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ACTIVITIES OF CASSAVA VALUE CHAIN ACTORS IN TARABA STATE, NIGERIA

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ABSTRACT

This study analysed the activities of cassava value chain actors in Taraba State, Nigeria. A multi-stage sampling procedure was used to select 210 respondents for this study. Primary data were collected using structured questionnaire. Data were analysed using frequency, percentage, mean and standard deviation. The results of this study revealed that most of the respondents were engaged in cassava production (75%) and processing (61.7%) to satisfy their family needs in terms of home consumption and to generate some income. A family labour was the major source of labour for the cassava value chain stakeholders. The majority of cassava producers (54.4%), processors (48.3%) and marketers (60.0%) got their information from mass media. The result shows that cassava producers source their planting material from their own farm 55%, the cassava products produce by the cassava producers are sold at the town market 50%. The result also revealed that 68.3% of cassava processors use the cassava product from their own farms, The cassava processor processed the cassava and sold the processed cassava product to consumers 53.3%. The result shows that 50% of cassava marketers obtained the cassava product they sale from their own farms, the major buyer of cassava product from the marketers are the consumers 60%. The result show that high input cost (92.2%), inadequate extension staff visitation (88.3%) and lack of processing equipment (93.3%) are the major constraints facing cassava value chain actors. Cassava local varieties, traditional method of cultivation and processing were in use in Taraba State. Taraba State Government should increase the number and frequency of extension officer visits to cassava farmers, processors, and marketers to improve knowledge transfer, especially on modern cultivation and processing technique.

Keywords: *Cassava, Value Chain, Actors*

INTRODUCTION

Cassava is a perishable crop and has a shelf life of approximately three days in it raw form after harvest (Adeniyi, 2021). It is adaptable to tropical climate and soil, it has the ability to thrive in an area where other crops have failed like in semi-arid regions and in less fertile soils. Cassava is widely consumed in all parts of the country and has significantly contributed to solving food security problem in Nigeria.

Cassava value chain stakeholders can earn higher benefits from cassava industry if values are added to the fresh roots. Cassava needs to have a competitive and comparative advantage to be able to thrive in the global market (Wongpit *et al.,* 2024). There is high demand and high potentials that can be observed in the cassava value chain, there is the demand for cassava flour of high quality in areas like snacks, biscuits, and bread, there is high demand for starch from cassava, cassava based constituents like sugar syrup and sweeteners are in high demand, there is high demand for ethanol or bio-fuel, ethanol can be used for cooking, it can be used to power vehicles, It can be used in industries (Ayantoye, 2021).Bakery and pasta products can use cassava flour as partial replacement. Cassava can be used to feed poultry, pigs and ruminants. Non-food industries which include corrugated cardboard, furniture, paper and or plywood use dextrin as high quality adhesives. Fruit canning and jam industry can also be added to use dextrose. Most sweetening agents involve glucose and dextrose. The cyanogens which are contained in cassava are removed through processing.

Inspite the versatility of cassava to the nation; Cassava is susceptible to physiological deterioration after the roots are harvested. Roots left unprocessed for 48 hours after harvest have little market value and limits the range over which fresh roots can be marketed. Inadequately processed cassava creates a potential health

hazard (presence of cyanogenic compounds) (Moses et al., 2024). Cassava has short shelf-life; it is bulky in terms of weight and volume (Antia & Etuk, 2025). This affects the cost of transportation and storage, therefore, it has to undergo physical transformation in order to make it fit for consumption and to prolong its shelf live, marketability, and stability of the crop (building reserved stock to even market supply).

Losses due to poor handling, lack of processing and adequate storage, in the root/tuber crops were estimated to be between 20 and 40% of the harvested products annually in Nigeria (Roy et al., 2025). This magnitude of loss is not only a waste of food (Abewoy, 2021) but also waste of human effort, farm inputs, livelihoods, investment and scarce resources; giving rise to perpetual poverty, continuous inability of farmers to procure farm inputs from the proceeds of the remaining unprocessed produce, painting a picture of producing food below demand. This scenario has widen the poverty gap, especially among farmers, reduced employment along the supposed value chain and pausing security risk (Adekunle, 2023). There are indications that cassava value chain is underdeveloped in Nigeria, therefore to address these challenges and improve the standard of cassava product, a lot of problems or challenges needs to be addressed.

