

Harnessing the Potentials of NTFPs for National Development in Nigeria

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: Harnessing, Potentials, 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 and their products play critical roles in human environment, needs and livelihood (Adeyaju, 2001).

Adedayo and Oyun (2010) noted that man cannot live a convenient and satisfying life without the forest and its resources. Not even the application of today's technology can provide a suitable and acceptable alternative to the use of the forests and its resources. Among the diverse products provided by the forests NTFPs represents 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 (Central African Regional Programme for the Environment (CARPE), 2001). 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 (CARPE, 2001).

NTFPs are many and varied. They include forest fruits, ropes, resins, snails, mushrooms, leaves, firewood and bush meat. Non-timber forest products (NTFPs) are biological resources other than timber, which are harvested from either natural or managed forests. Examples include fruits, 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 (Nguyen and Bui, 2000).

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.

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. 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

43 social, such as literacy rates and availability of healthcare. To achieve this development many
44 countries embarked on development strategies code named National Development Plan (NDP). This
45 is a long/ medium term development plan, developed by the government (National Planning
46 Commission) to ensure that strategies are put in place to achieve national development and at the
47 same time ensure that the strategies are followed.

48 Nigeria has great potentials in agriculture and forestry that can help to bring rapid national
49 development. It is however sad to note that many of these potentials have not been properly
50 harnessed both by government and by individuals. Adeyoju (2001) noted that throughout ages, the
51 presence or absence of forests is an indication of civilization. In any habitat the botanical content of
52 the forest is vital to the welfare of the people.

53 **2.1 Concept of NTFPs.**

54 Wickens (1991) defined NTFPs as all biological materials (other than industrial round wood, derived
55 sawn timber, wood chips, wood based panels and pulp) that may be extracted from natural
56 ecosystem, managed plantations and be utilized within the household, be marketed or have social,
57 cultural and religious significance. This means NTFPs cover a wide variety of forest products that are
58 not timber products. Chamberlain *et al.*, (1998) also defined NTFPs as plants, parts of plants, fungi
59 and other biological materials that are harvested from within and on the edge of natural, manipulated
60 or disturbed forests. NTFPs include fungi, Moss, Lichen, herbs, vines, shrubs or trees. Many different
61 parts are harvested including the roots, tubers, leaves, bark, fungi, branches, resin, fruits, seeds as
62 well as the wood. NTFPs are plants and plant materials used for food, fuel, storage fodder, and
63 medicine etc. (Idumah *et al.*, 2008). NTFPs are highly valued either for their leaves, roots, barks or
64 fruits. They are the forest treasure that sustains rural dwellers by providing income, foods and
65 medicinal materials. As a matter of fact, majority of the rural poor all over Africa would have been
66 showing obvious signs of malnutrition if not for the food provided by NTFPs to them in form of forest
67 fruits and vegetables. Forest foods help to supplement and complement the daily diet of the rural
68 poor.

69 **Potentials of NTFPs for National Development**

70 **Provision of Food;** - One of the glaring potentials of NTFPs to national development is the provision
71 of food to many people. Food is a necessity and one of the major indices of national development is
72 improved nutritional status of the people. NTFPs provide diverse types of food to many people in
73 Nigeria. These include different types of forest fruits (like *Adansonia digitata* and *Chrysophyllum*

74 *albidum*) and leaves (like *Ocimum gratissimum* and *Vitex doniana*), snails, honey, bush meat and
 75 mushrooms. Table 1 shows a list of forest plant species in Nigeria that provide food to the people
 76 either as fruits or as leaves which serve as vegetables. It is important to note that many of these
 77 forest fruits and leaves are very rich in vitamins, minerals and proteins. They therefore help to improve
 78 the nutritional status of many Nigerians. Warner (2000) noted that forests are the source of a variety
 79 of foods that supplement and complement what is obtained from agriculture. This shows that foods
 80 obtained from the forests as NTFP foods play important role in ensuring that the nutritional status of
 81 many people is improved. NTFP foods are even much more important in ensuring that many
 82 households in Nigeria stay out of hunger during emergencies and difficult periods. These include
 83 periods of drought, floods, wars or insurgency as well as during prolonged dry season and during
 84 periods of crop failure. It is a well known fact that poor people live precariously without any savings
 85 against emergencies or crop failure. NTFP foods therefore provide cushion against these adversaries
 86 and help households to maintain high nutritional status even during adverse periods. It is important to
 87 note that many rural households in the country are faced with the problem of malnutrition. Most of
 88 them often feed on bland and monotonous diet of carbohydrate which often leads to malnutrition.
 89 However NTFP foods have the ability to improve and enrich this monotonous diet. Adedayo (2017)
 90 noted that many NTFPs that serve as food help to add flavor to the otherwise bland food eaten by the
 91 rural dwellers in the country. Especially vegetables like *Ocimum gratissimum* and the succulent leaves
 92 of *Adansonia digitata*. He noted further that these NTFPs help to improve the nutrition of rural
 93 dwellers by providing protein, energy, vitamins and essential minerals. For instance Montoho
 94 Gardens (2007) stated that the nutritional composition of *Blighia sapida* per 100g of fruit is fat 18.8g,
 95 protein 8.8g and phosphorous 98mg. Some NTFP fruits are very nutritious in the country. They
 96 include the fruits of *Tamarindus indica*, *Parkia biglobosa*, *Vitellaria paradoxa*, *Spondias mombin* and
 97 *Borassus aethiopum*. The processed seeds of *Parkia biglobosa* is particularly known to be rich in
 98 proteins and vitamins. It is therefore included in the soup preparations of many households in the
 99 country.

