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## Conservation of forest resources by rural farmers in Anambra State, Nigeria

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### Abstract

*This study assessed the conservation practices, forest resources available, roles of local organisations in forest conservation and constraints to conservation of forest resources in the area. Multi-stage sampling procedure was used to select 100 respondents used for the study. Data were collected with the use of interview schedule and analysed with frequency distribution, percentages and mean scores. Result shows that greater percentage (96.7% and 76.7%) were male and between 31 and 40 years respectively. The prevailing conservation practice in the study area were enforcement of law against bush burning ( $\bar{X} = 4.3$ ), legislation against indiscriminate felling of trees ( $\bar{X} = 4.1$ ) and restrictions on some areas ( $\bar{X} = 4.0$ ). Various forest resources available in the area included: timber (95%) and Bush meat (98.3%). The roles of local organisations in conserving forest resources included: prevention of clearing of forest area for agricultural purposes ( $\bar{X} = 3.3$ ) and provision of forest guards for forest preservation. Constraints to conservation of forest resources included insufficient finance to conserve forest resources ( $\bar{X} = 3.4$ ) and lack of local people involvement in conservation decisions ( $\bar{X} = 3.3$ ). This implies that there are many forest resources. Hence it was recommended that there should be provision of fund and involvement of rural people in making decisions for conservation of forest resources in the area.*

**Keywords: Conservation, forest resources, farmers**

### Introduction

Nigeria is blessed with expanse of land and vegetation, but this important resource is not sustainably managed. Forests are fundamental to food security and veritable storehouses of biological diversity and forest products, which are the mainstay of many households. These products play significant roles in the lives of rural people. They meet the basic nutritional requirement of present and future generations and improve living standards for the rural people. They also reduce the vulnerability of the agricultural sector to adverse natural and socio-economic factors and other risks and above all strengthen self reliance. It is well known that today, world forest resources are facing extinction much faster than they would through natural processes along. According to Ogunwusi (2012), more recently there have been changes in the structure of the forestry sector in Nigeria.

In Nigeria, deforestation or loss of vegetation or the selective exploitation of forests for economic or social reasons is very common. In most areas major losses have been recorded in vegetation, forest complexity (diversity), or in germplasm (quality). The

deforestation rate in the country is about 3.5% per year, translating to a loss of 350,000–400,000 ha of forest land per year and recently, it was shown that forests now occupy about 923,767 km<sup>2</sup> or about 10 million ha (Ladipo, 2010). This is about 10% of Nigeria's forest land area and well below Food and Agriculture Organisation's recommended national minimum of 25% and between 1990 and 2005 alone, the world lost 3.3% of its forests while Nigeria lost 21% (Ladipo, 2010). Also, according to Adeyoju (2001), the total forest estate which stood at 10% of the country's land area in 1996 is now less than 6%. This makes forest conservation practices important. Interdependence between population and environment has been endangered and broken down as problems of deforestation, soil erosion, flooding and pollution increases.

Forest conservation is defined as actions taken in management of a forest that result in maintenance of the possibilities for future forest related benefits (Wollenberg, Nawir, Uluk and Pramono, 2001). In principle, local people own the forest, but the management and control of forest, reserves, which cover around three quarter of forest area, is rested on the state governments (Status of tropical forest management, 2005). Before the colonial era the former eastern Nigeria had successfully managed their forest resources with little or no threat to the environment. This was checked by using traditional institutions such as the family (kinship) religions, town unions, clubs, clan and kindred meetings among others. Participatory resource management is often seen as an appropriate solution to reducing resource degradation and it is generally assumed that it would ensure the equitable and sustainable use of environment resources. Through local participation, nearby communities would be engaged as stakeholders in managing the resources thus ensuring commitment to long term management goals (Chukwuone, 2007). Forest conservation world over is changing from the traditional forest management approach with technical details and absolute concentration on trees, to managing the forest in a way that ensures greater benefit flow to all stakeholders especially the forest communities (Forest Association of Nigeria, 2003).

