



Assessment of Income Generation from Non-timber Forest Products in Awka-North Local Government Area of Anambra State, Nigeria

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Authors' contributions

This work was carried out in collaboration among all authors. Author BCO designed the study, data collection and writing of the manuscript. Author AEI supervised and managed the literature searches. Authors JUE and OC performed the statistical analysis, interpret data and reviewed manuscript. Author NNA coded the data and reviewed manuscript. All Authors read and approved the final manuscript.

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ABSTRACT

Non-Timber Forest Products are important sources of income that can supplement farming and/or other activities to the rural dwellers. In spite of this, its potential to improve the standard of living and generate income to rural dwellers has not been known in Awka-North Local Government Area. The study was carried out from January to August, 2017. The study identified the variety of non-timber forest products (NTFPs) available to rural households, the level of income generated by households from these available Non-timber forest products and constraints to Non-timber forest products collection in the study area. Three towns; Achalla, Amansea and Mgbakwu were selected using multi-stage random sampling technique. A total of 100 copies of structured questionnaires were administered to obtain information from respondents who engaged in NTFPs based activities in the selected towns. Data collected were analyzed using descriptive statistics and 5-point Likert Type Scale. The study revealed that fish, snail, bush meat, spices, firewood, fruits, seeds and nuts, vegetables and honey are the Non-timber forest products available to the rural dwellers. Monthly

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income of ₦61,000 and above was generated by the rural dwellers who engaged in NTFPs sales. Lack of marketing, bush burning, deforestation, NTFPs scarcity, over exploitation, transportation, bad road network, distance from forest, market price of other products and unfavourable government policies are the constraints confronting the respondents in the collection of Non-timber forest products in the study area.

Keywords: Forest; non-timber forest products; assessment; income generation.

1. INTRODUCTION

Forest is a web of life; a dynamic, constantly changing community of living things- from the subsoil to the canopy, a forest is much more than its trees. Forest comprises timber and non-timber forest products. Non-timber forest products (NTFPs) are 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 [1]. The importance of local, regional, national and international trade of Non-timber forest products can significantly contribute to community and household economies. However, little is known about NTFPs, their collection, utilization, and marketing in Awka-North Local Government Area (LGA) despite their great potential to positively affect communities and households.

The extraction of Non-timber forest products has multiplier effects in the economy by generating employment and income in processing and trading activities. However, depletion of Non-timber forest products on account of indiscriminate exploitation, deforestation and forest degradation have a major issue of concern that may affect the NTFPs based livelihood and economics. It has been established from previous research works that a significant number of rural, tribal and overall forest dependent communities derive a significant part of their food, nutrition, health- care needs and income from Non-timber forest resources. However, in Awka-North Local Government Area, Anambra State, it has not been established if the communities and rural households are dependent on Non-timber forest products for their income and nutrition and hence, its livelihoods require some focused intervention on Non-timber forest products.

The Assessment of Income Generation from Non-timber forest products in Awka-North L.G.A was carried out to identify the forms of Non-timber forest resources available to rural households in the study area, to determine the level of income generated by households from

Non-timber forest resources, to identify constraints to Non-timber forest resources collection in the study area and with view of enhancing the standard of living of the rural households.

2. METHODOLOGY

2.1 Study Area

Awka-North is a Local Government Area in Anambra State, South eastern Nigeria and lies approximately between longitude 7°10' E and 7°16' E and latitude 6°15' N and 6°25'N of the Equator. Awka-North Local Government Area in Anambra State is predominantly inhabited by the Ibos. It is 90 m, 295.28 ft, in height above sea level and has its Headquarters at Achalla. The total population of the inhabitant of Awka North Local Government Area from national population commission of Nigeria is 112,192 (2006 census) with an annual growth rate of 2%. The LGA human population is projected to reach 148,400 as extrapolated for 2020. Towns that make up the local government are Awba, Ofemili, Ugbene, Ebenebe, Achalla (the capital), Urum, Amansea, Amanasa, Amanuke, Isu-Aniocha, Mgbakwu, and Ugbenu. The major occupation of the inhabitants in Awka-North L.G.A is farming. The natural vegetation of the area is tropical dry or deciduous forest, which, in its original form, comprised tall trees with thick under growth and numerous climbers.

2.2 Data Collection

In this study, multi-stage random sampling technique was used to select the towns investigated for NTFPs in Awka North L.G.A. The towns selected include Achalla (capital), Amansea and Mgbakwu. A market was purposively selected from each of these three towns because of the size of the markets. A total of 100 constructed questionnaires were administered in this study. Forty (40) respondents were randomly selected from Achalla (capital) because of high number of

population while 30 respondents were randomly selected each from Amansea and Mgbakwu. Data for this study were obtained using structured questionnaires. Information obtained includes Non-timber forest products available to households, the level of income generated by households and constraints to NTFPs collection in the study area. The research survey focuses on the value of NTFPs to the livelihood of the rural dwellers.

