

Evaluation of Sorghum Marketing in Danko-Wasagu Local Government Area of Kebbi State, Nigeria

Musa D Baba¹, Ishaq D Sanchi¹, Jamilu S Dabai² and Amina Y Sabo¹

¹. Department of Agricultural Extension and Management, Kebbi State College of Agriculture Zuru, Nigeria.

². Department of Agricultural Technology, Kebbi State College of Agriculture Zuru, Nigeria.

Email: musababa108@gmail.com

Abstract: The study examined the marketing of sorghum in Danko-Wasagu Local Government Area of Kebbi State, Nigeria. Stratified random sampling technique was used to select one hundred and twenty four (124) sorghum marketers (producers, wholesalers and retailers) proportionate to the population in five (5) major markets in the study area. Primary data were collected using structured questionnaires. Data analysis was carried out using descriptive statistics, marketing efficiency and marketing margin. Result of the study showed that sorghum marketing is dominated by males (61.3%) and that sorghum marketing in the study area enjoys higher patronage by young people who are energetic enough to withstand the stress involved in the business. Most of the sorghum marketers in the study area are literate enough to give room for effective communication in doing their sorghum marketing. Sorghum marketing in the area is structured in such a way that there is ease of entry and exit. Furthermore, price of Sorghum is determined by market forces. Marketing margin of an average sorghum marketer in the study area was ₦1, 935 per 100kg and the percentage marketing margin was 41.19%. This indicated that Sorghum marketing in the study area was profitable and 100% retail price paid by the final consumer resulted in farm-to-retail price spread (marketing margin) of 41%. An average sorghum marketer in the study area earns a farm-to-retail price spread of 0.41kobo for every 1 Naira retail price paid by the final consumer in the marketing process. The marketing efficiency (0.240) of Sorghum in the study area was inefficient. Inadequate capital was the major problem faced by Sorghum marketers in the study area. It is therefore recommended that for effective performance of Sorghum marketing in the study area there is need for marketing associations to seek for loans from financial institutions.

[Musa D Baba, Ishaq D Sanchi, Jamilu S Dabai and Amina Y Sabo. **Evaluation of Sorghum Marketing in Danko-Wasagu Local Government Area of Kebbi State, Nigeria.** *Researcher* 2014;6(9):38-42]. (ISSN: 1553-9865). <http://www.sciencepub.net/researcher>. 7

Key words: sorghum; marketing; margin; efficiency; danko-wasagu

1.0 Introduction

Sorghum (*Sorghum bicolor L moench*) is one of the most important staple crops in Nigeria, and is the most important cereal food in the Northern states that covers the guinea savannah ecological zone (FAO, 2003). In terms of food contribution, sorghum is the major cereal consumed by the majority of the population (NAERLS., 2007). In the Northern states, about 73% of the total calories intake and 52.3% of the per capital protein intake are contributed by sorghum alone (Samm, 2009). In many parts of the world, sorghum has traditionally been used in food products and various food items, porridge, unleavened bread, cookies, couscous and malted beverages are made from this versatile grain (Oyedipe, 2001). The whole grain may be ground into flour or decorticated before grinding to produce either a fine particle product or flour, which is then used in various traditional foods. Sorghum has unique properties that make it well suited for meeting today's demand for healthy food. For example, some sorghum varieties are rich in anti-oxidants and all sorghum varieties are gluten-free, making them an attractive alternative for sufferers of wheat allergies (Samm, 2009).

Sorghum is also an important animal feed used in countries like the United States and Mexico. Good-quality sorghums are available with a nutritional feeding value that is equivalent to that of corn. In 2008/2009 season about 49.36% of sorghum production goes into feed and residual uses (Yinka, 2009). In China, sorghum is the most important ingredient for the production of distilled beverages such as *Maotai*. In Southern Africa, it is used to produce beer, including the local version of Guinness. It is also used in the same way as barley to produce "malt". African sorghum beer is a popular drink primarily amongst the black community for historical reasons (Samm, 2009). Sorghum beer is known by many different names in various countries across Africa, including *Burukutu* (Nigeria), *Pombe* (East Africa), *Bil-bil* (Cameroon) and *Bjala* in (Northern Lesotho) (Yinka, 2009). Sorghum stem can be made into excellent wall board for house building, as well as biodegradable packaging. It does not accumulate static electricity, so it is also being used in packaging materials for sensitive electronic equipment (Oyedipe, 2001).

