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Implication of Agricultural Practices, Commercial Logging and Forest Conservation in Ikono Local Government Area, Akwa Ibom State-Nigeria

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Abstract
The purpose of this study is to investigate the implication of agricultural practices, commercial logging and forest conservation in Ikono Local Government Area, Akwa Ibom State. In order to achieve the set objective of this study, two hypotheses and tested statistically at 0.05 level of significance. Using Pearson product moment correlation analysis. The design used for the sampling was the survey research design while the sampling procedure used was the simple random sampling technique. A well validated 29-item questionnaire tagged "Implication of Agricultural Practices, Commercial Logging and Forest Conservation (IAPCLFC) was designed using the four point likert scale model and administered to a simple size of three hundred (300) persons drawn proportionally from the selected geo-political wards". From the analysis, it was found that the two hypotheses were significantly related to forest conservation. Based on these, it was recommended that government should embark on an enlightenment campaign of the people, emphasis should be place on importance and benefits to be derived from forest resources.
Keywords: agricultural practices, commercial logging, forest, conservation

1. Introduction

Nature conservation is the most important challenge of the present century, nothing affects the quality of our lives quite like the welfare and state of nature and no future can be quite so bleak as one in which the living resources which are very essential for human survival and development, are increasingly being destroyed or depleted by human carelessness. Forest resources conservation is therefore very necessary for ameliorating these problems through judicious management of the resources for sustained yield and long-term satisfaction.

Conservation of natural forest is the controlled use of the resources in such a way that its capacity to renew itself is not impaired. Conservation of the natural forest ensures the continuity of the benefits derived from them. These benefits are so important to man that they ensure his continuous survival on the planet earth. In Nigeria, the decline in the total forested area is now resulting in a widespread concern for conservation at both national and local levels. The worsening deterioration of environmental quality, Okigbo (1991) observes, has given rise to environmental movements, political parties, various organizations, spearheading political activism and campaigns for changes in policies, laws, technologies and development strategies aimed at safeguarding the quality of our environment. How best to avoid the unpleasant consequences of the current assault on the world's forest should be the concern not only of forest and environmental experts but also of communicators and educators. I believe in concert with other inputs, communication and education which are the vehicles of awareness can help not only in arresting but also in redressing the threatened plight of our eco-system. This research intends to look into the level of environmental awareness and its effects on forest conservation. Useful recommendations will also be made in the improvement of forest conservation so as to generate favourable attitude towards forest conservation practices.

1.1 Statement of Problem

Forests are of great use to mankind. The forest provides us with food, shelter, revenue as well as raw materials for industries. Forest also protects biodiversities, watershed, hydrological cycle and stabilization of the soil against erosion. Forest serves as habitat for wildlife, represent gene bank for declining genetic base of domestic plants and animals, tourist attraction and educational research. However, most rural communities depend absolutely on the forest for their farmland, livelihood and survival. Despite the importance of forest to mankind, the forest in Ikono Local Government Area is exploited through careless logging which has irregularly degraded the environment especially on steep slope and on fragile ecosystem. This problem has continued to occur irrespective of the teaching of environmental education in the curriculum of schools and the activities of Government and Non-governmental Organization (NGO's) towards preserving the environment. This study aims to find out if the level of awareness of the environment influences the attitudes of the people towards forest conservation.

1.2 Research Hypotheses

1. There is no significant relationship between the types of agricultural practices and the level of forest conservation practices in Ikono Local Government Area.
2. There is no significant relationship between commercial logging practices and level of forest conservation practices in Ikono Local Government Area.

2. Literature Review

2.1 Agricultural Practices and Forest Conservation

Forest clearing has been identified as one of the most significant causes of deforestation in different parts of the world. Detailed scientific studies illustrate the apparent effect of agricultural vegetation. The rate of forest destruction is alarming in West Africa due to rapid population growth and land use (Myers, 1991). For example, recent estimates indicate that over 350,000 hectares of forest and natural vegetation are being lost annually due to agricultural activities (NEST, 1991).

