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Harnessing the Potentials of NTFPs for National Development in Nigeria

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ABSTRACT

Development is a desirable change that brings improvement in the standard of living of majority of the people. Especially improvement in the nutritional status and health of the people, increase in their real income and per capita income as well as improvement in the educational achievement or access to education, fairer distribution of income and better livelihood options. However the potentials of NTFPs in contributing to national development in Nigeria have not been fully tapped. Therefore, this paper examined the potentials of NTFPs for national development. These potentials, namely, provision of food, provision of income, provision of communal peace and provision of medicinal materials. The study revealed some of the ways of harnessing the potentials of NTFPs in contributing to national development include revision of States forest policy, adoption of open door forest policy, Commercialization of NTFPs, improved extension service for NTFPs and promoting conservation of NTFPs. The States forestry Departments in the country should strive hard to create a unit for NTFPs that will coordinate and monitor the exploitation of NTFPs in their States and ensure their sustainable contribution to national development.

Keywords: Forest policy; livelihood strategies; sustainable forest management; non-timber forest products; national development; Nigeria.

1. INTRODUCTION

The forest and its resources are precious resources to man. The welfare of man and his wellbeing are linked with the forest and its resources. Forests their products play critical roles in the human environment, needs and livelihood [1]. [2] noted that man cannot live a convenient and satisfying life without the forest and its resources. even the application of todav's technology can provide a suitable acceptable alternative to the use of the forests and its resources. Among the diverse products provided by the forests, non -Timber Forest Products (NTFP) represent a significant part. NTFPs have been playing significant roles in the livelihoods of many rural households not only in Nigeria but all over Africa. NTFPs provide small but significant sources of income, particularly for women and for families that do not have access to agricultural markets [3]. NTFPs also provide critical supplies of food during periods when agricultural crops fail or are otherwise scarce. NTFPs are so important that at a time NTFPs were seen as a possible 'magic bullet' to solve deforestation issues [3].

NTFPs are many and varied. They include forest fruits, ropes, resins, snails, mushrooms, leaves, firewood and bush meat. They are biological resources other than timber, which is harvested from either natural or managed forests. Examples include nuts, oil seeds, latexes, resins, gums, medicinal plants, spices, wildlife and wildlife products. Others are dyes, ornamental plants, poles, raw materials such as bamboo and rattan [4].

NTFPs are highly valued either for their leaves, roots, barks or fruits. They are the forest treasure that sustains rural dwellers by providing income, foods and medicinal materials. It is however sad to note that the utilization of NTFPs in Nigeria has been faced with a myriad of problems which has limited their great values and potentials in contributing to national development. Table 1 shows that the major problems faced by the people in the utilization of NTFPs in Ondo State, Nigeria are; long distance covered in search of NTFPs, increasing scarcity of many NTFPs, bad roads and seasonality of NTFPs. It is sad to note that many people trekked long distances in order to get NTFPs. This is a problem because lots of time that could have been used for other productive ventures is wasted as a result of the long distance covered. Closely connected with this is increasing scarcity of NTFPs, bad roads and seasonality of NTFPs making it difficult to utilize NTFPs. [5] noted that NTFPs market in Ghana is highly characterized by seasonality. This shows that seasonality of NTFPs is a problem that cuts across the West African subregion. As such the potentials of NTFPs in contributing to national development have been reduced drastically by these problems. It is in view of this that this paper takes a look at how the potentials of NTFPs in contributing to national development can be harnessed with a view to improving the contributions of NTFPs to national development in Nigeria. The paper takes a look at the concepts of national development and NTFPs. This is with a view to having a good theoretical knowledge of the two concepts. The paper also takes a look at the potentials of NTFPs for national development and how these potentials can be harnessed for national development in Nigeria.

