

Original Research Paper

Constraints to Rural Women Involvement in Cassava Value Chain in Nigeria

¹Akaninyene Patrick Obot, ¹Obiekwe Ngozi, ¹Anunobi Chizoba, ²Obot Elizabeth and ³Udoh Mfon

¹Department of Agricultural Economics and Extension, Nnamdi Azikiwe University, Awka, P.M. B 5025, Anambra State, Nigeria

²Department of Engineering, TopFaith University, Mkpatak, Akwa Ibom State, Nigeria

³Department of General Studies, TopFaith University, Mkpatak, Akwa Ibom State, Nigeria

Article history

Received: 18-01-2023

Revised: 16-03-2023

Accepted: 25-03-2023

Corresponding Author:

Akaninyene Patrick Obot
Department of Agricultural
Economics and Extension,
Nnamdi Azikiwe University,
Awka, P.M. B 5025, Anambra
State, Nigeria
Email: ap.obot@unizik.edu.ng

Abstract: Cassava is one of the fastest expanding staple food crops in cassava-consuming countries and has continued to gain prominence among farmers while the industrial demand is also rising consistently. The study was carried out with the intention of examining rural women's involvement in various cassava value chain activities and identifying the factors that hinder their active involvement in cassava value addition. The study employed descriptive statistics (frequency, percentage counts, mean, and likert scale) in the analysis. From the results obtained, more rural women were involved in the processing of cassava and marketing of the products while they really engaged families or hired labor in the planting and harvesting. The identified constraints facing the respondents were low returns (profit), lack of access to institutional credit, lack of farmland, theft, lack of storage facilities, and distance to market. The study recommended that government and the cassava industry stakeholders should support the rural women involved in the cassava value chain adequately as it would not only generate more profit for the women but also create more jobs for the youths and bring foreign exchange to the government.

Keywords: Cassava, Value Chain, Rural Women, Agriculture, Constraints

Introduction

Globally, cassava has experienced consistent growth of above 3% annually and it is the fastest growing prominent stable food crop in cassava consuming countries while also rising consistently in industrial demand. Cassava is used for the making of fufu, gari, flour, tapioca, animal feed, ethanol, starch, gum, and glucose while the leaves are sources of vitamins, minerals, and proteins. The root of cassava can be eaten as food, fed to stock, or used in the manufacture of starch (Eguono, 2015). Cassava is cultivated all through the year, which makes it more desirable compared to periodic crops like yam, beans, or peas and it possesses the ability to adapt to climate change, with a tolerance to low soil fertility, resistance to drought conditions, pests' diseases and suitability to store its roots for long periods underground even they mature.

African countries account for 64% of the global production of cassava and Nigeria is the largest producer of cassava in the world, representing 19.4% of the global production in Fig. 1.

One-third of the total national output of cassava comes from the Niger delta region of Nigeria as many of the rural farmers depend on cassava as a main source of food and income. According to Daniels *et al.* (2011), the major

cassava producing states in Nigeria are Benue, Kogi, cross river, Ondo, Imo, Akwa Ibom, and rivers states. In the region, the cassava industry is occupied by about 70% of women farmers who are entirely responsible for the processing and marketing of cassava and its by-products. Cassava plant prefers an annual rainfall of 1000 mm or more which implies that an average of 50 mm rainfall per month spreading over a period of 6 months is enough for a cassava plant to grow well (Hauser *et al.*, 2014).

The Cassava value chain describes the range of activities and set of actors that brings the product from production in the field to the final consumer's table, wherein at each stage value is added to the product. It entails a whole lot of activities from production, processing, distribution, and marketing of specific traded commodities (Fatunbi *et al.*, 2015; Apata and Babalola, 2013). The actors in the value chain can be categorized into the producers (land clearing, tilling of land, mound making/ridges, stem cutting, planting, weeding/replanting), harvesters (harvesting and bagging of raw cassava), processors (peeling, washing, grinding and frying for garri, grinding and soaking for pap, soaking for fermentation for fufu, boiling for tapioca, cutting the peeled ones and sun drying for animal feed or cassava flour, bagging) and marketers (selling).