According to FAO. (2003) as reported by (Samm, 2009), sorghum is one of the most drought tolerant cereal crops currently under cultivation. Its morphological and physiological characteristics contribute to its adaptability to drought conditions, including an extensive root system, waxy brooms on the leaves that reduce water loss, ability to stop growth in periods of drought and to resume when conditions are favourable, and tolerance to water-logging. The crop adapts well to different soil types and toxicities. These factors together make it an ideal crop for growing in a biotically stressful environment (Oyedipe, 2001). Agricultural marketing is concerned with all stages of operations which include the movement of commodities from the farms to the consumers. It involves the performance of all activities involved in the flow of goods and services from the point of initial production until they are in the hands of ultimate consumers (Adesiyun *et al.*, 2007). Marketing is the sum total of all business activities involved in the movement of commodities from production to consumption. This definition is applicable to the marketing of industrial goods as well as to that of agricultural commodities (Katherine *et al.*, 2010).

2.0 Methodology

Danko-Wasagu Local Government is one of the twenty one (21) Local Governments of Kebbi State. It covers a geographical land area of four thousand two hundred and eight (4,208) square kilometers. It is boarded in the south by Sakaba Local Government area of Kebbi State, in the west by Zuru Local Government of Kebbi State and in the North – East by Bukkuyum Local Government of Zamfara State. Danko/Wasagu lies between latitude 11°N and longitude 5° and 6°E of the equator (Girma, 2008). The estimated population of the Local Government Area is about two hundred and sixty five thousand, two hundred and seventy one (265,271) people (NPC., 2006). The topography of the local government is flat or low land area with a fertile soil covered by sandy soil, sometimes coarse in texture with the several fadama and alluvial plain suitable for Agricultural activities. The local government is made up of eight administrative districts namely: Danko, Wasagu, Ribah, Waje, Kanya, Bena, Kyabu and Wari districts. The weather is marked by a single rainy season and long dry season. The average rainfall is 720mm, the rainy season period is between May to October and the length of rainy season is about four or five months. The mean temperature range is 31°C and 38°C respectively. Hence, the months of November to February are particularly cold due to dry harmattan and from March to May are generally hot and wet as in the tropics (Girma, 2008).

The study was carried out in some selected villages of the study area. Five villages were

purposely selected; this is because of the existence of large markets in these villages. The villages are Bena, Danko, Maga, Ribah and Wasagu. With the aid of a sampling frame, stratified random sampling technique was used to select sorghum producers, wholesalers and retailers proportionate to the population. Thus, eighty six (86) sorghum producers, seventeen (17) sorghum wholesalers and twenty one (21) sorghum retailers were selected, making a total of one hundred and twenty four (124) respondents as the sample size. The data were collected through the use of structured questionnaire. Data analysis was carried out using descriptive statistics, marketing margin and marketing efficiency.

2.1 Specification of Models

2.1.1 Marketing Margin

The marketing margin is the difference between the value of a commodity when it is ready for sale from the farm and its value when it is finally bought by the consumer (Asogwa and Okwoche, 2012).

$$MM = Pr - Pf \dots \dots \dots \text{eq (1)}$$

$$\%MM = \frac{Pr - Pf}{Pr} \times 100 \dots \dots \dots \text{eq (2)}$$

Where:

MM = Marketing Margin

Pr = Retail Price

Pf = Farm gate Price

2.1.2 Marketing Efficiency

Marketing efficiency is the ratio of marketing cost to marketing margin. A higher value of this ratio indicates improved marketing efficiency and lower value denotes reduced efficiency (Asogwa and Okwoche, 2012).

$$ME = \frac{MC}{MM} \dots \dots \dots \text{eq (3)}$$

$$\%ME = ME \times 100 \dots \dots \dots \text{eq (4)}$$

Where:

