FUDMA Journal of Sciences (FJS)
ISSN online: 2616-1370
ISSN print: 2645 - 2944
Vol. 9 No. 12, December, 2025, pp 138 – 143
DOI: https://doi.org/10.33003/fjs-2025-0912-4246

COST AND RETURNS STRUCTURE OF GARRI PROCESSING AMONG COOPERATIVE WOMEN IN IJEBU-DIVISION OF OGUN-STATE, NIGERIA

***[1]Shittu Kazeem Adesina, [2]Adebayo Omowunmi Mercy and [3]Jimoh Bashiru Oladayo**

[1]Department of Cooperative Economics and Management, Nnamdi Azikiwe University, Awka, Anambra State, Nigeria.
[2]Department of Cooperative and Rural Development, Osun State University, Okuku, Osun State, Nigeria.
[3] Department of Cooperative Economics and Management, Federal Polytechnic Ekowe, Bayelsa State, Nigeria.

*Corresponding authors' email: shittuadesina81@gmail.com
Orcid iD: https://orchid.org/0009-0003-6381-8926

ABSTRACT

The study examined cost and returns structure of Garri processing among cooperative women Ijebu-Division of Ogun State, Nigeria. A two-stage sampling technique was used to select sample size of 120 respondents using structured questionnaire to generate required information from respondents. Data analysis was carried out using descriptive and inferential statistics. The result revealed that majority (98.3%) of the respondents had formal education. Garri processors had much years' experience in their business with a mean of households' size of 5 persons. Majority (82.5%) of Garri processors were married with an average age of 38 years old. The budgetary analysis result revealed that garri processing was found to be highly profitable at net income of N14, 167.74 and gross margin N27, 298.35 per annum. Likewise, benefit-cost B/C of 1.46 also revealed that for every one naira spent on Garri processing there was a return of N0:46k, this showed that Garri processing is a highly viable and profitable business. Bad road, lack of capital, poor and instable price of garri, high cost of transportation were major constraints militating against garri processing. Therefore, the study recommended that, problems confronting Garri processors should be addressed properly. Government should help garri processors by providing agricultural loans with no or low interest rates with comfortable loan repayment period. People who are jobless can also engage themselves in Garri processing to create job for themselves. Garri producers should form themselves into cooperative groups and pool their resources together for easy access of Garri processing inputs.

Keywords: Garri processors, Cost and Returns, Garri processing, Cooperatives, Incomes

INTRODUCTION

As a versatile cassava product, Garri can utilized in a variety of ways, it can be soaked in cold water and consumed directly with some light accompaniment such as sweetness, fish and groundnut. Garri can be eaten dry or soaked in water as Eba and consumed with soups and stews. The approximate and physical properties of Garri is a function of the cassava variety, age of cassava, time of harvesting, processing method, packaging method, storage conditional and duration of storage (Oduro *et, al*, 2020). Garri is a convenient food with short preparation time especially for commercial demand, its cheapness, ease of storage and preparation for consumption. These characteristics combine to make it a purchasable preference and a consumable food product among rural and urban dwellers in Nigeria, as well as Africa as a whole. Garri is a major staple food in Nigeria. Food is the basis necessity for life and all people need it for survival. Garri will contribute to the food security status of its producing and consuming households". Private and public investments are required to reach this vision (Plucknett *et, al.,* 2020). IITA, (2017) defined a staple food defined is one that is eaten regularly and which provide a large proportion of the population's energy and/or nutrients. Garri which is a by-product of Cassava reach in carbohydrate, mainly starch and is a major source of energy.

With the exception of sugar cane, Garri is the highest source of carbohydrate. It is consumed by several millions of people in the African continent, especially in the West Africa sub region (Ogiehor, 2022). As cash crops, cassava generates cash income for the largest number of households in comparison with other staples (Nweke, 2024). As a food crop, cassava has some inherent characteristics which make it attractive, especially to the small holders farmers in Nigeria. Garri is an essential part of the diet of 500 million people and provides a livelihood for millions of farmers, processors and traders (IITA, 2018). Garri is a granular food product produced by grating cassava roots into a mash, fermenting and dewatering the mash into a wet cake, and roasting the wet material into gelatinized particles. Garri is the most popular form in which cassava (*Manihot esculenta*) is consumed by several millions of people in the African continent, especially in the West Africa sub region (Ogiehor, 2022; Ogiehor & Ikenebomen, 2021).

