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# ***RE-THINKING BIODIVERSITY LOSS AND SUSTAINABLE DEVELOPMENT IN NIGERIA: THE AKWA IBOM STATE EXPERIENCE***

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## **Abstract**

**I**t appears discussion on biodiversity in our environment is uncommon. Yet our environment and biodiversity are daily being destroyed because man wants to be comfortable in all perspectives. Plants and animals in our environment are as important as the air or water we take in. The paper is addressing the need for the preservation of environment and by extension the biodiversity since they are sine qua non to our existence. That biodiversity loss is partly caused by poor socio-economic conditions of the people such as poverty and hunger, unemployment, economic production for wealth creation. Other causes include urbanization and construction of infrastructure such as roads, schools, and hospitals etc. To preserve environment and biodiversity, the paper suggests that people be educated on the need to preserve the environment. Environmental education as a start be included in the Universal Basic Education Curriculum. The issue of poverty be addressed by all levels of government to stem the tide of poor living conditions of the people. Animals and plants species are important for the survival of man on this planet. The paper uses historical analysis as its methodology.

## **Introduction**

For a long time now the issue of biodiversity loss especially in this part of Nigeria has been attracting attention and called for concern among both the academics and non academics who are interested in the preservation of the environment and indeed the ecosystem. Within the international system apart from earthquake, climate change, flood, famine, terrorism, other things that capture international attention in fora is environmental security and by extension biodiversity loss. Biodiversity loss is a product of man's cruel activities on land, water and air. The activities range from poor farming methods, incessant bush burning for farming and hunting (game), deforestation for any purpose building of infrastructures such as roads, factories, deposition of industrial wastes, oil exploration and exploitation which often times lead to pollution of land, water and air. The flaring of gas has deleterious effect on land which invariably affects biodiversity. The paper therefore is interested on the need for the preservation of environment and by extension biodiversity. Human life partly depends on biodiversity. As much as 40 percent of our modern pharmaceutical medicines are derived from plants and animals. That, preservation of environment would engender economic growth and development, thus enhancing the wellbeing of man. International conventions that are related to the international trade in endangered species of wild fauna and flora and others be strictly adhered to.

## **Concept of Biodiversity**

Biodiversity refers to the different plant and animal species in the earth's ecosystem – global, regional and local. The species identified by biologists are over 1.4 million and distributed around the world (Pavehouse and Goldstein, 2008). Viotti and Kauppi (2009) biodiversity loss is calculated against the natural rate of extinction, that the loss is owing to land conversion, climate change, pollution, and the harvesting of natural resources. Land conversion is most intensive in tropical forests, but other contributing factors to the loss of biodiversity include waste and pollution, urban development and wars. Pearce and Warford (1994), put that biodiversity is the totality of genes, species and ecosystems. It is not just the total stock of living things matters, but the range of different things. In all biodiversity comprise of all living organisms habiting the ecosystem with man as the controlling mechanism.

## **A Conceptual Overview of Sustainable Development**

The 1970s saw the beginning of international summits on environment and a proliferation of international agreements on environmental issues. According to the United Nations Environment Programme (itself established in 1972), there are 144 regional and 97 global environmental agreements relating to the environment, more than three-quarters of which were signed after 1972. The first major global environment summit was the United Nations

Conference on the Human Environment (UNCHE) held in Stockholm in 1972. It initiated a number of intergovernmental investigations, meetings and agreements on global environmental problems. These merged with parallel investigations into development and common security, and culminated in 1987 in the World Commission on Environment and Development (WCED) 1987 titled our common future. The WCED report popularised the term 'sustainable development;' and it introduced the term 'environmental security' (Collins, 2007).

Sustainable development has therefore been defined as development that meets the present generation without compromising the ability of future generations to meet their needs (Brundtland Report, 1987). It is therefore a concept involving the utilisation of available natural resources, the preservation of genetic diversity and the maintenance of ecosystem. The Brundtland Report's view of sustainable development implies that future generation should be compensated for the damage caused by the present day activities for development to be sustainable. For development to be sustainable, it is necessary to sustain the ecosystem and strengthen the social and economic fabric that underscores development (Egwu, 2008).

