



Marketing Management

Elixir Marketing Mgmt. 52 (2012) 11645-11649

Elixir
ISSN: 2229-712X

Economic assessment of marketing of non-wood forest products in Ibadan metropolis

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ARTICLE INFO

Article history:

Received: 20 September 2012;

Received in revised form:

19 November 2012;

Accepted: 23 November 2012;

Keywords

Economic assessment,
Marketing,
Non-wood forest products,
Profitability.

ABSTRACT

The study focused on the economic assessment of marketing of Non-Wood Forest Products in Ibadan metropolis with a view to identify the socio-economic characteristics of marketers of NWFPs, to identify various NWFPs marketed by the people, to estimate costs and returns from marketing of NWFPs and to identify factors influencing the marketing of NWFPs in the study area. The data for the study were collected through the use of structured questionnaires randomly administered to one hundred and twenty (120) marketers of various NWFPs in eight (8) selected markets. The result from the study revealed that women were mainly involved in the marketing of NWFPs (85%) being their primary occupation with a higher percentage of the marketers earning above ₦20,000 monthly. Profit margin analysis showed that the business is both feasible and viable with the marketing efficiency and rate of return on investment between 1.18-1.90 and 28%-75% respectively. However, marketing of NWFPs in the study area was confronted with some challenges including transportation, perishability, seasonality, poor storage facility, price fluctuation, poor processing facility and poor market structure.

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Introduction

The forest is one of the main stays of economic development in Nigeria (Adeyoju, 2005). Millions of households in developing countries and in Nigeria particularly depend on various products other than timber and other industrial round wood i.e. Non-Wood Forest Products (NWFPs) which have always constituted a large part of the forest economy (Terry, et al. 2004). FAO has adopted a working definition which describes "Non-Wood Forest Products as consisting of goods of biological origin other than wood, derived from forests, other wooded lands and trees outside forests" (FAO, 1999). They include food items (such as honey, nuts, mushrooms and leaf fodder for animals), construction materials (including rattan and palm leaves), medicinal plants, other health care and cosmetic products and items of cultural and spiritual significance. These products are primarily consumed at the local or national level, although some are traded internationally in commercial quantity. These include cork, essential oils, forest nuts, gum arabic, rattan and plant and animal components of pharmaceutical products with about 80% of the population in developing countries, including Nigeria, using NWFPs to meet their nutritional and health needs (FAO, 1999). FAO, 1995b showed that NWFPs are important to three main groups; rural populations who have traditionally used these items for livelihood and socio-cultural purposes, urban consumers, and traders whose numbers in the NWFPs sector increase as urban markets for these products grow.

The value from the forest resource is derived through harvesting, processing and marketing of products based on wood and non-wood materials and services provided by the forests. In sustainable forest utilization, marketing provides a means of maximizing the values and distributing them among the participants in forestry activities. Marketing of NWFPs, like

every other marketing enterprise, involves the interaction between a seller and buyer at an agreed price (Olukosi and Isitor, 1990, Barker, 1981). It is the movement of commodities or products from points of harvest or production until the products are received by the ultimate consumers (Adekanye, 1988). Discussing marketing in the context of NWFPs refers to marketing in all its possible variations i.e. in the socio-economic context of forestry, marketing is one of the means, in combination with processing and resource management, to cater for the needs of the people involved. It is therefore vital not only to medium and large scale industrial enterprises but also in helping small farming and forestry communities move from a subsistence economy to one in which they can start and sustain profitable enterprises on their own. Description of marketing portrays it as a physical activity of haulage, sorting, grading, packaging, storage, display etc and the simplest marketing practices for NWFPs can be found in local trade (Raintree, et al 1994).

NWFPs comprise a varied group of products that meet the needs of all kinds of end users. Some of the products find markets with the final consumers without any major processing (e.g. fruits, berries, mushroom, etc), others have markets with industrial customers who use them as raw materials in making either their industrial products (e.g. converting essential oils or gums to fragrances and flavors) or consumer products (e.g. rattan furniture). A great number of products are marketed simultaneously at different market levels and very often does any NWFP, alone, reach outstanding economic significance in trade. In most instances their significance comes from the contribution of several diverse products in the trade of a nation. For example, in developing countries, NWFPs trade provides about 50% of income for 20-30% of the people (Sekhar, et al 1993). The number of these products is huge and Tewari (1994)

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for example had listed 282 edible fruits, 104 edible stem tubers, 199 edible leaves, 112 edible seeds, 46 edible flowers and 74 underground roots, rhizomes and tubers as tradable NWFPs. Arnold, J.E.M (1995) highlighted their importance to local communities and societies as a whole. NWFPs are estimated to contribute about 10-40% of tribal household earnings in developing countries. Collection of a single NWFP from existing resources is, however, not able to provide enough income to sustain people, hence, different NWFPs in different seasons are collected and marketed to ensure sustained income (Sekhar, et al. 1993).

