



FOREST MANAGEMENT PRACTICES OF RURAL DWELLERS IN IJEBU-NORTH LOCAL GOVERNMENT AREA OF OGUN STATE, NIGERIA

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Abstract

Forests are exploited for livelihood sustenance by rural dwellers. However, mode of exploitation and management of a forest, to a large extent, will determine its health and sustainability. This study therefore assessed rural dwellers' forest management practices in Ijebu-North Local Government Area of Ogun State, Nigeria. Multistage sampling technique was used to randomly select a sample of 119 rural dwellers from nine communities (Bogije (141), Odobotu (210), Tiluba (143), Togunberu (97), Asigidi (222), Ogunmoro (103), Lagan (73), Oke arewa (134) and Aredi (81). Interview schedule was used to collect data on respondents' socio-economic characteristics, forest related livelihood activities, forest exploitation and management practices and perceived constraints to sustainable forest management practices. Data were analysed using descriptive statistics (frequency, percentages and mean) and inferential statistics (Chi square). The majority of the respondents were ≤ 50 years (70.6%) old, 73.9% were male, 68.9% were married and 79.8% did not have more than primary school education. The highest monthly average income earned by the respondents was N30,000 (54.6%). Their major occupations were fuel-wood collection (84.9%), crop farming (73.9%) and collection of herbs (68.9%). All the respondents did not plant new seedlings after trees harvesting. Also, the majority cut trees without recourse to their maturity (66.4%), not sparing young animals/snails during hunting (87.4%) and were involved in bush burning (79.0%). Perceived constraints to sustainable forest management practices in the study area included the need for survival ($\bar{X} = 2.0$) and lack of information on forest management practices ($\bar{X} = 1.7$). It is recommended that extension agencies of Agricultural development Programme (ADP) and Forestry Departments should include forest management information in their agenda for rural dwellers in general and farmers in particular. Rural dwellers should also be encouraged to form forest management committees.

Keywords: Sustainability, Environment, Livelihood, Constraints

Introduction

Forest, a large area of land dominated by trees, is a part of the environment that people are exploiting for survival. Usually, the forest, especially in southern Nigeria is an important feature in rural areas where majority of Nigerians live. Although urbanisation is increasing globally, over 77.0% of Nigerian populations are still in rural areas (Azzez, *et al*; 2010). Similarly, Adekola and Mbalisi (2015) noted that about 79% of Nigeria's population are living in rural areas where forests are located and therefore are directly benefiting from the forests and forest products. This implies that forests are a part of the environment that is relied on by rural dwellers to meet their daily needs. Forests have sustained human needs world over for centuries and people have harvested fuel wood, fodder, other plant materials, hunted wild animals for meat and grazed their livestock in forests (Arjunan *et al.*, 2005; Harris and

Mohammed, 2003). Millions of households in developing countries, Nigeria inclusive therefore depend on forests for its products and benefits which they also harvest, process and trade in to generate income (Tewari, 2012). Also, stressing the importance of forests to rural populace, Bwalya (2013) reported that about 1.6 billion rural people all over the world depend fully or partially on products derived from local forests.

It is also important to note that beyond livelihoods, human beings depend on forests for air and several other environmental services watershed protection, prevention of soil erosion and mitigation of climate change. They are habitats for animals. The numerous benefits of the forest to mankind and the environment underscore the need to manage it in a sustainable manner. This is in line with the submission of Adekola and Mbalisi (2015) that the world has for long recognised the importance of the environment and the need for man to live harmoniously with it.

Nigeria is well endowed with forest resources, accounting for about 2.5 percent of the Gross Domestic Products. These resources provide employment for over 2 million people through supply of fuel wood and poles and more than 80 000 people working in the log processing industries, especially in the forest zones of the south (FAO, 2010). This amplifies the need to ensure sustainability of this aspect of our environment. Population pressure and the need to mitigate the effects of poverty among Nigerians, especially in rural communities, have led to the exploit of forests in an unsustainable manner. The ever increasing form of agricultural land use and largely unregulated land tenure systems accounts for much of deforestation in Nigeria. The trees in open forest are regarded as common property and may be freely harvested by all members of the community with no form of restriction as to use and access, sometimes subjected to different community regulations (Bisong and Andrew-Essien, 2010).

