ECONOMIC CONTRIBUTION OF NON-TIMBER FOREST PRODUCTS (NTFPs) IN OGUN WATERSIDE LOCAL GOVERNMENT AREA, OGUN STATE

By

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Abstract
This study assessed the economic contributions of NTFPs in the area. Purposive sampling was used to select 2 communities from 18 communities identified in the area. This was based on the fact that these communities had forest areas. Projected population of each of the communities selected were computed using the projection formula with Lukogbe 4,000 and Ibu 2,200 people. Furthermore, 2.5% sampling intensity was used to select 100 respondents from Lukogbe and 55 respondents from Ibu making a total of 155 respondents. Data were collected with the aid of structured questionnaire and analyzed using descriptive statistics. Results showed that majority of respondents were male (71.0%), between 50-59 years (31.0%), had secondary education (36.8%), farmers (43.2%), married (58.7%), had household size of 6-10 (50.3%), indigenes (84.5%) and had been in NTFPs business for 11-20 years (34.2%). Major NTFPs identified in the area include bush meat (99.4%), fruits (98.7%) and fuelwood (98.1%). Majority (47.1%) of respondents earn between ? 300,000-? 499,000/ annum from sales of NTFPs. Major benefits of NTFPs in the area were for medicinal purposes (100%), food (99.4%) and income (90.3%). NTFPs is vital in livelihood sustenance in the area. There is need to intensify efforts on awareness campaign to enlighten individuals on sustainable strategies to manage these species.

Keywords: Non-timber forest products, Sustainable Forest Management, Rural households, Income.

Introduction
Non-timber forest products (NTFPs) constitute an important source of livelihood for millions of people across the world. It is estimated that more than 15 million people in Sub-Saharan Africa earn their income from forest-related enterprises such as fuel wood, charcoal sales, commercial hunting and handicraft production (Brian *et al.,* 2011; Food and Agriculture Organisation (FAO) 2016). In Nigeria, rural households largely depend on agriculture or NTFPs as their main source of income (National Bureau of Statistics (NBS), 2009). According to Jimoh *et al*., (2013), it was observed that rural households in Nigeria

derived up to 80% of their incomes from the sales of NTFPs. In addition, Zaku *et al*., (2013) reported that over 70% of the country's households depend directly on fuelwood as their main sources of energy, with daily consumption estimated at 27.5 million kg/day**.** Many people living in and around forests harvest a range of products from forests for trade or consumption as compared to timber, due to less expensive extraction technology and ease of access (Schaafsma, 2012).

According to Nambiza and Lyatura (2013) the integrity of forests is vital to household food security, mostly because of the dependence of the poor on forest resources. Thus, the collection of Non-Timber Forest Products (NTFPs) for household use is widespread. This is mainly driven by poverty and household food insecurity caused by lack of non-wood substitute products (World Bank, 2009). In many developing countries, including Nigeria majority of rural household and a large proportion of urban household depend on NTFPs to meet some parts of their nutritional, health, construction material and income from selling these products. FAO (2020) in a documented experience in community forest management stated that the roles of NTFPs include: income generation for rural development; more equitable sharing of the benefits of forest; and local participation in forest management.

In economic terms, NTFPs contribute substantially to national economic growth and international trade. For example, wild plant resources contribute an income of around US$ 1200 per household per year in Southern Africa (Shackleton *et al.*, 2007). Likewise, Jimoh and Haruna (2007) reported that the NTFPs have potential to contribute around 68% of total monthly household income within Onigambari Forest Reserve, Nigeria. Despite these potential benefits that are offered by the non-timber forest products, it has been widely documented that it still offers little in terms of opportunities for expanding livelihood options required to reduce livelihood vulnerability (Ruiz-Perez, 2001; Leßmeister *et al.,* 2016). Therefore, this study was carried out to assess the economic contribution of NTFPs in Ogun waterside local government area.

