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ECONOMICS OF NON-TIMBER FOREST PRODUCTS MARKETING IN SELECTED MARKETS OF OWERRI AGRICULTURAL ZONE OF IMO STATE, NIGERIA: A CASE STUDY OF OIL BEAN SEEDS

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ABSTRACT

The study assessed the economics of oil bean seeds marketing in the selected market of Owerri Agricultural Zone of Imo State, Nigeria. One hundred and ten oil bean seeds marketers were randomly selected from eleven major markets of the study area. Primary data were collected using structured questionnaire. Results show that oil bean seeds market is relatively dominated by female marketers (67%). The percentage gross marketing margins for wholesale and retail of oil bean seeds marketing were 32.30% and 41% respectively, while their percentage net margins were 24.93% and 22.64% respectively. The wholesalers earned positive net returns of N2,700.00 per 100kg of oil bean seeds from marketing operations while the retails earned positive net returns of N540.00 per 20kg oil bean seeds marketing operation. These earnings are very commensurate with wholesalers and retailers' marketing services. The determined economic efficiencies for wholesaling and retailing of oil bean seeds were 1.23 and 1.20 respectively. Major constraints to wholesaling and retailing of oil bean seeds include seasonal availability of oil bean seeds and high cost of oil bean seeds during the off-season.
Key words: *Non-timber products, oil bean seeds marketing, Owerri – Nigeria.*

INTRODUCTION

Many rural dwellers in tropical regions depend on non-timber forest products (NTFPS) for their subsistence and their income needs. KAFUOP (2003) defined NTFPS as goods of biological origin (plants and animals) other than timber. The sources of these products could be natural ecosystems, on-farm woodlots, and individual trees in homestead, agricultural and forest plantations. Examples of NTFPs with current potential uses are oil bean seeds, honey, industrial plant oils and waxes, plant gums and resins, natural pigments, insect products and medicinal plants.

There are numerous local, national and world level estimates of number of people in different areas who are in one way or the other dependent on NTFPs. For instance 1.5 million people in the Brazillian Amazon derive part of their income from extractive products (Non-Wood News, 1994). Zhong *et al* (1995) stated that 700,000 people work in the bamboo sector in China; while in India 50 million tribal people are living mainly from NTFPs (Poffenberger, 1996). Townson (1995) estimated that in the forest zone of Southern Ghana 258,000 people, or 20% of the economically active population earns part of their income from NTFPs. In the Oku Mountain region of Cameroon one-third of the population supplement their income with the sale of *primus africana* bark and artisan activities (Mcleon, 1987). Many rural dwellers in Imo state of Nigeria use oil bean seeds which is one or the NTFPs as a source of household sustenance and supplemental income (Okafor and Ololo, 1975) furthermore,

Pimentel *et al* (1997), estimated that over 300 million people in the world derive part or all of their livelihood and food from forests.

Marketing of NTFPs are significant at regional and international levels, providing revenue for the actors directly involved and for the government. At the international level, it is estimated that the annual trade of NTFPs amounts to less than US $ 11 billion (Qusseynou, *et al*, 1998). The European Union, the United States and Japan account for approximately 60% of world inputs of NTFPs, and general direction of the trade is from developing to developed countries (Igbal, 1995). In Nigeria, it is estimated that 78,880 tons of *Ivingia spp* are marketed per year (Department of Forest Resource Management of Nigeria 1986, cited by Falconer,1990). Nkongmeneck (1985), estimated the size of the market for kola nut (*Cola acuminata*) in Cameroon to be 20,400 tons. While Falconer and Arnold (1991) cited Moby-Etia (1982) as estimating the market of palm wine in Bas-Woun region of Cameroon to be 6,000 tons per month. In rural Sierra-Leone, over 50% of the firewood collected is marketed (Kamara 1986, cited by Falconer and Arnold 1991)

Oil bean tree (*Pentadethru macrophylla*) is a tropical forest tree producing edible forest product (Emebiri *et al*, 1995). The most useful part of *Pentaclethra macrophylla* is the seeds, which is a delicacy among the Igbos of South East zone of Nigeria. Okafor and Ololo (1975) recommended increased production of this plant because of the nutritional value of its seeds. They stated that oil bean seeds are composed of mainly 23.04% of fat and 28.4% of protein of the total dry matter. Onwuchi (1998) further reported that chemical analysis carried over on oil bean seed by the Scientific and Technical Department of Imperical Institute, London revealed that it contains iodine and oil of high melting point which can be for soap making.

