Resident Perception of Forest Resource Management in Selected Communities in Ede South Local Government, Nigeria

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ABSTRACT: This study examined residents' perceptions of how forest resources are maintained and managed in Osun State, Nigeria's Ede South local government. The primary data were obtained by randomly selecting community members to receive questionnaires. The data was examined using cross tabulation, linear regression, and correlation. The analysis's findings indicate that 86% of the respondents are already aware of the need to save forests. The respondents are 48 years old on average. The majority of respondents (67.1%) believed that if the government is allowed to control the forest resources, they can be managed more effectively. According to the survey, only 20% of respondents had a low level of understanding regarding community-based forest resource management. The majority of respondents (41%) don't know what they stand to gain from this strategy. 41% of them hold the view that the government owns the forest and should therefore be responsible for managing it, not them. In order to manage forest resources sustainably, community members should have the opportunity to participate in decision-making. Young professionals should also be involved.

Historically, monitoring of forests has been carried out by outside experts adhering to exact scientific methods (Angelsen et al., 2009). However, in recent years, local community members have successfully carried out these duties using participative and locally relevant techniques (Palmer, 2011). Participation of locals in decision-making processes regarding the management of forest resources in their area of residence is referred to as community participation. Participation was defined by (Mather, 1998) as people's capacity to share, influence, control, design, join in decision-making, and exercise authority in projects and programs that have an impact on their lives and resources. Sustainable natural resource management emphasizes the inclusion of people's preferences and expectations in the decision-making process, which raises social acceptance of the decisions (Defries et al., 2005).Thus increasing the social acceptance of the decisions and reducing conflict among users (Bray *et al.,* 2003, Kehinde *et al.,* 2009). FAO (1992) asserts that involvement of rural communities in the management of forest resources is essential to ensuring the long-term preservation of the resources. Due to their traditional knowledge and practices, indigenous people and their communities play a crucial role in environmental management and development (UNDP, 2012). Since forestry departments only have a limited amount of financial and human resources to ensure sustainable use of the several hectares of land under their sole jurisdiction, it is crucial that rural residents who live closer to natural resource enclaves get involved. According to Hardin

(1968), community involvement could improve the sustainable use of forest resources, aid in the formation of community forestry associations, and safeguard the traditional interests of local communities who traditionally live near and in contact with forests. Forest management initiatives in Nigeria vary from one state to another (Fisher, 1995). Many developing and developed nations' communities are working to increase their control over their forest resources. Worldwide, national policies are being created to re-involve people in decisions regarding forest management in order to address this problem. Hence, this study evaluates resident perception of forest resource management in selected communities in Ede South Local Government, Osun State, Nigeria.

MATERIALS AND METHODS

Study Area: South-western Nigeria's Osun State contains the town of Ede. It is located 180 kilometers southwest of Lagos along the Osun River at the junction of three roads leading from Oshogbo, Ogbomosho, and Ife. About 90% of people live in Ede, which is a town with a large Muslim population. It has a 330 km2 area, a 269 m elevation, an average temperature of 31°C, a wind speed of 8 km/h, and a 60% humidity level. One of Yoruba land's most well-known ancient towns is Ede. It is located at roughly 7.7349° N and 4.4439° E. It is in the zone of the Guinea Savannah. Ede North and Ede South Local Governments are its two local governments. The 2006 Population Census places the population as 159,866.Due to the town's central location and proximity to significant cities like Osogbo, Iwo, Ife, and Ejigbo, residents engage in farming, trading, and commercial activities on a huge scale. Due to the Federal Polytechnic, Redeemer's University, the railway lines connecting Lagos and Northern Nigeria, the River Osun, which runs through the town, and the Ede Water Works, which provides water to about twenty (20) local governments in the state, Ede is significant in the history of the State. The traditional title of the paramount monarch in Ede is The Timi of Ede, and the current Timi is Oba Muniru Adesola Lawal Laminisa I. It is made up of the Ede North and Ede South local governments. Nigeria's Osun State has the Local Government Area of Ede South. Its main office is in the city of Ede. 219 km2 in size, with 76,035 people living there as of the 2006 census. Villages and Districts in the Ede South LGA.

