ASSESSMENT OF MARKETING EFFICIENCY OF MORINGA LEAVES IN KANO STATE, NIGERIA

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ABSTRACT

This study assessed the marketing efficiency of moringa leaves in kano state. Multi-stage sampling technique was used for the study, it involve purposive selection of fagge zone, random selection of fagge ward and random selection 33 respondents from the list of registered members of association. Primary data was used and collected with the aid of structured questionnaires .Descriptive statistics and Marketing Efficiency Model were used to analyse the data. The results of descriptive statistics revealed that majority (54.5%) of Moringa traders did not source for information about the crop. Only 45.5% of the traders sourced for information about the price of Moringa and loan disbursement by the credit agency. Moringa traders also sourced for the necessary inputs required for Moringa trading. Inputs sourced includes Moringa leaves (fresh and dried) and capital. The major source of capital for investing in Moringa trade was similar to that of production. Majority (54.5%) of the respondents used personal savings as the major source of capital for investing in Moringa trading while others (45.5%) sourced their capital from relatives and friends. It also showed that Moringa producers maintained a total market value of ₦ 183/kg and a marketing efficiency value of 68.8%. The estimated marketing efficiency results obtained from the three participants are less than 100%. This implies that marketing of Moringa products in Kano state was relatively inefficient. Despite the huge potential of the crop for cross – border trading, Moringa Oliefera in the study areas is faced with the problem of unorganized market. The findings of the study recommends that in order to develop Moringa enterprise further, there is need for government to establish special market that will link scientists, nutritionist producers, farmers, industrialist, processors, investors, buyers, traders, consumers and traditional leaders as promoters of the crop. This can be done through training, workshop or conferences of stakeholders.

KEYWORDS: Assessment, Marketing, Efficiency and Moringa

INTRODUCTION

Moringa oleifera is a fast growing drought resistant and slender softwood tree. It is found widely distributed in both tropical and subtropics areas. It is commonly known by several names in different countries such as horse radish tree, drumstick tree, wonder plant, ben oil tree or the miracle tree (Palada and Chang, 2003; Radovich, 2009). In Nigeria it is known as Zogale (in Hausa), Gawara (in Fulfude), Okwe oyibo (in Ibo) and Ewe Igbale (in Yoruba) (Gombe, 2009). Moringa is one of the world's most useful plants. It is a highly nutritive crop, the tender pods, leaves and flowers of which are used as popular vegetables in cuisines for their distinctly inviting flavor (Rajangam *et al.*, 2001). The leaves contain more Bcarotene than carrot, more protein than peas, more vitamin C than orange, more calcium than milk, more potassium than

bananas and more iron than spinach (Palada and Chang, 2003; Radovich and Paull, 2008). Furthermore, the crop is an interesting plant with many different uses in agriculture (livestock forage), medicine for cancer (Fahey, 2005), treatment of ulcers, *Staphlylococcus aureus* (Medical Pharmacopia, 1999) and industry (dyes and water purification) (Rajangam *et al.*, 2001, Palada and Chang, 2003; Gombe, 2009; Akinbode and Ikotun, 2008). Its multiple uses have attracted the attention of researchers, development workers and farmers. Although principally perennial and highly cross-pollinated in nature, there are seed-grown annual cultivars with definite superiority over perennial types, and the crop has adapted to varied agro ecosystems and farming systems.

Moringa trees grow easily from seeds or cuttings. They grow quickly even in poor soils andbloom 8 months after planting. *Moringaoliefera* is a medium size tree of about 10 meters high belonging to the moringaceae family. The moringaceae is a single genus family with 14 known species and of these, only moringaoleifera is the most widely known and exceptional species and is planted in the whole tropical belt. The tree is indigenous to Northern India and Pakistan (Verdcourt, 1985). Moringa is commonly known as the horse-radish tree, arising from the use of the root by Europeans in India as a substitute for horseradish.