Value chains are chains of activities through which the product comes from the farm to the consumer, including planting, harvesting, processing, packaging, transporting, marketing and selling. Value is added to raw roots at every stage and the efficiency of this chain determines the quality, marketability and profitability of cassava products.

Nigeria's cassava value chain consists of many actors, who play their various roles. The farmers are the main actors by tilling and preparing the cassava roots. The fresh roots are processed into a range of products, including flour, starch, ethanol and sweeteners. Raw and processed cassava moves to various markets through traders, middlemen, wholesalers, and retailers. Input suppliers deliver the seeds, fertilizers, and pesticides necessary for farming, and transporters facilitate their quick arrival to markets.

Previous studies on cassava value chain have focused on profitability, socioeconomic determinants of productivity, financing, credit administration among actors and the likes. Little or no available study dwelt on the activities of cassava value chain actors. The foregoing makes it imperative to investigate the activities of cassava value chain actors in Taraba State, Nigeria with the aim to bridge the gap.

Methodology

This study was conducted in Taraba State, Nigeria. It was created on august 27th, 1991 with a land mass of 59, 400km^2 It lies between latitude 6^0 30′ and 8^0 30′ north of the equator and between longitude 9^0 00′ and 12^0 00′ east of the Greenwich meridian (ED et al., 2021), with estimated population of 2,300,736 (The National Population Commission (NPC), 2006). NPC had projected an annual growth rate of 3.5% which brought the population figure to three million, five hundred and ninety-seven thousand, ninety-four people (3,597,094) as at 2024. The State has sixteen (16) local government areas and two special development areas (SDAs) grouped into four agricultural zones by Taraba State Agricultural Development Programme (TADP) namely; Zone I, Zone II, Zone III and Zone IV (TADP, 2016). Zone I comprises Ardo-kola, Jalingo, Lau, Karim-lamido, Yorro and Zing with headquarters at Zing. Zone II has Wukari, Ibi, Gassol and part of Bali (Garba-Chede/Dakka) LGAs with headquarters at Wukari. Zone III comprises Takum, Donga, Ussa, Kurmi, part of Bali (Bali/Suntai) LGAs and Yangtu and Ngada Special Development Areas (SDAs) with headquarters at Takum. Zone IV has only Sardauna LGA because of its difficult terrain with headquarters at Gembu. Its dry season lasts for a minimum of four months (December to March) while the wet season spans early March to late November in the south. The area has mean annual rainfall of 1800mm (TRSG, 2020). The Majority of the population consists of peasant farmers cultivating food and cash crops like sorghum, yam, rice, maize, cassava, sesame etc., mostly at a small-scale level, fresh water fishing and forestry. Livestock keeping is a minor occupation of the population of the area dealing with goats, sheep, rabbit and fish farming.

The target population for this study comprises cassava producers, processors, and marketers operating in Taraba State, Nigeria

Multistage sampling procedures were used to select respondents for this study. In the first stage three (3) local government areas (LGAs) were purposively selected from the sixteen (16) local government area in Taraba State, i.e. Donga, Takum and Ussa based on the intensity of cassava production in the area. In the second stage, in each Local Government Area, two (2) villages were selected using simple random sampling. These are Tor-damisa and Ananu in Donga LGA, Jenuwa Gida and Jenuwa Nfiye , in Takum LGA as well as kpambo and kwesati in Ussa LGA. While the use of simple random sampling helps to reduce selection bias, it is important to note that differences in village size, cassava activity levels, and socio-economic factors may

have influence the representativeness of the sample populations across these villages. In the third stage, Snowball technique was used in the identification of 190 cassava producers, 124 cassava processors and 125 cassava marketers and simple random sampling technique was used in the selection of 90 producers, 60 processors and 60 marketers from the selected villages, making a total of 210 respondents for the study.
Frequency distribution, percentage, mean, and standard deviation were used to identify the stages of actors activities in cassava value chain, the sources of information used by the cassava value chain Actors, the marketing channel among the cassava value chain actors and identify constraints faced by cassava value chain actors in adding value to cassava produce.

