



## **Assortment of Farming Activities to Non Timber Forest Products for Sustainable Livelihoods in Mbano Local Government Area of Imo State, Nigeria.**

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### ***Abstract***

The research was aimed at evaluating the assortment of farming activities to non-timber forest products for sustainable livelihoods in Mbano local government area of Imo State, Nigeria. This study was carried out in five communities of Mbano LGA of Imo State, Nigeria which were; Umuduru, Osu - Owere, Asu –Ana, Umuosu and Amausari as participation communities in assortment of farming activities to non timber forest products. Multistage random sampling was used to choose 219 respondents. Face-to-face interviews with the respondents generated primary data, which was obtained using structured questionnaires. The socio-economic profile of the sampled respondents was determined using descriptive methods. The data obtained from objective I, III and IV was analyzed using descriptive statistics such as (frequency distribution, percentage mean) objective II was achieved using livelihood status index. The outcome of the research appeared that most of the respondents were active with mean age of 30 years while the average family size was 11. The findings of the study showed that 80.4% were married and more than half of the respondents had no formal education. However, respondents in the study area had moderate livelihood for assortment from farming activities to non-timber forest product. Also, fuelwood was ranked highest for utilization amongst forest products utilized in the study area. The challenges faced by the respondents in the study area ranges from restriction from the community, government and transportation problem. It is therefore recommended that awareness should be

advocated to farming family for diversifying their means of livelihood for sustainable income and the standard of their wellbeing.

**Keywords:** Assortment, activities, non-timber, livelihoods, forest, sustainable.

## ***Introduction***

### **Background of the Study**

In Nigeria, rural household depend on forest resources to meet a variety of livelihood objectives. These objectives include food security, social security, income generation and risk management (Emmanuel, 2022). The majority of people in Nigeria particularly those (communities) that are residing in rural areas continue to be vulnerable to environmental changes and this vulnerability is greatly increased by the grossly undeveloped agriculture and over dependence on natural resources particularly non-wood forest products for sustainable livelihoods (Agbo 2023). The contributions of non-timber forest products as source of income, diversification of farming activities and food to households cannot be over emphasized; NTFPs are usually for cultural and recreational purposes, biodiversity conservation, and rural economic development (Edward *et al.*, 2021). As indicated by (Peter *et al.*, 2020), the NTFPs, if prioritized by the government and other stakeholders can be used to enhance the economic and social well-being of communities living in and around forestlands. These products are grouped into timber and non-timber products (NTFPs). Although timber

products are highly valued worldwide, the NTFPs which play an important role in sustaining livelihoods of communities living around forest areas, but have been given minimum attention. Although NTFPs may not be the most important income generating products for local people living close to the forests, they contribute significantly to household income, Furthermore, the importance of NTFPs in household income is not well known due to the absence of a systematic and rigorous data collection system at national level in many developing countries (FAO 2021). Previous workers have observed that rural households in Nigeria derived up to 80% of their incomes from the sales of NTFPs (Jimeel *et al.* 2023). In addition, (Babalola *et al.* 2022) 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. Thus, harvesting and processing of NTFPs in many areas in the country have shifted from subsistence exploitation and sales at the local markets to international cross-boundary trade. For example, in the high forest zones of Eastern and Western Nigeria, harvesting of game meat and snails for sales are now major income generating activities

almost all year round (Okocha 2022). While in the Savannah zone of Central and Northern Nigeria, honey, fuelwood, locust bean seeds, gum Arabic, and charcoal production generate lots of incomes for the rural households (Jimeel et al. 2023). Similar contributions of NTFPs to rural wellbeing have been reported in other African countries including Kenya and Tanzania (Samjeen *et al.* 2022). Several findings revealed that adult, mostly females, middle aged with sufficient energy are involved in gathering and marketing of NTFPs. This therefore, gives rise to the need for inclusion and encouragement of women and youth to be more involved in NTFP based enterprises with appropriate regulations in place. In approaching the NTFP regulation, it is important for the Government to take into considerations the financial, environmental, ecological and social costs and benefits of such actions, capacity of the government in implementing the actions and the likelihood of compliance by the relevant stakeholders (James and Daniel 2021). Non-timber forest products (NTFPs) contribute to livelihoods of between 3.5 and 5.8 billion people worldwide in the form of income, food and nutrition security, medicinal and other socio-economic ecosystem services (FAO, 2021), and (James and Daniel, 2021) found that the livelihoods of people in Southern Africa are dependent strongly on natural resources. This finding has been prompted by the fact that communities living adjacent to forest reserves rely greatly on the NTFPs for their livelihoods.