ME = Marketing Efficiency

MC = Marketing Cost

MM = Marketing Margin

If ME = 1, Marketing is efficient

If ME > 1, Marketing is highly efficient

If ME < 1, Marketing is not efficient

3.0 Results and Discussion

3.1 Socio-economic Characteristics of Sorghum Marketers

Table 4.1 showed that the age of the marketers ranging between 31 - 40 years are predominant with 34.7%. Also 26.6% of the marketers are between the ages of 20 - 30 years. The implication of the foregoing result is that sorghum marketing in the study area enjoys higher patronage by the young people who are energetic enough to withstand the stress involved in the business. This result suggests that majority of sorghum marketers in the study area are young farmers who are within the age bracket of people who are innovative

and active at work (Asogwa and Okwoche 2012). These category marketers therefore can make meaningful impact in sorghum marketing when adequately motivated with the needed marketing facilities. Majority (61.3%) of the marketers involved in sorghum marketing are males while 38.7% are females. The dominance of sorghum marketing by males in the study area is a pointer to the belief in the study area that women are supposed to stay at home and in the farm while men struggle for survival through such business. Moreover, women lack exposure to the business. This is because the business requires a lot of energy and is labour intensive, involving moving from one place to another assembling the products for marketing.

Table 1: Socio-economic characteristics of sorghum marketers

Parameters	Frequency	Percentage
Age (Years)		
20 – 30	33	26.6
31 – 40	43	34.7
41 – 50	25	20.2
51 and above	23	18.5
Total	124	100
Sex		
Male	76	61.3
Female	48	38.7
Total	124	100
Marital Status		
Married	84	67.7
Single	40	32.3
Total	124	100
Educational Background		
No education	12	9.7
Primary education	34	27.4
Secondary education	52	41.9
Tertiary education	26	21.0
Total	124	100
Marketing Experience (Years)		
1 – 5	62	19.4
6 – 10	30	24.2
11 – 15	24	50.0
16 – 20	8	6.4
Total	124	100

Source: Field Survey Data and Computation by the Researcher,(2014).

The result also revealed that majority (67.7%) of the marketers are married as against 32.3% single; indicating that sorghum marketing in the study area is common among couples. About 41.9% of the marketers had secondary education. This result suggests that a good proportion of the marketers are literate enough to give room for effective communication in doing their sorghum marketing business in the study area. This is acceptable on the ground that education affects the way farm business is

managed as well as overall production (Jongur and Ahmed, 2008). The Table further revealed that majority (50%) of the marketers have marketing experience between 11 - 15 years which suggest the ability to manage risk and make quick decision resulting in better marketing performance.

3.2 Marketing Structure of Sorghum in the Study Area

Table 2: Marketing structure of sorghum in the study area

Parameters	Frequency	Percentage
Membership of Marketing Associations		
No	15	12.1
Total	124	100
Freedom of Entry and Exit		
Yes	115	92.7
No	9	7.3
Total	124	100
Price Fixing		
Individual	12	9.7
Market Forces	91	73.4
Marketing Associations	21	16.9
Total	124	100
Source of Marketing Information		
Middlemen	86	69.4
Marketing Associations	27	21.7
Media	11	8.9
Total	124	100

Source: Field Survey Data and Computation by the Researcher, (2014).

Table 4.2 revealed the percentage distribution of Sorghum marketers by membership of marketing association. Majority (87.9%) of the Sorghum marketers in the study area subscribed to the membership of marketing association, whereas 12.1% do not subscribe to the membership of marketing association. Those involved in Sorghum Marketing Association did so because of easy access to extension services, market and credit facilities. The result also showed that majority (92.7%) of the sorghum marketers in the study area agreed that there is freedom to buy and sell their sorghum anywhere. This implies that sorghum marketing in the area is structured in such a way that there is ease of entry and exit as well as freedom of buying and selling of sorghum in the study area. Result further revealed that 73.4% of the marketers agreed that price fixing was by bargaining, 21% was by marketing associations and 12% of price fixing was by individuals. This indicated that price fixing among the marketers was majorly by bargaining, suggesting that the market forces determine the price of sorghum. The Table also indicated that Sorghum marketers obtained their marketing information mostly from middlemen (69.4%). This indicated that

middlemen have much influence on marketing activities that take place in the study area.