Results and Discussion

Activities of Cassava Value Chain Actors Producers

The result in Table 1 shows that 53.3% of cassava producer got their cassava stems used for cassava production from theirs own farm**,** while 27.8% got their cassava stem from their neighbours and 18.9% got their cassava stems from the local markets. This indicates that the cassava producers are using the local method of getting cassava planting materials for their production. This scenario will impact negatively on cassava production not only in the study area but also in the country at large. This result agrees with the findings of Owoade et al. (2025) that the main cassava stem source for men and women farmers in Nigeria was their own farm and neighbors through gift or purchase. The study also agrees with the findings of Olaosebikan et al. (2023) that most cassava producers in Nigeria make used of local cassava variety for their cassava production.

The result also shows that 76.7% cassava producers' uses hand or simple implement in the cultivation of their cassava and 23.3% used tractor for the production activities. This implies that cassava producers in Taraba State are still using simple farm implement for cassava production and this will affect the production of cassava because only small areas of land can be cultivated with simple farm tools. This agree with the finding of Onasanya et al. (2021) that the majority of the cassava production in Nigeria is done by farmers who maintain small farms and carry out their operations manually with traditional farm tools, like hoes and machetes.
The result further revealed that 57.8% of cassava producer intercropped cassava with other crops, while 42.2% practiced sole cropping. The respondents intercropped cassavas with maize (46.7%) and sorghum (11.1%). Mixed cropping is the major cropping system being practices by cassava producers in Taraba State, because it acts as an insurance against total crop failure. This study is in agreement with the study of Okorie et al., (2021) that Cassava was not grown as a sole crop in Enugu State. Different crops were intercropped with cassava.
The result also shows that the 50.0% of cassava producers used agrochemicals for their weed control. This is the fastest and less stressed method of weed control used by the farmers. It may be because of agrochemicals effectiveness in rapid control of weeds and the majority 58.9% apply fertilizer during their cassava production. This may be because the farmland in the sampled area was generally under continuous cultivation with few cases of short fallow years hence the fertility status is expected to be poor.
From the finding on Table 1, 85.6% of cassava producers harvested their cassava manually. This is an indication that farmers in the study area are still practice local way of cassava harvesting. After the harvest of cassava tubers only 42.2% processed the tubers before sale. 98.9% of the cassava products are stored in bags. This is similar to the findings of Igwe et al. (2024) that farmers in Nigeria are using crude method of storing cassava products.

Table 1: Stages of activities of cassava producer

Variable	Frequency	Percentage
Sources of cassava seed/stem		
Own seed	50	55.6
Neighbours farms	17	18.8
Local market	23	25.6
Type of cassava variety use Improved seed/stem	30	33.3
Local seed/stem	60	66.7
Mode of cultivation		
Hand implement	69	76.7
Tractor	21	23.3
System of cassava cultivation		
Mixed cropping	52	57.8
Sole cropping	38	42.2
Crop intercrop with cassava		
Maize	42	46.7
Sorghum	10	11.1
Type of weed control Agrochemical	45	50.0
Manual	45	50.0
Fertilizer Application Yes	53	58.9
Method of cassava Harvesting		
Mechanical	13	14.4
Manual	77	85.6
Process cassava before sale Yes	38	42.2
Method of cassava storages Bags	89	98.9

Source: field survey, 2021

Processors

The result in table 2 shows that the majority of the cassava processor (68.3%) source their cassava used for their processing from their own farm, 31.7% of cassava processor buy their cassava root used for their processing directly from farmers. The respondents stated that they could not store their cassava for a long time due to high rate of perishability and poor storage facility. This also shows that the majority of the cassava producers are also in to cassava processing. The result also revealed that the majority of cassava processors (78.3%) processed their cassava locally and uses local variety of cassava (66.7%) for the processing. This implies that local method of processing is predominant in the study area and this may affect cassava processing. This supports the findings of Uwandu and Amadi (2023) that traditional technologies mostly were employed by the cassava processors in Nigeria. The result further shows that the majority of cassava processor (58.3%) processed cassava into cassava flour, 25.0% processed cassava into garri and 11.7% processed cassava into fufu. Cassava flour is the predominant cassava processed product in the area. This may be because the process of processing cassava flour in the area is easier. The result also shows that the majority of the cassava processors (86.7%) are processing in small scale. The majority of the respondents still depend largely on traditional method for processing cassava. Only few respondents use mechanized method of processing. This may be due to the high cost of mechanized processing machine. This finding is similar to the findings of Sanni et al. (2024) that the majority of the cassava processors in South-west Nigeria still depend largely on traditional method for processing cassava.

