ASSESSMENT OF COMMUNITY PARTICIPATION IN FOREST CONSERVATION IN ONDO STATE, NIGERIA

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ABSTRACT: *This study examines community participation in forest conservation in Ondo State, Nigeria, exploring the socio-economic dynamics and the effectiveness of decentralized forest management. Amidst escalating environmental degradation and forest depletion, this research highlights the critical role local communities' play in the stewardship of forest reserves. Data were collected through surveys, interviews, and field observations involving 200 households across multiple communities adjacent to forest reserves. The findings reveal a strong community willingness to engage in forest conservation, with a substantial proportion of respondents prepared to accept financial incentives to aid in conservation efforts. The study also uncovers a significant correlation between socioeconomic factors—such as income levels, educational attainment, and proximity to forests—and the willingness to participate in conservation initiatives. Despite the readiness to support forest preservation, the research identifies a glaring lack of awareness and involvement in existing forest conservation programs. It is recommended that enhanced community education on the benefits of forest conservation, the introduction of more robust economic incentives, increased community involvement in conservation decision-making, and the strengthening of legal frameworks to protect forest resources. These steps are essential for sustainable forest management and biodiversity conservation in the area, which could serve as a model for similar regions globally.*

KEYWORDS: Conservation, Community, Environment, Forest, Willingness, Nigeria.

INTRODUCTION

Forest resources cover almost a third of the earth's land surface and are essential to the health of our environment as well as providing many environmental benefits including a major role in the hydrologic cycle, soil conservation, prevention of climate change, and preservation of biodiversity (Chakravarty *et al.*, 2012; Food and Agriculture Organization [FAO], 2016). However, as the world population continues to grow and the global economy expands, these resources are threatened mainly by human activities (Ariyo *et al.,* 2018). These threats include human settlement, infrastructure development, uncontrolled logging and tree felling, tourism, recreation, and resource extraction (Chape *et al.,* 2008; Ariyo *et al.,* 2018).

Many trees, shrubs, herbs, and assorted animals have been depleted while some are endangered. For instance, several plant species have been exploited especially those with edible seeds, nuts, and kernels, and most primates such as guenons, mangabeys, drills, chimpanzees, and gorillas are now endangered (Akachuku, 2007; Mfon *et al*, 2014; Olutumise et al., 2023). Reptiles such as crocodiles, monitor lizards, alligators, royal pythons, and boar constrictors are very few. Also, several species of amphibians, fruit bats, fishes, snails, birds, etc. are threatened, endangered, or extinct. Several crops have been "lost" as the younger generations of Nigerians may not know them. These "lost" plants are of serious economic importance. They include algae, mushrooms, roots, vegetables, tubers, fruit trees, culinary plants, and medicinal plants, among others (Okojie, 1993).

Where participatory forestry is concerned, the goal of decentralization policies, for example in the case of PFM, has often been to increase the participation of rural households in decision-making and benefits related to all aspects of forest management (Schreckenberg *et al.,* 2006; Mutune *et al.,* 2015). However, participation is broad-based, and the achievement of inclusiveness has been challenging in these processes. Yet inclusiveness is important because it allows broad-based participation in local public decision-making for the sustainability of forest management with economic objectives.

How can communities effectively integrate social development and ecological protection when rapid economic development can be hugely consumptive of natural resources? Although many regions advocate ''green industrialization'' and emphasize the sustainable use of natural resources, sustainable management of natural resources remains a challenge all over the world. Community-based co-management (CBCM) is a relatively new natural resources management model and has been applied near numerous nature reserves and hotspots. CBCM is a people-centered, community-oriented, resource-focused, and partnership-based management model (Bond *et al.,* 2006; Robert and Rebecca, 2006; Chen *et al.,* 2013). It emphasizes the positive participation and cooperation of different stakeholders in natural resource management and livelihood development (Danida, 2007; Stephen, 2006; Chen *et al.,* 2013).

