

*Full Length Research Paper*

# Assessment of rural households' objectives for gathering non-timber forest products (NTFPs) in Kogi State, Nigeria

**Awe F.\*, Osadebe C. O., Imoagene E., Fashina A. Y., Eniola T. S. and Adeleke E. O.**

Forestry Research Institute of Nigeria, P. M. B. 5040, Jericho, Ibadan, Oyo State, Nigeria.

Accepted 10 January, 2011

**This study assessed rural households' objectives for gathering non-timber forest products in Kogi State, Nigeria, with specific focus on identifying some species of non-timber forest products present in the area, identifying reasons why they engaged in the gathering of the non-timber forest products (NTFPs) as well as determining the relative importance of the identified reasons to the households. One hundred and sixty-eight (168) questionnaires were randomly administered on respondents from four randomly selected local government areas from Kogi West Senatorial District of the State. The study identified some species of NTFPs that were found in the study area. These included locust bean (*Parkia biglobosa*), water leaf (*Talinium triangulare*), bitter leaf (*Vernonia amygdalina*) and a host of others. Also, reasons why these rural households in the study area collected NTFPs were identified. Among the reasons given were food security, self employment, income generation and continuity. The relative importance of the given reasons was also determined and it was discovered that food security was the most important reason the households engaged in NTFPs gathering while continuity objective was ranked least.**

**Key words:** Non-timber forest products, household, food security, continuity, Kogi State.

## INTRODUCTION

Rural households across the world have various reasons for which they engage in non-timber forest products (NTFPs) gathering and these differ from one person to another, from one household to the other and from one region to another. However, the kind of objectives or goals set by these households depends on individual households' present, and in some cases future needs. According to Ellis (1993), household objective could be under two broad categories, namely economic efficiency and social effectiveness. In the view of Clayton (1983), the priority objectives of households are to ensure sufficient food production and cash. But apart from these two reasons, households generally have a number of secondary objectives for which they engage in the gathering of NTFPs, such as having security in their

livelihood, having the opportunity to observe socio-cultural customs and obligations as well as having satisfactory amount of leisure time. And when we talk of household, it is a person or group of persons who live together under the same roof and having a common feeding arrangement (Dewey, 1975). Throughout the world, millions of people make extensive use of biological products from the wild (Koziell and Saunder, 2001; Lawes et al., 2004). These items commonly termed non-timber forest products (NTFPs) are harvested for both subsistence and commercial use, either regularly or as a fallback during times of need. Neumann and Hirsch (2000), after noting the exclusive nature of the terminology, went on to define a NTFP as 'literally any and every natural resource from the forest except timber.' According to Andel (2006), they are wild plant and animal products harvested from forests, such as wild fruits, vegetables, nuts, edible roots, honey, palm, medicinal plants, poisons, snails and bush meat. He further

\*Corresponding author. E-mail: femray4real@yahoo.com.

maintained that millions of people especially those living in rural areas in developing countries, including Nigeria, collect these products daily and many, according to Sale (2006) and Shomkegh et al. (2008), regards selling as a means of earning a living.

Non-timber forest products are biological products and services derived mainly from forests as well as marginal lands. They may be used to make different products for domestic use or marketed through middlemen. They add to people's livelihood security, especially for rural dwellers, and may also have substantial cultural significance and value (Posey, 1999; Cocks and Wiersum, 2003). Research at a global scale has identified that rural households draw from a diversity of income sources, adopt a range of livelihood strategies in order to achieve and maintain a sustainable livelihood (DFID, 1999). These include the use of NTFPs both for household consumption and for sale.

Often times, people have attributed the reason why rural households engage in NTFPs collection or gathering mainly to income generation. But apart from income or profit-making, there are several other reasons for which these people engage in the collection of these products. In view of this, the study was set out to investigate why rural households of Kogi State engage in NTFPs gathering, with the following specific objectives being investigated:

1. To identify some species of NTFPs found in the study area.
2. To identify the reasons why rural households in the study area engage in NTFPs gathering.
3. To determine the relative importance of these goals to the households.