The purpose of this study is to examine assortment of farming activities for non-timber forest products for sustainable livelihoods, the specific objectives are to:

- i. describe the socio-economic characteristics of respondents in the study area,
- ii. determine the livelihoods status for non-timber forest products,
- iii. ascertain forest products utilization by respondents for sustainable livelihoods,
- iv. ascertain the challenges faced by the respondents in the study area

## **MATERIAL AND METHODS**

### **Selection of the study area and sample**

The research was carried out in five (5) different communities in Mbanol Government area of Imo State. Both descriptive and analytical techniques were used for the study. The communities are: Umuduru, Osu - Owere, Asu –Ana, Umuosuru and Amausari as participation communities in assortment of farming activities to non timber forest products.

### **Sampling Procedure and Sample Size**

Multi-stage sampling technique was used for the study. The first stage involved random selection of Agricultural zones I (Okigwe) in the State. At the second stage, one (1) Local Government Area (LGA) was randomly selected, this is due to the abundance of non- timber forest activities in Mbano local government area of

agricultural zone I. The third stage involved random selection of five (5) communities from the Local Government Areas (LGA). At the fourth stage, 15% of the respondents were randomly selected from the sampling frame of each community. In all, a total of 219 respondents were selected from the LGA as the sample size for the study.

**Table 1: Sample distribution of the respondents in the study area**

<b>Communities</b>	<b>Sample frame</b>	<b>Sample size (15%)</b>
<b>Umuduru</b>	330	35.1
<b>Osu Owere</b>	235	22.2
<b>Asu Ana</b>	212	19.6
<b>Umuosu</b>	120	12.8
<b>Amausari</b>	103	10.3
<b>Total</b>	1000	100

**Sources: Field survey, 2023**

### **Method of Data collection and Analytical Techniques**

Primary data was used for the study, the data were collected by researchers and trained enumerators using structured questionnaire complimented with interview schedule. The data obtained from objective I, III and IV was analyzed using descriptive statistics such as (frequency distribution, percentage mean). Objective II was achieved using livelihoods status index.

## **RESULTS AND DISCUSSIONS**

### **Socio-economic Characteristics of Respondents**

#### **Age**

Table 2, revealed that (32.8%) and (44.8%) of the respondents had age of 20-30 years and 30-40 years respectively. The mean age of the respondents was 30.3 years. This finding indicates that the respondents in the study area were still within their active and productive age where assortment of farming activities can be diversified into non timber forest products. This finding is in line with that Emeka (2022) who reported that mean age of 30 years are active age to diversify from farming activities to non-timber forest resources in a study conducted in Orlu local government area of Imo State.

#### **Marital status**

Table 2, indicated that 80.4% of the respondents were married while 12.3% and 7.3% were single and widowed respectively. This implies that most of the respondents in the study area were married. Marriage involves some kind of responsibilities on the

family whereby farmers are implored to diversify from farming activities to non-timber forest resources in order to avoid seasonal scarcity. This finding concurs with Ijeoma *et al.* (2022) who reported that majority of rural households in Southern part of Nigeria are married.

### Household size

Table 2, shows that the mean household size of the respondents was 11 persons, implying that respondents in the study area were of large household size. It is generally believed that large household size is an advantage in the assortment of non-timber forest resources for sustainable livelihoods. This result is in line with (Ugochukwu, 2022) who says that large household size reduces the rate of labor cost for diversifying farming activities in a rural setting.

### Years of experience

Table 2, revealed that the mean year of experience in assortment of non-timber forest resources is 15.5 years. This signifies that respondents in the study area had improved in years of diversification of non-timber forest resources. This could be advantageous in utilizing different types of non-timber forest products that will enhance their income and livelihood. This finding agreed with that of Ibrahim and Hauwa'u (2021) who reported that high experience among rural populace that assorted into non-timber forest product in Nigeria increase their income and better their standard of living.

### Educational level

Table 2, revealed that 53.9% of the respondents had non-formal education. On the other hand, 34.7% and 11.4% of the respondents had primary and secondary education respectively. This finding shows that more than half of the respondents in the study area had non-formal education and this may influence decision to apply different strategies of non-timber forest products processing activities that will improve their livelihood. This finding agrees with Mike *et al.* (2022) who reported that level of non-formal education among rural populace in Nigeria decreases their diversify strategies.

