



IMPLICATION OF FOREST OFFENCES ON SUSTAINABLE FOREST MANAGEMENT AMONG STAKEHOLDERS IN SOUTHWESTERN NIGERIA

*¹Oso, A.O. and ²Babalola, F.D.

¹ Department of Forestry, Wildlife and Fisheries, Olabisi Onabanjo University, Ago-Iwoye, Ogun State, Nigeria.

²Department of Forest Resources Management, University of Ilorin, 240003, Ilorin, Kwara State, Nigeria.

*Correspondence Author: osoolusesi16@gmail.com

ABSTRACT

Illegal logging is a major problem for many timber-producing countries in the developing world. The damage caused by illegal activities and corrupt practices in the Nigerian forest is a problem of enormous proportions. The study assessed forest offences among stakeholders and its implication on sustainable forest management in six States of South-west Nigeria with a view to recommending policy options for sustainable forest management. The States include Lagos, Ogun, Oyo, Osun, Ondo and Ekiti. The survey was conducted through the use of structured questionnaire and focus group discussions. The respondents were made up of forest officers, saw-millers, timber contractors, and people living within and around the Forest Reserves. Data were presented using descriptive statistics. Identified Forest Offences in Forest Reserves were illegal felling of trees (19.8%), illegal farming (18.9%), arson (15.9%), illegal hunting (15.7%), trespassing (15.2%) and misuse of pass-hammer (14.5%). There was no significant variation in the proportion of Forest offences across the States. Illegal felling of trees was the most common Forest offence among both the saw-millers (97.2%) and timber contractors (94.8%), while hunting in the Reserves was the most common Forest offence among farmers (80.0%). Among forestry officials, 54.0% indicated that forestry officials aided Forest offences. It is recommended that Government should provide forestry officials with the necessary financial support, equipment, communication and transportation to enable them carry out their work promptly and efficiently. In addition, stiffer penalties should be meted out to forest offenders to serve as deterrent to others.

Keywords: Forest offences, illegal felling, forest stakeholders, sustainable forest management

INTRODUCTION

Sustainable Forest Management (SFM) is defined according to Higman *et al.*, (2005) as the best available practices based on current scientific and traditional knowledge, which allow multiple objectives and needs to be met without degrading the forest resource. SFM has always been a goal of forestry sector in any country (Tropical Forest Update, 2005) and bad forest management leads to loss of livelihoods, loss of cultural assets and knowledge, loss of an asset base for national development.

Increased awareness of the magnitude and global implications of illegal activities in the forestry sector have triggered various initiatives to control them in both industrialized and developing countries. Efforts are being made at the local, national and international levels by various stakeholders to address the issue of illegal activities. Several governments are also in the process of rationalizing their legal and policy frameworks, building institutional capacity to foster better law compliance and gathering

additional data on the extent and nature of illegal operations (FAO, 2005).

Nigeria has a land area of 923,772 km² (UNEP, 2006) and contains over 600 species of timber, significant numbers of aquatic birds and other rare mammals which attest to the abundance of the country's genetic resources, diversity of ecosystems and natural beauty (Olorode, 2002). At independence, Nigeria was richly endowed with forest resources enough to sustain the economies of the timber producing States. A combination of factors has however, put to question the ability to hitherto rich forest of the country to sustainably produce needed products to effectively bridge supply-demand gap. This gap has been created because of high increase in population and massive deforestation for other development activities (Enabor, 1986). Meanwhile, Forest Management Evaluating and Coordination Unit (FORMECU) (1993) has put the average annual deforestation rate in Nigeria at 3.5 percent. The strategies for forest policy implementation in the South-west Nigeria are feeble and uncoordinated.

Much more importantly, there is dearth of information on the magnitude of forest offences, stakeholders' involvement in forest offences and the impacts of forest offences on the sustainable forest management in Nigeria. General reports on forest administration have revealed that annual occurrence of forest offences has for long been a forest management problem (CIFOR, 2003). It is disheartening to know that a permanent solution to this age long problem has not yet emerged.

Forest offences constitute an index of the inefficiency of forest service. For instance, illegal logging is a major problem for many timber-producing countries in the developing world. It causes environmental damage, costs governments billions of local currencies in lost revenue, promotes corruption, and undermines the rule of law and good governance (Palmer, 2001; Greenpeace, 1999). It also retards sustainable development in most of the producing countries. Many researchers have only indicated the

destructive effects of forest offences in plantations and natural forests wildlife and their habits, but hardly quantified the magnitude of financial losses involved (FAO, 2001).