Table 1. Problems encountered by people in the collection of NTFPs in Ondo State, Nigeria

Problems faced in the collection of NTFPs	n	%	
Long distance	103	43	
Bad road/ high transportation cost	29	12	
Restriction by the Guard	17	7	
Increasing scarcity of NTFPs	38	16	
Seasonality of NTFPs	17	7	
Insect bite	22	9	
Unfavorable Weather	14	6	
Total	240	100	

Source: Adapted from Falade (2012) Federal University of Technology Akure, Nigeria. Unpublished M. Agric. Tech. Thesis

2. CONCEPT OF NATIONAL DEVELOPMENT

All over the world, every society strives for development. This is because development is a desirable change that brings improvement in the standard of living of the people especially their nutritional status, improvement in health, increase in real income of the people and per capita income as well as improvement in the educational achievement or access to education. fairer distribution of income and better livelihood options. As noted by [6] national development is the ability of a county or countries to improve the social welfare of the people e.g. by providing social amenities like quality education, potable water, transportation infrastructure and medical care. In the same vein [7] defined national development as the ability of a nation to improve the lives of its citizens. Measures of improvement may be material, such as an increase in the gross domestic product, or social, such as literacy rates and availability of healthcare.

Development helps to bring improvement into all aspects of human lives including income and consumption levels. However, achieving this development in Nigeria and in many other African countries seems to be a herculean task. This is as a result of failure on the part of government and individuals to take advantage of the country's human potentials and resource endowment. National development refers to the ability of a nation to improve the lives of its citizens. Measures of improvement may be material, such as an increase in the gross domestic product, or social, such as literacy rates and availability of healthcare. To achieve this development many countries embarked on development strategies code-named National Development Plan (NDP). This is a long/ medium-term development plan, developed by the government (National Planning Commission) to ensure that strategies are put in place to achieve national development and at the same time ensure that the strategies are followed.

Nigeria has great potentials in agriculture and forestry that can help to bring rapid national development. It is however sad to note that many of these potentials have not been properly harnessed both by the government and by individuals. [1] noted that throughout ages, the presence or absence of forests is an indication of civilization. In any habitat, the botanical content of the forest is vital to the welfare of the people.

2.1 Concept of NTFPs

Wickens GE [8] defined NTFPs as all biological materials (other than industrial round wood, derived sawn timber, wood chips, wood-based panels and pulp) that may be extracted from natural ecosystem, managed plantations and be utilized within the household, be marketed or have social, cultural and religious significance. This means NTFPs cover a wide variety of forest products that are not timber products. [9] also defined NTFPs as plants, parts of plants, fungi and other biological materials that are harvested from within and on the edge of natural, manipulated or disturbed forests. NTFPs include fungi, moss, Lichen, herbs, vines, shrubs or trees. Many different parts are harvested including the roots, tubers, leaves, bark, fungi, branches, resin, fruits, seeds as well as the wood. NTFPs are plants and plant materials used for food, fuel, storage fodder, and medicine etc. [10]. [11] noted that Non-timber forest often referred to as products. NTFPs, are an important aspect of forests and forest use in many parts of the world. In addition to timber, paper, and bioenergy, a number of products are from forests that have extracted important local and economic uses and been, suggested by researchers and some environmental NGO's and agencies to offer additional economic benefits for local communities. Examples of NTFPs include the game, medicinal plants, resins, bamboo, fruits, fibers, fungi, and palms. These products include those naturally occurring in forest ecosystems, as well as products that are managed (by manipulating forest ecosystems) or planted. As these products depend on forest environments for their production, they are thought of as a potential economic "win-wins" that will promote forest conservation while providing local benefits. It has been shown that NTFPs can be extracted sustainably - however, other cases have shown that uncontrolled extraction due to high demand or population pressures can cause forest degradation or species extinction.

They are the forest treasure that sustains rural dwellers by providing income, foods and medicinal materials. As a matter of fact, the majority of the rural poor all over Africa would have been showing obvious signs of malnutrition if not for the food provided by NTFPs to them in form of forest fruits and vegetables. Forest foods help to supplement and complement the daily diet of the rural poor.