100 In the same vein many leaves that are NTFPs serve as vegetables to many households in the
 101 country. Sene (2000) noted that through trial and error over generations, African societies have
 102 discovered and utilized myriad plant species whose leaves can be used for food. The leaves
 103 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.

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

Source: Adapted from Fuwape, 2005 and Babalola and Agbeja, 2008

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 fair distribution of income. National development cannot be achieved in any decisive manner without increase in the income earnings of majority of the grass root people. It is increase in the income of the majority of the grass root people that will lead to 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 2 shows that rural women in north central Nigeria earned reasonable income from the sale of forest fruits which is an important NTFP in the area. An average of 37% of them earned between ₦31,000.00 and ₦40,000.00 per annum from the sale of forest fruits alone in North Central Nigeria.. Ojea *et al.* (2016) and Endamana *et al.* (2016) 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 . Sunderlin *et al* (2005) 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: Estimate of annual Income realized by rural women from the sale of forest fruits in North Central Nigeria.

Ethnic Group	A		B		C		D		E		F		G		H		Total
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	
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= <₦10, 000.00, B= ₦ 10,000.00- ₦ 20,000.00, C= ₦ 21,000.00- ₦ 39,000.00, D= ₦ 31,000.00- ₦ 40,000.00, E= ₦ 41,000.00- ₦ 50,000.00, F = ₦ 51,000.00- ₦ 60,000.00, G= ₦ 61,000.00- ₦ 70,000.00, H= >₦ 70,000.00

Source: Adedayo *et al*, (2010).

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. Kutesa (2009) noted that 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. 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. Adedayo (2007) 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. WHO (2000) 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.

3.1 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.  situation has not really help 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 concerns NTFP governance are necessary to be addressed by the forest policy of each states of the country in order to take care of competition and their over-exploitation. 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.

2. Adoption of Open door Forest Policy: - Forest policy makers 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 policy makers 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 policy makers and from NTFP unit back to the people. NTFP units created in the States forestry Departments in the country or forest policy makers in each state forestry Department should be able to have 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.

3. 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. The strategy of 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 majority of the producers of NTFPs with the markets.

- 214 c. Another way of improving commercialization of NTFPs is to provide improved storage
215 facilities to the producers and sellers of NTFPs. Improved storage facilities will help to
216 reduce loss through spoilage as it is currently experienced by some sellers of NTFPs due
217 to poor storage facilities. Improved storage facilities will therefore help to encourage the
218 sales of some NTFPs.
- 219 d. Value addition to NTFPs can also help to improve their commercialization. Processing of
220 some NTFPs can help to add more value to them thereby helping to increase sales and
221 income derived from them. Taylor (1999) noted that local processing of forest fruits
222 (which are also NTFPs) can increase returns on them.
- 223 e. Removing marketing barrier that prevent marketers of NTFPs from changing from being a
224 retailer to wholesalers can also help to improve commercialization of NTFPs. This is
225 because if commercialization of NTFPs is to be encouraged there must be free entry into
226 their marketing. Ramadhani (2002) and Schreckenberg *et al* (2006) noted that
227 commercialization of forest fruits can be improved by removing marketing barriers that
228 prevent women from changing from being a retailer to wholesaler. They noted further that
229 unnecessary road checks and permits should be avoided. This will promote easy
230 movement of NTFPs and it will help to promote their commercialization.
- 231 f. Grading and packaging of NTFPs can also help to improve their commercialization.
232 Grading will help to remove NTFPs that are low quality, while packaging will help to
233 attract the attention of many people. This will thus boost its commercialization.
- 234 **4. Improved Extension Service for NTFPs:** -The extension service for NTFPs in each state in
235 Nigeria should be improved. Hitherto the extension service for NTFPs in most states is either
236 non existence or at a low ebb.. If NTFP units are created in the States Forestry Departments,
237 the unit will ensure that the awareness of NTFPs is promoted among the people through
238 improved extension services. Improved extension services will help to create awareness
239 among the people the various potentials of NTFPs in improving the income earnings of the
240 people.
- 241 **5. Promoting Conservation of NTFPs:** - awareness must be created among the people on the
242 need to avoid over-exploitation of NTFPs and ensure their conservation. When there is

sustainable utilization of NTFPs it will ensure there continuous contribution to national development.

4. 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.

