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Knowledge and perception of and attitude to forest conservation practices in Southwestern Nigeria

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Abstract

Despite widespread acknowledgment of the importance of forests to sustainable development, tackling deforestation remains a herculean task. Local participation has been suggested to guarantee success in the conservation of forests and associated biodiversity. However, awareness and knowledge level of residents of forest- dependent communities on the subject is essential to their meaningful participation in forestry development in Nigeria. This chapter reports the knowledge of, attitude to and perception on forest conservation among residents of Olorunsogo LGA, Oyo State, Nigeria. Multistage stratified randomly sampling technique was used to collect primary data from 211 residents through the use of structured questionnaire. Data collected were analysed using descriptive and inferential (Chi square and Logit analysis) test statistics at $\alpha_{0.05}$. Awareness of residents about the impact of forests on the environment was high and their perception of forest conservation was guided by their knowledge of it. The latter was however low. Also, planting of trees among respondents is not dependent on their demographic background but their involvement in conservation practices is a function of their gender, educational background and marital status. Respondents' interest in conservation will improve, if their knowledge base on the subject is built.

Keywords: [Forest communities, Perception of conservation, Attitude to forests]

Introduction

The importance of the forest ecosystem to human survival can never be over stressed (Agbogidi and Ofuoku, 2007). Forest ecosystem is the planet's lungs, home to people and wildlife; as well as the engine of green economy. They are also essential to life on earth as home to amazing animals and plants. According to World Wide Fund for Nature, almost nine out of ten species found on land live in forests (WWF, 2015). Forests also lock up vast amounts of carbon, release oxygen, make rainfall and provide subsistence fuel wood and medicine (Foskett and Foskett, 2004; Agbogidi and Eshegbeyi, 2008). Forests have been reported by International Union for Nature and Natural Resources to be of global importance in climate regulation and in sustaining communities and supporting biodiversity locally (IUCN, 1980).

Despite their immense value, nearly half of world's forests have been lost. According to FCI (2015), forests are lost at disturbing rates annually to agricultural crops, grazing cattle and income generation from their timber and other products. Most significantly, in many parts of the world, deforestation and degradation of tropical forests are negatively affecting the availability of forest resources and services. Deforestation according to Okojie (1997), is caused by pressure on the forest for fuel wood, demand for timber and paper, increase in population density, rural poverty, inequitable access to land, inter-sectoral policy impacts and natural hazards. It is however worthy of note, that as environmental services are degraded and users become affected, people are likely to become more environmentally conscious and might want to better protect the environment (Pepper, 1996).

The role of people in the maintenance of forest biodiversity is very important in forestry conservation; since biodiversity is a balance that must be struck between humans and nature. Thus, despite the importance of biodiversity conservation, human being for whom it is intended is much more important. According to Obot (1995), the attitudes of community dwellers towards resources conservation is either positive or negative. Negative attitude could emanate from the inexhaustibility perception of environmental resources, which might

lead to its disposal at whim. A positive attitude towards the environment is however the human solution required for ameliorating hazards created by abused environmental resources, with sustainable development as the ultimate target (Obot, *op cit*).

The knowledge of the benefit of forest conservation, which could be a function of the environment in which the residents live or work often determines their perception of forest while perception in turn determines the disposition of the residents to conservation and willingness to manage the forest and its components. In view of these, it is very important that the knowledge, perception and attitude of residents in and around forest resources be assessed in order to advice on veritable conservation strategies for their forest resources. This paper therefore reports findings in this direction with the view to improving forest conservation in Olorunsogo Local Government Area of Oyo State, Nigeria.

Methodology

Study Area

Olorunsogo Local Government Area (Figure 1) with headquarters in Igbeti has an area of 1,069km^2; and a population of 81,759 as at the 2006 census. It lies within latitudes 8^o 40' and 9^o 05N', longitudes 3^o 45' and 4^o 15'E (LSR, 1976). The Local Government Area falls within the Southern Guinea Savanna Zone. This zone is experiencing land cover changes, which may be attributed to climate change, land use change and the encroachment of desert from the semi-arid region of the country. The climate is marked by distinct wet and dry seasons lasting from April to October and November to March, respectively. The mean temperature during the wet season is 28^{o}C and 35^{o}C during the dry season; while the annual mean rainfall ranged between 1,000 and 1,200 mm (Oguntoyinbo, 1978; cited in Ayoade, 1995). These climatic conditions, particularly rainfall amount and distribution over the year, support the cultivation of grains and root crops as well as livestock farming. Hence, peasant farming is the major source of livelihood to the residents of the area. Men are into crop farming, trading and mining. Women are into multiple livelihood activities like vegetable gardening and trading of farm products.

