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# ANALYSIS OF CONSTRAINTS TO THE UTILIZATION OF CASSAVA PRODUCTION TECHNOLOGIES BY CASSAVA FARMERS IN CROSS RIVER STATE

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**Abstract**
*This study analyzed the constraints to utilization of improved cassava production technologies in Cross River State. Specifically, the study identified the improved cassava production technologies in the study area, ascertained the extent of utilization of the technologies and identified constraints to the utilization of the technologies. The study adopted a multi-stage sampling procedure in selecting 234 respondents for the study. Date for the study were generated through the use of questionnaire and analyzed using frequency, mean, percentage and ranking. Results showed that intercropping of cassava with early maturing crops (94.4%), use of improved cassava varieties (93.6%), chemical weeds control (62.8%) and improved land preparation (61.5%) were most prevalent in the study area. Results on extent of utilization showed that the use of improved varieties was most often utilized and farmers were constrained by inadequate farm credits from utilizing improved cassava technologies. The study therefore recommended that farm inputs should be supplied to farmers by government through agricultural extension agents at subsidized rate.*
*Keywords: Constraints, utilization, improve cassava production, technologies.*

## Introduction

Cassava (*Manihot esculanta)* is a native crop of South America, planted in the tropics for its tuberous and starchy roots used for food by many households (Osuafor, *et al.,* (2020). After rice and maize, cassava is the third-most significant source of calories in Africa's tropical and subtropical regions (Food and Agricultural Organization, (FAO), 2020). It is commonly grown in several Sub-saharan African nations and currently, half of the cassava consumed worldwide is produced in Africa (FAO, 2020).

According to Mbanjo *et al.* (2021), cassava is crucial for food security of millions of people in Sub-saharan Africa and has great potential to contribute to Africa development and income-earning potential for small-scale farmers and related value chains on the continent. According to Adeniji *et al.* (2005), cassava cultivation in Nigeria began during the period of slave trade brought about by Portuguese merchants. Ever since then, cassava cultivation is done almost all over the country and majorly cultivated in the Southern part of the country where it grows well under favourable weather and soil conditions.

As opined by Makinde *et al.* (2015), Nigeria is the largest producer of cassava with 36.8, 42.5, 54.2 and 54.0 million metric tonnes in 2009, 2010, and 2012, respectively. According to the FAO (2024), Nigeria has consistently maintained the leading position as the world largest producer of cassava in recent years with an annual production record of 38.7 million metric tonnes. Due to the importance of cassava in the Nation's Food and Industrial Sector, the federal and some state governments have initiated programs and policies aimed at revolutionizing the crop. Some of the policies/programs are the Presidential Initiative on

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Cassava (PIC), Root and Tuber Expansion Program (RTEP), Cassava Enterprise Development Project (CEDP) and the Agricultural Transformation Agenda (ATA) among others (Uzochukwu *et al.,* 2021).

Nsoanya and Nenna (2017) noted that even though a lot of improved cassava production technologies have been developed by government through the research institutes, these technologies have not been appreciably utilized by cassava farmers thus an urgent need to increase their utilization. Some of the technologies include the use of improved cassava varieties, application of fertilizers, intercropping as well as the use of recommended herbicides and pesticides.

Iheme (2025) observed that in recent times, cassava farmers in Cross River State have been experiencing a decline in cassava production resulting in decreased yields. Currently, the growing population in the state is driving up the demand for food productions, and cassava being a significant home-made crop is struggling to keep up as crop yield decreases intensely due to farmers inability to adopt improved cassava production technologies. Addressing this disturbing issue informed the research gap and motivation for the study in the state. This study will answer the following research questions;

1. What are the improved cassava production technologies available in Cross River State?
2. What is the extent of utilization of the improved cassava production technologies in the study area?
3. What are the constraints to the utilization of the improved cassava production technologies in the study area?

**Materials and Method**

This study was carried out in Cross River State to ascertain the constraints to utilization of improved cassava production technologies by cassava farmers in Cross River State. Cross River State is located in the Southern geopolitical zone of Nigeria. Geographically, it is located between latitude $4^o$ 28′ and $6^o$ 55′ North of the equator and longitude $7^o$ 5′ and $9^o$ 28′ East of the Greenwich Meridian. It shares boundaries with Benue State in the North, Akwa Ibom State and Atlantic Ocean in the South, the Republic of Cameroon in the East and Enugu and Abia States in the West. It covers a geographical land mass of approximately 23,000 square kilometers with a population of about 3,353,766 people (State Bureau of Statistics, 2011).