However, the numerous rural development forestry and agroforestry initiatives have concentrated on the production systems neglecting the marketing and end use which the raw materials and products will eventually serve; and at the same time the process of assessing markets has not been adequately recognized. This has resulted in inadequate recognition of the role of marketing in oil bean seeds distribution with the attendant loss in income of oil bean seeds gatherers, marketers and consumers alike. Hence the study focuses on the economic assessment of oil bean seeds marketing in Owerri Agricultural Zone of Imo State. Specifically, the study assessed the socio-economic characteristics of oil bean seeds marketers; examined the oil bean seeds marketing activities and channels; determined the costs and returns of wholesale and retail marketing operations, determined the marketing margin and level of marketing efficiency of oil bean seeds marketing activities; and identified the constraints faced by oil bean seeds marketers.

Methodology

The study was conducted in Owerri Agricultural Zone of Imo State which comprises eleven local government areas namely; Owerri Municipal Council, Owerri North, Owerri West, Ohaji/Egbema, Oguta, Ngor Okpala, Mbaitoli, Ikeduru, Aboh Mbaise, Ahiazu Mbaise, and Ezinihitte Mbaise. The location was purposely chosen because the zone is noted for production and high consumption of oil bean seeds. Imo State is located in the southeast zone of Nigeria and lies between latitude 5° 10 and 6° 35 , north of the equator, and longitude 6° 35 E and 7° 28 E (Ministry of Lands Survey and Urban Planning, 1992). It is a tropical rain forest zone with annual temperature of 27°C. The people of Owerri Agricultural zone engage in several productive agriculture and income generating activities. It is not unusual for one person to engage in three to four different types of agricultural and non-farm activities. Such activities may be seasonal and almost always on a small scale. Compound farms dominated by semi-domesticated trees such as African pear, oil bean trees (*Pentaclethra macrophylla), Ivingia spp,* breadfruit trees and oil palm tress are common features of land use in the zone. Lumbering is an important economic activity, but in the highly depleted forests of the zone, extraction of non-timber forest products including firewood, fruits, nuts, seeds, leafy vegetables, etc is an indispensable local economic activity of the people through out the zone.

The market places which consist of mere open spaces under large trees in small hamlets or large cleared spaces with temporary sheds for display of goods in the larger rural settlements, and also serves as the principal venue for the exchange activity. There are eight-day and four-day cycle village markets and the larger daily urban markets. Women play an important part in retailing non-timber forest products and foodstuff while the men are mainly involved the marketing of bulky goods.

Stratified random sampling technique was adopted in respondents' selection. The sample size for wholesalers and retailers of oil bean seeds was fifty-five each. Five each of wholesalers and retailers of oil bean seeds were randomly selected from each of the eleven local government areas of the agricultural zone.

Primary and secondary sources data were used. Primary data were collected using questionnaire, which was administered to gatherers, wholesalers and retailers of oil bean seeds. The sundry data included information from published materials such as journals, seminar papers and forestry publications. Data were collected in socio-economic characteristics of wholesalers and retailers of oil bean seeds, costs and returns of wholesaling and retailing of oil bean seeds marketing. Wholesale and retail prices were obtained by determining the costs of 100kg and 20kg bags of oil bean seeds respectively. Costs involved in the transportation of one 100kg and 20kg bags of oil bean seeds to and from the markets of purchase and rent paid or occupied market stalls were among relevant information collected.

Depreciated costs of marketing equipment were derived from costs of marketing equipment using straight-line method of depreciation. Data collected were arranged and analysed using simple statistical tools. Net profits from oil bean seeds wholesale and retail marketing were determined using the net margin principle, which is equal to the difference between gross returns and the total cost. Flow chart was used to illustrate the oil bean seeds marketing channels.

Results and Discussion

Socio-economic characteristics of oil bean seeds marketers

Females dominate the oil bean seeds wholesale (81:822) and retail (100%) marketing (Table 1). This is because the females are predominantly the gatherers and secondly oil bean seeds business is erroneously regarded as petty and a famine venture or undertaking.