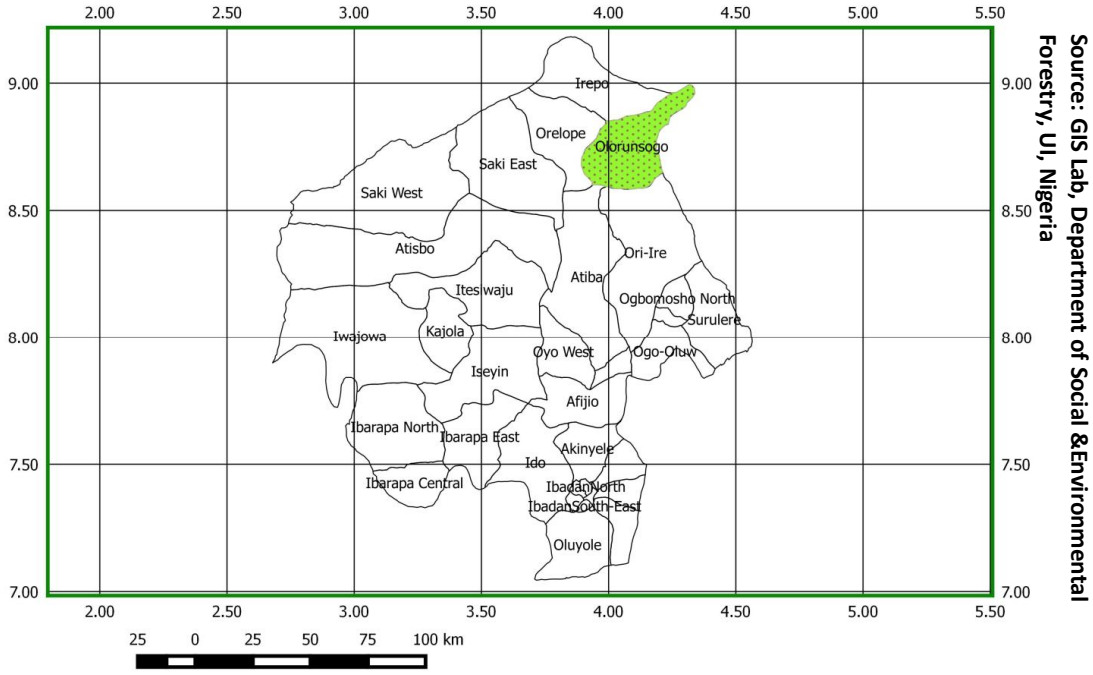

Figure 1: Map of Oyo State, Nigeria showing Olorunsogo Local Government Area

Data Sources

Primary data was collected through the use of structured questionnaires administration and personal interviews. The questionnaire was structured such that the respondents' knowledge, attitude and perception on forest conservation practices in the study area were captured. Also, secondary information was sourced from articles published in journals, conference and seminar proceedings, related websites and books on forest conservation as well as attitude to; and perception of conservation practices.

Sampling Procedure

The study adopted multistage stratified random sampling technique. Political Wards present in the study area serve as the main focus. The local government area has 2 rural and 8 urban wards giving a total number of ten. Thirty percent sampling intensity of both rural and urban was taken given three wards from rural and one ward from urban communities. Respondents comprised registered and eligible voters (People above 18years of age) as at 2015 general election in Nigeria. Thereafter, 2% sampling intensity of a population below 5,000 was taken in order to know the total number of structured questionnaire that were to be administered. This was done in order to take care of the socio economic background of the people in the study area. In all, 211 questionnaires were administered. Oral interviews were also conducted to compliment the information obtained from questionnaire survey.

Data Analysis

The data collected were analysed using Descriptive Test Statistics for comparative purposes. Pearson's correlation coefficient was used to measure relationship between some variables. Cross tab, Chi square test, and Logit analysis were used to test the hypotheses generated in the course of the study.

Results

Table 1: Summary of Demographic Characteristics of Respondents

Dominant Characteristics	Frequency	Percentage
Age (Years)		
>20-30	91	43.1
Gender		
Male	125	59.2
Marital status		
Married	132	62.6
Family size		
6-9.	103	48.8
Religion		
Islam	107	50.7
Level of education		
Tertiary	117	55.5
Primary occupation		
Entrepreneur	79	37.4
Secondary occupation		
Farming	101	48.0

Awareness of and Knowledge about Forest Conservation

The results on awareness of and knowledge about forest conservation of respondents are presented in Table 2. The Table reveals that 96.2% of the respondents consented to benefiting from the forest surrounding them with most prominent benefit identified being fuelwood (23.7%). Other identified benefits include medicinal plants (20.9%), timber (19.9%) and bushmeat (13.7%).

