



Environment

Contributions of selected non-timber forest products to household food security in Nigeria

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Abstract

Despite numerous policies and programmes geared towards improving the living standard of rural households in Nigeria, it has been difficult to stem the growth of food insecurity. Forest and trees are becoming scarce, thus resulting in a state of imbalance between what rural households need and what they can obtain. This is a threat to their survival. To ensure continuity, rural households involve themselves in the management of forest areas for continual availability of non-timber forest products (NTFPs). This study examines the contributions of selected non-timber forest products in ensuring household food security in Osun State of Nigeria. Data were generated through the use of structured questionnaires administered to 120 randomly selected rural household heads. The chi-square result showed that a significant relationship exists between household food security and the degree of contribution of NTFPs on rural households ($X^2 = 11.64, p = 0.05$). A major conclusion is that the efforts geared at accelerating sustainable forest development, management and environmental conservation have not achieved the desired result. Moreover, the forest reserve areas should be made more accessible to rural households and laws governing forest reserved areas be reviewed and made flexible so that rural populace in such environment can benefit from such. A recommendation in this paper is the need to allow existing legislation restricting forest access to local people and discriminating against small forest enterprises should be modified to allow local people to use the forest for gathering forest products and for growing food and cash crops.

Key words: Food security, forest reserve areas, NTFP, poverty.

Introduction

People are dependent upon natural resources for meeting a large number of their basic necessities of life. The type of resources and utilization patterns, however, vary by ecological zone and socio-cultural area. Forest provides a wide range of benefits at the local, national and global levels. The contribution of non-timber forest products (NTFPs) therefore, to forestry sector in particular and rural household generally in most countries is significant, though it had been undervalued in the past. NTFPs play a very significant role in many developing countries due to the greater population concentration relying directly on the forest. The international fund for agricultural development rural poverty study revealed that the number of rural households living in absolute poverty in the developing countries including Nigeria increased from 400 million in 1965 to 600 million in 1988¹⁰ thus leading to the problem of food insecurity. In the rural areas, the problem of food insecurity lingers on, and has defied any precise solution. In many parts of the world, forest lands are under threat from several sides, leaving the poor even more vulnerable⁴.

Due to increase in population level, less agricultural land is available and ever growing number of people are turning to forest products to supplement their income. Trees and other products are being removed from the forest faster than they can grow, thus leading to a diminishing source of raw materials, soil erosion, reduction in agricultural yields and imbalance in the microclimate and resource depletion, which is the end-product of forest mismanagement affecting more than fuel collection. There is therefore a growing awareness of the contributions of NTFPs to household economies, food security, national economies and

conservation of biodiversity. Non-Timber Forest Products provide food, medicines, fibres and cash income for rural households⁶.

In the developing countries, 80% of the people use forest products for food and personal care¹. For example in Ghana, karite butter is used as cosmetic product distributed by the International Body Shop Chain of Shops¹. 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 income⁶. In Zimbabwe, 237,000 people worked on Non-Timber Forest Products in 1997, compared with 16,000 in industrial forestry¹. Most non-timber forest products are sold locally or in regional markets. In Cameroon¹, sales of NTFPs are worth several million euros and go beyond local market as market stalls in the conurbations of Douala and Yaounde are full of such products as butter tree plums or safou (*Dacryodes edulis*), groundnut tree nuts (*Ricinodendron heudelotti* used as a condiment), dika bread fruit and colanut.

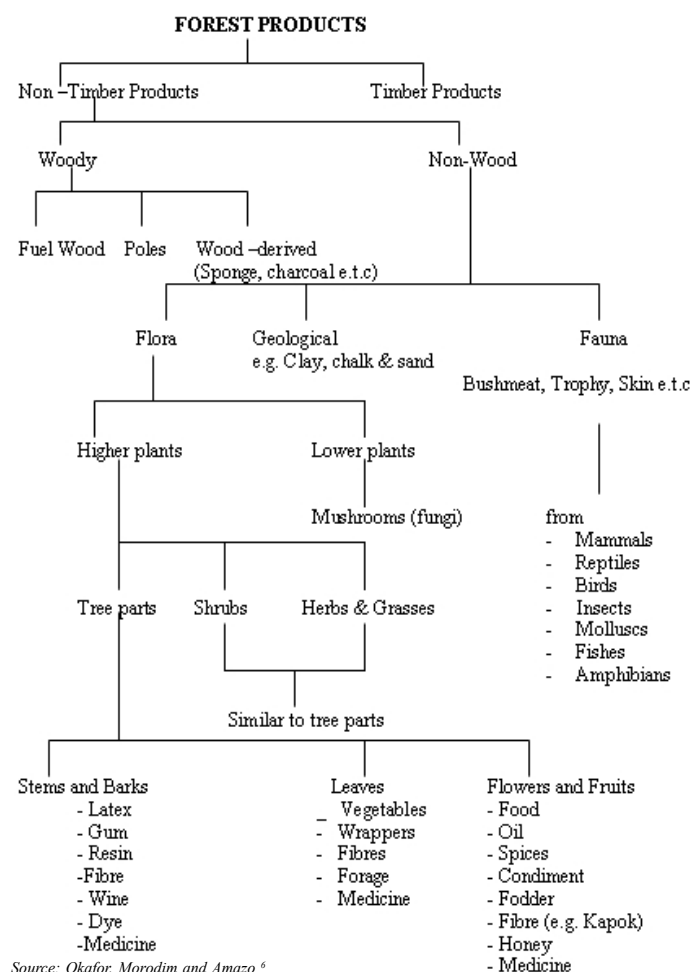
The thrust of this paper is to examine the contributions of non-timber forest products in ensuring household food security in Nigeria. This is with a view to gain better insight into household food insecurity and an attempt to strengthen existing weak analysis of the link between development policies and food security.

