SSRG International Journal of Economics and Management Studies
ISSN: 2393 – 9125 / https://doi.org/10.14445/23939125/IJEMS-V6I8P117

Volume 6 Issue 8, 157 - 161, Aug 2019

Original Article

Economic Analysis of Non-Timber Forest Products in Ibarapa East Local Government Area, Eruwa, Oyo State, Nigeria

Olapade-Ogunwole, Folayimi[1], Ojedokun, IdrisKayode[2] and Ganiyu, MuibatOmolara[3]

[1] *Senior Lecturer & Department of Agricultural Economics &LadokeAkintola University of Technology, Ogbomoso, Oyo State, Nigeria.*
[2]*Lecturer II & Department of Agricultural Economics &LadokeAkintola University of Technology, Ogbomoso, Oyo State, Nigeria.*
[3]*Lecture & Department of Agricultural Economics, LadokeAkintola University of Technology, Ogbomoso, Oyo State, Nigeria.*

Abstract *- Non-timber forest products (NTFPs) have attracted considerable global interest in recent years due to increasing recognition of their contribution to household economics and food security and environmental objectives such as the conservation of biological diversity. The study examined the economic analysis of NTFPs by rural farmers in Ibarapa East local government area, Eruwa, Oyo State, Nigeria. Specifically, the study described the farmer's socio-economic characteristics, cost and returns on NTFPs, types of NTFPs available, and challenges facing, NTFPs in the study area. A multistage random sampling procedure was used to select 90 farmers who were interviewed with the aid of a structured questionnaire. The data were analyzed with descriptive, gross margin analysis, and linear regression models.*

The result showed that the majority (67.3%) of the respondents were male, 53.5% of the respondent's secondary school education, the mean age was 46 years and the mean household size was 6 individuals, 67.0% of the respondents had between 11 – 20 years of experience of extracting non-timber forest products, only 3.4% of the respondents had access to credit. Furthermore, 81.8% of the respondents were involved in the extraction of snail as their non-timer forest products, 73.9% involved in the extraction of fruit/spices, 63.6% involved in the extraction of locust bean, 61.4% involved in the killing of bushmeat, 45.5% involved in felling of firewood, 44.3% involved in the extraction of medicinal plants, 43.2% involved in the harvesting of palm fruit, 38.6% involved in the extraction of honey, 22.7% of the respondent involved in the extraction of palm wine as their non-timber forest products. Also, 30.7% of the respondents realized between less or equal to ₦50,000 annually from the sale of non-timber forest products, 28.4% realized between ₦50,100 – 100,000 from the sale of non-timber forest products, 25.0% realized between ₦100,100 – 150,000 annually from the sale of non-timber forest products while 5.9% of the respondent realized between ≥₦150,100 annually from the sale of non-timber forest products. Based on the benefit-cost ratio, for very ₦1.00 invested in the non-timber forest products by the respondent ₦1.38 will be returned to the respondents. It was also revealed that 65.9% of the respondents encountered the problem of poor transportation, 68.2% encountered the problem of poor or lack of storage facilities, 89.8% encountered the problem of bush burning, 93.2% encountered problem of security, 90.9% encountered problem of overexploitation of the NTFPs, 67.0% encountered problem of long-distance from the forest, 81.8% encountered problem of deforestation. The result of the regression analysis showed that Sex is positively significant at 5% level, age is negatively significant at 10% years spent in school is positively significant at 1% level, years of extraction in non-timber forest products and household size is positively significant at 5% level while access to credit and transportation cost is negatively significant at 5%.

In conclusion, marketable NTFPs can provide an important means for economic growth and sustainable forest management in local communities. Basic information regarding NTFPs is necessary for communities to make optimal use of their natural resource. It is therefore important to know NTFPs since they can be developed as a means of economic growth and forest resources conservation.

Keywords *- Non-timber forest products, Oyo Stare, cost, and returns.*

I. INTRODUCTION

Forest products are essential for subsistence and economic activities all around the world. Non-timber forest products (NTFPs) have sustained rural families for centuries globally and are prominent among internationally traded commodities over centuries. NTFPs have traditionally provided a source of nutrition and income for millions of indigenous women and men in some most remote areas of developing countries (IFAD, 2008).

The importance of non-timber forest products goes beyond meeting basic needs since the products are also among the rapidly growing market sectors. The estimated total value in world trade on NTFPs as of today is approximately US $1,100million (Kalu and Anigbere, 2011).