Despite the existence of several national management practices in most regions of Nigeria especially in Ondo State, the rate of forest loss in afforestation through attacks by the encroachers that trespassed into the reserves for agricultural expansion (burning of trees and farming), illegally felled timbers for commercial purposes causing vast degradation of landscape and also depletion in forest resources most especially, planting trees is on the rise. Most management strategies do not take cognizance of the users in the environment, therefore there is a need to identify the best management practices to reduce forest degradation that is, involving the community around forest reserve in the management structure since community

participation in forest management is a tool to combat degradation. According to Porkharel *et al.* (2014), the dependency of the local and indigenous communities on forest resources for their livelihoods in developing countries has motivated policymakers to decentralize forest management to participating local communities. It is necessary to seek to know the willingness of the local communities to support protection. This study sought to look from a perspective that if stakeholders are ready to employ their services in the protection of forest reserves around them, will they be willing to accept any premium offer to them?

MATERIALS AND METHODS

Study Area

The study was carried out in Ondo State. Ondo State is one of the 36 states of the Federal Republic of Nigeria. It has an approximate land area of 14,793,723 square kilometers. The State geographically lies between longitude $4^0 3`$ and $6^0$ East of the Greenwich Meridian and latitude $5^0 45`$ and $8^0 15`$ North of the equator, with a population of 3,441,024 million (National Population Commission, 2006). The State is made up of 18 Local Government Areas (LGAs). The tropical climate of the state is broadly of two seasons: rainy season (April – October); and dry season (November – March). The temperature throughout the year ranges between 21^0C to 29^0C and humidity is relatively high. The annual rainfall varies from 2,000mm in the Southern area to 1,150mm in the Northern area. The state enjoys luxuriant vegetation with a high forest zone (rain forest) in the South and sub-savannah forest in the Northern fringe. Ondo State has a forest reserve covering a total area of about 3,200 sqkm. Some of the forest reserves in the State are Akure Ofosu Forest Reserve, (a globally accepted World protected area that covers 394 km^2 (152 sq miles); Ala Forest Reserve, Ifon - Ose River Park Forest Reserve, Oyinmo Forest Reserve, Ipole/Idoani Forest Reserve, Owo Forest Reserve, Queen`s Forest, Okeluse Forest Reserve, Ojigbo Forest Reserve (mangrove) Ese Odo, Island Forest Reserve at Ilaje and Idanre Forest Reserve.

Data Collection

Data for this study were obtained from primary sources. The primary data were obtained through a field survey using well- a structured questionnaire and interview schedule administered to the residents living around the forest resources in the study area.

Sampling Procedure

A multistage sampling procedure was used in the selection of respondents in the study area. In the first stage, two agricultural zones (Owo and Ondo) were purposely selected from the three agricultural zones based on the information from the Ministry of Natural Resources, Akure, Ondo State for occupying the largest sqkm of forest reserves. The second stage involved the purposive selection of two Local Government Areas (Idanre, Akure North, Ondo East, and Ose) from each of the selected zones that were identified as having forest reserves in the State. The third stage involved the purposive selection of five rural communities around the forest reserves in the LGAs selected. In the fourth stage, a random sampling technique was used to draw ten (10) households from the selected communities, giving a sample size of 200 households for the study.