Data collection: Primary data for the study were obtained through the administration of seventy questionnaires. The questionnaires were administered in four communities (Akoda, Ponpola, Sekona and Olokii), selected purposively because the nature of the settlement being a dispersed. The questionnaire used

covered the socio-economic condition of the respondents, their farmland, the respondent's view and knowledge of forest conservation and the medium of information, the presence of association at local level that plant trees and their willingness to join such association, the various activities affecting forest resources at local level and the control of community leaders over forest resources.
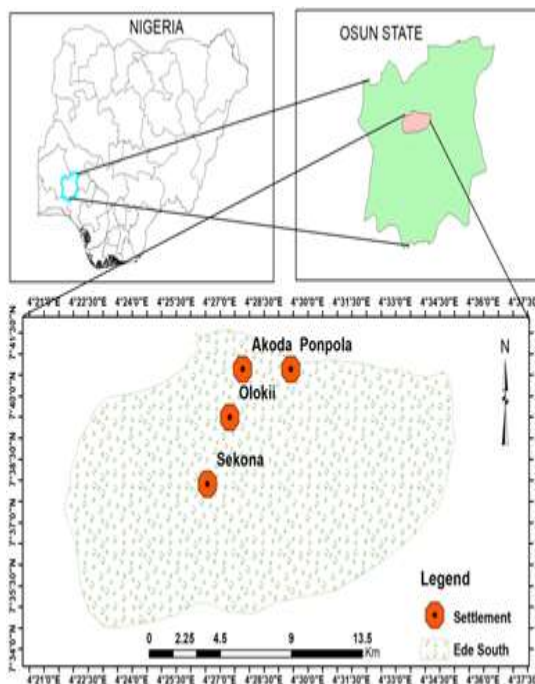

Fig 1: Map of Ede South showing the locations of the communities

Data Exploration and Analysis: The data derived were analyzed using R version 4.0.3, a programming language for statistical computing. A measure of association between variables measuring awareness and other variables of interest is computed using Chi – square test of independence given as:

$$X^2 = \sum_{i=1}^{n} \frac{(O_i - E_i)^2}{E_i} \quad \text{……. 1}$$

Where: O_i is referred to as the observed value while E_i is the expected value.

The perception (or awareness) of forest resource management by the respondents in relation to other socio-economic variables is evaluated using binary logistic regression model, given as:

$$\frac{\pi}{1-\pi} = \exp(X\boldsymbol{\beta}) \quad \text{…… 2}$$

Where: π is the probability that an observation is in a specified category of the binary response variable

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while $X\beta$ is a vector of explanatory variables X and parameters β.

RESULTS AND DISCUSSION

Figure 2's findings on the respondents' socioeconomic and personal characteristics show that there are significantly more men (64.3%) than women (35.7%) respondents. The majority tribe are Yoruba's (92.9%), and 81.4% of them practice Christianity. Every responder has had formal education, with the majority (41.5%) finishing elementary school. 75.7% of those who work with forest resources are natives and are a part of at least one social group. This suggests that the availability of forest resources draws skilled, agile, primarily native, trained individuals who can read and write. There is no Hausa trade in the study area's forest resources.
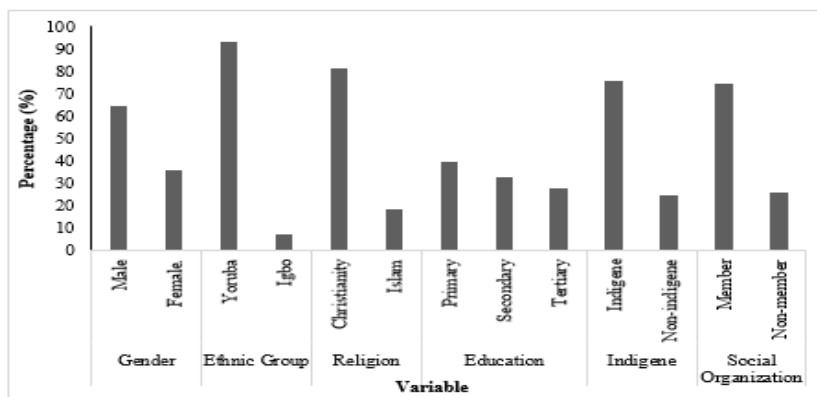