Table 2: Distribution of Respondents' Consent to Benefiting from the Surrounding Forest and the Identified Benefits

Respondents' Consent to Benefiting from the Surrounding Forest	Frequency	Percentage	Mode
Yes	203	96.2	Yes
No	4	1.9	
Not really	4	1.9	
Types of benefit			
Fuelwood	50	23.7	Fuelwood
Timber	42	19.9	
Bush meat	29	13.7	
Medicinal plants	44	20.9	
Religious purposes	9	4.3	
Other benefits	32	15.2	
No response	5	2.4	

Table 3: Distribution of Respondent's Opinion on Forest Conservation Practices

Identified Perception to forest conservation practices	SA		A		UN		D		SD		NR	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Planned cutting of trees enhance sustainable agricultural production	79	37.4	112	53.1	5	2.4	13	6.2	2	0.9	0	0
Regulated cutting of trees is imperative to human survival	64	30.3	124	58.8	14	6.6	6	2.8	2	0.9	1	0.5
Control of forest fires has impact on environmental health	79	37.4	81	38.4	21	10	22	10.4	7	3.3	1	0.5
Reforestation improves environmental health	105	49.8	84	39.8	14	6.6	8	3.8	0	0	0	0
Afforestation is important for sustainable development	84	39.8	100	47.4	20	9.5	5	2.4	2	0.9	0	0
There is need to check deforestation for agricultural purposes	71	33.6	103	48.8	25	11.8	9	4.3	2	0.9	1	0.5
There is need to check deforestation for habitation purposes	62	29.4	106	50.2	21	10	20	9.5	2	0.9	0	0
Proper utilization of forest products has implication for forest health	67	31.8	100	47.4	17	8.1	19	9	8	3.8	0	0
Protection of the forest is a task for everyone	79	37.4	96	45.5	21	10	14	6.6	1	0.5	0	0
Role of government in forest conservation cannot be overstressed	91	43.1	89	42.2	15	7.1	13	6.2	2	0.9	1	0.5
Reducing consumption of forest resources has implication on its survival	58	27.5	106	50.2	21	10	18	8.5	8	3.8	0	0
Value addition to forest resources enhances its economic value	79	37.4	104	49.3	24	11.4	3	1.4	1	0.5	0	0
Recycling of forest resources is possible with appropriate technology	82	38.9	105	49.8	22	10.4	1	0.5	0	0	1	0.5
Reduced of paper is possible in our society	70	33.2	86	40.8	35	16.6	12	5.7	6	2.8	2	0.9
There are alternatives to the use of wood in construction	61	28.9	94	44.5	31	14.7	17	8.1	8	3.8	0	0
Agriculture Supply more raw materials for industrialization than forestry	37	17.5	103	48.8	29	13.7	17	8.1	24	11	1	0.5
Planting of trees unnecessarily ties down valuable capital	18	8.5	51	24.2	55	26.1	48	22.7	38	18	1	0.5
The cost of reforestation is higher compared to the benefits from the forest	17	8.1	65	30.8	55	26.1	45	21.3	28	13	1	0.5
Discouraging hunting in forests is limiting access to animal protein	14	6.6	55	26.1	49	23.2	35	16.6	57	27	1	0.5
Agricultural projects has more economic benefit than afforestation	37	17.5	101	47.9	41	19.4	15	7.1	16	7.6	1	0.5

Table 4: Summary of Pearson's Chi Square Analyses of Dependence of Tree Planting on Respondents' Demographic Background

Variable	Pearson Chi-square value	Df	Sig (2-tailed)	Remark
Sex	0.87	1	0.768	N. significant
Age	1.575	3	0.665	N. significant
Marital Status	0.001	1	0.971	N. significant
Religion	0.668	2	0.716	N. significant
Academic Qualifications	7.505	6	0.277	N. significant

Table 5: Summary of Logit Regression Model to Examine Relationship between Respondents' Forest Conservation Practices and their Demographic Background

Independent variables	Odd ratio	Sig.
Gender	0.246	0.036
Marital Status	12.098	0.018
Educational Qualification	1.505	0.637
Age	1.830	0.218

Discussion

Demographic Characteristics of Respondents

The study found that most of the respondents were between 20 and 50 years of age. This is similar to the finding of Ratsimbazafy *et al.* (2012) from the Makira Forest Project in Madagascar where 67.0% of the respondents were observed to be between 30 and 55 years of age, which they expressed as representing the most productive age group. Tesfaye (2017) in a similar study also revealed that 90.0% of respondents' from similar background fall within this same age bracket. The position of this group of people is expected to go a long way in influencing decisions on sustainable management of forest resources in the study area.

Also, majority of the respondents are male (59.2%) and married (62.6%) while the modal family size was between 6 and 9 members (48.8%). Tesfaye (2017) also reported more male than female in a similar survey. This did not imply the presence of more male than female in the study area; but it is characteristic of rural survey where men are generally more favoured on opinion polling than their female counterpart.