The damage caused by illegal activities and corrupt practices in the Nigerian forest is a problem of enormous proportions. Forest exploitation is dominated by rampant illegal harvesting, large scale violation of trade regulations both domestically and internationally, fraudulent practices, abetted or condoned by government officials and other destructive activities in violation of applicable laws. Based on the above, it is very pertinent that the assessment of forest offences among stakeholders and its implication on sustainable forest management be studied in South-west Nigeria with a view to recommending policy options for sustainable forest management.

MATERIAL AND METHODS

Study area

The study was carried out in the six States of South-west Nigeria; these include Lagos, Ogun, Oyo, Osun, Ondo and Ekiti States. The study area has 85 constituted Forest reserves with a forest area cover of 842,499 hectare.

Climates and vegetation of the study area

The climate of Southwestern Nigeria is tropical in nature and it is characterized by wet and dry seasons. The temperature ranges between 21°C and 34°C while the annual rainfall ranges between 1500 mm and 3000 mm. The wet season is associated with the Southwestern monsoon wind from the Atlantic Ocean while the dry season is associated with the northeast trade wind from the Sahara Desert. The vegetation in Southwestern Nigeria is made up of fresh water swamp and mangrove forest at the belt, the low land in forest stretches inland to Ogun and part of Ondo State while secondary forest is towards the northern boundary where derived and southern Savannah exists.

Sampling of Forestry Stakeholders

The survey was conducted through the use of structured questionnaire and focus group discussions to collect relevant data from forest stakeholders in the southwest States of Nigeria.

Respondents for this study were made up of Forest Officers, Saw-millers, Timber Contractors, and people living within and around the Forest Reserves. One Officer in charge of each administrative zone was selected and 20 percent of Forestry Officials from each of the State Headquarters which gave a total of 152 Officials. Ten percent of the registered Timber Contractors were randomly selected in each of the State across the zones. The samples were collected pro-rata, according to the population of the timber contractors in each zone. Thus, for the six States, 10 percent sampling yielded a total of 128 timber contractors. Ten percent of the registered saw-millers were randomly selected from each State across the zones. The number of saw-millers was 201. A total of 251 dwellers in local communities located in selected Forest Reserves in each of the States were randomly sampled. These people constitute a major stakeholder because they live within the Forest Reserve and directly have impacts on the State of the forests.

Data Analysis

The primary and secondary data collected were processed into suitable format for various analyses. Data analysis involved both parametric and non-parametric tests using appropriate statistical tools. The following statistical analyses were carried out: Descriptive statistics such as frequency tables, percentages and bar charts. Field observation and in-depth interviews of the respondents were adopted to compliment the

information obtained through the questionnaire.

RESULTS

Common forest offences among Saw millers and Timber contractors in the last five years

Across all the south-west States in Nigeria, as shown on Table 1, illegal felling of trees was the most common (97.2%) followed by failure to produce log certificates (94.4 %), and felling of undersized trees (78.2%) while non-renewal of property hammer (14.1%) was the least common forestry offence among saw millers. All (100 %) the saw millers in Oyo, Ogun, and Ondo States had committed illegal felling of trees in the last five years and all the saw millers in Ekiti State had committed failure to produce log certificates. Felling of undersized trees was most common in Ogun State (87.5 %) and non-renewal of property hammer was most common among saw millers in Osun State (24.1 %).

Among timber contractors, illegal felling of trees (94.8%) was the most common forest offence followed by failure to produce log certificates (91.8%) and felling of undersized trees (74.2 %) while non-renewal of property hammer (18.6%) was the least common forest offence among the timber contractors in southwest Nigeria. Lagos, Ogun, Ondo and Osun States had the highest percent (100 %) of illegal felling of trees and Lagos and Ondo States (100% each) had the highest percent of failure to produce log certificates. Osun State had highest percent (80 %) of felling of undersized trees among the timber contractors and Lagos State with 25 percent of the contractors had highest rate of non-renewal of property hammer (Table 1).

