

## DEMAND ANALYSIS FOR SOME TIMBER SPECIES IN IBADAN METROPOLIS: IMPLICATION FOR RESEARCH INTO WOOD PRODUCTION

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**Abstract:** The study was carried out within Ibadan Metropolis to identify the wood species that are in high demand within the Metropolis. Among the species identified were Afara (*Terminalia superba*), Teak (*Tectona grandis*) and Iroko (*Milicia excelsa*) which were the most demanded. Factors responsible for the increase demand of these species were also identified. These include price, hardness and durability, colour with hardness and durability being the most important factor given by the respondents.

**Keywords:** Demand, Wood Production, Ibadan, Research

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### INTRODUCTION

Woods are products of the forest. They are natural resources which have diversified uses. Wood is a renewable, durable and versatile material that has been used for millennia all over the world (Dawes, 2009). Due to their properties, wood and wood-based products have long traditions in a wide variety of applications- from construction and furniture- making to paper production and heating. Haque and Prasad (1984) gave an extensive list of items that were made from wood. Such items include furniture, boat panels, light flooring, cabinet work, boxes, crates, joinery, roofing components etc. Other uses are upholstery, railway slipper and building and construction purposes. Woods used for furniture provide colour and texture, strength and beauty to furniture whether it is home furniture or office furniture ([www.topolansky.co.za](http://www.topolansky.co.za)). Woods are often categorized as soft and hard wood. This is based on the arrangement of its fibres and its particles, colour and hardness qualities. Most grown woods are found in the mangrove and rainforest belt while some are found in the mangrove and rainforest belt while some are found in scattered forms in the Guinea Savannah belt. Their properties differ from one type of wood to another type of wood. The wood which is required for making wooded bed or outdoor furniture must be more durable as compared to the wood used for making smaller decorative items like wooden mirror frames. According to FAO (1981), the demand for wood, especially fuelwood, has been on the increase and is more than the supply. This may be attributed to the increase in human population and standard of living, cost and availability of energy and our various levels of economic activities. Owoyemi *et al* (2010) wrote that the demand for wood for various purposes has put serious pressure on Nigeria's forest. Some of the uses to which wood is put include timber for building construction, shipbuilding, furniture making, transmission poles, railroad ties, pulp and paper, chemicals and fuelwood. The multi-importance of forest resources and population pressure has caused indiscriminate exploitation and scarcity of these resources in Nigeria. 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 uses. According to Fuwape (2003), there were some changes in wood based industries in Nigeria between 1974 and 1997. The total number of wood based industries increased from 358 in 1974 to 1483 in 1990 but decreased to 1373 in 1997. The reduction in the number of wood mills between 1990 and 1997 was attributed to deficit in supply of required wood raw material due to overexploitation of the forest. Different wood based industries such as saw mill industry, particleboard industry, fuel wood and charcoal industry and so on, make different demand for wood. According to Tembe *et al* (2010), sawmill industry in Nigeria has an estimated capacity of approximately 12.0 million

m<sup>3</sup> per year in log equivalent, though only 40% of this capacity is actually used. The estimated consumption of wood by sawmill industry in 1992 was 2706000m<sup>3</sup>, 2711000m<sup>3</sup> in 1993, 2716000m<sup>3</sup> in 1995, 2726000m<sup>3</sup> in 1996 and 2713000m<sup>3</sup> in 1997. The demand and supply forecasts of log by sawmill industry in 1990, 2000 and 2010 are given in Table 1. The table clearly shows the deficit between the quantity demanded and the quantity supplied of wood in sawmill industries. In 1990, the quantity demanded was 3992000m<sup>3</sup> but the quantity supplied was 3482000m<sup>3</sup> with a deficit of 510000m<sup>3</sup>. In 2000, the quantity demanded was 6378 0000m<sup>3</sup>, but the quantity supplied was 29960000m<sup>3</sup> with a deficit of 3382000m<sup>3</sup>. It was therefore projected that in 2010, the quantity demanded will be 10205000m<sup>3</sup> but the supply will be 2480000m<sup>3</sup> with deficit more than 3 times the supply. This may not be unconnected with the excessive exploitation of timber without equivalent replacement.

**Table 1: Demand and supply forecast for saw wood (1000m<sup>3</sup>)**

Year	Demand	Supply	Deficit
1990	3992	3482	510
2000	6378	2996	3382
2010	10205	2480	7725

Source: FDF, 1998

**Table 2: Demand and supply schedule of wood for particleboard production (1000m<sup>3</sup>)**

Year	Demand	Supply
1992	39.5	43.1
1993	41.1	42.8
1994	42.8	42.3
1995	44.5	31.3
1996	46.3	30.7
1997	48.2	29.8
2010	70.7	13.7

Source: FDF, 1998

**Table 3: Demand and Supply of wood for fuelwood and charcoal (1000m<sup>3</sup>)**

Year	Demand	Supply
1990	73949	28026
2000	83521	71349
2010	88138	63099

Source: FDF, 1998

From Table 2, it can be seen that in 1992 and 1993, the quantity of wood supplied for particle board production was greater than the quantity demanded by 36000m<sup>3</sup> and 17000m<sup>3</sup> respectively, while in 1994 to 1997, there was a narrow deficit in the quantity of wood supplied for the industry. This could be attributed to the wastage that occurred due to the excessive supply of wood to the industry between 1992 and 1993. It was therefore projected that the deficit would be about five times greater than the quantity supplied by the year 2010, indicating a very poor level of sustainable supply. In addition, since the predominantly rural population depends mainly on fuelwood and charcoal to meet basic energy needs for cooking and heating, recent studies reveal that Nigeria produces about 1 million tones of charcoal annually, of which 80% is consumed in cities (ANFP, 2006). Fuelwood and charcoal, according to Tembe *et al* (2010), account for about 50% of the nation primary energy consumption. Therefore the demand on wood for fuelwood and charcoal is far greater than any other need. Table 3 shows the estimated volume for demand and supplied of fuelwood and charcoal of 1990 and 2000 and

the projected value for 2010. In 1990 the supply of wood for fuelwood was greater than the quantity demanded. But in 2000 and 2010 there is a deficit of about 12172000m<sup>3</sup> and 250000m<sup>3</sup> respectively, an indication of shortage of wood availability.

