



## PERCEPTION OF FOREST DWELLERS ON THREATS TO SUSTAINABLE FOREST MANAGEMENT IN SOUTHWESTERN NIGERIA

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### ABSTRACT

*This study examined the perception of forest dwellers on the factors influencing forest sustainability in South Western Nigeria, such as logging, failure to plant, overgrazing, and bush burning among others. Also the perception about whether forest population that is, resources, actually increasing, decreasing or remain constant was also investigated among forest dweller households. Of the 450 household heads proposed for the study, 430 were valid and used for the research analysis (from Ogun (272), Ondo (89) and Osun (69) states were randomly selected). The descriptive statistics was employed to show degree in percentage of perception to forest threats in the study area. The average age of household was  $47.6 \pm 11.6$  years and household size was  $7.0 \pm 4.0$  persons. Majority of the household heads were male (92.1%), married (89.5%) with  $2.4 \pm 5.0$  years of education and  $19.9 \pm 14.9$  years of residency in the forest area. The empirical research showed that logging (48.60%) and failures to replace trees (48.14) with other threats (78.8%) such as urbanization, agriculture, fetching of fuel wood, charcoal production and poaching were serious threats affecting sustainable forest management. About 76.74% of the respondents were of the opinion that forest resources was increasing, about 57.21% of the respondents perceived and observed that forest resources were declining while 42.79% observed that forest resources are not declining while 70.7% were of the opinion that forest resources remain constant. It is therefore recommended that government should embark on programs that will sustainably conserve the forest and prevent indiscriminate exploitation of forest resources. The study recommends also that sustainable forest management practices should be enforced to keep forest and its resources for posterity.*

**Key words:** Sustainable forest management, Forest population, Forest dwellers, Perception

### INTRODUCTION

Sustainable forest management in Nigeria is being plagued with many challenges directly related to forest utilization and indiscriminate human activities in the Southwestern, Nigeria. Over the years sustainable management of the tropical forest resources has been of primary concern due to its potential impact on biological diversity and importance in maintaining global ecological functions. In spite of its importance, the natural tropical high forest has continued to diminish rapidly in the African continent, thus dwindling sustainable forest management. Forest provides the greatest diversity of plant life, yet they continue to be felled and burned and seldom replaced. The imminent role of tropical forest in the earth means

that the destruction of forest has serious environmental and socio-economic consequences.

Decline in forest is as a result of enormous human ability to alter large forest ecosystems which are source of intense conflicts between rural populations, governments, commercial interests and, increasingly, sections of the public at large (Nzeh *et al.*, 2015). There is sufficient evidence to indicate that the whole world is facing an environmental crisis on account of heavy deforestation. Most of the African timber rich zones are faced with diminishing forest resources due to forest degradation, human and animal population pressures, mismanagement and other forms of exploitation (Ezebilo, 2004). The utmost threats to

forest reserves in Nigeria have been bush burning and illegal logging, which have been prevalent over the years. The degradation process in the forest area has been found to be significant in terms of the disappearance of the three crowns layers of trees which is conversant to the country (Salami *et al.*, 1999) in Orimoogunje (2009).

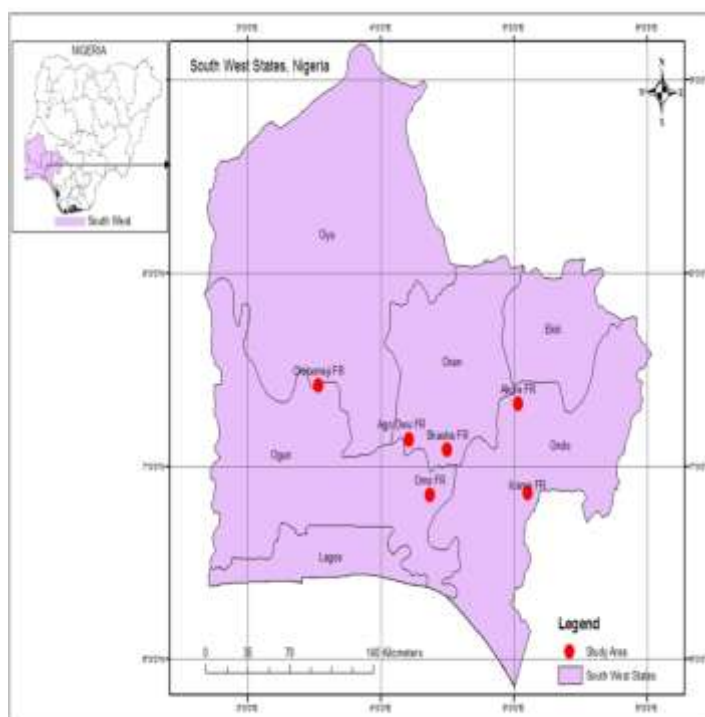
With extensive deforestation, villagers are compelled to walk long distance to fetch fuel wood and eventually tempted to substitute dried animal dung and crop residues for fuel wood. This tends to have serious consequences for local agricultural production and productivity because; the rural communities also rely on this substitute for improving soil fertility. Apart from the deterioration in the quality of life associated with forest degradation, there are other more insidious effects that endanger the future of humans on this planet. Sustainable forest management encompasses forest law enforcement and governance, involving tackling illegal forest activities, strengthening and reforming forest management institutions, updating and reviewing policy, building legal and institutional frameworks, and increasing capacity to enforce existing laws and policies. The focus of this paper is to investigate the socioeconomic characteristics of the people in the forest areas; the