Data Analysis

Data obtained were analyzed using descriptive statistics, the Likert scale, the contingent valuation method, and double-bounded logit. Descriptive statistics were used to describe the socio-economic characteristics of the respondents, determine the awareness of any forest conservation programme among the respondents, and identify different forest conservation associations among the respondents. Likert scale was used to determine the perception of the respondents about forest conservation in the study area. A five (5) point Likert-type scale of strongly agree (5), agree (4), undecided (3), disagree (2), and strongly disagree (1) was adopted to elicit the response of the respondent. This was used to classify the perception of the respondents into favorable, indifferent, and unfavorable perception in line with Torimiro and Dionco – Adebayo (2004). Class boundaries are: $< 1.0 < 1.5 =$ strongly disagree; $\geq 1.5 < 2.5 =$ disagree; $\geq 2.5 < 3.5 =$ undecided; $\geq 3.5 < 4.5 =$ agree and $\geq 4.5 \leq 5.0 =$ strongly agree. The contingent Valuation Method was used to assess the level of willingness of the community to accept a premium for the conservation of forest resources. The CVM is based on the concept of the willingness to pay a certain amount for the individual to maximize his/ her utility or willingness to accept compensation to improve his utility. The contingent Valuation Method was used to find out how much an individual respondent was willing to accept for conserving forests by using a survey questionnaire as used by Mitchell and Carson (1989).

CVM was used to obtain the Willingness to Accept (WTA) of the respondents. ₦50,000 was allocated as the initial bid, ₦25,000 as the lower bid, and a higher bid of ₦75,000 per month was offered. When offered a bid of ₦50,000, a higher bid of ₦75,000 was offered if the response was yes, and in case of a no response to the initial bid, a bid offer of ₦25,000 was given to the respondents. From CVM two dichotomous variables were observed, i.e. the answer to the first question and its follow-up answer. There are four possible outcomes of dichotomous choices, namely; `YES YES`(YY), which means respondents said yes to the first and second bid, `YES NO` (YN), it means respondents said yes to the first bid, and no to the second bid, `NO YES` (NY), it denotes respondents said no to the first bid and yes to the second bid and `NO NO` (NN) means respondents said Yes to No the first and second bid.

YY= 1 for yes-yes answer, 0 otherwise

NY= 1 for a no-yes answer,0 otherwise

YN= 1 for a yes-no answer, 0 otherwise

NN= 1 for a no-no answer, 0 otherwise

Therefore, one of four abilities of consumers can be: 1. Yes–Yes (YY), 2. Yes–No (YN), 3. No–Yes (NY), 4. No–No (NN).

According to Hanemann *et al.* (1991), and Adekunle *et al.* (2016), t_1 is the first bid and t_2 is the second bid. The bounds on the WTA are:

1. The individual answers yes to the first question and no to the second, then $t_2 > t_1$. In this case, we can infer that $t_1 < WTA < t_2$.

2. The individual answers yes to the first question and yes to the second, then $t_2 < WTA < \infty$

3. The individual answers no to the first question and yes to the second, then $t_2 < t_1$. In this case, we have that $t_2 < WTA < t_1$.

4. The individual answers no to the first and second questions, then we have that $0 < WTA < t_2$.

The general form of the Double-bounded model is:

$$WTA_{ij} = \mu_i + \varepsilon_{ij} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots 1$$

WTA_{ij} represents the jth of the respondent's willingness to accept, and $i = 1, 2$ represents the first and the second answers. μ_1, and μ_2, are the means for the first and the second responses. To construct the likelihood function for the interval data model, Adekunle *et al*. (2016) assumed that $\mu = \mu_1 = \mu_2$ where μ is a parameter.

$$WTA_j = \mu + \varepsilon_j \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots 2$$

Written with the error as normal the likelihood function.

1.   Double-Bounded Logit Model: Following Hanemann *et al.,* (1991), the following response probabilities were obtained for the logit model.

$$Pi^{NN} = 1-1/(1 + e^{-\alpha+\beta \text{ LOW BID}}) \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots 3$$

$$Pi^{YN} = 1/(1 + e^{-(\alpha+\beta \text{ HIGH BID})}) - 1/(1 + e^{-(\alpha+\beta \text{ FIRST BID})}) \dots\dots\dots\dots\dots\dots\dots\dots\dots 4$$

$$Pi^{NY} = 1/(1 + e^{-(\alpha+\beta \text{ FIRST BID})}) - 1/(1 + e^{-\alpha+\beta \text{ LOW BID}}) \dots\dots\dots\dots\dots\dots\dots\dots\dots 5$$