## METHODOLOGY

### Study area

The study was carried out in Kogi State which is situated within the North-Central zone of Nigeria. It is the most centrally located of all the States of the Federation (FOS, 1997), with a population of 3,595,789 (2005 Census). It comprises Igala, Ebara, Kabba, Yoruba and Kogi divisions of former Kabba Province with Yoruba, Nupe and Bassa as the main ethnic groups and Yoruba, Nupe and Ebara as the major languages spoken. The State has two distinct seasons (the wet and dry seasons) and a humid tropical climate prevails over the State.

This study covered four local government areas out of the twenty-one (21) in the State. The four LGAs were randomly selected from a purposively selected Kogi West Senatorial District of the State, which forms the Yoruba speaking part of the State. The purposive selection of the district was due to the prevalence of NTFPs collection activities in the region. At least three towns and villages were randomly selected from the each of the local government areas. The chosen towns and villages were Aiyegunle-Gbedde, Araromi-Gbedde and Okoro-Gbedde (Ijumu LGA); Ihale, Okebukun, Iluke and Kabba Township (Kabba-Bunu LGA); Bagido-Isanlu, Idofin-Isanlu, Iddo-Ojesh and Mopo-Isanlu (Yagba East

LGA) as well Efo-Amuro, Ileteju-Mopa and Takete-Idde in Mopamuro Local Government Area.

### Method of data collection

Data were purposively collected through interview schedule and questionnaires administered on one hundred and sixty eight (168) randomly selected household heads from fourteen (14) towns and villages.

### Method of data analysis

Data were analyzed using frequency matrix, frequency counts, percentages and least significant difference (LSD) test.

## RESULTS AND DISCUSSION

Table 1 shows some NTFPs that are commonly found in the study area and what they are being used for, by the people of the area. These were identified by the respondents as the most commonly collected and most often used species.

The most commonly collected species of NTFPs in the study area are vegetables, bush meat, chew sticks, mushroom, wrapping leaves, construction poles, fruits and nuts. The distribution of respondents according to the collected species is shown in Figure 1.

From Figure 1, it observed that bush meat is the most collected of all the species. This is in agreement with an earlier report by Awe et al. (2009) that apart from farming, bush meat hunting is a common activity in the study area.

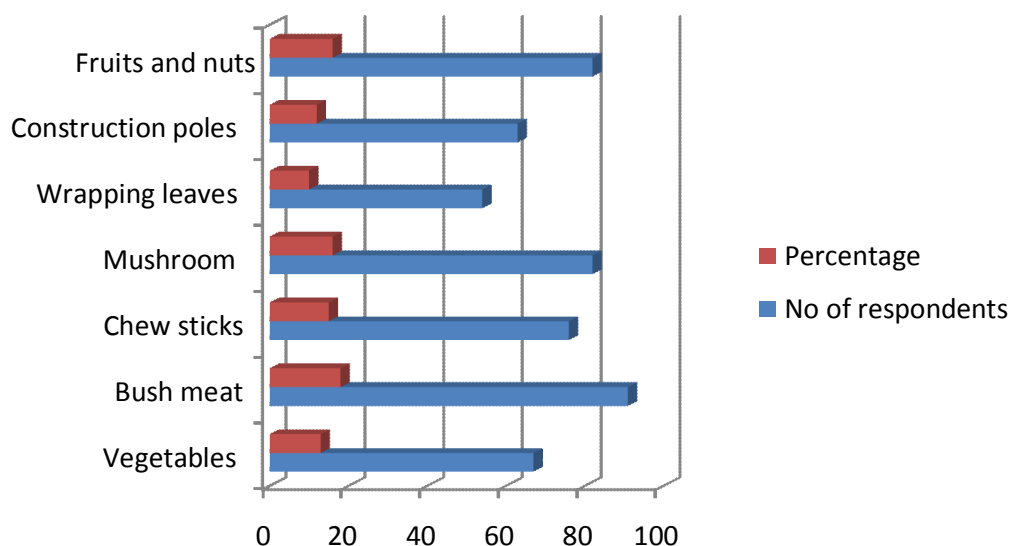
### Utilization of NTFPs among respondents

It was observed from the study that there are several uses to which rural households put NTFPs. These include the use NTFPs as food, medicine, local construction materials, and crafts and so on. Nearly all (98%) of the respondents affirmed that they collect and use NTFPs as food. The species used as food are in the form of wild fruits (*Chrysophyllum albidum*), vegetables (*Vernonia amygdalina*), and bush meat (*Thryonomys swinderianus*); honey, nuts, snails, edible insects as well as edible roots.

