

Marketing and profitability of non-timber forest product (*Thaumatococcus danielli*) (Benn) beth in Ogun State

Adeniran O. A., Osadebe C. O., Famuyide O. O., Adebayo O., K. A. Bolaji-Olutunji

Forestry Research Institute of Nigeria, Jericho, Ibadan

Email address

chrisabel_t@yahoo.com (Adeniran O. A.)

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Abstract

The study assessed the marketing of *Thaumatococcus danielli* leaves in Ogun state, Nigeria. It looked into the intrinsic qualities of *Thaumatococcus danielli* and its contribution to income of rural communities, its accessibility, availability and profitability to the traders in the area. Four major markets, Mamu, Odeda, Olugbo, Kila, markets were purposively selected after the reconnaissance survey and sixty copies of the structured questionnaires were administered in all. Descriptive statistics and gross margin analysis were used to analyse the data collected. Result shows that about 72% of the sellers were female and 75% has *T. danielli* trade as their primary occupation; the gross margin of N6,402.23 shows that it is a highly profitable venture. Research should be carried out to grow these products more around South west Nigeria to reduce the sellers' travelling long distance to purchase the products. Also to encourage advancement of the trade in the area, relevant government agencies should promote local propagation of the species and improve transportation facilities.

Keywords

Thaumatococcus danielli, Marketing, Gross Margin, Profitability

1. Introduction

Conventional forestry practice in Nigeria has for a long time neglected other products except timber. These other products have been perceived globally and in Nigeria at various times as 'minor' forest products or non-timber forest products (NTFPs). During the first two to three decades of forestry in Nigeria, non-timber trees and plants were selectively poisoned by the Nigeria Forestry services resulting in the destruction of substantial part of the forest ecosystem. Many forest dwellers that depended on non-timber resources for their sustainability were displaced by this action. This act also led to the conversion of valuable natural forests to monoculture plantation of exotic timber species which lack the common traditional values for medicines, fruits, vegetables and other non-timber products of economic and sometimes religious values (Wilson, 1990).

Before and after the discovery of crude oil, agriculture

remains the mainstay of Nigerian economy. Agriculture is a major activity in the rural areas. Even the people who engage in other non-agricultural occupation such as trades and craft, weaving, carving, tailoring and merchandising, still supplement their livelihood from farming. (Olubanjo, 2001).

The contribution of non-timber forest resources to the rural economy is known to be substantial but there are no reliable data on which this could be quantified. NTFPs include food items (such as honey, nuts berries, mushrooms, leaf fodder for animals) construction materials (including rattan and palm leaves) medicinal plants, other health care cosmetics products, and items of cultural and spiritual significance. These NTFPs are primarily consumed at the local or national levels although some are traded internationally in commercial quantities, this include cork, essential oils, forest nuts, gum Arabic, rattan and plant and animal components of pharmaceutical products. About 80% of the population in developing countries uses NTFPs to meet nutrition and health

needs (FAO, 1990). Rural women as well as men, throughout the world are engaged in a range of production activities essential to household, and to the economic development of the society. The social and economic structure of Nigeria is changing with relevance of globalization. Many women in rural communities rely on the marketing of non NTFPs as an important component and often the sole source of income; this income is used to improve household food security and the welfare of the family worldwide, thus they are the main harvesters and marketers of many NTFPs.

Thaumatococcus daniellii, a robust rhizomal understorey tropical monocotyledon forest herb, found throughout the Guineo-Congolian rain forest is one of the important NTFPs and belongs to the family *marantaceaea*. It grows well in semi deciduous and deciduous forests where annual rainfall does not exceed 200mm and usually found growing under the canopy of Kola, Cocoa and Rubber plantations (Dalziel and Hutchinsan 1937). *T. danielli* known as 'sweet prayer' plant native to West Africa is 'Eweran' in Yoruba, 'Akwukwoagichi' or Akwukwo Uma in Delta, 'Ogu' in Igbo. Traditionally, the leaves are used for wrapping various types of food such as pounded yam, bean cake. It is also used for preserving kola nuts and as food supplements to some ruminant animals. The stalks are also used for weaving fish traps while the rootfeature in traditional medicine (Ogunkunle et al, 2004). However as much as this product is so useful, it is getting extinct. The most exiting use of *T.danielli*, however, is its use as sweetener or taste modifier, as it contains *thaumatin*, a substance five thousand times sweeter than sugar that is use as a natural sweetener. Thaumatin, used in the beverage, confectionary, and pharmaceuticals industries, is an internationally traded commodity and sold on the London market in 2003 at over USD 6400/kg. *Thaumatin* is a mixture of extremely sweet protein which makes it to be traditionally used for sweetening bread and flavoring palm wine (Yeboah, 2003).