2.2 Potentials of NTFPs for National Development

Provision of Food: One of the glaring potentials of NTFPs to national development is the provision of food to many people. Food is a necessity and one of the major indices of national development is improved nutritional status of the people. NTFPs provide diverse types of food to many people in Nigeria. These include different types of forest fruits (like Adansonia digitata and Chrysophyllum albidum) and leaves (like Ocimum gratissimum and Vitex doniana,) snails, honey, bush meat and mushrooms. Table 2 shows a list of forest plant species in Nigeria that provide food to the people either as fruits or as leaves which serve as vegetables. It is important to note that many of these forest fruits and leaves are very rich in vitamins, minerals and proteins. They therefore help to improve the nutritional status of many Nigerians. [12] noted that Forest foods such as wild fruits, nuts, vegetables, mushrooms and animal products contribute in many ways to food security. The dietary quality of many forest foods is high. Many of the micronutrients provided by forest foods have important health developmental functions, and their absence in therefore. important diets. has implications. [13] also noted that forests are the source of a variety of foods that supplement and complement what is obtained from agriculture. This shows that foods obtained from the forests as NTFP foods play important role in ensuring that the nutritional status of many people is improved. NTFP foods are even much more important in ensuring that many households in Nigeria stay out of hunger during emergencies and difficult periods. These include periods of drought, floods, wars or insurgency as well as during prolonged dry season and during periods of crop failure. It is a well-known fact that poor people live precariously without any savings against emergencies or crop failure. NTFP foods therefore provide a cushion against these adversaries and help households to maintain high nutritional status even during adverse periods. It is important to note that many rural households in the country are faced with the problem of malnutrition. Most of them often feed on bland and monotonous diet of carbohydrate which often leads to malnutrition. Therefore NTFP foods have the ability to improve and enrich this monotonous diet. [14] noted that many NTFPs that serve as food help to add flavor to the otherwise bland food eaten by the rural dwellers in the country. Especially

vegetables like Ocimum gratissimum and the succulent leaves of Adansonia digitata. He noted further that these NTFPs help to improve the nutrition of rural dwellers by providing protein, energy, vitamins and essential minerals. For instance [15] stated that the nutritional composition of Blighia sapida per 100g of fruit is fat 18.8g, protein 8.8g and phosphorous 98mg. Some NTFP fruits are very nutritious in the country. They include the fruits of Tamarindus indica, Parkia biglobosa, Vitellaria paradoxa, Spondias mombin and Borassus aethiopum. The processed seedsof Parkia biglobosa particularly known to be rich in proteins and vitamins. It is therefore included in the soup preparations of many households in the country.

In the same vein many leaves that are NTFPs serve as vegetables to many households in the country. [16] noted that through trial and error over generations, African societies have discovered and utilized myriad plant species whose leaves can be used for food. The leaves contribute to the richness of diets, hence reducing various dietary deficiencies. Worthy of note are the leaves of Adansonia digitata, Ocimum gratissimum and Vernonia amygdalina which are widely used as vegetables by many rural dwellers and some urban dwellers in the country. This shows that NTFP foods play important role in ensuring that a lot of people are not malnourished in the country.

Provision of Income: NTFPs have great potentials in providing income to many people especially the rural dwellers and some urban dwellers not only in Nigeria but all over Africa. The provision of income by NTFPs has helped to contribute to national development. It is important to note that one of the indices of national development is a fair distribution of income. National development cannot be achieved in any decisive manner without an increase in the income earnings of the majority of the grass root people. It is increasing in the income of the majority of the grass root people that will lead to a fairer distribution of income which will bring about national development. NTFPS are capable of providing and increasing the income levels of millions of rural inhabitants and urban poor in Nigeria. Table 3 shows that rural women in north central Nigeria earned a reasonable income from the sale of forest fruits which is an important NTFP in the area. An average of 37% of them earned between N31, 000,00 and N40, 000,00 per annum from the sale of forest fruits alone in North Central Nigeria. [19] and [20] noted that

though NTFPs may not be the most important income generating products for local people living close to the forests, they contribute significantly to household income, food security, and household health care as well as, provision of multiple social and cultural values . [21] noted that exploitation of NTFPs plays an important role for the rural poor as gap filler and source of income in situations where alternative livelihood activities are scarce.

