TIMBER EXPLOITATION AND FOREST RESOURCES DEGRADATION IN ETUNG LOCAL GOVERNMENT AREA OF CROSS RIVER STATE, NIGERIA

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Abstract

This study investigated the relationship between timber exploitation and forest resources degradation in Etung Local Government Area of Cross River State. A theory was adopted to guide the study. To achieve the purpose of this study, a specific objective and null hypothesis were formulated. The review of related literature was carried out accordingly in line with the specific objectives raised. Survey research design was adopted for the study. The area of the study was Etung LGA, Cross River State. The target population was all household members aged 18 and above. Multiple sampling approaches were adopted in selecting the local government, wards and two hundred (200) respondents used for the study. A ten item modified four point Likert scale questionnaire titled Timber exploitation and Forest Resources Degradation Questionnaire (TEFRCQ) was the instrument used for collecting data for the study. The researcher visited the study area, seeking for permission from Community Heads to carry out the study. The validated

questionnaire was administered by the researcher and three research assistants. To test the hypotheses formulated for the study, Pearson product moment statistical tools was used as statistical tool for data analysis. The hypothesis formulated was tested at 0.05 level of significance. The result of the analysis revealed that there is a significant relationship between timber exploitation and forest resources degradation in Etung LGA. Based on the findings it was recommended among others that In addition to the aforementioned, the government should promulgate and implement a strict policy to regulate the logging of timber.

Keywords: timber, exploitation, forest, resources, degradation, Cross River State, Nigeria.

Introduction

Despite the crucial importance of forest, each year some 13 million hectares of forest areas in the tropics are converted, mainly to agriculture (FAO, 2015). Over the years, there has been increased concern at both national and regional levels about the declining condition of forest resources. Ajake and Anyadike (2012) in their study have observed that human pressure on forests and forest land has resulted into biodiversity loss, degrading forests, land and water, and emission of considerable amounts of carbon into the atmosphere, with the greatest threats (most especially deforestation) occurring in developing countries within tropical ecosystems. Hence, the degradation of forest became an issue of increasing priority and urgency.

Sustainable forest management is based on the broad consideration of environmental, social and cultural dimensions in a holistic manner when developing policies and plans for managing and conserving resources FAO (2015). The goal of sustainable forest management is to ensure that the significant benefits of forests are made available to the people who live in the forest or who rely on forests for their livelihoods, while at the same time conserving vital forest resources by increasing direct benefits to people and the environment: contributing to livelihoods, income generation and employment at the social level; and contributing to important services such as carbon sequestration and water, soil and biodiversity degradation at the environmental level (FAO, 2009; Dau, Mai & Dawaki, 2015).

Forest reserves are portions of state lands under reservation where commercial harvesting of wood products is controlled in order to capture elements of biodiversity. They are managed by the state government under the auspices of their forestry departments (Olujobi, 2015). Historically, reservation of land for forestry purpose was at its peak during the colonial era; this was done in order to manage, maintain forest resources and provide a supply of timber (Ayeni, 2013).

This was followed by exploitation of forest resources to meet both export and increasing local demand as well as to earn foreign exchange.

The management of forest reserves in Nigeria is the responsibility of the state governments. How well or how far these state governments and the communities managed and ensured the sustainability of these forest reserves, in the light of the threats enunciated above. It was against this background that the study seeks to investigate the relationship between timber exploitation and forest resources degradation in Etung Local Government Area of Cross River State.

Theoretical framework

This study in anchored on Legal pluralism by Anne Griffiths (1986)

Legal pluralism has been conceptualized by Griffiths (1986) as a critic to the legal centralist point of view. The legal centralism states that the dominant conception of law is the one of state regulation, which is uniform for all people, exclusive of all other normative systems (or orders), and administered by a unique set of state institutions. According to the author legal pluralism is the existence of multiple sources of law (both state and non-state) within the same geographical area. Legal pluralism is generally defined as a situation in which two or more legal systems coexist in the same social field (Griffiths, 1986 in Boelen, Roth & Zwarteveen, 2003).

Nonetheless, both state legal and non-state legal institutions, whether identified or not in state law, are perceived as important factors that compose the existing reality of complex normative systems. Griffiths (1986) emphasizes that any significance that the state legal normative system may have on political, economic and social practices will always be relative to that of non-state normative systems for the same practices. As a consequence, the concept of normative system should be examined more carefully with the purpose of better understanding interactions between different legal systems.