Marketing of NWFPs is largely information based. It operates on the basis of information about markets, competition and business environment. Efficient marketing relies on a well functioning marketing information service that provides necessary quantitative and qualitative information regularly, reliably, timely and at lowest possible cost. Information is needed on the markets (demand, supply and end uses), marketing factors (products, distribution channels, promotion and prices), competition, marketing environment and institutions related to marketing. It is important to recognize the marketing of NWFPs as a means of contributing to sustainable utilization of forest resources. Also, adequate recognition would help secure the necessary political and donor support for strengthened development of NWFP marketing and through it the sustainable utilization of forest resources. This study, therefore, seeks to address the economics of marketing of NWFPs in Ibadan metropolis with a view to identifying the socio-economic characteristics of marketers of NWFPs and to estimate costs and returns from marketing of NWFPs in the study area.

Methodology

Study Area

The study was conducted in Ibadan Metropolis- the capital of Oyo state, Nigeria. The area is located between latitude $7^{\circ} 21'$ and $9^{\circ} 17'$ North; and longitude $1^{\circ} 2'$ and $2^{\circ} 44'$ East. The two identifiable seasons are the rainy season beginning from late March to October and dry season stretching from November to early March. The mean annual temperature varies between 21.1° C and 31.1° C. The annual rainfall is within the range of 800mm in the derived eco-zone to 1500mm in the rainforest belt. It is bimodal with peaks in July and September (Faleyimu and Agbeja, 2004).

Data Collection

The methodology adopted for data collection included purposive random sampling of eight (8) markets, selection of respondents, data collection and analysis. Eight (8) markets namely Aleshinloye, Dugbe, Akpata, Omi-adio, Oja-oba, Oje, Bodija and Moniya markets distributed across six (6) Local Govt Areas (Ibadan Southwest, Ibadan Northwest, Iddo, Ibadan North, Akinyele and Ibadan Northeast) were selected for the study. Fifteen (15) respondents involved in the trading of NWFPs were randomly selected in each market and administered the questionnaires which were designed to elicit information based on the objectives of the study.

Data Analysis

The quantitative and qualitative data were analyzed using appropriate descriptive and inferential statistical tools i.e. percentages, frequency, abundance, gross margin analysis, marketing efficiency and rate of return on investment. A unit in this study is measured in terms of 50kg bag. The results were summarized accordingly, presented in the form of figures and tables for clarity purposes.

Gross margin analysis is given as:

$$GM = TR - TVC \dots \dots \dots (i)$$

Where:

GM= gross margin

TR= total revenue/unit

TVC=total variable cost/unit

Marketing efficiency is given as:

$$ME = TR / TVC \dots \dots \dots (ii)$$

Where:

ME= marketing efficiency

TR= total revenue

TVC=total variable cost

Rate of return on investment is given as:

$$RORI = GM / TC \dots \dots \dots (iii)$$

Where:

RORI= rate of return on investment

GM=profit margin/gross margin

TC= total cost

Result and Discussion

Socio-economic characteristics of respondents

The socio-economic characteristics of respondents are presented in Table 1. 85% of the respondents were female, 89% were of age 21-40, 92% were married while 85% of the sampled population was into NWFPs trade as their primary occupation in the study area. Distribution of respondents by education revealed that 70% had secondary education. Majority of the respondents earned a monthly income above N20, 000 (33.16%) while 93% had household size of 0-5. NWFPs trade was dominated by females. This is probably because women are more predominant in either capital or labour intensive aspects of forestry businesses include marketing (Ogunwande *et al* (2009). It was also observed that adults dominated NWFPs collection and marketing as most of the respondents were in their active ages. One of the reasons why adults were more involved in NWFPs marketing was because of their experience and having good sense of judgment they are able to avoid losses. Moreover, young people may not be involved because of schooling. Majority of the respondents had secondary school education. This could be due to the fact that living in urban area exposes people to opportunity to school.