Despite Nigeria's position as the major producer of garri in the world, the level of income that accrues to garri producers and processors after huge investments of capital and labour. The method of processing is traditional by using small and inefficient equipment and manual labor.

This makes the processing labor-intensive and labour productivity is low (Nestle & Fresco, 2023). The field labour requirement contrasts with the high demand of labour for garri processing. Thus, any cost-saving or yield-increasing technology may not fully translate into expanded production if there is no matching cost-saving technology for garri processing, hence, the packing is very important to earn substantive income. Sorting and packaging activities are not carried out further reducing the ability of using a sound marketing system to boost farmers' income and ensure adequate protection of consumers. Among other constraints, the poor condition of the Nigerian rural roads contributes to high deterioration of fresh cassava and makes transportation of processed products to market very difficult. More so, some products are contaminated with undesirable organisms due to the drudgery associated with the traditional processing and therefore reduce the market quality (Nweke, 2024). Improved cassava processing and utilization techniques would greatly

increase labour efficiency, productivity, income, raise marketing opportunities and upgrade the nutrition and living standard of the cassava farmers and processors. Inefficient and inadequate storage system is another constraints associated with the poor marketing for agricultural produce in Nigeria. As a consequence there is a substantial waste at the farm level and the poor storage system also harvest times adversely affecting farmers' incomes. Standardized system of grading and measurement, which enhances marketing efficiency, is not a feature of agricultural market in
Nigeria. Garri production is laborious and cumbersome. This is why it vary within markets, across markets and from time in the market place. Since production is not complete until the product get to the hands of the final consumers and Garri market has been very unstable with its prices experiencing volatile swings in both price and availability. Garri is made by peeling fresh cassava roots, then washing and grating, fermenting, dewatering or pressing, breaking of the cake, sifting, roasting, sieving or grading, and packaging. Nigeria is the world's largest producer of cassava with an estimated production put at about 57.1 million metric tons in 2016 (Umeh *et, al.,* 2019). Cassava is an important food and cash crop for many rural households in Imo State. As a cash crop, cassava generates cash income for the largest number of households in comparison with other staples (Akerele *et, al.,* 2021). Freshly harvested cassava roots have varying amounts of potentially toxic cyanogens (Osuji *et, al.* 2018). They also have a short shelf-life usually not more than 72hrs due to post-harvest physiological deterioration (Zaman *et, al.,* 2019). Consequently freshly harvested cassava roots must be processed into non-toxic and more stable forms within a short time to avoid loss, thus making processing a critical component of the cassava value chain. Both men and women participate in cassava processing operations (Amadi, 2020). However, their levels or intensity of participation vary with specific operations. Women dominate in most processing operations (peeling, sieving, toasting, fermenting, cooking, pounding and wrapping of pounded cassava), while men dominate in grating and dewatering because they operated the machines used for these operations (Amadi and Ezeh, 2018). Participation in agricultural production by rural dwellers is influenced by their socio-economic characteristics, farmers within the age range of 30-59 were found to be more productive than farmers who were 60 years and above because they are still active and very energetic, while farmers with more years of farming experience had higher farm outputs than those with little or no experience. Chukwuji *et, al.,* (2017) reported that the level of education of a farmer not only increases his productivity, but also enhances his ability to understand and evaluate new production techniques. Jatto *et, al.,* (2020) reported that farm size contributed positively to cassava farming, he further explained that cultivation of larger hectare of land leads to increase in production and income. Cassava is the most preferred staple crop in Nigeria. It is the most important crop by production, and the second most important by consumption (IFAD, 2019). Over 54% of the World's total cassava output is being produced by Africa and Nigeria ranks the highest with a production of about 54.8 million MT in 2014 (IFAD, 2019). The study aims to examine profitability analysis of Garri processing among cooperative women in Ijebu-East and Ijebu North-East Local Government Areas of Ogun State, Nigeria. The specific objectives are to: describe the socio-economic characteristics of Garri processors, determine cost and returns, and profitability level associated with Garri processing, identify the challenges militating against Garri production and suggested solutions to constraints associated with Garri processing in the study area