This agrees with earlier reports by Andel (2006) and Jimoh and Haruna (2007) as well as Tee and Amonum (2008) that NTFPs are used as food and food condiments by rural households. Likewise, more than 92 % (155) of the respondents confirmed that they use NTFPs for medicinal purposes to treat various ailments and diseases which include diarrhea, wounds, ulcer, stomach aches and many other infirmities. The part used for these purposes are the roots, leaves, bark and seeds. This is in conformity with the report by Abere and Lameed (2008) that African giant land snails (*Achatina achatina* and

**Table 1.** Some identified edible NTFPs in Kogi State.

Scientific name	Common name	Part used	Uses
<i>Parkia biglobosa</i>	Locust bean	Fruit pump,seeds	Food,spices
<i>V. amygdalina</i>	Bitter leaf	Leaves	Vegetable, income
<i>Talinium triangulare</i>	Water leaf	Leaves	Vegetable, income
<i>Ricinus communis</i>	Castor oil	Fruits	Condiment
<i>Elaeis guineensis</i>	Oil palm	Nuts,fruit,stem	Food, wine, income
<i>Celsosia argente</i>	Coco yam	Leaves,stem	Vegetable, food
<i>C. albidum</i>	Star apple	Fruits	Snacks, income
<i>Vitellaria paradoxa</i>	Shear butter	Fruits,seed	Cooking oil, cosmetics
<i>Apis mellifera</i>	Honey bees	Honey	Food, income
<i>Agaricus bosporium</i>	Mushroom	Strip,pileus	Food, income
<i>Cola nitida</i>	Kola nut	Fruit	Food,income, medicine
<i>Garcinia cola</i>	Bitter kola	fruit	Food,income, medicine
<i>Cocos nucifera</i>	Coconut	Fruit	Food, income
<i>Carica papaya</i>	Pawpaw	Fruit,leaves	Food, Income, medicine
<i>Cricetomy sp.</i>	Giant rat	Whole part	Food, income
<i>Thryonomys swimderianus</i>	Grass cutter	Whole part	Food, income
<i>A. achatina</i>	Giant land snail	Whole part	Food, income, medicine
<i>Archachatina marginata</i>	Giant land snail	Whole part	Food, income, medicine
<i>Occimum gratissimum</i>	Scented leaf	Leaves,tender stem	Food supplement, medicine
<i>Mangifera indica</i>	Mango	Fruit	Food, income
<i>Anacardium occidentale</i>	Cashew	Fruit,nut	Food, income
<i>Bambusa vulgaris</i>	Bamboo	Stem,leaves	Construction
<i>Mussularis acuminata</i>	Chew stick	Little stem	Toothcare, income
<i>Luffa luffa aegyptiaca</i>	Sponge	Fruit	Washing, bathing
<i>Lophira lanceolata</i>	Chew stick	Little stem	Totthbrush, buccal hygiene

**Figure 1.** Distribution of respondents according to collected species.

*Archachatina marginata*) are used to cure whooping cough, anemia, ulcer, asthma, aphrodisiac and hypertension. They further stressed that the fluid of the snails

is used to treat headache, dysentery, eye problems and small pox, while the meat is used to cure bone fracture and infertility in women. The respondents also attested

**Table 2.** Personal data of respondents.

Variable	Frequency	Percentage
<b>Age of household head</b>		
20-29	5	3
30-39	58	35
40-49	47	28
50-59	44	26
Above 60	14	8
<b>Gender</b>		
Male	98	58
Female	70	42
<b>Educational level</b>		
No formal education	91	54
Primary	57	34
Secondary	15	9
Post secondary	5	3

that a single species of NTFPs could have multiple curative values, as observed in snails which have been successfully used to control malformation of bone structure and promotion of easy childbirth, nourishment of lactating women, and circumcision of male children as well as suppression of convulsion in children. This also agrees with previous reports of Abere and Lameed (2008).

