Journal of Research in Forestry, Wildlife & Environment Vol. 11(3) September, 2019
http://www.ajol.info/index.php/jrfwe
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E-mail:jfewr@yahoo.com
ISBN: 2141 – 1778
Awe et al., 2019

ASSESSMENT OF TIMBER SPECIES AVAILABILITY IN SELECTED SAWMILLS AND TIMBER MARKETS IN KOGI STATE, NIGERIA

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ABSTRACT

This paper assessed the availability of timber species in Okun Area, Kogi West Senatorial District of Kogi State, Nigeria. One hundred copies of structured questionnaire were randomly administered to timber sellers from six selected timber markets and sawmills from two randomly selected Local Government Areas (LGAs) the State .Four timber markets were selected from Ijumu LGA and two from Kabba-Bunu LGA, making a total of six timber markets. Descriptive statistics such as frequency and percentage distributions as well as content analysis were used to analyse the collected data. Study revealed that 21% of the timber dealers were more than 50 years of age, with about 69% of them having been in business for 20 years and above. Different reasons were given by respondents on why they engage in the timber business and these include availability, durability and demand, with 40% of them citing the demand for the timber species as the reason why they traded the species. The study shows that certain timber species such as Terminalia spp, Milicia excelsa, and Nauclea dideriichii have become endangered species due to over exploitation. Therefore, there is need for the planting of fast growing plantation species by State Forestry Department in Kogi State to replace commercially popular and endangered species as alternatives to decreasing availability of popular timber species so as to avoid running out of valuable and good quality timber species in the near future.

Key words: Timber, Okun, durability, availability, demand, workability

INTRODUCTION

Timber, being a construction material, has been used for different purposes, including structural and ornamental purposes. It is used throughout the world for many tasks, from simple structural application to highly finished and ornate decoration and it is the dominant industrial material in Nigeria (Fuwape, 2000). There are approximately 200,000 hardwood species and 1000 softwood species in Nigeria, of the total number; only 2,300 tree species are commercially important (Oluyege, 2007). In building and furniture industries, various species of timber are used for different purposes. The choice of wood species used varies, due to different features and characteristics of the wood, some of these features are wood strength, natural durability, colour (appearance), ease of machine and workability, cost, contraction, hardness and availability.

In recent years the number of timber species harvested and marketed in production forests in Africa has grown in recent years, especially near seaports or major local markets, where prime species have been largely logged out. However, a handful of species still makes up the bulk of production. In Central African Republic, for example, loggers harvest 15 to 18 timber species, and five species make up 90% of production; in Northern Congo, 18 to 20 species are harvested, but five species account for nearly 80% of production (ITTO, 2006). The major timber species exported from Nigeria and some other African countries include Mahogany *(Khaya senegalensis*), Obeche (*Triplochiton scleroxylon*), Afara (*Terminalia superba*), Abura (*Mitragyna ciliate*), Iroko (*Milicia excelsa*), Teak (*Tectona grandis*) (ITTO, 2006). Timber can be described as wood in a form suitable for construction or carpentry, joinery or for reconversion to manufacturing purpose. Timber has been used as a

building material for over 400, 000 years and it is very common and best known material for house construction including framing of floors, walls and roofs (RMRDC, 1998).