Negative impacts of unsustainable exploitation of the forests are visible in form of soil erosion and deforestation. Emeodilichi (2018) identified reasons for deforestation to include conversion of forest reserves areas to residential or industrial areas, removing of forest trees as a result of road or rail construction, conversion for agricultural purposes and cutting down of forest trees for domestics and industrial use like fire-woods, timbers, paper production and charcoal production. The unhealthy exploitation of the forests has been on for a very long time. Nigerians regard the natural vegetation as an inexhaustible bounty of nature and therefore treated it casually, cutting, burning and clearing it ruthlessly (NEST, 1991). Adekola and Mbalisi (2015) submitted that the loss of environmental resources is highly pronounced in countries of Africa in the area of forest and forest resources. According to Onuche (2010), exploitation that outstrips regeneration is a great threat to the sustainability of forest resources in country. It is against this background that this study assessed the interaction between rural dwellers and forests in the study area.

The general objective of the study was to assess the livelihood activities in relation to the forest in the study area. This was achieved through the description of the socio-economic characteristics of rural dwellers in the study area, identification of their forest related livelihood activities, ascertaining the extent to which rural dwellers observe sustainable management of forests in their domain and the determination of their perception towards sustainable management of the forest.

Methodology

The Study Area

This study was carried out in Ijebu North Local Government Area of Ogun State, Nigeria. Ijebu North

Local Government was established in 1979 with the headquarters at Ijebu- Igbo. The Local Government, which manifests both urban and rural characteristics, was split into Ifelodun and Ijebu-Igbo Local Government Areas in 1981 and later re-amalgamated in January 1984. Ijebu Igbo, the Local headquarters, is five kilometers from the Ijebu-ode on Ibadan-Ijebu Ode highway, while it is 20km from the Sagamu-Benin Expressway through the Ago-Iwoye-Irolu-IIisan route. It is about 45km from Ibadan, the capital of Oyo State and about 117km from Abeokuta, the Ogun State capital. The Local Government area is bounded in the north by Oluyole Local Government in Oyo State, in the west by Ijebu North-East, Odogbolu and Ijebu-ode Local Government Areas and in the east by Ikenne LGA. The LGA covers an area of 1,250 square kilometers. It has a population of about 142,429 persons as projected from the 1991 population census figures. Agriculture is the economic mainstay of the people of the Local Government Area. Prominent among their farm products are oil-palm, cocoa, coffee, kolanut, maize, yam, cassava, cocoyam, and vegetables. These agricultural products are the source of raw-materials for agro-allied industries which in turn utilize the available labour in the area. The Local Government is rich in Yoruba culture. The people of the Local Government Area observe the same customs, uphold the same values and beliefs and respects similar tradition as other Yoruba as reflected in their life styles, mode of dressing, marriage, child-naming and funeral ceremonies. The Local Government comprises eleven {11} Political wards, namely: Atikori, Oke-Agbo, Ojowo/Japara, Oke-Sopen, Ome, Oru-Awa-Iaporu, Osun, Ago-Iwoye Urban 1, Ago-Iwoye Urban 2, Ako-Onigbagbo Gelete, Mamu/Ehin-Etiri. The Local Government also has their area offices located at Ago-Iwoye, Oru-Awa-Iaporu and Mamu. These area offices are being used to disseminate information about government policies to the people at the grassroots and to generate revenue.

Sampling Procedure and Sample Size

Multi stage sampling procedure was used to draw sample for the study. Ijebu North Local Government Area comprises eleven wards. Twenty five percent of the wards were randomly selected (3 wards). Villages in the selected wards were identified and ten percent of the villages were also randomly selected. One thousand one hundred and nineteen rural dwellers involved in the use of the forests for livelihood activities were identified and ten percent of them were randomly selected to constitute sample for the study. In all, one hundred and nineteen rural dwellers selected from Bogije, Odobotu, Tiluba, Togunberu, Asigidi, Ogunmoro, Lagan, Oke arewa and Aredi villages constituted the respondents for the study (Table 1).