Methodology

Description of the study area

Ogun waterside is a local government area in Ogun state, Nigeria. It is the only area of the state with coastline on the Bight of Benin and also borders Lagos lagoon. Its latitude and longitude is at $6^0$29'N $4^0$24'E/6.483^{0}N 4.400^{0}E.Ogun waterside has an area of 1,000km^2 and an estimated population of 103,200 (NPC, 2006) resulting in a population density of 103.2/km^2. It is bordered by Ijebu East local government to the Northwest, Odigbo, Okitipupa and Ilaje local government areas of Ondo state to the Northeast, East and Southeast respectively, Epe local government of Lagos state to the West, and the Atlantic Ocean to the south. Other towns and villages in the local government area include: Ilushin, Lukogbe, Iwopin, Olojumeta, Imakun Omi, Ode Omi, Ibu, ItebuManuwa, Ibiade, Efire,

Lomiro, Oni, Ayede, Igele, Ayila, and Irokun.

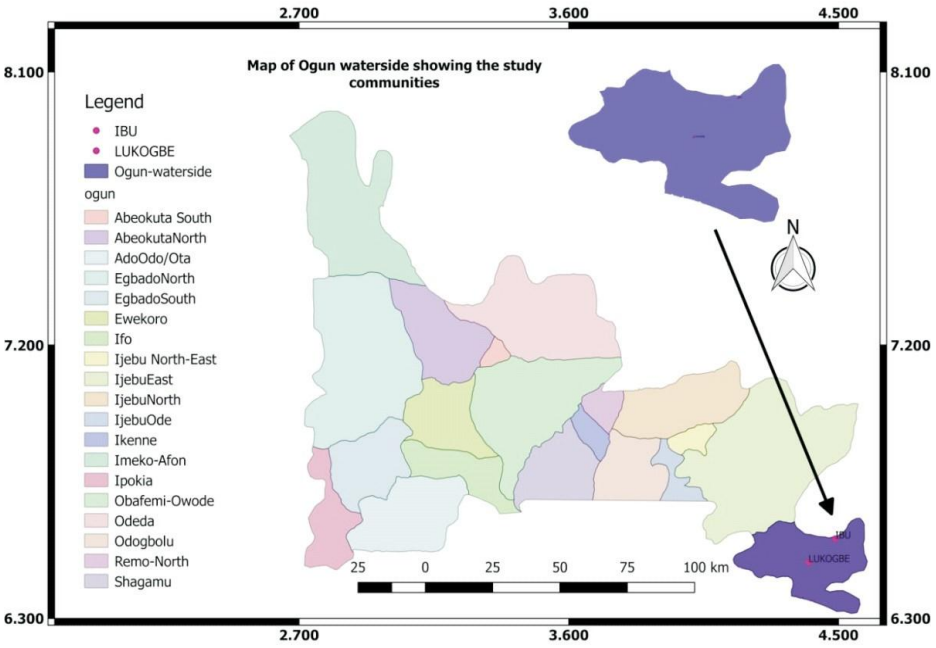

Figure 1: Map of the study area

Sampling procedure

From the reconnaissance survey carried out, 18 communities (Ilushin, Lukogbe, Iwopin, Olojumeta, Imakun Omi, Ode Omi, Ibu, Itebu Manuwa, Ibiade, Efire, Lomiro, Oni, Ayede, Igele, Ayila and Irokun) were identified in the study area out of which two communities (Lukogbe and Ibu) were purposively selected. This selection was based on the fact that these communities had forest areas unlike others where the land areas were mostly coastlines. Also, inhabitants of these communities were actively involved in the exploitation of NTFPs for various purposes. To get the population of each of the communities selected, a document indicating the population of the area for 2006 was obtained from the National Population Commission of Ogun state and from this document a projection of 2020 population size for the area was computed using the projection formula:

$Pn = Poert$ ..... (1)

Where: Pn = Final population, Po = Initial population, e = exponential r = growth rate

(3.2%), t = time interval (x-2006) years, t = 21 years.
Therefore, the total projected population of Lukogbe was 4,000 while that of Ibu was 2,200 people. However, 2.5% sampling intensity adopted by Diaw *et al.*, (2002) was further used to select respondents for the study. Hence, 100 respondents were randomly selected in Lukogbe while 55 respondents were randomly selected in Ibu. Therefore, a total of 155 respondents were randomly selected for this study.