Where,

FIRST BID – Starting bid Value

LOW BID – Follow-up Lower bid value

HIGH BID – Follow-up Higher bid Value

The double-bound log-likelihood function is

$$LDB = \Sigma Ii^{YY} \log Pi^{YY} + \Sigma Ii^{YN} \log Pi^{YN} + \Sigma Ii^{NY} \log Pi^{NY} + \Sigma Ii^{NN} \log Pi^{NN} \dots\dots\dots\dots\dots\dots\dots\dots\dots 6$$

$i = 1 \dots\dots\dots.n$

where Li, indicates the response category of each respondent i.

concerning four possible outcomes of dichotomous choice the double-double logit

the model is explicitly stated as:

$$\text{Ln} \frac{WTA}{1-WTA} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 \dots\dots. + \beta_{12} X_{12} + \varepsilon_i \dots\dots\dots\dots\dots 7$$

X_1 = Bid offered to the respondents to elicit WTA (₦)

X_2 = Sex of the respondent (male = 1, female = 0)

X_3 = Age (years)

X_4 = Nativity of the household (native = 1, 0 = otherwise)

X_5 = Year of Formal Education (years of schooling)

X_6 = Marital Status (married = 1, 0 otherwise)

X_7 = Household size (number of persons)

X_8 = Estimated Annual income (₦)

X_9 = Main Occupation of respondents (farming = 1, otherwise = 0)

X_{10} = Employment (employed = 1, not employed = 0)

X_{11} = Nearness of respondents to the forest (Distance in km)

X_{12} = Benefit derived (Yes – 1; No – 0)

μ = Error term.

RESULTS AND DISCUSSION

Socio-Economic Characteristics of Respondents

Table 1 presents the results and discussion of the socio-economic characteristics of the respondents in the study area. Some of the characteristics presented include age, gender, and marital status, level of education attained, household size, and annual income. The Table showed that a higher proportion (33.5%) of the respondents were between 31 and 40 years old and the mean age of the respondents was about 42 years, which showed that respondents are in their productive/active age. This indicated most of the respondents are within their productive age and are likely to be actively involved in forest conservation programs. This corroborated the findings of Suleiman *et al.* (2017) and Olutumise *et al.* (2023) that the majority of communities living around forest reserves are between the age group of 20 and 49 years. Most of the respondents (55.5%) were males in the study area. This implied that the male counterparts were more in number and they are more likely to take the risk of going into the forest reserve to prevent people from depleting forest resources compared to women in the study area as also documented in studies from the region (Olutumise & Oparinde, 2022; Ilesanmi *et al.*, 2023; Oparinde *et al.*, 2023a). The majority (80.0%) of the respondents were married. This suggests that the majority of the respondents have more responsibilities to cater to thereby may likely support forest conservation since forest services are one of their sources of livelihood.

All the respondents had one form of formal education or the other, with the majority (49.5%) of them having access to secondary education. This implies that the majority of the respondents had formal education and it is expected that education would provide people with opportunities to access information, enable them to adopt one or more innovative practices, and understand the advantages of conserving forest resources in the study area. This corroborates the findings of Muchapondwa (2003) and Newton *et al*. (2016) that the level of education attained by the

household head is expected to influence the nature of his/her economic activity and consequently the level of his/her income, also education would make it easier for households to comprehend negative externalities and passive user values of natural resources (Kadilikansimba *et al.,* 2023).

Households consist of persons living under the same roof and eating from the same pot (United Nations, 2002; Huka *et al.,* 2023; Adegoroye *et al.,* 2023). The table showed that most (71.0%) of the respondents in the study area have a household size between 1 and 5 persons. The mean household size was 4 persons. This indicated that small household' size was prevalent among the respondents. This implied that most of the respondents in the study area have a small number of people within their households who will likely participate in forest conservation management. The distribution of respondents according to their primary occupation revealed that most (44.5%) of the respondents practiced crop production as their primary occupation in the study area, while others were into timber logging, trading, and agro-processing. This result shows that the majority of the respondents are into crop production, this implies that agriculture is the main source of livelihood of the people living around the forest reserve and may likely be using the forest reserve to practice Agriculture and may want to conserve it from going into extinction because of the benefit they derived from the reserve.