## **Causes of Biodiversity Loss**

Discussions on biodiversity loss are varied and accommodating depending on the angle one wants to view it. However, the destruction of ecosystems and subsequent loss of biodiversity is the fall-out of man insatiable need to improve its living conditions. One of such conditions is to secure food on his table. Hence, poor farming methods are employed such as slash and burn (shifting cultivation), application of artificial fertilizers, over cropping etc. Other ways of finding food is through over-hunting and overfishing.

Food and food security have led to the expansion of agricultural land and in the process dislocate the ecosystem and species of animals, plants are affected. Other processes which closely link to food is the overharvesting of industrial wood, fuel wood, and other forest products. Underlying these practices are such factors as poverty, population growth, markets and trade in forest products. Another major cause of biodiversity loss is the deposition of industrial toxic waste – on land or emptied into rivers. Other causes include urbanization and building of infrastructures such as roads, schools and hospitals, factories, etc. In the case of Aka Ibom State, it is a young state and it is in a hurry to develop. More roads are opened across the state, local governments are expanding. In the process forests, streams have to give way for these structures to be raised.

## **Importance of Maintaining Biodiversity**

The human population cannot maintain itself without cultivating and maintaining certain species of animals and plants. Before this is possible would depend on the continued vigor of this relationship on the stock of

wild species. It is estimated that about 25 percent of the prescription drugs in the developed societies are derived from plants. The products not only being consumed in advanced economies but also in developing ones such as ours. Besides, wild species of plants constitute a vital source of raw material needed for future medicines. Wild species of plants are also critical for agriculture. This is possible through traditional plants and animal breeding, and even more through modern methods of biotechnology, genetic materials and qualities later transferred from wild species into cultivated ones. For instance in 1979 a species of wild maize resistant to an important crop virus was discovered in Mexico. When transferred to species of domestic corn, this characteristic substantially enhanced the agricultural value of that crop (Field and Field, 2006).

It is necessary to understand that when species goes extinct, it is gone forever whatever valuable qualities that organism may have had. Some species go extinct because they are overexploited. But the vast majority are under pressure because of habitat destruction. This is as a result of exploitation of land for commercial purposes, clearing for agricultural purposes, land for urban expansion etc.

#### **History of Biodiversity Loss since 1960s**

According to Inwang and Nsa (2010), methods of farming that were prevailing in 1960s are still common and prevailing in our communities today. The commonest farming method is shifting cultivation (slash and burn). The only difference between 1960 and 1970 are that there were thick forests, virgin forests, grooves. These thick forests housed various species of animals, reptiles, mammals, micro and macro organisms etc. Every animal has its habitat and used to the conditions that keeps to its survival. And when those conditions are denied, the animals either temporarily or permanently would die, if for a long period may be extinct. In water, various crustaceans, fishes lives are terminated through the use of chemicals. Besides oil spills into water is also responsible for loss of biodiversity especially since 1970s. Indeed, there are many animals, reptiles and mammals that are not common in Akwa Ibom State forest today – zebra, elephants, chimpanzee, monkeys, dinosaurs, snails.

Now, between 1960-1970, the population of this region was low, there was enough food and food security was guaranteed. There were still virgin forests, thick forests, farmlands were enough and fallow periods were long. There was hunting, the hunters were not as aggressive as it is today.

In the riverine areas of Oron, Mbo, Nwaniba, Itu, Ibiono Ibom, Ikot Abasi, Oruk Anam, there were fishermen who lived and eke their living on water. Later fishing methods changed. Some local fishermen used poisonous leaves and chemicals to fish in rivers and streams. This method kills nearly every fish and other crustaceans – young and old. It is also agreed that this cruel method would not allow for fish procreation for future consumers. It is also agreed that this method of

terminating other aquatic lives, overfishing and hunting, are as a result of population pressure resulted from poverty and high standard of living as a result of changes in the society.

