

ASSESSMENT OF CASHEW NUT VALUE CHAIN IN KOGI STATE, NIGERIA

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ABSTRACT

Cashew nut value chain in Kogi State was examined in this study. Sample size of 200 respondents were selected using multistage sampling technique. Structured questionnaire was used for data collection. Data collected were analyzed using descriptive statistics. Results showed that 82.1% of the farmers, 80.0% of the marketers and 56.7% of the processors were males. The average age was 50 years, 53 years, and 47 years among farmers, marketers, and processors, respectively. The results further showed that 42.1% of the sell directly to the agent/wholesalers on the farm site; 66.7% of the marketers sourced for cashew nuts from the farmers or processors as kernels and sold to consumers who may also be processors in the value chain; while 63.3% of the soured for inputs from marketers. Production (85.7%) and marketing (58.6%) were the major entrepreneurial opportunities among the farmers; the marketers rated input sources (86.7%), marketing (80%) and end buyers as major opportunities; while processors' major entrepreneurial activity was processing (76.7%). Based on the findings in this study, it can be concluded that farmers, marketers and processors will perform well given adequate production, marketing and processing inputs respectively. It is recommended that more farmers, processors, and marketers, should be encouraged to engage in cashew nut value addition activities at all levels in the chain value. This can be achieved through intensified awareness among relevant actors within the value chain.

Keywords: Cashew nut, Assessment, Value-chain, entrepreneurial.

INTRODUCTION

Cashew (*Anacardium occidentale*) has for many years been used for food and income generation, the trees are usually grown for their kernels which when roasted have a very pleasant taste (Jolaoso and Onwualu 2013). Anjani (2014) reported that raw cashew nuts which are much in demand in industrialized countries are processed into kernels that constitute a valuable export product for confectionery. They are used as ingredients for making fruit paste, candied fruit, canned fruit, cashew apple, resins, jams and jellies, chutney, fruit juice, alcohol and vinegar. Cashew kernels rank third after almonds and hazelnuts in the international trade of tree nuts.

Cashew grows successfully in Nigeria in virtually all agro-ecological zones including the semi-arid areas but with high concentration in the middle belt areas in smallholder farms and plantations. Onuchi and Aiyelabowo (2006), reported that in 1995, the total hectares of land under cashew cultivation was estimated at 40,000 with about 60 percent of the holdings owned by smallholders; another 30 percent were available in the wild; while 10 percent was in the large and medium size commercial plantation sector. By the year 2,000 there were indications that total hectares had increased significantly to about 100,000ha due to the involvement of some State Governments in cashew cultivation (Crusoe, 2016). This expansion was a direct result of the cashew production expansion programme of their various Agricultural Development programmes (ADPs), National Land Development Authority (NALDA) and Tree crop units (TCUs). With a yield estimated at 700kg per hectare. The Cocoa Research Institute of Nigeria (CRIN), which has national mandate on cashew production estimates national production to be around 70,000MT annually. She maintains a cashew observatory in Ochaja, Kogi State, where lots of cashew are harvested annually (Crusoe, 2016).

According to Farayola *et al.*, (2013) Cashew nut processing allows for the development of an important by-product, which can increase its added value. Cashew nut shell liquid (CNSL) represents 15 percent of the gross weight and has some attractive possible medicinal and industrial uses (Farayola *et al.*, 2013). CNSL is one of the few natural resins that is highly heat resistant and is used in braking systems and in paint manufacture. It contains a compound known as *anacardium* which is used to treat dermatological disorders. The main markets for CNSL are the United States, the European Union, Japan and the Republic of Korea. Together these account for over ninety percent of world trade, most of which is supplied by India and Brazil (Jolaoso and Onwualu 2013). Cashew apples can also be made into drinks, wines and pickles. Due to the high value of cashew nuts even small pieces find a market in confectionery products (FAO 2012). Value-added agriculture is fundamentally market-driven. It needs trained and skilled manpower to cope with the demand of rapidly changing markets. Bani, (2005), reported value-added businesses tend to be closer to the consumers, playing in highly competitive markets where speed and accuracy are imperative, which requires the government support through building institutions, market information, skilled manpower, capital formation and technology.

Marketing is one of the significant aspects of Nigerian agriculture. Agricultural marketing is the performance of all the activities involved in the flow of agricultural products and services from the initial points of production until they reach the hands of the ultimate consumers.