Ola (1996) also lamented over 11,300 bacteria of forest being cleared annually in omo forest reserve in Ogun State for the establishment of monoculture plantation of indigenous and exotic free species. This evidence presents a significant and direct role of forest clearing for agricultural activities which cause forest loss. It has been established that the highest rate of forest modification have occurred in areas with heavy dependence on forest lands for subsistence and shifting agriculture largely found in developing countries (Allen and Barnes, 1985). The global drive towards sustainable environment provide critical need for studies involving impact of agricultural activities on forest vegetation opportunities to be derived from such studies include prediction of stability and changes to be expected as caused by different agricultural practices of the different zone possible ecological effects of changes and form and type of vegetation occurring in different zone. An adequate and reliable information base necessary for better decision making in the forestry sector for sustainable environment is obtained. Habitat loss usually precipitate species extinction in many states of Nigeria, relatively little natural vegetation remains untouched by human hands (Myers, 1991). Rates of forest loss are accelerating due to agricultural practices like bush burning and shifting cultivation. NEST (1991) identified the farmers as the main deforestating agent through logging, clearing and bush burning for cultivation to provide food. It asserted that this degrade the soil, reduce soil fertility and lead to poor yield.

FAO/UNEP (1993) report bush burning open up the top soil to the activity of erosion which resulted into reduction in the value of land. According to Anijah-Obi (2001) observed that bush burning especially during the dry season exposes the soil to erosion and destroys the soil nutrients. Bush burning destroys the plants and causes biodiversity loss. Deforestation and vegetation loss due to bush burning and need for timber, farms and fuel wood leads to land degradation. Douglas (1988) integration conservation into the farming system stated that most important species are lost during the forest in the case of slash and burn where the fire is uncontrollable, properties and farms have also been destroyed. Shifting cultivation do lead to a high degree of ecological stability if efficiently managed and where the population is kept stable that is, where a certain balance is maintained between nature's supply and man's needs (Simmons 1981). Inspite of the ecological stability of the shifting cultivation, agriculture under low population densities as principal snag in it inability to keep pace with increased densities which may result in a significant loss in primary vegetation and also shortened fallow period which may lead to loss of soil fertility especially where there is deficiency in soil management techniques. If an ecological goal lies in the conservation of biological diversity and the ecosystem, there will be the need to aid a more intensive cultivation method by the introduction of appropriate land resource management techniques (Bisong 2001).

Forest plantation establishment, bush burning, shifting cultivation and other development features have occurred in the forest resulting in loss of biodiversity. The economic implication of loss of biodiversity on local communities and on the national economy in general calls for a joint effort by all stakeholders. The large decrease in Ikono forest was due to several human activities that had taken place in the forest right from inception till now. These activities over a long period of time could lead to reduction of plant diversity especially with the natural forest zone of the forest. The bush burning and shifting cultivation methods of agriculture is inimical to sustainable forest land use management. But this is the general practice in Akwa Ibom State.

2.2 Commercial Logging and Forest Conservation

Throughout the world, the destruction of natural forest has a profound impact on rural communities. The deterioration of the earth's extensive forest has exposed critical watershed, accelerated top-soil erosion and sedimentation of rivers and reservoirs, exacerbated flooding and over taxed the land's natural resilience and capacity to regenerate and sustain its productive functions. Attempts to tighten bureaucratic control over natural forest have often led only to heighten conflict among users and further assault on the ecosystem, rather than conservation and sustainable use (International Union for the Conservation of Natural Resources 1993).

Agabi, Abang and Animashaun (1994) elucidated that many wild plants and wild animals vanish with the forest,

for example a typical 1000 hectare of patch of tropical forest contains as many as 1,5000 species of lowering plants, up to 750 species of trees, 400 birds species, 150 types of butterflies, 100 different reptiles and 60 species of amphibians and insects too numerous to count. Clearing the tropical rainforest would therefore lead to loss or extinction of millions of species. Edmonds (2000) trees across wide area of the landscape are drying faster than they are growing and being replace. Because of this, trees mortality conditions exist that almost guarantee large and severe wildlife. In these ecosystem not only are the trees at risk but aquatic resources wildlife and other values also are affected.

Logging involves cutting down of large trees with attendant opening of canopy, damage to younger trees and destruction of wildlife, habitats, this leads to loss of biodiversity, some of the valuable tree species such as mahogany is already on the endangered species list and have disappeared in other part of Nigeria. The destruction of habitat for some wild animal has treated their existence and some are virtually extinct. Logging especially in the community forest leads to deforestation and conversion of the forest to other form of land use. According to World Resources Institute (2002) the expansion of commercial logging open a network of access route into previously remote areas with negative ecological impact deforestation, forest fragmentation, micro-climate change, biodiversity loss, changes in quality and quantity in local hydrology, negative social impact dispossession of local people's land loss of livelihood human right abuses and unsustainable economy.