Figure 2: Personal and Socio-economic characteristics of the respondents

According to the analysis' findings, which are shown in Figure, 77.1% of the respondents owned some land and primarily engaged in farming. The majority of these respondents—55%—use subsistence farming, followed by 35% who practice rotational farming and only a minority who use automated farming. According to the respondents, there are three types of forests: primary (41.4%), secondary (25.7%), and degraded (32.9%). However, the results demonstrated the respondents' contributions to the degradation of the forest, as shown in figure 3, where 41.4% fell trees frequently, 40% rarely, and only 20% replanted them after they were felled to serve agricultural, commercial, and other unspecified purposes. 21% of respondents said they planted trees for agricultural and commercial interests, while the remaining 78.6% said they did so for other reasons. Land use for other types of agricultural products is one of the main reasons for the low rate of tree replanting in the research area. Cash crop (25.9%) and food crop (53.7% of the agricultural products replaced with forest trees) are a couple of them. According to the answers, cutting down trees for agriculture was done in order to maximize profits from the produced goods. Inferentially, a higher proportion of the respondents involved in managing the forest resources in the research area are landowners who primarily farm to support their families.
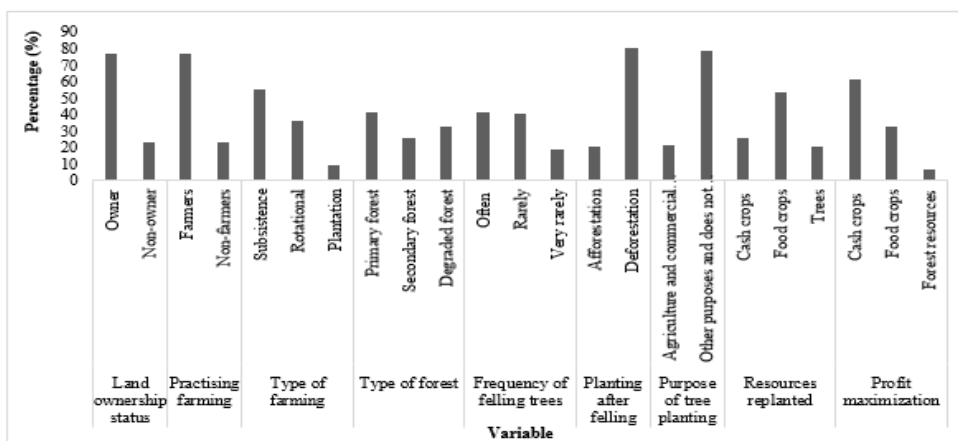

Fig 3: Forest Resources Management in selected communities in Ede south Local Government, Osun state, Nigeria

According to additional research, 80% of the respondents were familiar with the idea of forest protection and its methods. The majority of these respondents (37.2%) and the media (32.9%), as well as other sources including village leaders (11.4%) and extension agents (18.5%), were responsible for their awareness. The majority of respondents (65.7%) are aware of associations with tree planting. In contrast,

58.6% of them are unwilling to join any tree-planting organizations despite government efforts to educate the public and their understanding of the administration's forestry policies. Construction (46%) is the main activity influencing forest resources. According to Table 1, the majority of respondents (60%) think that local officials have no influence over forest resources.

Table 1: Forest Conservation in selected communities in Ede South Local Government, Osun state, Nigeria

S/No	Variables	Respondent question	Frequency	Percentage (%)
1	Forest conservation	Aware	56	80
		Not-aware	14	20
2	Source of conservation information	Village leaders	8	11.4
		Government	26	37.2
		Extension agent	13	18.5
		Media	23	32.9
3	Association that plant trees	Aware of association that plant	24	34.3
		Not aware of association that plant	46	65.7
4	Interest in joining association	Willing to join	29	41.4
		Not willing to join	41	58.6
5	Education/Enlightenment by government official on forest conservation	Yes	44	62.9
		No	26	37.1
6	Monitoring activities by government official	Yes	61	87.1
		No	9	12.9
7	Awareness of government policy	Yes	36	51.4
		No	34	48.6
		Public enlightenment	23	32.9
8	Activities affecting forest resources	Lumbering	10	14.3
		Bush burning	11	15.7
		Mechanized farming	3	4.3
		Construction	46	65.7
9	Community leaders' control over forest resources	Control over forest resources	28	40
		No control over forest resources	42	60

Further findings on the willingness for replanting trees and forest types in the locality revealed that the Primary (thick) forest has 12.9% (highest) replanting percentage and the degraded forest had the least (2.9%).Twenty-nine of the respondents claimed to have thick forest in their locality while twenty-three and eighteen respondents claimed to have dispersed and secondary forest types in their locality respectively. Of the twenty-respondents with the claim of having thick forest in their locality, only nine claimed to plant trees while two were observed to plant tree out of the twenty-three respondents who claimed to have dispersed forest type in their locality as presented in figure 4. In order to determine the relationship between the local forest type and tree-planting willingness, a correlation test was carried out in response to the results shown in Table 2. It has been found that there is a significant positive correlation (r = 0.614) between awareness and interest in joining a tree-planting association. This implies that more members will be eager to join a group that plants trees