Method of data collection
Primary data were used for this study. Primary data were collected with the aid of structured questionnaire. The questionnaire was designed to obtain information on the NTFPs in the study area, common NTFPs utilized by household in the study area and benefits of NTFPs to household food security and income.
Data analysis
Data collected were analyzed using descriptive statistics

Results and Discussion
Socio-demographic characteristics of the respondents
The result in Table 1 revealed the socio-demographic characteristics of the respondents in the study area. It was indicated that majority (71.0%) of the respondents were male while 29.0% were female. This therefore, shows that more males than females were involved in collection of NTFPs in the study area. This was because males are traditionally the major providers of household income. This therefore conform to the findings of Olawuyi and Odeyale (2019) which stated that men are accorded much higher status than women and this have a significant impact on access to resources and assignment of rights and duties. It was also revealed that most (31.0%) of the respondents were within the ages of 50-59 years while the least percentage (10.3%) were recorded in respondents within the ages of 0-29 years. This implies that greater percentage of the respondents in the study area were still very agile and full of vigor and strength to carry out the laborious activities involved in collection of NTFPs. This supported the findings of Wuranti (2004); Olawuyi and Odeyale (2019) who reported that farmers in their active years are productive.
Also, the result shows that most (58.7%) of the respondents were married while a few of the respondents (7.7%) were widowed. This may be due to the fact that most of the respondents practice polygamy. This is also in agreement with the findings of Babatunde, (2008) who reported that most people in rural communities are married and are mostly engaged in farming activities. The result on the household size of respondents shows that household size of 6-10 recorded the highest percentage (50.3%) while those with 16-20 recorded the least (12.9%). The result of this study is not surprising, considering the findings of Olawuyi *et al.*, (2019) that individuals in rural communities tend to have high percentage of household size as this necessitate the pressure to produce more for the family

and also for sale. The educational status of the respondents revealed that 36.8% had secondary education while the least percentage 12.3% was recorded for those that had no formal education. This result supported the finding of Olawuyi, (2019) which stated that most farmers in rural communities lack tertiary education due to their inability to proceed in their education. However, the result on nativity indicated that majority of the respondents (84.5 %) were indigenes while 15.5% were non-indigene. This imply that most rural dwellers are native of the area and are also more involved in exploitation of forest products for livelihood sustenance. With reference to the occupation of respondents, it was indicated that most (43.2%) of the respondents were farmers while the least percentage was recorded for those involved in other forms of occupation with 1.3%. This is also in agreement with the findings of Odeyale and Olawuyi, **(**2018) who stated that majority of people in the rural areas are mostly engaged in farming activities. For the years in business, the result shows that majority of the respondents (34.2%) had about 11-20 years of experience while the least percentage (15.5%) had above 30 years of experience in the business. This is an indication that most of the respondents have been into the business of farming for quite a long time.

Table 1: Socio-demographic characteristics of the respondents

Characteristics	**Frequency**	**Mean**	**Percentage**
Gender			
Male	110		71.0
Female	45		29
Total	155		100
Age			
0-29	16		10.3
30-39	24		15.5
40-49	47	38.5	30.3
50-59	28		31.0
60-69	20		12.9
Total	155		100
Marital status			
Single	29		18.7
Married	91		58.7
Widowed	12		7.7
Divorced	23		14.8
Total	155		100

Household size			
0-5	24		15.5
6-10	78	9.5	50.3
11-15	33		21.3
16-20	20		12.9
Total	155		100
Educational status			
No formal	19		12.3
Primary	31		20.0
Secondary	57		36.8
Tertiary	48		31.0
Total	155		100
Nativity			
Indigene	135		84.5
Non-indigene	20		15.5
Total	155		100
Occupation			
Farmer	67		43.2
Artisan	30		19.4
Logger	4		2.6
NTFPs collectors	34		21.9
Hunter	18		11.6
Others	2		1.3
Total	155		100
Years in business			
0-10	45		29.0
11-20	53	17.7	34.2
21-30	33		21.3
31-40	24		15.5
Total	155		100

Source: Field Survey, 2020

NTFPs identified in the study area

Table2: NTFPs identified in the study area

Products	Frequency	Percentage
Honey	144	92.9
Snail	151	97.4
Mushroom	40	25.8
Forages and fodders	144	92.9
Bush meat	154	99.4
Nuts	139	89.7
Fruits	153	98.7
Fuel wood	152	98.1
Gums	38	24.5
Resins	102	65.8
Wrapping leaves	138	89.0
Shea butter	107	69.0
Palm wine	137	88.4
Vegetable	152	98.1
Sponge	142	91.7
Ropes	146	94.2
Poles	125	80.6
Others	40	25.8