Total values of world trade in NTFPs have been estimated in the order of US $11 billion, UNCTAD (2001) NTFPs have been described as all biological materials, other than timber, extracted from natural and managed forests for human subsistence and economic activities, (Wilkinson and Elevitch, 2011). Examples of NTFPs include fruits, mushrooms, wild games, nuts, seed, oils, spices, resins, gums, medicinal plants (stem, barks, leaves, and roots), and fibers, all these contributions in a raw and processed for to rural livelihoods by improving food security and healthcare. Many NTFPs are commercial products economy of households and national economics such as gum, Arabic, and medicinal plants.

In some cases, NTFPs may be important than the regular case income gained from commercial logging while the preservation of NTFPs is fundamental to the maintenance and continuation of many traditional ways of life. Nkwatoch et al, (2010), identified 36important NTFPs species sourced from the Ejagham forest reserve for local and external trade and household consumption. From the list, Irvingia (wild mango or African mango), GnetumCarpolobia, MassularinadRicindendron species were identified as the five tradable NTFPs in the transboundary trade between Cameroon and Nigeria. Trade-in NTFPs generates employment opportunities, substantial income, and support livelihood among rural populations in tropical regions globally,

Currently, about 75%of poor people in the world depend on NTFPs for their subsistence while 80% of forest-based people in developing countries use NTFPs daily (Noubissie et al, 2008).

Mulenga et al (2011) reported the contribution of NTFPs to rural household income and food security in Zambia as well as its influence on the national economy. Forest-based activities in developing countries Nigeria inclusive, which are mostly in NTFPs area, provide an equivalent of 17 million full-time jobs in the formal sector and another 30 million in the informal sector, as well as 13 – 35% of all rural non-farm employment (Duong, 2008).

Millions of people around the world depend on the forest for medicine, raw materials, fuel, income, and food. Food and Agricultural Organization (FAO) estimates that 500 million people live in or near forests, and in some places; forests are the primary source of food. But almost everywhere, forests provide a regular supplement to people's diet. In many developing countries, forest foods represent a much-needed safety net, helping people get by between harvest seasons when crops fail, or during times of droughts, famines, or social strife. In some areas, forests support livestock production by providing fodder, and in others, for example, coastal mangrove swamps – they support local fisheries.

Forest contains many useful animals of subsistence and commercial values which sustain rural people and rural economies. NTFPs are found in a wide variety of outlets such as health food stores, pharmacies, etc. People have benefited from these plants for many generations and they have contributed significantly to both local and regional economics all over the world. NTFPs are a dependable source of income and food supply in rural areas. In the local, urban, national, and international markets, NTFPs contribute substantially to national economic growth (Olumide, 200). Recently, forest managers seem to have realized the enormity of the contribution of these resources to the welfare of the people, particularly in the rural areas. The name has thus been changed to "Non-timber forest products".

II. METHODS AND MATERIALS

The study was carried out in Ibarapa East Local Government Area, Eruwa, Oyo State. The population of the study was 118,288 and consist of all rural farmers in the study area.

A multistage sampling technique was used for this study. The first stage involved the selection of the local government area used. The second stage involved the random selection of villages in the study area. The third stage involved the purposive selection of respondents in each village. Finally, a total of 176 respondents were selected for the study.

Descriptive statistics were used to analyze the socio-economic characteristics of the respondents and presented in percentages, charts, frequency, mean and standard deviation. Descriptive statistics were also used to identify the identified NTFPs produced by the respondents in the study area, and also to identify the challenges facing NTFPs production in the study area. Gross margin was used to analyze the cost and return of NTFPs to the farmers in the study area.

Gross Margin Analysis

GM – TR – TVC

Where; π = GM – TFC/TR – (TVC + TFC)

Specification of Model

$Y = b_0 + b_1X_1 + b_2X_2 \ldots\ldots\ldots\ldots + b_nX_n + e$

Where; Y = Revenue, X_1 = Age (yrs), X_2 = Level of Education, X_3 = Household Size , X_4 = Gender (Male or Female), X_5 = Years of Experience, X_6 = Marital Status,, X_7 = Primary Occupation, X_8 = Cost of Transportation (Naira), and e = Error Term.

III. RESULTS AND DISCUSSION

Table 1 revealed that 54.5% of the respondent realized between ₦400,100 – ₦600,000 annually, 27.3% realized between ₦200,100 – 400,000, 10.2% realized between less or equal to ₦200,100 annually while the remaining 8.0% of the respondent realized between ≥ ₦600,100 annually from other occupations apart from non-timber forest production.