Most of the respondents made NWFPs trade as their primary occupation with a higher percentage of the sampled population earning above N20,000 monthly. This probably indicates that the business provides a good means of livelihood to the extent that they are able to depend solely on it for a living.

Examples of NWFPs marketed in the study area

The following under-listed examples reveal the stock of NWFPs marketed in the study area. The NWFPs have been classified as leaves, seeds, fruits, stem, bark, roots, meat, tubers etc (Famuyide, *et al.* 2011).

Leaves

Climbing black pepper (*Piper guineense*)

Umbrella thorn (*Ficus vallis*)

Brimstone tree (*Morinda lucida*)

Mango tree (*Magnifera indica*)

African mahogany (*Khaya ivorensis*)

Nauclea (*Nauclea diderichii*)

Atooo (*Chasmanthera dependens*)

Ginger (*Zingiber officinale*)

Ewe-eran (*Thaumatococcus daniellii*)

Palm fronds (*Elaeis guineensis*)

Stool/Pattern wood (*Alstonia boonei*)

Table 1: Socio-economic characteristics of respondents

VARIABLES	FREQUENCY N=120	PERCENTAGE (%)
<u>SEX</u>		
MALE	18	15.0
FEMALE	102	85.0
<u>AGE (YEARS)</u>		
0-20	5	4.16
21-40	89	74.17
41-60	24	20.0
>60	2	1.67
<u>MARITAL STATUS</u>		
MARRIED	92	76.67
SINGLE	6	5
WIDOWED	20	16.66
SEPERATED	2	1.67
<u>EDUCATIONAL STATUS</u>		
NONE	11	9.17
PRIMARY	31	25.83
SECONDARY	70	58.33
TERTIARY	8	6.67
<u>PRIMARY OCCUPATION</u>		
FARMING	0	0
NTFPs TRADE	102	85.0
OTHERS	18	15.0
<u>HOUSEHOLD SIZE</u>		
0-5	112	93.0
>5	8	7.0
<u>MONTHLY INCOME</u>		
< ₦5000	8	6.67
₦5000- ₦9000	11	9.17
₦10,000- ₦14,000	29	24.17
₦15,000- ₦19,000	31	25.83
≥ ₦20,000	41	33.16

Source: Field survey 2011

Table 2: Estimates of costs and returns from marketing of NWFPs

	TR/UNIT (₦)	TVC/UNIT (₦)	GM (₦)	ME	RORI
LEAVES	2110	1200	910	1.90	75%
SEEDS	1900	1400	500	1.36	36%
FRUITS	1720	1200	520	1.43	43%
MEAT	2050	1600	450	1.18	28%
BARK	1860	1400	460	1.33	33%

Source: Field survey, 2011

Table 3: Factors influencing marketing of NWFPs in the study area

PROBLEM	FREQUENCY	%
Transportation	27	26.74
Perishability	13	12.87
Seasonality	12	11.88
Poor storage facility	10	9.97
Price fluctuation	21	20.79
Poor processing facility	10	9.97
Poor market structure	8	7.92

Source: Field survey, 2011

African mustard/fig tree (*Ficus capensis*)
 Alligator pepper (*Aframomum melegueta*)
 Pigeon pea (*Cajanus cajan*)
 Red silk cotton tree (*Bombax buonopozense*)
 Neem tree (*Azadirachta indica*)
 Carpet grass (*Anonopus compressus*)
 White afara (*Terminalia superba*)
 Iroko (*Melicia excelsa*)
 Physic nut (*Jatropha curcas*)
 Baobab (*Adansonia digitata*)

Fruits

Umbrella thorn (*Ficus vallis*)
 Shea butter (*Butyrospermum paradoxa*)
 Sphenocentrum (*Sphenocentrum jollyanum*)
 African mustard tree (*Ficus capensis*)
 Isin (*Blighia sapida*)
 Ethiopian pepper (*Xylopica aethiopica*)
 Native kola (*Cola acuminata*)
 Water melon (*Citrullus lanatus*)

Seeds

Calabash nutmeg (*Monodora mystreica*)
 Umbrella thorn (*Ficus vallis*)
 Native kola (*Cola nitida*)
 Bitter kola (*Garcinia kola*)
 Cascarilla (*Xylopi aethiopic a*)
 Shea butter (*Butyrospermum paradoxa*)
 Alligator pepper (*Aframomum melegueta*)
 Ogbonno (*Irvingia gabonensis*)
 Locust bean (*Parkia biglobosa*)
 Pigeon pea (*Cajanus cajan*)
 Jute plant (*Corchorus olitorus*)
 Neem tree (*Azadirachta indica*)
 Cocoa (*Theobroma cacao*)