**Table 2: Distribution of respondents according to socio-economic characteristics (n=219)**

Variables	Frequency	Percentage	Mean
<b>Age</b>			
20 – 30	72	32.8	30.3
30 – 40	98	44.8	
41 – 50	49	22.4	

<b>Marital status</b>			
<b>Married</b>	176	80.4	
<b>Single</b>	27	12.3	
<b>Widowed</b>	16	7.3	
<b>Household size</b>			
<b>&lt; 8</b>	78	35.6	11
<b>8 – 12</b>	114	52.1	
<b>12 – 15</b>	27	12.3	
<b>Year of experience</b>			
<b>&lt; 11</b>	69	31.5	15.5
<b>11 – 20</b>	150	68.5	
<b>Educational level</b>			
<b>Non Formal</b>	118	53.9	
<b>Primary</b>	76	34.7	
<b>Secondary</b>	25	11.4	

Sources: Field survey, 2023

### **Livelihoods Status for Non-Timber Forest Products**

Table 3, showed that (71.7%) of the respondents had moderate livelihood while (15.5%) had low livelihood. Also, (10.5%) of the respondents had high livelihood while only (2.3%) of the respondents had very high livelihoods. This finding concur with the study by Ibrahim and Hauwa'u (2021) that, moderate livelihood among the rural household in Ifelodun Local Government Area of Kwara State is as a result of diversification of agricultural activities. Moderate and high livelihood among the respondents in the study area is a strong indication of improved livelihood from diversification to non-timber forest product. This finding is in line with that of Usman and Umar (2021) who revealed that majorities of farmers in Eastern part of Nigeria had moderate livelihood due to assortment from agricultural to non-timber forest resources.

Table 3: Distribution of the respondents based on their livelihood status (n=219)

<b>Status</b>	<b>Frequency</b>	<b>Percentages</b>
Very High	5	2.3
High	23	10.5
Moderate	157	71.7
Low	34	15.5
<b>Total</b>	<b>219</b>	<b>100.0</b>

<b>Mean Livelihood Index</b>	<b>0.416</b>
<b>Minimum Livelihood Index</b>	<b>0.213</b>
<b>Maximum Livelihood Index</b>	<b>0.862</b>

**Source: Field Survey, 2023**

**Note: Livelihood index is classified as  $\leq 0.30$  = Low,  $0.30 - 0.55$  = Moderate,  $0.55 - 0.85$  = High,  $> 0.85$  = Very High.**

### **Ascertain Forest Products Utilization by Respondents for Sustainable Livelihoods**

Table 4 shows that fuel wood ranked highest with (84%) for utilization both in the household and for commercial purposes for sustainable livelihood, followed by timber off cuts, bamboos, medicinal herbs and poles which ranked 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup>, and 5<sup>th</sup> respectively. Furthermore, gum arabic was ranked lowest as forest product utilization by the respondents for sustainable livelihood. This is consistent with findings from Ijeoma *et. al.*, (2022), who show that diversification of farming activities to non-timber forest products in the Eastern part of the country improve household wellbeing in a number of ways, including energy, nutrition, health, shelter, and monetary income.

**Table 4: Ascertain Forest Products Utilization by Respondents for Sustainable Livelihoods**

<b>Forest Products</b>	<b>Frequency of utilization</b>	<b>Ranking</b>
Fuel wood	84%	1 <sup>st</sup>
Medicinal Herbs	56%	4 <sup>th</sup>
Fodder For Livestock	35%	9 <sup>th</sup>
Honey	29%	10 <sup>th</sup>
Gum Arabic	19%	11 <sup>th</sup>
Fruit Nuts	50%	7 <sup>th</sup>
Timber Off Cuts	62%	2 <sup>nd</sup>
Canes	36%	8 <sup>th</sup>
Bamboos	59%	3 <sup>rd</sup>
Rattans	51%	6 <sup>th</sup>
Poles	52%	5 <sup>th</sup>

**Source: field survey, 2023.**

Table 5 shows forest use restriction by community as the major constraints to forest resources utilisation in the study area with a frequency of 83.7. This might be due dispute over ownership of forest by two communities and villages. This finding agreed with the study of Agbo (2023) that there were community restrictions in Eastern

Nigeria regarding to forest utilization. This constraint was followed by Forest use restriction by government with a frequency of 83.0, this might be attributed to human activities such as deforestation, bush burning and natural phenomena like intense radiation and soil erosion. This result collaborate the finding of Jimeel, *et. al.*, (2023) that human activities lead to forest resources restriction by the government.. The third ranked constraint was poor transportation means with a frequency of 81.0 which result from inadequate means of transporting forest products. The least ranked constraint was fire outbreak with a frequency of 59.0.

