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Socio-Economic Analysis of Non-Timber Forest Products Activities and Income Generation among Rural Households in Nigeria

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ABSTRACT

In this paper, the availability and economic importance of some selected Non-Timber Forest Products (NTFPs) among rural households in Nigeria were investigated. The National Living Standard Survey (NLSS) data collected by Nigeria's National Bureau of Statistics were used for the study. A number of forest products activities were found to be of importance to the livelihood of households in the study area. These include hunting, honey processing, palm wine tapping, fruit processing, hides, and mushroom gathering. About 17% of the respondents were engaged in hunting, 17.43% in honey processing, 17.36% in palm wine tapping, and 15.85% mushroom gathering. With respect to income generation, the most important of these activities is palm wine tapping with income share of 87.51%. The results also show that the poor were found to be more dependent on the forest than the non-poor, while households from the Southern zones were more forest dependent than households from the Northern zones. It is recommended that research should be conducted into breeding of early maturing species of these valuable trees that are being cut down at an alarming rate to guarantee future availability for food, medicinal and livelihood purposes.

Introduction

In early times, humans around the world have relied on products derived from forest species for their survival and well-being. The term for forest produce was defined as 'all material yielded by a forest estate". Tropical forests provide ample goods and services; these mainly include timber and Non-Timber Forest Products (NTFPs). Timber and firewood were termed as timber forest products while other items received from forests were called non-timber forest products. NTFPs have been studied by researchers from many different academic fields and each field used a slightly different definition of NTFPs. Odebode (2003) and Adepoju (2007) defined NTFPs as all goods and services for commercial, industrial, or subsistence use derived forests and allies land uses, other than timber, fuel wood and fodder. She included crops grown under the shade of trees, certain agroforestry crops which depends on wild sources for seed or planting stock as NTFPs. CIFOR (2009) gave their own definition as any product or service other than timber that is produced in a forest. They include fruits, nuts, vegetables, fish and, medicinal plants, resins, essences, and a range of barks and fibers such as bamboo, rattans, and a host of other palms and grasses".

NTFP harvesting remains widespread throughout the world. People from diverse income levels, age groups, and cultural backgrounds harvest NTFPs for household subsistence, maintaining cultural and family traditions, obtaining spiritual fulfillment, maintaining physical and emotional well-being, scientific learning, and earning income (Malleson *et al.* 2014). Other terms synonymous with harvesting include wildcrafting, gathering, collecting and foraging.

Very large numbers of third world rural households generate some of their income from selling non-timber forest products (NTFPs). As pressures on the agricultural land base increase, leading to progressive fragmentation of farm holdings and overuse of arable land, the ability of farm households to achieve food self-sufficiency from their land has been declining widely. Rural populations are becoming increasingly reliant on farm and non-farm income in order to meet their food and other needs. Forest product activities have repeatedly been found to provide one of the main sources of non-farm income to rural households (Kuponiyi, 2007).

The FAO estimated that 80% of the population of the "developing" world use NTFPs to meet some of their health and nutritional needs (FAO, 1997, 2008). The importance of NTFPs in supporting livelihood of forest dependent communities has been widely promoted due to the recognition that NTFPs can contribute to improve the livelihoods and household food security (FAO, 1995); generate additional employment and income (Marshall *et al.*, 2003); and offer opportunities for NTFP-based enterprises (Subedi, 2006).

NTFPs are a dependable source of income and food supply in the rural areas. However, it is a diminishing resource as a result of its dependency on land which is known to be under pressure of depletion from agriculture and development of public infrastructures. Non-timber forest products constitute a critical component of food security and it is an important source of income for the poor in many developing countries. Several opportunities for improved rural development are linked to NTFP. In many areas, rural populations are traditionally depended on local forest resources to provide additional income through collection and marketing of NTFPs. Where employment opportunities from traditional industries are declining, workers looking for alternative income sources often turn to collection of these products from nearby forest.

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In Nigeria, food security of rural dwellers is improved by growing trees in the home gardens and on farms. Leaves, rattan, honey, sap, gums from the small scale industries are important sources of income (Okafor *et al.*, 1994). Due to the diverse varieties for species obtainable from NTFPs a lot of household were able to meet their immediate needs by collecting these products from the nearby forest. While other households earn income to meet other needs through the marketing of NTFPs harvested.

Against this background, NTFPs are obviously very important as they contribute to meeting food and other basic needs. They provide a source of input into the agricultural system, help households control exposure to risk of various kinds. A better understanding of the magnitude and nature of the role of NTFPs is therefore central to making decision about forest management that adequately reflects society's demand upon the forest resource.

