

Assessment of Wood Species of High Demand in Selected Timber Market in Ibadan

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Abstract

Wood has always played a major role as raw material for wood based industries which make use of different species for specific kind of task to be performed, thereby making a particular wood specie more required (demanded) than others. Hence this study investigated the wood species that are highly demanded in the city of Ibadan, Nigeria. The study was carried out in four main timber markets: Omowumi, Akanran, Adegbayi, and Oke-Bola in Ibadan North-East local government, Ona-Ara local government, Egbeda local government and Ibadan South West local government respectively in Ibadan, the capital of Oyo state, Nigeria. Data was collected with structured questionnaire and interview. 160 questionnaires were purposefully administered in the four local governments and all were retrieved. Data collected was analyzed with the aid of descriptive statistical tools. Results revealed the following wood species as highly demanded in the order of preference: *Terminalia superba* (Afara) (26.25%), *Tectona grandis* (Teak) (17.50%), *Milicia excels* (Iroko) (15%), *Mansonia altissima* (12.5%), *Gmelina arborea* (11.25%), *Cordia millieni* (Omo) (7.50%), *Ceiba petendra* (Araba) (6.25%) and *Nuclea diderenchii* (Opepe) (3.75%). Factors influencing the increase in the demand of these wood species were also identified which include: durability, price, hardness, colour and lustre. Hardness, price and durability are the most influencing factors considered by the respondents.

Keywords

Wood Species, Influencing Factor, Demand, Plank Seller, Assessment, Ibadan

1. Introduction

Wood is a structural and fibrous tissue present in the roots and stems of trees. It is a natural resource obtained from forest, which has various uses [1]. Wood has been in use as durable and renewable material in all nations of the world [2]. Woods and wood-based products have varieties of applications. They are used for construction, furniture making, paper production, boat panels, light flooring, cabinet work, boxes, crates, joinery, roofing components, upholstery, railway slipper, building and different construction purposes [3]. Wood has continued to play important roles in the socio economic life of the people and what they are used for depend on quality, such as durability and workability. It is one of the most functional raw materials known in the world [4]. Throughout history, people relied on wood for various needs like farm tools, building

materials, weapons for hunting and warfare, the first resting place (the body court) and the last resting place (the coffin). According to Douglas [5], wood is virtually the most predominant material used for construction and energy generation, until the last half of 19th century. Wood must be converted to the required size before it can generate the required satisfaction, although some people sell theirs on the field as log because of lack of fund to process it [6].

Woods are often categorized as soft and hard wood. This is based on the arrangement of its fibres and particles, and other qualities like colour, texture and hardness. Most grown trees are present in the mangrove and rainforest belt while few trees found in scattered forms are present in the Guinea Savannah belt. Wood are of different types and kinds. The wood used for building and roofing houses are quite different from those required for making wooden boxes and wooden mirror frames. [4]

According to FAO [7], the need and the demand for wood, especially fuel wood, has been on the increase, in fact, it is far greater than the supply. This may be due to geometrical increase in the number of people leading to competition for available resources. Owoyemi *et al.*, [8] wrote that the demand of wood for various purposes has put serious pressure on Nigeria's forest. Some of the uses upon which pressure is put on our timber include: building construction, ship building, furniture making, transmission poles, railroad ties, pulp and paper, chemicals and fuel wood etc.

The multi importance of forest products and geometrical increase in population has caused indiscriminate exploitation of wood and scarcity of these resources in Nigeria [9]. Different timber or wood species and sizes have different ways by which they can be utilized. However, this largely depends on the wood-based industry and the desired end users.

Nigeria covers an area of about 983,2137 km² [10]. Out of this area, 360,000 km² is classified as forest. The rain forest reserve account for only 2% of the country's total land area and constitute the primary source of timber supplies [11]. The common category of wood coming from the forest are: round logs, pole and fuel wood. It is a fact that Nigeria is blessed with natural resources most especially forest cover, particularly in the Southern part of the country.

However, the area under forest is continually diminishing due to the usage of land for agriculture and high rate of exploitation without any replacement and the competition between forestry and other sectors [12]. In order to supplement the diminishing timber resources of natural forest, there should be establishment of plantations with the highly demanded wood species, also government should conduct awareness programme for individual or group of people on the need to replace the felling timber with the highly desirable wood species [13]. Despite the fact that the estimated total plantation forest area is about 123.7 million hectares in the world and 5.7 million hectares in Africa [14], there is still an urgent need for commercial reforestation programs and afforestation programmes with the highly demanded wood species to replace the rapidly diminishing supply of rainforest timbers [15], which supply more than 75% of the world's trade in hardwood logs, over 50% of the trade sawn hardwood and a significant portion of panels and pulp.

It is widely acknowledged that areas at old-growth forest available for logging are nearing exhaustion, and the associated environmental impact with some traditional forestry methods have reaching and damaging effects. Plantation forests such as those implemented by green carbon must become the major source for commercial use lumber [16].

While human population and demand for tree product are increasing rapidly in Nigeria, the natural forest is going down without reasonable replacement, therefore, there is a need for accelerating the propagation of multipurpose tree on farmland. The demand for timber species is increasing without a corresponding increase in the supply of desirable timber species. This study therefore attempts to identify the

types of wood that are in high demand so that such highly desirable wood would be recommended for planting in order to meet the rising need of woods and wood products in the country.

