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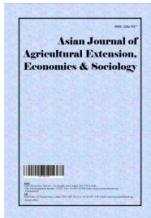
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Economics of Moringas Marketing in Enugu Metropolis, Enugu State, Nigeria

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Authors' contributions

The work is a collaborative work among all the authors. All authors read and approved the final manuscript.

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ABSTRACT

This study assessed the economics of Moringa marketing in Enugu metropolis. It is an obvious truth that agricultural production and other agricultural business are never completed without getting to the final consumers (the primary target) thus, the importance of marketing is to make these products available to the final consumers and improve access to food consumption. This study was carried out in Enugu Metropolis. Eighty (80) respondents were purposively selected from two local government areas of the study using descriptive sampling techniques. A questionnaire was used as an instrument for data collection. The result showed that the majority (75%) of marketers of Moringa products in the areas were females. About 47.5% were within the age of 31-40 years, 50% attended secondary Schools, 81.25% were married, 90% were Christians and 62.5% had 1-5 years of experience. The two intermediaries in the marketing system are the wholesaler and retailer. The major forms in which moringa products are marketed are the Moringa powder, seeds, oil and herbal tea. The monthly costs and returns from moringa marketing showed gross margin to be N 43,400, net profit to be N 22,800 and benefits cost ration BCR) to be 1:16 indicating that moringa is profitable in the study area. Despite the profitability of Moringa, marketers identified their major

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constraint to be low demand as a result of difficulties in convincing people to buy. It is therefore recommended that extension agent and processors should help in enlightening people on the multifarious benefits of Moringa by organizing programs on Moringa.

Keywords: *Moringa; marketing Enugu metropolis; distribution.*

1. INTRODUCTION

Moringa oleifera is a type of local medicinal Indian herb which has turned out to be familiar in the tropical and subtropical countries. *Moringa oleifera* is one of the vegetables of the brassica order and belongs to the family Moringaceae. Moringaceae is a single genus family with 13 known species [1]. Today the tree is common to all landscape all over the tropics of the whole world, from South Asia to West African. It is most visible in Eastern southern parts of Africa. Moringa plant species initially originated from the northern parts of India as far back as 500 years ago [2], it later moved into the southern parts of the country where it is known as "Munugal keeran" meaning Moringa leaves.

It is a multipurpose plant cultivated for medical applications and used as food and feed [3].

Moringa is drought resistant growing best with rainfalls of 25-1500 mm per annum. It requires a temperature of about 25-35°C although it can tolerate 48°C for a short time. It prefers well-drained sandy or loamy soil and can be grown on a clay soil but not water logged (Price 2000).

Moringa has numerous uses: as a plant-based mineral supplement in animal and human nutrition. It is rich in proteins, minerals, vitamins, beta carotene and trace elements [4]. Among rural dwellers, it has been found useful in the treatment of diverse medical conditions [5] and it is currently being considered as an immune stimulant for HIV people [6]. Moringa extracts in 80% ethanol serve as an effective plant growth hormone [7] (Foidl 2001). Capable of increasing yields by 25-30% in several crops like maize, soya, sorghum, tea and melon [8] the seed which is about 40% oil with excellent quality (73% oleic acid) for cooking, contains approximately 13% saturated fatty acid and 82% unsaturated fatty acids [9,10] it goes to show, therefore, that Moringa has the potential to significantly add to household income and improve quality of life in Nigeria [11]. If it is grown and utilized for industrial development. This requires the creation of Moringa value chain involving production, processing, marketing and investment.

Moringa oleifera is one of the most useful multipurpose plants known to man. Virtually every part of the tree is beneficial in some way and both rural and urban people depend on it for their lively hood. Although the Moringa tree is widespread throughout the tropics, around farms and compounds and often used as fence especially in Northern Nigeria, not much has been done to enhance its large scale production, processing, marketing and investment as an industrial raw material in Nigeria.

Moringa is known worldwide for its multiple nutritional and an excellent source of many vitamins and minerals [12].

1.1 Health Benefits of Moringa

Moringa is known to have multiple benefits. It consists of anti-inflammatory, antispasmodic, anti-hypertensive, antitumor, antioxidant, antipyretic, antiulcer, antiepileptic, diuretic, cholesterol lowering, renal, antidiabetic [13,14] and hepatoprotective activities [15,16]. Moringa was claimed to be the most nutrient-rich plant yet discovered [17]. The assorted extracts of moringa morphological parts such as seeds cotyledon, seeds coat, stem, bark, leaves root bark are reported to possess antimicrobial potentials [18]. Recently, Onsare et al. [19]; have reported preliminary work on the antimicrobial activity of aqueous extract of pods husk against Gram-positive, Gram-negative pathogenic bacteria and yeast strains. Other health benefits of Moringa include hair growth, stamina boost, anti-ageing process, e.t.c.

2. METHODOLOGY

The study area is Enugu Metropolis. Enugu has an area of about 455,701 km. National population Council (NPC 1991). It comprises of three Local Government Area Namely Enugu East, Enugu south and Enugu North. Enugu East is bounded by Nkanu East Local Government Area. Enugu North is bounded by Isi-Uzo Local Government Area while Enugu South is bounded by Nkanu West Local Government Area. The major markets in the study area are Oye Emene,

Abakpa, Nkwo Nike Mami, Gariki, Kenyeta, Ogbete, Artizan markets etc.

