

# Contributions of sawn wood and herb sellers from Ibadan metropolis, southwestern Nigeria to forest restoration

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## Abstract

The study investigated contributions of sawn wood and herb sellers in Ibadan metropolis to forest restoration. Data were obtained through personal interview and administration of semi-structured questionnaire on 100 sawn wood sellers and 100 herb sellers in five selected markets for each category. Data collected were analyzed using descriptive statistics. The study revealed that 59% of the wood sellers were males and 41% were females whereas 29% of the herb sellers were males and 71% were females. Highest percentage (40%) of sawn wood sellers and herb sellers (46%) had their ages between 41-50% years. Majority (40%) of the sawn wood sellers had secondary education while majority (38%) of the herb sellers had primary education. Timber ranked 1<sup>st</sup> with 89% as a benefit derived from forests by sawn wood sellers while for herb sellers, medicine ranked 1<sup>st</sup> with 98%. Also, 59% and 97% of the sawn wood sellers and herb sellers respectively have never planted trees before. Tree species planted by 41% of sawn wood sellers who have planted trees before were *Gmelina arborea*, *Tectona grandis* and *Terminalia ivonrensis*. Identified constraints regarding tree planting in order of importance were non-availability of seeds, lack of funds and non-availability of land. The participation of both sawn wood sellers and herb sellers in forest restoration is still very low therefore there is need for more awareness among general public on benefits derivable from forests. This would likely encourage more responsible use of forests and consequently aid involvement of more people in forest restoration.

## Introduction

People have been engaged in forest-based enterprises for a long time. This may be due to their dependence on forests for their various needs ranging from construction to storage, agricultural, energy, nutritional and medicinal purposes. FAO (2018) reported that forests and trees supply hundreds of millions of people with food, energy, and income, and act as a safety net during hard times. These people get engaged in activities such as furniture making from sawn wood, rattan and bamboo, charcoal production, collection and processing of non-timber forest products such as medicinal plants, fruits and ropes, fuelwood gathering, honey production, silkworm production, mushroom cultivation, domestication of wildlife for bush meat; all of these activities are either solely or somewhat forest-based. Access to forest goods by people

who rely heavily on forests for diverse reasons has become challenging in recent years as a result of indiscriminate use of the forest which has led to overexploitation and legitimate initiatives such as the declaration of state forests, national parks or wildlife reserves (Isager et al., 2001).

Diverse reasons can be attributed to deforestation which include burgeoning population, urbanization, industrialization, grazing, construction of large dams, expansion of agricultural lands, annual bush burning and fuelwood exploitation. The growing population and rising prices of food as well as energy will exacerbate the situation particularly in a developing country like Nigeria. All these reasons have led to an increased demand for forest resources and this has posed a serious threat to the economy as well as social and environmental welfare

(Aigbe and Oluku, 2012). Hence, the people that benefit from the forest either directly or indirectly have a major role to play in forest restoration (Agbogidi and Okonta, 2003). Such people should see the forest as their capital base that should be protected rather than squandered. Successful management of forest resources rest on the support, understanding and cooperation of the people that use the forest. According to FAO (2003), if local people benefit from enterprises that depend on the sustainable use of the forest, they will reasonably contribute to forest restoration. This is however a probability hence this study investigated the contributions of people in forest-based enterprises particularly the sawn wood and herb sellers to forest restoration in Ibadan metropolis.

Elliot et al. (2013) defined forest restoration as actions to re-instate ecological processes, which accelerate recovery of forest structure, ecological functioning and biodiversity levels towards those typical of climax forest. Restoration is more than planting trees, its benefits are many and these include the quantity and the quality of the forest itself, enhancement of food security, improvement of water quality, climate change mitigation and employment creation (Winterbottom, 2014). Most communities have realized that forest restoration is not only targeted at preventing the unsustainable extraction of forest products, but it also has several strategic roles such as the prevention of ozone layer from depleting among many other services. Despite the desired forest restoration, disastrous environmental phenomena occur which lead to deforestation, biotic loss, species becoming endangered, destruction of biological diversity, loss of fertile land and pollution (Oloyede, 2008; Saliu et al.,

2010). Deforestation and overexploitation of the forests have led to the destruction of forest restoration efforts (Alder, 2004). Two types of forest restoration efforts have been identified by Crouzeilles et al. (2017) which are natural forest regeneration and active restoration. Natural forest regeneration usually occurs when species colonize lands that have undergone natural disasters and marginal lands that have been deserted due to overexploitation. At times, this process is assisted by humans through guarding against livestock encroachment, weed invasion and fire (Shono et al., 2007; Zahawi et al., 2014). On the other hand, active restoration involves the use of seedlings, direct sowing and other interventions to aid in the restoration of the forest. In restoring a forest, efforts are made to return a deforested estate or degraded forest to the original and ameliorated state.