This study examines different rates of wood consumption with specific objectives to

- carry out a survey on the types of woods that are in high demand in the study area
- examine the reasons for the demand of these wood species
- investigate other usefulness of these woods and their by-products

## METHODOLOGY

The study was carried out in Ibadan Metropolis. Ibadan which is the capital city of Oyo State is located approximately on longitude 3°5' East of the Greenwich Meridian and latitude 7°23' North of the Equator. There are eleven Local Government Areas (LGAs) within Ibadan among which are six semi-urban and five urban (NPC,2006) Data were collected with the use of structured questionnaire and oral interview process for those respondents who could neither read nor write. Sixty copies of the questionnaire were purposively administered on wood buyers within the Metropolis. Data were analyzed with the use of descriptive statistics such as frequencies, percentages, bar charts etc.

## RESULTS AND DISCUSSION

From the data collected, it was discovered that price, hardness and durability, colour and customers, demand are strong factors that influence the rate of purchase of specific woods. Among these factors, hardness and durability accounts for about 35.25% of the total demand rate while price, colour and customers' demand account for 20.14%, 16.54% and 12.955 respectively, as shown in table1. It could then be inferred that hardness and durability together with price are the main factors that attract wood users to the various types of wood which include Omo (*Cordia millenii*), Teak( *Tectona grandis*), Mahogany( *Khaya senegalensis*), Obeche( *Triplochiton scleroxylon*), Opepe( *Nauclea diderenchii*) and a host of others.

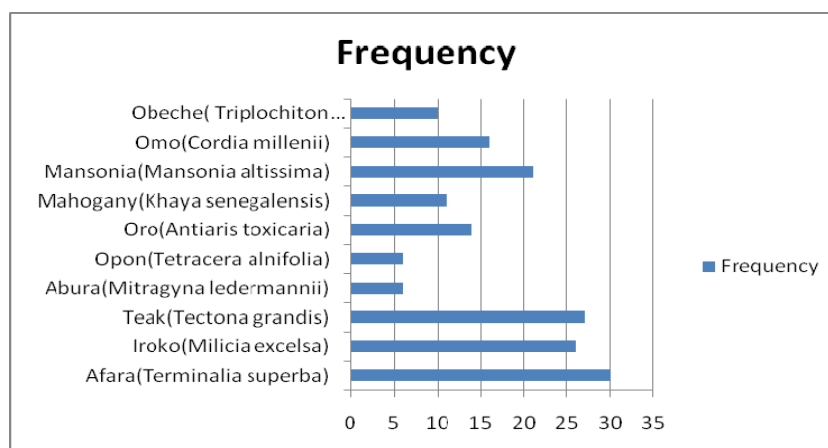
**Table1: Factors influencing rate of wood purchase**

Factor	*Frequency	Percentage
Price	28	20.14
Hardness/durability	49	35.25
Softness	3	2.16
Lustre	18	12.95
Colour	23	16.54
Customers' demand	18	12.95
<b>Total</b>	<b>139</b>	<b>100</b>

\*Multiple responses

Source: Field survey, 2007

It was also discovered from the study that Afara( *Terminalia superba*) was the most demanded accounting for 14.3% of the total wood demanded. It was closely followed by Teak (*Tectona grandis*) and Iroko ( *Milicia excelsa*) which represented 12.9% and 12.4% respectively. It could therefore be inferred that these wood species are frequently felled in the forest around the Metropolis, thereby posing threat to their sustainability. Among the wood species, Opon (*Tetracera alnifolia*) and Abura (*Mitragyna ledermannii*) were the least demanded, as shown in Figure1.



**Figure 1: Frequency distribution of demand for some wood species within Ibadan Metropolis**

## CONCLUSION

It is a known fact that the importance of wood in Nigeria's economy cannot be underestimated. This is seen in the wide range of uses to which wood is put. These include construction, furniture-making, paper production, heating etc., as found out from the study. The increase in demand for wood for various purposes has led to indiscriminate felling of trees and consequent deforestation. The problem has reached a point where even the government has acknowledged the risk that forests may be wiped out if it does not put in place measures to stop deforestation. Though timber industry is a profitable business in Nigeria, it does not contribute to the country's gross domestic product because of lack of transparency by the stakeholders involved, their tax evasiveness and illegal logging in forest reserves. From the survey, it was discovered that the consumption of wood and its products is expected to increase in Nigeria and it is very likely that we will not be able to supply sufficient timber to satisfy the demand of some specific woods and their products. It is therefore recommended that more research should be carried out and directed towards finding a reduced gestation period for these highly demanded wood species. More land should be used for forest plantation to make up for the indiscriminate felling of trees. Also, wood related industries should ensure judicious use of the woods within their reach to minimize wastage. In addition, other wood species should often be used to augment production in order to reduce the pressure on the highly demanded ones.

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