Data and Methodology

The data used for the study were collected by the National Bureau of Statistics (NBS). They were based on the Nigeria Living Standards Surveys (NLSS) of households that was carried out between September 2003 and August 2004. The questionnaire development was a joint effort of the Nigerian Bureau of Statistics, the World Bank and the National Planning Commission. The survey covered the rural areas of the 36 states of the Federation and the Federal Capital Territory. Ten Enumeration Areas were studied in each of the states while five were covered in Abuja. In-depth data were collected on key elements which includes demographic characteristics, educational skills and training, agricultural activities and income. The NLSS sample design was two-stage stratified. The first stage was the cluster of housing units called Enumeration Areas (EAs), while the second stage was the housing units. One and twenty EAs were selected in each state while sixty were selected in the FCT. Five housing units were selected in each of the selected EAs. Fifty housing units were covered in each state and twenty five housing units in the FCT per month. Each state had a sample size of 600 housing units, while the FCT had a sample size of 300. The national sample size for the 12-month survey period was 21,900 housing units. However, some households did not fully complete the questionnaires. Out of 21,900 households that were targeted for the survey, only 19,158 completed the survey. Although there are 19,158 urban and rural households in the full sample, the analysis focused on rural households, which total 14,512. The following forest products activities were identified: hunting, honey processing, palm wine tapping, fruit processing, hides and mushroom gathering.

Results and discussion

Forest products activities being engaged by households in the study area include (Table 1): hunting (17.57 percent), honey processing (17.43 percent), palmwine tapping (17.36 percent), fruit processing (16.03), hides (15.87) and mushroom gathering (15.85). With respect to income generation, the most important of these activities are palmwine tapping with income share of 87.51 percent, hides (10.02 percent), fruit processing (6.65 percent) and hunting with income share of 5.71 percent.

Table 1. Forest Products Activities and Income

Activities	No of Households	In %	Income in %
Hunting	2372	17.47	5.71
Honey processing	2366	17.43	0.10
Palmwine	2357	17.36	87.51
Fruit processing	2176	16.03	6.65
Hides	2154	15.87	10.02
Mushroom gathering	2152	15.85	0.01

Calculations from 2004 Nigerian Living Standard Survey

Income from Forest Products by Zone

The zonal distribution of income from forest products shows that 69.67 percent of it originates from the Southwest (Table 2). About 30 percent of this income is from the Southeast, while the remaining income is from the Southsouth. There was no data on income from forest products from the North. With respect to participation, the proportion of households who participated in these activities is evenly distributed between the Southern zones; 34.74 percent in the Southeast, 27.81 percent in the Southsouth and 37.45 percent in the Southwest.

Table 2. Income from Forest Products by Zone

Zone	South east	Southsouth	South west	Northcentral	North east	North west
No of Households	832	666	897	0	0	0
% of Households	34.74	27.81	37.45	0.00	0.00	0.00
Income in %	30.02	0.30	69.67	0.00	0.00	0.00

Calculations from 2004 Nigerian Living Standard Survey

Income from Forest Products by Poverty Group (Expenditure Tercile)

Analysis of income from forest products in table 3 revealed that the proportion of households who are engaged in forest products drops significantly with increasing wealth. The share of households generating income from forest products is highest among the poorest households with 51.98 percent of them participating and generating 51.73 percent of their income from these activities.

Table 3. Income from Forest Products by Poverty Group

Income tercile	First	Second	Third
No of Households	1245	760	390
% of Households	51.98	31.73	16.28
Income in %	51.73	25.37	22.90

Calculations from 2004 Nigerian Living Standard Survey

Income from Forest Products by Gender of the Household Head When income from forest products was analysed according to gender of the household head (Table 4), it was revealed that the males participated in these activities (82.38 percent) than females (17.62 percent). Also males generated a higher income from these activities (61.61 percent) than females (38.39 percent).

Table 4. Income from Forest Products by gender of the Household Head

gender	Male	Female
No of Households	1973	422
% of Households	82.38	17.62
Income in %	61.61	38.39

Calculations from 2004 Nigerian Living Standard Survey

Conclusion and recommendation

This study revealed the economic importance of NTFPs to rural households in Nigeria. These products make direct and indirect contributions to household economy, through the generation of income from the sale of collected and processed forest products. The study also revealed that several poor households in rural Nigeria rely on forest products for their livelihoods.

It is recommended that poverty reduction policy should highlight the importance of forest products in sustaining rural households' livelihood and finally, research on breeding, improvement, domestication, utilization and processing of

valuable forest products should be encouraged.

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