The study area is located between longitude $6^{\circ}21'E$ and $6^{\circ}31'E$ and latitude $7^{\circ}26'N$ and $7^{\circ}3'N$. Enugu Metropolis was selected because moringa marketing is practiced in the area purposive sampling technique was employed to ensure a good spread of respondents for the study. The two LGA in Enugu metropolis were selected followed by the selection of two districts (where Moringa products are marketed) from each of the local government areas making it 4 districts for the research. It was followed by the selection of the respondents with purposive sampling techniques. From the selected districts, 20 respondents were selected from each of the districts. This gives a total of eighty

(80) respondents. Primary data was collected using interview methods and well-structured questionnaire. The data collected were on Socio-economic characteristics, channels of distribution, forms in which the products are marketed, cost and returns and constraints faced by the marketers. Secondary data were collected from past works relevant to the study. Data that were collected were analyzed using relevant economic and other statistical tools in order to achieve specific objectives.

3. DISCUSSION

The revenue made from the sales of the processed parts amounted to N164,200 which was the total revenue.

Table 1. Cost-returns analysis of moringa marketing (monthly)

Items	Quantity	Unit cost	Total cost	Life span	Annual Depreciation
Blender	1	10,000	10000	4years	2500
Spoon	2	500	1000	2years	500
Scale	1	3000	3000	5 years	600
Sieve	2	1500	3000	2years	1500
Basin	2	3000	6000	2years	3000
Spreading sheet	1	1000	1000	1year	1000
Fan	1	6000	6000	4years	1500
Generator	1	30000	30000	3 years	10000
Total					N 20,600

Average variable cost

Items	Unit	Unit price ₦	Quantity	Amount ₦
Moringa leaves bought	20kg	5000	3	1500
Moringa seeds bought	20kg	10000	1	10000
Moringa oil	1000ml	33,300	2	66,600
Labelling cost	-	10	300	3000
Containers for seeds	40g	40	80	3200
Containers for powder	40g	40	100	4000
Containers for powder	500g	200	10	2000
Containers for oil	30ml	66	100	6,600
Transportation Fee	-	5000	-	5000
Marketing Fee	Monthly	200	-	5,400

Total Variable cost

The total variable costs were the expenditure made on the parts processed and containers with

transportation. This

amounted to N120,800.

The cost of procuring processing and other marketing facilities(TFC) was N20,600 which gave rise to the total cost

N141,400

Average revenue

Items	Unit	Unit price ₦	Quantity	Amount ₦
Moringa powder	40g	300	100	30000
Moringa powder	500g	3500	10	35000
Moringa seeds	40g	250	80	20000
Moringa oil	30ml	1200	66	79200
Total revenue				₦164,200

3.1 Cost of Distribution (Moringa Marketing)

Cost is defined as expenses incurred in organizing and carrying out marketing processes. Cost involves variable cost and fixed costs. Variable costs are a cost associated with factor input whose quantity varies or changes in the short run within the marketing cycles. While fixed costs are those cost corresponding to factor input whose quantities do not change throughout the marketing cycle. They are a cost associated with assets.

Total cost (TC) = Total variable cost (TVC)+Total fixed cost (TFC)

TVC= ₦120800

TFC= ₦20600

Total cost = ₦14 1400

Total revenue = ₦164200

Gross margin = Total revenue (TR) — Total variable cost (TVC)

Gross margin = ₦164200 — ₦120800

= ₦43400

Net profit = Total revenue — Total cost

Net profit = ₦164200 — ₦14 1400

₦22800(month1y)

Benefit cost ratio (BCR) = TR/TC

BCR = ₦164200/ ₦141400 = 1.16

Therefore the marketing of moringa leaves, seeds, and oil are profitable in Enugu metropolis.

It means that in every 1naira spent, 16kobo is made as gain (BCR)=1;16.

4. CONCLUSION

In conclusion, it is proven in numerous cases that the *Moringa oleifera* products possess a wide range of medicinal and therapeutic properties. For instance, in this paper, it views the general nutritional contents, pharmaceutical benefits which would spur its demand and hence its marketing. Enough study has been done on the benefits, but its demand is still low. For the optimal use of these numerous benefits, more enlightenment is needed to boost marketing and acceptability. The inefficiencies in the marketing system, which further reduce the money earned by traders, should be addressed. These short comings in return are caused by the problems facing the traders such as inadequate capital, transportation problems, low demand as a result of lack of awareness of its benefits. If these problems are tackled holistically, moringa production and marketing in Enugu metropolis will be much more profitable and the marketing will be a worthwhile venture.

It is therefore recommended that Government at all levels should give attention to moringa marketing, and processing so that the benefits will be fully tapped. The processing companies and extension agents should also create good awareness of the numerous benefits of moringa in their marketing strategies. Government and non-governmental agencies should give financial assistance which the processing and marketing of this product deserve. The marketers and processors should form cooperatives to access loans and credit facilities. Change agents should also enlighten moringa marketers on record keeping. So that problems and solutions can be traced easily.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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