3.3 Marketing Efficiency

Table 4.3 indicated a marketing efficiency of 0.240 which is less than 1, the marketing system of Sorghum in the study area is therefore not efficient. The percentage marketing efficiency of Sorghum in the study area was 24.0. This showed that for every ₦1.00 spent, 24% is gained.

Table 3: Marketing efficiency of sorghum marketers

Variable	Value/Cost (₦)
Marketing Cost	465
Marketing Margin	1935
Marketing Efficiency	0.240
% Marketing Efficiency	24.0

Source: Field Survey Data and Computation by the Researcher, (2014).

3.4 Marketing Margin

Table 4.4 presents the marketing margin of an average sorghum marketer in the study area. The result showed that the farm gate price is ₦2, 763.00 per 100kg of sorghum, while the retail price is ₦3, 698.00 per 100kg. This indicated that marketing margin of an average sorghum marketer per 100kg in the study area is ₦1, 935 and the percentage marketing margin is 41.19%. This implies that Sorghum marketing in the study area was profitable. Also, 100% retail price paid by the final consumer result in farm-to-retail price spread (marketing margin) of 41%. In other words, an average sorghum marketer in the study area earns a market margin (farm-to-retail price spread) of 0.41 naira for every 1 Naira retail price paid by the final consumer in the marketing process. This represents payments for all assembling, processing, transporting,

Table 4: Marketing margin of sorghum marketers

Variable	Value (₦)
Farm Gate Price	2, 763
Retail Price	4, 698
Marketing Margin	1, 935
% Marketing Margin	41.19

Source: Field Survey Data and Computation by the Researcher, (2014).

and retailing charges added to farm products. The low level of the marketing margin of the marketers is largely attributable to the exploitative activities of the middlemen. This finding contradicts the observation of Jongur and Ahmed (2008) that farmer's margin was as high as 96.81% and the remaining 3.19% went to middlemen involved in sorghum marketing in

Adamawa central zone. This is attributable to the highly exploitative activities of middlemen in the study area.

3.5 Grading, Method of Storage and Means of Transportation of Sorghum

Table 4.5 showed that majority (54%) of the Sorghum marketers grade their Sorghum based on size and colour, 33.1% grade their Sorghum based on colour and only, 12.9% grade their Sorghum based on size. The result also showed that majority (79%) of the Sorghum marketers store their Sorghum in sacks, 12.9% of the Sorghum marketers store their Sorghum in rhumbus and only 8.1% of Sorghum marketers store their Sorghum in both sacks and rhumbus. Result further revealed that 44.3% of Sorghum marketers transport their Sorghum using cars/lorries, 31.5% of Sorghum marketers transport their Sorghum using motorcycles, while 24.2% used wheelbarrows. This may be due to the availability commercial cars/lorries and motorcyclist in the study area. This tallied with the findings of Asogwa and Okwoche (2012) that Sorghum marketers in Benue State transport their Sorghum by means of cars/lorries

Table 5: Grading, method of storage and means of transportation

Parameters	Frequency	Percentage
Grading of Sorghum		
Size	16	12.9
Colour	41	33.1
Both	67	54.0
Total	124	100
Storage of Sorghum		
Sacks	98	79
Rhumbus	16	12.9
Both	10	8.1
Total	124	100
Means of Transportation		
Wheel barrow	30	24.2
Motorcycle	39	31.5
Car/Lorry	55	44.3
Total	124	100

Source: Field Survey Data and Computation by the Researcher, (2014).

3.6 Problems of Sorghum Marketing

Table 4.6 showed that the most common problem faced by sorghum marketers in the study area was inadequate capital as it was ranked first. Others include high taxes 2nd, poor rural roads 3rd, robbery 4th, accidents 5th, price fluctuation 6th and poor sales 7th. This indicated that the high expenditure incurred by the marketers especially due to poor roads, high or multiple taxes increase the marketing costs which seriously reduce the market margin coupled with the exploitative activities of the middlemen.