Intentional restocking of deforested lands to form forests usually begins with reforestation efforts. Although reforestation offers many benefits which include soil conservation, soil fertility improvement, water shed protection, shelter belt protection; their simple composition and structure mean that they rarely contribute significantly to biodiversity conservation. Nevertheless, reforestation is usually the starting point of any forest restoration effort.

## **Methodology**

### *Description of the study area*

The study was carried out in Ibadan, Oyo state, Nigeria. Ibadan is located approximately on longitude 3°30'N and 4°10'N; and latitude 7°20'E and 7°40'E at a distance of about 145km North-East of Lagos. It is located in the South-West geopolitical zone of the country.

The total area is 130km<sup>2</sup>. It has tropical wet and dry climate. The mean annual rainfall is 1,500mm with mean temperature of 28°C and with hottest months in February, March and April. Ibadan has four rivers which are mainly tributaries. The rivers are Ona river in the North and West; Ogbera river towards the East; Ogunpa river flowing through the city and Kudeti river in the central part of the metropolis.

#### *Method of data collection*

Preliminary survey of sawn wood markets and herb markets in Ibadan was done. Then, five sawn wood markets: Bodija, Sango, Oke-Ado, Apata and Owode were chosen. Likewise, five herb markets were selected: Oje, Bode, Oranyan, Apata and Dugbe. The selection was guided by the large number of sawn wood and herb sellers in these markets.

Semi-structured questionnaire was administered to twenty randomly selected respondents in each of the selected sawn wood markets and herb markets. This made a total of 100 respondents each for sawn wood and herb sellers making a total of 200 respondents in all. The administration of the questionnaire was by personal interview and observations since most of the respondents could neither read nor write. Data collected include the demographic characteristics of the respondents, species of trees planted, and respondents' opinion on forest restoration among others.

Data collected were subjected to descriptive statistics such as frequency and percentage. Prioritization of the benefits derived from forests, trees planted, problems militating against tree planting and forest regeneration activities were carried out using percentage (%) mention. This method which followed the format of International Centre for Research in

Agroforestry (ICRAF) adapted by Popoola et al. (1996) and used by Arowosoge et al. (2009)

$$\% \text{ Mention} = \frac{\text{Number of times a variable was mentioned}}{\text{Number of interviews conducted}} \times 100$$

is stated below:

## **Results and Discussion**

### **Results**

#### *Socio-economic characteristics of sawn wood and herb sellers*

Socio-economic characteristics of the respondents are presented in Table 1. The result for sawn wood sellers showed that the highest percentage (40%) of the respondents ranged from 41 - 50 years of age followed by those within 51 - 60 years with a value of 35% while those whose ages were less than 30 years were just 2%. Similarly for herb sellers, the highest percentage (46%) was between 41-50 years of age followed by those between 51-60 years with a value of 37% while the least percentage (1%) were those whose ages were less than 30 years. The result also showed that 59% of the sawn wood sellers were males and 41% were females whereas 29% of the herb sellers were males and 71% were females.

Furthermore, the result showed that for sawn wood sellers, majority (40%) had secondary education followed by those that had tertiary education with a value of 29% while those with informal education were the least with 9%. Also, for herb sellers, 38% had primary education followed by respondents that had secondary education with 33% while those with tertiary education were the least with 10%. Majority of the sawn wood sellers and herb sellers were married with 78% and 83% respectively. The study also revealed that majority of the sawn wood sellers were Christians with 51% closely followed by Muslims with a value of 48% while majority

(83%) of the herb sellers were Muslims with 16% being Christians. The year of experience of respondents in business showed that the highest percentage (40%) of the sawn wood sellers have been in the business for a period of 11 to 20 years while the least number (5%) of the respondents has been in the business for over 30 years. Furthermore, majority (48%) of the herb sellers have been in the business for a period of 11 to 20 years while the least number (15%) has been in the business for minimum

of 30 years.