MATERIALS AND METHODS

Study Area

The study was carried out in Ijebu-East and Ijebu North-East Local Government Areas in Ogun State, Nigeria, Ijebu North-East is located at Ogun State Nigeria, it is one of the twenty local government areas in Ogun-State. Its headquarters in the town of Atan at 6°54′N 4°01′E.. It is bordered by Ijebu East, Ijebu North, Odogbolu, and Ijebu Ode Local Governments and is primarily populated by the Ijebu ethnic group who speak the Yoruba language. It is surrounded by other local government areas: Ijebu East to the east, Ijebu North to the north, Odogbolu to the west, and Ijebu Ode to the south. The local government is divided into 10 political wards. The area is home to the Ijebu people, a subgroup of the Yoruba ethnic group. The Ijebu dialect of the Yoruba language is prominent, some towns in the Ijebu North East Local Government Area include Atan, Idona, Oke-jara, Odotu, Imuroko, Igmasa, Odosenbora, Odosimadegun, Odosiwonade, Egunsen, Subugbawa, Ibido, Ilodu, Oke-Eri, Oriwu, Oketi, Ilumerin, Oke-Aye, Idorunwon, Iworo-Mosun, Gbawojo, and Omutedo. The local economy is supported by agriculture, such as coffee, kolanuts, maize, yam, cassava, and vegetables being cultivated. Ijebu-East is a Local Government Area (LGA) in Ogun State, Nigeria, It was formed in 1976, with its headquarters in the town of Ogbere located on the A121 highway at 6°44′N 4°10′E. It has an area of 2,234 km² and a population of 110,196 (NPC, 2006). "Ijebu East" comes from its position to the east of Ijebu-Ode. It is the largest LGA in Ogun State by area and is located in the eastern part of the Ijebu region, bordered by Lagos State and Lagos Lagoon in the south. Some of the major towns in the LGA include Itele Ijebu, Ijebu Ife, Imobi, Ijebu Imushin and Ogbere where the LGA's secretariat is located. Both primary and secondary data were used for this study. Primary data was gathered using questionnaire that was personally administered and interviewed the sampled Garri processors. Secondary data was gathered from internet sources, published journals, text books, dissertation and other relevant publications relating cassava productions. The study data used both descriptive and inferential statistics. Descriptive statistics such as; frequency table, percentage, mean was used to analysed socio-economic characteristics of Garri processors, challenges militating against Garri production and suggested solutions to constraints associated with Garri processing, and inferential statistics such as Budgetary analysis was used to estimate cost and returns, and profitability level associated with Garri processing. A two-stage sampling technique was employed to select sample size. (OGADEP, 2010) out of four (4) divisions in Ogun state, Ijebu division was selected in the first stage, and two (2) Local Government Areas were selected from earlier selected Ijebu division namely: Ijebu-East and Ijebu North-East Local Government Areas in Ogun-State. In the second stage, six (6) towns were randomly selected from the chosen Local Government Areas (Imobi, Ijebu-Imushin and Ogbere) from Ijebu-East Local Government Area, (Iworo-Mosun, Gbawojo, and Omutedo) from Ijebu North-East Local Government Area. The towns/ communities were selected because of their high concentration of Garri processing in those towns. Twenty (20) respondents were randomly selected from each selected six (6) towns making a total of 120 respondents for the study as sampled size.

Analytic Techniques

Model Specification

$$GM = TR - TVC \quad (1)$$

Where:

GM = Gross Margin (₦)

TR = Total Revenue (₦)
TVC = Total Variable Cost (₦)
$\pi = TR - TC$ (2)
OR
$\pi = GM - TFC$ (3)
Where:
TC = Total Cost (N)
$TC = TFC + TVC$ (4)
TFC = Total Fixed Cost (₦)
$RRI = NI/TC$ (5)
Where:
RRTVC = Rate of Return on Total Variable Cost (TC-TFC/TVC)
Profitability ratio = NI/TR (6)
Benefit cost ratio = B/C (7)