The widely used common name is drumstick tree, arising from the shape of the pods, resembling the slender and curved stick used for beating the drum. Very little is known about how Moringa came to Nigeria though it is commonly found in the Northern and Middle-belt regions of the country. The early herbarium Specimen documents it as an ornamental tree, (planted in public parks and private gardens). Although moringa oliefera tree is essentially not indigenous to Nigeria, it has become part of the traditional diet. Reliable information regarding its utilization is crucial. Unfortunately in Nigeria, such data are often lacking, despite the economic importance of the plant. Very little research has been done on the species although it is widely used by the rural poor in Northern and Central regions of Nigeria as a food resource. Recently, there has been an increased interest in the utilization of Moringa oleifera, as a protein source for livestock (Makkar and Becker, 1997; Sarwatt et al., 2002). It is a multipurpose tree of significant economic importance with industrial and medicinal uses (Morton, 1991). The leaves contain high concentrations of crude protein, essential vitamins, calcium, iron and proteins (Makkar and Becker, 1997; Gidamis et al., 2003). The research will be of immense contribution to Kano State governments in their strive to achieve food sufficiency and commercial agriculture. It is hoped that the study will be useful to researchers who will identify other areas for further studies on the crop. This study is, therefore, an avenue to contribute to the debate in expanding the literature or the body of knowledge on the subject matter.

The broad objective of the study is to determine the marketing efficiency of *Moringa* leaves with a view to understanding the contributions of the enterprise to the livelihood of the marketers in Kano State. The specific objectives are to: describe the Marketing Intelligence System of *Moringa* market, determine the marketing efficiency of *Moringa* leaves and, describe the constraints associated with *Moringa* marketing with a view to proffering some policy recommendations.

RESEARCH METHODOLOGY

Kano State is made up of forty four (44) Local Government Areas covering a total land area of 20,760 km^2. The State is located within latitude 11^{0}30^{l}N to 11^{0}500^{l}N and longitude 8^{0}30^{l}E to 8^{0}500^{l}E. The state is bordered to the north and northwest by Katsina State, to the east and northeast by Jigawa State, to the south by Bauchi State and the southwest by Kaduna State. According to 2006 provisional population figure, Kano State has a population of 12, 170, 636 inhabitants, by the year 2016 at an annual growth rate of 3.3%,. Agricultural land is put at 1,754, 200ha while forest and grazing land has 75,000ha (KNSG, 2004).The vegetation of

Kano State is the semi-arid Savannah that is suitable for both cereal agriculture and livestock rearing, and the environment is relatively easy for movement of natural resources and other goods..

Multi stage sampling technique was employed for this study. The first stage involved purposive selection of one agricultural zone out of the three zones in the state; which is Fagge zone due to its intensity and conspicuous *Moringa* marketing; second stage involved random selection of Fagge local government area, and the third stage involved random selection of one market from the LGA, and the last stage involved simple random selection of 33 active marketers from the respective total population derived from a list of registered members. Data for this study were collected from primary source. Primary data were collected using structured questionnaires personally administered with the aid of trained enumerators. The Analytical tools for data analysis were descriptive statistics such as mean, frequency percentages

$x = \sum x_i / \sum f$ ..... (1)

$\delta = \sqrt{\{\sum x^2 - \frac{(\sum x)^2}{n}\}/n - 1}$, ... (2)

$\% = f/\sum f \times 100$ ..... (3

Where,

x- Observations

F-frequency

∑-summation

δ=variance

n- Number of observations

Marketing efficiency Model.

$$ME = \frac{Value\ added}{Total\ cost\ of\ marketing\ services\ (TCMS)} \times 100 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (4$$

Where;

ME = Marketing efficiency

Value added = cost of the Moring product (naira) as it changes form from one participant to another.

$TCMS = C_1 + C_2 + C_3 + C_4 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (5)$

Where;

C_1= transportation cost in naira

C_2= haulage cost in naira

C_3= commission charged in naira

C_4= market levy charged in naira

RESULTS AND DISCUSSION

Market Information/Intelligence.

These include information in regard to *Moringa* supply, sourcing of *Moringa* leaf itself and sources for information in regards to the availability of *Moringa*; source of fund for the business, association membership, different sources of information were available to the *Moringa* traders.