#### Benefits from the forest

#### *Benefits derived by sawn wood and herb sellers from forests*

The various benefits derived from the forest as mentioned by the respondents are presented in Table 2. The result for sawn wood sellers showed that timber ranked 1<sup>st</sup> with 89%, followed by food which ranked 2<sup>nd</sup> with 75% while environmental services ranked 4<sup>th</sup> with

**TABLE 1**  
Socio-economic characteristics of sawn wood and herb sellers

Description	Sawn Wood Sellers		Herb Sellers	
	Frequency (n=100)	Percentage (%)	Frequency (n=100)	Percentage (%)
<b>Age (Years)</b>				
<30	2	2	1	1
31-40	12	12	6	6
41-50	40	40	46	46
51-60	35	35	37	37
>60	11	11	10	10
<b>Gender</b>				
Male	59	59	29	29
Female	41	41	71	71
<b>Marital Status</b>				
Single	3	3	0	0
Married	78	78	83	83
Divorced	5	5	9	9
Widowed	14	14	8	8
<b>Educational Background</b>				
Informal	9	9	19	19
Primary	22	22	38	38
Secondary	40	40	33	33
Tertiary	29	29	10	10
<b>Religion</b>				
Christianity	51	52	16	16
Islam	48	48	83	83
Traditional	1	0	1	1
<b>Years of business</b>				
< 10 years	37	37.0	20	20.0
11-20 years	44	44.0	48	48.0
21-30 years	14	14.0	17	17.0
> 30 years	5	5.0	15	15.0

Source: Field survey, 2018

**TABLE 2**  
Benefits derived from trees and forests

Benefits	Sawn wood Sellers			Herb Sellers		
	No. of times mentioned	% Mention	Rank	No. of times mentioned	% Mention	Rank
Timber	89(100)	89.0	1st	42(100)	42.0	3rd
Medicine	71(100)	71.0	3rd	98(100)	98.0	1st
Food	75(100)	75.0	2nd	72(100)	72.2	2nd
Environmental Services	40(100)	40.0	4th	31(100)	31.0	4th

Source: Field survey, 2018

40%. Also for herb sellers, the result showed that medicine ranked 1<sup>st</sup> with 98% followed by food which ranked 2<sup>nd</sup> with 72.2% while environmental services ranked 4<sup>th</sup> with 31%. Likewise, all the sawn wood sellers (100%) said that all their wood species being sold were indigenous and not exotic. Also, the result of the sources of products being sold by both the sawn wood and herb sellers was similar. Forest reserve ranked 1<sup>st</sup> with 79% and 80% for the sawn wood and herb sellers respectively. This was followed by farmland which ranked 2<sup>nd</sup> with 15% for the sawn wood sellers and 6% for the herb sellers. Free areas ranked 3<sup>rd</sup> with 17% for the sawn wood sellers and 3% for the herb sellers.

*Participation of sawn wood and herb sellers in forest restoration*

Majority of the sawn wood sellers (74%) who were aware that trees could be planted said that they got this information through the mass

media while the least (4%) got theirs through books. In the case of herb sellers, the highest percentage (49%) also got theirs through the mass media while the least (2%) got theirs through forestry staff (Figure 1). Table 3 shows the various species that sawn wood sellers had planted before that ranked 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> and these are *Tectona grandis*, *Gmelina arborea* and *Terminalia ivorensis* respectively. Likewise, the herb sellers mentioned *Vernonia amygdalina*, *Anacardium occidentale*, *Moringa oleifera*, *Aframomum melegueta* and *Terminalia catappa* as the species they had planted before ranking 1<sup>st</sup> to 5<sup>th</sup> respectively (Table 4). Furthermore, in response to the questions of whether the respondents would like to be involved in planting trees, 74% of the sawn wood sellers and 66% of the herb sellers were not willing to plant trees (Figure 2). Similarly, 59% of the sawn wood sellers and 97% of the herb sellers have never planted trees before.