2.3 Data Analysis

The quantitative data obtained from the household survey were coded and analyzed using Statistical Package for Social Science (SPSS) version 16.0. Descriptive statistics were used to calculate frequencies, percentages, and means. The data collected were carefully organized and analyzed (research question one and two) using descriptive statistics while research question three was analyzed using a 5-point Likert Type Scale (Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree). The results were presented using frequency tables, percentage and mean.

3. RESULTS AND DISCUSSION

3.1 Non-timber Forest Products Available to Rural Household in the Study Area

Table 1 shows that fish, snail, bush meat, spices, firewood, fruits, seeds and nuts, vegetables and honey are some of the Non-timber forest products available to the rural household in Awka-North Local Government Area. Based on this, it can be seen that the aforementioned are the NTFPs available to rural household in Awka-North LGA. This is in agreement with [2] report who stated that Non-timber forest products also include wild and managed game, fish, and insects. [3] also noted that NTFPs are commonly grouped into categories such as floral greens, decorative, medicinal plants, foods, flavours and fragrances, fibers, and saps and resins. It therefore implies that, many of the rural dwellers in Awka-North LGA of Anambra State depend on these available non-timber forest products for their livelihood and well-being.

3.2 Level of Income Generated by Households from Non-timber Forest Products in the Study Area

Table 2 shows that 42 of the respondents generated income of ₦81,000 and above monthly from the sale of Non-timber forest

products, 23 of the respondents generated income of ₦61,000-₦80,000, 18 of the respondents generated income of ₦41,000-₦60,000, 10 of the respondents generates income of ₦21,000-₦40,000 and 7 of the respondents generates income of ₦0-₦20,000 monthly from the sale of Non-timber forest products in the study area. Based on the results, it can be seen that majority of the rural household generated income of ₦61,000 and above monthly, from the sale of Non-timber forest products. This shows that NTFPs sales yield more income monthly to the rural dwellers which in turn helps to reduce the level of poverty and improve the standard of living of the people of Awka-North LGA. This result agrees with Akinta, et al. [4] who reported that NTFPs could serve as source of wealth creation and consequently aid poverty alleviation, considering the socio-economic level of most inhabitants of rural areas who earn meager income, gathering and sales of NTFPs is one of the ways by which they can generate additional revenue. This finding is also in line with the research study reported by Brian, et al. [5] that Non-timber forest products contribute about 33% to household income for participating households, on average. It is well established that non-timber forest products (NTFPs) contribute in various ways to the well-being of many rural and urban households and populations around the world [6]. There is also growing evidence that local and wider-scale commercialization of NTFPs is increasing in many regions, providing cash income to numerous households [7]. This therefore, implies that the sale of NTFPs play an important role in poverty alleviation and in supporting rural livelihoods in Awka-North LGA.

Table 1. Non-timber forest products available rural house hold in the study area

S/N	Non-timber forest products available
1	Fish
2	Snail
3	Bush meat
4	Spices
5	Firewood
6	Fruits, seeds and nuts
7	Vegetables
8	Honey

3.3 Constraints to Non-timber Forest Products Collection in the Study Area

Table 3 shows that the respondents agreed with seven out of the ten constraints presented to

Table 2. Level of income generated by households from Non-timber forest products in the study area

S/N	Range of monthly income (₦)	Frequency	Mean Income	Percentage of respondents
1	0 - 20,000	7	10,000	7%
2	21,000 - 40,000	10	30,500	10%
3	41,000 - 60,000	18	50,500	18%
4	61,000 - 80,000	23	70,500	23%
5	81,000 – Above	42	90,500 and above	42%

Table 3. Constraints to Non-timber forest products collection in the study area

S/N	Constraints	Weighted mean (\bar{X})	Remark
1	Lack of marketing	3.41	Not Agree
2	Bush burning	3.51	Agree
3	Deforestation	4.20	Agree
4	NTFPs Scarcity	4.61	Agree
5	Over Exploitation	3.21	Not Agree
6	Transportation	3.10	Not Agree
7	Bad road network	3.53	Agree
8	Distance from forest	4.02	Agree
9	Market price of other products	3.77	Agree
10	Unfavourable government policies	4.13	Agree

them. The mean responses for the seven agreed constraints range from 4.61 to 3.51 while those for the disagreement range from 3.41 to 3.10. Based on the result, it can be seen that lack of marketing, bush burning, deforestation, NTFPs scarcity, over exploitation, transportation, bad road network, distance from forest, market price of other products and unfavourable government policies are the constraints to Non-timber forest products collection.

This finding agrees with Pandey, et al. [8] who found that a number of factors, including unfavourable government policies, non-destructive harvesting, destruction of natural habitats, bushfires, population growth and high demand, are hindering the collection, use and development of NTFPs. This result is also supported by Chidebere, et al. [9] who reported that marketers of NTFPs are faced with a number of constraints and that one of the major constraints is poor feeder roads. The returns associated with NTFP trade are affected by low market prices and the types of markets. For example, Malleson, et al. [10] reported that in Ghana, Cameroon and Nigeria, prices are subject to external market forces. Adam, et al. [11] found that cash income received from NTFPs was affected by market saturation

due to a limited number of markets. Openshaw [12] and Pullanikkatil, et al. [13] also stated that natural forests and grasslands in Malawi were being converted to agricultural production and settlements. Therefore, low amounts were harvested by traders for most of NTFPs due to scarcity of the resources, which in turn affected the returns to labor. Adam et al. [14] also reported similar results in the dry lands of Sudan. The small quantities available pushed some households to disengage from NTFP trade. This shows that the availability and market of NTFPs in Awka-North LGA is constrained by the agreed factors.