Despite the conservation practices, continuous degradation of the forest reserve base still has major effects on the economy. This can be manifested with the rapid disappearance of forest cover leading to erosion, loss of biodiversity, soil degradation, and unfavorable hydrological changes (FAN, 2003). This forest reserves have for sometimes been seriously neglected and have received little or no improvement in terms of investment and management (FAN, 2003). Lise (2000) noted that the type of natural environment that obtained some years ago are no longer available because of anthropogenic factors such as farming, bush burning, over grazing by animals, over exploitation of forest and other deforestation practices. The demand for welfare and social infrastructure, and high goods requirement were always at the expense of the fertile forests land. The pressure by man, animals and environmental agents on forests has made the soil become quickly impoverished and unable to sustain agricultural production.

Also uncontrolled deforestation especially in eastern Nigeria, leads to accelerated soil erosion problems. Population pressure has also aggravated gully erosion problem of Anambra State such that almost all local government areas of the state are affected through gradual removal of uniform depth of soil or gullies, which cut deep down slope. In view of the above, the forests have been subjected to degradation, exploration, utilization

and careless destruction. Also the trees in the forest within the study area are volunteer trees and consequently have considerably faced extinction and perhaps diminished in quantity and quality to such extent that it is inadequate for rural needs, hence posing environmental, biological, cultural, medical and nutritional problems. Hence, there was need to answer the following questions: What categories of forest resources are present in the study area? What are the contributions of farmers' union to the conservation of the forest? and What are the constraints in the conservation of forest resources in the study area?

The objective of the study was to investigate the conservation of forest resources by farmers in Anambra State. The specific objectives were to:-

1. identify the existing forest resources in the area;
2. ascertain rural farmers' union contribution to forest conservation and
3. ascertain constraints to conservation of the forest resources.

## Methodology

The study was carried out in Anambra State, Nigeria. Multi-stage sampling procedure was used to select 100 respondents from existing farmers' organisation. Data were collected through the use of interview schedule. Data were analysed with the use of descriptive statistics (percentages and mean scores).

## Results and Discussion

### Existing forest resources in the area

Forest resources in the area include timber and non timber products. Table 1 showed that majority (95.0%) of the respondent agreed that timber is a major forest product. This implies that timber is of high value in the study area. Timber is wood in form suitable for carpentry, joinery or for reconversion to manufacturing purpose. Standing trees or felled trees are capable of being converted for these purposes. According to Cunningham, Cunningham and Saigo (2005), timber accounts for about half of worldwide wood consumption. This finding is in line with the report of Ihenyen, Okoegwale and Mensah (2009) which states that timber tree species occur in most tropical forests and large areas tend to be exploited diffusely to extract a few prized logs.

The non-timber forest product (NTFPs) of the State are all biological materials other than timber, that are extracted from the forest. NTFPs are derived from large variety of plants and animals and may be consumed or processed into different set of products. Majority (93.3%) of the respondent agreed that spices were available forest resources. Majority (96.7%) of the respondents agreed that herbs as medicine is forest resource. A greater proportion (85.0%) of the respondents agreed that breadfruit is a forest resource. Also 96.7% of the respondent agreed that palm tree products were forest resources. Table 1 also shows that 75.0%, 93.3% and 98.3% of the respondent agreed that cashew nut, snail and bush meat were available forest resources. This result implies that these NTFPs were part of the forest resources among others.

This agrees with Fuwape and Onyekwelu (1997) in Fuwape, (2003) report that NTFPs provide food, medicine, handicraft, tannin, dyes and cosmetics. The use of NTFPs for traditional medicine was ranked as the most important in Nigeria followed by its use for food, craft and cosmetics (Akindele, 1992) in Fuwape, (2003). The popular acceptance of

NTFPs for medicinal purpose was attributed to the socio-economic status of the people and their confidence in the efficacy of herbal medicine. The sale of NTFPs in local market provides income for people in the rural area. Some also engage in the collection and sales of leaves, fruits, seeds and roots of forest trees as source of livelihood (Fuwape, 2003). It provides employment opportunity and income to the people. A lot of NTFPs are very valuable as craft materials. Plant fibres from *Raphia spp.* and palm trees are used in making brooms, ropes, fishing nets, baskets and mats.