The modal educational qualification among respondents was the possession of tertiary education certificates by 55.5% of them followed by those having secondary school certificates (25.1%). This deviates from the finding of Ratsimbazafy *et al.* (2012), which reported 25.0% of their respondents as illiterate and 52.0% as having only primary school education. The work of Garekae, *et al.* (2016) also reported 13.1% of the residents of communities surrounding Chobe Forest Reserve as not having any western education. Comparing primary and secondary occupational distribution pattern in the study area, it was found that the modal primary occupation was private business (37.4%); while farming was the most prominent secondary occupation.

Furthermore, only 45.7% of the respondents have other sources of livelihood apart from their major occupation implying that most of the respondents have only one occupation as their source of livelihood. Among those having other sources of livelihood (Secondary Occupation), 48.0% of them are farmers while 43.9% have private businesses (entrepreneurs). This implies that farming and entrepreneurial activities are the predominant occupation in the study area.

Awareness of and Knowledge about Forest Conservation

The study revealed that the forest affects the lives of the respondents directly or indirectly through benefit(s) derived therefrom. In a similar study, residents of surrounding communities were also of the view that Chilim-Gaji Forest, Ethiopia deserves sustainable stewardship from them because it is their source of rain and water; habitat for various wildlife and biodiversity apart from serving as a resource for maintaining the fertility of their land (Tesfaye, 2016).

Respondents' Perception of Forest Conservation Practices

Findings from the study (Table 3) revealed that majority of the respondents are positively disposed to forest conservation practices. However, many still believed that agricultural projects are more encouraging than forestry projects. This may not be unconnected with the low level of information on the long term benefits of the latter compared to the former. By implication, residents in the study area have a positive opinion and are willing to support forest conservation practices, but this is subject to their willingness to make sacrifices. While majority were of the view that planned cutting of trees will enhance sustainable agricultural production (90.5%);

some 65.4%, also placed more premium on agriculture compared to afforestation. This finding could be linked to the dependence of a substantial number of residents on agriculture either wholly or partly. The surrounding forests are sources of fertile agricultural lands to farmers and so may not be fully in support of any initiative that will limit such access. The studies of Mehta and Heinen (2001) and that of Baral and Heinen (2007) also established a correlation between benefits from protected areas and positive perception of biodiversity conservation. This may also be why 66.3% respondents were in support of agriculture supplying more industrial raw materials compared to forestry. Furthermore, majority (82.4%) of the respondents were of the opinion that there is need to check deforestation for agricultural purposes; reducing consumption of forest resources has implication on its survival (77.7%) and protection of the forest is a task for everyone (82.9%).

All these point to the recognition of the importance of forest and forest conservation by most of the respondents. Meanwhile, Pearson's Chi-square tests revealed that the dependence of tree planting in the study on respondents' sex, age, marital status, religion and academic qualification is not statistically significant ($P > 0.05$; Table 4). Mahanta and Das (2013), Garekae *et al*. (2012), Genç *et al*. (2012) and Shibia (2010) also reported that gender had no influence on conservation attitudes. However, the findings of this study is at variance with that of Garekae *et al*. (2012) which observed that the likelihood of holding favourable conservation attitudes increase with age, educational status and the level of forest dependency.

Furthermore, although respondents involvement in tree planting specifically is not dependent on identified demographic variables (Table 4) their involvement in on-farm forest conservation practices was found to be significantly ($p>0.05$) dependent on their gender and marital status with 0.246 and 12.098 odd ratios, respectively (Table 5). The result implies that only gender and marital status have approximately 0.3 and 12 times likelihood to influence respondents' involvement in forest conservation practices. On the other hand, influence of factors such as educational qualification and Age on involvement in forest conservation practices, was not significant ($p>0.05$). This result is in consonance with the findings of Engel *et al.* (2015) that socioeconomics variables, specifically gender and marital status play significant role in the involvement of farmers in any forest conservation activity.

Conclusions

The study revealed different attitudinal dispositions of the residents in Olorunsogo Local Government Area to forest conservation. Majority of them lack incentives to engage in the practice. Despite their level of awareness of environmental problems, majority of the respondents could not link the problems to deforestation. The need for communities to invest in forest conservation and to reduce the effect of environmental degradation is indisputable in Olorunsogo Local Government Area of Oyo State. The people in the study area are highly dependent on forest ecosystem for its abundant natural resources. The importance of these resources has caused indigenous people to diversify ways of managing them sustainably. But, result has shown that the activities of the rural people are not given consideration on the wise utilization of forest in the study area. The demographic characteristics of the people have no significant effect on awareness of the importance of forest to human survival. Respondents prefer agricultural projects to forestry projects yet; they believe that forestry has a great relationship with human survival.

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