Table 1: Percentage Distribution of Oil Bean Seeds Wholesalers and Retailers according to Socio-economic characteristics

Character	Wholesalers		Retailers	
	Frequency	%	Frequency	%
Gender				
Male	10	18.18	-	
Female	45	81.82	55	100
Age (in year)				
36 – 45	5	9.09	2	3.64
46 – 55	40	72.73	8	14.54
> 55	10	18.18	45	81.82
Marital Status				
Single	2	3.64	-	
Married	48	87.27	51	92.73
Widowed	5	9.09	4	7.27
Educational level				
No formal education	30	54.55	40	72.73
Primary education	20	33.36	13	23.64
Secondary education	5	9.09	2	3.63
Source of Initial capital				
Personal saving	45	81.82	58	87.27
Gift from friend/relation	8	14.55	6	10.91
Non-institutional loan	2	3.63	1	1.82
Opening capital size (₦)				
3,600 - 10,000	40	72.73	55	100
10,500 - 15,000	10	18.18	-	
15,500 and above	5	9.09	-	

Source: Field survey data, 2003

Most of the oil bean seeds marketers are within the age bracket of 46 years and above which is less active age. Almost all the oil bean seeds retailers (92.73%) and wholesalers (87.27%) interviewed are married but this result does not make the trading marital status specific since there are those that are single and widowed in the trade. Majority of oil bean seeds wholesalers have no formal education (54.55%) while 33.36% had primary education. But 72.73% of retailers are illiterates while 23.64% had primary education. Therefore education is not necessarily a prerequisite for the trade. The study also revealed that the operating capital size of most oil bean seeds wholesalers and retailers range from N3,500 to N10,000. This shows that the trade requires relatively small operating capital. The study also revealed that personal saving constitutes the major source of initial capital for the wholesalers (81.82%) and retailers (87.27%). This could be attributed to small operating capital size required for the trade.

Marketing Activities and Channel

The marketing activities of oil bean seeds involve production/seed gathering from the wild, wholesaling, and processing/retailing before the processed seeds get to the final consumers. In oil bean seeds marketing the retailers perform the functions of processing and retailing. However, the retailer constitutes the major participants in marketing of the oil bean seeds. The flow of oil bean seeds is shown in the marketing channel in *figure I.* The marketing channel shows that the consumers and processors/retailers can purchase directly unprocessed seeds from producers or seed gatherers and processed by themselves instead of buying from the wholesalers or processors/retailers as the case may be. This marketing attitude weakens the bargain strength of the wholesalers.

The study further revealed that there are no associations of oil bean seeds marketers that would have been functioning as a check. This implies that the market structure of oil bean seeds trade is perfectly competitive. However, the absence of this marketing association that could have served as a pressure group to protect the interest of both producers/gatherers and marketers of oil bean seeds affects the net returns at the various levels of the marketing system.

Wholesale and Retail Marketing Margins for Oil Bean Seeds

Marketing margin was estimated for oil bean seeds wholesaler and retailer and presented in Table 2. Marketing costs were also estimated to derive the net marketing margin. The operational costs of marketing were deduced from the gross margin to get the net margin (table 2).

The wholesale gross marketing margin was N4,600.00 per 100kg representing a percentage wholesale gross margin of 32.30% while the percentage wholesale net margin is 24.93% (Table 2). This means that after deducting the costs of performing marketing functions, the

wholesaler earn on average 25k for every naira of final price paid by the final consumer. This margin is relatively moderate considering the importance attached to marketing services.

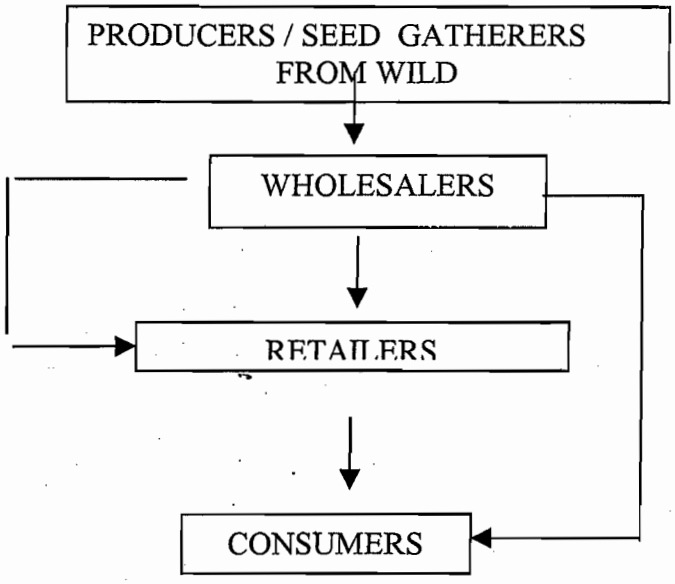

Figure I: Marketing channel for oil bean seeds in Owerri Agricultural Zone

Table 2 also revealed that the retail gross marketing margin to be N1,340.00 per 20kg. This represents a percentage retail gross margin of 41% while the percentage net margin is 22.64%. This further shows that after deducting the costs of performing retail marketing function the retailer earn on average 23k for every naira of the final price paid by the consumers.