**Table1: Percentage distribution of respondents according to existing forest resources**

Forest resources	Percentage (%)
Bushmeat	98.3
Star apple (Udara)( <i>Chrysophyllum albidum</i> )	98.0
Forage for livestock	97.0
Medicine (herbs)	96.7
Palm tree products	96.7
Timber	95.0
Plant fibres	95.0
Timber	95.0
Spices	93.3
Snail	93.3
Gums	90.0
Locust bean ( <i>Ogiri</i> )	90.0
Local fruits (pear, orange, guava, eta)	90.0
bitter kola <i>akuilu</i> , ( <i>Garcinia kola</i> )	90.0
Tamarinds ( <i>Ucha koro</i> )	89.0
Baobab fruit ( <i>Anyanwona</i> )	86.0
Breadfruit ukwa ( <i>Treculia africana</i> )	85.0
Gum Arabic	85.0
Dyes	80.0
<i>Oha</i> ( <i>P. santalinoides</i> )	80.0
Cashew nut	75.0
Oil bean <i>ukpaka</i> , ( <i>Pentaclethra macrophylla</i> )	70.0
<i>Mmimi</i> ( <i>Dannettia tripetala</i> )	70.0
<i>Ukpa</i> , conophor ( <i>Plukenetia conophora</i> )	50.0
<i>Uziza</i> , Guinea pepper	50.0
Bitter leaf <i>onugbu</i> , ( <i>Vernonia amygdalina</i> )	30.0

### Rural farmers' union contribution to forest conservation

Table 2 shows that prevention of clearing of forest areas for agricultural purpose ( $\bar{x} = 3.3$ ) rated as highest contribution of the union to forest conservation in the study area. The second contribution was by imposition of fine/sanction on the illegal exploiters ( $\bar{x} = 3.2$ ). This showed that the union control illegal exploitation by the use of fines/sanctions from the community members. The third contribution was making laws against indiscriminate felling of trees ( $\bar{x} = 3.2$ ). This implies that the town union holds timber from trees to be

major forest resources in the study area. This was followed by making laws against clearing of forest area for settlement ( $\bar{x} = 3.1$ ), prevention of illegal hunting/poaching ( $\bar{x} = 3.0$ ), provision of forest guards ( $\bar{x} = 2.7$ ) and making some trees sacred ( $\bar{x} = 2.4$ ). This is in line with Secretariat of the Convention on Biological Diversity (2009) report that good forest practices included: observing national laws/plans and practices of local communities in forest management activities, and support the implementation of international biodiversity related agreements and Coordinate actions of forest owners, users and managers across landscapes to best ensure the maintenance of sufficient high quality connected habitat for species.

Farmers' union contributions that were not considered as serious or significant by the respondents in area include: Investing in forest conservation not seeing the forest as only source of generating revenue ( $\bar{x} = 2.3$ ); educating their people on the benefits of conservation of forest resources; encouragement of alternative source of energy use other than wood with mean score 2.10 and making some animals sacred ( $\bar{x} = 2.0$ ). This implies that there is need for farmers to be educated on forest conservation practices. Also they should be enlightened on ways to invest on forest to improve the resources.