Finally, the Table revealed that a larger proportion (74.0%) of the households earn less than 1,000,000 annually in the study area, and 19% of the households earn between 1,000,001 and 2,000,000 annually. This implies that most of the households that earned low income annually may likely depend on forest resources for additional income. This supports the findings of Cavendish (2000); Vedeld *et al.* (2004); Suleiman *et al.,* (2017), that low-income households rely heavily on natural resource extraction.

Table 1: Distribution of Respondents by their Socio-Economic Characteristics

Age (Years)	Frequency	Relative Frequency (%)
≤ 20	1	0.5
21 – 30	31	15.5
31 – 40	67	33.5
41 – 50	53	26.5
51 and Above	48	24.0
Mean	**41.90**	**41.90**
Gender		
Male	111	55.5
Female	89	44.5
Marital Status		
Single	25	12.5
Married	160	80.0
Separated	1	0.5
Divorced	2	1.0
Widow	12	6.0
Level of Education		
Primary School completed	12	6.0
Primary School not completed	7	3.5
Secondary School completed	99	49.5

Secondary School not completed	49	24.5
NCE/OND	17	8.5
HND	11	5.5
First Degree	5	2.5
Household Size		
1 – 5	142	71.0
6 – 10	58	29.0
Mean	**4**	**4**
Annual Income₦		
< 1,000,000	148	74.0
1,000,001 – 2,000,000	39	19.5
2,000,001 – 3,000,000	9	4.5
3,000,001 and above	4	2.0
Occupation		
Farming		
Crop Production	89	44.5
Livestock production	6	3.0
Non Farming		
Civil Services	8	4.0
Private Employment	12	6.0
Artisan	6	3.0
Trading	17	8.5
Timber logging	44	22.0
Off-Farm		
Working on other people's farm	1	0.5
Sales of Herbs and medicinal	2	1.0
Agro-processing	15	7.5
Total	**200**	**100**

Level of Perception of Respondents about Forest Conservation

Drawing inferences from the class boundaries of means as shown in Table 2, the respondents strongly agree that the protection of forest reserves is important with a mean score of 4.6. The respondents agreed that forest cover had declined over the past decades with a mean of 3.9. Also, the respondents agreed that they have a responsibility to protect the forest with a mean score of 4.5. The respondents also agreed that resource extraction fees are necessary to sustain the forest with a mean score of 4.2, and respondents agreed that establishing the protective area is necessary to sustain the forest with a mean of 4.6. The respondents agreed that forest conservation is necessary for future benefit with a mean of 4.6. Also, the respondents agreed that livelihoods are affected positively by forest improvement with a mean of 4.6. However, the respondents also agreed that livelihoods are affected negatively by forest improvement with a mean score of 2.7. The respondents agreed that they were aware that the government has given due recognition to forest conservation with a mean of 4.4. The respondents agreed with a mean score of 4.7 that a forest protection programme is necessary to sustain forest resources in the study area. The overall grand mean is 4.3, The implication of these is that the respondents place high importance on forest protection and are likely to be willing to conserve forest resources. These results also corroborate the assessment by Tesfaye (2017), which showed that

a high percentage of residents have positive attitudes toward forest resource conservation which indicates forest conservation success.