Table 1: Source of Information/Intelligence

Source of Information	Kano State	
	Frequencies	**Percentage**
Whether the Traders Sources		
Information		
Yes	15	45.5
No	18	54.5
Total	**33**	**100**
Nature of Information		
Issues on Price	10	66.7
Issues on Loan	5	33.3
Total	15	100

The results from the Table 1 show that majority (54.5%) of *Moringa* traders did not source for information about the crop. Only 45.5% of the traders sourced for information about the price of *Moringa* and loan disbursement by the credit agency. This might not be unconnected with the fact that many consumers are still not aware of the nutritional and pharmaceutical relevance of the crop. However, there were few cases where commission agents play the role of providing information but the income they attract from this practice is very insignificant.

Moringa traders also sourced for the necessary inputs required for *Moringa* trading. Inputs sourced includes *Moringa* leaves (fresh and dried) and capital. The major source of capital for investing in *Moringa* trade was similar to that of production. Majority (54.5%) of the respondents used personal savings as the major source of capital for investing in *Moringa* trading while others (45.5%) sourced their capital from relatives and friends (Table 2).

Table 2: Sources of capital for *Moringa* trading

Source	Freq.	Percentage
Personal Saving	18	54.5
Relative and Friends	15	45.5
Total	**33**	**100**

Results in Table 2 revealed tha *Moringa* leaves (Mleaf) both fresh and dried were sourced from various locations within and outside the study area by *Moringa* traders. Indeed, the crop does not have specific market like grains, despite its nutritional and pharmaceutical relevance.

The source of fresh *Moringa* leaves for trading are presented in Table 3

Table 3: Source of *Moringa* for Trading

Source	Kano State	
	Freq.	**Percentage**
Source of Fresh *Moringa* leaf Brought		
Farmer	29	88
Market	4	12
Total	**33**	**100**
Source of fresh *Moringa* leaf sold		
Consumers	29	88
Farmers	-	-
Marketer (Traders)	4	12
Total	**33**	**100**
Source of dried *Moringa* Leaf bought		
Farmers	7	21
Marketers	26	79
Total	**33**	**100**
Source of dried *Moringa* leaf Sold		
Farmers	1	3
Marketers (Retailers)	32	97
Total	**33**	**100**

Results from the distributions showed that majority (88%) of the *Moringa* traders bought their fresh *Moringa* from the farmers at farm level. About 88% of the fresh leaves purchased by the traders were sold directly to consumers, 12% to marketers. This shows that sale of *Moringa* fresh leaf is not market specific across the study areas. Table 3, detailed the sources of dried *Moringa* leaves traded in the two states. Results from the distribution showed that majority (79%) of dried *Moringa* trader obtained the commodity from the marketers (colleagues) and sold it directly to the retailers who constitutes up to 97% of the distribution. This shows that purchase and sale of dried *Moringa* attracts more commission agents and that is probably the reason why its price is relatively higher than the fresh leaves.

Marketing Efficiency of *Moringa* leaves in Kano State

Marketing efficiency can be defined as the maximization of the ratio of output to input in marketing. Marketing output refers to the value added to the commodity *(Moringa)* as it passes through the marketing system. Whereas marketing inputs are the costs of providing marketing services. Table 4. Presents analyses on the Marketing efficiency of *Moringa* in Kano State

Table 4: Marketing Efficiency of *Moringa* Products

	Component	Kano					
		Producer	% TMC	Processor	% TMC	Trader	% TMC
A	Value added in Naira/Kg (X1)	183		199		231	
B	Marketing Cost in Naira/Kg (X2):						
i	Transportation	50	18.80	50	17.30	-	0.00
ii	Haulage	10	3.76	10	3.46	-	0.00
ii	Commission	15	5.64	20	6.92	50	16.61
iv	Marketing levy	10	3.76	10	3.46	20	6.64
	Sub-total	266	100.00	289	100.00	301	100.00
C	ME(X1/X2 *100)	68.8		68.86		76.74	

TMC=Total Marketing Cost

Results in Table 4 showed that *Moringa* producers maintained a total market value of ₦183/kg and a marketing efficiency value of 68.8%. However, the estimated marketing efficiency of the Processors and Traders follows similar pattern with that of the producer. The estimated marketing efficiency results obtained from the three participants are less than 100%. This implies that marketing of *Moringa* products in Kano state is relatively inefficient. Hence, there is need for improving the marketing efficiency in the study area by using a morecheaper alternative means of transportation.