Table 2: Activities of cassava processors

Variable	Frequency	Percentage
Sources of cassava product		
Own Farm	41	68.3
Farmers	19	31.7
Method of cassava processing		
Improved Method	13	21.7
Traditional	47	78.3
Cassava variety processed		
Improved variety	20	33.3
Local Variety	40	66.7
Processed cassava product produce Garri	15	25.0
Cassava flour	35	58.3
Fufu	7	11.7
Cassava chips	3	5.0
Processing scale		
Large scale	8	13.3

Source: Field survey, 2021

Cassava marketers

The results in Table 3 show that 71.7% of cassava marketers are retailers, buying and selling in small quantities, primarily using their own funds (53.3%). Most markets are village-based (60%) and about 4.3 km from farms. Cassava products sold include cassava flour (43.3%), fufu (30.0%), and garri (21.7%), with cassava flour being the most common. Marketers mostly source cassava from their own farms (60%) or individual processors (40%). About 80% add value to the products before sale. The majority (60%) sell directly to final consumers, while 20% sell to retailers or food sellers. Transport is mainly via pick-up vans (70%) and motorcycles (30%). These findings align with studies by Akubor et al. (2024) on cassava trade in local markets but differ from Ndjouenkeu et al. (2021), where gari ranked first in importance in Southeast Nigeria

Table 3: Stages of activities of cassava marketers

Variable	Frequency	Percentage	Mean
Type of business performed			
Wholesale	5	8.3	
Retail	43	71.7	
Retail and wholesale	12	20.0	
Sources of capital for cassava marketing Personal saving	32	53.3	
Cooperative	8	13.3	
Friends	16	26.7	
Bank	4	6.7	
Form of Cassava Sold			
Garri	13	21.7	
Cassva flour	26	43.3	
Fu-fu	18	30.0	
Cassava chip	3	5.0	
Location of Market			
Village Market	36	60.0	
Town Market	24	40.0	
Distance to market			4.3000
Sources of cassava products			
Individual processor	24	40.0	
Own production	36	60.0	
Do you add value to cassava before sale Yes	48	80.0	
Cassava buyer			
Final consumers	36	60.0	
Retailer or Food seller	12	20.0	
Traders who sells in other market	12	20.0	
Mode of Transportation			
Pick-up	42	70.0	
Motorbike	18	30.0	

Source: field survey, 2021

Sources of Information of the Cassava Value Chain Stakeholders

Table 4 shows that cassava producer (54.4%), processor (48.3%) and marketers (60.0%) got their information from mass media. This implies that mass media is the most important source of information in the study area. In Nigeria, the use of mass media especially radio is one of the fastest methods of disseminating information to farmers and encourages adoption of improved agricultural practices (Atser et al., 2023). This finding is similar to the finding of Nwaobiala (2018) that the majority of farmers in Abia State (90%) and Imo state (91%) sourced information on cassava production technologies from radio

programmes. About 32.2% cassava producers, 30.0% cassava processors and 20.0% cassava marketers access information on cassava production, processing and marketing from families and friends. This is an evident that quit a number of farmers are not using much of scientific information in their farming practice, this may be as a result of reliance on traditional farming methods. Also 6.7% producers, 10.0% processors and 11.7% received information on cassava production, processing and marketing from extension agents. This may be that only few farmers have contact with the extension agent in the last farming season. This may also be as a result of low extension agent farmer's ratio. This finding is consisted with that of Suleiman et al. (2021) and Idris-Adeniyi et al. (2024) that radio, fellow farmers, agricultural extension agents, ranked major sources of agricultural information to the farmers surveyed in Imo and Oyo State.