Anijah-Obi (2001) Timber exploitation which results to deforestation has resulted in low productivity in the shrinking of the rainforest and agricultural production and shortage of arable land. The acute shortage of fuel wood, shortage of industrial timber, loss of biodiversity and genetic resources, increased siltation. Also removal of trees which are carbon sink can lead to increase level of ultraviolet light which in turn can affect vegetation as plant become stunted. Lumbering which leads to deforestation if not accompanied y trees planting can lead to land degradation, soil erosion the fauna population of the forest is also affected, destruction and modification of wildlife habitat. Logging operations and shifting patterns of agriculture **robs** the world rainforest of their rich heritage of trees and wildlife and this strips the soil bare and plants, animals, birds, reptiles and insect die off or gets displaced.

According to International Union for the conservation of Natural Resources (1993) timber exploitation leads to loss of habitat for countless animals and plant species, the destruction of home and livelihood of native trines like birds who make their nest on trees, increase in the amount of carbon dioxide in the atmosphere due to excess chlorofluorocarbons (CFCS) gases because of no trees to use them for photosynthesis, thus resulting in ozone layer depletion and global warming where the after effect becomes acid rain which is poisonous to plants. Ubi (2002) opined that when forest are logged, the habitat of wildlife and adverse effect on recreation and tourist by hunting supply site, increasing safety risk, destroying view sheds, decreasing biodiversity and generally degrading the characteristics of forest area. It follows therefore that we must be careful of what we do to the forest.

3. Materials and Method

The research design used for this study was survey research. This involves the collection of data to accurately and objectively describe existing phenomena. The study area of the research is Ikono Local Government Area of Akwa Ibom State, Ikono Local Government Area is regarded as the cradle of Ibibio nation. The major occupation of the people of Ikono Local Government Area is farming, handicraft, trading, hunting etc. The people's dialect and official language is Ibibio and English language. The population of the study comprised all the communities in Ikono Local Government Area that made up the eleven geo-political wards of the area. This simple random sampling technique was adopted for this study. This is because the population of the study area is large to be studied censusly by the researcher. Hence, the need to select and study a sample that will be representational of the population of the study. This same method was employed to randomly select fifty (50) persons from each of the six selected geo-political wards for the study with special consideration and occupation of the respondents. Consequently, a total of three hundred (300) respondents were drawn. The instrument for data collection used for this study was a 24-item questionnaire which reflected the researcher questions and hypothesis formulated for the study. A total of three hundred (300) respondents were targeted for filling of the questionnaires from the six geo-political wards that out of this, two hundred and eighty-seven (288) questionnaire were completed and returned in good form, making a return rate of 96%. For the reliability of the instrument used for this study, the split half reliability method was used. This involved administering the validated instrument once, to a sample of 30 respondents in the study area of the study.

4. Results and Discussion

4.1 Hypothesis one

This states that there is no significant relationship between the types of agricultural practices and the level of forest conservation practices in Ikono Local Government Area. Here, agricultural practices was the independent

variable (X) while the dependent (Y) was level of forest conservation practices. To test this data, Pearson product moment correlation coefficient analysis was used at 0.05 level of significant, the summary of the result were expressed as shown in table 1. The calculated value of correlation coefficient between the two variables agricultural practices and forest conservation practices for 286 degree of freedom at 0.05 level significant is 0.95. The result indicates a high (strong) positive relationship between the variables because the calculated r – value of 0.95 is greater than critical r – value of 0.113. The null hypothesis is therefore rejected in favour of the alternate hypothesis, which states that there is a significant relationship between the two variables.

The finding of this study as shown in table 1shows that there is a significant relationship between types of agricultural practices and the level of forest conservation practices. The finding is supported by NEST (1991) identified the farmers as the main deforesting agent through logging, clearing and bush burning for cultivation to provide food. It asserted that this degrade the soil, reduce soil fertility and lead to poor yield. The finding is also supported by FAO/UNEP (1993) report bush burning open up the tops soil to the activity of erosion which resulted into reduction in the value of land. In addition, Anijah-Obi (2001) observed that bush burning especially during the dry season exposes the soil to erosion and destroys the soil nutrients. Bush burning destroys the plants and causes biodiversity loss. The finding of Douglas (1988) integration conservation into the farming system stated that most important species are lost during the forest in the case of slash and burn. Where the fire is uncontrollable, properties and farms have also been destroyed. In support of the finding Summons (1981) suggest the shifting cultivation do lead to a high degree of ecological stability if efficiently managed and where the population is kept stable that is, when a certain balance is maintained between nature's supply and man's needs. Finally, the finding of this study is supported by Bisong (2001) if an ecological goal lies in the conservation of biological diversity and ecosystem, there will be need to aid a more intensive cultivation method by the introduction of appropriate land resource management techniques.