Poor trading systems of some crops and their products partly lead to the inherent inefficient agricultural commodity marketing in Nigeria. For the cashew nut produce, its marketing involves several players and channels. It starts from the sale of raw cashew nuts from farmers to the retailers who then sells to the wholesalers until it reaches the level of the processors, for selling of the processed and graded kernels to the ultimate consumers. The marketing channel may vary for different commodities depending on the nature, use, value of commodities, marketing margin and the mark-up policy of the traders in the marketing system (Onyenobi et al., 2009). Despite the critical roles of marketing in Nigeria's agricultural development, successive governments paid more attention to the production aspect of agriculture, with little attention to marketing related activities (Idachaba, 2000). One of the major problems facing farmers and marketers in the developing world is lack of storage and processing facilities for the perishable and seasonal agricultural commodities (Bani, 2005). Idachaba, (2000) and (Bani, 2005) also pointed out that many harvested products are lost before getting to the consumers and attribute these losses to lack of value additions to products, and inadequate storage facilities as well as premature harvesting of cashew nuts which are mostly stored without been dried properly and this always results in low quality and poor priced nuts when taken to the market. In addition, most consumer markets in Nigeria are not well developed in certain areas. There is dearth of adequate information on cashew nut value chain especially in Kogi State and this culminates in a knowledge gap. Against this backdrop in knowledge, this study sought to appraise cashew nut value chain in Kogi State. The specific objectives of this study were to: describe the socio-economic characteristics of actors in the cashew value chain, Identify major actors in the value chain and identify entrepreneurial opportunities available in the cashew value chain in the study area.

MATERIALS AND METHODS

This study was conducted in Kogi State, Nigeria. The state was created in August, 1991 out of Kwara and Benue States. It is located in the North central region of Nigeria with the headquarters at Lokoja, which is situated at the confluence of rivers Niger and Benue making the state to be popularly known as the confluence state. Kogi state has three senatorial districts (Western, Central and Eastern senatorial districts). It consists of 21 Local Government Areas (LGAs). The state lies between Latitudes 6⁰31'N and 8⁰42'N of the equator and Longitudes 5⁰18'E to 7⁰49'E to 8⁰42'N of the meridian. The state shares boundaries with Niger, Nasarawa, Plateau States and Federal Capital Territory (FCT) to the North and Benue to the East, to the west, it is bounded by Kwara, Ondo and Ekiti States and to the South by Enugu, Anambra and Edo States. Kogi State has a total population of about 3,314,043 (NPC 2006).

It has about 2 million hectares of cultivable land with only about 0.5 million hectares currently under cultivation, Kogi State Economic Empowerment and Development Strategy (KOSEEDS, 2004).

Kogi State is characterized with Rivers, valleys and swamp lands for dry season farming. The major food crops grown in the state are: Yam, Cassava, Maize, Sorghum, Rice, Millet, Cowpea, Pigeon pea, Groundnut, Bambara nut, Cocoyam, Sweet potato, Beniseed, Melon, Banana, Plantain, and Cotton. Fruits and Leafy Vegetables Such As Okra, Pepper, Fluted Pumpkin and Spinach are Highly Cultivated in the Area. Tree Crops Grown in the State are; Cashew, Oil Palm, Citrus, Cocoa, Coffee and Kola nut. Cattle, Sheep, Goats and Poultry are the major animals reared. Fish is common along the riverside. Kogi State is abundantly endowed with Iron ore, Limestone and Coals (Adofu, *et al.*, 2013).

Table 1: Sample distribution of respondents

Zones	Blocks	Actors			Total
		Farmers	Marketers	Processors	
Zone B	Ankpa	25	5	5	35
	Dekina	25	5	5	35
	Egume	20	5	5	30
Zone C	Ejule	20	5	5	30
	Ajaka	25	5	5	35
	Idah	25	5	5	35
Total	6	140	30	30	200

Note: the number of farmers in Egume and Ejule is reduced by five farmers each, this is because we have more Cashew nut plantation Farms in Dekina and Ankpa than we have in Egume and Ejule.

The study population comprised of all the cashew farmers, Marketers and Processors registered under the Cashew Farmers Association (CFA) in Kogi State. Multistage sampling technique was used for sample size selection (Table 1). In the first stage, six (6) blocks were randomly selected from the two agro-ecological zones, which are zone B (Anyigba) and zone C (Alloma) in accordance with Kogi state Agricultural Development Project (KADP) extension structure. In the second stage, three communities consisting above 25 farmers, 5 marketers and 5 processors, were randomly selected from each of the chosen blocks. In the third stage, twenty (20) cashew farmers, five (5) cashew processors and five (5) cashew marketers were randomly selected from each cell, In total, 200 respondents were used for the study as in Table 1.