2. Materials and Methods

2.1. Area of Study

The study was carried out within four selected timber market in Ibadan metropolis Omowunmi timber market at Ibadan North-East local government, Akanran timber market at Ona –Ara local government, Adegbayi timber market at Egbeda local government and Oke-Bola timber market at Ibadan South west local government, Ibadan, the capital of Oyo state, Nigeria which is located approximately on longitude 3°5' East and latitude 7°23' North. The timber markets were purposively selected from Ibadan because of the high demand of wood and presence of different wood species in the area.

2.2. Method of Data Collection

Data were collected with the aid of structured questionnaire. 160 questionnaires were administered within the four timber markets in Ibadan. The administration of questionnaires is as follows: Omowumi market: 46 questionnaires, Akanran market: 30 questionnaires, Adegbayi market: 50 questionnaires and Oke-Bola market: 34 questionnaires. The questionnaires were administered to the plank sellers and personal interview was also used to those who could not read or write while the literates attended to the questionnaires themselves. All the questionnaires were retrieved.

2.3. Method of Data Analysis

Data were analyzed using descriptive statistics such as frequency distribution, percentage distribution and bar chart.

3. Result and Discussion

Table 1. Distribution of respondents by timber market.

Sawmill	Frequency	Percentage
Adegbayi	50	31.25%
Omowumi	46	28.75%
Akanran	30	18.75%
Oke-Bola	34	21.25%
Total	160	100%

Table 1 shows the number of respondents in each timber market with Adegbayi having the highest number of respondents of 31.25%, followed by Omowumi (28.75%), Oke-Bola (21.25%) and the least is Akanran with 18.75%.

Table 2. Socio-economic characteristics of respondent in timber market.

Variable	Frequency	Percentage
GENDER		
Male	86	53.75
Female	74	46.25

Variable	Frequency	Percentage
Total	160	100.00
AGE		
18-30yrs	30	18.75
31-40yrs	54	33.75
41-50yrs	40	25.00
51yrs above	36	22.50
Total	160	100
DURATION IN SAWMILL INDUSTRY		
1-5yrs	38	23.75
6-10yrs	48	30.00
11-20yrs	40	25.00
21yrs and above	34	21.25
MARITAL STATUS		
Single	32	20.00
Married	48	30.00
Divorced	38	23.75
Widow	42	26.25
LEVEL OF EDUCATION		
Primary	42	26.25
Secondary	69	43.13
Tertiary	15	9.37
No formal	34	21.25

Table 2 shows the socio-economic characteristics of the respondent in the study area. The result indicates that 53.75% of the respondents were male while 46.25% were female, this shows that male engages in the business more than female. 33.75% of the respondents' age between 31 to 40 years were the highest, this indicates that the respondents within this age brackets were the most in the business meaning that the respondents are in their active age and they have the capability to carry on the business. The result also reveals that the people that have spent 6-10 years in the business have the highest percentage of 30% while those that have spent 21 years and above are the least with 21.25%. Marital status of the respondents shows that 20% of the respondents are single, 30% married, 23.75% divorced and 26.25% widow. The married people are in the majority and marital status is not a barrier in the business, while the educational status of the respondents indicates that 26.25% had primary education, 43.13% had secondary education, 9.37% had tertiary education and 21.25% had no formal education.



Figure 1. The bar chart showing the wood species that are in high demand.

The factors influencing the demand of these wood species include price, hardness, durability, colour and lustre.

Table 3. Factor influencing the species of wood in high demand.

Factor	Frequency	Percentage
Hardness	62	38.75
Durability	22	13.75
Price	40	25.00
Colour	20	12.50
Lustre	16	10.00

Table 3 shows the factors influencing the wood species that are highly demanded in the four local governments within Ibadan metropolis. These factors include the following in the order of necessity: hardness, price, durability, colour and lustre.

4. Conclusion

It is an indisputable fact that wood plays a significant role in Nigeria's Economy. Apart from being the most predominant material used for construction and energy generation, it is also used for furniture making, paper production, railway slippers, roofing, upholstery etc. as found out from the study. The demand of wood for various purposes are on the increase and the natural forest is depleting without reasonable replacement. It has even been acknowledged by the government that the forest may be wiped out if strict measure is not put in place to stop indiscriminate deforestation. It has become a matter of necessity to establish forest plantations with species of wood

that are highly demanded by (loggers). According to this study, wood species that are highly demanded by plank sellers within Ibadan metropolis include the following in order of preference: *Terminalia superba*, *Tectona grandis*, *Milicia excelsa*, *Mansonia altissima*, *Gmelina arborea*, *Cordia millieni*, *Ceiba petendra*, *Nuclea diderenchii*. Therefore, these wood species are recommended for forest establishment in order to meet the rising need of wood and its products in the country and to manage the forest on a sustainable yield basis. Also, there should be comprehensive impact assessment of forest industries with respect to logging, harvesting, transportation and conversion of wood. In addition, more land should be used for forest plantation to serve as a vegetation cover, which acts as thermal insulator between the atmosphere and the ground to buffer atmospheric variations thereby regulating the flow of numerous biogeochemical cycles, most importantly those of water, carbon and nitrogen that are of great importance in local and global energy balance.

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