By 1960, the population was lower than what is obtained today. Because the population is growing, pressure on land and indeed environment becomes enormous as individuals and groups struggles to sustain themselves. However, it is convenient to look at two major phenomena that are responsible for biodiversity loss in this part of Nigeria. One is poverty and population pull on land; and the second is oil exploration and exploitation. All these revolve around economy and human sustenance.

#### **Poverty**

Poverty is a deplorable state of human welfare, and it is closely linked to environmental abuse and degradation. The poor are both victims and agents of environmental damage. In other words, poverty influences the environment and in turn environment influences poverty. In this connection poverty is both a cause and effect of environmental damage and by extension biodiversity. Poverty to a large extent produces negative and unjust social conditions such as structural inequality. Hence, the concept of equity and of meeting the needs of the citizen is central to sustainable development. But looking ahead it is not to be.

Those who are poor and hungry especially rural dwellers are the major culprits and agents of biodiversity loss, because they often destroy their immediate environments in order to survive. They are responsible for tilling tired soils, cutting down of trees for fuel and for trade, set fire on buses to hunt animals. The reason is that, as it is often suggested, that the poor have more children than the rich. Hence, over population is considered an environmental problem because it brings undue pressure on scarce resources and adversely affects the environment. By extension, high population growth rate definitely compromise government's ability to provide health care, housing, education, employment and other social amenities required to improve the quality of life of these rural people. But, this is not to say that the region under discussion and indeed Nigeria is overpopulated. The problem is that why most rural dwellers are suffering and plunder the resources negatively is because of poor governance at all levels of government within the Nigerian state. Since they must survive, they pillage the environmental capital – land, forests and water.

Indeed, according to Barbier (1995), as quoted by Franca Anija-Obi (2001), rural farmers will generally not modify their land management practices or farming systems unless it is in their direct economic interest to do so. Meaning that as long as they derive maximum utilisation of the environment that turn in revenue to cater for their wellbeing and their families absolutely nothing is wrong with the environment. For instance, search for fuel wood, fodder for animals, these processes are responsible for opening up of land to erosion.

Erosion to a large extent is an agent of biodiversity loss.

### **Oil Population and Gas Flaring**

In the Niger Delta, which Akwa Ibom State is part, fossil fuel use, particularly oil and gas exploration, has aggravated the problem of ecological damage. For instance, there is the growing nuisance of air and water pollution in addition to oil spill on land. As far back as 1986 when the country was flaring only about 17 million cubic metres of natural gas per year, it was estimated that gas flaring was responsible for an annual emission of about 2, 700 tonnes of dust, 160 tonnes of oxides of sulphur, 5,400 tonnes of carbon monoxide and 27, 000 tonnes of oxides of nitrogen into the atmosphere (Federal Ministry of Environment, 2008). Today, it may be more. Apart from the health problems created, the excessive heating of the soil and vegetation around the flare sites results in soil degradation with attendant effects on fauna and flora. A combination of these injurious air with precipitation cause weak acid which in turn is injurious to both the fauna and flora, and by extension other animal species. Every living thing survives or has certain conditions for its survival, when such conditions are punctured, it becomes inimical to their wellbeing and survival.

In the same corollary, oil spill on land is a recurring decimal. The first oil spill was recorded in 1970 with over 150 barrels flowing both on land and water (Mba, 2000). Now, between 1970 and 1983 when oil became the commanding height in Nigerian economy, 1581 cases of offshore oil spillage were recorded and involved, 1,711,355 barrels (Akpan, 2006). Till date and often times not recorded, millions of barrels of oil still found its way into our farmlands, forests, lakes, ponds, streams, rivers and dealt effectively but negatively on our environment.

Every region produces solid and liquid wastes daily and disposed them within the environment. For instance, studies by Adekeye showed that between 522, 043 and 342, 352 metric tons of solid and liquid waste are generated annually in Lagos and Rivers States. The important point here is that most of these wastes are toxic in nature and therefore are injuries to fauna and flora where these wastes are dumped. The fauna and flora contributes to the food chain within the environment (Adekeye, 2007).