Timber accounts for about half of worldwide wood consumption and this exceeds the use of steel and plastic combined (Cunningham *et al*. 2005). According to Lucas (2006), the preference of timber may not be unconnected to its versatility, abundance, accessibility, renewability, less energy input required for processing and relative cheapness. However, it occurs in low density in most tropical forests, therefore, large areas tend to be exploited diffusely to extract a few prized logs. In the estimation of FAO (2010), Nigeria loses about 3.7 percent of its forest area yearly and this makes it to have the highest net loss from 2000 to 2010, mainly due to over-exploitation of wood for timber production. Consequently, yield of the most valuable timber species declined as a result of initial overcutting and failure to leave sufficient seed trees (Kellman and Tackabery,1993) leading to decline in the availability of some tree species like Iroko (*Milicia excelsa*), Opepe (*Nuclea diderrichii*), Teak (*Tectona grandis)* and many other valuable timber species. The scarcity of these fine quality timber species has forced into the markets species that ten to twenty years ago were considered only acceptable for low-end construction type uses. This reflected in the recent patronage given to the use of species such as*Pycnanathus angolensis* (Akomu), *Triplochiton scleroxylon* (Arere) and *Albizia zygia* (Ayunre) as general purpose wood in Nigeria (Wood Explorer, 2011). Recently the use has been extended as they are now sought for any end uses including structural and non-structural uses. This is due to scarcity of high quality species in the market. In view of this, the study was conducted to assess the availability and variation of timber species in selected sawmills and timber markets in Kogi State over the past three decades.

MATERIALS AND METHODS

Study Area

The study was carried out in Okun Area of Kogi State. The area comprises Ijumu, Kabba-Bunu, Yagba West, Yagba East, and Mopa-Muro Local Government Areas of the state. Kogi State is situated within the North-Central zone of Nigeria. It is the most centrally located of all the States of the Federation, with a population of 3,595,789 (NPC, 2006). It comprises Igala, Ebira, Kabba, Yoruba and Kogi divisions of former Kabba Province with Yoruba, Nupe and Bassa as the main ethnic groups and Yoruba, Nupe and Ebira as the major languages spoken. The State has two distinct seasons (the wet and dry seasons) and a humid tropical climate prevails over the State. The study was carried out in selected sawmills and timber markets in West Senatorial District of the State, which forms the Yoruba speaking part of Kogi State.

Data Collection and Analysis

One hundred (100) copies of structured questionnaire as well as Key Informant interview methods were used to elicit information from timber sellers in the selected timber markets and sawmills in the state. Two of the six LGAs that make up the Western District of the state were randomly selected for the study. Ten copies of questionnaire were randomly administered to timber sellers from each of the purposively selected six timber markets and sawmills within the study area. The number of sawmills markets selection was based on the number of sawmills and timber markets in each of the selected LGAs. More sawmills markets were selected from LGA with higher number of sawmills. Only ninety five (95) copies of the questionnaire were used for analysis, as five of the copies were discarded due to mismatched information. The selected timber markets and sawmills were Mosafunoto Sawmill and Ogo-Oluwa Sawmill (Kabba- Bunu LGA); Aare Sawmill, Iyah Sawmill, Face-one sawmill and Sunday sawmill (Ijumu LGA). Information obtained through the questionnaire was supplemented with information gathered from the key informant interview of the respondents.

Data Analysis

Descriptive statistics such as percentages and frequencies as well as content analysis and synthesis of the interviews were carried and were used in analysing the data.

RESULTS

Table 1 shows the socio-economic characteristics of timber sellers in the study area. The results showed that 15% of the sellers were less than 30 years while 80% were between 30 and 70 years of age and those that were above 70 years accounted for 5%. This is an indication that the timber business cuts across different age groups. The

study showed that seventy percent of the sellers were male while female accounted for about 30%. This shows that both male and female engage in timber trading in the study area. From the educational distribution in Table 1, 95% of the sellers had formal education and at least primary education while only 5% had no formal education. It was also discovered from the study that the tribe of the timber marketers does not affect their involvement in the business, as Yoruba (50%), Igbo (20%), Hausa (25%) and other tribes (5%) engaged in timber trading. Seventy percent of the sellers claimed they have been in the business for more than forty (20) years while 30% of them were less than 30 years in the business.