The relevance of this conceptual framework to this study is directly on the legal perspective of not only considering the direct gain of exploiting natural resources but also the legal implication. This will go a long way in controlling the unguarded usage of environmental resources that has both environmental, physical and economic impact on the populace.

Statement of the problem

The state of timber exploitation has been a source of concern to educational stakeholders, environmental health workers, and environmental management experts. It is often believed that timber exploitation are on the frontline of the battle to degrade the environment. However, some timber exploitation have caused a major difficult condition within our environment. These appear to be increase of task of people on forest and wildlife timber which is the main source of their

income. The continuous exploitation of forest timber has in turn affected the ecosystem, timber exploitation has raised a serious threat to our environment.

The incessant exploitation of forest timber has led to ecological degradation. There have been increased evidence of degradation and depletion of forest resources in the study area over the year. It was on this premise; this study seeks to examine the relationship between timber exploitation and forest resources degradation in Etung Local Government Area of Cross River State.

Purpose of the study

The major purpose of this study was to examine the relationship between timber exploitation and forest resources degradation in Etung Local Government Area of Cross River State.

Research hypotheses

The following Hypothesis stated in null form was formulated to guide the study. There is no significant relationship between timber exploitation and forest resources degradation.

Significance of the study

The findings of this research work may be of great benefit to rural farmers Etung LGA, government, policy makers, the Non-Governmental Organizations (NGOs), and other researchers.

To the rural farmers, it will encourage them to imbibe crop rotation farming practice and avoid shifting cultivation which gives room for unsustainable felling of trees. Since this is no economic justification to leave mature trees in the forest, it will help guide the users of forest to harvest mature trees, regulation will be observed also in both timber and None Timber Forest Products (NTFPS).

The outcome of this study will spur the policy makers to formulate realistic forestry and agricultural policies that are likely to promote sustainable forest resources utilization and degradation of forest resources in the research area. Similarly it may enable the government to; in addition to formulating policies, help in making sure that all the policies are enforced through the use of relevant agencies in-charge of environmental protection.

This study will also help stakeholders, Government, non-governmental organizations (NGOS), private bodies, individuals, forest degradation organizations to create job opportunities for rural dwellers in Etung LGA to divert their attention from total dependence on forest resources. Hence the major challenge that induces the total dependence on environmental resources is poverty and lack of job, this may hence be an eye opener to these body to create job opportunities to the teaming masses and reduce their attention on environmental

resource which may go a long way in helping to conserve the environmental resources.

Finally, this study will offer other intending researchers in a similar area the opportunity to know the level of exploitation of forest resources in Cross River State. The study will equally serve as a body of knowledge or reference work for other researchers in similar area.

Literature Review
Timber exploitation and forest resource degradation

Timber exploitation, and demand for land for agricultural activities had significant relationship on forest resource degradation. According to the World Resources Institute (WRI), the world has lost about half of its forest cover from 62 million km2 to 33 million km2 as a result of timber exploitation and other deforestation activities carried out by humans. (Summerlin, 2015).

Thus, the proximate or direct drivers of timber exploitation are human activities and actions that directly affect forest reserve and result in loss of carbon stocks. The direct drivers of such biodiversity loss especially forest resources include: agriculture (food crops and livestock), which remains the largest direct human-induced driver of biodiversity degradation, species loss, and conversion of natural habitat, (Chapin & Tilman, 2006).

Diverse of change in biodiversity may be natural or human-induced, timber exploitation triggers a loss of biodiversity and makes it more difficult for ecosystems to recover from the negative impacts associated with this human intervention. Ecosystem recovery from such human-induced change is not only slow and costly in some cases, but the ecosystem may also be irreversible (Diaz, Hodgson, Thompson, Cabido, & Cornelissen, 2006).

Thus, timber exploitation has tremendously threatened to deplete or endangered biodiversity in the forest ecosystem, having negative ecological, genetic and socio-economic effects on the environment. According to Ajake et al (2015) some of the key effects of timber exploitation on forest resource degradation include atmospheric pollution. Noting that timber exploitation in developing countries is held to account for about 18% to 30% of increased emissions of greenhouse gases (GHG), which are responsible for global warming and climate change. Trees serve as a carbon sink, by absorbing Carbon dioxide, Co2. Trees and other plants remove carbon in the form of carbon dioxide from the atmosphere during the process of photosynthesis. Carbon dioxide is dangerous to animals including man and as deforestation takes place, the few trees left cannot absorb a huge amount of carbon dioxide, therefore, the excess carbon dioxide gets into the atmosphere causing global warming.