Thaumatococcus danielli (Benn) Benth (miraculous berry) has been contributing to the rural economy for a long time but whose potentials have not been fully exploited for community development. It is a multi-purpose perennial herb that offers a wide assortant of uses with its leaves, fruits, stalks and roots (Arowosoge, 2006). It is a naturally occurring plant growing in the wild. However, some farmers are beginning to grow it commercially. It is processed into mats, bags, slippers and sponge. It is also used as ornamentals, fish traps, and roof thatching. To have adequate supply of *T. danielli*, there must be reasonable level of investment in cultivation or domestication to make them available and achieve sustainability.

Production and marketing of *Thaumatococcus danielli* leave are being encouraged but for production to be complete and successful the cultivated and harvested leaves must get to the final consumer and this cannot be attained without efficient market.

Marketing of non-timber forest products like any other marketing enterprises involves exchange between a buyer and a seller at a given price (Olukosi and Isitor 1990). Fruits,

nuts and bark provide some income opportunity for large and small-scale traders. Non-timber forest products tends to be marketed by vendors who operate regularly (daily to weekly) within general markets. The markets are organized around the buyers-sellers who are mostly women, as in other West African countries intermediary traders also sort and grade NTFPs and often process them to some degree (Fereday, Gordon and Oji, 1997). It is an oligopolistic market because there are few sellers and many sellers and forces of demand and supply determines the price. Marketing requires investment, and for adequate investment there is need to ascertain the profitability and efficiency of marketing in *Thaumatococcus danielli*.

1.1. Marketing Concept

Marketing involves making contact between buyers and sellers for purpose of selling and buying Eyiye, (1991). Kotler (1995), state that marketing is a matter of getting the right goods and services in the right place at the right time with the right communication promotion. Bamigboye (1995) describes marketing as a management process responsible for the identification, anticipation and satisfaction of consumer requirement. Marketing is the sum total activities involved in a market. Some markets for example, shops and stall physically bring together the sellers and buyers. The essential features of markets are demand, the behavior of buyers, supply and behavior of sellers. The unique role of marketing is therefore the act that link production and consumption point. Marketing plays a vital role in the process because a well organized efficient market structure ensures profitable return to seller at a reasonable low price to consumers. The efficiency of marketing determines how producers will increase their output. Usman et al, 2010).

Forest products marketing are all business activities involved in getting forest products of all kinds including services where applicable from the hands of the producers into the hands of the final consumer (Popoola et al, 1998). It does not mean that marketing takes place after the products have come off the production line. Rather, marketing activities such as product planning and market research precede production. Hence, the needs of the market usually dictate what will be produced, this according to Milton (1960) in (Popoola et al, 19998). The above definition also distinguishes marketing from selling by emphasizing that marketing focuses on the needs of buyers. It is pre-occupied with the idea of satisfying the needs of the customers by means of products and services and by a whole cluster of customer deriving satisfaction associated with creating, delivering and consuming the products selling on the other hand is pre-occupied with converting goods and services into cash.

Non-Timber Forest Products' trade involves a large number of people such as gatherers, producers, wholesalers and retailers operating at different levels of trading channels. Marketing channels also vary from one commodity to another; it may be a single channel system where the flow of goods and services is between the producer and consumer. It

may be a multiple stage flow where the producer or gatherer sells to the wholesaler who in turn sells to the retailer who later sells to the wholesaler who in turn sells to retailer who later sells to the final user. The necessity of the channels is to increase the utilization of all factors of production to the maximum (Stella, 1993)

2. Objectives

The major objective of this study is to socioeconomic characteristics of *T. danielli* sellers and profitability of *Thaumatococcus danielli* in Ogun State, Nigeria. The specific objectives are:

- 1 To determine the profitability of marketing *Thaumatococcus danielli* by the traders.
- 2 To examine the intrinsic qualities of *Thaumatococcus danielli* and its contribution to income of rural communities.
- 3 To examine the accessibility and availability of *Thaumatococcus danielli* to the traders.

3. Methodology

3.1. The Study Area

The study area, Ogun State, Nigeria lies within 20°45'E and 3°55'E longitude and 7°01'N and 7°08'N latitude in the tropics. Ogun State is bounded in the west by Benin Republic, in the south by Lagos State and the Atlantic Ocean, in the east by Ondo State, and in the north by Oyo state. As shown in Figure 1 below, Ogun State covers a land area of 16,409.28 square kilometers and represents less than two percent of Nigeria's landmass. The natural vegetation ranges from fresh-water swamp with mangrove forest in the southwest and diverse forest communities to the woody Guinea savannah in the northwest. The rainy season starts around the middle of March and continues till late October, while the dry season starts in November and lasts until February, in most locations. Rainfall ranges between 900 and 1600mm, annually. The area is warm throughout the year with an average temperature ranging between 28 and 35°C. Humidity is between 85 and 95 percent (Oloruntoba & Adegbite, 2006). Like most states in the southwest, Ogun State is highly urbanized, with a population of approximately 3.73 million people and growth rate of about 3 percent, annually, and has twenty (20) local government areas (The National Population Commission (NPC), 2006).

