LOGGING ACTIVITIES, HUNTING ACTIVITIES AND DEPLETION OF FOREST RESOURCES IN IKOM EDUCATION ZONE OF CROSS RIVER STATE, NIGERIA

By

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Abstract
This study evaluated the relationship between logging activities, hunting activities and depleting of forest resources in Ikom Education Zone, Cross River State, Nigeria. To achieve the purpose of the study, two research questions were posed and two null hypotheses were formulated and tested at 0.05 level of significance. A total sample of two hundred and seventeen (217) forest community dwellers was used for the study. The instrument for data collection was a 20 items structured questionnaire developed by the researcher titled "Logging Activities, Hunting Activities and Depletion of Forest Resources Questionnaire," (LAHADFRQ). The data generated was analyzed using Pearson product moment correlation analysis. The findings of the study revealed that there is a significant relationship between logging and hunting activities and degradation of forest resources in Ikom Education Zone, Cross River State, Nigeria. It was recommended that the government and other environmental stakeholders should ensure the awareness creation against unsustainable logging and that the government should promulgate and enforce a better policy against the indiscriminate hunting of wildlife.
Keywords: Logging, hunting, activities, depletion, forest, resources

Introduction

The challenge of forest resource depletion in Ikom education zone of Cross River State is not only affecting the ecosystem and livelihood of the people in the rural areas, it is equally impacting on human beings by change in climate conditions, ecological damage alongside biodiversity depletion. Until the beginning of the 19th century, tropical wildlife was reasonably considered to be balanced with primitive tools such as traps, snares and den guns used for hunting as well as small scale agriculture. And the introduction of plantation agriculture (cocoa, palm oil and rubber) during the first decade in the 19thcentury marked the beginning of large-scale depletion of the tropical forest ecosystem (Akinyemi & Kayode, 2010).

Despite the serious implication of deforestation to wildlife and biodiversity, the trees within various forests provide the timber with which houses are built and furniture constructed; trees

provide short fiber pulp for paper. This has influence on human behaviour, values, mentalities and attitudes towards the environment or forest resources. Forest resources remain the economic mainstay of the rural dwellers across the globe and in the study area. Most young men and women in Ikom Education Zove of Cross River State derive their income from the non-timber forest product (NTFPS) such as Afang, Atama, Hot leaf, Cane rope, Editan, sponge, otasi, etc. Logging of tress by both young and adult males also serves as a source of livelihood.

Logging removes large trees that normally fall into streams and provide shelter and thermal cover, raises water temperatures and pH, and degrades the chemical and ecological conditions and food webs that fish need to survive. The rainforest has been widely and indiscriminately exploited for timber with little or no attention given to the conservation of the much more valuable non-timber products. According to Ambe and Onnoghen (2019), Opeyemi, Enefiok, Udo and Dan (2015), vast tracts of the rainforest have been degraded, denuded and eventually cleared to accommodate other forms of land use. Consequently, many tree species are threatened by extinction and considerable genetic resources have been lost. Opeyemi, Enefiok, Udo and Dan (2015) maintained that among the species being threatened by extinction are trees that produce in addition to timber, economically viable non-timber products which are important food and medicinal items and raw materials to cottage industries and also that some wild animals have also been observed to migrate from areas where tree cover was removed to undisturbed vegetations. Some plant and animal genetic resources that could be used in producing new pharmaceuticals or traditional medicine are lost as a result of the destruction of forest cover. This category of trees that produce both timber and economically valuable non-timber products have been tagged “Timber Plus Tree”.

The excessive exploitation of forest resources has caused a serious problem on the environment. When a forest is destroyed, the vegetative cover of the soil is removed and the soil is exposed to environmental forces of wind and surface runoff and the topsoil will experience erosion and reduction of fertility and become less productive (Okonji, 2001). Moreover, deforestation leads to accumulation of global carbon, emitted from burning of fossil fuels, in the atmosphere. The main consequences of this are global warming and climate change.