The population of this study consisted of registered cassava farmers in the study area. The study adopted a multi-stage sampling procedure in selecting respondents for the study. Stage one involved the purposive selection of six extension blocks from the three agricultural zones in Cross River State. The sampled blocks were Obudu and Obanliku from Ogoja Agricultural Zone, Obubra, Etung and Boki from Ikom Agricultural Zone and Akamkpa from Calabar Agricultural Zone. Stage two involved the simple random selection of four cells each from the selected blocks giving a total of twenty four cells. In stage three, simple random selection was done using a sample frame containing the list of registered cassava farmers in the study area. About 20% of the registered farmers selected giving a sample size of 234 cassava farmers. Questionnaire were used to generate data from the respondents and the data were analyzed using frequency, percentage, mean and ranking.

**Results and Discussion**
**Improved Cassava Production Technologies available in the Study Area**

The results on Table 1 show the types of improved cassava production technologies available in the study area. Results show that the majority (94.4%) of the respondents indicated the presence of intercropping, this was followed by the use of improved cassava varieties especially the TME 419 and farmers pride (IBA 96632). This was followed by

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chemical weeds control (62.8%). The implication in Cross River State was done through mixed cropping with early maturing crops rather than sole cropping and in addition, the high indication of the presence of improved cassava (TME 419 and farmers pride) showed that the varieties were made available to farmers by extension and the farmers got and cultivated them. These results support the views of Anyanwu (2018) which states that cassava farmers in Imo State mostly cultivated cassava with early maturing crops like melon, cowpea, maize, etc. Results also show that the least available improved cassava production technologies in the study area were; disease control (9.4%), use of adequate spacing of 1m x 1m at $45^o$ (18.4%) and the use of irrigation and drainage (29.5%). The implication of this result is that majority of cassava farmers in the study area cultivated using improved variety of cassava which were also disease resistant making it unnecessary for disease control. Also, Cross River State being a tropical region had adequate rainfall throughout the year making it unnecessary for irrigation.

**Table 1: Distribution of respondents based on improved cassava production**

| Cassava production technologies | Available | Percentage |
| --- | --- | --- |
| Use of improved cassava varieties | 219 | 93.6 |
| Application of fertilizer | 72 | 30 |
| Use of irrigation and drainage | 69 | 29.5 |
| Pest control using pesticides | 81 | 34.6 |
| Improved land preparation (ridges and mounds making) | 144 | 61.5 |
| Adequate spacing of 1m x 1m planted at $45^o$ | 43 | 18.4 |
| Chemical weeds control | 147 | 62.8 |
| Intercropping with other crops | 221 | 94.4 |
| Disease control | 22 | 9.4 |

**Technologies available in the study area**
Source: Field Survey, 2025.

**Extent of utilization of improved cassava production technologies in the study area**
Results on Table 2 show the extent of utilization of improved cassava production technologies by farmers in the study area. Results show that four improved production technologies were majorly utilized. Majority (94.5%) utilized intercropping of cassava with early maturing crops, 93.6% practiced this very often while 0.9% practiced this occasionally. This was followed by the use of improved cassava varieties where 93.5% utilized the technology, 85.4% utilized it often while 8.1% utilized it occasionally. Improved land preparation recorded 61.6% of utilization while chemical weeds control recorded 62.8% utilization. The implication of these results is that a wide range of improved cassava production technologies were not adequately utilized by farmers in the study area. This could be due to reasons like high cost of the technologies, inadequate technical know-how and unavailability of the technologies.

**Constraints to the utilization of improved cassava production technologies in the study area**
Table 3 shows the distribution of respondents based on constraints to utilization of improved cassava production technologies. Results show that lack of farm credits ($\square$ = 3.4) ranked 1st among the constraints, inability to collect loan ($\square$ = 3.3) ranked 2nd and this was followed by high cost of farm inputs ($\square$ = 3.2) ranking 3rd. The results imply that cassava farmers in the study area did not use most of the improved cassava production technologies because they needed the financial backing to do so which they did not have and also could not get from the

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bank. Most cassava farmers lacked the needed collaterals to get money from banks consequently, they depended on other sources of income which were inadequate.