Table 1. Distribution of the Respondents by Annual Income From Other Occupation

Annual Income (₦)	Frequency	Percentage
≤ 200,000	18	10.2
200,000 – 400,000	48	27.3
400,100 – 600,000	96	54.5
≥ 600,100	14	8.0
Total	**176**	**100.00**

Source: Field Survey, 2016.

Table 2 revealed that 81.8% of the respondents were involved in the extraction of snail as their non-timber forest products, 73.9% were involved in the extraction of fruit/spices as their non-timber forest products, 63.6% were involved in the extraction of locust beans as their non-timber forest products, 61.4% involved in the killing of bushmeat as their non-timber forest products, 45.5% involved in felling of firewood as their non-timber forest products, 44.3% involved in the extraction of the medicinal plant as their non-timber forest products, 43.2% involved in the harvesting of palm fruit as their non-timber forest products, 38.6% involved in the extraction of honey as their non-timber forest products while 22.7% of the respondents involved in the extraction of palm wine as their non-timber forest products. The result showed that respondents involved in them with various non-timber forest products extract which can generate income for them apart from their major occupations

Table 2. Distribution of the Respondents by Non-Timer Forest Product

Annual Income (₦)	Frequency	Percentage
Firewood	80	45.5
Fruit/Spices	130	73.9
Bush meat	108	61.4
Medicinal plants	78	44.3
Honey	68	38.6
Palm wine	40	22.7
Palm fruit	76	43.2
Locust bean	112	63.6
Snail	144	63.6
*Multiple Response		

Source: Field Survey, 2016.

Table 3 revealed 30.7% of the respondents realized between less or equal to ₦50,000 annually from the sale of non-timber forest products, 28.4% realized between ₦50,100 – ₦100,000 from the sale of non-timber forest products, 25.0% realized between ₦100,100 – ₦150,000 annually from the sale of non-timber forest products while the remaining 15.9% of the respondent realized between ≥ ₦150,100 annually from the sale of non-timber forest product.

Table 3. Distribution of the Respondents by Annual Income From Non-Timber Forest Product

Annual Income (₦)	Frequency	Percentage
≤ 50,000	54	30.7
50,100 – 100,000	50	28.4
100,100 – 150,000	44	25.0
≥ 150,100	28	15.9
Total	**176**	**100.00**

Source: Field Survey, 2016.

A. Cost and returns of respondents from non-timber forest products

Gross Margin = Total Revenue – Total Variable Cost

= ₦1021,800 – ₦563,500= ₦458,300

Profit (π) = GM – TFC

= ₦358,300 – ₦178,600= ₦279,700

The total revenue derived from non-timber forest products is ₦1021,800, the total fixed cost is ₦178,600 and the total variable cost is ₦563,500 the total cost equals the total fixed cost plus the total variable cost which sum up to ₦742,100, gross margin equals the total revenue minus the total variable cost and its gives ₦458,300 and the profit equal gross margin minus the total fixed cost and its gives ₦279,700.

Benefit cost ratio = $\frac{\text{Total revenue}}{\text{Totalcost}} = \frac{1021800}{742100} =$ 1.38

B. Regression Analysis

The result of regression analysis in table 5 showed that the R square is 0.79.6, which implies that

79.6% variation of respondents' total revenue is explained by the independent variables. Sex is positively significant at 5% level which implies that as more men is tend to engaged in extraction of NTFPs the more they will be profitable because most men can work more vigorously than women, the regression coefficient for age is negative and significant at 10%, which suggests that age has a negative impact on the value of income which may be true in the sense that as the respondent continue to be ageing this affect them physically and will reduce their strength which will make them to be less effective in NTFPs extraction because of the nature of the work, years spent in school is positively significant at 1% level which implies that as the more the respondents is educated the more the likely profit he will derived from NTFPs extraction because he will have better knowledge about the NTFPs, it marketing and it nutrition value, year of extraction in non-timber forest products and household size is positively significant at 5% level which implies that an increased in numbers of years in NTFPs will enhanced them in understanding of management practices, when and where to find them and also an increased in household size will enhanced household contribution to labour force in NTFPs extraction for the engaged families.

Access to credit and transportation cost is negatively significant at 5% level which implies that an increase in transport cost will reduce the profit derived from NTFPs extraction in the study area while according to the result from socio-economic characteristics it showed that only a few of the respondents had access to credit the may be the reason why the coefficient of access to credit is negativities.