Table 2: Distribution of Respondents' Perception of Forest Conservation

Perception of households about forest conservation	Strongly agree(5)		Agree(4)		Undecided		Disagree		Strongly disagree		Mean score	Inferences based on mean class
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%		
Protection of forest resources is important	122	61	75	38.5	0	0	1	0.5	0	0	**4.6**	**Strongly Agree**
Forest cover has declined over the past decades	90	45	61	30.5	1	0.5	27	13.5	21	10.5	**3.9**	**Agree**
I have a responsibility to protect the forest	105	52.5	89	44.5	3	1.5	1	0.5	2	1	**4.5**	**Strongly Agree**
Resource extraction fees are necessary to sustain the resources	100	50	56	28	27	13.5	15	7.5	2	1	**4.2**	**Agree**
Establishing the protective Area is necessary to sustain the forest in my area	113	56.5	85	42.5	2	1	0	0	0	0	**4.6**	**Strongly Agree**
Forest conservation is necessary for future benefit	126	63	72	36	1	0.5	0	0	1	0.5	**4.6**	**Strongly Agree**
Livelihoods are affected positively by forest improvement	134	67	62	31	3	1.5	0	0	1	0.5	**4.6**	**Strongly Agree**
Livelihoods are affected negatively by	16	8	36	18	60	30	56	28	32	16	**2.7**	**Disagreed**

forest improvement											
I am aware that the government has given due recognition to forest conservation	105	52.5	80	40	8	4	6	3	1	0.5	**4.4**	**Agreed**
A forest protection programme is necessary to sustain the forest in my area	151	75.5	47	23.5	2	1	0	0	0	0	**4.7**	**Strongly Agree**
GRAND MEAN	**4.3**										

Awareness and Level of Involvement in Forest Conservation Programme among the Respondents

Awareness of Forest Conservation Programme (FCP)

The results Table 3 revealed that 49% of the respondents were aware of forest conservation programs in the study area while 51% of the respondents were not aware of conservation programs on forest resources. This implied that more than half of the respondents did not have an idea nor were aware of any conservation program in the study area. This indicates that a lack of awareness of FCP may likely lead people not to be fully involved in the FCP. The Table further shows that 40% of the respondents were aware of Redd+ (Reducing Emissions from Deforestation and Forest Degradation) programme by the government, 4.0% of the respondents were also aware of Redd+ (Reducing Emissions from Deforestation and Forest Degradation), and Wildlife programme in the study area. This indicated that those dwellers who were aware of any forest conservation program had a higher chance of participating in any of the programs.

Table 3: Distribution of Awareness and Identification of FCP by the Respondents

Forest Conservation Program	Frequency	Relative Frequency (%)
Aware	98	49.0
Not Aware	102	51.0
Types of Programme		
Redd+	80	40.0
Wild-Life	10	5.0
Wild-Life and Redd+	8	4.0
Not Aware of FCP	102	51
Total	**200**	**100**

Level of Involvement in Forest Conservation Program (FCP)

Table 4 shows the distribution of respondents by area of involvement in the Forest Conservation Program (FCP). Only the 98 respondents who fully participated in FCP were captured in the Table. The Table revealed that 85.7% of the respondents were not involved in the activities of the wildlife program. Also, 6.1% of the respondents were involved in the implementation of untouched areas (Preventing people from going into the inner core to encroach) and the outer part (Allowing arable farming for rural dwellers) in the Wildlife conservation program.

Furthermore, 44.9% of the respondents were involved in the planning stage on how to control illegal logging while 40.8% of the respondents were involved in planning afforestation of forest trees in Redd+ (Reducing Emissions from Deforestation and Forest degradation). This implies that most of them are active participants in the Redd+ program which may likely affect the function of reducing emissions from deforestation and forest degradation in a positive way to sustain the management of forests and enhancement of forest carbon stocks.