Furthermore, according to the respondents, those species used for construction include *Phoenix reclinata*, *Raphia* sp., *Chromolaena odorata*, etc. Others like palm leaves or grasses are locally used as construction materials in the thatching of huts, fences and local bridges across small streams. This possibly led Andel (2006) to state that life would be virtually impossible for most people living in rural areas of developing countries, Nigeria inclusive, without the availability of palm leaves for roof thatch as many people in these regions have no money to buy zinc sheets for roofing.

Table 2 shows the personal characteristics of the respondents. The results show that 66% of the households' heads were less than 50 years of age. This implies that majority of those involved in the gathering and collection of non-timber forest products were active people who can still move around to source for the products. It could also be deduced from the table that the collection of NTFPs is a collective responsibility of both male and female, though there are some species that are particularly gathered by female. These include mushroom, wrapping leaves, vegetables, fruits etc. while the hunting of bush meat is peculiar to the male. The study also reveals that majority (54%) of the respondents were not educated and only 3% had post secondary education. This implies that

most of the respondents lack basic education.

People gather NTFPs for a variety of reasons. The relative importance of values may change throughout an individual's lifetime, but often they are interrelated and complementary. Thus gathering can be a way of obtaining critical livelihood resources by way of income generation or provision of food. It could also be a way of maintaining valuable skills and passing on important knowledge.

In the study area, the respondents gave various reasons why they engage in gathering and collection of NTFPs. Some gave similar or the same reasons for which they engage in the gathering, but the order of importance of the objectives differed with individual households. The main reasons identified by the respondents were food security, income generation, self employment or employment generation and continuity. The order of importance of these objectives to the households is shown in Table 3.

Achieving the food security objective ranked first, with a total preference frequency of 340. This implies that the most important reason why rural households of the study area engage in NTFPs collection is to provide food for their households. They use the NTFPs as safety-net or fallback, especially during the non-cropping season or lean period. This supports the study of Anon (2000) that 80% of the people in developing countries gather forest products for food and personal care. This explains why food security objective ranked first, as shown in Table 3. The second most important reason why the people engage in NTFPs gathering is to generate income for their households. This may not be unconnected with the fact that they need money to purchase the food they

**Table 3.** Frequency matrix and rank ordering of rural households' objectives.

Objectives	Food security	Self income employment	Continuity	Total	
Food security	-	52(31)	82(48.8)	32(19.0)	166
Self employment	108(64.3)	-	91(54.2)	40(23.8)	239
Income	91(54.2)	42(25)	-	41(24.4)	174
Continuity	151(90.0)	87(51.8)	97(57.7)	-	335
Total	340	181	270	103	894
Rank	1st	3rd	2nd	4th	89.3

The figures in parentheses represent the percentage of the total respondents indicated by the frequency. The numbers in each column indicate the frequency with which an objective was preferred to another objective represented by the respective rows. Reading across the table, the number in a given column of that row indicates the frequency with which the objectives represented by that row was not preferred to the objectives represented by the given column.

cannot produce. This also corroborates earlier reports by Olawoye (1996) and Kuponiyi (2007) that rural households spend income realized from NTFPs to buy food to maintain their families. This further stresses the importance of meeting the objective of food security by the households. The least ranked among the households' objectives is continuity with total preference frequency of 103. This goal was observed among respondents who have the intention of maintaining valuable skills and passing on important knowledge to others. For example, active knowledge of how to harvest and handle materials for desired characteristics is critical to producing strong and beautiful baskets. Therefore respondents in this category claimed that passing such skills on to younger family members will ensure that gathering will be available to them as a livelihood strategy, should they ever need it.

Least significant difference (LSD) statistic with a value of 89.32 at 0.05 level of significance was used to test the order of importance of these objectives to the households by comparing their means. And given the test criteria, it was discovered that there was no significant difference between the rankings of the objectives among the respondents, since the differences between their means were less than the value of LSD. Hence, the ranking is in accordance to the order of importance of the objectives to the rural households.

