Available online at www.elixirpublishers.com (Elixir International Journal)

Bio Diversity

Elixir Bio Diver. 49 (2012) 10131-10136

ISSN: 2229-712X

Timber species availability and Variation in Ibadan and Oyo Timber Markets over the last forty years

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ARTICLE INFO

Article history:

Received: 9 May 2012;

Received in revised form:

16 August 2012;

Accepted: 24 August 2012;

Keywords

Timber,

Metropolis,

Sellers,

Market.

ABSTRACT

This paper examines the availability and variations of timber species within Ibadan Metropolis and Oyo Town Oyo State, Nigeria. Sixty copies of structured questionnaire were randomly administered on timber sellers from randomly selected timber markets in Ibadan and Oyo town. The selected markets in Ibadan were Bodija Timber Market (18), Sango Timber Market (12), Oke-Ado Timber Market (7) and Apata Timber Market (7). Those visited in Oyo were Sabo Timber Market (5), Owode Timber Market (6) and Oroki Timber Market (5). Descriptive statistics such as frequency and percentage distributions were used to analyze the collected data. Study revealed that 70% of the timber dealers were between 30 and 70 years of age, with 60% of them having been in business for more than 40 years. Various reasons were given by the traders on why they engaged in the timber business and these include availability, durability and demand, with majority (38.3%) of them citing the demand for the timber species as the reason why they traded the species. It was discovered from the study that certain timber species have become endangered species due to over-exploitation and these include *Nauclea dideriichii, Tectona grandis, Terminalia spp., Khaya senegalensis Milicia excelsa,* among others. The scarcity of these fine quality species has then brought into the market species in a few years ago were considered only suitable for low-end uses. These include *Daniella oliveirii Pycnanathus angolensis*(Akomu), *Albizia zygia*(Ayunre) and others. Therefore, there a is need for the planting of fast growing plantation species by State forestry departments in six geopolitical zones in Nigeria, as a replacement for commercially popular species; and 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.

Introduction

Nigerian forests are rich in plant and animal species (flora and fauna) and have since then been traditionally protected for timber production. Timber is a construction material which has been used for both 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). Different species of timber are used for different purposes in building and furniture industries. The projection of wood consumption of 4.704 and 0.688 millions/m^3 was made for the year 2010 for sawn wood and wood based panels respectively in Afica(FAO, 1991). 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.

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 Africa include Mahogany (*Khaya senegalensis*), Obeche (*Triplochiton scleroxylon*), Afara (*Terminalia superb*), Abura *(Mitragyna ciliate*,Iroko(*Milicia excelsa),* Teak(*Tectona grandis)* (ITTO, *op cit*). 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)

According to Cunningham *et al.* (2005), timber accounts for about half of worldwide wood consumption. This exceeds the use of steel and plastic combined. The preference of timber may not be unconnected to its renewability, abundance, accessibility, versatility, less energy input required for processing and relative cheapness (Lucas, 2006). But it occurs in low density in most tropical forests, hence, large areas tend to be exploited diffusely to extract a few prized logs. FAO (2010) estimated that Nigeria

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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 years ago were considered only acceptable for low-end construction type uses. This reflected in the recent patronage given to the use of *Pycnanathus angolensis*(Akomu), *Triplochiton scleroxylon* (Arere) and *Albizia zygia* (Ayunre) as general purpose wood in Nigeria, particularly the Southwest (The 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 timber markets in Ibadan and Oyo over the past forty (40) years, with the specific objectives of determining the species traded over the said period; the species that are fading away as well those species that are currently traded in the market.

