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## **IMPACTS OF FOREST PLANTATION MANAGEMENT ON FOREST DWELLERS IN SOUTHWESTERN NIGERIA**

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### **Abstract**

The positive impact of responsibly managed forest plantation on rural livelihood is one of the performance indices of Participatory Forest Management, as Forest Dwellers (FDs) are known as the best protectors of the environment. However, in Southwestern Nigeria, there is dearth of information on the impact of Forest Plantation Management (FPM) on FDs since implementation of 2006 government approved National Forest Policy in Southwestern Nigeria. Therefore impacts of FPM on FDs in some designated forest reserves were investigated. Simple random sampling was used to select 1,377 FDs from adjoining communities in 12 purposively selected Forest Plantations (FPs) across six States: Ekiti (147), Lagos (129), Ogun (305), Ondo (226), Osun (350) and Oyo (220). A set of structured questionnaire was used to obtain data on impacts of FPM on FDs. Data were analyzed using descriptive statistics and Chi-square test at  $\alpha_{0.05}$ . The respondents were mainly adults while 34.33% were within age of 41 and 50 years. They are mostly male (76.05%); 48.71% had secondary education while 33.44% had only primary education. FDs therefore ascertained their benefits' derivation from Forest Plantations (FPs) ( $\chi^2=45.34$ ) with a list of array of benefits being derived, confirmed the protective role of FPs against rainstorm ( $\chi^2=83.67$ ) and ascertained the protective function of FPs in general ( $\chi^2=177.36$ ) as they all had significant association with effective FPM. Also, tests on socio-economic impacts confirmed the positive impacts of FPM on the economic well-being of the FDs as high percentage of their livelihood depends on the plantations. In general, the study established the positive impacts of FPM on forest-dwelling people as their socio-economic well-being is enhanced. Therefore government should invest more in the provision of various incentives to encourage private forest participations while it is important to intensifying more efforts to embrace community participations so as to develop our existing FPs and establishment of the new ones to the economic, social and environmental benefit of the region.

**Keywords:** Forest plantation, Forest dwellers' type, Forest benefits, Forest management



## **Introduction**

Forest plantation plays a vital role in economic development of the State. The forest provides household food and shelter for the people (Omorodion and Ebana, 1994). Precisely, forest plantations around the world provide important sources of livelihood for many of the rural poor, although people necessarily make use of the forest in the same way and on the same level. Angelsen and Wunder (2003) put forward five dimensions along which forest benefits in rural livelihoods can be categorized and assessed: I. Look at groups of beneficiaries; II. Evaluate types of forest products and services; III. Distinction between high and low rent forest products; IV. Differentiate the role of forest benefits in the household economy or livelihood strategy (for example, subsistence use versus cash income; gap filling versus regular use); V. Extent of resource management (that is, from pure forests/forest products).

As a matter of fact, forest dwellers do represent the group with the highest level of forest dependency (Arnold, 2001). Forest dwellers depend heavily on forest resources for subsistence with hunting, gathering and shifting cultivation (that is, clearance of forest land for agricultural purposes) as main livelihood activities (Byron and Arnold, 1997). The forest is an important basis for their rotational agricultural systems (Burgers *et- al.*, 2005). Forest dwellers are most often indigenous population groups that live in and with the forest according to their own traditions, making the forest also an important part of their social and cultural systems (Arnold and Bird, 1999).

A larger proportion of forest-using people is made up by farmers living at the forest frontiers (Arnold, 2001). Within this group, it is primarily the poor and landless farmers that still rely greatly on forest resources for their livelihoods. Wealthier farmers on the other hand, are less dependent on the forest as their livelihoods are predominantly based on sedentary agriculture. For them, forest products merely function as a supplementary source of income and forest products are gathered or produced (that is, Smallholders) only in times when market demand for certain forest products is high (Arnold and Bird, 1999). While the poor forest farmers derive a greater share of their livelihood from forest products, the wealthier forest farmers, with more resources for forest gathering and production, are the heaviest forest users (Arnold, 2001).

Commercial forest users do not necessarily live in or near the forest, but do indirectly draw on the forest (part of) their livelihoods through commercial forest activities, such as the production, processing and sale of forest products (Byron and Arnold, 1997). Poor farming households often undertake low-skill and low capital commercial forest activities (that is, basket making, fuelwood vending) on a part-time basis.