The forest houses half of the world's animals such as mammals, reptiles, Insects and invertebrates. Most of them are hardly found on the ground because

trees provide food and shelter for them. Several plants and assorted animals have been depleted, while some are endangered and lost as the next generation may not be aware of such occurrences. For instance, several plant species have been over exploited especially those with edible fruits, seeds, vegetables, roots, trees, mushrooms, culinary plants, medical plants, nuts, and kernels. Also, most primates such as chimpanzee, gorilla, monkeys, reptiles, chameleon, amphibians and birds, among others are being endangered (Akachukwu, 2015).

These lost plants and animals are of economic importance such as food, medicine, hides, and others. In the study area, loss of biodiversity due to forest exploitation activities such as logging and unsustainable collection of non-timber forest products are posing a serious threat to forest resource degradation. Other prominent implications of timber exploitation are soil erosion, climate change, loss of forest products, depletion of water and soil resources (King & Udosen, 2010).

The literature reviewed had portrayed that wood extraction activities, methods of land cultivation by rural dwellers and hunting practices, have greatly affected biodiversity degradation. It is deduced from the literature that logging operations are the main causes of deforestation, degradation or depletion of forest resources which results to destruction and extinction of biodiversity. The consumption of forest resource through logging has vast impact on the biodiversity. Though literature reviewed shows 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, it has to do with sustainable utilization of forest resources. Land cultivation has been one of the practices of agriculture, as literature reviewed revealed that forest clearance for farming, following the crude traditional method of land cultivation such as land tenure and shifting cultivation have led to widespread exploitation of the forest resource and is the major destroyer of biodiversity.

This has negative impact on biodiversity. The literature reviewed further revealed that the pattern of hunting explained why very little surviving wildlife are around areas of high human population. The uncontrolled or unregulated hunting has resulted in loss of biodiversity. The forest elephants, chimpanzee, leopard etc. are among the animals that are in endangered list. Literature reviewed were from both foreign and local sources. Despite the efforts by various authorities above on the relationship between forest resource exploitation and biodiversity degradation, enough has not been studied on the exploitation pattern of rural dwellers as it relates to forest resource degradation which bothered this researcher and more so, when none of such studies had been carried out in the present study area. This is the gap the present study intends to fill.

Research Methodology

Survey research design was used for the study, survey refers to the act of collecting data through asking questions either in person, phone, online or

questionnaire from a target population. Survey research is used to gather the opinions, beliefs and feeling of selected groups of individual often chosen for demography sampling (Obasi 2016:18). This was used since part of the research objective could be achieved through conducting a field survey in order to collect data from the sample population.

Etung Local Government was created out of Obubra Local Government in 1987. It has its boundary with Abi, Obubra, Biase and Akamkpa Local Government Areas. It comprises 13 wards and is inhabited by the people of Agoi, Ibami Assiga, Mkpani, Ekon, Nko Ugep and Idomi. The dominant language is Etung. The people of Etung Local Government Area are largely farmers and celebrate new yam festival. The projected population of Etung is estimated at 154,000.

The population of the study covers the entire inhabitants of the 13 communities in Etung Local Government Area of Cross River State. Currently they have a projected population of 196.271 inhabitants from ar 374 housing units in the area and this constitutes the population of the study (NPN, Calabar 2022).

Multistage sampling procedure was adopted for the study. First the purposive sampling technique was used to select various communities with tropical high forest in Etung LGA, this is because there is concentration of forest in some areas than others in study area. The forest covers map of cross river state produced by the Geographic Information System (GIS) unit of the Cross River State forestry commission was used to purposively select communities with high concentration of forest.

At the second stage of the simple random sampling technique was used to select villages to be used in the study. And finally, the accidental sampling technique was employed to sample on the residents in the study areas. By occidental sampling technique, it implies that the researcher gave the instrument to the residents in the study area he was able to access. Here the researcher positioned himself in the strategic locations in the communities selected and administer the instrument, at the end of the process, 200 questionnaires were completed and retrieved and used as the sample for the study. A total of 200 persons from the research area were sampled using multistage sampling technique, and this constitutes the sample for the study.

The instrument used for the data collection is a structured questionnaire title: "Timber exploitation and Forest Resources Degradation Questionnaire (TEFRCQ)". The questionnaire has two sections A and B. Section A Contains personal data of the respondents and section B contains direct statement with multiple options such as Strongly Agree (SA), Agree (A), Disagree (D) and Strong Disagree (SD).