Table1: Socioeconomic Characteristics of Timber Sellers

Variables	Frequency	Percentage
Age (in years		
Less than 30	16	16.84
30-50	59	62.11
51-70	17	17.89
Above 70	3	3.16
Total	95	100
Gender		
Male	65	68.42
Female	30	31.58
Total	95	100
Educational Level		
Primary	24	25.26
Secondary	20	21.05
Post-Secondary	46	48.42
None	5	5.26
Total	95	100
Tribe		
Yoruba	48	50.53
Hausa	16	16.84
Igbo	22	23.16
Others	9	9.47
Total	95	100
Years in Business		
Less than 20	29	30.53
	57	60
20-40	9	9.47
Above 40	95	100
Total		

Table 2 shows a list of timber species that have been in the market for the past three decades (30 years). Most of these species have now declined in availability; they have however registered their presence in the market in the past thirty years. Result on choices for the timber species traded shows that 40% of sellers' choice was based on the demand of the people while 35% of respondents' choice depended on species that were durable. Twenty percent of them based their reasons on both low cost and availability of the species. Only 5% of the sellers based their preference on other factors such as the colour and workability of such timber species, as indicated in Figure1.

Table 2: Species of Timber Traded over the last Thirty Years

Scientific Name	Local Name
Triplochiton scleroxylon	Obeche/Arere
Afzelia Africana	Apa
Ceiba petandra	Araba
Nuclea diderrichii	Opepe
Terminalia superba	Afara
Arogeissus leocarpus	Ayin
Milicia excelsa	Iroko
Albizia zygia	Ayunre
Vitellaria paradoxa	Emi
Mitragynia ciliate	Abura
Chrysophyllum delevayi	Osan
Cordia millenii	Omo
Daniella oleivera	Iyaa
Terminalia ivorensis	Idigbo/Afara Dudu

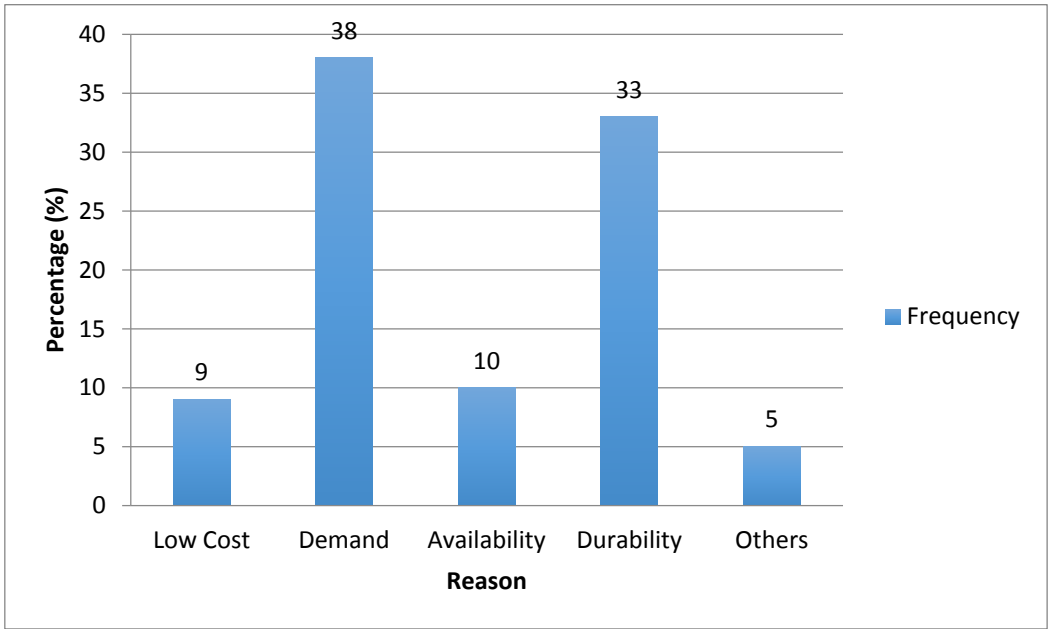

Figure1: Reason for choice of species traded.

From Figure2, 96% of the timber sellers agreed that there has been fluctuation and decline in the availability of the timber species traded within the last three decades and various reasons were given for the fluctuations. Prominent among the reasons given was over-exploitation, as shown in Figure 3. This confirms FAO (2010) estimate that Nigeria loses about 3.7% of its forest area per year and this makes it to have the highest net loss between the periods 2000 to 2010.