Table 4: Distribution of Level of Involvement in FCP by the Respondents

Activities in the Conservation Program	Planning		Implementation		Monitoring		Those not involved		Total	
Wild-Life	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Area untouched (preventing people from going into inner-core	4	4.1	6	6.1	4	4.1	84	85.7	98	100.0
Outer-Part (Allowed arable farming)	4	4.1	6	6.1	4	4.1	84	85.7	98	100.0
Buffer (Between inner-core and Outer-part)	8	8.2	2	2.0	4	4.1	84	85.7	98	100.0
Redd+										
Control illegal felling (Conservation)	44	44.9	20	20.4	34	34.7	0	0	98	100.0
Afforestation to enhance carbon stock (Sustainable)	40	40.8	21	21.4	37	37.8	0	0	98	100.0

Respondents' Willingness to Accept a Premium for Forest Conservation

Even though the majority of the respondents were not aware of any FCP in the study area, the result in Table 5 showed that the majority (95%) of the respondents were willing to accept a premium to protect the forest around them. Individuals, who refuse the proposed change,

exhibit a zero WTA in the study area. However, some zero bids are appealing bids, which refer to situations where respondents indicate their WTA is zero because they are ready to make themselves available for forest conservation at no cost.

Table 5: Distribution of Respondents According to Willingness to Accept a Premium

Willingness to Accept a Premium	Frequency	Relative Frequency (%)
Willing	190	95.0
Not willing	10	5.0
Total	**200**	**100**

Reasons for Willingness to Accept a Premium to Protect the Forest

Table 6 revealed the distribution of reasons for respondents in the study area to be WTA for forest conservation. The majority (41.6%) of the respondents are willing to accept a premium to conserve the forest reserve around them so that the coming generation can benefit from the forest resources. Likewise, 34.2% think of the protection of forests against degradation while 29.5% want the forest to produce environmental goods.

Table 6: Distribution of Reasons for Willing to Accept a Premium for Forest Conservation by the Respondents

Reasons for Willingness to Accept	Frequency*	Relative Frequency (%)*
Better quality of goods and services from the forest	19	10.0
Protection of forests from degradation	65	34.2
For the coming generation to benefit	79	41.6
Programme can be implemented if everyone contributes	38	20.0
For the production of different environmental goods	56	29.5

N=190 (Frequency of respondents who are willing to accept) *Multiple responses

Reasons for Not Willing to Accept a Premium for Forest Conservation

The reasons the respondents were not willing to accept a premium for forest conservation are summarized in Table 7. According to the Table, a considerable number of the respondents 66.7% reported that their family cannot live without forest products. This shows that they are ready for any program that will prevent their family from exploiting the forest resources to meet their basic needs while respondents who are not WTA because the compensation is not reasonable are 50.0%. The implication is that they will be willing if the government/NGOs improve on their compensation strategies. Furthermore, 33.3% of the respondents revealed that they are not ready to trade forest for any compensation from either the government/NGOs because they believed it is their family property.

Table 7: Distribution of Reasons for Not Willing to Accept a Premium for Forest Conservation by the Respondents

Reasons for Not Willing to Accept	Frequency*	Relative Frequency (%)*
Compensation not reasonable	5	50.0
Not ready to trade forest for any compensation	3	33.3
Need to know another opinion about the program	2	20.0
Our family cannot live without forest product	6	66.7
Don't think it is worthwhile to stop exploiting the forest	3	33.3
The forest is protected enough	1	10.0

N=10 (Frequency of respondents who are not willing to accept) *Multiple responses

Factors Influencing Willingness to Accept the Protection of Forest Resources

The factors influencing respondents` WTA a premium to conserve forest resources are presented in Table 8. The Table revealed five variables that significantly determine the respondent's willingness to accept a premium to conserve forest resources in the study area, which are; bid amount, Age, marital status, income, and forest distance. The bid amount put-on a positive significant relationship on the respondent's willingness to accept a premium to conserve, maintain, and protect Forest resources. This indicates that as the bid amount increases, the respondents` WTA increases. This implies that as the bid amount increases by one unit, the respondents` willingness to accept also increases by 1.117 under a 1% significant level, which implies that the bid amount highly affects the decision of the respondents. This result is in line with the findings of Nguyen (2015) who opined that a positive sign indicates that as the bid amount increases, the respondents would be more likely to accept a premium: the higher the compensation offered, the higher the willingness to accept is.