Non-timber Forest Products (NTFPs) (for example, game, fruit, firewood, medicinal plants, rattan, bamboo) provide important sources of food, fuel, forage and medicine in rural livelihoods (Sunderlin, 2005). Most households collect NTFPs for the purpose of household consumption. Some forest products have a permanent place in a household's diet; others only function as a supplement when other food is not available (Ros-Tonen, 2000). NTFPs are important 'gap fillers' in rural livelihoods; they help overcome seasonal shortfalls and serve as substitutes during emergencies (Angelsen and Wunder, 2003).

Finally, the protective function of forest plantation itself cannot be over-emphasized while the participation of forest dwellers in various legal logging activities cannot also be ruled out. However, the study therefore evaluated the impacts of forest plantation management on forest dwellers in Southwestern Nigeria with special attention to benefits of effective forest plantation management.

### Methodology

The study area is southwestern Nigeria which consists of Ekiti, Lagos, Ogun, Ondo, Osun and Oyo States. It is also known as the Southwestern geographical zone of Nigeria (Fig 1). The area lies between longitude  $2^{\circ}31^1$  and  $6^{\circ}00^1$  East and Latitude  $6^{\circ}21^1$  and  $8^{\circ}37^1$ N (Agboola, 1997) with a total land area of 77,818km<sup>2</sup> and a current population of 27,721,832 (NPC, 2006). They are notable as the major timber producing states in the past and also in the present. They are also notable for employment of latent labour locked up in the rural areas. The study area is bounded in the East by Edo and Delta states, in the North by Kwara and Kogi States, in the West by the Republic of Benin and in the south by Gulf of Guinea.



Figure 1: Map of Nigeria showing the study area



Field survey was carried out through the use of structured questionnaire whose contents were designed to ensure binary responses are gotten. The respondents were farmers and other people living in the forest plantations' adjoining communities. Simple random sampling was used to select 1,377 forest dwellers from adjoining communities in 12 purposively selected forest plantations across six States: Ekiti (147), Lagos (129), Ogun (305), Ondo (226), Osun (350) and Oyo (220). Diaw *et- al.* (2002) was adapted to sample forest dwellers in each sampled community, where 10, 5, 2.5 percent sampling intensity were used to select respondents in communities where population is less than 500, between 500 and 1000 and over 1000 respectively. The 12 forest plantations selected are Ogbese and Eda in Ekiti State, Ogun River and Badagry in Lagos State, Omo and Olokemeji in Ogun State, Oluwa and Oyinmo in Ondo State, Shasha and Ipetu/Ikeji in Osun State and lastly, Onigambari and Okoo/iroo in Oyo State (Fig 2). The communities in and around the forest plantations within 2-3km radius were identified. Among the identified communities, 5 were randomly selected per plantation, except in Lagos State where they are limited in number. Precisely, only 4 of such were found in Ogun River while none was found in Badagry due to encroachment. A total of 1,244 structured questionnaire were retrieved, the returns represent 93% of the total number of questionnaire administered to the forest dwellers in the study area. The data obtained were analyzed using descriptive statistical tools such as tabular presentations while Chi-square test was used to test the impacts of forest plantation management on forest dwellers.

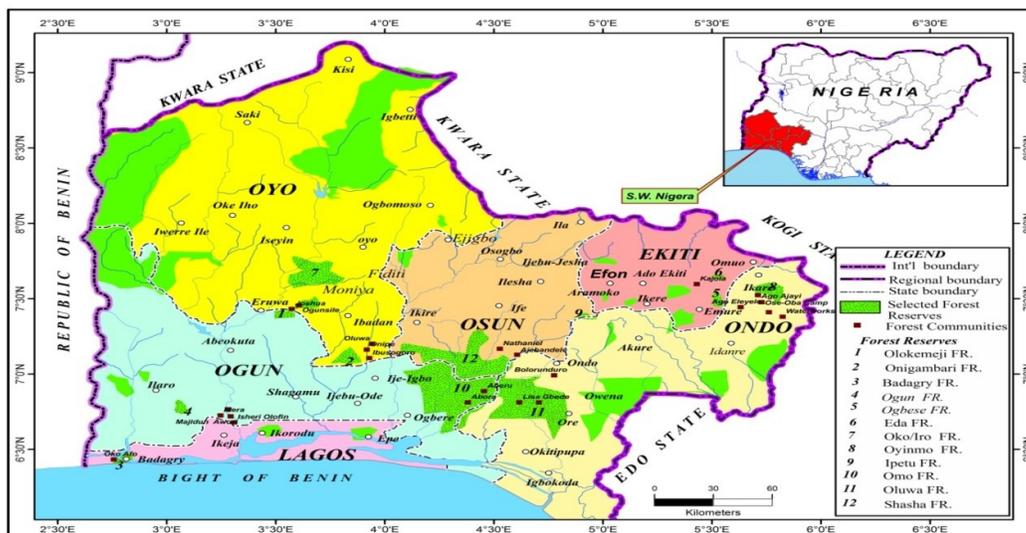


Figure 2: Map of Southwestern Nigeria showing selected forest reserves and some adjoining communities



