



MARKETING ANALYSIS OF LEGUMES BY-PRODUCTS USED AS LIVESTOCK FEED IN KANO STATE, NIGERIA

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ABSTRACT: *The study focused on the profitability analysis of marketing of legumes by-products used as livestock feed in Kano State. Multistage sampling technique was used for the study and data was collected using structured questionnaire supplemented with key informant interview. A total of one hundred and seventy eight (178) legumes by-product marketers were sampled. The analytical tools employed included descriptive statistics, net marketing margin analysis and marketing efficiency. The result of the socio economic characteristics showed that 12% of the legumes by-products marketers were adult belonging to the age group of 43-52 years, 51% of them had household size of 1-6 members, 43.8% of the legumes by-products marketers had 14-22 years of marketing experience. The result of the profitability analysis revealed that legumes by-products marketing was profitable as the marketing margin for Cowpea haulms and Groundnut haulms were ₦323.34 and ₦470 respectively. The total revenue realized for the marketing were ₦1796.67 and ₦2083.33 for Cowpea haulms and Groundnut haulms respectively. The result further revealed Gross Margin (GR) of 0.01 and 0.01 for Cowpea haulms and Groundnut haulms traded in the study area while return per naira invested was found to be 1.09 and 1.16 accrued from every ₦1.00 invested for legumes by-products marketing. The result also revealed that marketing of legumes by-products was efficient with 254.17% and 306.16% for Cowpea haulms and Groundnut haulms respectively indicating that marketing of these by-products was profitable and efficient in the study area. The study recommended that since legumes by-product marketing is a profitable enterprise more youth should be encouraged to venture into the enterprises this will go a long way in reducing unemployment in the study area.*

Keywords: *Legumes by-products, Cowpea haulms and Groundnut haulms.*



INTRODUCTION

Feeds are natural substances which are most commonly organic matter with little components of inorganic matter (Umar, 2002). Livestock feeds are both organic and inorganic substances taken in by animals to provide nutrients such as energy, proteins, minerals and vitamins, metabolized in the body to maintain and produce body tissues, fluids and by-products such as meat, milk and eggs. The feed industry is one of the most competitive businesses in the agricultural sector and is by far the largest purchaser of U.S. corn, feed grains and soybean meal (FAO, 2001).

Studies in various part of Nigeria revealed that about 31% of the Nigerian land area is cropped and different ranges of livestock feeds are produced (Abubakar, 1998). Livestock feeds are of two types those from cereal (millet bran, sorghum bran and maize bran) and those from legume (cowpea vines, groundnut hay and soybean) (Benerjee, 2005). Marketing provides the mechanism whereby producers exchange their commodity for cash. The cash is used for acquiring goods and services which they do not produce themselves, in order to satisfy a variety of needs ranging from food items, clothing, shelter, medication and schooling to the purchase of breeding stock and other production inputs and supplies.

Livestock feed markets suffered from neglect in marketing services in spite of their importance to household welfare and national economy as a whole simply because their full potential is fairly realized. The marketing of industrial and agricultural by-products in Nigeria is faced with a number of constraints including relatively unorganized market and inadequate feed markets.



MATERIAL AND METHODS

The study was carried out in Kano State, Nigeria. The state lies on latitudes $10^{\circ} 33^1\text{N}$ to $12^{\circ}37^1\text{N}$ and Longitude $7^{\circ} 40^1\text{E}$ to $9^{\circ} 29^1\text{E}$. It is within sudan savannah zone, the total land area of the state is 20,760 square kilometers. The mean daily maximum and minimum temperature are 91.6°F (33.1°) and 60.6°F (15.85°C) respectively. According to the official gazette of Federal Republic of Nigeria (2007), the state had a population of 9,383,682 inhabitants. (NPC, 2006). Major crops grown in the state includes millet, sorghum, maize, rice, wheat, cotton, gum Arabic and groundnut etc. Their by-products are significant source of food to livestock while rearing of animal like cattle, horses, goats and sheep were more pronounced (RIM, 1992). Kano state is currently made up of forty four Local Governments Area (LGAs) and the state is agriculturally classified into three (3) zones by the Kano State Agricultural and Rural Development Authority (KNARDA, 1995). Legumes by-products marketers are found in all the three ADPs zones of Kano state (KNARDA, 2001).