Definitions and Contributions of NTFPs to Household Food Security

There is no standard agreed definition of non-timber forest products. FAO⁴ defined NTFPs as "non-wood forest products which include all goods of biological origin, as well as services

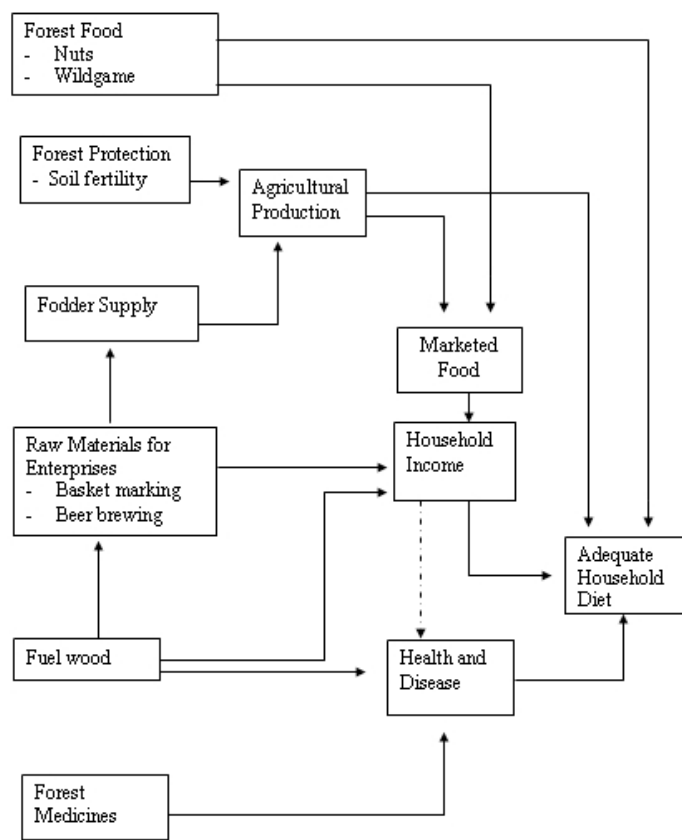
derived from forest or any land under similar use, and exclude wood in all its forms. Non-timber forest products refer to all the resources/products (other than industrial round wood and derived sawn timber, wood chips, wood based panels and pulp), that may be extracted from forest ecosystem and are utilised within the household or are marketed or have social, cultural or religious significance³. These include plants and plant materials used for food, fuel, storage and fodder, medicine, cottage and wrapping materials, biochemicals, as well as animals, birds, reptiles and fishes, for food and feather (Fig. 1). Okafor et al.⁶ defined NTFPs as forest goods and services providing for wood products. These include poles, fuels, chewing sticks, gum, dye, herbs, shrubs, wine, stem fibres, seeds, spices, mushrooms condiments, and so on. For the purpose of this study, NTFP is defined as the product or resources that may be extracted from forest ecosystem and are utilised within the household or are marketed or have social, cultural or religious significance.

Non-timber forest products play a vital role in many developing countries, especially Nigeria. This is as a result of population concentration in the rural areas relying directly on forests⁹. NTFPs can be harvested in forest plantations or on trees outside the forest. These products range from being used as food or food additives (nuts, mushrooms, wild fruits, herbs, spices, aromatic plants) and as plant materials (fibres, creepers and flowers) and plant derivatives (raffia, bamboo, rattan, cork and essential oils) to animal (game, bees) and animal products (honey, silk). Forests and farm trees make significant direct contributions to food



Source: Okafor, Morodim and Amazo⁶

Figure 1. Flow chart showing the classification of forest products and various forms of non-timber forest products (NTFPs).