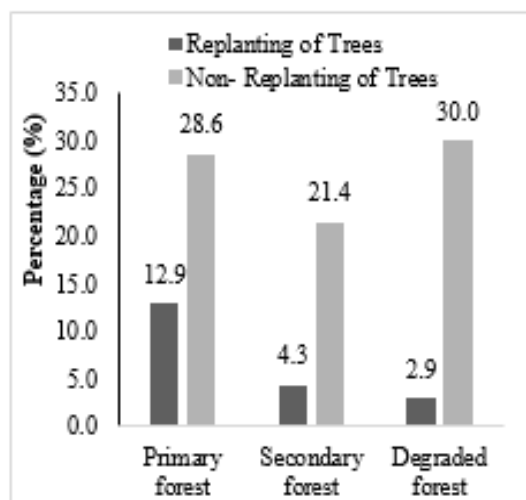the more the campaign (or awareness) about its presence is spread.

Fig 4: Type of forest in respondent locality and willingness to plant trees

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The relationship between those who plant trees after cutting down a tree is also highly partially positively correlated (r = 0.425), indicating that the number of people planting plants greatly rose with the removal of trees, which explains the development of secondary forests.Table 3 presents the summary of the binary logistic regression for awareness of association that plant trees and interest in the respondent joining the association. For the model, responses from respondents who supplied "No" for an answer was taken as the baseline for those who had interest for joining an association, provided they were aware of the association. The table showed that the odds of developing interest to join an association of tree planters increases by approximately eighty–nine percent (89%) for every unit increase of awareness of the availability of an association of tree planters (i.e. exp (0.638) = 1.893) at 95% confidence interval.

Table 2: Summary of correlation analysis willingness for tree planting and joining tree planting association

S/No	Variable 1	Variable 2	r	p-value	Remark
1	Are you aware of association that plant tree?	Are you interested in joining association that plant tree?	0.614	<0.001	Statistically significantly different
2	Frequency of felling trees?	Do you plant after cutting?	0.425	<0.001	Statistically significantly different

** Correlation is significant at the 0.05 level (2-tailed).

Table 3: Summary of regression analysis for interest in joining a tree planting association

Variable	Coefficient	Std. Err.	t-value	p-value	Exp (Coeff.)
Constant	0.529	0.171	3.091	0.003	–
Awareness of association that plants tree	0.638	0.099	6.423	<0.001	1.893

Baseline for the response variable = No

The study's findings show that those involved in managing and depleting forests are skilled, quick, primarily native, and trained individuals who can read and write. The majority of farming operations are those that have invaded untapped woodland that has been given to some native people under the statutory occupancy right. In their study of forest communities in Adamawa State, Bray et al. (2003) discovered that Local Empowerment and Environmental Management Project (LEEMP) facilitates grassroots citizen participation in the goals of sustainable natural resource management and collective community wellbeing. There is a direct correlation between rural poverty and deforestation, and community empowerment efforts to manage forests have improved both resource conservation and local communities' standard of living. There is a dearth of this kind of program in this forest community, which discourages the forest communities from achieving conservation. Bartlett AG et al. (2017) classified the traditional systems for forest protection in the study areas as beliefs, taboos, myths, proverbs, and songs. The results support the claims made by Banerjee (1992), Makarabhirom (1999), Gilmour D et al, (1993), and H.F.M (2003) that cultural beliefs, myths, and taboos have a significant influence on Ashanti forest conservation. The fact that native people claimed ownership of the forest and its accoutrements encouraged indiscriminate tree cutting for commercial and agricultural objectives without a replanting system, with only a few people being aware of the implications of doing so. While cash and food crops are primarily planted in the affected areas, the locals' mentality is that felling trees for agricultural purposes is equivalent to replanting trees. The locals are unaware that the ecosystem services provided by trees, especially mature ones, cannot be compared to those of a simple agricultural plantation. The indigene placed importance on profit maximization from the cultivated produce and justified their decision to fell trees for cultivation as their means of livelihood because the land belongs to them, despite their awareness of the concept of forest conservation and its techniques, government policy on forest resources, and the availability of tree planting associations. These demonstrate their opposition to replanting the felled trees.

Conclusion: The study showed how indigenous contributed to forest degradation in order to maximize profit and make ends meet, with little thought given to forest protection. The survey revealed that the locals thought it was preferable to cultivate food and income crops on forest land using resources from the forest

rather than leaving the forest area intact. Construction is a resource-intensive activity that competes with growing crops for food and profit. The resident's belief that government should be in charge of forest management and conservation. Enlightenment of the members of the community about the advantages of their involvement and their commitment in forest resources

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