perception of the forest dwellers on the factors that serve as threat to forest sustainability and the intensity of forest threat among the forest dwellers

## MATERIALS AND METHODS

### Study Area

The study was conducted in forest areas in rural southwestern Nigeria. Fig. 1 represents a geographical area spreading between Latitude 2° to the North and latitude 6° to the south. It is marked by longitude 4° to the west and 6° to the east and has a land area of 114,271 km<sup>2</sup> representing 12% of the country's land mass and comprising of 6 states namely Oyo, Osun, Ondo, Ekiti, Ogun and Lagos States. It has the total population of 35.2million (CIA, 2012) and is predominantly agrarian; more than 96% of the population is Yoruba. The zone is characterised by a typically equatorial climate, with distinct dry and wet seasons. The main growing season lasts up to 9 months with two peaks in July and September. Rainfall ranges between 2600mm in the coastal areas of Lagos and Ogun states and nearly 1200mm in the northern areas of Ondo, Ekiti, Oyo and Osun states. The average zonal rainfall is 1480mm with a mean monthly temperature range of 18°24°C during the rainy season and 30°35°C during the dry season.



**Figure 1: Map of the Selected Forest Reserves**

## Experimental Design

The study was carried out in selected forest reserve areas in southwestern Nigeria. A four - stage sampling procedure was used. The first stage was the purposive selection of Ogun, Osun and Ondo States with highest concentration density of forest in southwestern Nigeria. The second stage involved random selection of two forest reserves in each State. These were Omo and Olokemeji Forest Reserves in Ogun State; Akure (Aponmu) and Idanre forest reserves in Ondo State with Shasha and Ago-Owu forest reserves in Osun State. This was necessary to obtain a diversity of forest resources and forest activities (Fig.1). The third stage was the random sampling of villages in and around the reserves proportionate to size. Twelve (12) villages were randomly selected from Omo Forest Reserve; three (3) from Olokemeji Forest Reserve; three (3) from Akure Forest Reserve; two (2) from Idanre Forest Reserve; three (3) from Shasha and two (2) from in Ago-Owu Forest Reserves made up 25 villages altogether. The fourth stage was the random selection of household heads proportionate to size.

## Method of Data Collection

Primary data were collected with a structured questionnaire administered on heads of households living within and around the forests. Of the 450 household heads proposed for the study, 430 were valid and used for the research analysis.

## Data Analysis

Descriptive statistics such as percentage and bar charts were used for the analysis.

## RESULTS

### Socioeconomic Characteristics of Rural Household Heads

The socioeconomic characteristics of the respondents revealed that 92% of the household heads in the study area were male (Table 1). About 89.5% of the household heads were married, 5.6% were single, 3.5% were widowed and 1.4% were

divorced. About 33.0% of the respondent were in age group between 46 and 55years of age and 22.8% were above 50 years old, only 3.0% were less than 25years. The mean of the household head age was  $47.63 \text{ years} \pm 11.65$ . Average number of years in school of household head was  $2.38 \pm 5.016$  years and the average years of settlement in the forest area was  $19.89 \pm 14.86$ . Farming was the major primary occupation of the household heads (65.30%). About 17.90% took extracting forest resources as their primary occupation, 5.6% were artisanal workers, 2.8% were only wage/salary and trading was just 8.4%. Table 2 shows the distribution of family type, monogamy (76.5%) and polygamy (23.5%) families. About 38.1% acquired the land by inheritance, 19.30% rented the farmland, 12.3% leased the farmland and 21.4% acquired the land by purchase. The average farm size was  $2.4 \pm 3.57$  hectares.