RESULT AND DISCUSSION

Socio-Economics Characteristics of the Respondents

From table 1, the result revealed that substantial percentage (41.7%) and (35.0%) of the respondents had their age fell within 31–40 years and 41-50 age bracket, which also showed that the majority of the respondents were in their productive age meaning that they had enough strength and agility to work very hard. Also, 13.3% and 10.0% of the respondent had their age fell within 51 – 60 and below 31 years respectively. This results is similarly with Shittu *et, al., (*2025) who claimed majority (87.5)) %) of the respondents engaging in farming activities now were in their prime working age. Gender of the respondents was analyzed and the results showed that majority (90.7%) of the respondents were females while 9.3% of the respondents were males this is pointed to an indication that majority of Garri processors in the study area were females and contributed significantly to Garri processing in the study area than males counterpart. Implication is that females were more hard working and productive in Garri processing in the study area. The marital status of the respondents shown that 82.5% of the respondents were married, 2.5% were single, 5.8% were divorced, 8.3% were widowed and 0.8% were separated. This disclosed that highest percentage of the sampled respondents were married and they had family responsibilities. This findings is consistent with Yusuf (2019) who asserted that majority of the farmers had family members to care for. In terms of education attainment, the study revealed that 33% of the cassava processors had primary school education only, 64% also were secondary school leavers, 21% had educated up to tertiary institution level while 1.7% of the respondents had no formal education. The result showed that majority of the respondents are well educated and they can write and read very well, this indicated that higher education attainment will assist the respondents to further improve their income and overall maximize their profit. Finding is consistent with Umeh *et, al.,* (2019), who asserted that farmers with higher educational levels can adopt innovation easily to improve their income. This study revealed that majority 74.2% of the cassava processors practiced Christianity as religion while 24.2% of the sampled Garri processing practiced Islam while only 0.6% practiced traditional religion. This indicated that respondents are associated with one religion or the other, which implied that there is no religious discrimination in their involvement in Garri processing. It was also shown that no religion against sampled respondents' business. In addition, the study revealed that majority 50.0% of the respondents predominantly engage in farming as their major occupation while 24.2% of the respondents are involved in Garri and fufu (Akpu) production in Igbo language, 8.3% engaged in trading. The Garri processors whose major occupations are other jobs involved by some respondents include artisans12.5% and other jobs 5.0% who engage in some other activities respectively. This showed that majority of them engaged in other activities besides Garri production to increase their income. Years of experience is expected according to a *priori expectation,* to increase productivity. The study revealed that 21.7% of the sampled Garri processors had between 4 and 6 years of experience in Garri processing, 15.8% had between 7 and 9 years of experience, 25.0% had between 10 and 12 years of experience, while 33.3% had 13 and above years of cassava processing experience and 4.2% had less than or 3 years of experience. This implied that larger percentage of them (74.1%) had experience between 7 and 13 years or more in Garri processing which showed that Garri processors in the study area were not new in their businesses. This findings aligned with (Sekunade *et, al.,* 2024) who asserted that individual business owners with high business experience will have ability to manage business risk properly. The Majority (70.0%) of the respondents had between 4-6 persons as household size while 17.5%, 4.2%, 0.8% of the respondents had 7-9, 10-12 and, 13 and above members as household size respectively. 7.5% of the respondents also had 3 persons or less than as their household's size. This revealed that Garri producers had considerably moderate household size in the study area.

Table 1: Distribution of Socio-Economic Characteristics of the Respondents

Variable	Value	Frequency	Percentage	Cumulative frequency	Average
Age (years)	≤30	12	10.0	10.0	
	31-40	50	41.7	51.7	
	41-50	42	35.0	86.7	
	51-60	16	13.5	100.0	38 years
Gender	Males	11	9.2	9.2	
	Females	109	90.8	100.0	
Marital status	Single	3	2.5	2.5	
	Married	99	82.5	85.0	
	Divorced	7	5.9	90.9	
	Widowed	10	8.3	99.2	
	Separated	1	0.8	100.0	
Educational attainment	No formal education	2	1.7	1.7	
	Primary education	33	27.5	29.2	