## **Results and discussion**

### **Demographic information of forest dwellers in Southwestern Nigeria**

Table 1 showed that most of the respondents were males (76.05%) and 34.33% of the respondents was between 41-50 years of age, followed by 27.81% that corresponds to 31-40 years. It was also observed that a few of the respondents were above 70 years of age (3.62%). The table also revealed that 48.71% of the respondents had secondary education; 33.44% had primary education; 0.24% had first degree and 14.0% had no formal education.

This study showed clearly that most of those engaged in forest and forest-related activities were men. The predomination of men in forest-related activities may be traced to its strenuous or laborious nature in general. It has been a common practice to find few women embarking on such activities. The few percentage of the women are commonly found in collection of NTFPs and its processing/sales. They also involve in processing of some annual crops. This conforms to the findings of Williams (1984) who stated that as a processor, rural women are actively engaged after harvesting periods. The study also revealed that the size of the economically active population engaged in forest and other related activities is presently very high and this agrees with the findings of (Faleyimu, 2010). The implication for this could probably be tied to the fact that forestry sector serves as easier way to satisfy the basic needs of life (Food, Shelter and Clothing). Poor or weak policy implementation may therefore pose a lot of danger to the world's clamour for effective conservation to ensure sustainability of forest resources.

As high percentage of the respondents had secondary and primary education, this could be attributed to the location of forest reserves and the prevalent or available schools in and around the reserves, which are mostly primary and secondary schools. Only few who are determined to study further leaves such environment. Many often do not care to study further inasmuch they start making money at a very tender age. The aged ones claimed not to have access to education while they were young and that this was responsible for their inability to have formal education.

### **Table 1: Demographic information of forest dwellers in Southwestern Nigeria**



Demographic Parameters	Frequency	Percentage
<b>Gender</b>		
Male	946	76.05
Female	298	23.95
<b>Total</b>	1244	100
<b>Age Distribution</b>		
20-30	85	6.83
31-40	346	27.81
41-50	427	34.33
51-60	233	18.73
61-70	99	7.96
71 and above	45	3.62
None response	9	0.72
<b>Total</b>	1244	100
<b>Educational Distribution</b>		
First degree	3	0.24
HND	8	0.64
NCE	7	0.56
ND	30	2.41
Secondary education	606	48.71
Primary education	416	33.44
No formal education	174	14.0
<b>Total</b>	1244	100

**Source: Field Survey, 2014.**

### **Forest dwellers' type**

Table 2 showed that the respondents were predominantly farmers (57.08%) while some of them engaged in dual economic activities such as timber contractor and at the same time a farmer (1.53%), farmer and artisan (11.28%) for survival. This was followed by the timber contractors which represents 13.02% of the respondents. Only one of the respondents (0.08%) was a truck driver.



This study affirmed the predominance nature of farmers' staying in and around the forest reserves. Mostly, people move close to reservation area in search of fertile soil so as to enjoy good crop yield, but their settlement thereby leads to the emergence of other economic activities. For instance, during logging season some of them showed interest and that was why we often saw women joining men in logging business. Their staying close to the reserve also enabled them to involve in one trade or the other. Some gathered NTFPs both with and without permission for sale. The stay of the farmers in and around the reserves had contributed a lot to the plantation development in the past, especially during the adoption of Taungya System. This study is in line with FAO (2010) which reported that the main types of people/ forest relationships cover the spectrum of livelihood benefits.

**Table 2: Forest dwellers' type**

Type	Frequency	Percentage
Timber Contractor	162	13.02
Farmer	710	57.08
Artisan	81	6.51
Forest gatherer	31	2.49
Operator	30	2.41
Trader	35	2.82
Timber contractor & Farmer	19	1.53
Farmer & Artisan	139	11.18
Farmer & Operator	7	0.56
Farmer & Trader	2	0.16
Farmer & palm wine tapper	3	0.24
Hunter	2	0.16
Truck driver	1	0.08
Farmer & Traditional healer	3	0.24
Nurse	9	0.72
Teacher	7	0.56
Artisan & Forest gatherer	3	0.24
<b>Total</b>	<b>1244</b>	<b>100</b>

**Source:** Field Survey, 2014



### **Frequency analysis of Forest dwellers' States of origin**

Table 3 showed the frequency analysis of the respondents' States of origin and it was observed that high percentage of the respondents originated from the study area, in the order of 21.87% in Osun, 11.01% in Ondo, 17.28% in Oyo, 18.65% in Ogun, 3.22% in Ekiti and 8.04% in Lagos. Obviously, Benue State is the State with highest percentage of respondents' State of origin among its contemporaries that were not within the study area (6.75%).