Table 1: Pearson Product Moment Correlation Coefficient Analysis of the relationship between agricultural practices and forest conservation practices.

N = 288

Variables	Σx Σy	Σx^2 Σy^2	ΣXY	r-cal
Agricultural awareness	2470	43298		
			42099	0.95
Forest conservation practices	2448	42905		

Significant at 0.05 levels, df = 286, critical r = 0.113.

4.2 Hypothesis Two

This hypothesis which was stated in the null form, that there is no significant relationship between commercial logging practices and level of forest conservation practices in Ikono Local Government Area. It was also tested using the Pearson product moment correlation coefficient analysis. Here the dependent variable (Y) was forest conservation practices and the independent variable (X) was commercial logging practices. After testing the hypothesis, the summary of the result w as also expressed as shown in table 2.

As shown in table 2, the calculated value of correlation coefficient between the two variables commercial logging practices (X) and forest conservation practices (Y) for 286 degree of freedom at 0.05 level of significant is 0.94. The result of the analysis showed that there is a high (strong) positive relationship between the two variables because the calculated r-value of 0.94 is greater than the critical r-value of 0.113. Therefore the null hypothesis is rejected and the alternate hypothesis retained.

The finding of this study with respect to the hypothesis showed that there is significant relationship between commercial logging practices and level of forest conservation practices. This is because, throughout the world, the destruction of natural forest has a profound impact on rural communities. The finding is supported by WRI (2002), the expansion of commercial logging open a network of access route into previously remote areas with negative ecological impact deforestation, forest fragmentation, micro-climate change, biodiversity loss, changes in quality and quantity in local hydrology, negative social impact dispossession of local people's land loss of livelihood human right abuses and unsustainable economy. The finding is also supported by Anijah-Obi (2001) Timber exploitation which results to deforestation has resulted in low productivity in the shrinking of the rainforest and agricultural production and shortage of arable land. In support of this finding, IUCN (1993) stated that timber exploitation leads to loss of habitat for countless animals and plant species, the destruction of home and livelihood of nature tribes like birds who make their nest on trees, increase in the amount of carbon dioxide in the atmosphere due to excess chlorofluorocarbons (cfcs) gases because of no trees to use them for photosynthesis, thus resulting in ozone layer depletion and global warming where the after effect becomes acid rain which is poisonous to plants. The finding is supported by Ubi (2002) opined that when forest are logged, the habitat of wildlife and adverse effect on recreation and tourist by hunting supply site, increasing safety risk, destroying view sheds, decreasing biodiversity and generally degrading the characteristics of forest area reserve

by visitors. If follows therefore that we must be careful of what we do to the forest.

Table 2: Pearson Product Moment Correlation Coefficient Analysis showing the relationship between commercial logging practices and forest conservation practices.

N = 288

Variables	Σx Σy	Σx^2 Σy^2	ΣXY	r-cal
Commercial logging practices	2537	46685		
			44994	0.94
Forest conservation practices	2541	46296		

Significant at 0.05 levels, df = 286, critical r = 0.113.

5. Conclusion and Recommendation

Agricultural practice is significantly related to forest conservation. The rates of forest loss are accelerating due to agricultural practices like bush burning and shifting cultivation. Commercial logging is significantly related to forest conservation. Commercial logging impact on the environment negatively causing deforestation, environmental degradation, forest fragmentation and loss of biodiversity. On the basis of the finding in this study, government should embark on an enlightenment campaign on the people. Here, emphasis should be placed on importance and benefits to be derived from forest resources. Government should organize poverty alleviation programme for the people. The programme should be directed at teaching the people other trades or professions which would shift the attention and interest of these people from the forest. Laws should be put in place to punish those engage in commercial logging and task force should be established to monitor and regulate the activities of commercial loggers.

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