Variable	Value	Frequency	Percentage	Cumulative frequency	Average
	Secondary education	64	53.3	82.5	
	Tertiary education	21	17.5	100.0	
Religion	Christianity	89	74.2	74.2	
	Islam	29	24.2	98.4	
	Traditional worshipper	2	1.6	100.0	
Major Occupations	Farming	60	50.0	50.0	
	Garri processing	29	8.3	58.3	
	Trading	10	24.2	82.5	
	Artisans	15	12.5	95.0	
	Others	6	5.0	100.0	
Year of experience	≤ 3	5	4.2	4.2	
	4-6	26	21.7	25.9	
	7-9	19	15.8	41.7	
	10-12	30	25.0	66.7	
	> 13	40	33.3	100.0	
Households size	≤ 3	9	7.5	7.5	
	4-6	84	70.0	77.5	
	7-9	21	17.5	95.0	
	10-12	5	4.2	99.2	
	13 & above	1	0.8	100.0	5 persons
Total		120	100		

Source; Field Survey, 2024

Cost, Returns and Profitability of Garri Processing

Budgetary result from garri processing in the study area was analyzed and presented using their mean values. The total variable cost from the business was estimated at N17, 836.73 and accounted for 57.60%. The total fixed cost was estimated at N13, 130.61and accounted for 42.40% of the total cost. This showed that variable cost constituted the larger proportion of cost of Garri processing business for the respondents. In addition, Total Revenue (TR) and Gross Margin (GM) of the business were estimated at N45, 135.08 and N27, 298.35 respectively. The result showed that Rate of Return on Investment (RRI), Profitability Index or Returns on Sale (PI or RS), Rate of Return on Variable Cost (RRVC) and Operating Ratio (OR) were 45.80%, 0.31, 179.43% and 0.41%. The implication of this, is that Garri processors or producers made profit in their business and which invariable increased their returns on investment and implied that Garri processing is profitable and viable in the study area. The benefit-cost B/C of 1.46 also revealed that for every one naira spent on Garri processing there was a return of N0:46k.

Table 2: Distribution of Cost, Returns and Profitability of Garri Processing

Description	VALUES (N)	% of Total Cost
Revenue (N)		
Value of Garri Sold (N)	43707.9670	96.80
Value of Cassava Peels (N)	605.0333	1.37
Value of Cassava Flakes (Koko Garri) (N)	822.0833	1.83
Total Revenue(N)	45135.0836	100
Variable Cost Items:		
Labour Cost (N)	16233.7331	52.42
Transportation Cost (N)	601.2500	1.94
Nylon Cost (N)	350.1333	1.12
Firewood (N)	168.2833	0.55
Servicing of Machines (N)	483.3333	1.57
Total Variable Cost N	17836.7330	57.60
Gross Margin (N)	27298.3506	
Fixed Cost Items:		
Interest on Loan (N)	6487.5001	20.96
Knife(N)	219.3944	0.70
Sieve (N)	267.0833	0.86
Stirrer(N)	189.9583	0.60
frying pan (N)	918.7715	2.98
Basket (N)	263.2000	0.84
Sack (N)	260.6111	0.85
Presser (N)	980.3556	3.17

Description	VALUES (N)	% of Total Cost
Revenue (N)		
Bowl (N)	308.0931	0.98
Drum (N)	458.3333	1.49
Clay Stand (N)	352.9412	1.14
Grater (N)	2424.3698	7.83
Total Fixed Cost (N)	13130.6117	42.40
Total Cost	30967.3447	100
Net Income	14167.7386	
Profitability Indices:		
Rate of Returns on Investment (%)	45.80%	
Profitability Index or Returns on Sale	0.31	
Rate of Return on Variable Cost (%)	179.43%	
Operating Ratio	0.41	
Benefit-Cost B/C	1.46	