The study also revealed that some foreigners lived in the forest adjoining communities in Ogun State (0.96%). Precisely, they were from Republic of Benin.

This study showed that most of forest dwellers originated from the study area. In other words, most respondents were indigenes while the rest had settled in the areas many years ago. The people living in and around the forests include smallholders practicing subsistence farming and settlers who have come in the areas in search of new opportunity in agriculture (Calibre and SCC, 2000; Krishnaswamy and Hanson, 1999; Scherr, *et- al.*, 2004). As a matter of fact, the reserves accommodate people from other States. The people from Benue State were found to have highest percentage of respondents among its contemporaries that were not within the study area. This could be attributed to the love of Benue people for agriculture and that was why they were tagged by the Federal Republic of Nigeria as the "Food Basket of the Nation". In fact in Oyo State presently, they are notable for vegetable production all over the State.

Interestingly, the forest dwellers were not only limited to only Nigeria citizens as some foreigners were found in the forest adjoining communities in Ogun State, precisely in Olokemeji Forest Reserve. They were all from The Republic of Benin, a neighbouring country to Nigeria. Coincidentally, Ogun State happens to be one of the States in Southwestern Nigeria sharing border with The Republic of Benin. Therefore, the presence of these foreigners might be traced to the closeness of the State to the country.



**Table 3: Frequency analysis of forest dwellers' States of origin**

State	Ekiti	Lagos	Ogun	Ondo	Osun	Oyo	Total	Percentage
Akwa	1	0	6	8	2	1	18	1.45
Ibom								
Anambra	0	0	0	1	1	0	2	0.16
Benue	45	0	11	13	15	0	84	6.75
Cross	0	0	5	9	2	0	16	1.29
River								
Delta	0	0	1	0	0	0	1	0.08
Ebonyin	0	0	8	3	1	0	12	0.96
Edo	2	0	2	1	0	1	6	0.48
Ekiti	40	0	0	0	0	0	40	3.22
Enugu	3	0	12	13	4	2	34	2.73
Lagos	0	100	0	0	0	0	100	8.04
Ogun	0	23	186	4	12	7	232	18.65
Ondo	28	0	9	60	40	0	137	11.01
Osun	0	0	8	38	226	0	272	21.87
Oyo	0	0	6	18	12	179	215	17.28
Imo	2	0	0	0	0	0	2	0.16
Kogi	13	0	1	24	3	0	41	3.30
Kwara	0	0	1	11	0	1	13	1.05
None	0	1	4	1	0	1	7	0.56
response								
<b>Total</b>	134	124	272	204	318	192	1244	100

\*Rep. Of Benin (Country adjoining Ogun State)