Methodology

Study Area

The study was conducted in selected timber markets within Ibadan Metropolis and Oyo Town, both in Oyo State, Nigeria. Ibadan is located approximately on Longitude $3^{o}5^{1}$ East of the Greenwich Meridian and Latitude $7^{o}23^{1,}$ north of the Equator (NPC,2006) while Oyo Town is on Latitude $7^{o}47^{1}26^{11}$ N and Longitude $3^{o}56^{1}15^{11}$ E(www.collinsmaps.com). Ibadan has a population of about 1,338,659, according to NPC (2006), while Oyo Town has a population of about 736,113. While Ibadan is a major centre for trade in cassava, cocoa, cotton, timber, rubber and palm oil while Oyo Town is a traditional centre of cotton spinning, weaving and dyeing. It is also famous for carved calabashes, leatherwork, wood carving and timber as well as mat making (www.britannica.com).

Data Collection and Analysis

Sixty (60) copies of structured questionnaire and oral interview were used to elicit information from timber sellers in the selected timber markets within Ibadan and Oyo. At least five copies of the questionnaire were randomly administered on timber sellers from each of the purposively selected timber markets in both Ibadan Metropolis and Oyo Town. The selected timber markets were Bodija Timber Market(18), Sango Timber Market(12), Oke-Ado Timber Market(7), Apata Timber Market(7), Sabo Timber Market, Oyo(5), Owode Timber Market, Oyo(6) and Oroki Timber Market, Oyo(5). The numbers in parentheses are the numbers of copies of questionnaire administered. Information obtained through the questionnaire was supplemented with in-depth interview of the respondents. Descriptive statistics such as percentages and frequencies were used in analyzing the data.

Results and discussion

Table 1 shows the socio-economic characteristics of timber sellers in the study area. The results showed that 10% of the sellers were less than 30 years while 75% were between 30 and 70 years of age and those that were above 70 years accounted for 15%. This is an indication that the timber marketing cuts across different age groups. About seventy seven percent of the sellers were male while female accounted for about 23%. This shows that both male and female engage in timber trading. From the educational distribution in Table 1, 85% of the sellers had formal education and at least primary education while 15% 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 (60%), Igbo (18.3%) and Hausa (21.7%) engage in timber trading. Sixty percent of the sellers claimed they have been in the business for more than forty (40) years while 18.3% of them were less than 20 years in the business. This implies that majority of the respondents would have adequate knowledge and information about various timber species within the period of coverage of the study.

Table 2 below shows a list of timber species that have been in the market for the past forty years. Though, most of these species are declining in availability; they have registered their presence in the market in the past forty years**.**

When asked what informed their choices for the timber species traded, 38.3% of the sellers said it was based on the demand of the people, 28.3% of them said it was because those species were durable. About 8% of them based their reasons on both demand and availability of the species. Only 3.3% of the sellers based their preferences for the species they traded on the cheapness of those species, as indicated in Table 3. This is in line with 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.

From Table 4, 85% of the timber sellers agreed that there has been fluctuation and decline in the availability of the timber species traded within the last forty years and various reasons were given for the fluctuations. Prominent among these was over-exploitation, as shown in Figure 1. 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 from year 2000 to 2010.

From the 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 Ibadan and Oyo are listed in Table 5 and Table 6 respectively. This also corroborates the work of Sotannde et al. (2010) 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 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. The resultant effect of the scarcity of these 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, especially within the southwest, Nigeria. Other wood species that are currently traded in addition to the existing ones include Mango (Mangifera indica), Cola (Cola acuminata), Rubber (Hevea brasiliensis), among others, as shown in Table 9.

Table 7 and Table 8 show the list of timber species that are currently selling in Ibadan and Oyo Timber markets respectively. They comprise both the existing and the new timber species that are being traded.