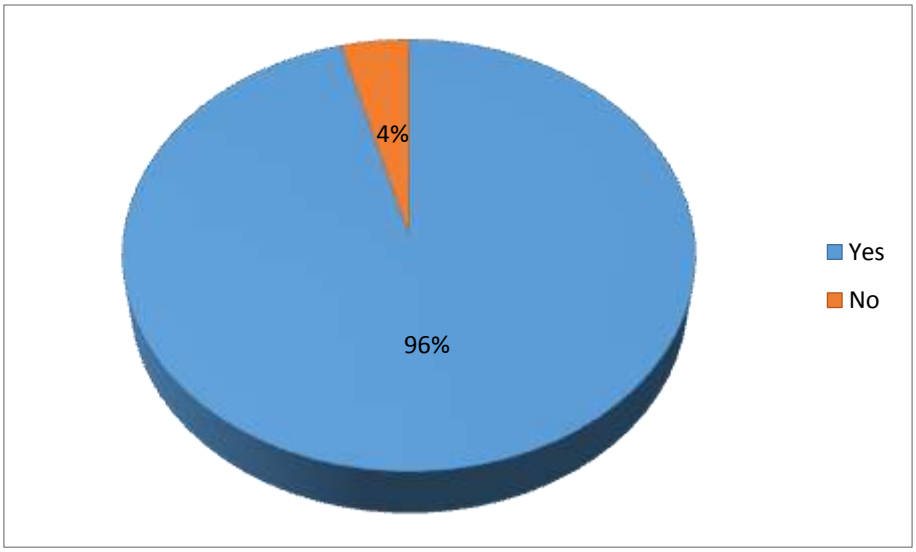

Figure2: Fluctuations in Species Availability for Trade

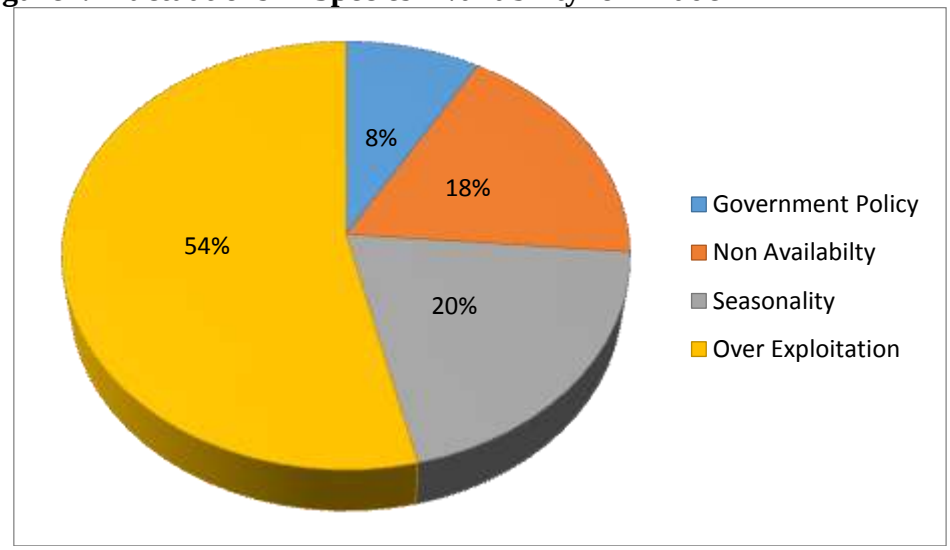

Figure 3: Reasons for fluctuation in timber species availability for trade

Table 3: Endangered Timber Species in Kogi State

Scientific Name	Local name
Ceiba petandra	Araba
Milicia excelsa	Iroko
Mitragynia ciliate	Abura
Nuclea diderrichii	Opepe
Cordia millenni	Omo
Chrysophyllum delevayi	Osan
Arogeissus leocarpus	Ayin
Triplochiton scleroxylon	Arere
Khaya senegalensis	Mahogany
Terminalia superba	Afara

Table 4 shows the list of timber species that were currently sold in the selected Timber markets and sawmills in Kogi State. They comprised both the existing and the new timber species that are being traded.