Table 2. List of forest plant species that provide edible fruits or leaves to the people in Nigeria

S/N	Name of plant species	Type of food				
1	Adansonia digitata	Fruits Leaves	and			
2.	Artocarpus cuminis	Fruit				
3.	Blighia sapida	Fruit				
4.	Borrassius aetopium	Fruit				
5.	Chrysophyllum albidum	Fruit				
6	Dacryodes edulis	Fruit				
7.	Garcinia cola	Fruit				
8.	Gongronema latifolium	Leaves				
9.	Irvingia gabonensis	Fruit				
10.	Moringa oleofera	Leaves				
11.	Morus mesozygia	Fruit				
12.	Ocimum gratissimum	Leaves				
13.	Parkia biglobosa	Fruit				
14.	Spondias mombin	Fruit				
15.	Tamarindus indica	Fruit				
16.	Tetracapidium	Fruit				
	conophorum					
17.	Treculia africana	Seed				
18	Vernonia amygdalina	Leaves				
19.	Vitellaria paradoxum	Nuts				
20.	Vitex doniana	Leaves				

Source: Adapted from [17] and [18]

Promotion of Communal Peace:- The exploitation of NTFPs has a great potential in promoting communal peace and community development, and by extension, national development. It is important to note that peace brings development and progress to the society. Without peace, development is not possible As a matter of fact businesses as well as all forms of livelihoods can only thrive well under a peaceful atmosphere. Exploitation of NTFPs can bring peace to the society because it could help to

engage many members of the community in one thing or the other. Some people are engaged in harvesting, some in processing and some in the sale of NTFPs. [23] noted that NTFPs provide employment for 57% and 43% of women involved in marketing and processing, of NTFPs respectively in Benin, Nigeria. What this means, in essence, is that many people who otherwise would have been jobless found employment in the utilization chain of NTFPs. As such they are busy with their NTFP jobs rather than getting involved in any criminal activities or in any form of insurgency. It is a known fact that an idle hand is the devils workshop. The implication of this on peace is that those that are jobless are the ones that are often into criminal activities or insurgency, but when these people are engaged in the utilization of NTFPs, the tendency of their involvement in criminal activities or insurgency is drastically reduced. The role of exploitation of NTFPs in promoting societal peace is an unquantifiable role which is of extreme importance in ensuring national development.

Provision of Medicinal Materials: NTFPs are known to provide medicinal materials that are used in curing different kinds of ailments. It is the medicinal materials provided by NTFPs that has helped majority of them to be in a state of good health. The health of an individual and by extension the health of a community is important to the survival, welfare and development of the individual or community. [24] noted that many Nigerians and other African countries sought alternative medical care through the use of medicinal plants in order to maintain their health and cope with the rigours of daily struggle for survival and hard work. He noted further that for millions of the poor people in tropical African countries, forest plants are well cherished and sought for medicinal use. It is when people are in a state of good health that they can be engaged in hard work that can bring about development. [25] noted that though it has not been scientifically proven but it has been observed and locally proven that traditional medicine are well known to be used in the treatment of various human ailments especially by the rural people in developing countries. They also provide the necessary nutrients for the growth and development of the human body. Table 4 shows a list of plant materials that are used for medicinal purpose by rural women in Kogi State, Nigeria.

Table 3. Estimate of annual Income realized by rural women from the sale of forest fruits in North Central Nigeria

Ethnic	Α		В		С		D		Е		F		G		Н		Total
group	Ν	%	Ν	%	N	%	N	%	Ν	%	N	%	Ν	%	Ν	%	
Yoruba	2	3	17	21	27	34	33	41	1	1	0	0	0	0	0	0	80
Nupe	6	8	19	24	28	35	26	33	1	1	0	0	0	0	0	0	80
Berom	1	1	16	20	33	41	30	38	0	0	0	0	0	0	0	0	80

NB: A = <410,000.00, B = 410,000.00 - 420,000.00, C = 421,000.00 - 439,000.00, D = 431,000.00 - 440,000.00, E = 441,000.00 - 450,000.00, E = 451,000.00 - 460,000.00, E = 461,000.00 - 470,000.00, E = 470,000.00,

Table 4. Name of plants and the ailment cured used by rural women in Kogi State, Nigeria