Sampling Method

A multistage sampling technique was used for data collection in the study area. For this study all the three (3) Zones was considered. The first stage involved purposive selection of two local government areas from each zone based on relative abundance and high intensity of feed marketers. On that basis, Rano and Kura local government areas were chosen from zone I, Danbatta and Shanono local government areas were chosen from zone II and Wudil and Taraunilocal government areas were chosen from zone III. The second stage, involved purposive selection of one market from each of the selected local government based on the size, location and high involvement in feed marketing. On that basis, Rano and Kura markets were selected



from zone I, Danbatta and Shanono markets were selected from zone II and Wudil and Unguwauku Yan awaki markets were selected from zone III. The third stage, involved random selection of respondents from the six selected markets. A pre-survey was conducted and a total of 595 marketers were identified from all the markets out of which 30% was considered from each of the selected markets. In the last stage, a total of 178 respondents were randomly selected using flip papers in the study. In each market, the marketers were first identified and a list was prepared, a ballot box method was applied in selecting the marketers.

ANALYTICAL TOOLS

The tools of analysis used for this study are: Descriptive statistics, Marketing margin analysis and Marketing Efficiency.

Marketing Margin Analysis: The model is specified as follows:

$$\text{Net Marketing Margin (NM)} = \text{TR} - \text{TMC} \text{ ----- (i)}$$

Where:

NMM = Net Marketing margin

TMC = Total Marketing Cost ($C_1+C_2+C_3+C_4+C_5$)

Where: C_1 = Cost of Transportation ₦, C_2 = Cost of labor ₦, C_3 = Marketing charges ₦

C_4 = Storage ₦ and C_5 = Commission Fee ₦

Gross Ratio: It is a ratio that measures the overall financial success of a business. A less than 1 ratio is desirable for any business, the lower the ratio the higher the profit (Olukosi and Erhabor, 2008).



It is stated as:

$$GR = \frac{TMC}{TR} \text{----- (ii)}$$

Where,

GR = Gross Ratio

TMC = Total Marketing Cost

TR = Total Revenue

Operating Ratio: It measures the solvency of a business. A ratio less than 1 is desirable because it indicates that the business is making profit. A ratio of 1 implies break-even and a ratio greater than 1 implies a loss (Olukosi and Erhabor, 2008). According to Musa *et. al.*, (2006), the lower the ratio (<1) the higher the profitability of the business. It is given as:

$$OR = \frac{TVC}{TR} \text{----- (iii)}$$

Where,

OR = Operating Ratio

TMC = Total Variable Cost

TR = Total Revenue

Return on Capital Invested: return on capital invested is defined as total income or revenue divided by total marketing cost (Olukosi *et. al.*, 2005). It is given as:

$$RNI = \frac{TR}{TMC} \text{----- (iv)}$$

Where,

RNI = Return on Capital Invested

TR = Total Revenue

TMC = Total Marketing Cost



Marketing Efficiency: The formula is specified as:

$$M.E = \frac{\text{Value added by marketing}}{\text{Cost of marketing services}} \times 100 \text{ ----- (vi)}$$

Thus:

$$\text{Value Added by marketing (VA)} = Sp - Pp$$

Where:

Sp = Selling price of the commodity (in naira)

Pp = Purchase price of the commodity (in naira)

RESULT AND DISCUSSION

Socio Economic Characteristic of Respondents

The study examined the socio-economic characteristics of the respondents' such as age, household size and years of experience in livestock feed marketing. The results are presented in Table 1 which showed that the ages of the respondents' ranges from 23-32 years with an average of 44years. The results further revealed that adult of age group of 43–52 years were the highest with 43.1%, while least percentage of 2.3% goes to age group of 63-72 years. The implication of this finding is that, middle aged take part more in livestock feed marketing than old aged and younger ones in the study area. This tally with the finding force work of Umar (2007) that trader's age affects their efficiency in performing managerial decisions. Household size is one of the socio economic variables that may influence the level of participation in legumes by-product marketing. The result in Table 1 revealed that majority of the livestock feed marketers 51% had household size of 1– 6 members and 8.5% goes to household size of 13-30 members. Thus,



majority of the respondents in the study area are having less household size because the business is more of middle aged who have less family size than the old ones. Marketing experience is the number of years that the marketers spent in livestock feed business. The longer the experience in the business, the better the performance in livestock feed marketing. The result indicated that most of the respondents 43.75% had a marketing experience of 14-22 years while 6.25% of the respondents had marketing experience of 32-49 years. This implies that livestock marketers can manage risk and make sound decision in managing cereal and legume by products used as livestock feed to enhance better performance.