**Source:** Field Survey, 2014

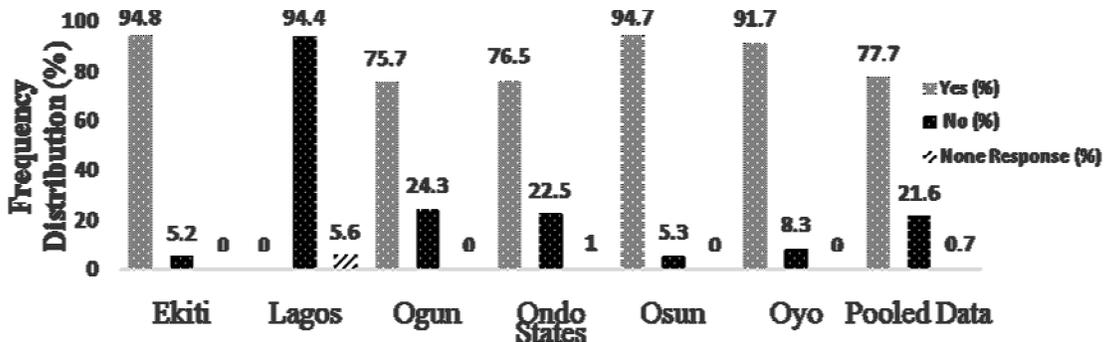


### **Forest dwellers' views on permission prior to benefits' derivation from the forest plantation**

Figure 3 showed the confirmations made by the forest dwellers on whether they do obtain permission before getting aforementioned benefits from the forest plantation around them. 94.4% of respondents in Lagos State indicated that they were not obtaining any permit before benefits derivation while just 5.6% admitted that permit was a prerequisite for benefit derivation. High percentage of the respondents in the other 5 States indicated that permission before benefit derivation was of utmost importance. The pooled data from Southwestern Nigeria showed that 77.7% of the respondents indicated that they were obtaining permit before getting/ collection of forest produce from the forest plantation, while 21.6% were not and 0.7% did not respond. The chi-square test indicated that confirmation made by forest dwellers on permission before benefits' derivation from forest plantation had significant association with effective forest plantation management in the study area. ( $\chi^2=542.15$ ,  $p<0.05$ ).

According to USDA (2015), permit means authorization in writing by a forest officer. Certainly, some benefits from the forest ought not to be derived without proper permission as this is necessary to ensure sustainability. The study upholds the existence of permission to collect or exploit forest products and economic activities in the forest plantations. The indirect benefits of forest plantation are solely gift of nature which is to be enjoyed by everyone.

The study also unfolds the porosity of the plantations in Lagos State as 94.4% of the respondents from there indicated that they do not obtain any permit before deriving benefits from the plantation around them. Although this study earlier revealed that the prevalent activities of the forest dwellers there is farming, precisely vegetable farming and some annual crops but one may still rightly wonder if farming activities could be carried out in the forest plantation without permission.



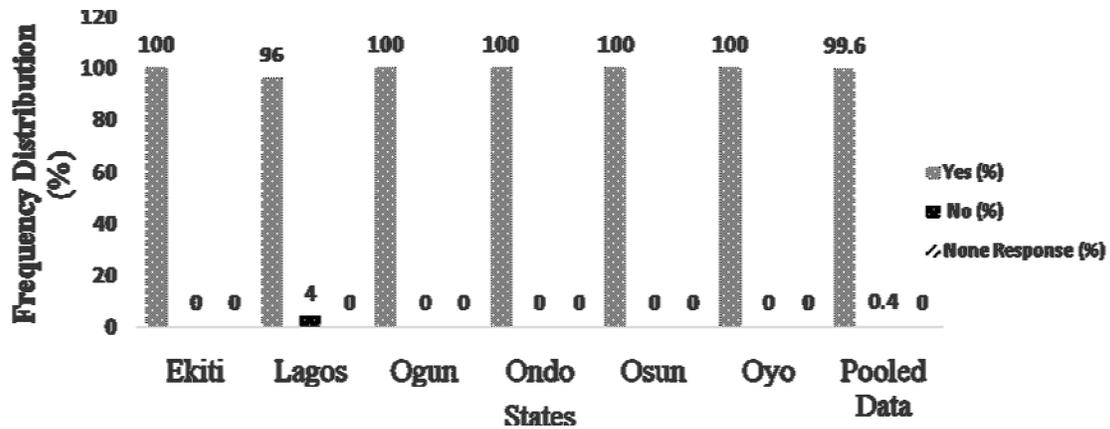
**Fig 3: Frequency distribution of forest dwellers' views on permission prior to benefit derivation from the forest plantation**

**Ascertainment of forest dwellers' benefits from forest plantation**

Figure 4 showed that 100% respondents in Ekiti, Ondo, Ogun, Osun and Oyo States indicated that they had benefited from forest plantations around them. The pooled data from Southwestern Nigeria indicated that 99.6% of the respondents had benefited from forest plantations around them while 0.4% indicated that they had not. The chi-square test showed that ascertainment of forest dwellers' benefits from forest plantation had significant association with effective forest plantation management in the study area. ( $\chi^2=45.34$ ,  $p<0.05$ ).

The study showed that a lot of benefits were being derived by the forest dwellers from the forest plantation management around them in all the States in Southwestern Nigeria. This agrees with the review of Banjo and Abu, (2014) on benefits of community participation in forest management. In fact, 96% of the respondents in Lagos State submitted to this despite their inactive involvement in plantation management. Observation into their activities in Ogun River Forest Reserve showed that most of them were actively engaged in farming while some in fishing due to the closeness of the reserve to the river. Farmers in this environment rely solely on this river for irrigation during the dry season.

As a matter of fact, it is very difficult for someone to say he/she had not benefitted from the plantations, as it also offers environmental benefit which could be classified under indirect benefit of forest resources.