## CONCLUSION AND RECOMMENDATION

This study has shown that there are several reasons for which rural households engage in non-timber forest products in the study area. Some of these reasons include their desire to provide food for their families especially during lean harvest period, during which NTFPs serve as 'safety-net' for the households. Other reasons given were income generation which enables them to get money to purchase food they cannot produce from their agricultural activities as well as employment generation and continuity purposes. It was also discovered that the order of importance of these objectives or reasons differed

with the households. Meeting food security objective was considered the most important by the households while continuity objective was ranked least.

It is hereby recommended that there is the need for forest policies to include the production of NTFPs to allow for the production of bush meat, honey, bamboo, traditional medicines and other forest food to better the lot of rural households who largely depend on these products from the forest for their survival.

## REFERENCES

- Abere SA, Lameed GA (2008). The medicinal utilization of snails in some selected States in Nigeria. In: Onkwelu, JC, Adekunle VAJ, Oke DO (eds.). Proceedings of the 1<sup>st</sup> National Conference of the Forests and Forest Products Society of Nigeria (FFPN) held at the Federal University of Technology, Akure, Ondo State, pp. 233-237.
- Andel TV (2006). Non-timber forest products the value of wild plants. Agromisa publication and CTA, The Netherlands.
- Anon (2000). Information for Agricultural Development in ACP Countries. Spore, 89: 4.
- Awe F, Idumah FO, Imoagene E, Eniola TS (2009). Socio-economic Characteristics and Rural Households' perception about the consumption of grasscutter (*Thryonomys swinderianus*) meat in selected LGAs of Kogi State. J. Agric. For. Social Sci., 7(1):124-233.
- Clayton E (1983). Agriculture, Poverty and Freedom in Developing Countries, Macmillan Press, London.
- Cocks ML, Weirsum KF (2003). The significance of plant diversity to rural households in the Eastern Cape Province of South African Forests, Trees Livelihoods, 13: 39-58.
- Dewey D (1975). Micro-Economics. The Analysis of Price and Markets. Oxford University Press, Inc.
- DFID (1999). Sustainable Livelihoods and Poverty Elimination: Background Briefing. November. ([www.ids.ac.uk/livelihoods.html](http://www.ids.ac.uk/livelihoods.html))
- Ellis F (1993). Peasant Economics: Farm Households and Agrarian Development. 2<sup>nd</sup> Edition Cambridge: Cambridge University Press.
- Jimoh SO, Haruna EA (2007). Contribution of non-timber forest products to household food security and income around Onigabari Forest Reserve, Oyo State, Nigeria. J. Environ. Ext., 6: 28-33.
- Koziell I, Saunders J (eds.) (2001). Living off Biodiversity: Exploring Livelihoods and Biodiversity. IIED, London.
- Kuponiyi FA (2007). Socio-economic importance of non-timber forest products among rural residents of Shaki agricultural zone of Oyo State, Nigeria. J. Environ. Ext., 6: 34-38.
- Lawes M, Eeley H, Shackleton CM, Geach BS (eds) (2004). Indigenous Forests and Woodlands in South Africa: Policy, People and Practice. University of KwaZulu-Natal Press, Pietermaritzburg.

Neumann RP, Hirsch E (2000). Commercialization of non-timber forest products: review and analysis of research. CIFOR, Bogor, Indonesia.  
Olawoye JE (1996). Sociological issue for Sustainable Forest Management. Ghana J. For. Special Edition. 3: 18-33.  
Posey DA (1999). Cultural and Spiritual Values of Biodiversity. UNEP, Nairobi.  
Sale FA (2006). The processing and marketing of non-timber forest products (NTFPs) in Nigeria. In: Popoola L (ed.). Proceedings of the

31<sup>st</sup> Annual Conference of FAN held in Markurdi, Benue State, Nigeria, pp. 379-387.  
Shomkegh SA, Tember ET, Tem O (2008). Ethno-botanical survey of the non-timber forest products in Markurdi local government of Benue State. In: Popoola L (ed.). Proceedings of the 32<sup>nd</sup> Annual Conference of FAN, held in Umuahia, Abia State, Nigeria, pp. 682-687.