### Factors Influencing Forest Sustainability

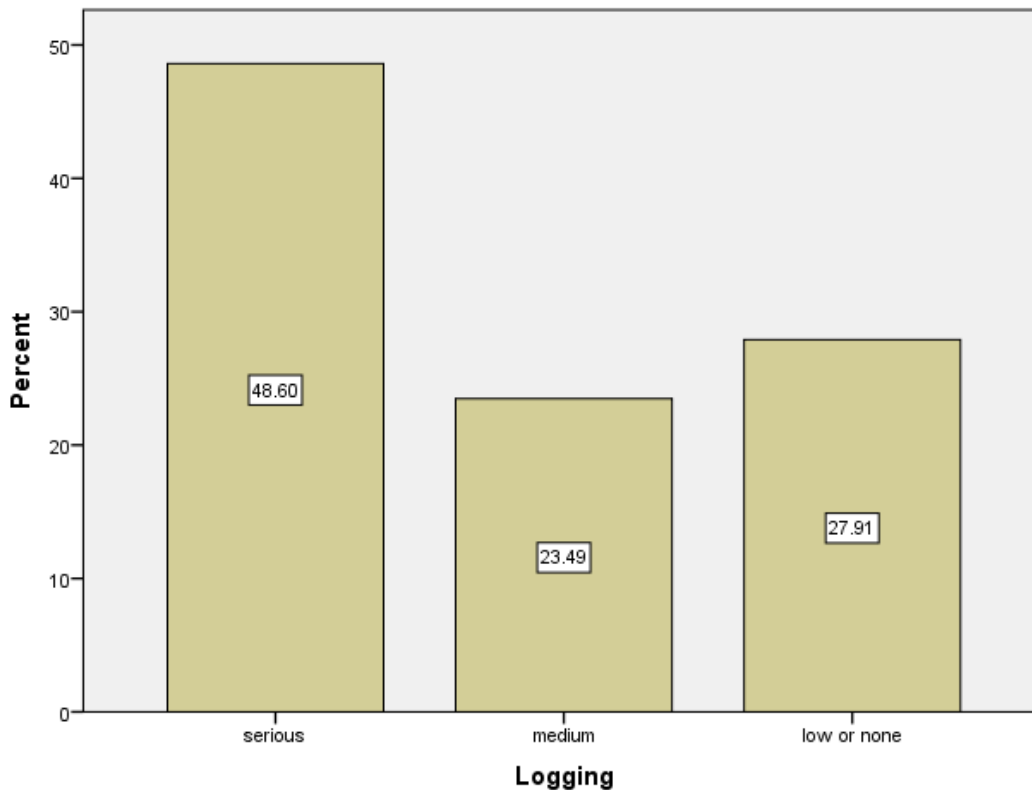
The study showed that about 48.6% of the respondents indicated that logging is a serious threat to sustainable forest management in the study area while 23.49% of the respondents indicated that logging is moderately a threat and 27.91% responded it was a low threat. About 48.12% of the respondents in the study area revealed that the failure to replant tree is seriously causing threat to forest preservation, 22.09% of the respondents were moderately of the opinion that failure replant trees is a threat and 29.77% believed failure to replant is not a threat to forest sustainability. About 52.56% saw bush burning as a no or low threat to forest sustainability, 21.36% as moderate and 25.58% as serious threat to forest. Most (57.9%) of the respondents in the study revealed that overgrazing activities is low and just 22.09% felt was a serious challenge. However about 78.8% of the respondents revealed other activities such as urbanization, agriculture, fetching of fuel wood, charcoal production and poaching as serious threat in the study area.