3.2. Data Collection

The data were collected through the use of structured questionnaires and oral interview. Four major markets, Mamu, Odeda, Olugbo, Kila, markets were purposively selected after the reconnaissance survey and sixty copies of the questionnaires were administered in all. The questionnaires were not uniformly administered because the sellers vary in their concentration in different markets.

3.3. Data Analysis

Descriptive statistics such percentage and frequency table were employed for the analysis of the data of the study.

This model as used by Okumadewa et al (2000) was adopted for the analysis.

$$\text{Gross margin} = \text{Total Revenue} - \text{Cost Price}$$

3.4. Gross Margin Analysis

$$\begin{aligned} \text{Gross margin} &= \text{Total Average Revenue} - \text{Total Variable} \\ &\text{Cost N7, 565.2 - N1, 163.02} \\ &= \text{N6, 402.23} \end{aligned}$$

4. Results and Discussion

4.1. Socioeconomics Characteristics of the Marketers

About seventy two percent of the marketers were females (Table 1) this implies that *T. danielli* marketing is predominantly women affair. This is in line with the findings of Eniayeju (2010) and Oluwatayo (2010), which stated that the bulk of agricultural production, processing and marketing is usually done by women.

Table 1. Socio-economic Characteristics of the Marketers

Variable	Frequency	Percentage
Male	17	28.33
Female	43	71.67
Total	60	100
Age		
0 – 30	0	0
30--40	18	30.00
41—50	25	41.67
51---60	17	28.33
Total	60	100
Educational Status		
No formal education	23	38.33
Primary	27	45.00
Secondary	10	16.66
Tertiary	0	0
Total	60	100
Marital Status		
Single	0	0
Married	34	56.66
Widow	16	26.67s
Divorced	10	16.67
Total	60	100
Primary Occupation		
<i>T. danielli</i>	45	75.00
Artisan	3	5.00
Other farm produce	12	20.00
Total	60	100
Secondary Occupation		
<i>T. danielli</i>	40	66.67
Artisan	11	18.33
Other farm produce	9	15.00
Total	60	100

Source: Field survey, 2010.

Hundred percent of the marketers were above thirty years

of age. This may be because the younger people in the study area are either schooling, learning a trade to become an artisan or shifting interest from farming and other related activities. Thirty eight percent of the sellers had no formal education, forty five percent had primary education and sixteen percent had secondary education. Fifty seven percent of the marketers were married; twenty seven were widows while sixteen percent were divorcees. Seventy five percent of the respondents took *T. danielli* as their primary occupation while sixty seven took it as their secondary occupation. This implies that *Thaumatococcus danieli* trade is more than just being used to supplement income from other sources, if properly developed and managed in a sustainable manner, it could be a poverty reduction measure among rural and urban dwellers. This is similar to the findings of Adelani *et al* (2010)

4.2. Gross Margin Analysis

From the gross margin analysis it could be derived that marketing of *T. danielli* is very profitable and sustainable because little capital can be used to start the business with high return. This is because *T. danielli* is naturally abundant wherever it is found.

5. Conclusion and Recommendation

While the importance of NTFPs is coming into lime light, there are some militating problems against their production and marketing. NTFPs are biological entities which are grossly affected by seasonal variation. This in turn affects their prices. In Nigeria, there are two seasons, rainy and dry. Most of the NTFPs are cheap during the raining season because of the abundance of rain while they are relatively expensive during the dry season.

Strategies that support, the collection, commercialization of NTFPs by local people have the potentials to provide an increased source of income for people living in the forest areas or near the forest. NTFPs have important subsistence uses. However, forest are being cleared as the global demand for timber rises and as ranching and large scale agricultural activities increase, many plants species become vulnerable to over exploitation and forest resources are increasingly declining. NTFPs are under threats. Since *Thaumatococcus danielli* is an undergrowth species, it should be raised in plantations as it will not pose serious threat to development of forest plantations but could contribute immensely to maximizing the output per unit area of forestlands.

