



THE ROLE, CHALLENGES AND NEED FOR NON –TIMBER FOREST PRODUCTS CONSERVATION IN RURAL COMMUNITIES

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Abstract

Non-timber forest products (NTFPs) constitute an important source of livelihood for millions of people from forest fringe communities across the world. This report examines the significant roles played by non-timber forest products in the livelihood of rural dwellers, its challenges and need for its conservation were examined. Non-timber forest products contribute immensely to household food security and income generation of people and hence play a significant role in rural poverty reduction. Majority of rural households and a large proportion of urban households depend on the products to meet some part of their food, nutrition, healthcare needs, house construction and income among others. It also serves as vital livelihood safety nets in times of hardship. The NTFPs create high economic value and large-scale employment. The NTFPs have attracted global interest due to the increasing recognition of the fact that they can provide important community needs for improved rural livelihood. However, a number of factors including indiscriminate exploitation, deforestation, forest fire, land conversion for cultivation, urbanization, over-harvesting, destruction of natural habitats and forest degradation are hindering the use and development of NTFPs. In addition, poor access to the markets and insufficient capital to invest in NTFPs also affect NTFPs for sustainable livelihood. An appropriate policy framework for a sustainable promotion of NTFPs, domestication of useful plant species, sustainable harvesting, processing and agro-forestry practices are necessary to facilitate food security, reduction of poverty and improved livelihoods, particularly for the economically-marginalized and forest-dependent communities.

Keywords: NTFPs, Sustainable livelihood, Rural dwellers, and Conservation,

Introduction

Tropical forests provide ample goods and services, which mainly include timber and Non-Timber Forest Products (NTFPs). Non Timber Forest Products play important roles in the livelihoods of millions of rural and urban people across the globe (Asfaw *et al.*, 2013). NTFPs are wild plant and animal products harvested from forests, such as wild fruits, vegetables, nuts, edible roots, honey, palm and medicinal plants, snails and bush meat, gum, resins, bamboo, rattans and palms, fibres and flosses, grasses, leaves, seeds (Andel, 2006). It can also be referred to as all the resources or products that may be extracted from forest ecosystem and are utilized within the household or are marketed or have social cultural or religious significance (Mallik, 2000). These include plants and plant materials used for food, fuel, storage and fodder, medicine plants, resins, nuts, vegetable, cottage and wrapping materials, biochemical, as well as animals, birds, reptiles, fishes and mushrooms (FAO, 1995). These natural resources (NTFPs) are indispensable part of the livelihood to rural communities living in and near forests. The non-timber forest products contribute immensely to household food security and income generation of the people and hence play a significant role in rural poverty reduction. However, relatively little information is **provided** on the relative importance of these resources and their contribution to livelihoods. Majority of rural households in **under developed part of** the communities and a large proportion of urban households depend on the products to meet some part of their nutritional, health, house construction, or other needs (Asfaw *et al.*, 2013). The NTFPs have attracted global interest due to the increasing recognition of the fact that they can provide important community needs for improved rural livelihood. This report examines the significant roles played by non-timber forest products in the livelihood of rural dwellers and need to conserve them

Non-timber forest products were for long overshadowed by timber products and has received increased policy and research attention only in the last few decades. These policy and research attentions were based on three propositions (Arnold and Ruiz-Perez, 2001). The first was that NTFP contribute significantly to the livelihood and welfare for households living in and adjacent to forest. Secondly, exploitation of NTFP has ecologically less destructive than timber harvesting and other forest uses and the third point is that NTFP production and development by giving a foundation for sustainable economic development could reduce tropical deforestation.

The Role of NTFPs in Rural Livelihood

Non-Timber Forest Products provide a wealth of resources for both rural and urban dwellers in the life of people

that are close to them. These include foods, medicines, construction materials, fuelwood, as well as sources of spiritual and cultural significance. NTFPs serve as raw materials for industries ranging from large-scale floral greens suppliers and pharmaceutical companies to micro-enterprises centered on basket-making, woodcarving, medical plant harvesting and processing, and a variety of other activities. Trade in NTFPs generates employment opportunity, substantial income and support livelihood among rural dwellers. NTFPs provide the basis of healthcare for the vast majority of the region's population for whom western medicines are unavailable or too expensive (Ndoye and Tieguhong, 2004).