**Fig 4: Frequency distribution of forest dwellers' responses to ascertainment of benefits from forest plantation**

#### List of benefits from forest plantation

Table 4 showed the list of benefits being derived by the forest dwellers from the forest plantations. It was observed that some of the dwellers enjoyed dual benefits and even beyond. None of the respondents had benefited from logging activities in Lagos State while the majority of them claimed to have been beneficiaries of NTFPs and Farming (71.77% and 3.23%). The pooled data from the Southwestern Nigeria indicated that most of the beneficiaries were farmers (57.07%) while the least among them were truck drivers, traders, truck drivers & mechanics and hunters & Farmers (0.08%).

The study established that most of the respondents in Southwestern Nigeria benefited in one way or the other, but majorly from farming activities. The identified benefits are pointer to the existence of economic activities that could enhance the economic well-being of the forest dwellers in the Southwestern Nigeria and this is in line with the review of Banjo and Abu, (2014) which stated that one of the benefits of community participation in forest management is the improvement in socio-economic well being of the people. Many rural dwellers in Nigeria obtain a major share of their subsistence from a large and adverse set of forest products, even though the work to gather them is not their main economic activity (Agbeja *et-al.*, 2005). It has also been estimated by Adekunle *et- al.*, (2010) that, about 58% of them



earn some cash income from forest-related activities. The observation that forest dwellers in Lagos State had not really benefited from logging activities could still be attributed to the limited available forest resources in the State. Mostly, the State relies solely on timbers from the neighbouring States and even beyond at times.



**Table 4: List of benefits from forest plantation**

Benefit	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
<b>State</b>																							
Ekiti	115	0	5	0	0	6	1	0	0	6	0	1	0	0	0	0	0	0	0	0	0	0	0
	*85.81	0	*3.73	0	0	*4.48	*0.75	0	0	*4.48	0	*0.75	0	0	0	0	0	0	0	0	0	0	0
Lagos	4	0	0	89	0	0	0	1	0	25	5	0	0	0	0	0	0	0	0	0	0	0	0
	*3.23	0	0	*71.77	0	0	0	*0.81	0	*20.16	*4.03	0	0	0	0	0	0	0	0	0	0	0	0
Ogun	114	0	0	42	0	13	1	0	0	29	2	4	0	4	4	36	1	0	4	1	0	0	17
	*41.91	0	0	*15.44	0	*4.78	*0.37	0	0	*10.66	*0.74	*1.47	0	*1.47	*1.47	*13.24	*0.37	0	*1.47	*0.37	0	0	*6.24
Ondo	112	0	10	34	16	27	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	*54.90	0	*4.90	*16.67	*7.84	*13.24	*2.45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Osun	204	0	20	21	0	21	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	50
	*64.15	0	*6.29	*6.61	0	*6.61	0	0	0	0	0	0	*0.31	0	0	0	0	*0.31	0	0	0	0	*15.72
Oyo	161	7	5	0	0	2	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	2	2
	*83.86	*3.65	*2.60	0	0	*1.04	0	0	*6.77	0	0	0	0	0	0	0	0	0	0	0	0	*1.04	*1.04
Pooled data	710	7	40	186	16	69	7	1	13	60	7	5	1	4	4	36	1	1	4	1	0	2	69
	*57.07	*0.56	*3.22	*14.95	*1.29	*5.55	*0.56	*0.08	*1.05	*4.82	*0.56	*0.41	*0.08	*0.32	*0.32	*2.89	*0.08	*0.08	*0.32	*0.08	0	*0.16	*5.55

Source: Field Survey, 2014.

\*Percentage



#### **Key to Table 4**

- A- Farming
- B- Farming & Collection of Firewood
- C- Farming & Logging
- D- NTFPs' collection
- E- Workers (Casual)
- F- Logging
- G- Miscellaneous Patronages
- H- Environmental Protection
- I- Collection of Firewood
- J- Collection of NTFPs & Farming
- K- Sawmill operator and Felling
- L- Sales of firewood
- M- Truck driver
- N- Loading of logs & firewood
- O- Environmental protection & NTFPs' collection
- P- Farming & Loading of trucks (Logs & firewood)
- Q- Trading
- R- Truck driver & mechanics
- S- Collection of NTFPs & Trading
- T- Farming & Hunting
- U- Farming & Collection of NTFPs
- V- Farming & Trading
- W- None response

#### **Forest dwellers' experience on rainstorm**

The pooled data from the Southwestern Nigeria (Figure 5) indicated that 72.7% of the respondents had not experienced rainstorm leading to removal of roofs in their various communities while 26.5% had experienced such and 0.8% did not respond. The chi-square test