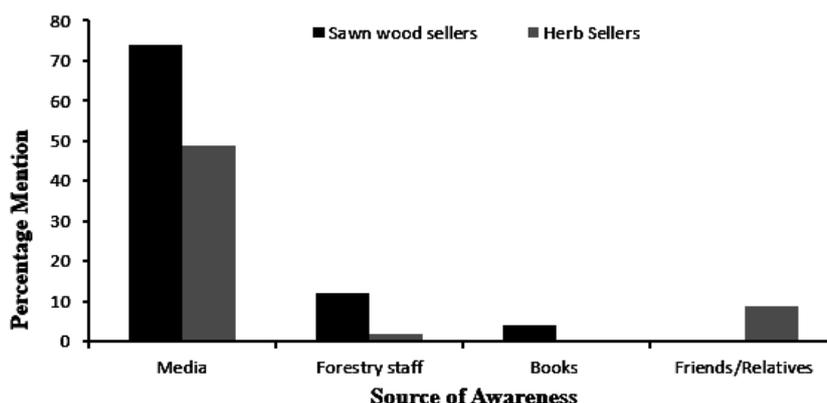


Figure 1: Source of awareness regarding tree planting

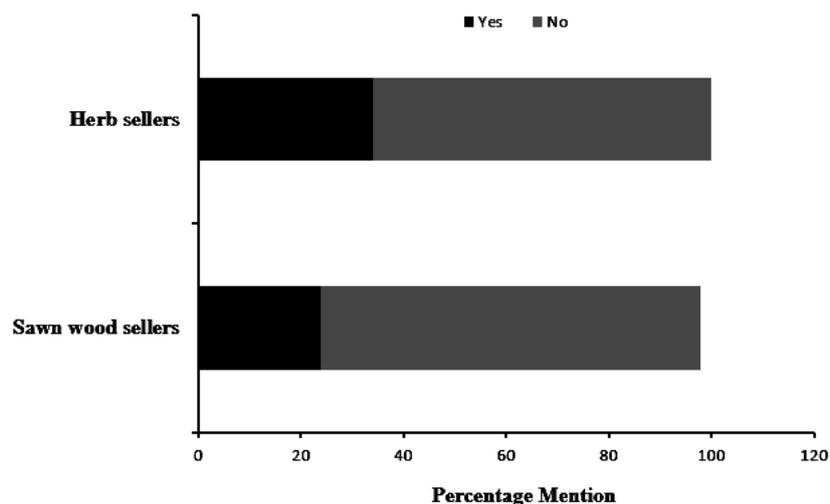


Figure 2: Willingness to plant trees

**TABLE 3**

Trees planted by sawn wood sellers

Common Name	Botanical Name	No. of Times Mentioned	%Mention	Rank
Gmelina	<i>Gmelina arborea</i>	47(100)	47	2 <sup>nd</sup>
Teak	<i>Tectona grandis</i>	69(100)	69	1 <sup>st</sup>
Black afara	<i>Terminalia ivorensis</i>	28(100)	28	3 <sup>rd</sup>

Source: Field survey, 2018

**TABLE 4**

Trees/shrubs planted by herb sellers

Common Name/Local Name	Botanical Name	No. of Times Mentioned	%Mention	Rank
Ataare	<i>Aframomum melegueta</i>	48(100)	48	4 <sup>th</sup>
Cashew	<i>Anacardium occidentale</i>	58(100)	58	2 <sup>nd</sup>
Fruit tree	<i>Terminalia catappa</i>	28(100)	28	5 <sup>th</sup>
Drum	<i>Moringa oleifera</i>	50(100)	50	3 <sup>rd</sup>
Bitter Leaf/Ewuro	<i>Vernonia amygdalina</i>	61(100)	61	1 <sup>st</sup>

Source: Field survey, 2018

**TABLE 5**

Forest restoration activities by respondents

Restoration Activities	Sawn wood Sellers			Herb Sellers		
	No. of Times Mentioned	% Mention	Rank	No. of Times Mentioned	% Mention	Rank
Raising tree seedling	1(100)	1.0	4 <sup>th</sup>	8(100)	8.0	3 <sup>rd</sup>
Planting of trees in farmland	4(100)	4.0	3 <sup>rd</sup>	16(100)	16.0	2 <sup>nd</sup>
Replanting trees in private plantation	8(100)	8.0	2 <sup>nd</sup>	-	-	-
Planting of trees within compound	17(100)	17.0	1 <sup>st</sup>	76 (100)	76.0	1 <sup>st</sup>

Source: Field survey, 2018

The result of respondents’ involvement in forest restoration activities is presented in Table 5. For sawn wood sellers, planting of trees within their compounds ranked 1<sup>st</sup> with 17% followed by planting of trees in private plantations with 8% while raising tree seedlings ranked the least with 1%. For herb sellers, planting trees within their compounds ranked 1<sup>st</sup> with 76%, planting trees in farmland ranked 2<sup>nd</sup> with 16% while raising tree seedlings ranked the least with 8%.