### **Declining Species**

According to Federal Ministry of Environment, the total area occupied by reserved forests in Nigeria was approximately 10 percent as at 1977. Going by international standards of at least 25 percent, ours is on decline daily because about 1 percent of forest areas are cleared for domestic and commercial purposes.

In the 1980s, about 400 hectares suffered from deforestation while only 26 hectares were reforested on the annual basis (UNDP Nigeria, 1996). In the same vein Food and Agricultural Organisation (FAO), the remaining forest area in Nigeria will likely disappear by 2020 if the current rate of forest depletion continues

unabated. The value of loss forest cover has been estimated at US\$ 750 million annually at 1989 prices (FMEHUD, 2008). What this means is that massive deforestation and devegetation is that almost total dependence of over 90 percent of rural population in Nigeria on forest resources for livelihoods and economic survival. That fuel wood extraction, shifting cultivation and conversion of forest agricultural lands are some of the activities with the most serious impact on biodiversity.

Indeed, declining species are not peculiar to Akwa Ibom State but is applicable to Nigeria. Nigeria derives all her food and a broad array of medicines and industrial inputs from both wild and domesticated components of biodiversity. However, the future of different species of animals and plants are under threat from increasing degradation of the ecosystem primarily from economic motives and poverty. Now, since the rate of replacements has not been commensurate with use, the number of threatened and endangered species is increasing. It is noticed that uncontrolled logging and felling of trees are regular and with increased pressure from hunters, poachers and bush burning, Nigeria's wildlife is declining.

Etini (2010) added that many animals have recently disappeared in our surroundings. There used to be hippopotamus, the giraffe, zebra, the black rhinoceros and the giant eland. In addition, World Atlas (1991) quoted by Federal Ministry of Environment (2008), estimated that at least 50 percent or more gorillas are killed in Nigeria than born each year. And added that almost all surviving species of antelopes are threatened mainly due to over-hunting. Leopards that were common in Akwa Ibom in particular are now rare, reason is that they are hunted for the skins. As Ukoinyang argued, thick forests in Ikono, Oron, Ikot Abasi used to house different wild animals such as elephants, zebra, giraffe, monkeys, etc but have since disappeared. He attributed it to the activities of hunters, modern development and changes caused by oil activities.

The FMEHUD in 1999 put that an estimated 484 plant species from 112 families are threatened with extinction as a result of habitat destruction and deforestation. It added that, even birds, tortoises, monkeys, crocodiles, monitor lizards are not left out in the declining population. In the same vein, wrapping leaves, chewing sticks, medicinal plants are rapidly facing extinction. It is also on record that over 839 bird species recorded in Nigeria, but only six of these including three from montane rainforest, are believed to be threatened. In Cross River, that is sharing nearly common ecosystem with Akwa Ibom, it is reported that about 75 species of frog have been discovered but facing declining state because of deforestation (FMEHUD, 2008).

### **The Way Forward**

Man is the controller of his environment. Sustainable development can only be achieved through

management against over exploitation. The issue of poverty should be addressed by creating strong institutions that provide jobs for the people especially those living in rural communities. Poverty cannot be exterminated but can be reduced considerably. Education is a panacea for development, and environmental education become a pivot for the masses. When people are educated, they would be able to understand the need to keep the laws relating to his or her environment. In other words, environmental education should be included in the curriculum of Universal Basic Education → if started at that level, we may hope for a better future. Besides, international laws that deals with biodiversity should as a matter of necessity be applied where it is necessary. Forest Reserves were none existed be created by governments at all levels. The present forests and grooves in our rural communities be protected against felling of trees and hunting of animals – to maintain them sanctions are necessary.

### Conclusion

The paper has attempted to look at the various explanations of biodiversity and sustainable development. It bestride the causes and history of biodiversity loss in Nigeria. Importance of biodiversity to man. It discovers that poverty, urbanisation and oil exploitation are the major causes while others are peripheral causes. To preserve various forms of life the people must be properly addressed on the need for good environmental management at least to reduce it. International laws and conventions against the environment be followed. Forest reserves be created where none existed.

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