Source: Field Survey Data, 2024

Constraints Encountered by Garri Processors

The problems being faced by the Garri processors in the study area were highlighted in the table 3, among the constraint bad roads was accounted for 82.5% emerged as the major challenge and most pressing concern confronting Garri production. This phenomenon can be attributed to the high cost of fuel. Lack of capital, poor and instable price of Garri, high cost of transportation were also among the major constraints being faced by Garri marketers were accounted for 59.2%, 54.2%, and 50.8% respectively. Next to this was competitiveness, followed by the rest like; sales, credit sales, poor storage facility, high purchase of cassava tuber, high labour cost, shortage of labour, inadequate equipment availability and risk of accident and robbery which constituted the mentioned values (40.8%), (31.7%), (21.7%), (15.8%), (12.5%), (15.0%), (11.7%), (9.2%) and (5.0%) respectively. All the identified constraints were also ranked as 1st, 2nd, 3rd, 4th, 5th, 6th, 7th, 8th, 9th, 10th, 11th, 12th, and 13th the least accordingly. The substantial issue of inadequate storage facilities was closely trailed by high cost of inputs, likely arising from the limited income generated by producers with small farm tools. The general implication of the challenges is that, the high expenditure incurred by the Garri processors especially high cost of transportation, poor storage facility, high purchase of cassava tuber, high labour cost, shortage of labour, equipment availability among others will increase the market cost, which negatively affect the market and profit margin.

Table 3: Distribution of Problems Encountered in Garri Processing

Constraints	Yes		No		Mean	Rank
	Frq.	%	Frq.	%		
Bad Roads	99	82.5	21	17.5	2.8167	1st
High cost of transportation	61	50.8	59	49.2	2.4750	11th
Poor and instable price of Garri	65	54.2	55	45.8	2.5250	9th
High purchase of cassava tuber	66	12.5	44	34.2	1.5917	7th
Lack of capital	71	59.2	49	35.8	2.5417	3rd
Poor sales	68	31.7	52	56.7	2.2000	5th
Poor storage facility	69	15.8	51	49.2	1.8083	4th
Competitiveness	66	40.8	54	45.0	2.2667	7th
Risk of accident and robbery	46	5.0	74	24.2	1.3417	13th
Credit sales	62	21.7	58	48.3	1.9167	10th
Shortage of labour	77	11.7	43	24.2	1.4750	2nd
High labour cost	68	15.0	52	28.3	1.5833	5th
Equipment inavailability	47	9.2	73	26.7	1.4500	12th

Source: Field Survey Data, 2024

Suggested Solution to Problems Associated With Garri Processing

The table 4 below, explained the suggested solutions to constraints associated with Garri processing in the study area. The suggested solutions identified includes; provision of good roads, provision of adequate labour, provision of adequate capital, provisions of storage facilities, low cost of purchase of cassava and stability price of Garri. By facilitating adequate financial assistance, Garri processors can procure superior inputs thereby enhancing the Garri production and overall business profitability and also improve standard of living among individual Garri processors. if all those suggested solutions could be attributed to, Garri producers income will increase and expenditure incurred by Garri producers will be reduced drastically, and the enterprise will also be more attractive to people in the societies that is, people will have interest in engaging in processing Garri.

Table 4: Distribution of Suggested Solution to Problems Associated With Garri Processing

Suggested Solutions to Constraints Facing Garri Processing	Mean	Standard deviation	Rank
Provision of good roads	3.267	1.365	1st
Stability of Garri price	2.235	1.214	6th
Low cost purchase of cassava tubers	2.551	1.236	5th
Provision of adequate capital	2.954	1.323	3rd
Provision of storage facility	2.671	1.292	4th
Provision of adequate labour	3.004	1.332	2nd

Source: Field Survey Data, 2024

CONCLUSION

The study revealed that Garri processing is a highly viable and profitable business in the study area. Majority (86.7%) of garri processors were agile, youthful and strong with much experienced of years in their business which helps them to be more efficient in their management. Bad road, lack of capital, poor and instable price of garri, high cost of transportation were major constraints faced Garri processing in the study area. Females were more than males in this enterprise, and majority of the respondents (82.5%) were married with formal education. Garri processing business had no religion taboo. Without gain saying, Garri processing is a reliable venture.

REFERENCES

Akerele, E. O., Okubanjo, .A. J., Uthman-Akinhanmi, Y. O., Olugbemi, M. T., Yangomodo O. D., Ilori, A. R. & Fadipe, M. O (2021). Determinants of loan and profitability of Cassava Processing among women cooperator in Yewa Division Ogun-State, Nigeria. FUW Trends in Science and Technology vol: 6(1). pp 314-318.

Amadi, G. (2020). Determinant of level of participation in Cassava Processing a gender situation analysis among farmers in Imo State, Nigeria. *NAJ. Nigeria Agricultural Journal.* 51(3): 100-104.