Source: F.A.O (1992)

Figure 2. Flow chart of links between forestry and household food security.

security of the rural population providing a vast array of food which supplies essential nutrients especially at times when other food sources are unavailable⁷.

Few studies have focussed on the links between forest products and household food security. Information available suggests that the nutritional contributions of forests and farm trees are very important (Fig. 2). Edible food found in forests (seeds, leaves, fruits, roots, gum, fungi, insects, rodents, wild game and fish) have superior nutritional quality when compared with domesticated varieties. Processed and stored forest foods products help insure a year-round food supply. Non-timber forest products are also important for seasonally dependent agricultural systems². They provide food, fodder and energy (compared with other forest food such as leaves and fruits). They contribute to the quality of rural household diet indirectly by providing a habitat for wild animals and fish, thus providing livestock fodder. They supply medicine and fuelwood for food processing. Fuelwood shortages may indirectly affect food security (Fig. 3).

FAO² found that sandawe consume gathered plants with 45 percent of their meals in a year-round basis. It further stated that at least two or three different species were used on a monthly basis. Moreover, many pastoralists rely on the seasonal products of forested areas for sustenance. They rely on the year-round supply of forest food products to supplement their diet. Olawoye⁷ opined that rural households spend income realized from non-timber forest products to buy food to maintain their families. This provides a supplement to the economic status in the lives of the generality of the rural dwellers. Hence, dependence upon several combined and seasonal activities is the only one to ensure household food security. Forest fuels are important for

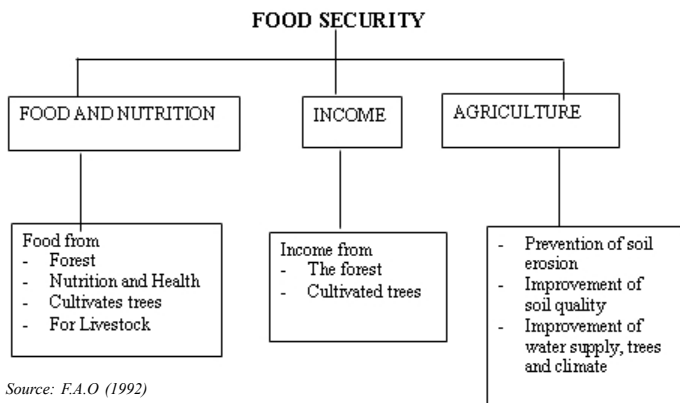


Figure 3. Flow chart on forest products and household food security.

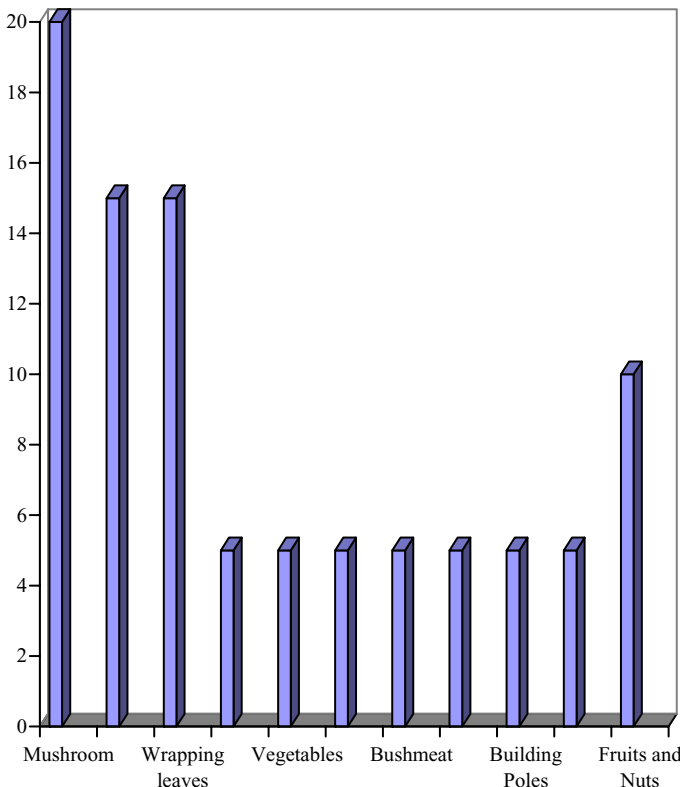


Figure 4. Distribution of household heads according to the gathered non-timber forest products.

ensuring and enhancing food security² by providing energy for processing inedible food and for preserving food to counteract seasonal shortages.