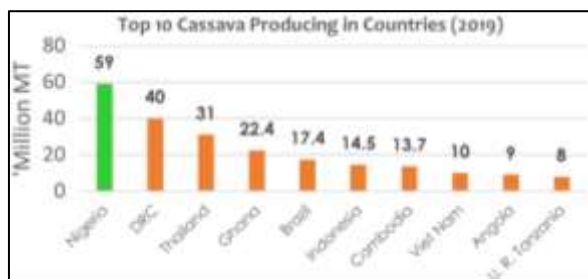


Fig. 1: Top 10 cassava producing countries in 2019; source: FAOUN (2019)

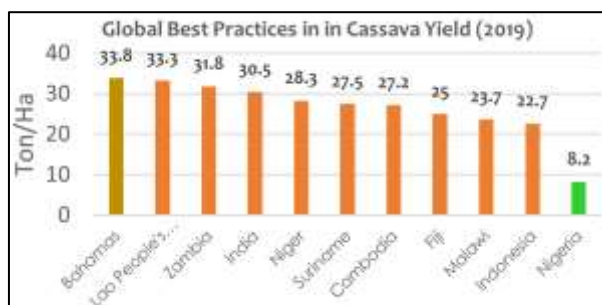


Fig. 2: Global best practices in cassava yield in 2019; source: FAOUN (2019)

The production of cassava and its products is characterized by small-scale producers who plant low yielding inputs and uses traditional production technologies which largely accounts for low output. The Nigerian government 2002 initiated a program in order to increase cassava production to meet both local and export markets (Omotayo and Oladejo, 2016). Despite this initiative, the demand for cassava roots and products is high and fast rising and the current supply cannot meet the need of the ever-increasing population (OPHI, 2017; FAOUN, 2019) in Fig. 2.

This study, therefore, sought to examine where there is a gap for government/stakeholders to intervene in order to increase production that meets both the local and industrial demand.

Therefore, the objectives of the study were; to examine the socio-economic characteristics of the respondents; examine the cassava value chain activities the respondents are involved in, and; determine the constraints faced by rural women involved in the cassava value chain.

Materials

Primary data was used for the analysis with the aid of a questionnaire where the respondents were interviewed.

Methods

Study Area

Although cassava is grown in all agroecological zones of Nigeria, it thrives better in the rainforest and

derived savannah areas. The highest cassava production is recorded in the North-central and South-South regions of Nigeria. Akwa Ibom state has located in South-South Nigeria the state lies between latitude 4°31 and 5°31 North and longitude 7°35 and 8°35 East; occupies a total land area of 7, 254, 935 km². Akwa Ibom state occupies a total land area of 7, 254, 935 km² with a Tropical monsoon climate with an annual temperature of 28.47°C (83.25°F) and which is 0.99% lower than Nigeria's averages. Cassava grows best on light sandy loams or on loamy sands which are moist, fertile, and deep, but it also does well on soils ranging in texture from the sands to the clays and on soils of relatively low fertility.

Sampling Procedures

A multi-stage sampling technique was used. In stage one, two Local Government Areas (LGAs) in the State were purposively selected based on the high level of cassava production. In the second stage, five communities were selected from the LGAs. In the third stage, 25 female cassava farmers (producers, harvesters, processors, and marketers) were selected from each of the communities which made up 125 respondents.

Data Collection and Analysis

Data collection was done with the aid of administered questionnaires. Descriptive statistics involving the use of frequency counts and percentages were used to describe the socio-economic characteristics of the respondents and the type of cassava value chain involved.

In objective 3, the likert scale was used to measure and present the results of the respondents' responses on the constraints to rural women's participation in the cassava value chain. The scale was graduated as follows; 1 = Strongly Disagree, 2 = Disagree, 3 Neutral, 4 = Agree, 5 = Strongly Agree. The mean constraints fall between 1.0-1.8 (Strongly Disagree), 1.81-2.60 (Disagree), 2.61-3.40 (Neutral), 3.41-4.20 (Agree), and 4.21-5.0 (Strongly Agree).

Results and Discussion

Distribution of the Respondent's Socio-Economic Characteristics

Age

The result in (Table 2) shows that 57.6% of the respondents were between the age of 41-50 years which indicated that most of the respondents were still young and active age. 28.0 and 14.4% of the respondents were between the age of 31-40 years and 20-30 years. The result corresponded with Akaninyene *et al.* (2022) that most rural farmers were made up of young people because of the vigor involved in agricultural activities. Besides this, young people get involved in agricultural activities as a means of livelihood.

Marital Status

The result in Table 2 shows that 66.4% of the respondents were married. 24.0 and 9.6% of the respondents were widowed and single. The married farming household is benefitted from family labor as the cost of labor is used for other things. The result corresponded with Akaninyene *et al.* (2022) that most rural farmers are married.

Household Size

The result in Table 2 shows that the majority (58.4%) of the respondents had a household size of 5-10 persons. About 41.6% of the respondents had a household size of 1-4

persons. The large family size was an advantage to the rural farmers who employed household labor in the cassava value chain activities. The result also concurred with Akaninyene *et al.* (2022) that most of the rural farmers had a large family size.

Table 1 describes the different stages of cassava value chain in the study area showing from the input/production where the raw materials are planted as the first stage. The second stage involved the harvest of the produce, the third stage involved the processing and the packaging stage while the last stage is the sales/distribution of the produce till it gets to the final consumer.