Primary data were used for this study. Data were collected using a well structured questionnaire which was administered to the respondents in the study area. Descriptive statistics (Frequencies and Percentages) were used for data analysis. Variables considered in the study included: age of respondents (in years), education level (number of years spent in school), years of farming experience, membership of co-operative society (member=1, non-member=0), extension contacts and information on value addition.

RESULTS AND DISCUSSION

Socio-economic Characteristics of the Respondents

The socio-economic characteristics examined in this study were: age, Sex, household size, educational level, experience and cooperative society.

Cashew nuts production and value addition though usually seen as a male occupation, this study found that a sizeable proportion of female are also involved across the major actors. Results presented in Table 1 indicated that most (82.1%) of the farmers, (80.0%) marketers and (56.7%) processors were involved in cashew nut value chain were males. The results also indicated that the females were more involved in processing activities. This agrees with the findings of Agbongiarhuoyi *et al.* (2015), who reported that 69% of cashew farmers are males. Results in Table 1 also showed the average age of the farming household is 50 years, 53 years for marketers and 47 years for processors. This implies that most of the respondents are in their productive ages and should be able to add value to their produce. This is consistent with the findings of Justina and Eghosa (2017) who reported that an average age of cashew farmer in Oyo state, Nigeria was 48.84 years.

The results in table 1 indicated a mean of 10 years farming experience for the farmers, 8 years for marketers and an average of 9 years for the processors. This implies that, the respondents have a considerable years of experience in cashew enterprises and it is expected to have a possible effect on cashew production and processing. Number of years spent in cashew marketing could increase marketers' skills with its multiplier effect on higher returns. This agrees with Rehman *et al* (2002) who reported that the length of time spent in business can be linked to its profitability level. The results presented in Table 1 revealed an average household size of 6 persons across the respondents. This implies that the respondents had relatively large household size and there will be no problem with labour supply because members of the household could serve as sources of labour for the production and processing cashew. Orisakwe and Agomuo (2011) inferred that large household is advantageous in farming as labour may be derived from the members.

Table 2: Socio-economic characteristics of farmers, marketers and processors in cashew nut value chain.

Entrepreneurial opportunities	Farmers		Marketers		Processors	
	Freq.	Mean	Freq.	Mean	Freq.	Mean
Sex						
Male	15(82.1)		24 (80.0)		17 (56.7)	
Female	25(17.9)		6 (20.0)		13 (43.3)	
Total	140(100)		30 (100)		30 (100)	
Age						
21-40	36(25.7)		3 (10.0)		12 (40.0)	
41-60	75(53.6)	50 Years	20 (66.7)	53 Years	11 (36.7)	47 Years
61-80	29(20.7)		7 (23.3)		7 (23.3)	
Total	140(100)		30 (100)		30 (100)	
Farming Exp.						
1-10	74(52.9)		23 (76.7)		18 (60.0)	
11-20	65(46.4)	10 Years	7 (23.3)	8 Years	11 (36.7)	9 Years
>20	1(0.7)		0 (00.0)		1 (3.3)	
Total	140 (100)		30 (100)		30 (100)	
Household size						
1-5	33 (23.6)		9 (30.0)		8 (26.7)	
6-10	78 (55.7)	6 Persons	13 (43.3)	6 Persons	17 (56.7)	6 Persons
>10	29 (20.7)		8 (26.7)		5 (16.7)	
Total	140 (100)		30 (100)		30 (100)	
Education						
No formal Educ.	67 (47.9)		12 (40.0)		12 (40.0)	
Primary Educ.	43 (30.7)		11 (36.7)		9 (30.0)	
Secondary Educ.	20 (14.3)		1 (3.3)		7 (23.3)	
Tertiary Educ.	10 (7.1)		6 (20.0)		2 (6.7)	
Total	140 (100)		30 (100)		30 (100)	
Cooperatives						
Yes	72 (51.4)		22 (73.3)		13 (43.3)	
No	68 (48.6)		8 (26.7)		17 (56.7)	
Total	140 (100)		30 (30)		30 (100)	

Source: Field Survey, 2019

Table 1 showed that a greater proportion (47.9% farmers, 40% marketers and 40% processors) had no formal education while only few of the respondents could read and write. This implies that majority of the respondents may not understand the importance of value addition to produce. According to Henri-Ukoha, *et al.* (2011) the level of education of a person does not only increase his farm productivity but also enhances his ability to understand and evaluate new production technologies. Okoye, *et al.* (2004) also noted that educated farmers are expected to be more receptive to new and improved technologies than Results in Table 1 further showed that majority (51.4%) of farmers and (73.3%) of marketers belong to cooperative society while only (43.3%) of processors belong to cooperative society. This might increase their ability to share experiences with other farmers on issues pertaining to cashew production. The possible reasons why majority joined cooperative society could be as a result of satisfying their basic need which could be achieved collectively as opined by Ekong (2010).

