws should be put in place to check environmental pollution prone activities such as gas flaring, oil spills and dumping of hazardous wastes including radio-active substances in our water bodies.
4. Government as a matter of urgency should start developing the renewable sources of energy like solar, wind, ocean waves, etc. which are environmentally friendly and relatively cheap as compared to fossil fuel which is costlier and mainly responsible for pollution. Nigeria as a country experiences lengthy sunshine hours (6 hrs per day averagely), which if properly harnessed can produce enough electricity to power most of her cities and even industries. The use of renewable energy in Nigeria will help reduce deforestation since many people would likely stop the use of fuel wood as a source of energy for cooking in preference for the more cleaner and cheaper sources of energy.
5. If the menace of environmental degradation is tackled holistically, and our economy is diversified with adequate attention given to other sectors then the

dream of Nigeria becoming one of the 20 greatest economies by the year 2020 will be realized. If not, the Vision 20-20-20 and millennium development goals objectives will only be a mirage.

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