Source: Field Survey, 2020

The result in Table 2 shows the non- timber forest products identified in the study area. It was revealed that honey (92.9%), snail (97.4%), forages and fodders (92.9%), bush meats (99.4%), fruits (98.7%), fuel wood (98.1%), vegetable (98.1%), sponge (91.7%), ropes (94.2%), among others were the major products identified in the study area. This result is an indication that the area is blessed with varieties of NTFPs which are cherished by most rural dwellers and their exploitation greatly contribute to their livelihood sustenance. This corroborated the findings of Olawuyi and Odeyale (2019) who reported that most people in rural communities largely depend on forest products to sustain their families.

Income generate per year from the sales of the products

Table 3: Income generate per year from the sales of the products

Amount/year (?)	Frequency	Mean	Percentage
0 - 100,000	12		7.7
100,000 - 299,000	50		32.3
300,000 - 499,000	73	267,338.71	47.1
500,000- 699,000	20		12.9
Total	155		100
What do you use the money for after selling NTFPs			
Paying tuition fees	18		11.6
Buying home utensils	34		21.9
Buying food for family use	23		14.8
Saving for future expenditure	65		41.9
Others	15		9.7
Total	155		100
Do you agree with me that there should be management of these NTFPs?			
Yes	155		100.0
No	0		0.0
Total	155		100

Source: Field Survey, 2020

The result in Table 3 shows the amount generated per annum by respondents from non-timber forest products. It was indicated that majority of the respondents (47.1%) earn about ? 300,000- ? 499,000 yearly while the least percentage (7.7%) of the individuals were respondents who earns below ? 100,000. This means that the respondents generate quite much from the sales of NTFPs per year to sustain their livelihood. This corroborated the findings of *Olawuyi and Agbeja (2018)* who reported that majority of rural households in Nigeria depend on the forest product to meet some part of their nutritional needs and also generated income from the sales of NTFPs. It was further revealed from the table that 41.9% of the respondents save the money they generate from sales of forest products for future expenditure while a few others (9.7%) use the money for some other purposes. It was also revealed that 50.1% of the respondents found the business moderately profitable while 18.7% of the respondents said it was not profitable (Figure 2).Therefore, it was generally agreed that management of forest resources be ensure to enhance sustainability. The various ways by which forest resources can be managed were suggested by

respondents and these include: Enlightenment of rural communities (61.0%). Prohibition of illegal fellers (18.0%), Formulation of laws and policies (15.0%), Afforestation/ reforestation (5.0%) and others (1.0%) (Figure 3). However, reasons given for NTFPs business not profitable include: poor transportation (86.0%), distance to market (7.0%), others (lack of storage facilities) (4.0%) and cost of registration (3.0%) (Figure 4)