Table 1: Distribution of Saw-millers and Timber contractors on the forest offences they committed in the last five years

Forest offences	Southwest States of Nigeria													
	Ekiti		Lagos		Ogun		Ondo		Osun		Oyo		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Saw millers														
Illegal felling	10	90.9	24	96.0	32	100.0	26	100.0	27	93.1	19	100.0	138	97.2
Failure to produce log certificates	11	100.0	24	96.0	30	93.8	25	96.2	27	93.1	17	89.5	134	94.4
Non-renewal of property hammer	2	18.2	2	8.0	3	9.4	3	11.5	7	24.1	3	15.8	20	14.1
Felling of undersized trees	7	63.6	19	76.0	28	87.5	20	76.9	23	79.3	14	73.7	111	78.2
Total*	11	100.0	25	100.0	32	100.0	26	100.0	29	100.0	19	100.0	142	100.0
Timber contractors														
Illegal felling	11	73.3	4	100.0	22	100.0	18	100.0	19	95.0	18	100.0	92	94.8
Failure to produce log certificates	14	93.3	4	100.0	17	77.3	18	100.0	19	95.0	17	94.4	89	91.8
Non-renewal of property hammer	4	26.7	1	25.0	4	18.2	3	16.7	3	15.0	3	16.7	18	18.6
Felling of undersized trees	10	66.7	3	75.0	17	77.3	14	77.8	16	80.0	12	66.7	72	74.2
Total*	15	100.0	4	100.0	22	100.0	18	100.0	20	100.0	18	100.0	97	100.0

*Totals are more than 100 percent because respondents could choose more than one option

Occurrences of forest offences in the south-west States of Nigeria

Table 2 shows the distribution of occurrences of forest offences among timber contractors and saw millers in south-west states of Nigeria. Precisely 70.6% of the saw millers and 75.8% of the timber contractors have committed forest offences before the survey. The State with the highest percent (85 %) of occurrence of forest offences among saw

millers was Osun State while the least was Ekiti State (55 %) as shown in Table 2. However, Ekiti State (83.3%) had the highest occurrence of forest offence among timber contractors while the other states had more than 70%) of occurrence of forest offence among the timber contractors with Ogun State (71 %) having the least.

Table 2: Distribution of respondents with forest offences in the last five years in Southwest Nigeria

State	Saw miller						Timber Contractors					
	No		Yes		Total		No		Yes		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Ekiti	9	45.0	11	55.0	20	100.0	3	16.7	15	83.3	18	100.0
Lagos	9	26.5	25	73.5	34	100.0	1	20.0	4	80.0	5	100.0
Ogun	12	27.3	32	72.7	44	100.0	9	29.0	22	71.0	31	100.0
Ondo	11	29.7	26	70.3	37	100.0	5	21.7	18	78.3	23	100.0
Osun	5	14.7	29	85.3	34	100.0	7	25.9	20	74.1	27	100.0
Oyo	13	40.6	19	59.4	32	100.0	6	25.0	18	75.0	24	100.0
Total	59	29.4	142	70.6	201	100.0	31	24.2	97	75.8	128	100.0

Common forest offences among the rural dwellers

Figure 1 shows the distribution of common forest offences among farmers in southwest Nigeria. Hunting in the forest reserve was the most common (79.7%) forest offence among the farmers followed by making firewood in reserve (76.9 %) and clearing of tree species

(70.1%). Other forest offences among the farmers included preference for *Gmelina* (63.3 %) and more than 50 % of the farmers also indicated erection of structures (53 %) while about 20 % of the farmers also indicated that planting tree species within the crops as a forest offence.