**Table 2: Distribution of respondents according to the contributions of farmers' Union in forest conservation**

Contributions of Town Unions	Mean score ( $\bar{x}$ )	Ranking
Prevention of clearing of forest area for agricultural purpose	3.3	1 <sup>st</sup>
Provision of forest guards for forest preservation	3.2	2 <sup>nd</sup>
Imposition of fines/sanctions on illegal exploiters	3.2	3 <sup>rd</sup>
Making laws against indiscriminate felling of trees	3.1	4 <sup>th</sup>
Involvement of local people in the conservation movement	3.1	4 <sup>th</sup>
Making laws against cleaning of forest area for settlement	3.0	5 <sup>th</sup>
Prevention of illegal hunting or poaching	3.0	5 <sup>th</sup>
Prevention of grazing in the forest area	3.0	5 <sup>th</sup>
Making source trees sacred	2.7	6 <sup>th</sup>
Investing in forest conservation not seeing the forest as only source of generating revenue	2.4	7 <sup>th</sup>
Educating their people on the benefit of conserving forest resources	2.3	8 <sup>th</sup>
Encouragement of alternative sources of energy use other than wood	2.1	9 <sup>th</sup>
Making some animals sacred	2.0	10 <sup>th</sup>

### Constraints to Forest Conservation in the Study Area

Table 3 shows that the respondents rated insufficient finance ( $\bar{x} = 3.4$ ) as the major constraint to forest conservation. This implies that insufficient finance was the most perceived problem in the study area.

This was followed by instability of government policy ( $\bar{x} = 3.3$ ). This shows that change in government which brings about change in policy in Nigeria is a major constraint in forest conservation.

Also inadequate involvement of local people in conservation decision ( $\bar{x} = 3.3$ ). This shows that importance of local people involvement in forest resources conservation cannot be over emphasized.

High incidence of pest and diseases ( $\bar{x} = 3.2$ ) was also perceived as a constraint. This implies that high incidence of pest and disease is highly significant in the study area. Ignorant of conservation technique due to low level of education ( $\bar{x} = 3.2$ ) was also regarded as a problem in the study area.

Deforestation without afforestation ( $\bar{x} = 3.1$ ) was perceived as constraint to forest conservation in the study area. The implication of deforestation and overgrazing is that they cause imbalance in ecosystem. This imbalance brings about excessive carbon-dioxide (CO<sub>2</sub>) which forms HCO<sub>3</sub> which is a weak acid.

This was followed by inadequate material for reforestation with ( $\bar{x} = 3.1$ ). This implies that the respondents in the study area agreed that inadequate material for reforestation is a constraint to forest conservation. Ineffective regulations to the part of town union and scarcity of resources due to irrational exploitation of forest resources were regarded as a constraint to forest conservation.

**Table 3: Distribution of respondents according to constraints of forest conservation**

Constraints	Means ( $\bar{x}$ )	score	Ranking
Inadequate finance to conserve forest resource	3.4		1 <sup>st</sup>
Instability in government policies	3.2		2 <sup>nd</sup>
Inadequate local people's involvement in conservation decisions	3.3		3 <sup>rd</sup>
High incidence of pest and diseases infestation	3.2		4 <sup>th</sup>
Ignorance of conservation technique due to low level of education	3.2		4 <sup>th</sup>
Deforestation without afforestation	3.2		5 <sup>th</sup>
Deforestation and over grazing/ Damage by grazing animals	3.1		6 <sup>th</sup>
Inadequate material for reforestation	3.1		7 <sup>th</sup>
Ineffective regulations on the part of farmers' unions	2.2		8 <sup>th</sup>
Scarcity of resources due to irrational exploitation of resources	2.8		9 <sup>th</sup>
Lack of storage facilities for forest resources	2.2		10 <sup>th</sup>

### Conclusion and Recommendation

Forests provide varieties of food, fibre and medicine for humans. However these benefits derived from forest areas are endangered by human exploitations and activities. The study revealed the forest resource in Anambra State which included: timber, palm tree products, herbs and fruits. It also explained the conservation practices in the area and the constraint faced by farmers' union in forest conservation. Therefore the following recommendations were made:

1. farmers union and Government should collaborate and provide adequate fund and facilities to the conservation of forest resources;
2. appropriate government and forestry policies should be enacted to encourage conservation of forest resources;
3. the establishers of small sawmill holdings and wood industries should be encouraged to effectively control and minimize wastage of wood resources and
4. training should be provided for farmers in forest management and conservation techniques.

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