4. CONCLUSION

Based on the findings, it can be concluded that fish, snail, bush meat, spices, firewood, fruits, seeds, nuts, vegetables, and honey are the Non-timber forest products available in the study area which is a source of food to the rural households and a means of improved standard of living and well-being. Majority of the rural households generate income of ₦61,000 and above from the sale of Non-timber forest products and this helps to improve their standard of living and aid poverty alleviation.

The constraints to Non-timber forest products collection include lack of marketing, bush burning, deforestation, NTFPs scarcity, over exploitation, transportation, bad road network, distance from forest, market price of other products and unfavourable government policies. This affects the availability and market of Non-timber forest resources to the rural dwellers. Forest and forest reserve areas should be made more accessible to the rural households and laws governing forest reserve areas be reviewed and made flexible so that rural dwellers in Awka-North LGA can benefit from the available Non-timber forest products. Interventions aimed at increasing rural incomes through extraction and sale of Non-timber forest products should be made effective by the Government while also considering the ecological implication of increased NTFPs extraction. Government should develop strategies and policies that guide against deforestation, bush burning, over exploitation and construct and maintain good road networks to enhance access to rural households and marketers to the forest, markets and areas of collection. Community participation should be encouraged to enhance conservation and sustainability of NTFPs in Awka-North LGA. The Nigerian Conservation Foundation should promote conservation efforts and also create economic incentives for continued and expanded preservation in Awka-North LGA.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Malhotra KC, Bhattacharya P. Forest and livelihood. CESS Publisher, Hyderabad, India. 2010;246.
2. Awono A, Ingram V, Schure J, Levang P. Guide for small and medium enterprises in the sustainable non-timber forest product trade in Central Africa. CIFOR, Bogor, Indonesia. 2013;1-34.
3. Alexiades MN, Shanley P. Forest products, livelihoods and conservation: Case studies of non-Timber forest products systems. Volume 3- America Latina. CIFOR, Bogor, Indonesia. 2004;1504.
4. Akinta CI, Gbadebo JO, Oseke JI, Akinbi OJ, Akintan AO. Journal of Forestry Research and Management. Potentials of Non-Timber Forest Products (NTFPs) for poverty alleviation in Odigbo L.G.A of Ondo State. 2013;10:29-39.
5. Brian P Mulenga, Robert B Richardson, Gelson Tembo. Non-timber forest products and rural poverty alleviation in Zambia. Indaba Agricultural Policy Research Institute 26A Middleway, Kabulonga, Lusaka, Zambia. 2012;12-13.
6. Angelsen A, Jagger P, Babigumira R, Belcher B, Hogarth NJ, Bauch S, et al. Environmental income and rural livelihoods: A global-comparative analysis. World Dev. 2014;64:S12-S28.
7. Cunningham AB. Non-timber products and markets: Lessons for export-oriented enterprise development from Africa. in Non-timber forest products in the global context, eds Shackleton SE, Shackleton CM, Shanley P. (Springer, Heidelberg). 2011;83-106.
8. Pandey AK, Tripathi YC, Ashwani Kumar. Non-timber forest products (NTFPs) for sustained livelihood: Challenges and strategies. Review Article. 2016;36-38.
9. Chidebere – Mark NM, Ejike RD, Akwiwu UN. Economics of Non-timber forest products (NTFPs) marketing in Ikwano Local Government Area, Abia State, Nigeria. Department of Agricultural Economics, Extension and Rural Development, Faculty of Agriculture and Veterinary Medicine, Imo State University, Owerri, Nigeria. 2016;4(2):1-8.
10. Malleson R, Asaha S, Egot M, Kshatriya M, Marshall E, Obeng-Okra K, et al. Non-timber forest products income from forest landscapes of Cameroon, Ghana and Nigeria - An incidental or integral contribution to sustaining rural livelihoods? Int. Forest. Rev. 2014;16:261–277.
11. Adam YO, Pretzsch J, Pattenella D. Contribution of non-timber forest products livelihoods strategies to rural development in dry lands of Sudan: Potentials and failures. Agric. Syst. 2013;117:90–97.

12. Openshaw K. Biomass energy: Employment generation and its contribution to poverty alleviation. *Biomass Bioenergy*. 2010;34:365–378.
13. Pullanikkatil D, Mograbi PJ, Palamuleni L, Ruhiiga T, Shackleton CM. Unsustainable Trade-Offs: Ecosystem Services in a Rapidly Changing Likangala River Catchment in Southern Malawi. *Environment, Development and Sustainability*; 2016.
14. Adam YO, Pretzsch J, Pettenella D. Contribution of non-timber forest products livelihood strategies to rural development in drylands of Sudan: Potentials and Failures. 2013:117:90-97.

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