*Challenges encountered in sourcing for products and regarding forest restoration efforts*

Problems encountered by sawn wood sellers in sourcing for wood species are presented in Table 6. The result for the sawn wood sellers showed that scarcity of matured wood in the forest ranked 1<sup>st</sup> with 75% followed by lack of transportation with 21% while accessibility

during the rainy season ranked least with 10%. Moreover for herb sellers, scarcity of herbs ranked 1<sup>st</sup> with 100% followed by lack of transportation which ranked 2<sup>nd</sup> with 87% while fraudulent activities ranked 5<sup>th</sup> with 20%.

Furthermore, the results of the challenges encountered for tree planting were similar for sawn wood sellers and herb sellers (Figure 3). These challenges were non-availability of seeds, lack of funds and non-availability of land with their ranking as 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> with 59%, 23% and 12% respectively for sawn wood sellers and 97%, 2% and 1% respectively for herb sellers. Also, problems encountered with raising tree species were ranked and lack of knowledge of proper tending of seedlings ranked 1<sup>st</sup> with 77% and 98% for sawn wood sellers and herb sellers respectively. Lack of skilled labour and poor survival of seedlings ranked 2<sup>nd</sup> and 3<sup>rd</sup> for sawn wood sellers only

**TABLE 6**  
Problems encountered in sourcing for benefits from the forest

Problems	Sawn wood Sellers			Herb Sellers		
	No. of Times Mentioned	% Mention	Rank	No. of Times Mentioned	% Mention	Rank
Lack of transportation	35(100)	35.0	2 <sup>nd</sup>	89(100)	89.0	2 <sup>nd</sup>
Lack of access during raining season	10(100)	10.0	5 <sup>th</sup>	40(100)	40.0	4 <sup>th</sup>
Time consuming	20(100)	20.0	3 <sup>rd</sup>	80(100)	80.0	3 <sup>rd</sup>
Fraudulent activities	14(100)	14.0	4 <sup>th</sup>	20(100)	20.0	5 <sup>th</sup>
Scarcity of wood/herbs in the forest	75(100)	75.0	1 <sup>st</sup>	100(100)	100.0	1 <sup>st</sup>

Source: Field survey, 2018

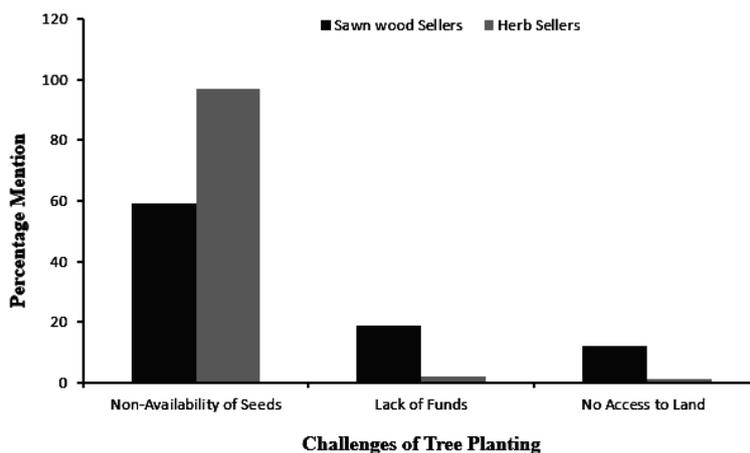


Figure 3: Challenges encountered during tree planting

**TABLE 7**  
Problems encountered at seedling stage

Problems	Sawn wood Sellers			Herb Sellers		
	No. of Times Mentioned	% Mention	Rank	No. of Times Mentioned	% Mention	Rank
Poor survival of seedling	3(100)	3.0	3 <sup>rd</sup>	-	-	-
Lack of skilled labour	8(100)	8.0	2 <sup>nd</sup>	-	-	-
Poor weather and climate	-	-	-	-	-	-
Lack of knowledge on proper tending of seedling	77(100)	77.0	1 <sup>st</sup>	98(100)	98.0	1 <sup>st</sup>

Source: Field survey, 2018

(Table 7).

### Discussion

#### *Socio-economic characteristics of sawn wood and herb sellers*

The fact that males were more than females in sawn wood enterprise as revealed in this study may be due to the strenuous nature of the business. According to Ndaghu et al. (2012) labour-demanding livelihoods are usually male dominated. A report had earlier been given by Aiyeloja et al. (2012) that laborious occupations are dominated by the male gender in the southeastern Nigeria. However, the gender profile for herb enterprise showed that majority of the herb sellers were females. This is in agreement with Usman and Osuji (2007) on the marketing of miraculous berry (*Thaumatococcus daniellii*) that females are generally involved in the marketing of non-timber forest products such as herbs, fodder and fruits. Similarly, Molnar et al. (2010) reported that women work predominantly in the informal sectors as primary collectors and sellers of NTFPs while men dominate more formal sectors and timber trade. The study also revealed that majority of sawn wood and herb sellers were of middle age (41-50) years. This shows that they were active people who could move around to source for forest products for business transactions. Also, forest-

based enterprises must have been providing livelihood for the family of those that are engaged in the business because majority of the sawn wood and herb sellers were married. It has been opined that married people that are into business tend to be more committed to their business because of their many financial obligations in the family (Okunmadewa et al., 2000).