The uses of Non-Timber Forest Products (NTFPs)

Forests contribute to all aspects of rural life by providing food, fodder, fuel wood, medicines, building materials, and materials for all sorts of household items, as well as many more intangible benefits such as cultural symbols ritual artifacts and locals (Facloner, 1995). However, about thirty (30) different species of NTFPs have been identified and observed to be commonly traded and used by the people although most of the NTFPs are seasonal especially the forest fruits and forest vegetables. Non-Timber Forest Products (NTFPs) can be classified into different categories, based on the purpose of use (for example, as food, fuel, medicine, household utensils, farm implements); level of use, part of plant harvested (leaf, fruit, stem, roots) and trophy from wild animals (Jeannette, 2000). For this study, the classification of NTFPs is based on categories related to their use and part of plant harvested or used.

Source of Food

Andel (2006) stated that food products include: wild fruits (*Cola pachycarpa*, *Daeryodis edulis*, *Irvingiagabonensis* etc) vegetables, nuts, edible roots, bush meat, edible insects, honey and food additives like spices, flavorings, food colorants, fermentation agents. Many non-timber forest products are harvested each year from forests around the world. Some NTFPs are rich in nutrients. This has been documented for *Gnetum africanum*, insect foods, and mushrooms. Bush meat is perhaps the most significant NTFP, in terms of its contribution to people's diet, the volumes being harvested and its economic value is also high.

In most areas especially the rural areas *Piper guineensis* and *Xylopia aethiopica* are used as spices and/or soup condiment for a nursing mother. *Gnetum africanum*, *Gongronema latifolia* and *Piper guineensis* leaves are very important delicacies in every household among the communities. They are usually used in soup making (Nsala soup), African salad (abacha), and in preparing goat head (Isi ewu). Also, *Garcinia cola* is used as medicine to treat snake bites, cough and anti-poison. Water extract of *Garcinia cola* is also used in cloth colouring while *Cola nitida* is valued during marriage ceremony and any other gathering. There is a slogan in Igbo land that says anybody who brings cola brings life. Also oil bean seeds (ugba), leaves and fruit are among the non-timber forest products which contain many of the necessary vitamins and other nutritional elements for survival and is usually prepared during traditional ceremony in some parts of this area. It is also used in preparing yam vegetable and can also be eaten as snacks. Falconer (1992) noted that forest foods contribute significantly to the diet of many rural households while *a great variety of fruits are gathered from forest and fallow lands*.

Medicinal Value

Another area in which NTFPs make a crucial contribution to rural livelihoods of people is as a source of medicine. It includes medicinal plants, bark, leaves, roots, resin and seeds which are used in treatment of various ailments including the treatment of stomach aches, cut wounds, diarrhea, ulcer and others (Andel, 2006). Forests supply medicines for the vast majority of urban and rural people and medicinal plants are consistently ranked as one of the most-valued forest products by local people. Majority of the rural people in the study area rely on wild plants as their main medicinal source especially traditional bone setters. Most traditional medicines are based on plants, and many of these come from forest areas. Many commonly used medicinal plants are sourced from secondary forest and cultivated areas, but often, the species that are considered most powerful are harvested from old-growth forest (Laird, 1999). Also, African giant land snail (*Achatina achatina* and *Archachatina marginata*) are used to cure whooping cough, anemia, ulcer, asthma and hypertension. Furthermore, most of the rural dwellers in this area use the fluid of the snail to treat headache, dysentery, eye problems and smallpox.

Fuel Wood Supply

Most rural households rely on fuel wood to meet all their energy needs. But, most fuel wood is collected from farms and bush fallow, rather than the forest. Supply of fuel wood has been a serious problem in this area since most of the forests are not accessible by the rural communities due to one reason or the other. Rural dwellers who cannot afford the cost of gas and kerosene get to the extent of entering into sacred forest in search of fuel wood. Also men and women who engage in fuel wood trade generate much income from it since there is scarcity of fuel wood in the area.

Construction Materials

These includes forest products like palm leaves or grass for roof thatch, bamboo, wood (sticks and poles). Building materials such as cement and aluminum roofing sheets are available but the majority of rural households who cannot afford these rely instead on the forest for their building materials. Block houses exist in many of the rural areas and in some of the remote places in some part of the country such as Umuerum and Ifiteogwariin Akwa Ibom State where mud and thatch houses still exist, rural dwellers makes use of these NTFPs in the construction of their houses like Raphia palm, *Newbuldialeavis* and also they make use of bamboo as well. Andel (2006) stated that life would be virtually impossible for most people living in rural areas without the availability of palm leaves for root thatch.

Source of Family Income for Livelihood

Non-Timber Forest Products (NTFPs) are conventionally viewed as the products of the poor unlike that of the timber for the rich. Studies conducted by (Aiyelaja *et al.*, 2012) show that extraction, processing, and trading of NTFPs is often the only employment available for the population in remote rural areas. Adepoju(2007) indicate that NTFPs are a dependable source of income and food supply in the rural areas. These NTFPs have so far added to peoples' livelihood security, especially for rural dwellers inhabiting them.