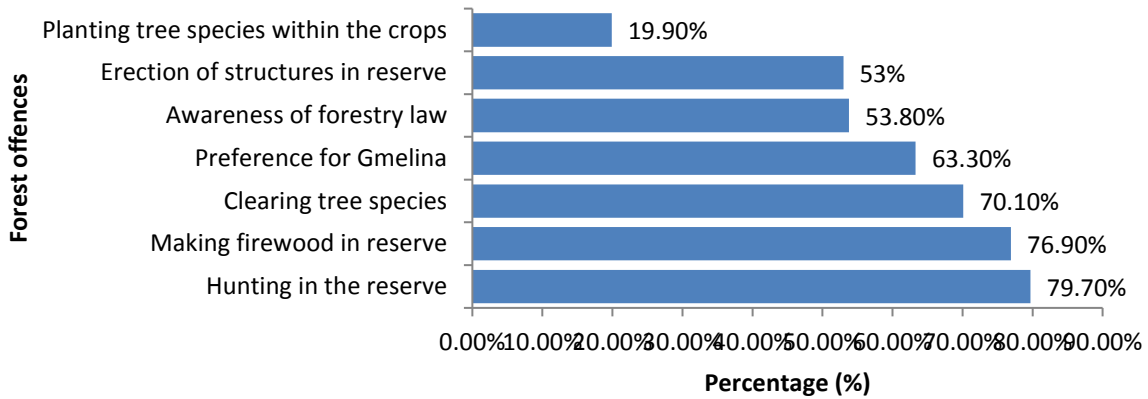


Figure 1: Common forest offences among farmers in South-west, Nigeria

Forest offences among rural dwellers surrounding forest reserves

Figure 2 shows the percent distribution of the perception of local farmers from southwest Nigeria about forest offences. In general, 72.5% of the farmers indicated that people commit forest offences while 27.5% believe that people do not commit forest offences.

However, from each state, more than 70% of the farmers from Ogun (74 %), Ondo (73 %), Osun (75%), and Oyo (75%) States believe that farmers commit forest offences the highest perception of forest offences is in Lagos state (90 %) but about 55 percent of farmers in Ekiti State believe that farmers committed forest offences.

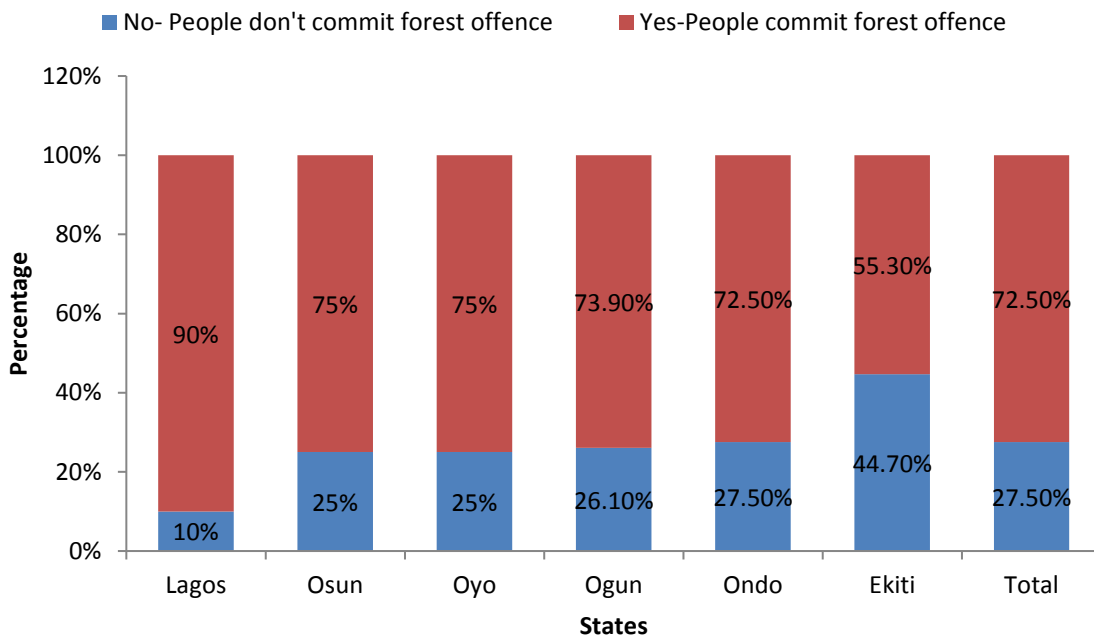


Figure 2: Perception of the farmers on the question of whether people commit forest offences or not

Factors promoting forest offences as indicated by forestry officials

Most of the officials, which was more than 80 %, across all the States, indicated that weak penalties for offenders was the most common factor (Figure 3). This was followed by more

than 76% that indicated that the fact that government tariffs being too high was another contributing factor to forest offences and this was highest in Oyo State (83%); also, insufficient supply to meet demand, which was the most pronounced in Lagos State (89

%), was indicated by 71% of the officials across the States. 59% of the respondents indicated inefficient exploitation practices, lack of efficient supervision (56%), and cumbersome administrative procedures (54%) were also factors that contribute to

forest offences (see Figure 3). The least mentioned factor was disputes over property rights between government and communities (37.4 %) and this was most mentioned in Osun State (48 %) and least in Lagos State (22%).