Profitability of Marketing Legumes By-Products used as Livestock Feed

The profitability measures such as the marketing margin, net marketing margin (NMM), marketing revenue and return to naira invested (RNI), gross ratio (GR) and operating ratio (OR) were determined and presented in Table 2. The results revealed that the total sales per year of cowpea haulms and groundnut hauls were ₦332,383.98 and ₦385,416.08 respectively. The return to naira investments of 1.09 and 1.16 for cowpea haulms and groundnut hauls implies that a profit of ₦0.09 and ₦1.16 would return to the invested respectively. The result further revealed gross ratio (GR) of 0.01 and 0.02 for cowpea haulms and groundnut hauls traded. The ratios were all less than unity. A less than 1 ratio is preferable for any farm business, Olukosi and Erhabor, (2008) posited that the lower the ratio the high the profit impliedly, cowpea haulms and groundnut hauls were profitable in the study area. In similar vein, the operating ratio (OR) of cowpea haulms and groundnut hauls were obtained as 0.91 and 0.87 respectively. Operating ratio



of both commodities was lower than unity. Olukosi and Erhabor, (2008) also reported that a ratio less than one indicates that the marketers are marking profit.

The results in Table 2 further indicated that the marketing efficiencies of cowpea haulms and ground nut haulms used as livestock feed was found to be 254.17% and 306.16% respectively. The result further revealed that groundnut haulms have the highest marketing efficiency as compared to cowpea haulms in the marketing of legumes by-products in the study area. The higher the ratio the higher the marketing efficiency and vice versa (Olukosi, *et al.*, 2007).

Table 1: Socio Economic Characteristics of Legume by-products Marketers.

Variables	Frequency	Percentage	
Age			
23-32	3	1.7	
33-42	60	34.7	
43-52	77	43.1	
53-62	32	18.2	
63-72	4	2.3	
Total	176	100	
Mean 44.35	Min 23	Max 68	SD 7.793
Household size			
1-6	89	50.6	
7-12	72	40.9	
13-18	12	6.8	
19-24	2	1.13	
25-30	1	0.57	
Total	176	100	
Mean 7.3	Min 1	Max 29	SD 4.112
Marketing experience			
5-13	69	39.20	
14-22	77	43.75	
23-31	19	10.8	



32-40	9	5.11	
41-49	2	1.14	
Total	176	100	
Mean 17.64	Min 5	Max 45	SD 7.62

Source: Field survey, 2013. SD = Standard Deviation

Table 2: Profitability Analysis per 116kg of Cowpea haulms and 116kg of Groundnut haulms used as Livestock feed per 24kg (bag)

	Cowpea haulms		Groundnut haulms	
Parameters	Value (₹ /kg)	% TMC	Value (₹ /kg)	% TMC
Marketing Cost (MC)				
Purchase price	1473.33	89.66	1613.33	89.46
Transportation cost	40	2.43	50	2.77
Storage cost	30	1.83	30	1.66
Cost of labour	80	4.87	90	4.99
Marketing charges	20	1.22	20	1.11
Total Marketing Cost (TMC)	170	100	190	100
Total Revenue	1796.67		2083.33	
Gross Ratio	0.01		0.01	
Operating Ratio	0.91		0.87	
Marketing Margin	153.34		280	
Net Marketing Margin	1626.67		1893.33	
RNI	1.09		1.16	
Marketing Efficiency (%)	254.17		306.16	

Source: Field Survey, 2013

*(₹3.5 = 1 rupee)



CONCLUSION

The prospect of legumes by-products marketing in Kano state were found to be full time occupation providing employment for a large number of individuals. This could be attributed to the amount of profits realized in both activities. The socio economic characteristics that enhance higher marketing of cereal and legumes by-products marketers were age, household size, years of experience and level of income.

RECOMMENDATION

Based on the findings of the study the following recommendations were made:

- i. Legumes by-products marketers should form strong and viable corporative groups which will make them have access to institutional support.
- ii. Since legumes by-products marketing is a profitable enterprise more youth should be encouraged to venture in to the enterprises this will go a long way in reducing unemployment in the study area.
- iii. There is need for government and its development partners to encourage people to go into farming so that there will be an increase in the quantity cereals and legumes and subsequently an increase in the availability of livestock feeds.



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