**Table 1. Socioeconomic Characteristics of the Rural Households**

<b>Variable</b>	<b>Frequency</b>	<b>Percentage</b>	<b>Mean</b>	<b>Standard Deviation</b>
<b>Sex</b>				
Male	396	92.10		
Female	34	7.90		
<b>Total</b>	<b>430</b>	<b>100</b>		
<b>Marital status</b>				
Married	385	89.50		
Singled	24	5.60		
Windowed	15	3.50		
Divorced	06	1.40		
<b>Total</b>	<b>430</b>	<b>100</b>		
<b>Age</b>				
≥ 25	13	3.00		
26-35	64	14.90		
36-45	113	26.30	47.63	11.65
46-55	142	33.00		
≤ 56	98	22.80		
<b>Total</b>	<b>430</b>	<b>100</b>		
<b>Household size</b>				
1-5	160	37.20		
6-10	218	50.10	6.92	3.639
Above 11	52	12.70		
<b>Total</b>	<b>430</b>	<b>100</b>		
<b>Education level(year)</b>				
0	84	19.50		
1-6	150	35.30		
7-12	152	34.90	2.38	5.016
Tertiary	44	10.20		
<b>Total</b>	<b>430</b>	<b>100</b>		
<b>Years of residency</b>				
1-10	141	32.80		
11-20	137	31.90	19.89	14.86
Above 21	152	35.30		
<b>Total</b>	<b>430</b>	<b>100</b>		
<b>Primary Occupation</b>				
Farming	281	65.30		
Forest activity	77	17.90		
Artisanal activity	24	5.60		
Wage/salary	12	2.80		
Trading	22	5.11		
Transfer	14	3.25		
<b>Total</b>	<b>430</b>	<b>100</b>		
<b>Secondary Occupation</b>				
Farming	121	28.10		
Forest Activities	175	40.70		
Artisanal	37	8.60		
Wage/ Salary	04	0.90		
Trading	85	19.76		
Transfer	08	1.86		
<b>Total</b>	<b>430</b>	<b>100</b>		

**Table 1. Socioeconomic Characteristics CONT'D**

Variable	Frequency	Percentage	Mean	Standard Deviation
<b>Family Type</b>				
Monogamy	101	76.50		
Polygamy	329	23.50		
<b>Total</b>	<b>430</b>	<b>100</b>		
<b>Land acquisition</b>				
No land	39	9.10		
Inheritance	164	38.10		
Rented	82	19.10		
Leased	53	12.30		
Other	92	21.40		
<b>Total</b>	<b>430</b>	<b>100</b>		
<b>Farm size</b>				
0-10	418	97.21		
11-20	10	2.33	2.40	3.57
21- above	02	0.46		
<b>Total</b>	<b>430</b>	<b>100</b>		



**Figure 2: Logging as a threat to forest sustainability in Southwestern Nigeria**

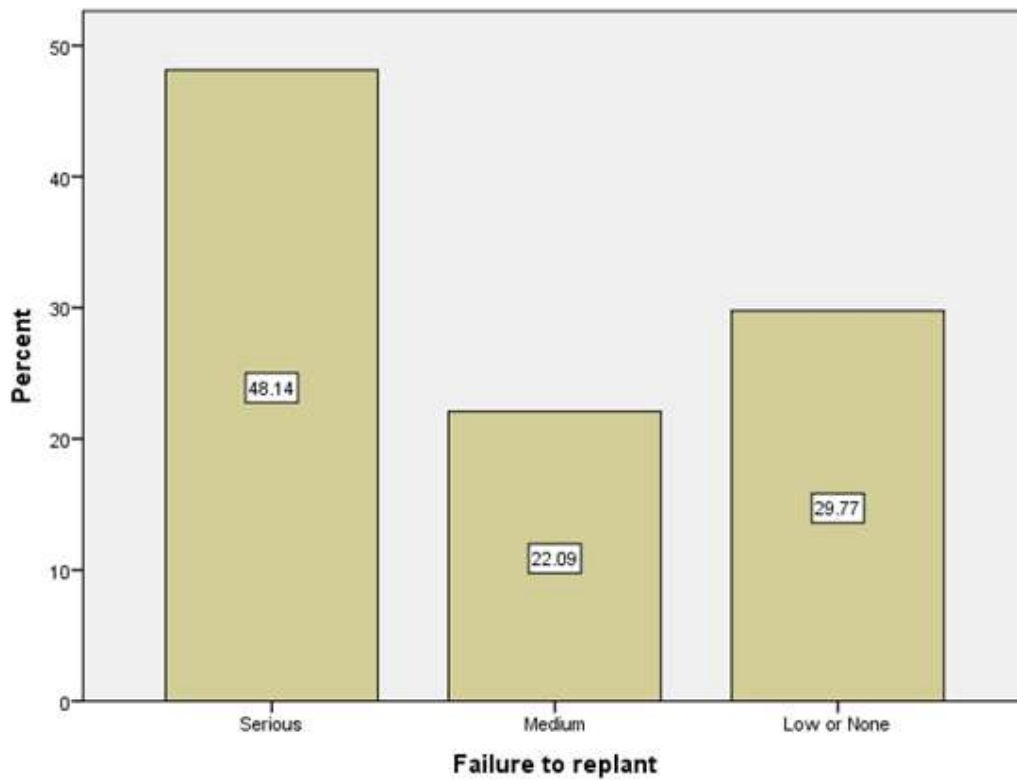


Figure 3: Perception on failure to plant trees as threat to forest sustainability in Southwestern Nigeria.