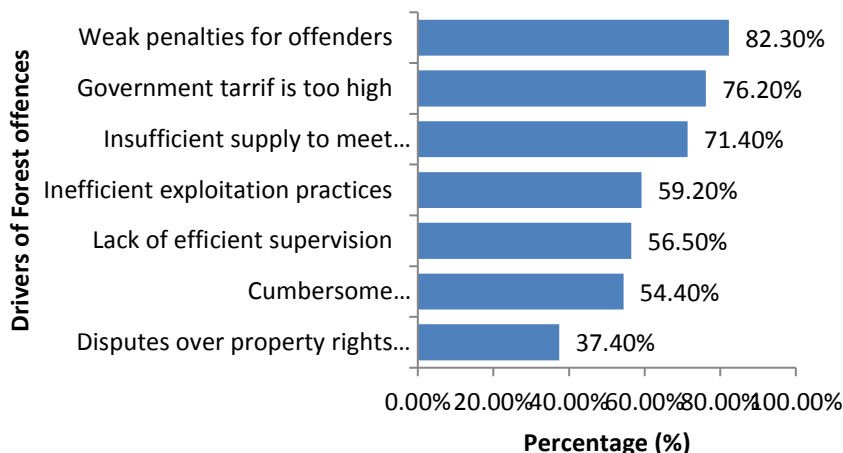


Figure 3: Percent distribution of the factors promoting forest offences as indicated by forestry officials in South-west, Nigeria

Factors that promote forest offences among Saw-millers

Insufficient supply to meet demand was the most common (84%) factor (more than 90 % in Ogun, Ondo and Osun States), followed by weak penalties for offenders (82 %) among factors that promote forest offences among saw millers. More than 70% of the respondents indicated that government tariffs being too high (77 %), which was highest in Ekiti State (85 percent); lack of capital to finance business (76%) – this was highest in Lagos State (94%); and high cost of production (71%) were also factors that

promote forest offences among saw millers. Other forestry offences indicated by the saw millers included inefficient exploitation practices (62.7%; most common in Osun State, 79 %), lack of efficient supervision (54.7%; most common in Lagos State, 62%), and cumbersome administrative procedures (49.8 %; most common in Ogun State, 54%), while the least common factor that promotes forest offences was disputes over property rights between government and communities (36.8 %), which was most common in Lagos State (41%) compared to other States (Figure 4).



Figure 4: Factors that promote forest offences among saw-millers

Factors that promote forest offences among timber contractors

Most of the respondents, which was 84.4% of the timber contractors across the south western states of Nigeria, indicated that insufficient supply to meet demand and this was highest in Lagos State with 100%), weak penalties for offenders (82%; 100 percent in Lagos State), and high cost of production (80.5%; 100 percent in Lagos State) were the most common factors promoting forest offences among timber contractors. Furthermore, 75.8% of the timber contractors indicated that lack of capital to finance the business, which was 100% in Lagos State, and 71.9% indicated that government tariff being too high were also factors that promoted forest offences among the timber contractors. Other factors that promoted forest offences among timber contractors included payment of unofficial fees (61.7 percent), inefficient supervision (58.6%), inefficient exploitation practices (57%), cumbersome administrative procedures (51.6%), and the least

pronounced, disputes over property rights between government and communities (38.3%).

Number of Years Operation in Reserve and Forest Offences among Timber Contractors

Table 3 shows the relationship between number of operating in Reserve and forest offence among timber contractors in southwest Nigeria. Apart from those that had operated for five years or less among whom 75% had committed forest offence, there was an increase in the proportion of forest offence with increase in the number of years of operating in reserve. From about 70 percent among those that had spent 6-10 years the proportions increased to 100% among those that had spent 16-20 years and those that had spent 21 years or more. There was no significant relationship between number of years spent in forest reserve and forest offence ($p > 0.05$).

Table 3: Relationship between number of years operating in Reserve and forest offences in last five years among timber contractors in southwest Nigeria

Years of operating in the Reserve (Years)	Committed offences in the last five years				Total	
	No		Yes		N	%
	N	%	N	%		
<= 5	9	25.0	27	75.0	36	100.0
6 - 10	19	30.6	43	69.4	62	100.0
11 - 15	3	11.1	24	88.9	27	100.0
16 - 20	0	0.0	1	100.0	1	100.0
21+	0	0.0	2	100.0	2	100.0
Total	31	24.2	97	75.8	128	100.0
<i>Chi square value =</i>	4.893	<i>df =</i>	4	<i>Sig. =</i>	0.298	

Number years of operating in reserve and Forest Offences among Sawmillers

Table 4 shows relationship between number of years operating in reserve and forest offences in last five years among saw millers in south-west, Nigeria. All (100 %) the saw millers that had spent 21 years or more in their respective Reserve had committed forest offence in the last five years. About 73% of those had spent 6-10 years in reserve, 69 % of

those that had spent 5 years or less and 66% of those that had spent 11-15 years, as well as half of those that had spent 16-20 years in the Forest Reserve had committed forest offence in the last five years. There was no significant relationship between the age of the saw-millers and forestry offences in the last five years ($p>0.05$).