In Philippines, rattan gathering for sale to furniture makers is a major source of income for half the people in an area where income and food supplies are insufficient to meet basic needs. In Bangladesh, Zambia, Honduras, Egypt, Jamaica and Sierra-Leone, forest product processing enterprises were found to be a major rural manufacturing employers. In Africa (e.g. Botswana) gathering is a more important economic activity for the poor than farming⁸. In Ghana, charcoal making from trees grown on fallow agricultural land provides the only source of household cash income⁴.

In summary, the contributions of NTFPs cannot be over emphasised when considering the roles they play in any nation. Historically, mankind has depended on non-wood resources for meeting basic needs of subsistence and trade⁴. This study will therefore examine the contributions of selected non-timber forest products to household food security in Osun State. The specific

objectives include identification of non-timber forest products available for collection or harvesting by rural household and investigation of relationships between household food security and the degree of contribution of non-timber forest products. The aim is also to find out if any relationship exists between few demographic characteristics of rural household heads and degree of contribution of non-timber forest products to their income generation and food security.

Methodology

Data were purposively collected through interview schedule administered on 120 randomly selected household heads from twelve towns and villages within the forest reserve in nine L.G.A of Osun State. Ten household heads were randomly selected and interviewed per town or village. The towns and villages include Apomu and Ikoyi (Isokan Local Government Area), Ikire (Irewole Local Government Area), Ikirun (Ifelodun Local Government Area), Iragbiji, (Boripe Local Government Area), Okuku (Odo-Otin Local Government Area), Igbona (Olorunda Local Government), Gbongan (Aiyedaade Local Government Area), Odeomu, Wakajaiye and Awo (Egbedore Local Government Area) and Osogbo (Osogbo Local Government Area). Data were presented using chi-square, frequency counts and percentages.

Results and Discussion

Educational level of respondents: The study revealed that majority (85%) of the household heads interviewed were not educated while only ten percent have benefited from adult literacy classes and 5% of them had secondary school education. This shows that most of the household heads lack a basic education.

Household food security: Most of the respondents were food secure, while (40%) were food insecure. Food security means having access to sufficient food for a healthy and productive life in the right quantity and at the right time.

Sources of food consumed monthly: Most household heads (62%) indicated forest as their source of food. They consume all that are gathered and get supplement from other sources. Thirty eight percent of the household heads interviewed indicated farming for subsistence purpose and consumed all the farm products from their farms all-year-round.

Distribution of household heads according to the gathered non-timber forest products: The study revealed that the selected NTFPs are all consumed by the respondents in varying quantities daily. The NTFPs consumed are mostly freely picked. The NTFPs indicated by the households include mushroom (20%), gathered fuel wood (15%), wrapping leaves (15%), herbs (5%), vegetables (5%), snails (5%), bushmeat (5%), fuelwood products (5%), building poles (5%), honey (5%), fruits and nuts (10%) (Fig. 4).

Distribution of respondents according to availability of NTFPs: Most respondents (85%) revealed that NTFPs are available throughout the year especially the freely picked ones. The freely picked NTFPs are essential and very important and provide households income and food for the households. Fifteen percent of the household heads revealed unavailability of the NTFPs throughout the year.

Table 1. Chi-square test of relationship between the degree of contribution of non-timber forest products and household food security of rural household, income, gender and educational level of respondents.

Variable	Calculated X ²	Tabulated X ²	Df	Decision	Level of significant (p)
Household food security	11.64	9.49	4	S	0.05
Rural household headship (Gender)	4.21	3.84	1	S	0.05
Educational level	2.63	7.81	3	NS	0.05
Income for rural household	11.36	11.07	5	S	

Source: Survey Data
Df – Degree of freedom, P =0.05

Contributions of NTFPs to rural households: Non-timber forest products contribute highly to the income and welfare of household. Areas of contribution stated by the respondents include gathering, collection and sale of leaves and medicinal herbs, food vending, rearing of goat, sales of palm wine, fruits and nuts, fuelwood and honey, others include snail keeping, goat, sheep, rabbit and poultry rearing, food processing, crafts and basket weaving, trapping, catching and processing of meat.

Table 1 shows that there is a significant relationship between degree of contributions of NTFPs and household food security. Furthermore, there is a significant relationship between the degree of contribution of NTFPs and income. However, there is no relationship between the degree of contribution of NTFPs and educational attainment of the respondents.

Conclusions

A major conclusion is that non-timber forest products contribute significantly to household food security by providing food, medicines and raw materials for enterprises. Therefore, the forest reserve areas should be made more accessible to the rural households and laws governing forest reserved areas be reviewed and made flexible so that rural populace in such environment can benefit from such. Moreover, the efforts geared at accelerating sustainable forest development and management and environmental conservation have not achieved the desired result. A recommendation in this paper is the need for forest policy to include the production of non-timber forest products and local agroforestry schemes should be developed within national forests to allow for the production of bush meats, rattan, bamboo, traditional medicines, honey and other forest food.

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