Table 1: Cassava value chain

S/N	Stages	Activities
1	Inputs/production: This stage is concerned with the sourcing of raw materials required for cassava production	Seedling supply, land clearing/tilling of land, mound making/ridges, stem cutting/planting, fertilizer, herbicides/pesticides, crop protection/weeding
2	Harvest and logistics: This covers primary production of raw commodities, storage, and sale	Cultivation, collection, and aggregation, bagging, storage
3	Processing and packaging: This stage involves the transformation of cassava raw materials into one or more finished internationally traded goods	Peeling, washing, grinding, and frying for garri, grinding and soaking for pap, soaking for fermentation for fufu, boiling for tapioca, cutting the peeled and sun drying for animal feed or cassava flour, bagging
4	Sales and distribution: This stage is concerned with the delivery of traded commodities to their final destination	Freight, logistics, and marketing

Akaninyene *et al.* (2022)

Table 2: Distribution of the respondent's socioeconomic characteristics

S/N	Variable	Frequency (n = 125)	Percentage (100%)
1	Age (year)		
	20-30	18	14.4
	31-40	35	28.0
2	41-50	72	57.6
	Marital status		
	single	12	9.6
3	Married	83	66.4
	Widowed	30	24.0
	Household size		
4	<5 persons	52	41.6
	5-10 persons	73	58.4
	Years of farming experience		
5	1-10 years	18	14.4
	11-20 years	34	27.2
	21-30 years	73	58.4
6	Primary occupation		
	Farming only	112	89.6
	Farming with others	13	10.4
7	Educational qualification		
	No formal education	36	28.8
	Primary	50	40.0
	Secondary	21	16.8
8	Tertiary	18	14.4
	Farmland size (ha)		
	<1	82	65.6
	1-2	32	25.6
9	3-4	11	8.8

Field study 2022

Table 3: Distribution according to cassava value chain activities

S/N	Variable	Frequency (n = 125)	Percentage (100%)
1	Producers (cutting of stem, planting, weeding)	17	13.6.8
2	Harvesters (harvesting, gathering of cassava)	26	20.80
3	Processors (peeling, washing, grinding, frying, fermenting, bagging)	43	34.40
4	Marketers (selling)	39	31.20

Field study 2022

Table 4: Constraints faced by rural women involved in the cassava value chain

S/n	Frequency	Item	Mean	Standard deviation
1	125	Low returns (profit)	3.8720	0.95120
2	125	Lack of access to institutional credit	3.8336	0.88854
3	125	Lack of farmland	3.7232	0.71922
4	125	Theft	3.6848	0.88218
5	125	Lack of facilities	3.6816	0.92635
6	125	Distance to market	3.6448	0.77371

Field study 2022

Farming Experience

Table 2 result shows that 58.4% had 21-30 years of experience which can be of help to the respondents to avert the risk involved in cassava enterprise. 27.2% Had 11-20 years of experience and 14.4% had 1-10 years of experience. The years of farming experience helped the farmers to employ a mechanism that averted high losses as a result of poor markets or the unavailability of storage facilities. The years of experience also helped the farmers to try out various technologies in order to maximize profit. The result corresponded with Akaninyene *et al.* (2022).

Primary Occupation

The result in Table 2 shows that the majority of the farmers (89.6%) were primarily in the cassava value chain business while 10.4% were combining other businesses/jobs with the cassava value chain business. The rural women involved in the cassava value chain as their primary occupation aided in the availability of the product on and off-season.

Level of Education

The result in Table 2 shows that most of the respondents (40.0%) had primary education, 28.8% had no formal education, 16.8% had secondary education and 14.4% had tertiary education. This was an advantage to the cassava value chain as most of the respondents were educated and as such could read and understand the use of new technologies for improved production. This also agreed with Akaninyene *et al.* (2022) that most of the rural farmers had formal education.

Farmland Size

The majority (65.6) of the respondent had <1 ha of farmland while 25.6 and 8.8% had 1-2 and 3-4 ha in Table 2. The result shows that the respondents were still farming on fragmented/rented farmland in order to increase their

cassava production. The result confirmed by Akaninyene *et al.* (2022) that most of the rural farmers cultivated farmland that is less than 1ha.

Distribution of Women According to Cassava Value Addition Activities

The result in Table 3 shows that rural women were more active in the processing of cassava (34.4%) followed by marketing (31.2%), harvesting (20.8%), and planting (13.6). This was attributed to the fact that during the planting season, rural farmers who are married do the planting, harvesting, and marketing with their families while the men see the processing (peeling, washing) as solely the work of the women. Besides, after planting and harvesting the cassava, the men went to other farming work or business to support the family leaving the peeling and processing to the women who take pleasure in doing it since it's their primary occupation.