Table 5: Constraints, Causes and Coping Strategies associate with Marketing processing

Constrains/ Causes/ Strategies	**Freq.**	**Percentage**
Inadequate Capital for Investment	11	34.4
Lack of Awareness about its Benefit	10	31.4
Lack Specific Market Location	4	12.4
Lack of NAFDAC Regulation	4	12.4
Lack of Standardization	3	9.4
Total	**32**	**100**
Causes		
Cultural Effect about the Crop	13	86.7
Lack of Motivation	-	-
No Steady Price	2	13.3
Poor Market Outlet	-	-
Total	**15**	**100**

Result in Table 5 showed that majority of the *Moringa* traders (34.4%) ranked inadequate capital to expand their scale of operation as the most important constraints. This implies that if the traders can operate a larger scale, and coupled with the fact that it has exportable value, the volume of trade would be much higher than was currently obtained. Absence of restriction is one of the basic assumptions underlying a competitive market. As such, the absence of national food and drug agency control (NAFDAC) especially at the level of artisanal processing was regarded as a constraint facing *Moringa* products trading even though their proportion (12.4%)

is negligible.Despite the huge potential of the crop for cross – border trading, *Moringa Oliefera* in the study areas is faced with the problem of unorganized market. This is reported by 7.1%. This implies that if a specific location designed for *Moringa* transaction, volume of trade would be much higher than what is currently obtained. Despite the relevance of *Moringa* in nutrition and medicine, many people are not aware of it. This is reported by Table 5 that majority (31.4%) of the *Moringa* traders across the study areas. This implies that if people will be made to be aware of the benefit of *Moringa* to human life, the volume of trade along the value chain of *Moringa* would increase.

CONCLUSION AND RECOMMENDATIONS

The study revealed that majority (54.5%) of *Moringa* traders did not source for information about the crop. Only 45.5% of the traders sourced for information about the price of *Moringa* and loan disbursement by the credit agency. This might not be unconnected with the fact that many consumers are still not aware of the nutritional and pharmaceutical relevance of the crop. However, there were few cases where commission agents play the role of providing information but the income they attract from this practice is very insignificant. *Moringa* traders also sourced for the necessary inputs required for *Moringa* trading. Inputs sourced includes *Moringa* leaves (fresh and dried) and capital. The major source of capital for investing in *Moringa* trade was similar to that of production. Majority (54.5%) of the respondents used personal savings as the major source of capital for investing in *Moringa* trading while others (45.5%) sourced their capital from relatives and friends. It also showed that *Moringa* producers maintained a total market value of ₦ 183/kg and a marketing efficiency value of 68.8%. However, the estimated marketing efficiency of the Processors and Traders follows similar pattern with that of the producer . The estimated marketing efficiency results obtained from the three participants are less than 100%. This implies that marketing of *Moringa* products in Kano state were **not efficient**. Hence, there is need for improving the marketing efficiency in the study area. Absence of restriction is one of the basic assumptions underlying a competitive market. As such, the absence of national food and drug agency control (NAFDAC) especially at the level of artisanal processing was regarded as a constraint facing *Moringa* products trading even though their proportion (12.4%) is negligible. Despite the huge potential of the crop for cross – border trading, *Moringa Oliefera* in the study areas is faced with the problem of unorganized market. The findings of the study recommendations that in order to develop *Moringa* enterprise further, there is the need for government to establish special market that will link scientists, nutritionist producers, farmers, industrialist, processors, investors, buyers, traders, consumers and traditional leaders as promoters of the crop. This can be done through training, workshop or conferences of stakeholders.

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