The environmental effects of illegal logging include deforestation, the loss of biodiversity and also the emission of greenhouse gases. Illegal logging has contributed to conflicts with indigenous and native populations, violence, human rights abuses, corruption, funding of armed conflicts and also the worsening of poverty. Logging is described as the commercial felling of trees to form other products. Deforestation, on the opposite hand, is defined because the complete removal of the forest and every one of its associated life forms. For the foremost part, act is guilty of deforestation, though natural disasters do play a task. Logging or reducing trees in the forest to reap timber for wood, products or fuel, may be a primary driver of deforestation. Logging affects the environment in several ways. Removal of trees alters species

composition, the structure of the forest, and may cause nutrient depletion (Kagawa & Leavittm, 2010).

Besides, fuel wood has been another channel through which forest resources are being utilized. The vast majority of Ikom Education zone depend directly or indirectly on fuel wood. However, Yunana, Shat, Galadimawa and Obassi (2014) noted that meeting rural household fuel wood energy needs in the country has become a herculean task due to the enormous quantity of wood required. According to these scholars, daily consumption of firewood by rural communities in Nigeria is estimated at 27.5million kilogram per day. In the drive to satisfy fuel wood requirements, most lands have been stripped bare of vegetation cover.

Consequently, this has resulted in soil exposure and erosion, thereby placing a heavy burden on the environment and on the resources base. Yunana, Shat, Galadimawa and Obassi (2014) maintained that the scramble for fuel wood has resulted in a massive destruction of many wood resources, leading to deforestation, and increasing desertification in parts of Nigeria and other parts of sub-Saharan Africa. The rate of deforestation in Nigeria is estimated at 400,000 hectare per annum. The increasing current demand on the natural purifiers (trees) for fuelwood without concomitant replenishment is an indication that the forest area will disappear fast, which the environment might not be able to support life after a few years, particularly in savanna ecological zone that is more fragile relative to the rainforest. It follows from the above that, the utilization of wood resources in the savanna lands should be done with caution.

Owor (2014) maintained that demand for forest resources, majorly log extraction will continue to increase as long as they remain the basis for development, while the balance between population, resources, environment and development will become more distorted. Agbera, Ajegeye and Jimoh (2009), in their defence, declared that there is no economic justification in leaving mature trees to continue growing after lots of them have exceeded their rotation period for a particular purpose. Forest exploitation however does not determine the sustainable supply of the forest product from generation to generation (Bisong, 2004).

People hunt for three basic, interrelated reasons: culture, food, and money. However, the importance of these drivers varies from place to place, and this variation affects the species hunters target and the methods they employ, which in turn affects the impacts of hunting on wildlife and the likely effectiveness of different conservation interventions (Harrison, 2016).

The Ikom Education Zone is a zone predominantly of rural dwellers, who depend on forest and its resources. Agbor (2001) maintained that most of the bush meat in the state (Cross River State) today comes from the southern part of Etung, Eastern Boki and Akamkpa, still vast tracts of tropical forest. Pauline (2004) noted that a certain Nigerian wildlife reserve has been decimated almost to extinction through unregulated hunting and trapping. In those areas, hunters/poachers use dangerous snares to trap wildlife near farms.

Vertebrates perform important functions in the ecology of tropical forests as herbivores, seed predators, seed dispersers and carnivores. Hence, the extirpation of vertebrate species from forests has implications for the conservation of biodiversity that go beyond a simple concern for the species themselves (Wright, 2003). Two functional groups of vertebrates are especially sensitive to hunting and thus are usually the first to be extirpated from a forest: large herbivores and large seed dispersers. In Southeast Asia, large herbivores, such as rhinoceros, elephants, wild cattle, and large deer, are now confined to small, scattered, isolated populations (International Union for Conservation of Nature (IUCN), 2015). Through their feeding activities these species cause selective mortality of tree seedlings and hence alter the community structure of forests (Young et al, 2013).

Pauline (2004) noted that traditional hunting methods result in wounding of wildlife, which, although lucky to escape from being killed by the hunters, eventually die and rot away in the bush. Though, it is observed that the Ejagham speaking people of Cross River State prefer to eat the spoiled/rotting bush meat which they use for preparing porridge plantain called "*NyamEgomeh*". Their customs and traditional beliefs drive them to hunt for rotten meat. The author further explained that the patterns of traditional hunting possibly explain why there is very little surviving wildlife around areas of high human population density. Consequently, the wild and uncontrolled setting of bushes on fire for agriculture or hunting reasons can result to biodiversity destruction.