The observed level of education among sawn wood sellers in Ibadan is similar to the result obtained by Omoteye (2017) who reported that most of the sawn wood sellers and sawmillers in Ado-Ekiti had secondary education. Similarly, Aiyeloja et al. (2013) reported a good percentage of the respondents having high school education. Being educated will make the sellers to be more effective in communication and make access to information easy particularly regarding changes in prices and new innovations in the marketing of sawn wood. Also, high level of education may not really be prerequisite for establishing certain trades such as herb selling for the majority of the sellers had only primary school education. Likewise, the trade could be learnt through apprenticeship. People from the two prevalent religions in Nigeria being Christianity and Islam were also involved in the business depicting the fact that religion had little or no effect regarding engaging in

this business.

#### *Benefits derived by sawn wood and herb sellers from forests*

The study revealed that the main benefit derived from the forest by the sawn wood sellers was timber while it was medicine for herb sellers. This finding confirms the report of FAO (2011) that many humans depend on forests and their products to meet a large number of their needs. Furthermore, there is still deficiency in knowledge among the respondents about the services that forest offers because the choice of environmental services as benefit from forests ranked least. Furthermore, FAO (2008) listed some of the benefits from forest which have been promoting economic development and reducing poverty in the society to include fuelwood and other forest products such as fruits, vegetables, soup condiments, seeds, herbs, timbers, poles and wildlife.

#### *Participation of sawn wood sellers and herb sellers in forest restoration*

Despite attesting to the many benefits derivable from the forests, sawn wood and herb sellers were not willing to plant trees as revealed by the results of this study. This result contradicts the report of Saliu et al. (2010) that peoples' involvement in afforestation is gaining recognition. Also, that respondents were not willing to plant trees could still be attributed to the myth that "trees are God-made so they will always regenerate on their own, they can never be exhausted". This myth could have been true assuming that there is no pressure on the forests but in the recent immediate past to date, rate of forest exploitation is very high and awaiting natural regeneration would be risky. Similarly, unwillingness to plant trees can be due to long rotation cycle of many tree species

especially in comparison with agronomic crops. Incidentally for the respondents that had planted trees before, sawn wood sellers were more than herb sellers, this may be so because sawn wood sellers deal more directly with wood products particularly timber so they may feel more obligated to plant trees whereas herb sellers deal more with non-wood/non-timber forest products.

Furthermore, the fact that all the sawn wood sellers interviewed sold indigenous species further attests to the report of Arowosoge et al. (2010) that there was acute shortage of *Tectona grandis* which ought to have been avoided. Incidentally, Ojo (1977) had anticipated this shortage to start by year 2000 in Nigeria and recommended the establishment of a massive plantation programme of about 30,000 hectares annually for a period of forty years in order to meet timber requirements of the nation. Moreover, *Tectona grandis* that ranked first among the trees that had been planted before by sawn wood sellers could be associated with its ease of establishment, fast growth rate, fire resistance traits and excellent wood properties (Akinsanmi, 1985; Kaosa-ard, 1998).

### **Conclusion**

This study has shown that males dominated the sawn wood enterprise while herb enterprise was dominated by females. The main benefit derived from the forest by the sawn wood sellers was timber while for herb sellers, it was medicine and these were mainly sourced from forest reserves. Furthermore, *Gmelina arborea*, *Tectona grandis* and *Terminalia ivorensis* were the tree species planted by the sawn wood sellers who claimed to have planted trees before. Identified constraints facing the planting of trees in order of importance

were non-availability of seeds, lack of funds and non-availability of land while lack of knowledge on tending of seedlings ranked first among the problems encountered at seedling stage for those who have planted trees before. The participation of both sawn wood sellers and herb sellers in forest restoration is still very low. There is need for more awareness among the generality of the public regarding many services derivable from forests apart from goods. as this would likely encourage more responsible use of forests and even aid participation of more people in forest restoration.

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