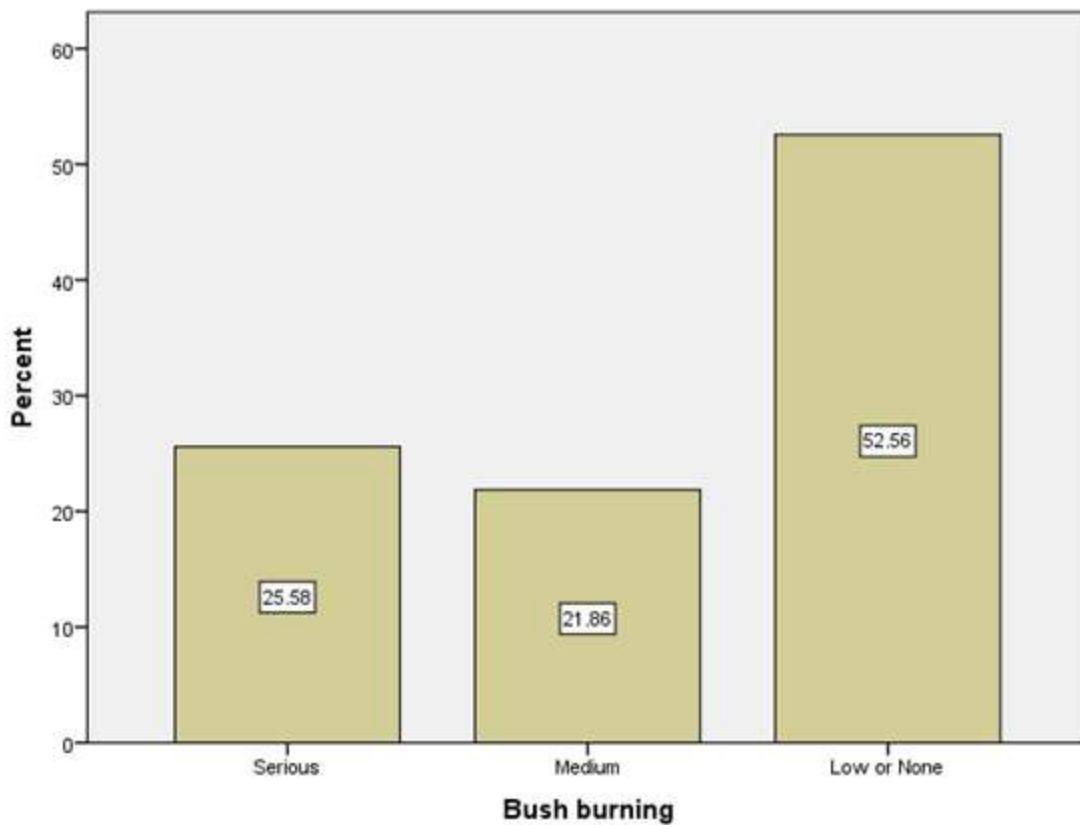
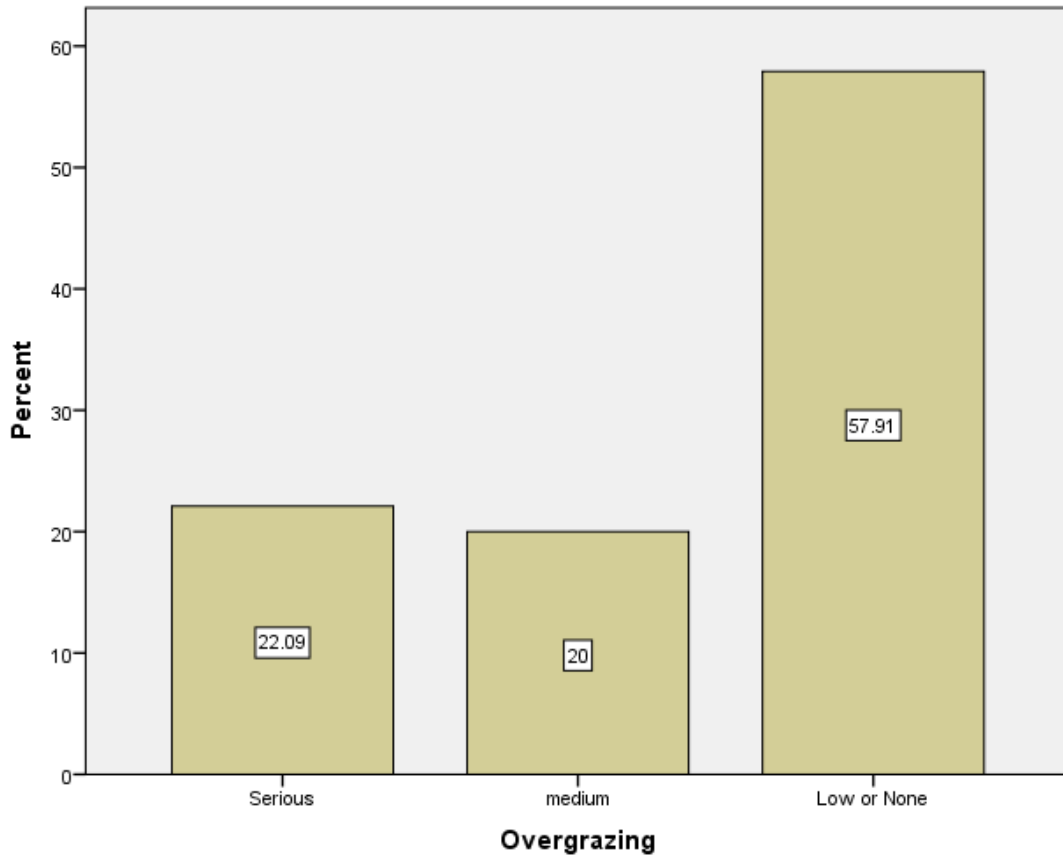