According to Linus (2007), some bush burning is just done for no reason. Children just set bushes on fire. The author noted that bush burning however releases huge amounts of carbon into the atmosphere and contaminating fresh air, destroys insects, microorganisms, loss of soil organic matter, causing poor yield, infused erosion and soil desiccation, desert encroachment, loss of medicinal products and a long list of problems.

First National Biodiversity Report (2001) reported that hunting and habitat loss have led to serious impacts on wildlife population. However, the effect of hunting on wildlife populations cannot be easily predicted and assessed. This is because different species react differently to hunting pressure and disturbances as a result of hunting and other human activities. The report shows that some species withstood hunting pressure, like cutting grass, *Ricetomys spp.* and the giant rat in some species with Nigeria as the western limit of their hunting alone.

Aronu, Nwachukwu and Adebayo (2010) revealed that original high forest vegetation has been considerably modified by human activities; these include burning, grazing, clearing, slashing and tillage, for farming, resulting in oil palm, bush tree crop plantations and derived savanna within the forest zone. These processes had led to the threatening of the habitat and neglect of some important indigenous species. In Nigeria, the destruction of natural habitats continues apace resulting in the depletion of the country's biodiversity over the period of time. The

scholars noted that due to use and abuse of the forests and with wrong or inappropriate property rights and institutional arrangements, they are subjected to severe degradation and depletion resulting in loss of biodiversity and access to people.

Statement of the problem

A large proportion of the virgin forest has been encroached into, and the people are rapidly losing their old growth forest, which is their source of livelihood. Issues of forest clearings for large scale mono-crop agricultural land uses coupled with slash and burn practices decimate the forest immensely from an agro-based perspective. From the commercial dimension, logging and fuel wood extraction have also contributed a very significant quota towards the fast rate at which the forest is disappearing. Based on these uncontrolled challenges of forest resource depletion, the researcher was poised to study the logging activities, hunting activities and depletion of forest resources in Ikom education zone of Cross River State, Nigeria.

Objectives of the study

The objective of this study was to explain the relationship between logging activities, hunting activities and depletion of forest resources in Ikom education zone of Cross River State, Nigeria. Specifically, the study sought to:

1. Determine the relationship between logging activities and depletion of forest resources in Ikom education zone of Cross River State, Nigeria.
2. Ascertain the relationship between hunting activities and depletion of forest resources in Ikom education zone of Cross River State, Nigeria.

Research questions

1. How does logging activities relate to depletion of forest resources in Ikom education zone of Cross River State, Nigeria?
2. What is the relationship between hunting activities and depletion of forest resources in Ikom education zone of Cross River State, Nigeria?

Hypotheses

1. There is no significant relationship between logging activities and depletion of forest resources in Ikom education zone of Cross River State, Nigeria
2. There is no significant relationship between hunting activities and depletion of forest resources in Ikom education zone of Cross River State, Nigeria.

Methodology

This study made use of survey research design. This was to ensure that the sample has the characteristic of representing the entire population of the study. From the 6,800 population of the selected local communities two hundred and seventeen (217) respondents were used for the study. The data collected were analyzed with Pearson Product moment Correlation Coefficient (PPMCC) at 0.05 significance level and 215 degrees of freedom.

Results

Ho1: There is no significant relationship between logging activities and depletion of forest resources in Ikom education zone of Cross River State, Nigeria**.** The result of the analysis is shown in Table 1.

Table 1
Pearson Product Moment Correlation (PPMC) of relationship between logging activities and depletion of forest resources in Ikom education zone of Cross River State, Nigeria

Variables	$\overline{x}$	SD	r-ratio	Df	p-level
Logging activities (X)	15.09	3.13			
			.353**	215	.003
Depletion of forest resources (Y).	28.73	5.93			

*Significant at .05 level; p<.05.

To analyse the data in Table 1 Pearson's Product Moment Correlation Coefficient Analysis was used. The finding showed that logging activities had a mean score of 15.09 with a standard deviation of 3.13 while depletion of forest resources had a mean score of 28.73 with standard deviation of 5.93. The result further showed that the r-calculated value of 0.353 is greater than critical-r value of 0.062, tested at .05 level of significance and 215degrees of freedom. Also, the p<.003 is less than p<.05. Hence, null hypothesis which stated that there is no significant relationship between logging activities and depletion of forest resources in Ikom education zone of Cross River State, Nigeria was rejected indicating that there is indeed a significant relationship between logging activities and depletion of forest resources in Ikom education zone of Cross River State, Nigeria**.**

Ho2: There is no significant relationship between hunting activities and depletion of forest resources in Ikom education zone of Cross River State, Nigeria. The result of the analysis is shown in Table 2.