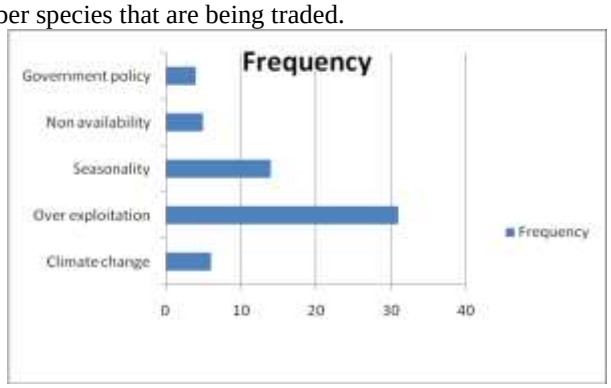

Figure 1: Reasons for fluctuation in timber species availability

Conclusion

The availability and variation of timber species in selected timber markets within Ibadan and Oyo town in Oyo State, Nigeria have shown critical downward trend over the 40 years. The study showed that species that were relatively available in the last forty (40) 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).

Recommendation

Oyo State Government should of necessity 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 curd the excesses of over-exploitation in various forest reserves in Oyo State.

Plantation of fast growing plantation 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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Table1: Socioeconomic Characteristics of Respondents

Variables	Frequency	Percentage
Age		
<30	**6**	**10**
30-50	**13**	**21.7**
51-70	**32**	**53.3**
>70	**9**	**15**
Total	60	100
Gender		
Male	**46**	**76.7**
Female	**14**	**23.3**
Total	60	100
Educational Level		
Primary	**24**	**40**
Secondary	**16**	**26.7**
Postsecondary	**11**	**18.3**
None	**9**	**15**
Total	60	100
Tribe		
Yoruba	**36**	**60**
Hausa	**13**	**21.7**
Igbo	**11**	**18.3**
Total	60	100
Years in Business		
<20	**11**	**18.3**
20-40	**13**	**21.7**
>40	**36**	**60**
Total	60	100

Source: Field Survey, 2011

Table 2: Timber Species traded in the last 40 years

Common Name	Scientific Name
Ita-gidi	Celtis mildbraedii
Eeki	Phyra alata
Abura	Mitragyna ciliata
Afara	Terminalia superba
Afara dudu(Idigbo)	Terminalia ivorensis
Apa(Oro/Sapo)	Afzelia africana
Arere/Obeche	Triplochiton scleroxylon
Araba	Ceiba petandra
Ayin	Anogeissus leocarpus
Danta	Nesogordonia papaverifera
Obobo	Guarea cedrata
Oporoporo	Pterygota macrocarpa
Omo	Cordia millenii
Oriro	Antiaris africana
Orokoro	Mallotus oppositifolius
Iroko	Milicia excelsa
Ita	Celtis integrifolia
Opon	Tetracera alnifolia
Opepe	Nuclea diderrichii
Ayo	Allium sativus
Ayunre	Albizia zygia
Eeku	Brachystegia leonensis
Emi	Vitellaria paradoxa
Opoto	Ficus capensis
Osan	Chrysophyllum delevoyi
Akonnu	Pycnanthus angolensis
Awin	Diahum guineense

Source: Field Survey, 2011

Table 3: Preference for Species Traded

Variable	Frequency	Percentage
Availability	7	11.7
In vogue	6	10
Cheapness	2	3.3
Durability	17	28.3
Demand	23	38.3
Others	5	8.3

Source: Field survey, 2011

Table 4: Fluctuations in Species Availability

Variable	Frequency	Percentage
Yes	48	80
No	12	20

Table 5: Endangered Timber Species within Ibadan Metropolis

Common Name	Scientific Name
Mahogany	*Khaya senegalensis*
Eru	*Gnetum spp*
Araba	*Ceiba petandra*
Afara	*Terminalia superba*
Gmelina	*Gmelina arborea*
Iroko	*Milicia excelsa*
Oorii(Emi)	*Vitellaria paradoxa*
Agboin (Ekhimi)	*Piptadenia africana*
Ayoo	*Allium sativum*
Arere	*Triplochiton scleroxylon*
Mansonia	*Mansonia altissima*
Teak	*Tectona grandis*
Abura	*Mitragyna ciliata*
Ayin	*Anogeissus leiocarpus*
Opepe	*Nauclea dideririchii*
Idigbo	*Terminalia ivorensis*
Omo	*Cordia millenii*
Ita	*Celtis integrifolia*
Danta	*Nesogordonia papaverifera*
Osan	*Chrysophyllum delevoyi*