Table 4: Sources of Information of the Cassava Value Chain Stakeholders

Variable	Producers		Processors		Marketers	
	Frequency	Percentages	Frequency	Percentage	Frequency	Percentage
Family and Friend	29	32.2	18	30.0	12	20.0
Extension agent	6	6.7	6	10.0	7	11.7
Mass media	49	54.4	29	48.3	36	60.0
Cooperative	5	5.6	4	6.7	5	8.3
Religious and traditional leaders	1	1.1	3	5.0		

Source: Field survey, 2021

The Marketing Channel among Cassava Value Chain Stakeholders

Figure 1 shows the relationship between the major cassava value chain actors in Taraba State and the dependences that existed among the actors and how cassava products flow from the input state to the final consumers.

The result shows that cassava producer source their planting material from their own farm 55%, local market 25.6% and neighbour farm18.9% and other farm input (tools and chemical) from Wholesaler 38.9%, retailer 33.3% and NGO 20%. The cassava products produce by the cassava producers are sold at the town market 50%, village market 36.7%, and farm gate 13.3% and to marketers 51.1%, processors 28.9% and consumers 20%.

The result also revealed that 68.3% of cassava processors use the cassava product from their own farm, 31.7% uses cassava product from cassava producer. The cassava processor processed the cassava and sold the processed cassava product to consumers 53.3%, marketers 33.3% and producers 13.3%.

The result shows that 50% of cassava marketers obtained the cassava product they sale from their own farms, 40% from the farm gate and 10% from the retailer. The major buyer of cassava product from the marketers are the consumers 60%, other retailers or food seller 20% and trader who sale in other market 20%. This implies that the majority of the respondents are in to production, processing and marketing. The linkages among the actors are weak. This finding is similar to the findings of Ibrahim, (2022) that four main channels existed in the cassava value chain in Ekiti State. His discovery also showed that the shortest and efficient channel was that between the farmer and the consumer at the farm gate.

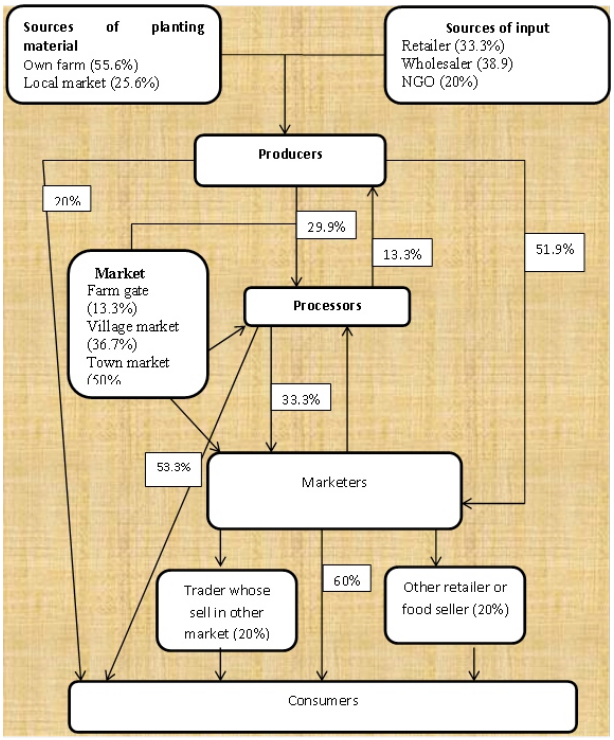

Figure: 1. Marketing channels for cassava product in Taraba State
Source: Field Survey, 2021