Constraints Faced by Rural Women Involved in Cassava Value Chain

From Table 4 the mean scores were within the 3.41-4.20 threshold, therefore the farmers agreed that low returns (profit), lack of access to credit, lack of farmland, theft, lack of facilities, and distance to the market were the major constraints they faced. The result corresponded with Akaninyene and Maurice (2022) that rural farmers faced many constraints in their farming activities some of which were poor returns, lack of farmland, and lack of access to institutional credit.

Conclusion and Recommendation

The value chain participation showed that rural women are mostly occupied in the processing and marketing of cassava as food and also a source of income. The findings from the study also showed that cassava as a staple food that most women in rural areas venture into is capable of creating more jobs for Nigeria's teeming

population once the factors identified by the participants are made available and accessible to the farmers. Therefore, government and the key stakeholders in the cassava industry should pay attention to the identified constraints and put in efforts in ensuring that the rural women in the cassava value chain industry are supported adequately.

Acknowledgment

I acknowledge the cassava value chain actors who acted as the respondents to this research. We also acknowledge the American Journal of Economics and Business Administration (AJEBA) for their efforts towards ensuring this research is of standard quality and published.

Funding Information

The authors have not received any financial support or funding to report.

Author's Contributions

Akaninyene Patrick Obot: Considerable contribution to conception and design and/or acquisition of data and/or analysis and interpretation of data; drafted the article of reviewed it critically for significant intellectual content; and author give final approval of the version to be submitted and any revised version.

Obiekwe Ngozi and Anunobi Chizoba: Make considerable contributions to conception and design and/or acquisition of data.

Obot Elizabeth and Udoh Mfon: Contribute in drafted the article or reviewed it critically for significant intellectual content.

Ethics

All the authors were cited and well acknowledge in the reference section.

References

Akaninyene, O., Rachael, O., & Ngozi, O. (2022). Determinants of Rural Women Involvement in Farming Activities in Akwa Ibom State, Nigeria. *Canadian Journal of Agriculture and Crops*, 7(2), 98-104.
<https://ideas.repec.org/a/onl/cjoaac/v7y2022i2p98-104id696.html>

Akaninyene, O., & Maurice, O. (2022). Rural Women Involvement in Oil Palm Value Chain in Akwa Ibom State, Nigeria. *Canadian Journal of Agriculture and Crops*, 7(2), 105-111.

<https://ideas.repec.org/a/onl/cjoaac/v7y2022i2p105-111id697.html>

Apata, T. G., & Babalola, J. A. (2013, September). Analysis of cassava value chain in Nigeria, from a pro-poor and gender perspective of farming households in Southwest Nigeria. In *Contributed Paper to the 138th EAAE Seminar on Pro-Poor Innovations in Food Supply Chains* (pp. 9-11).

https://www.agrodep.org/sites/default/files/annualmeeting/RV_Apata_T_0.pdf

Daniels, A., Udah, A., Elechi, N., Oriuwa, C., Tijani, G., & Sanni, A. (2011). Report on cassava value chain analysis in the Niger Delta. *Foundation for Partnership Initiatives in the Niger Delta (PIND), 1st Floor St. James Building, 167.*

Eguono, I. (2015). A look at Cassava production in Nigeria. *International Journal of Agricultural Sciences*, 5(5), 818-819.

<https://www.internationalscholarsjournals.com/articles/a-look-at-cassava-production-in-nigeria.pdf>

FAO. (2014). The state of food and agriculture. Innovation in family farming. Rome.
<https://www.fao.org/3/i4040e/i4040e.pdf>

Fatunbi, O., Adekunle, A. A., Youdeowai, A., Odularu, G. O., Adisa, S. A., Ohiomoba, I., & Akinbamijo, A. A. (2015). A Resource Manual for Training in Integrated Agricultural Research for Development (IAR4D) in Innovation Platforms. *Forum for Agricultural Research in Africa (FARA).*

Hauser, S., Wairegi, L. W. I., Asadu, C. L., Asawalam, D. O., Jokthan, G., & Ugbe, U. (2014). Cassava system cropping guide.

<https://core.ac.uk/download/pdf/132689633.pdf>

Omotayo, A. O., & Oladejo, A. J. (2016). Profitability of cassava-based production systems. *Journal of Human Ecology*, 56(1-2), 196-203.

<https://doi.org/10.1080/09709274.2016.11907056>

OPHI. (2017). "Nigeria Country Briefing", Multidimensional Poverty Index Data Bank. OPHI, University of Oxford.

www.ophi.org.uk/multidimensional-poverty-index/mpi-country-briefings/