Source: Field survey, 2011

Table 6: Endangered Timber Species in Oyo Town

Common Name	Scientific Name
Gmelina	*Gmelina arborea*
Araba	*Ceiba petandra*
Oorii(Emi)	*Vitellaria paradoxa*
Agboin (Ekhimi)	*Piptadenia africana*
Ayoo	*Allium sativum*
Arere	*Triplochiton scleroxylon*
Mansonia	*Mansonia altissima*
Teak	*Tectona grandis*
Abura	*Mitragyna ciliata*
Ayin	*Anogeissus leiocarpus*
Opepe	*Nauclea dideririchii*
Idigbo	*Terminalia ivorensis*
Omo	*Cordia millenii*
Ita	*Celtis integrifolia*
Danta	*Nesogordonia papaverifera*

Source: Field Survey, 2011

Table 7: Current Timber Species Traded in Ibadan Timber Markets

Common Name	Scientific Name
Ayin	*Anogeissus leiocarpus*
Obi	*Cola acuminata*
Mango	*Mangifera indica*
Eeku	*Brackystegia leonensis*
Orokoro	*Mallotus oppositifolius*
Teak	*Tectona grandis*
Gmelina	*Gmelina arborea*
Cassia	*Cassia bicarpsularis*
Iyaa	*Daniellia oliverii*
Igba	*Parkia biglobosa*
Emido	*Uapaca guineensis*
Apa(Oro/Sapo)	*Alfezia africana*
Osan	*Chrysophyllum delevoyi*
Akonnu	*Pyonanthus angolensis*
Ogungun(Araba)	*Ceiba petandra*
Sekeseke	*Delonix regia*
Poonoporo	*Pterygota macrocarpa*
Black Afara	*Terminalia Ivorensis*
Rubber	*Hevea brasiliensis*
White Afara	*Terminalia altissima*
Breadfruit	*Treculia africana*
Oriro	*Antiaris africana*
Ayunre	*Albizia coriaria*
Araba	*Ceiba petandra*
Ipapo(Ooro)	*Antiaris toxicaria*
Eki	*Phira alota*
Veneer	*Pseudotsuga menziesii*
Aboje	*Irvingia gabonensis*
Elekiriti	*Lonchocarpus sericeus*
Laakale	*Erythrina senegalensis*
Ure	*Trichillia spp.*
Ita aparo	*Panicum spp.*
Kerebuye	*Rothmannia longiflora*
Ige	*Diospyros mespiliformis*

Source: Field Survey, 2011

Table 8: Current Timber Species Traded in Oyo Timber Markets

Common Name	*Scientific Name*
Mango	*Mangifera indica*
Eeku	*Brackystegia leonensis*
Orokoro	*Mallotus oppositifolius*
Teak	*Tectona grandis*
Gmelina	*Gmelina arborea*
Cassia	*Cassia bicarpsularis*
Iyaa	*Daniellia oliverii*
Igba	*Parkia biglobosa*
Emido	*Uapaca guineensis*
Apa(Oro/Sapo)	*Alfezia africana*
Osan	*Chrysophyllum delevoyi*
Akonnu	*Pyonanthus angolensis*
Ogungun(Araba)	*Ceiba petandra*

Source: Field survey, 2011

Table 9: New Species Currently Traded in the Market

Common Name	**Scientific Name**
Obi	*Cola acuminata*
Mango	*Mangifera indica*
Rubber	*Hevea brasiliensis*
Aboje	*Irvingia gabonensis*
Ige	*Diospyros mespiliformis*
Breadfruit	*Treculia africana*
Orokoro	*Mallotus oppositifolius*
Laakale	*Erythrina senegalensis*
Elekiriti	*Lonchocarpus sericeus*
Ipapo(Ooro)	*Antiaris toxicaria*

Source: Field Survey, 2011