S/N	Name of plant species	Parts used	Ailment cured
1	Vernonia amygdalina	Leaves	Malaria
2	Azadirachta indica	Leaves and bark	Fever
3	Psidium guajava	Leaves	Fever
4	Carica papaya	Leaves, Fruits, Exudates	Malaria, Typhoid
5	Cassia alata	Flowers and roof	Fever
6	Moringa oleifera	Leaves	Malaria
7	Magnifera indica	Leaves, bark	Malaria
8	Garcinia cola	Seed	Cough
9	Spondias mombin	Leave	Blood replacement
10	Allium sativum	Bulb	Cough, Hypertension, Worms
11	Aloe barteri	Leaves	Constipation, Intestinal Ulcer
12	Allium cepa	leaves	Fever and Pile
13	Annona senegalensis	Leave	Low sperm count
14	Calotropis procera	Leave	Rashes
15	Daniellia oliveri	Bark	Malaria, Diabetes
16	Zingiber officinale	Leaves and root	Back pain
17	Piliostigma thonningii	Leave, Bark	Malaria
18	Vitex doniana	Leaves	Fever
19	Cola nitida	Bark	Low sperm count
20	Terminalia ivorensis	Leave, Bark	Cough, Diaorhea
21	Jatropha curcas	Exudate, Root	Mouth diseases, Sore
22	Momordica charantia	Whole plant	Gonorrhea, Fever, Pile
23	Phyllanthus amarus	Leave and seed	Fever, high blood pressure
24	Anthocleista djalonensis	Leave	Cough. Malaria
25	Khaya senegalensis	Bark	Pile, malaria
26	Adansonia digitata	Bark, Leaves	Control of heart beat
27	Parkia biglobosa	Bark	Skin Rashes
28	Piper guineense	Seed	Rotting teeth
29	Waltheria indica	Leave	Dysentery
30	Musa paradisiaca	Green Fruit	Diabetes
31	Pupalia lappacea	Leave, Seed	Women sterility
32	Morinda lucida	Leaves, bark	Malaria, Diabetes
34	Zingiber officinale		Cough, Asthma, Jaundice
35	Spondias mombin	Leaves	Malaria
36	Alstonia boonei	Bark	Rashes, Fever
37	Xylophia aethiopica	Seed	Teeth Rotting
38	Ocimum gratissium	Leaves	pile
39	Afzelia africana	Root	Hypertension
40	Fagara zanthoryloides	Root	Rheumatism

Source: [26]

2.3 Harnessing the Potentials of NTFPs for National Development

The potentials of NTFPs in contributing to national development cannot be overemphasized. They include the provision of food, income, contribution to peace and provision of medicinal materials. These potentials can be harnessed in the following ways.

- 1. Review of States Forest Policy:- It is essential that the forest policies of all the states in the country should be reviewed. There is the need to review the forest policy of many states in the country in view of the emerging contemporary issues in forestry that are germane to the development of forestry sector (especially NTFPs) and the reduction of rural poverty. Presently the forest policy of most states in Nigeria allows for people to have open access to NTFPs in free areas. Members of a community are also given free access to NTFPs on communal lands while members of the public are given free access to a limited number of NTFPs on government lands. This limited access includes free access to exploit leaves. snails, mushrooms, herbs and some fruits. This situation has not really helped in the sustainable management of NTFPs on communal lands. There is, therefore, the need to review state forest policy to take care of NTFP governance especially on communal lands. For instance, issues that concern NTFP governance are necessary to be addressed by the forest policy of each state of the country in order to take care of competition and their overexploitation. State forest policy should particularly pay attention to NTFP governance by ensuring that a unit is created in the Department of Forestry in each state that will see to all issues that is related to NTFPs especially NTFP governance. This will go a long way in helping local community dwellers to direct the utilization of NTFPs on their communal lands in a better and more sustainable manner. This no doubt will be in line with the current trend in the management of NTFPs worldwide. This will help to ensure sustainable management of NTFPs towards meeting the needs of the people.
- Adoption of Open door Forest Policy: Forest policymakers should adopt an open door policy on issues that are related to NTFPs. This is because if the utilization of

NTFPs is to improve considerably among the people and contribute more to national development forest policymakers must adopt this strategy (open door policy) that will allow for easy flow of information and communication from the people to the NTFP unit and forest policymakers and from NTFP unit back to the people. NTFP units created in the States forestry Departments in the country or forest policymakers in each state forestry Department should be able to have a free flow of information on the various indigenous uses of NTFPs in the state as well as uses of NTFPs in others in the country. This will help policy makers come up with a holistic policy that will help to promote the contribution of NTFPs to national development.