Actors' Channels in the Cashew Nut Value Chain

The distribution of actors according to the channels employed in production and marketing activities is presented in Table 2. Results showed that a greater percentage (42.1%) of the farmers agreed that channel two best describe their production and marketing activities. This channel indicated that farmers' source for inputs such as cashew nuts and seedlings. Once harvested, they sell to the agent/wholesalers on the farm site who have links with the processors. Also, the results in Table 2 showed that majority (66.7%) of the marketers agreed that channel 3 best described their production and marketing activities. This channel explained how produce is sourced by the marketers; either from the farmers as raw nuts or from processors as kernels and sold to consumers who may also be processors in the value chain. Table 2 also showed that majority (63.3%) of the processors agreed that channel 2 best describe their production and marketing activities. The channel implies that cashew processors source for inputs from marketers, afterwards process and sell back to the marketers either wholesalers or retailers in superstores or other sales outlets.

Table 3: Major Actors in the Cashew nut Value Chain

Channels/Actors	Farmers (%)	Marketers (%)	Processors (%)
1	17(12.1)	3(10.0)	6(20.0)
2	59(42.1)	7(23.3)	19(63.3)
3	23(16.4)	20(66.7)	5(16.7)
4	14(10.0)		
5	12(8.7)		
6	15(10.7)		
Total	140(100)	30(100)	30(100)

Source: Field Survey, 2019. Note: The various channels represent the different means through which goods or products and services flow from the producers to the consumers or to the processors and from the processors to the final consumers.

Entrepreneurial Opportunities available within the Cashew nuts Value chain

Table 3 shows the entrepreneurial opportunities available to farmers in cashew nut value chain in the study area. The result showed that only 34.3% of the respondents see input sources as entrepreneurial opportunities available to farmers in the study area while majority (65.7%) did not find input sources as entrepreneurial opportunities. The result also showed that majority (85.7%) of the respondents find production as entrepreneurial opportunities available to farmers in the study area while 14.3% did not find production as entrepreneurial opportunities. The result further showed that 15.7% of the respondents find processing as entrepreneurial opportunities available to farmers in the study area while majority 84.3% did not find processing as entrepreneurial opportunities.

Result in Table 3 also showed that majority (58.6%) of the respondents find marketing as entrepreneurial opportunities available to farmers in the study area while 41.4% did not find processing as entrepreneurial opportunities. Result in Table 3 shows the entrepreneurial opportunities available in cashew production at the marketer's level in the study area. The result shows that only 86.7% of the respondents find input sources as entrepreneurial opportunities available to marketers in the study area while only 13.3% did not find input sources as entrepreneurial opportunities.

Table 4: Entrepreneurial Opportunities within the Cashew Value Chain

Entrepreneurial opportunities	Farmers		Marketers		processors	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Input sources						
Yes	48	34.3	26	86.7	11	36.7
No	92	65.7	4	13.3	19	63.3
Total	140	100	30	100	30	100
Production						
Yes	120	85.7	00	00	12	40.0
No	20	14.3	00	00	18	60.0
Total	140	100	00	00	30	10
Processing						
Yes	22	15.7	00	00	23	76.7
No	118	84.3	00	00	7	23.3
Total	140	100	00	00	30	100
Marketing						
Yes	82	58.6	24	80.0	00	00
No	58	41.4	6	20.0	00	00
Total	140	100	30	100	00	00
End buyers						
Yes	00	00	20	66.7	13	43.3
No	00	00	10	33.3	17	56.7
Total	00	00	30	100	30	100

Source: Field Survey, 2019

CONCLUSION

The major actors in the cashew value chain were the farmers, marketers and processors. Majority of the actors were males who are in their active age and they are mostly uneducated. Channel two best described farmer's production and marketing activities, channel 3 best described marketer's activities while channel 2 best described processors activities. Sale of production and processing inputs, production and processing of cashew nuts are the entrepreneurial opportunities available to actors in the cashew value chain in the study area.

RECOMMENDATIONS

1. There is the need to have more cashew farmers, processors, marketers in the cashew value chain in the study area due to the economic importance of cashew. To achieve this, intensified efforts should be targeted at increasing the level of awareness of cashew value addition along the value chain.
2. Establishment of more local cashew unions for marketers which will ensure a strict control of the prices of processed cashew nuts. Such unions will also help to check the activities of foreign clients who must come through these unions for the purchase of cashew nuts, so as to achieve a clearer and visible cashew value chain network on the long run.

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