Constraints Faced by Cassava Value Chain Actors Table 5 shows that the constraints facing cassava producers include high cost of input (92.2%), poor extension services (91.1%), and limited access to improve seed (80.0%). Other constraints affecting cassava producer are pest and diseases (78.9%), poor marketing facility (77.8%) and poor access to credit (72.2%).These constraints reported by the respondents are critical, and is one of the reason that the majority cassava producer are producing cassava in a small-scale. Therefore, to be able to improve the production of cassava, proper measure must be considered. This finding corroborates the outcome of similar research carried out by Adeoye *et al.,* (2020) in Ibarapa Central Local Government of Oyo State where virtually all of the above identified constraints were revealed in varying degrees.Results in Table 5 show that lack of processing equipment ranked first as identified

by 93.3% of the cassava processors, followed by inadequate extension staff visitation (88.3%), inadequate capital ranked (86.7%,) lack of storage facilities (83.3%), inadequate market outlet (75%), high tax (66.7%), inadequate power supply (65.0%). This result shows that lack of processing equipment, inadequate extension staff visitation, inadequate capital and lack of storage facilities are the major constraints confronting cassava processor in the study area. This result revealed that the majority of the respondent uses tradition method of processing due to high cost of processing equipment which has direct effect on cassava processing in the area. This study is similar to the finding of a study by Adeoye *et al.,* (2020) that inadequate capital and lack of processing equipment is a major constraint to cassava processing. Also other researchers have mentioned lack of finance, lack of processing facilities, lack of storage facilities and inadequate market outlet as problems facing processors (ED et al, 2021).There are numerous problems facing cassava marketers, these are summarized in table 5. Inadequate capital had the highest value of 88.3%, follow by less or no market information and Price instability and inadequate extension staff visitation with 80% and 66.7% respectively. The cassava marketers also indicated that Low Price of cassava product with 63.3% also affect their marketing activities. This study is similar to the study of Jabil *et al.,* (2022) who reported that inadequate capital, market information; Price instability and inadequate extension contact are the major constraint in marketing of cassava product in Nasarawa State, Nigeria.

Table 5: Constraints Faced by Cassava Value Chain Stakeholders

Constraints	Frequency	Percentages	Mean	Std. Dev.
Cassava producers High input cost	83	92.2	4.20	0,995
Poor extension services	82	91.1	4.17	1.087
Limited access to improve seed	72	80.0	3.79	1.247
Pest and Diseases	71	78.9	3.66	1.307
Poor marketing facility	70	77.8	3.40	1.202
Poor access to credit Labour	65	72.2	3.17	1.374
Shortage Transportation problem	56	62.2	2.79	1.456
Inadequate Storage facility	54	60.0	2.61	1.505
Insecurity	53	58.9	2.40	1.383
Cassava processors	37	41.1	2.07	1.379
Lack of processing Equipment	56	93.3	4.67	0.656
Inadequate extension staff visitation	53	88.3	3.80	1.260
Inadequate capital	52	86.7	3.68	1.663
Lack of Storage Facilities	50	83.3	3.25	1.87
Inadequate market outlet	45	75.0	3.06	1.494
High Tax	40	66.7	2.98	1.882
Inadequate power supply	39	65.0	2.62	1.860

Source: Field survey, 2021 [xx]

multiple responses

Conclusion

Based on the findings of this study, a conclusion can be drawn that only local varieties of cassava are still being cultivated in Taraba State using local methods of cassava production. Cassavas tubers are processed on small scale using traditional method of cassava processing by cassava processors and the major cassava processed products were cassava flour, garri and fufu. The majority of cassavas marketers were retailer who were using personal saving for cassava marketing, there as value are addition to the cassava produces before they were sold to the consumers.

The majority of cassava value chain actors used mass media as their sources of information. Constraints such as high input costs, poor extension services, inadequate access to quality seed, processing equipment, storage facilities, and market outlets significantly hinder productivity and efficiency among all actors.

Recommendations

Based on the findings from this research work, it is recommended that:

i. Extension workers should intensify efforts to educate the farmers on improved cassava value chain activities.
ii. Government and development agencies should facilitate the distribution of improved cassava stems and seeds to farmers, possibly through subsidy programs or input supply schemes, to boost yield and crop resilience
iii. Taraba State government should facilitate affordable access to processing equipment and machines through credit schemes, leasing options, or subsidy programs. This will improve processing efficiency, product quality, and scale of operations.
iv. Non-governmental organization operating in the area should provide improved varieties of cassava to farmers if not free, should be at the lowest possible cost. This can lure more farmers into cassava farming and more value will be derived out of production level.

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