- Commercialization of NTFPs:-Commercialization is one sure way by which the interest of the people in the utilization of NTFPs can be increased. This is because commercialization will help to increase income earnings people can get from NTFPs tremendously. [27] noted that the rationale for NTFP commercialization is often to improve the livelihoods of poor people, especially NTFP producers. By creating and capturing more value, it is hoped that NTFP producers will gain from and improved income employment strategy opportunities. The οf commercialization can be achieved in the following ways.
 - a. Existing markets of NTFPs should be upgraded and expanded by the state or local government. Markets with shelter facilities should be provided for traders of NTFPs both in rural markets and in urban markets. In addition new sales outlets for NTFPs should be created at strategic locations in urban centres. The strategic locations are those locations that can advertise or help boost the awareness of NTFPs among urban dwellers. This will help to boost the level of patronage of NTFPs and help to increase the income derived from them.
 - b. Another way of improving the commercialization of NTFPs is by encouraging market research on NTFPs. Part of the market research will be to identify the best selling points for specific NTFPs and the best selling method (wholesale, retailing or hawking). Market research will also provide information on

the best way of linking producers of NTFPs with the markets. Most importantly market research should be able to identify important roads that can be developed that will link the majority of the producers of NTFPs with the markets.

- c. Another way of improving commercialization of NTFPs is to provide improved storage facilities to the producers and sellers of NTFPs. Improved storage facilities will help to reduce loss through spoilage as it is currently experienced by some sellers of NTFPs due to poor storage facilities. Improved storage facilities will, therefore, help to encourage the sales of some NTFPs.
- d. Value addition to NTFPs can also help to improve their commercialization. Processing of some NTFPs can help to add more value to them thereby helping to increase sales and income derived from them. [28] noted that local processing of forest fruits (which are also NTFPs) can increase returns on them.
- Removing marketing barrier that prevent marketers of NTFPs from changing from being a retailer to wholesalers can also help to improve commercialization of NTFPs. This is because commercialization of NTFPs is to be encouraged there must be free entry into their marketing. [29] and [30] noted that commercialization of forest fruits can be improved by removing marketing barriers that prevent women from changing from being a retailer to wholesaler. They noted further that unnecessary road checks and permits should be avoided. This will promote easy movement of NTFPs and it will help to promote their commercialization.
- f. Grading and packaging of NTFPs can also help to improve their commercialization. Grading will help to remove NTFPs that are low quality, while packaging will help to attract the attention of many people. This will thus boost its commercialization.
- 4. Improved Extension Service for NTFPs: The extension service for NTFPs in each state in Nigeria should be improved. Hitherto the extension service for NTFPs in most states is either non existence or at a low ebb.. If NTFP units are created in the States Forestry Departments, the unit will

ensure that the awareness of NTFPs is promoted among the people through improved extension services. Improved extension services will help to create awareness among the people the various potentials of NTFPs in improving the income earnings of the people.

5. Promoting Conservation of NTFPs:
awareness must be created among the people on the need to avoid overexploitation of NTFPs and ensure their conservation. Conservation according to [31] means the management of human use of the biodiversity so that it may yield the greatest sustainable benefit to the present generation while maintaining it's potential to meet the needs and aspirates of future generations When NTFPs are conserved it ensures sustainable utilization of NTFPs. When there is sustainable utilization of NTFPs it will ensure its continuous contribution to national development.

3. CONCLUSION

This study examined the great potentials of NTFPs and how they could be harnessed for national development. These potentials include provision of food, provision of income, provision of communal peace and provision of medicinal materials. The study showed that the potentials of NTFPs in contributing to national development can be harnessed by reviewing of States forest policy, adoption of open door forest policy, commercialization of NTFPs, improved extension service for NTFPs and promoting conservation of NTFPs. Each State of the federation will do well by creating a unit for NTFPs in order to properly harness the potentials of NTFPs for national development.

COMPETING INTERESTS

Author has declared that no competing interests exist.

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