Chukwuji, C.O., Inono, O.E. Ike, P. C (2017). Determinants of Technical efficiency in Garri processing in Delta State, Nigeria. *Journal of Central European Agriculture.* 8(3):327-336.

International Fund for Agricultural Development (2019). Cassava: Turning a Subsistence Crop into a Cash Crop in Western and Central Africa, Rural Poverty Portal, Breadcrumbs Portlet, Powered by IFAD. From < http://www.fidafrique.net/rubrique554 html>(Retrievedon27 June 2019).25-27

International Institute for Tropical Agriculture (2017). The African Challenge on Cassava Production. 1(8): 7-8.

International Institute of Tropical Agriculture (2018). Potential for commercial production and marketing of cassava: Experiences from the small-scale cassava processing project in East and Southern Africa. 1 – 88.

Jatto, K.A., Adeoye, A.S., Abegunrin, O.O., Oke, O.O., Eniola, O. & Smart, M. (2020). Analysis of Plantain Marketing in Afijio Local Government Area of Oyo State, Nigeria. *Journal of Agriculture and Food Environment.* 7(2): 26-34, 2020

National Population Commission (NPC) (2006). Nigeria National Census: Population Distribution by Sex, State, LGAs and Senatorial District: 2006 Census Priority Tables.

Nestle, B. & Fresco (2023). Chronic cassava toxicity. *Proceedings of an interdisciplinary workshop, London:* 113 – 140.

Nweke. F. I (2024). Processing Potentials for Cassava Production Growth in Sub-Sahara Africa, *International Institute of Tropical Agriculture, Ibadan, Nigeria, COSCA working paper*, 2024, No 11, 6-11

Oduro, .I, Ellis W. O, Dziedzoave N.T, & Nimako-Yeboah. K. (2020). Quality of Gari from Selected Processing Zones in Ghana.Food Control. 11(4):297-303.

Ogiehor I. S. (2022). Extension of shelf life of garri by combinations of preservative factors. Ph.D thesis, University of Benin, Benin city, Nigeria.1 (2): 188-198

Ogiehor I. S, & Ikenebomeh M. J, (2021). Quality characteristics of market garri destined for consumption in ten selected Nigerian states: *Baseline for industrialization Advances in Natural and Applied Sciences Research.* 2(1): 17-25.

Ogun State Agricultural Development Project (OGADEP, 2010). Diagnostic Survey Report of Ogun State, Nigeria.

Osuji, M.N., Mejeha, R. O., Simonya, J. P & Gbolagun, A.S (2018). Determinants of Entreprises Preference of Cassava- based farmers by Gender in South-West, Nigeria. *Research Journal of Food and Nutrition.* 2: 45-52 ISSN 2637-5583.

Plucknett, Donald L., Truman P. Phillips, Robert B. & Kagbo. K. (2020). A Global Development Strategy for Cassava: Transforming a Traditional Tropical Root Crop purring Rural Industrial Development and Raising Incomes for the Rural Poor.

Sekunade A. B, & Toluwase S. O. (2024). Profitability and Production Efficiency of Indigenous Tomato Cultivation among Farmers in Osun State, Nigeria. *IORS Journal of Agriculture and Veterinary Science*, 7 (11); 13-23.

Shittu, K. A., Adebayo. O. M., Ojewande. A. A. and Jimoh. B. O. (2025). Influence of Credit Utilization on Crop Production among Cooperative Farmers in Osun-State, Nigeria *Journal of Agricultural Development and Policy*, 35(1): 1-6.

Umeh J. C, Ogbanje. F. C, Adejo M. A. (2019). Technical Efficiency Analysis of Pig Production: A Sustainable Animal Protein Augmentation for Nigerians. *Journal of Advanced Agricultural Technologies* 2: 19-24.

Yusuf, F. A. (2019). Urban backyard Swine Production. A Case Study of Kaduna. A Nigerian Metropolitan City. *Nigeria Journal of Animal Production* 31: 237-244.

Zaman, M. M., A. S. M. A. Huq and M. J. A. Chowdhury. (2019). Production potentiality of summer tomato in Jamalpur district, *International Journal of Sustainable Crop Production* 1(2): 12-15.