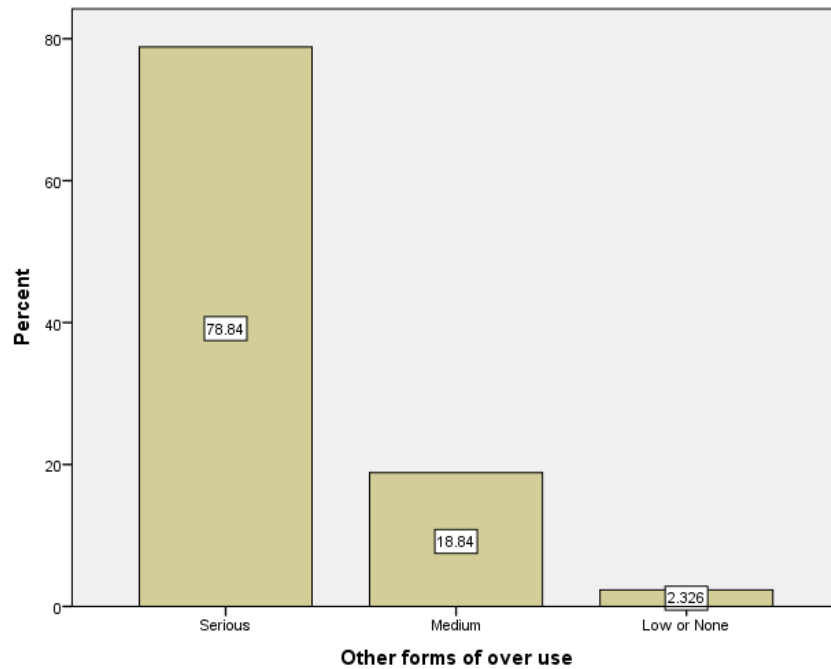