Validity is the extent to which an instrument measures what is meant to measure. The research instrument for the work was designed by the researcher with reference to the major variables of the study. The questionnaire was face and

construct validated by two experts in Measurement and Evaluation and one from Environmental Education department, both from University of Calabar, Calabar Cross River State. The researcher included some important information to aid the experts in validating the instrument.

A total of 200 copies of questionnaires was designed and administered in person to the target respondents, a period of two weeks was allotted for this field work. Following the collection of the completed questionnaire codes/scores were given to each item. Each of the items were scored independently using the 4-point likert scale: 4 points for strongly agree (SA), 3 points for agree (A), 2 points for disagree (D) and 1 point for strongly disagree (SD). The sum of scores for each respondent from section B determined their responses with regards to the variables under study.

Results and Discussion
General description of the research variables
The essence of this study was to examine the effect timber exploitation on forest resources degradation in Etung Local Government Area of Cross River State. The independent variable of the study is timber exploitation, which were sub-divided into firewood extraction, crop production, timber exploitation and hunting, while the dependent variable is forest resources degradation.
Presentation of results
A hypothesis was stated and tested in order to give answer to this work. The hypothesis was tested at 0.05 degree of freedom.

Hypothesis

There is no significant relationship between timber exploitation and forest resources degradation. In this hypothesis the independent variable is timber exploitation, while the dependent variable is forest resources degradation, in testing this hypothesis, Pearson Product Moment Correlation (PPMC) was used. The result of data analysis is presented in table 1.

Table 1
Pearson product moment correction (PPMC) analysis of relationship between timber exploitation and forest resources degradation

Variables	X	SD	r-ratio	df	p-level
Timber exploitation (x)	11.365	2.0209			
			.544*	198	.000
Forest resources degradation (y)	26.460	2.1017			

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

The finding table 1 showed that timber exploitation had a mean score of 11.365 with a standard deviation of 2.0209, forest resources degradation had a mean score of 26.460 with standard deviation of 2.1017. The outcome further showed that the r-calculated r-value of 0.544 is greater than the critical r-value of 0.138, tested at .05 level of significance and 875 degree of freedom. Also, the $p < .000$ is less than $p < .05$. With reference to this result, the null hypothesis which stated that there is no significant relationship between timber exploitation and forest resources degradation was rejected, showing that there is a significant relationship between timber exploitation and forest resources degradation in Etung LGA.

Discussions of findings
Timber exploitation and forest resource degradation

The result of this hypothesis showed that indeed there is a significant relationship between timber exploitation and forest resources degradation. The conclusion is in line with the investigation of Díaz et al. (2006) who expressed that timber exploitation trigger a loss of biodiversity and make it more difficult for ecosystems to recover from the negative impacts associated with this human intervention. Ecosystem recovery from such human-induced change is not only slow and costly in some cases, but the ecosystem may also be irreversible.

Thus, timber exploitation has tremendously threatened to deplete or endangered biodiversity in the forest ecosystem, having negative ecological, genetic and socio-economic effects on the environment. The finding of the study is also in line with that of Ajake (2015) whose study concluded that some of the key effect of timber exploitation on forest resource degradation includes atmospheric pollution. Noting that timber exploitation in developing countries is held to account for about 18% to 30% of increased emissions of greenhouse gases (GHG), which are responsible for global warming and climate change.

Summary, Conclusion and Recommendation
Summary of the study

This study was designed to examine the relationship between timber exploitation and forest resources degradation in Etung Local Government Area of Cross River State. Specifically, the objective of this study was to investigate the relationship between timber exploitation and forest resource degradation. To achieve this purpose, a hypothesis was developed, which guided the study. The hypothesis was stated as follows:
There is no significant relationship between timber exploitation and forest resources degradation.

The researcher reviewed previous literature based on the variables under study Survey research design was adopted for the study, the design was considered appropriate because it allows the researcher to make inference and generalization

of the population by selecting and studying the sample of the study. The generated data was analyzed using Pearson Product Moment Correlation Coefficient Analysis. The following result was deduced from the data analysis:

There is a significant relationship between timber exploitation and forest resources degradation.

Conclusion

Based on result of the data analysis these conclusions were reached; there is a significant relationship between timber exploitation and forest resources degradation. Based on result of the work these recommendations were made: the government and other environmental stakeholders should ensure that community participates in mobilization awareness against unsustainable firewood extraction. In addition to the aforementioned, the government should promulgate and implement a strict policy to regulate the logging of timber. Defaulters should be made to face the law based on the study limitations. Finally, government should promulgate and enforce a better policy against the unholy hunting of wild life. Fines and jail terms can be given to defaulters to help conserve the wildlife.

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