Table 4: Relationship between number of years operating in Reserve and forest offences in last five years among saw millers in southwest Nigeria

Years of operating in the reserve (Years)	Committed offence in the last five years				Total	
	No		Yes			
	N	%	N	%	N	%
<= 5	13	31.0	29	69.0	42	100.0
6 - 10	30	26.8	82	73.2	112	100.0
11 – 15	14	34.1	27	65.9	41	100.0
16 – 20	2	50.0	2	50.0	4	100.0
21+	0	0.0	2	100.0	2	100.0
Total	59	29.4	142	70.6	201	100.0
<i>Chi-square value =</i>	2.515		<i>df = 4</i>		Sig. = 0.642	

DISCUSSION

From the results of the study, the dominant forest offences among saw-millers and timber contractors include illegal felling of trees, failure to produce log certificates, non-renewal of property hammer, and felling of undersized trees. Among the offences, illegal felling of trees was the most prominent that the stakeholders committed in the last five years. It was observed that illegal felling of trees dovetailed to other forms of offences such as felling of undersized trees, avoidance of log certificates, non-renewal of property hammer. The issue was compounded by insufficient forestry officials (especially the boundary guards) on the field to prevent the illegal activities. Also, the forestry officials are not undergoing training and are not provided with appropriate and adequate logistics (equipment, machinery, vehicles and fund) to be able to fight the increasing level of forest offences. At the level of rural dweller, illegal felling of trees and illegal farming were identified as the most common forest offences. According to Adedayo (2010), many people indulge in illegal forest acts due

to ignorance and lack of alternative sources of livelihood.

Increasing demand for wood resulting into insufficient supply of timber as well as high government tariff were indicated by the saw-millers and timber contractors as another factors promoting forest offences. The high tariff levied on the timber contractors could be a major reason their cost of production is too high and hence, they tend to commit forest offences to offset the costs. Other reasons for committing forest offences included lack of capital to finance the business, avoiding payment of official fees, and inefficient exploitation practices by contractors and saw-millers; low level of job satisfaction by forestry officials; inadequate or lack of funds for forestry field activities; and untimely release of funds for effective forestry administration. Also, rural dwellers involve in illegal hunting which directly lead to arson by setting forest reserves on fires. Other identified forestry offences included hunting and fetching firewood in the reserve, clearing tree species, preference for *Gmelina* wood (Agera *et al*, 2009), non-awareness of forestry

laws, erection of structures within the Forest Reserve. Furthermore, Oduntan *et al.* (2013) describes hunting as threats to forests because it destroys forest canopy and opens up ways for other diverse forms of vegetation especially grasses. Similarly, Adekunle and Faremi, (2006) also reported that majority of the farmers who encroached into forest lands in Ondo State always embark on deliberate removal of trees in order to pave way for the planting of their own agricultural crops.

Above all, most common reason that forest offences are common is weak penalties and enforcement of forest laws. This was also observed by Udo (1997) and Agera *et al.* (2009). In their findings, they argued that dearth of forestry legislation and corrupt practices by forestry staff were the major causes of deforestation. This implies that there is no adequate (if any) enforcement of forest law against offenders. Those

apprehended eventually get away since it costs them very little to be released.

Forest offences have huge economic implication on the nation. It was observed from the result that the number of offences keep increasing by the year, which implies that either the forestry policies that guide forest offences are not being implemented or more people are coming into the forestry business without adhering to the guidelines for exploitation of the timber resources.

CONCLUSION

A number of forestry offences were identified in South-west of Nigeria at the different levels of the stakeholders. Saw-millers and Timber contractors were directly involved in tree felling, therefore, responsible for highest level of forest offences. However, their activities were in most cases, supported by the forest officials and in some cases rural dwellers.

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