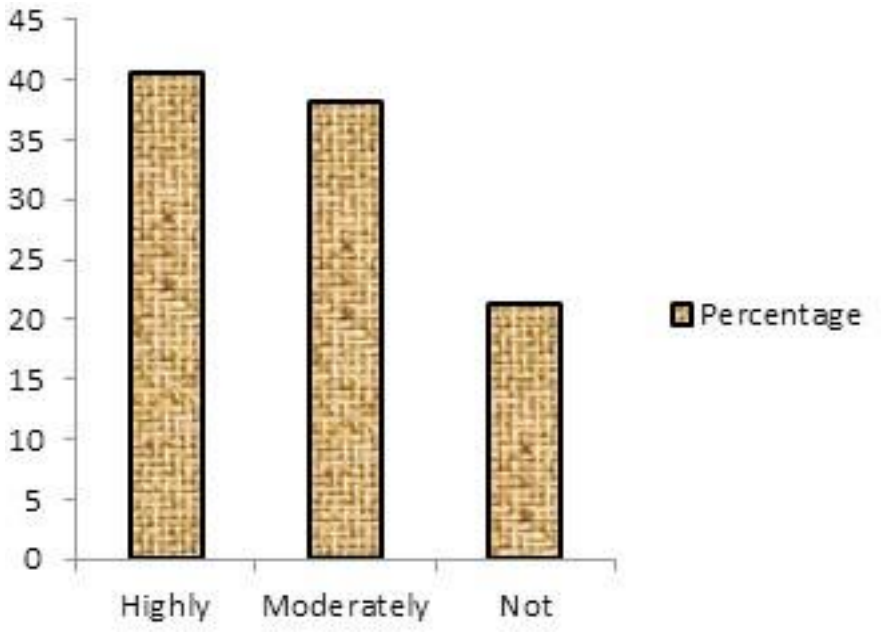

Figure 2: Respondents rating of the forest products in the study area

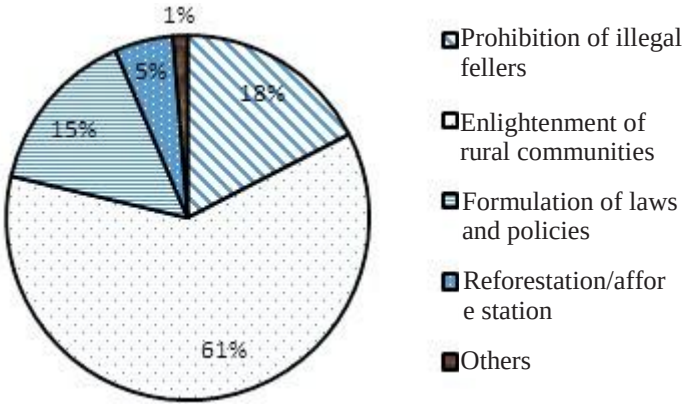

Figure 3: Ways in which the forest resources can be managed

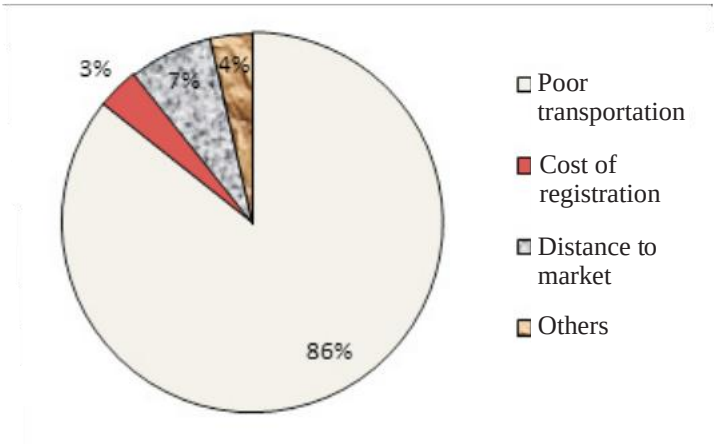

Figure 4: Reasons given for sales of NTFPs not profitable in the study area

Benefits of NTFPs in the study area

Table 4: Benefits of NTFPs in the study area

Benefits	Frequency	Percentage
Medicinal		
Yes	155	100.0
No	-	
Total	155	100
Food		
Yes	154	99.4
No	1	0.6
Total	155	100
Shelter		
Yes	90	58.1
No	65	41.9
Total	155	100
Income generation		
Yes	140	90.3
No	15	9.7
Total	155	100
Help to meet educational needs		
Yes	18	11.6
No	137	88.4
Total	155	100

Provision of job opportunity		
Yes	56	36.1
No	99	63.9
Total	155	100
Poverty reduction		
Yes	39	23.2
No	119	76.8
Total	155	100

Source: Field Survey, 2020

The result in Table 4 shows the response of the respondents on benefits of the products in the study area. It was revealed that major benefits of NTFPs are medicinal purposes (100%), source of food (99.4%), source of income (90.3%) and for building (58.1%). This implies that respondents in the study area depended on the forest as their basic necessities such as food, shelter and medicine or as supplement to other food products as well as for income generation. This conform to the study Aluko *et al*., (2020) which stated that NTFPs contribute significantly to the income of rural people.

Conclusion

The important roles played by NTFPs in livelihood of rural households cannot be over-emphasized. The study revealed that majority of rural households in Ogun waterside local government area depends on NTFPs to meet some part of their nutritional, health, housing construction needs. Major NTFPs identified in the area include honey, snail, forages and fodders, bush meats, fuel wood, vegetable, sponge, ropes and poles. These NTFPs were commonly utilized by households in the study area. Lastly, major benefits of NTFPs were for medicinal purposes, as source of food, as source of income and for building. Therefore, sustainable forest management of non-timber forest products should be taken up as a developmental strategy in the reserve to ensure the continuous availability of these products for rural sustenance.

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