However, in many areas in most especially therural populations traditionally depend 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 for sale eg black velvet, pepper fruit, wrapping leaves, bush mango, utazi, uziza, oha, okazi and others are some of the NTFPs they are sale to generate income. Money earned from the sale of forest products has been shown to complement agricultural income and provide financial cost of health, and house hold expenses (Arnold and Ruiz Perez, 2001). It was also shown that NTFPs based activities can be important in filling income gaps and can provide a buffer in times of hardship or emergency.

Table 1: List of commonNon-Timber Forest Products and their usesin rural communities of Anambra State, Nigeria

Species	Common Name	Local Name	Uses	Plant Parts Used
<i>Bambusa Vulgaris</i>	Bamboo	Achara	Construction staking, firewood	Stem
<i>Calamus Spp.</i>	Cane (rattan)	Ekpe	Use for making local basket	Stem
<i>Dacryodes Edulis</i>	Local pear	Ube	Food as snacks	Fruit
<i>Garcina cola</i>	Bitter cola	Aki ilu	Medicinal	Seed
<i>Garcinia Mannii</i>	Chewing stick	Atu	Hygiene (oral)	Stem &twigs
<i>Gnetumafricana</i>	Okazi	Okazi	Vegetable	Leaves
<i>Gongronemalatifolia</i>	Utazi	Utazi	Vegetable & medicinal	Leaves & stem
<i>Irvingiagabonensis</i>	Ogbono	Ogbono	Soup thickener	Seed
<i>Pentaclethra macrophylla</i>	Ukpaka	Ukpaka	Uses as food during wedding ceremony	Seed
<i>Pipe quineensis</i>	Guinean pepper	Uziza	Soap additive, preservative in medicine, vegetable	Seed and leaves
<i>Xylopiiathropica</i>	Uda	Uda	Spice/nervousness	Fruit
<i>Tetrapleura tetraptera</i>	Aridan plant	yokoyoko	Spice	Fruit
<i>Treuliaafricana</i>	African bread fruit	Ukwa	Food	Seed
<i>Thryonomyswinderigues</i>	Grass cutter/ cane rat	Bush meat	Food	Whole part
<i>Elaeisguineensis</i>	Oil palm tree	Nkwunkwu	Palm wine	Stem
<i>Annona muricata</i>	Sour sop	Soar sop	Food/Snack	Fruit
<i>Thomatocousdanielli</i>	Wrapping leaves	Wrapping leaves	Wrapping moi-moi and agidi	Leaves
<i>Anacardium occidentals</i>	Cashew	Cashew	Food/Snack	Leaves, root and fruit
<i>Daliumguinensis</i>	Black velvet	icheku	Food/Snack	Seed
<i>Ricinus communis</i>	Castor oil	Ogiri	Hemorrhoids laxative wound dressing & mental illness.	Seed

<i>Vernonia amygdalina</i>	Bitter leaf	Onugbu	Stomach disorder	Leaf
<i>Ocimumgratissimum</i>	Scent leaf	Nuchanwu	Cooking/medicinal	Leaf
<i>Parkiabiglobosa</i>	Locust bean		Use in production of local Magi (dawadawa)	Seed
<i>Piper nigrum</i>	Black pepper		Spice	Seed
<i>Aframomummelegueta</i>	Alligator pepper	Oseoji	Spice	Seed
<i>Achatina achatina</i>	Africana giant land snail	Ngina	Food	Freshy part
<i>Pterocarpus soyauxii</i>	Ohaocha	Ohaocha	Vegetable	Leaves
<i>Dennsitolatripetata</i>	Pepper fruit	Mnimi	Spice/Snack	Fruit
<i>Newboldialaevis</i>	Ogirisi	Ogirisi	Boundary demarcation	Stem
<i>Cola nitida</i>	Kola nut	Oji	Medicinal	Seed

Source: Field survey, (2019)

Challenges of Non-Timber Forest Products

Despite the benefits obtained from these NTFPs, majority of the communities are still threatened by illegal activities, extensive forest fire, land conversion for cultivation, deforestation, built areas; urbanization, encroachment and land use change to palm oil plantation for agriculture have contributed in the loss of many hectares of forest land in the study area.