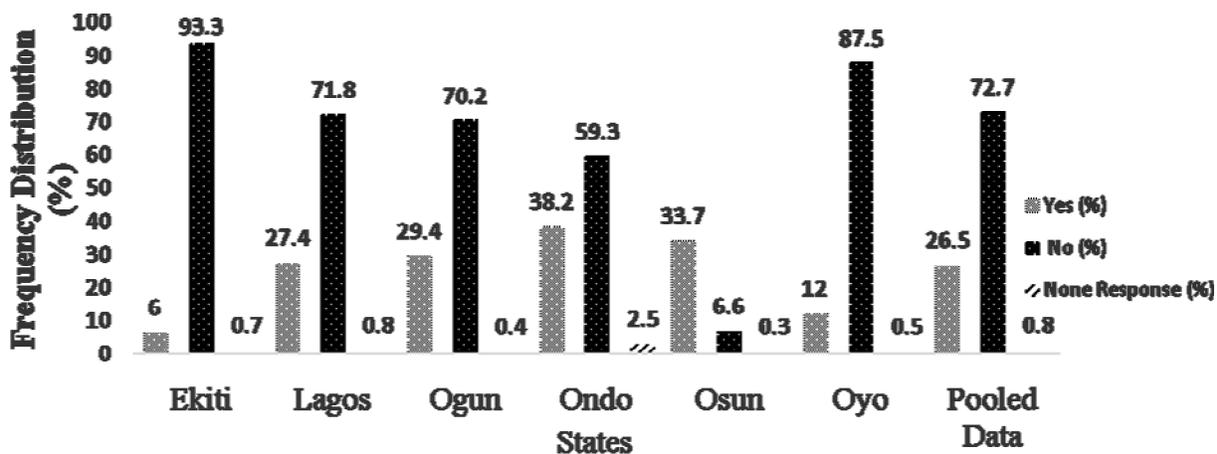


indicated that forest dwellers' experience on rainstorm had significant association with effective forest plantation management in the study area. ( $\chi^2=83.67$ ,  $p<0.05$ ).

Storm can simply be referred to as a disturbance in the air above the earth, with strong winds and usually also with rain.

Albergel *et- al.*, (2011) cited by FAO (2014) reported that in the case of extreme rainfall events, trees, shrubs and herbs can significantly reduce the kinetic energy of raindrops and therefore the risk of erosion, while the importance of tree branches in storm breaking cannot be over-emphasized.

The study upholds the protective function of trees as 72.7% of the respondents in Southwestern Nigeria submitted that they had not experienced rainstorm that resulted into the removal of their roofing materials. Forest plantation offers numerous environmental functions which acting as a storm breaker is just only one of them.



**Fig 5: Frequency distribution of forest dwellers' reactions on rainstorm experience**

#### Forest dwellers' ascertainment of protective function of forest plantation

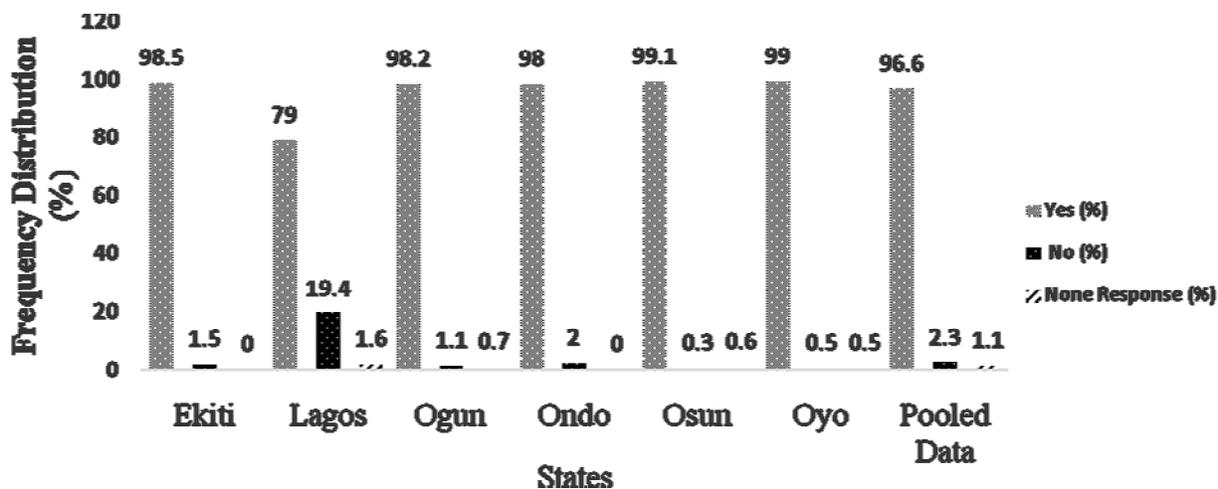
The pooled data from the Southwestern Nigeria (Fig 6) indicated that 96.6% of the respondents ascertained the protective function of forest plantation around them while 2.3% disagreed and



1.1% did not respond. The chi-square test showed that ascertainment of protective function of forest plantation had significant association with effective forest plantation management in the study area. ( $\chi^2=177.36$ ,  $p<0.05$ ).