Stem

Calabash nutmeg (*Monodora mysterica*)
 Corpse awakener (*Calliandra portoricensis*)
 Opon (*Tracera alnetifolia*)
 Olax (*Olox subscorpiodea*)
 Sausage tree (*Kigelia africana*)
 Cascarilla (*Croton lobatus*)

Bark

Brimstone tree (*Morinda lucida*)
 Mango tree (*Mangifera indica*)
 African mahogany (*Khaya ivorensis*)
 Nauclea (*Nauclea diderichii*)
 African copa (*Daniella oliveri*)
 Calabash nutmeg (*Monodora mysterica*)

Meat

Giant snail (*Archachatina marginata*)
 Grasscuttrer (*Trynomys swinderianus*)
 Antelop (*Sylvicapra grimmia*)
 Giant rat (*Crycetomis gambianus*)

Root

African mahogany (*Khaya ivorensis*)
 Bitter kola (*Garcinia cola*)
 Jute plant (*Corchorus olitorus*)
 Spring onion (*Allium ascalanium*)

Costs and Returns

The costs and returns from marketing of the different parts of NWFPs were estimated by using gross margin analyses, marketing efficiency and rate of returns on investment to determine the profitability of the marketing of NWFPs in the

study area (see equations. i, ii and iii above). The results are presented in Table 2.

The average gross margin was higher for leaves (₦ 910) as against ₦500, ₦ 520, ₦ 450 and ₦ 460 for seeds, fruits, meat and bark respectively. This indicated that traders in leafy NWFPs made more profit per unit price of the product. There was a wide disparity in the prices of the products brought into the market by the sellers. This may be attributed to the bargaining power of the traders at the points of purchase and lack of standard weighing machines. Also, the marketing efficiency for the products in the study area was between 1.18-1.90. This showed that marketing of these products were efficient. This compares favorably with the observations of Okunmadewa, et al. (2000), Usman, et al. (2005) and Akinyemi, et al. (2009). This study can therefore aver to classify the efficiency rates as follows:

1.01 – 1.40 -----Fairly efficient
 1.41 – 1.80Very efficient and
 ≥1.81 ----- Highly efficient

The RORI for the study area was between 28%-75%. RORI been an indicator of profitability showed that the business was highly profitable since the higher the RORI, the higher the profitability (Akinyemi, et al. 2009).

Factors influencing marketing of NWFPs in the study area

Table 3 shows that there were seven identifiable constraints facing the NWFPs marketing in the study area.

The factors influencing marketing of NWFPs as indicated by the respondents in the study area include transportation (26.74%), perishability (12.87), seasonality (11.88%), poor storage facility (9.97%), price fluctuation (20.79%), poor processing facility (9.97%) and poor market structure (7.92%). The result showed that transportation was the greatest constraint faced by the respondents. This could probably be due to the fact that people travel far and wide outside the state to obtain the products coupled with the fact that inter-state roads are in deplorable conditions. Also price fluctuation was another major constraint due to the fact that most of the products are seasonal and perishable which makes them scarce leading to unwarranted price increases even though there are substitutes.

Conclusion And Recommendation

In conclusion, the study has shown that the contributions of NWFPs should not be under estimated when we consider the roles they play in the economy of any nation. Women were the dominant participants in NWFPs trade being their primary occupation because they play crucial role in the downstream forestry enterprise development at all stages including marketing and also because of the small scale/capital requirement of the business. Also, marketing of NWFPs in the study area contributed positively towards poverty alleviation as it is a good source of income in peri-urban and urban economies with a higher percentage of the population earning above N20,000 monthly. Profit margin analysis showed that the business is both feasible and viable with the marketing efficiency and rate of return on investment between 1.18-1.90 and 28%-75% respectively. However, marketing of NWFPs in the study area faced some challenges including transportation, perishability, seasonality, poor storage facility, price fluctuation, poor processing facility and poor market structure. It is therefore recommended that due to the profitable and efficient nature of this business, more people are encouraged to be involved as a means of livelihood. Also, government, NGOs, private investors and other relevant stakeholders should look into the constraint of

poor market structures and transportation to promote NWFPs marketing in urban areas.

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