Table 5. Regression Analysis

Variables	Co-efficient	Standard Error	t-value
Sex	28595.51	14255.67	2.01*
Age	–3475.421	1859.86	–1.87***
Years spent in school	4711.881	1430.415	3.29*
Primary occupation	4097.635	5433.759	0.75
Year of experience	3441.271	1542.158	2.23**
Household size	9276.253	4596.843	2.02**
Access to credit	–74932.04	30088.8	– 2.49
Labour	1913.405	2707.883	0.71
Transportation cost	–5.769337	2.659618	– 2.16**
Constant	99017.75	23833.83	4.15

Source: Computed from Stata 11 Regression Analysis, 2016.s

* Significant at 10%, ** Significant at 5%, *** Significant at 1%

IV. CONCLUSION

The neglect of agriculture and forestry, in particular, has lured so many citizens to unemployment and environmental consequences such as erosion, pollution, desertification, low productivity in agricultural production and so many other factors leading to our present predicament of insecurity due to the economic downturn. Three basic assumptions emerge from NTFP research and literature: NTFPs are good for the environment; they are good for development; and they promote gender equity (Neumann and Hirsch, 2000). Based on these assumptions many international development agendas promote NTFPs as tools for sustainable development. That is, NTFPs are viewed as a potential means to better the livelihood strategies of rural populations while simultaneously sustaining the biodiversity of forested areas. NTFPs are important to local livelihoods, in maintaining biological diversity, and sustainable economic growth. NTFPs provide basic subsistence with food, medicines, and construction materials for shelter, cultural and ritual values (i.e. incense) as well as cash income for many local communities, especially where these groups have access to forest areas. As a result, marketable NTFPs can provide an important means for economic growth and sustainable forest management in local communities. Basic information regarding NTFPs is necessary for communities to make optimal use of their natural resources. It is therefore important to know NTFPs since they can be developed as a means of economic growth and forest resource conservation.

Based on the findings of this study, it was concluded that rural farmers had a high level of involvement in NFTPs gathering especially those products that are nutritious and economic relevant and it had contributed to the food security of rural households. The study revealed a significant relationship between some selected socioeconomic characteristic variables and level of involvement of respondents in the gathering of NTFPs; there is a positive and significant relationship between the level of household food security, level of income, and level of involvement of respondents in the gathering of NTFPs.

REFERENCES

[1] Duong, N.H ,. The role of non-timber forest products in livelihood strategies and household economics in a remote upland village in the upper ca river basinnghe the Phuong, Journal of Science and Development Feb.2008: (2008) 88 – 89.

[2] Kalu, C& Anigbere, R.F., Social Benefit of Non-Timber Forest Products (NTFPs): An Assessment of Employment

Generation from NTFPs Enterprises in Benin Metropolis, Edo State, Nigeria. Nigeria Journal of Agriculture and Environment, 7(2) (2011) 30 – 35

[3] Mulenga, P.B., Richardson, R.B, Mapemba, L. & Tembo, G. Contribution of Non-Timber Forest Products to Rural Income in Zambia. Policy Synthesis Food Security Research Project, Zambia.Ministry of Agriculture and Cooperatives, Agricultural Consultative Forum, Lusaka, Zambia. No 46. http:///www.aec.mus/fs2/zambia/index.htm.., 46 (2011).

[4] Nkwatoch A.F., Labode Popoola, S.M., Iyassa, and Nkwatoch, F., Trade on NTFPs between South-West Cameroon and Nigeria. Ghana Journal of Applied Science ., 16(12) (2011)

[5] Noubissie, E.T., Chupezi, J. and Ndoye, O., Studies on the Socio-Economic Analysis of Socio-Economic Non-timber Forest Products (NTFPs) in Central Africa. Synthesis of reports of studies in the Project GCP/RAF/398/GER. Yaounde, Cameroon, FAO GCP/RAF/398/GER Enhancing Food Security in Central African through the management and sustainable use of NWFP: (2008) 43.

[6] Olumide, J.O., Ensuring Food Security through Optimizing the Marketing of Non-Timber Forest Products in Oyo State, Nigeria. African Crop Science Proceedings, 9 (2009) 773 – 776.

[7] Wilkinson and Elvitch ., Non-Timber Forest Products: NTFPs Enterprises http:www.agrofrestry.net/overstory/overstory53html. The overstory ., (Accessed November 2011). , 53 (2011).