**Table 5: Challenges Faced by the Respondents in the Study Area**

Constraints	frequency	Ranking
<b>Illegal utilization of forest resources</b>	80.3	4 <sup>th</sup>
<b>Inadequate labor supply</b>	65.5	8 <sup>th</sup>
<b>Land tenure problem</b>	79.7	5 <sup>th</sup>
<b>Incessant communal crisis</b>	75.3	7 <sup>th</sup>
<b>Fire outbreak</b>	59.0	9 <sup>th</sup>
<b>Poor financial resources</b>	76.2	6 <sup>th</sup>
<b>Poor transportation means</b>	81.0	3 <sup>rd</sup>
<b>Forest use restriction by government</b>	83.0	2 <sup>nd</sup>
<b>Forest use restriction by community</b>	83.7	1 <sup>st</sup>

Sources: Field survey, 2023

\*Multiple responses

## CONCLUSION AND RECOMMENDATIONS

Based on the findings of these research it was concluded that majority of the respondents were in their active age and are married while majority had moderate household size with a mean of 11 members in a household. The year of experience of non-timber forest resources utilization was 15.5 implying that the respondents has quite number of years of experience for diversifying from farming activities to non-timber forest resources utilization, it was also observed that more than half of the respondents do not have formal education. However, respondents in the study area had moderate livelihood for assortment from farming activities to non-timber forest product. Also, fuelwood was ranked highest for utilization amongst forest products utilized in the study area. The major constraints faced by the respondents in the study area for assortment from farming activities to non-timber forest products ranges from restriction from the community, government and transportation problem. It is therefore recommended that awareness should be advocated to farming family for diversifying



their means of livelihood for sustainable income and the standard of their wellbeing. Also, means of transportation should be provided by the government and non-governmental organizations to ease the transportation of forest products.

## REFERENCES

- Agbo, K. (2023). Patterns and equity outcomes in household reliance on non-timber forest products: Evidence from two rural communities. *National Review of Forestry*, 2(3).
- Babalola, O., Daniel, K., & Saliu, J. (2022). *Enhancing Food Security Through non Timber Forest Products for Economic development. Journal of Agricultural Forestry Resources*. 4(2)
- Edward, S., Donald, U., & Mathew, W. (2021). Varieties of dependence: A community case study on non-timber forest products usage across socioeconomic stratas. *Journal of Forests and Livelihoods*, 1(2).
- Emeka, G. (2022). The Impact of forest utilisation and crude oil prospecting activities on natural forests and forest plantations, Nigeria. Ministry of Environment.: Pp. 34-75
- Emmanuel, A. (2022). Role of non-timber forest products in sustaining rural livelihoods in Awka. *International Journal of Forestry and Forest resources*, 4(1).
- FAO. (2021). *State of the World's Forests*, FAO Rome, Regional paper discussion No18, 24- 85.
- Ibrahim, U., & Hauwa'u M. (2021). The environmental impact of poverty: evidence from firewood collection in rural areas. *International Journal of forest and forestry resources* 2 (4).
- Ijeoma, O., Nze., & Obinna, K. (2022). *Developing Indices for Estimating Flora and Fauna Biodiversity Components of the Gele-Gele Forest Reserve in Nigeria. Environmental Sustainability and Conservation in Nigeria*. Pp. 310-319
- James, M., & Daniel, U. (2021). *Can Non-Timber Forest Products Match Tropical Forest Conservation and Development Objective?* NY: Ecological Economics and Management, Oxford University Press: Pp. 701-743
- Jimeel, O., Alfa, M., & Kehinde, N. (2023). Participatory inclusions, community forestry, and gender: An analysis for South Africa and a conceptual framework. *World Development Document No 29*, Pp 567- 766.
- Mike, B. N., Raymond, O., & David, S., (2022). Socio-economic characteristics and food security of farming households in Benue State, North-Central Nigeria. *International Journal of Nutrition*, 3(2).
- Okocha, K. (2022). Over utilisation of forest resources its impact on the environment. *Referred Research Journal*, 1(3).
- Peter, A., Onoh, Y., and Afam, M. (2020). When dependence excludes: Elite control over non-timber forest product trade in indigenous villages of Kenya. *International Journal of Local Environment*, 2(1).
- Samjeen, M., Ray, G., & Owen, U., (2022). Promoting environmental protection in Nigeria through environmental education: the role of women. *Journal of Natural Environment* 2(1).
- Ugochukwu, A., Obasi, M., & Kamsi, K. (2022). Environmental impact of natural resources utilisation in Nigeria and the way forward. *Journal of Applied Technology in Environmental Sanitation*, 1 (5).
- Usman, M, Umar, I. S. (2021). Analysis of Livelihood Benefits Derived from Forest Resources Utilization among Farming Populace in Kogi States, Nigeria, *Journal of Agriculture and Sustainable Development*, 1 (1).