Table 1: Summary of Sampling Procedure and Sample Size

Number of wards in Ijebu North LGA	Selected wards	Number of villages in selected wards	Selected villages	Numbers of rural dwellers in each location	Number of respondents	
11	Ward 2	22	Bogije	141	14	
			Odobotu	210	21	
	Ward 4	44	Tiluba	143	14	
			Togunberu	97	10	
			Asigidi	222	22	
			Egunmoro	103	10	
	Ward 8	31	Lagan	73	7	
			Oke arowa	134	13	
			Aredi	81	8	
	TOTAL					119

Source: Ijebu North LGA, 2018

Results and Discussion

Table 2 presents the results on the socio-economic characteristics of the respondents. The table reveals that majority (70.6%) of the respondents were not older than 50 years. This is indicative of rural dwellers that were energetic and still in active stage of life. This result is in line with the findings of Fasona *et al* (2018) which reported that majority of forest users in south west Nigeria were virile youth within age bracket 31-45 years. This is expected to influence their intensity of use of the forest for livelihood activities. Also, 73.9% were males. This implies that the male gender dominated these selected rural communities. This result buttresses the submission of Mwangi (2011) that traditionally forest management has been associated with timber, a product of commercial value that is often traded in markets largely by males. Males are usually family heads; hence the need to provide for families may influence their level of use of available forests. On marital status, the majority (68.9%) were married. Marriage comes with responsibilities; therefore forest exploitation in the study area is an opportunity to generate food and income to cope with family responsibilities. The table reveals that 79.8% of the respondents were neither formally educated or did not go beyond primary school. This is against the findings of Fasona *et al* (2018) which reported that

50.0% of forest users in South west, Nigeria. This indicates that the majority of the respondents had limited opportunities for livelihoods in the formal sector. This could influence intensity of forest exploitation. Natural resources, such as the forest, are exploited for the survival of the families in rural communities. The result on family size reveals that the majority (61.3%) of the respondents had 5-10 persons in their household. This implies fairly large family size. This may influence the intensity of forest exploitation for livelihood. On occupation, the majority (59.6%) of the respondents were engaged in farming. The result reflects the rural nature of the study area. The engagement of the majority in farming implies the possibility of clearing more expanse of forest land for crop production. The methods used in farming activities will impact on the health of the forest. The result also shows that 54.6% realised less than N30, 000 in a month. This implies that majority of the rural dwellers were low income earners. So, they always augment their earnings with collection and sales of forest resources. Table 2 also indicated the experience of these set of people in forest resources exploitation. It was discovered that the majority had been exploiting forest and forest resources for over 10 years. This made them to be aware of the implications of their activities on forest resources management.

Table 2: Distribution of Respondents Based on Personal Characteristic (n=119)

Personal Characteristics	Frequency	Percentage
Age (years)		
30	5	4.2
31-40	36	30.3
41-50	43	36.1
51-60	35	29.4
Sex		
Male	88	73.9
Female	31	26.1
Marital status		
Single	13	10.9
Married	82	68.9
Separated	24	20.2

Educational status		
Non-formal education	45	37.8
Primary education	50	42.0
Secondary education	18	15.1
Tertiary education	6	5.1
House size		
<5	26	21.8
5-10	73	61.3
>10	20	16.9
Occupation		
Farming	71	59.6
Business/ trading	32	26.9
Civil servant	7	5.9
Others	9	7.6
Income per month (₦)		
5,000-9,999	9	7.6
10,000-19,999	21	17.6
20,000- 29,999	35	29.4
30,000 and above	54	45.4
Experience (years)		
<10	51	42.9
10-20	42	35.3
21-30	13	10.9
31-40	9	7.6
>40	4	3.4

Forest Related Activities of the Respondents

The results on forest related activities of the respondents are presented in Table 3. The table reveals that the majority were into fuel-wood collection (84.9%). This result corroborates the report of Jessica (2010) which noted that in developing countries, especially in rural areas, 2.5 billion people rely on biomass such as fuel wood, charcoal, agricultural waste and animal dung, to meet their energy needs for cooking. This was followed by crop farming (73.9%) and collection of herbs (68.9%). These activities have potential negative impacts on sustainable forest management if not properly carried out. It is noted from the results that majority of the respondents who

engaged in each these activities were frequently interacting with the forest and the resources therein. All the 30 respondents who engaged in logging and 101 who were into fuel wood collection and the 40 who were involved in fruit collection frequently interacted with the forests. Similarly, majority of bee keepers/harvesters (93.8%), herb collectors (85.4%) and animal/snail hunters (73.8%) were exploiting the forest frequently. The results generally indicated the high intensity and the impacts of the activities of rural dwellers in the study areas on the available forests. This then suggests that poor management of the forests could have negative impacts on the forests.