REFERENCES

- Adedayo A...G. 2007. The use of medicinal plants among urban households within Akure metropolis, Ondo State, Nigeria. In medicinal plants in Agriculture, The Nigeria experience. Proceedings 3rd Annual Conference, School of Agriculture and Agriculture Technology (eds. G. E. Onibi, S.O Agele, V.A.J. Adekunle and M.O. Olufayo), Federal University of Technology, Akure, Nigeria. 16th-19th April, 2007. PP 185-190.
- Adedayo, A.G. and Oyun, M.B. (2010): Assessment of the impact of Democratic Rule on some Aspects of Forest Resources Management in Ondo State, Nigeria.. International Journal of Social Forestry Vol. 3(1) pp.1- 11.
- Adedayo, A.G. Oyun, M.B... and Kadeba, T.O.S. (2010): Access of Rural Women to Forest Resources and its impact on Rural Household Welfare in North Central Nigeria. *Journal of Forest Policy and Economics* 12 439 - 450.
- Adedayo, A. G. (2017). Harnessing the Food Potentials of NTFPs for Food security in Nigeria's Rural Communities. :In: O. A. Fagbenro and B. N. Ejidike (eds.) Proceedings of the 6th International Conference / workshop on Giant African Land Snails (NetGALS). Snail: Harnessing Bio-Resources for food security and National Development. Held at the Federal University of Technology, Akure, Nigeria. June 4th-7th, 2017. Pp. 20-24.
- Adeyoju, K.(2001). Forestry for National Development. In: L. Popoola, J.E. Abu and P.I. Oni (eds.) *Proceedings of the 27th Annual Conference of the Forestry Association of Nigeria* held in Abuja, FCT.17th-21st September 2001 Pp.55-68.

- 274 Central African Regional Programme for the Environment (CARPE) (2001): Non-Timber Forest
275 Products Economics and Conservation Potential. Congo Basin Information Series
276 Issue Brief No 10 March, 2001.
- 277 Chamberlain, J.L., Bush, R. and Hammett, A.L. (1998): Non-Timber Forest Product: The other
278 Forest Products. *Forest Product Journal*.48 (10): 2-12.
- 279 Endamana D, Angu K A, Akwah G N, Shepherd G, Ntumwel B C (2016) Contribution of non- timber
280 forest products to cash and non- cash income of remote forest communities in Central Africa.
281 *Int. For. Rev.* 18 (3): 280–295.
- 282 Idumah, F.O. (2001): Forestry sub-sector and poverty alleviation in Nigeria. In: L. Popoola, J.E. Abu
283 and P.I. Oni (Eds.) Proceedings of the 27th Annual Conference of the Forestry Association of
284 Nigeria held in Abuja (FCT) 17th -21st September, 2001. Pp.319 – 327.
- 285 Montoso Gardens (2007):*Blighia sapida*: Common names, origin and distribution, description,
286 propagation and uses <http://www.montosogardens.com> Accessed on 10th July, 2013.
- 287 Nguyen, T. N. and Bui, T. A. (2000): Non-Timber Forest Products (NTFPs)-Gender Analysis & Gender
288 Action Plan. NTFP Project, 8 Chuong Duong Do, Hanoi, Vietnam, 2000.
- 289 Ojea E, Loureiro M L, Alló M, Barrio M (2016) Ecosystem services and REDD: estimating the benefits
290 of non- carbon services in worldwide forests. *World Dev.* 78: 246 –261.
- 291 Ramadhani, T. (2002): Marketing of Indigenous fruits in Zimbabwe. Socioeconomic studies on Rural
292 Development. Vol.129 Wissenschaftsverlag Vauk. Kiel, Germany. Pp.212.
- 293 Schreckenberg, K., Awono, A., Degrande, A., Mboosso, C., Ndoeye, O. and Tchoundjeu, Z. (2006):
294 Domesticating indigenous fruit trees as a contribution to poverty reduction. *Forests, Trees and*
295 *Livelihoods*.16, 35 -52.
- 296 Sene, E.H. (2000): Forests and Food in Africa; the place of forestry in FAO's Special programme for
297 Food Security. *Unasylva* 202 vol.51 (1) 13-18.
- 298 Sunderlin, W., Angelsen, A., Belcher, B., Burgers, P., Nasi, R., Santoso, L. and Wunder, S. (2005).
299 'Livelihoods, forests, and conservation in developing countries: an overview. *World*
300 *Development*, 3 (9): 1383–1402.
- 301 Taylor, D.A. (1999): Requisites for thriving rural non-wood forest product enterprises. *Unasylva* 198
302 50(3) 3-8.

- 303 Warner, K. (2000): Forestry and Sustainable Livelihood. *Unasylva* 2 02 vol. 51 (1) 3-12.
- 304 Wickens, G. E. (1991) Management issues for development of non-timber forest products. *Unasylva*
305 42(165):3-8.
- 306 World Health Organization (WHO), (2000): General guidelines for methodologies on research and
307 evaluation of traditional medicine