Table 2
Pearson Product Moment Correlation (PPMC) of relationship between hunting activities and depletion of forest resources in Ikom education zone of cross river state, Nigeria

Variables	$\overline{x}$	SD	r-ratio	Df	p-level
Hunting activities (X)	15.12	2.73	.367**	215	.001
Depletion of forest resources (Y)	28.73	5.93			

*Significant at .05 level; p<.05.

To analyse the data in Table 2, Pearson's Product Moment Correlation Coefficient Analysis was used, and the finding showed that hunting activities had a mean score of 15.12 with a standard deviation of 2.73 while depletion of forest resources had a mean score of 28.73 with standard deviation of 5.93. The result further showed that the r-calculated value of 0.367 is greater that critical-r of 0.062, tested at .05 level of significance and 215degree of freedom. Also, the p<.001 is less than p<.05. Therefore, the null hypothesis which expressed that there is no significant relationship between hunting activities and depletion of forest resources in Ikom education zone of Cross River State, Nigeria**.** was rejected indicating that there is indeed a significant relationship between hunting activities and depletion of forest resources in Ikom education zone of Cross River State, Nigeria.

Discussion of findings

Data in Table 1 determined whether logging activities relate to depletion of forest resources in Ikom education zone of Cross River State. The first hypothesis result showed that indeed logging activities and depletion of forest resources in Ikom education zone of Cross River State. This conclusion is in Opeyemi, Enefiok, Udo and Dan (2015) that stated that the rainforest has been widely and indiscriminately exploited for timber with little or no attention given to the conservation of the much more valuable non-timber products. According to the authors, vast tracts of the rainforest have been degraded, denuded and eventually cleared to accommodate other forms of land use. Consequently, many tree species are threatened by extinction and considerable genetic resources have been lost. Opeyemi, Enefiok, Udo and Dan (2015) maintained that among the species being threatened by extinction are trees that produce in addition to timber, economically viable non-timber products which are important food and medicinal items and raw materials to cottage industries.

Data in Table 2 determined whether hunting activities relate to depletion of forest resources in Ikom education zone of Cross River State, Nigeria. The second hypothesis result indicated thatthere is indeed a significant relationship between pedagogical innovation and teachers' readiness to adopt ICT for mathematics classroom instruction in Cross River State, Nigeria Pellegrino. This result is in line with the study carried out by Pauline (2004) who noted that traditional hunting methods result in wounding of wildlife, which, although lucky to escape

from being killed by the hunters, eventually die and rot away in the bush. Though, it is observed that the Ejagham speaking people of Cross River State prefer to eat the spoiled/rotting bush meat which they use for preparing porridge plantain called "*NyamEgomeh*". Their customs and traditional beliefs drive them to hunt for rotten meat. The author further explained that the patterns of traditional hunting possibly explain why there is very little surviving wildlife around areas of high human population density. Consequently, the wild and uncontrolled setting of bushes on fire for agriculture or hunting reasons can result to biodiversity destruction. Still in line with the present findings, Linus (2007) stated that some bush burning is done as a result of hunting activities. Children just set bushes on fire looking for meat. The author noted that bush burning however releases huge amounts of carbon into the atmosphere and contaminating fresh air, destroys insects, microorganisms, loss of soil organic matter, causing poor yield, infused erosion and soil desiccation, desert encroachment, loss of medicinal products and a long list of problems.

Conclusion

In view of the findings of the study the researcher arrived at the conclusion that there is significant relationship between logging activities, hunting activities and depleting of forest resources in Ikom Education Zone, Cross River State, Nigeria. This invariably implies that the logging and hunting activities that the rural dwellers exhibit in the research area though help their livelihood but have an adverse effect in the environment at the long run which is the depleting of forest resources.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. The government and other environmental stakeholders should ensure awareness creation against unsustainable logging.
2. The government should promulgate and enforce a better policy against the indiscriminate hunting of wildlife and defaulters should be tried in court and pay some fine to deter others from doing same.

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