Table 4: Timber Species Currently Traded in Kogi State

Scientific Name	Local name
Alfezia africana	Apa
Daniella oliverii	Iyaa
Parkia biglobosa	Igbaa
Cassia bicarpsularis	Cassia
Mangifera indica	Mango
Gmelina arborea	Gmelina
Cola acuminata	Obi
Arogeissus leocarpus	Ayin
Tectona grandis	Teak
Ceiba petandra	Araba
Treculia africana	Breadfruit
Albizia zygia	Ayunre

DISCUSSION

From this study, it has been discovered that preference for certain timber species in the market due to their high quality, strength and durability has resulted in the over-exploitation of such species. Hence, such species are now scarce and not readily available in the market. These species are regarded as endangered species because of the sharp decline in their availability in the market. These endangered species in Kogi State are listed in Table 3. This also corroborates the work of Famuyide *et al*.(2012) that stated that species like *Milicia excelsa*, *Khaya spp.*, *Afzelia Africana*, *Nauclea dideriichii*, *Triplochiton scleroxylon*, and *Terminalia spp*. are now scarce in the market as a result of over-exploitation in the forests and forest reserves in Nigeria to meet increasing demands for them, as well as Lucas (1983) who reported that *Nuclea dideriichii* has been listed alongside other most common economic wood species that is fast thinning out of forests located in the Southwest Nigeria. This explains why timber traders in Southwest Nigeria travel as far as Kogi State in search of timber, following the depletion of timber species in the region. However, Kogi State is now facing similar challenge as most of the timber species in the forests have also been depleted. The resultant effect of the scarcity of the fine quality timber species is the presence of species which in a few years ago were considered only acceptable for low-end construction uses. Such species include *Pycnanathus angolensis* (Akomu), *Albizia zygia* (Ayunre), *Daniellia oliverii* which are now also used as general purpose wood in, Nigeria. Other wood species that are currently traded in addition to the existing ones include Mango (*Mangifera indica*), Cola (*Cola acuminata*), among others, as shown in Table4. This also corroborates the study by Famuyide *et al*. (2012) on timber species availability and variation in Oyo state. Likewise, in corroboration of the different reasons given by the respondents for the fluctuation in timber species availability in the study area, FAO (2010) estimate that Nigeria loses about 3.7% of its forest area per year and this makes it to have the highest net loss between the periods 2000 to 2010. More so, the choice of the type of wood species traded corroborates the work of Idumah and Awe (2011) who observed that the choice of wood species by furniture makers within Ibadan Metropolis was based, among others things, on the hardness (strength) and durability. The results also corroborated the work of Famuyide *et al.* (2012) on what influenced the choice of timber species traded by timber marketers in Oyo State. In addition, the number of years the respondents have been in business implies that majority of the respondents would have adequate knowledge and information about various timber species within the period of coverage of the study.

Conclusion and Recommendation

Timber species availability and variation in selected timber markets and sawmills in Kogi State, Nigeria have shown critical downward trend over the last three decades. The study showed that species that were relatively available in the last thirty (30) years have now become scarce in the market owing to excessive logging and over-exploitation of such species. Some of the endangered species include *Nauclea dideriichii* (Opepe), *Tectona grandis* (Teak), *Milicia excelsa* (Iroko).

It is therefore recommended that Kogi State Government should, as a matter of urgency, review the forest policy to actually know the predicament against conservation and preservation of economic species that are facing extinction and forestry act be enacted to control the excesses of overexploitation in various forests within the state. Plantation of fast growing tree species as a replacement for commercially popular species should therefore be encouraged as alternatives to decreasing availability of popular timber species so as to avoid running out of valuable and good quality timber species in the nearest future.

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