Table 6: Problems of sorghum marketing

Parameters	Frequency	Percentage	Ranking
Inadequate Capital	43*	28.3	1 st
High Taxes	28	18.4	2 nd
Poor Rural Roads	20*	13.1	3 rd
Robbery	19	12.5	4 th
Accident	17	11.2	5 th
Price Fluctuation	15*	9.9	6 th
Poor Sales	10	6.6	7 th

Source: Field Survey Data and Computation by the Researcher, (2014). *Multiple Responses

4.0 Conclusion and Recommendations

Based on the findings of the study, it could be concluded that Sorghum marketing in the area is structured in such a way that there is ease of entry and exit, price fixing was by bargaining, suggesting that the market forces determine the price of sorghum in the study area. It could also be concluded that marketing margin of an average sorghum marketer was ₦1, 935 implying that Sorghum Marketing in the study area was profitable. Another conclusion drawn from this finding is that Sorghum marketing in the study area was inefficient and inadequate capital was the major problem faced by Sorghum marketers in the study area.

For active and effective performance in marketing of sorghum there is need for marketing associations to seek for loans from financial institutions. This should be done urgently to help new entrants and expansion of the existing sorghum marketing. This has become imperative because money lenders and informal credit institutions have not been able to meet the demand of the sub-sector in financial assistance. Rehabilitations and construction of access and feeder roads within the study area should be given appropriate attention in order to ease transportation problems and its attendant cost. There should be provision of adequate security by the government to reduce the menace of robbery as a marketing problem.

Acknowledgement:

Authors are grateful to the management of College of Agriculture Zuru, Kebbi State for their support and cooperation towards the conduct of this research.

Correspondence to:

Musa D Baba
 Department of Agricultural Extension and Management, College of Agriculture Zuru, PMB 1018, Kebbi State, Nigeria.
musababa108@gmail.com

8/21/2014

References

1. Adesiyun O. I, Adeleke O. A. and Salako B. A. Economic Analysis of Poultry Marketing in Ido Local Government Area of Oyo State, Nigeria. *Research Journal of Poultry Sciences* 2007; 1(3-4):23-25.
2. Asogwa B. C. and Okwoche V. A. Marketing of Agricultural Produce among Rural Farm Households in Nigeria: The Case of Sorghum Marketing in Benue State. *International Journal of Business and Social Science* 2012; 3(13):269-277.
3. Central Bank of Nigeria (CBN) Changing Structure of the Nigerian Economy and Implications for Development. CBN Publication 2000; 1-16.
4. Food and Agriculture Organization of the United Nations (FAO) 2003; Retrieved From www.fao.org 20 February
5. Girma, S. A. Agro-climatology of Millet Production in Desert Fringe Zone of Nigeria, A Case Study of Kebbi State. Unpublished M.Sc dissertation. 2008; Federal University of Technology Minna, Niger state: 1-97.
6. Jongur, A. A. U. and Ahmed B. Distribution Efficiency of sorghum Marketing in Selected Areas of Adamawa Central Zone of Nigeria. *Bowen Journal of Agriculture* 2008; 5(1&2): 63-71.
7. Katherine K, Mary Kay G. and Robert P. Poultry Market in West Africa: Nigeria. Prepared for the Market Access Team of the Bill and Melinda Gates Foundation. 2010; 23-87.
8. National Agricultural Extension and Rural Liason Services (NAERLS) Prospects and problems of the 1997 cropping season. NAERLS/AP, MUE, Kaduna. 2007; 4-13.
9. National Population Commission (NPC) Provisional Census Figure. Abuja Nigeria. 2006; 1-3.
10. Oyedipe, E. O. Agricultural Research Policy and National Development. Paper presented at the in-house technical workshop for the Agricultural Research Institute on the Agricultural Policy Abuja Nigeria. 2001; 6-14.
11. Sann, B. M. Gross margin analysis and linear programming; Tools in understanding how farmers in the guinea savannah region of Nigeria rejected the most profitable type of sorghum recommended by scientists. Proceedings; pre-conference of the Western Agricultural Economics Association. 2009; 1-20.
12. Yinka, A. O. Agricultural Marketing System in Nigeria. A term paper presented at the Department of Agricultural Economics and Extension, 2009; Kogi State University, Anyigba Nigeria: 23-28.