Vegetation plays a crucial role in preventing erosion by decreasing the effect of erosive forces and physically keeping the soil in place. The erosion of forest soils can be exacerbated by, for example, the loss of cover, wildfire and storms (FAO, 2014).

Generally, the study on forest dwellers’ knowledge of forest plantation acting as protector for our environment in all the States in Southwestern Nigeria really showed that the respondents appreciated trees around them and ascertained their importance in environmental protection.



**Fig 6: Frequency distribution of forest dwellers’ responses to ascertainment of protective function of forest plantation**

**Socio-economic impacts of forest plantation management**

The chi-square test showed that forest dwellers’ benefits had significant association with location of the respondents, forest dwellers’ type and their educational status. ( $\chi^2=45.34$ ;  $203.15$ ;  $24.23$ ,  $p<0.05$ ) while forest dwellers’ benefits had no significant association with the state of origin and sex of the respondents. ( $\chi^2= 1.58$ ;  $2.82$ ,  $p<0.05$ ).



The chi-square test revealed that forest dwellers' permission before benefits' derivation had significant association with the location of the respondents, forest dwellers' type, state of origin of respondents and their educational status. ( $\chi^2= 513.62; 68.78; 37.26; 34.42, p<0.05$ ) while permission before benefits' derivation had no significant association with the sex of the respondents. ( $\chi^2= 0.06, p<0.05$ ).

The positive impact of forest plantation management on forest-dwelling people was confirmed in the study area as variable, ascertainment of stakeholders' benefits from forest plantation was tested with the location of the respondents (Ondo, Lagos, Ekiti, Ogun, Osun and Oyo), the forest dwellers' type, and their educational status in which it could be inferred that the impact of forest plantation on the economic well-being of the forest dwellers would always encourage their stay in their respective location as high percentage of their livelihood depends on the plantation. This agrees with HCEFLCD (2004) cited by FAO (2014) which observed that rural people depend on forest products and these are likely to generate significant revenue, including for their food security. However, the foreseeing future pressure on forest plantation necessitates the development of new plantations and effective management of the existing ones. It could also be inferred from the study that the forest owner (State government) had been very passionate with the community people and this may be probably to reduce their aggression or negative effects of illegal activities on the plantations. Since the highest percentage of benefits comes from farming, it could also be deduced that the community people enjoys access to land for their arable farming.

Moreover, ascertainment of forest dwellers' benefits from forest plantation was also tested with the state of origin and sex of the respondents in which this indicated that the ownership of those plantations (State government) resists discrimination of non indigenes' settling in the forest's adjoining communities. In other words, the forest's adjoining communities had been very friendly as it accommodates both the indigenes and non-indigenes. Hence, different tribes were identified in the study area. There were also no gender discrimination as both male and female



were actively involved in socio-economic activities in the reserves, although the male activities seems predominates.

In considering the result obtained from testing variable, confirmations by forest dwellers on permission before benefits' derivation from the forest plantation with the location of the respondents, forest dwellers' type, state of origin of the respondents, it was a pointer to the adherence of the forest dwellers to the forest management policies implemented in the study area, especially the one addressing access restriction. As a matter of fact, permit is a restriction to the forest plantations and that was why the avenue was being utilized by the authority in-charge (state government) in generating revenue in the forestry sector.

Finally, the variable, confirmation by forest dwellers on permission before benefits' derivation from the forest plantation was also tested with the sex of the respondents and it could be inferred that irrespective of sex, the forest dwellers were being allowed to gain access into the forest reserves.

### **Conclusion and recommendations**

The study confirmed the positive impacts of forest plantation management on forest-dwelling people in the Southwestern Nigeria. More importantly, forest plantations in the study area had positive impacts on the forest dwellers such that their socio-economic well-being was enhanced. Hence, it is high time government invest more in the provision of various incentives to encourage private forest participation while further efforts should be made to embrace community participation so as to develop our existing forest plantations and establishment of the new ones to the economic, social and environmental benefit of the region.



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