Figure 4: Perception on Bush burning as a threat to forest sustainability in Southwestern Nigeria



**Figure 5: Perception overgrazing as a threat to forest sustainability in Southwestern Nigeria**

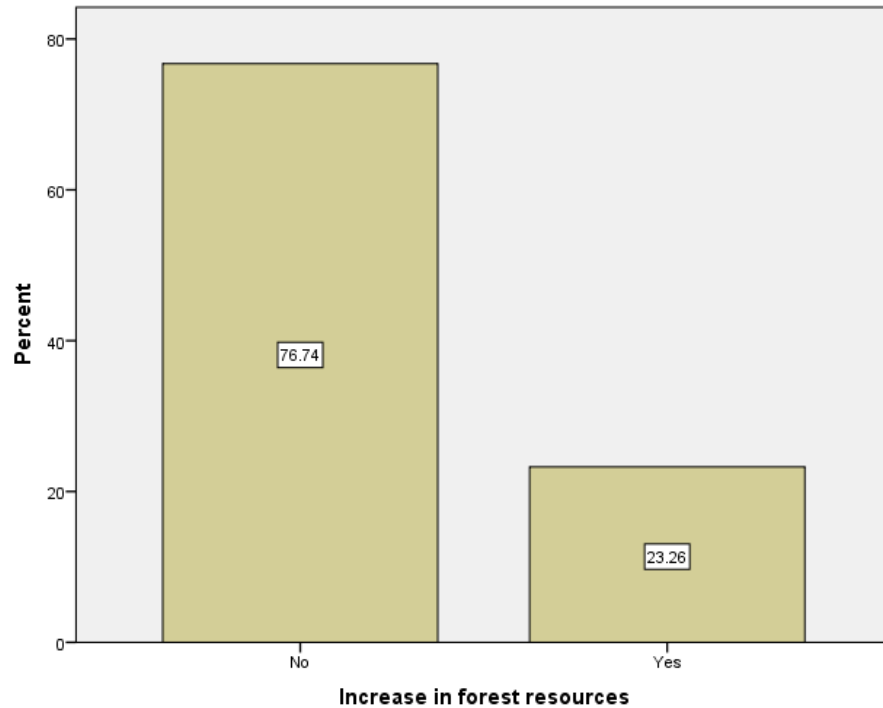


**Figure 6: Perception on other factors influencing forest sustainability in Southwestern Nigeria**

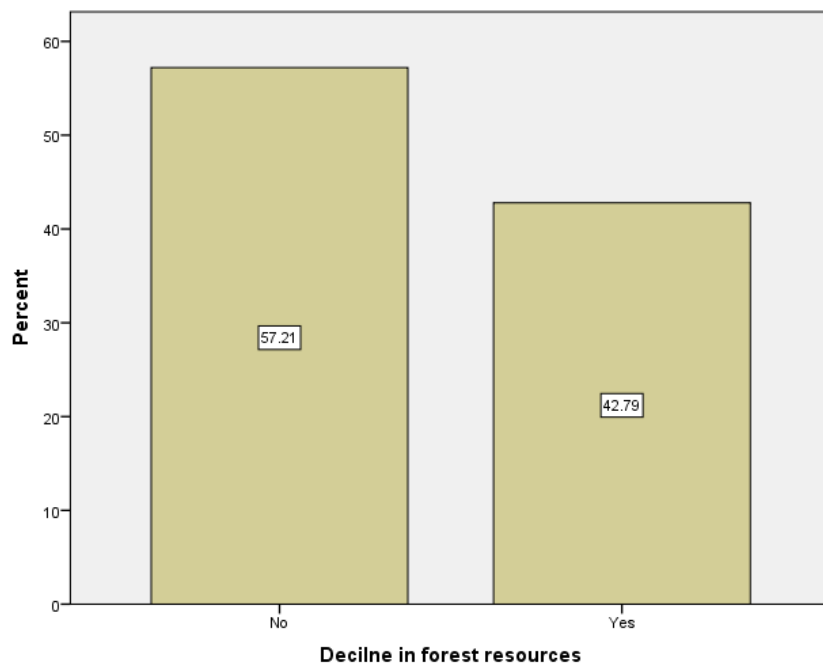
**Perception about Whether Forest Population is Increasing, Decreasing or Remain Constant**

The empirical result shows that 76.74% of the respondents were of the opinion that forest resources is increasing, while 23.26% disagreed that

forest resources were increasing. About 57.21% of the respondent perceived and observed that forest resources were declining while 42.79% observed that forest resources are not declining. Furthermore, 70.7% were of the opinion that forest resources remain constant and 29.3% had contrary opinion.