Costs and Returns Analysis of Wholesale and Retail Marketing Operations

Costs and returns associated with oil bean seeds wholesale and retail marketing operations are presented in table 3. Total variable costs of wholesale of 100kg oil bean seeds was N10,690.00, which consists of the cost of oil bean seeds (90.18%) and other variable costs (9.82%) as shown in *table 3.* While the total fixed cost was N850.00 with stall rent (29.41%) and interest loan (58.82%) constituting the major fixed costs wholesaling operation.

In the case of retail marketing of 20kg of oil bean seeds the total variable cost was N2,528 with the cost of oil bean seeds (76.27%) constituting the major percentage. While on the stall rent (50%) and depreciation expenses are only the components of the fixed costs. The variable costs of wholesale and retail marketing of oil bean seeds account for 92.63% and 92.67% respectively of the total marketing costs. Net returns for wholesale and retail marketing operations were N2,700.00 and N540.00 *(Table 3).* Oil bean seeds wholesaler and retailer gain approximately 23k and 20k respectively for every one naira spent on the trade.

These are enough to cover the cost of marketing services with a relatively high margin of profit.

Table 2: Marketing Margin for Oil Bean Seeds in Owerri Agricultural Zone Markets 2003

Item	Wholesaling for 100kg ₦	Retailing for 20kg ₦
Marketing Costs:		
Transportation	350.00	150.00
Labour	500.00	400.00
Storage	200.00	50.00
Total Variable Costs	1,050.00	600.00
Marketing Margin:		
Purchase price	9,640.00	1,928.00
Sale price	14,240.00	3,268.00
Gross Margin	4,600.00	1,340.00
Percentage Gross Margin (%)	32:30	41.00
Net Margin	3,550.00	740.00
Percentage Net Margin (%)	24.93	22.64

Source: Field survey data, 2003.

Marketing Efficiency

Economic efficiencies of wholesaling and retailing of oil bean seeds were determined. The wholesalers and retailers received ₦1.23 and ₦1.20 for every one naira spent respectively. Hence, oil bean seeds wholesale and retail marketing are economically efficient at moderate level. However, the economic efficiency can be further improved by solving those problems associated with oil bean seeds production, processing and distribution.

Problems of Oil Bean Seeds Marketing

The major constraints faced by oil bean seeds wholesalers and retailers are seasonal availability of the product, high cost of oil bean seeds and lack of interest in oil bean seeds gathering (Table 4). These account for low volume of purchase, hence marketers profit margins are also at moderate level.

Table 3: Costs and Returns Analysis of Oil Bean Seeds Marketing Operations in Owerri Agricultural Zone Markets, 2003

Item	Wholesaling for 100kg ₦	Retailing for 20kg ₦
Variable Costs:		
Transportation	350.00	150.00
Storage cost	200.00	50.00
Labour	500.00	400.00
Oil bean seeds	9,640.00	1,928.00
Total Variable Costs	10,690.00	2,528.00
Fixed Costs:		
Stall/Space rent	250.00	100.00
Interest on loan	500.00	-
Depreciation of equipment	100.00	100.00
Total Fixed Costs	850.00	200.00
Total Return	14,240.00	3,268.00
Gross Return	3,550.00	740.00
Net Return	2,700.00	540.00

Source: Field survey data, 2003

Table 4: Constraints Encountered in Wholesale and Retail Oil Bean Seeds Marketing

Description of Constraints	Ranking (Wholesale)	Ranking (Retail)
Seasonal availability of oil bean seeds	1	1
High cost of oil bean seeds	2	2
Lack of interest in oil bean seeds gathering	3	3
High transport cost	4	5
Destruction of the oil bean trees for charcoal	5	6
High gathering cost	6	4

Source: Field survey data, 2003.

CONCLUSION

Oil bean seeds marketing is a lucrative business both at wholesale and retail levels. The profit is not in excess of marketing costs which shows that the marketing system operations are relatively efficient.

The major constraints to efficient wholesaling and retailing oil bean seeds are oil bean seeds, high cost of oil bean seeds and lack of interest in oil bean seeds gathering from the wide.

These affect the volume of the business which in turn reduces the profit margin. However for increased profit margin and readily availability of the oil bean seeds households in the rural areas should be encouraged to plant oil bean trees at homestead as shade and economic tree.

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