Furthermore, the market of NTFP is extremely imperfect and unstructured. At present forest dwellers collect NTFPs and sell it to local traders which in turn sell it to the urban centre and finally reach to consumers. However, most of the forests are not accessible, they could be reserved or scared that no one enters to take anything from it. Also most forest people have poor access to markets, insufficient capital to invest in NTFPs for improving their livelihoods and little or no bargaining power when selling their products in markets. Due to lack of direct access to markets, they depend on intermediaries to sell their products, reducing their share of the income. Different types of information, such as price, value addition options and sustainable harvesting techniques are required by communities to increase their bargaining power and receive higher prices for their products. A social-networking forum must also be developed for exchanging market information within different stakeholders. To sell NTFPs at fair prices, forest dependent communities need access to an open and efficient market. Collective marketing approach as an NTFP based intervention can support communities with knowledge, confidence and processes to operate as a non-exploitative channel for the marketing of products. Creating such a market would generate higher revenues and offer a strong incentive for forest dependent communities to take on increasing responsibility for forest management and promote more efficient forest utilization.

Needs for the Conservation of Non-Timber Forest Products (NTFPs)

As a result of the challenges enumerated above, there is need for conservation of these NTFPs in this area. Indeed the conservation of biological diversity is vital to the sustainability of both rural and urban dwellers. However, on account of their potential role in livelihood and poverty alleviation, NTFPs have gained new attention in international debates that make it urgent for governments to put in place pro-poor reforms in the forest sector to protect and enhance the livelihood benefits that forests provide to the poor. If this is to be realized, local communities will get more secure rights if they are to be involved in managing and protecting large areas of forests globally.

NTFPs have also been trusted to contribute to the conservation of biological diversity via sustainable harvest techniques or agro-forestry practices. The interest in NTFPs has grown with increasing awareness of tropical forest deforestation and rising acknowledgement of the need to add value to forest resources, in order to compete with other land uses (Martinez, 2004). The origin of NTFPs conservation emanates from the assumption that: NTFPs much more than timber, contributes to different ways of improving livelihoods and welfare of populations living in and adjacent to forests, providing them with food, medicines, other material inputs and as a source of employment and income, particularly in hard times, and the exploitation of NTFPs is less ecologically destructive than timber harvesting and therefore provides a more sound basis for sustainable forest management. Increased commercial harvest of NTFPs should add to the perceived value of the tropical forest, at both the local and national levels, thereby increasing the incentive to retain the forest resource, rather than conversion of the land for use for agriculture or livestock (Arnold and Perez, 1998). Through the holistic management of NTFPs, an attempt is made to maintain and sustain the resource and its users, contribute to sustainable development, conserve forests and biodiversity, and to promote non-traditional enterprises. The strategies for the conservation of Non-Timber Forest Products include domestication of useful plant species and the several In-situ and Ex-situ conservation methods.

Conclusion

The livelihood of rural households in most of the rural communities depends on portfolio of activities in which NTFPs is one of the major role players. The collection of NTFPs is the major cash income source to this rural people particularly for the poor as they have less alternative sources of income. They contribute to improving

nutrition either as part of the family diet or as a means to achieve household food security. It has been established that a significant number of rural, tribal and overall forest dependent communities derive a significant part of their food, nutrition, healthcare needs and income from NTFPs. They also contribute to the well-being of rural households, particularly the poor, in terms of food security, nutrition, health and subsistence.

However, a number of factors, including deforestation, insufficient capital, poor access to market, ecological hazards, overharvesting, policy vacuum, non-destructive harvesting, destruction of natural habitats, bushfires, population growth among others are hindering the use and productivity of NTFPs. An appropriate policy framework for a sustainable promotion of NTFPs, domestication of NTFPs, improving harvesting and processing techniques are necessary to facilitate food security, reduction of poverty and improved livelihoods, particularly for the economically-marginalized and forest-dependent communities. Improving the existing poor market infrastructure will simultaneously solve related problems that limit the development potential of NTFP in this area. However, increase population density and deforestation has contributed so much in threatening the availability of NTFPs in this area especially because of inappropriate domestication technology. Therefore, there is need to conserve these resources as this may affect future prospect, sustainable of NTFPs and thus improve livelihoods of rural dwellers. In this regard, concerted effort from all sectors is needed to reverse the situation through an appropriate forest management strategy.

Recommendation

Based on the information gathered in this articles, the following recommendations are stated;

- ❖ Value addition: value should be added to some products such as drying, chopping or cleaning at point of collecting and packaging as this will help increase the value and quality of the produce. e.g packaging of *Daliumguinensis* before marketing.
- ❖ Proper domestication of important species in home gardens and in agro-forestry plots.
- ❖ State Government should set up appropriate forest management strategies and policies that can help conserve our forest.

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