Table 3: Distribution of Respondents Based on Forest Related Activities (n= 119)

Forest Related Activities	Frequency	Percentage	Frequency of Activities			
			Frequency	Percentage	Frequency	Percentage
Crop Farming	88	73.9	71	80.8	17	19.2
Logging	30	25.2	30	100.0	0	0.0
Herb collection	82	68.9	70	85.4	12	14.6
Bee keeping /harvesting	32	26.9	30	93.8	2	6.2
Fuel wood collection	101	84.9	101	100.0	0	0.0
Hunting of animals and snails	61	51.3	45	73.8	16	26.2
Fruits collection	40	33.6	40	100.0	0	0.0
Coal production	30	25.2	30	100.0	0	0

Source: Field survey, 2018. Multiple responses allowed.

Respondents' Forest Management Practices

Table 4 presents the results on sustainable forest management practices as observed by the respondents. The table reveals that none the respondents planted trees to replace those they had exploited. Also, most of the trees were felled without recourse to maturity (66.4%). This result amplifies the report of Dauda *et al.*, 2016 which noted that tree population is threatened in Agro-ecosystem of Dutsin-Ma Local Government Area of Katsina State, Nigeria, due to unsustainable harvesting. Young animals/snails were not spared

during hunting (87.4%) and they engaged in bush burning (79.0%). The table also indicates that only 42.0% always observed controlled bush burning and zero tillage. All of these practices are injurious to the health of the forests. It therefore implies that majority of these rural dwellers were not exploiting the forest in a sustainable manner. This behaviour could be due to their ignorance of standard forest management practices. It could also be due to poor regulations and monitoring by government agencies and the communities.

Tables 4: Distribution of Respondents Based on Forest Management Practices (n=119)

Sustainable forest management practices	Always	Sometimes	Never
	F (%)	F (%)	F (%)
Cutting of only mature trees	30 (25.2)	10 (8.4)	79 (66.4)
Obtaining permit for use of government reserved forests	30 (25.2)	18 (15.1)	71 (59.6)
Replanting cut trees	0 (0.0)	0 (0.0)	119 (100.0)
Avoiding bush burning	10 (8.4)	15 (12.6)	94 (79.0)
Sparing of young animals/snails during hunting	5 (4.2)	10 (8.4)	104 (87.4)
Controlled bush burning	50 (42.0)	25 (21.0)	44 (37.0)
Zero tillage for crop farming	50 (42.0)	21 (17.6)	48 (40.3)

Source: Field survey, 2018

Perception of the Respondents on Forest Conservation Practices

The results on the perception of the respondents on issues that relate to conservation of the forests are presented in Table 5. The table reveals that majority of the respondents had positive perception on sustainable management practices by disagreeing with bush burning during land preparation for cropping (58.8%) and hunting (67.7%) and that any available tree should be cut for fuel-wood (63.0%). Also, they were in

agreement with erosion being a consequence of deforestation (66.7%) and that forest trees will regenerate naturally (64.7%). All are the positive dispositions of rural dwellers that could be harnessed for sustainable forest management. However it is important to note that respondents agreed that all animals in the forests could be hunted (65.6%). This is against sustainability as young animals and snails should be spared for the future. This is an evidence of information gap that could be bridged with deliberate efforts.

Table 5: Distribution of Respondents Based on Perception on Forest Conservation(n=119)

S/N	Statements	SA	A	U	D	SD	Mean
		F (%)	F (%)	F (%)	F (%)	F (%)	
1	Forest is an inexhaustible natural resource, free use is allowed	35 (29.4)	9 (7.6)	5 (4.2)	12 (10.1)	58 (48.7)	3.4
2	Forest trees will regenerate naturally, hence we can use it any how	23 (19.3)	19 (16.0)	0 (0.0)	58 (48.7)	19 (16.0)	3.2
3	Forest guards are very important	10 (8.4)	55(46.2)	10 (8.4)	22 (18.5)	22 (18.5)	3.1
4	Abuse or no abuse forests cannot influence climate	19 (16.0)	19 (16.0)	58 (48.7)	0 (0.0)	23 (19.3)	2.9
5	Soil erosion is a consequence of deforestation, hence the need for afforestation	20(16.8)	57 (47.9)	20(16.8)	10 (8.4)	2(0.2)	3.4
6	All animals in forest are to be hunted	22 (18.5)	56(47.1)	12(10.1)	19 (16.0)	10 (8.4)	2.5
7	Forest trees are good for charcoal	19 (16.0)	19 (16.0)	58 (48.7)	0 (0.0)	23 (19.3)	2.9
8	Bush burning during animal hunting is not a bad idea	20(16.8)	6 (5.0)	10 (8.4)	68 (57.1)	15(12.6)	3.4
9	Burning bush to clear forest land is ideal	9 (7.6)	35 (29.4)	5 (4.2)	12 (10.1)	58 (48.7)	3.6
10	Any available tree could be cut for fuel wood	22 (18.5)	22 (18.5)	0 (0.0)	35 (29.4)	40 (33.6)	3.4
11	Burning trees for honey harvesting is normal in forests	22 (18.5)	22 (18.5)	0 (0.0)	35 (29.4)	40 (33.6)	3.4
12	Human life depends on the forest, hence no uncontrolled logging	19 (16.0)	19 (16.0)	58 (48.7)	0 (0.0)	23 (19.3)	2.9
13	Forests protect the environment, hence it should not be abused	20(16.8)	57 (47.9)	20(16.8)	10 (8.4)	2(0.2)	3.4
Grand Mean							2.9