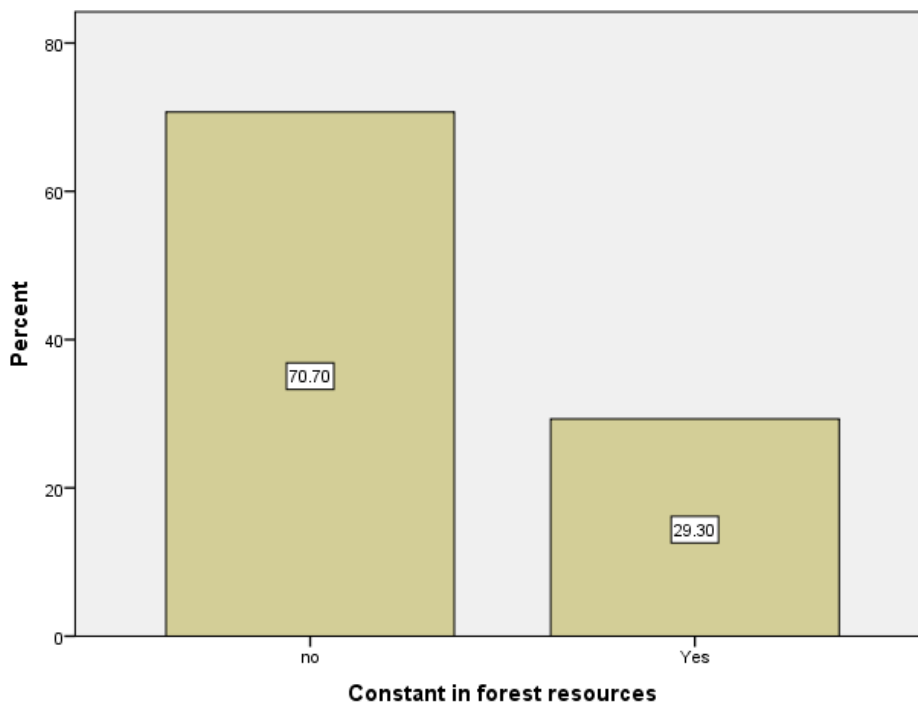


**Figure 7: Perception on forest population increasing in Southwestern Nigeria**



**Figure 8: Perception on forest population declining in Southwestern Nigeria**





**Figure 9: Perception that forest population remains constant in Southwestern Nigeria**

## DISCUSSION

The socioeconomic characteristics of rural household heads in forest areas of southwestern, Nigeria showed that there were more married male household heads in the study areas than other marital status. The mean of the age groups indicated that household heads were in the economically active age, implying that they can perform forest activities quite easily. This is substantiated by Yemiru *et al.*, (2010) findings that the average household head was 46.6 years old in Bale forest area in Ethiopia. The average household size of respondents in the study area was of 7.0. This implies that household members were used as labour because hired labours were scarce. The average number of years in the school indicated that that majority of the household heads had primary education level, and this low level of education made them to depend on the forest. This is similar to the findings of Yemiru *et al.* (2010) where they recorded an average education years of 1.31 in Ethiopia. However this is contrary to findings of Fonta *et al.* (2010) in South Eastern Nigeria and Nwera (2014) in Ngong forest where the number of years in school were higher, 5.23 and 5.1 respectively, though all are still within primary

education. This signifies that low educational level persisted in the rural areas and so expected best are not made out of forest resources. Furthermore, the average year of settlement in the area is in line with Bwalya, (2013) study in Zambia. The households were majorly subsistence farmers considering farm sizes and specialised in planting cocoa, kolanut, yam, cassava, palm trees, bitter Kola, plantain and bananas. It could be seen that few people took into artinsal, wage and trading as primary occupation in the rural areas. More people took forest activities as their secondary occupation (40.70%). This confirms the fact that forest resources serve as economic safety nets during periods of economic hardship, drought, seasonal food shortfalls, off farming season (Kabubo-Mariara and Gachoki, 2008) and a source of regular subsistence (Nwera, 2014).

This study further considered factors influencing forest sustainability such as logging which could be seen as a serious threat to forest. This corroborates with Oduntan *et al.*, (2013) that most reserves are threatened with logging activities. The failure to replant tree back after logging or deforestation was found to be serious problem because many of the respondents (48.18%) believed trees grow by

themselves. Grazing and bush burning were low in practice because they are prohibited in forest reserve areas. Moreover, the study found other activities such as urbanization, agriculture, fetching of fuel wood, charcoal production, and poaching as also posing serious threat in the study area. The study shows that forest guards and other technical staff are no longer active due to poor governance thereby allowing encroachment in the forest reserves (Popoola, 2014). Perception about whether forest population is increasing, decreasing or remain constant in this empirical research shows that they were of opinion that forest resources increasing and declining despite the usage.

## CONCLUSION

The study concluded that majority of the respondents perceived that logging was a serious

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- threat to sustainable forest management and that failure to replant trees will cause serious havoc to the forest. However, being a forest reserve, grazing was at the minimal but other activities such as urbanization, agriculture, fetching of fuel wood, charcoal production and poaching was on the increase. Most of the respondents perceived that forest resources were increasing while some were indifferent about the state of the forest reserves.

## Policy Recommendation

It is recommended that government should embark on programs that will sustainably conserve the forest and prevent indiscriminate exploitation of forest resources. The study also recommends that sustainable forest management practices should be enforced to keep forest and its resources for posterity.

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