From Table 9, the variable age is statistically significant at 10% with a negative coefficient. A unit increase in the Age of a respondent tends to decrease the willingness to accept a premium to conserve natural resources. This indicates that the older the respondent is, the more their willingness not to accept the bid offer. This result is similar to the report of Grany *et al.* (2014), Olubunmi-Ajayi *et al.* (2023), and Oparinde *et al.* (2023b) in their various studies. The marital status of respondents had a positive coefficient of 1892.580 which implies that a unit increase in marital status would increase the likelihood of accepting a premium. The result further revealed that marital status is significant at 5% and had a positive relationship in influencing respondents' decision to accept compensation to protect, manage, and conserve the natural resources in their environment from encroachers.

The coefficients of variable INCOME are statically significant at 10%. A unit increase in household income would reduce their WTA premium by -0.061 in the study area. The result reflects that the higher income the respondents earn, the less willing they are to accept the bids offered. This implies that as households` disposable income increases, dependency on natural resources from all the communities living around forest reserves will reduce. At the 10% level, the coefficients of variable forest distance are statistically significant. The negative sign of the coefficient of -530.269 shows the negative influence of distance on WTA.

Table 8: Factors Influencing Willingness-To-Accept

Variables	Coefficient	Standard Error	*P*-value
Bid Amount	1.117***	0.014	0.000
Sex	696.564	912.644	0.445
Age	-108.778*	55.381	0.050
Nativity	59.419	869.774	0.946
Years of formal education	20.864	229.557	0.928
Marital Status	1892.580**	847.909	0.026
Household size	116.054	268.670	0.666
Income	-0.061*	0.032	0.055
Main Occupation	94.225	917.959	0.918
Employment status	463.973	898.119	0.605
Forest Distance	-530.269**	269.110	0.049
Derived Benefit	475.606	1066.667	0.656
Constant	-281.043	4252.611	0.947
Number of Observations	200		
Log Likelihood	-233.846		
Prob > Chi2	0.000		
LR Chi2(12)	6345.38		
Pseudo R^2	0.5065		

***Significant at 1%, **Significant at 5%, *Significant at 10%

CONCLUSION AND RECOMMENDATIONS

The findings from the study on community participation in forest conservation in Ondo State highlight the critical role that local communities play in sustainable environmental practices. The data indicate that most community members are willing to engage in forest conservation, recognizing the long-term benefits for themselves and future generations. The willingness to accept a premium for conservation efforts underscores a collective commitment to environmental stewardship. Significant community involvement has been demonstrated through various forest conservation programs such as Redd+ and wildlife management. Despite challenges, such as a lack of awareness and limited economic incentives, community members have shown a positive disposition towards conservation initiatives, indicating a strong cultural and economic connection to the forest reserves. Based on the findings, recommendations were made as follows:

i.   There should be increased efforts in community education and awareness about the benefits of forest conservation. This should involve clear communication about existing and new conservation programs and how these efforts benefit the community directly.

ii. The government should develop incentive-based conservation programs that provide tangible benefits to the community members. These could include compensations for ecosystem services or benefits from sustainable forest management practices.

iii. There should be further decentralized forest management by involving community members in decision-making processes. This could be achieved through regular

community consultations and including local leaders in conservation planning and implementation.

iv. Implement a robust monitoring system to assess the effectiveness of conservation programs and the involvement level of the community. This system should also adapt to feedback from the community to improve program designs and outcomes.

v. The government should promote alternative livelihoods that are not only sustainable but also reduce the dependency on forest resources. This includes training on sustainable agricultural practices and non-timber forest products that could supplement traditional incomes.

vi. The government should strengthen legal frameworks that protect forest reserves against illegal activities and ensure that policies are community-friendly and geared towards sustainable development.

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