The marketing of *T. danielli* is very efficient, profitable and sustainable as discovered from the empirical research study. Increasing extension contact to the farmers will not only enhance improvement in its productive ability but could also assist in showcasing the income-generating and poverty-reducing potentials of *Thaumatococcus danielli* and other useful non-timber forest products in the study area for better profit and utilization

It is a market involved by few sellers and many buyers i.e Oligopolistic market. There is a very strong association involved in the business which protects and fights the course

of the business with the government and/or any other influence. The business can therefore alleviate poverty even with little capital. Research should be carried out to grow these products more around South west Nigeria to reduce the sellers' travelling long distance to purchase the products.

References

- [1] Adebisi- Adelani O., Adeoye I.B., Olajide-Taiwo F.B., Usman J.M., Agbarevoh P., and Oyedele O.O (2010): Gender Analysis Of Production, Potentials And Constraints Of *Thaumatococcus*
- [2] *Danielli* In Ekiti State. *Continental J. Agricultural Science* 4: 54 - 59, 2010 ISSN: 2141 - 4203
- [3] Arowosoge O.G.E and Labode Popoola (2006): Economic Analysis of *Thaumatococcus danielli* Benn Benth (miraculous berry) in Ekiti State, Nigeria. www.isfae.org/scietificjournal/2006/issue/content.pdf
- [4] Bamgboye E.J.D (1995): Marketing, Basic Concept and Decision, Pp 10.
- [5] Boussienguet (1990): The biodiversity of micro-organisms and invertebrates: Its role in sustainable agriculture. Proceedings of the 1st workshop on the Ecological Foundations of Sustainable Agriculture (WEFSA), London, 26 - 27 July, 1990. CASFA Report series No.4 (D. L Hawksworth, ed.), pp 31-35.
- [6] Eyiye, D.O. (1991): Economic Made Easy: Marketing Concept 204-206.
- [7] Fereday, N., Gordon, A. & Oji, G. 1997. Domestic market potential for tree products from farms and rural communities: experience from Cameroon. Socio-economic Series No. 13. Chatham, UK, Natural Resources Institute.
- [8] Okumadewa, F.Y., Mafimisebi and Adebayo, S.K. (2000): Cooperative Profitability of Wholesale and Retail Sun-dried meat Trade in Ibadan Metropolis. *Journal of Technology and Education*, vol.5 No.1 pp 1-10.
- [9] Ogunkunle, A. T. J. & F. A. Oladele (2004) Ethnobotanical study of fuelwood and timberwood consumption and replenishment in Ogbomosho, Oyo State, Nigeria. *Environmental Monitoring and Assessment*, 91, 223-236.
- [10] Dalziel and Hutchinsan 1937: Technology and Education in Nigeria. Vol.5 No.1 pp5-11. FAO, 1990: Forestry and Food Security, FAO Forestry Paper 90 FAO, Rome.
- [11] Kotler, P. (1995): Marketing Management, Analysis, Planning and control. Engelwood Cliff, N.J prentice 5p.
- [12] McWhirter, N. 1983. *Guinness book of world records 1984*. Guinness Superlatives, London.
- [13] Olubango, O. O. (2001): Women involvement in Agriculture, A case study of Ondo State, Nigeria. An unpublished undergraduate research project, Department of Agricultural Economics and Extension, Federal University of Technology, Akure. OO 20-25.
- [14] Olukosi, J.O. and S. U. Isitor (1990): Introduction to Agricultural Marketing and Price: Principles and Application. Published by Living book Series pp1-9.

- [15] Popoola, L. and S.A. Oluwalana (1998) Marketing of Non-Timber Forest Products in Nigeria. Paper presented at the Colloquium on Biodiversity (Rainforest Ecosystem of Nigeria. Organised by FEPA-UNAAB Linkage Centre for Forest Conservation and Biodiversity.1998; 243
- [16] Stella, Y.C. (1993) Market Channel Co-ordination and Economic Development in Agricultural and Food Marketing Reforming Developing Countries Selected Reading (Eds) Abbot JCCT A/C A.B Pub. Series. 1993; 25.
- [17] Usman J.M. (2010): Economics of African Walnut (*Tetracarpadium Conophorum*) in Ibadan. Proceeding of 33rd Annual conference of FAN, held between 25th-29th Benin City, Edo State Nigeria. pp573-579.
- [18] Wilson, (1990): Galip (*Canarium indicum*) as a cash crop in West New Britain, Papua New Guinea: experiences of the Kandrian Gloucester integrated development project. In: Stevens, M.L., Bourke, R.M. and Evans, B.R. (eds.) South Pacific indigenous nuts, 84-91. Australian Centre for International Agricultural Research, Canberra, Austral
- [19] Yeboah, S., Thomas H., Jurggen,K. (2003):Institute of Plant Production and Agroforestry of the Tropics and Subtropics, University of Hohenheim, Germany.