**Table 2: Distribution of respondents based on the extent of utilization of improved cassava production technologies in the study area**

| S/N | Production technologies | Often use (%) | Occasionally use (%) | Never use (%) | Total |
|---|---|---|---|---|---|
| * | Improved cassava varieties | 200 (85.4) | 19. (8.1) | 15 (6.4) | 234 |
| * | Application of fertilizer | 31 (13.2) | 41 (17.5) | 162 (69.2) | 234 |
| * | Irrigation and drainage | 18 (7.7) | 51 (21.6) | 165 (70.5) | 234 |
| * | Pest control using pesticides | 30 (12.8) | 51. (21.8) | 153 (63.4) | 234 |
| * | Improved land preparation | 112 (47.9) | 32 (13.7) | 90 (38.5) | 234 |
| * | Adequate spacing of 1m x 1m at $45^o$ | 17 (7.3) | 26 (11.1) | 191 (81.6) | 234 |
| * | Chemical weeds control | 98 (41.9) | 49 (20.9) | 87 (37.2) | 234 |
| * | Use of cassava planters | 12 (5.1) | 39 (16.7) | 183 (78.2) | 234 |
| * | Intercropping with early maturing crops | 219 (93.6) | 2 (0.9) | 13 (5.6) | 234 |
| * | Disease control | 10 (4.3) | 12 (5.1) | 212 (90.6) | 234 |

**Table 3: Distribution of respondents based on constraints to the utilization of improved cassava production technologies**

| S/N | constraints | SA (4) | A (3) | SD (2) | D (1) | Total | Mean | Rank |
|---|---|---|---|---|---|---|---|---|
| 1. | Lack of farm credit | 123 (492) | 86 (258) | 19 (38) | 6 | 794 | 3.4 | 1st |
| 2. | High wages of labour | 96 (384) | 43 (129) | 50 (100) | 45 | 658 | 2.8 | 7th |
| 3. | High cost of farm inputs | 116 (468) | 79 (237) | 29 (58) | 10 | 740 | 3.2 | 3rd |
| 4. | Lack of technical knowledge on the use of some technologies | 104 (416) | 53 (159) | 49 (98) | 28 | 701 | 3.0 | 4th |
| 5. | Unavailability of some technologies | 96 (384) | 47 (141) | 60 (120) | 31 | 676 | 2.9 | 5th |
| 6. | Environmental factors (rainfall temperature sunlight) | 6 (24) | 18 (54) | 68 (136) | 142 | 356 | 1.5 | 9th |
| 7. | Poor extension contact | 6 (24) | 16 (48) | 77 (154) | 135 | 361 | 1.5 | 9th |
| 8. | High cost of machines | 5 (20) | 18 (54) | 68 (136) | 143 | 353 | 1.5 | 9th |
| 9., | Absence of subsides and incentives | 100 (400) | 80 (240) | 6 (12) | 48 | 700 | 2.9 | 5th |
| 10. | Inability to get loan | 138 (552) | 42 (126) | 39 (78) | 15 | 771 | 3.3 | 2nd |

The findings of this study are similar with the results of Uzochukwu *et al.* (2021) who reported that cassava farmers in Anambra State were faced with several constraints such as inadequate credit facilities, inadequate capital, high cost of labour, lack of inputs, inadequate extension contact, inadequate credit facilities etc.

**Summary and Recommendations**

Cassava production in Cross River State is mostly carried out by small scale farmers. A lot of the improved cassava production technologies existed in the study area but farmers utilized just a few of them adequately. The most utilized technologies include; intercropping cassava with early maturing crops, improved land preparation, chemical weeds control and use of improved cassava varieties. Cassava farmers experienced constraints that limited them

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from the adequate production of other improved cassava production technologies such as inadequate farm credits, inability to get loan and high cost of farm inputs, etc.

Based on the findings of this work, the following recommendations were made;

1. Extension agents in Cross River State should make adequate effort in exposing cassava farmers to a variety of improved cassava production technologies.

2. Very few improved cassava production technologies were used very often by farmers in Cross River State, therefore farmers should be trained on the utilization of a variety of improved cassava production technologies.

3. Low interest loan as well as farm inputs such as fertilizers, agro chemicals, improved seeds etc should be made available to farmers by the government through the agricultural extension agents at subsidized rate.

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