Source: Field survey, 2018 Positive perception = ≥ 3.2, (61.5%) Negative perception: = < 3.2 (38.5%)

Constraints to Sustainable Forest Management Practices

Table 6 is on the constraints to sustainable forest management by the respondents. The need for survival ranked first among the reasons why they could not easily observe sustainable forest management

practices. This could be due to the high rate of poverty in rural areas of the country. Lack of information on forest management practices was also identified as a major factor. This implies information gap between relevant government, non-governmental agencies and the public, including rural dwellers.

Table 6: Respondents' Perceived Constraints to Sustainable Forest Management Practices

		Major constraint F (%)	Minor constraint F (%)	Not a constraint F (%)	Mean (\bar{X})
1	Lack of information of forest management practices	95 (79.8)	12 (10.1)	12 (10.1)	1.7
2	The need for survival	119 (100.0)	0 (0.0)	0 (0.0)	2.0
3	Inadequate finance	56 (47.1%)	43 (36.1)	20 (16.8)	1.3
4	Poor knowledge of forest laws	58 (48.7)	38 (31.9)	23 (19.3)	1.3
5	Lack of enforcement of forest related laws	45 (37.8)	45 (37.8)	29 (24.4)	1.1

Source: Field survey. Multiple responses allowed. Grand mean = 1.5

Result of Relationship between Selected Socio-economic Characteristics of the Respondents and their Perception on Forest Conservation

The results on the test of relationship between some socio-economic characteristics of the respondents and their perception on forest conservation are presented in Table 6. There was significant relationship existed between occupation ($\chi^2 = 14.747$), household size ($\chi^2 = 15.335$) and experience ($\chi^2 = 17.524$) of the respondents and their perception on forest conservation. This implies that their opinion was influenced by their

occupation, number of persons in their households and number of years they have been exploitation the forest. Their perception might have been influenced by the fact that most of them were crop farmers with fairly large household size and had been exploiting the forests for more than 10 years. The need to conserve soil fertility for crop farming, harnessing resources to meet family responsibilities associated with large households are factors that could influence opinions on issues relating to survival. An experience of over ten years is very adequate to shape their opinion.

Table 6: Relationship between Selected Socio-economic Characteristics of the Respondents and their Perception on Forest Conservation

Selected socio-economic characteristics	χ^2 value	df	p-value	Decision
Age	13.222	3	0.104	Not significant
Sex	0.340	1	0.844	Not significant
Marital status	10.045	3	0.262	Not significant
Educational level	10.038	3	0.262	Not significant
Occupation	14.747	3	0.022	Significant
Household size	15.335	2	0.004	Significant
Income per season	5.779	3	0.672	Not significant
Experience	17.524	4	0.025	Significant

Conclusion

This study concluded that rural dwellers in the study area were into forest related livelihood activities such as farming, fuel wood gathering, hunting for income generation and survival. However, their mode of exploitation of was unsustainable. Occupation, family size and experience influenced rural dwellers perception on forest conservation. They had positive perception on the need to conserve the forest but they lack forest conservation information. The need to survive constrained them from not violating the health of the forests.

Recommendation

It is recommended that:

- Extension agencies of Agricultural Development Programme (ADP) and Forestry Departments should include forest management information and education in their agenda for rural dwellers in general and farmers in particular.
- Government and non-governmental agencies involved in development programmes should encourage rural dwellers to adopt alternative source of energy to reduce reliance on fuel wood.
- Government and other forest development agencies should involve communities in forest management practices through a bottom-up approach.

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