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Technical Efficiency of Small-Scale Cassava Farmers in Ogun State, Nigeria

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ABSTRACT
This research work is focused on assessing the technical efficiency of small scale cassava farmers in Ewekoro Local Government Area of Ogun State, Nigeria. Primary data were utilized for this study and were obtained from a cross-section of 120 sampled small scale cassava producers through the use of a well-structured and personally administered questionnaire. Multi-stage sampling technique was employed in collecting the sample population that was examined in this research work. Results revealed that majority of the small scale cassava farmers are young and still within the work-active age bracket. Results also indicated that males are more into small scale cassava production in the study than females. Analysis of the years of experience of the respondents showed that cassava producers in the area are well experienced in the business. Budgetary analysis results revealed an estimated mean gross margin and net income of ₦61,266.67 and ₦5,896.49 respectively for cassava production in the study area. The operating ratio of small scale cassava farmers in the study area was estimated to be 0.92, indicating profitability of cassava production. Stochastic Frontier Production Function estimates of the technical efficiency of cassava producers in the study area revealed that the slope coefficients of the stochastic production frontier which includes Amount of Fertilizer used (Kg/ha) (X_1), Number of Labour used (Man days/ha) (X_2), Amount of Herbicide used (Litres/ha) (X_3), Quantity of Planting Materials (Stem Cuttings/ha) (X_4) brought about efficiency for the cassava producers. Estimates of inefficiency parameters revealed that increase Age of the respondents (Z_1) Cost of Herbicides (Z_3) and Cost of planting materials (Z_6) pronounced inefficiency for cassava producers., while increase in Household Size of the respondents (Z_2), Years of Farming Experience (Z_4) and Amount of Loan Obtained (Z_7) reduced the inefficiency of the cassava farmers in the study area. Research conducted into the different types of constraints facing cassava production in the study area showed that low soil fertility affected it the most, while lack of ready-made market for cassava tubers hindered it the least.
Keywords: Efficiency, Cassava, Farmers, Production, Profitability

INTRODUCTION

Food has been persistently used as a weapon during wars, national and international politics. Whosoever therefore controls the key to the storehouse controls the conscience of a hungry man or nation. In view of this, cassava not only serves as food crop, it is a major source of income and employment for rural households in Nigeria. As a food crop, cassava has some inherent characteristics which make it attractive especially to the small holder farmers in Nigeria. Firstly, it is rich in carbohydrates especially starch and consequently has multiplicity of end uses, secondly, it is available all the year round, making it preferable

to other more seasonal crops such as grains, peas, beans and other crops for food security and lastly it is tolerant of low soil fertility and more resistant to drought (Ogundari and Ojo, 2007).

Since the period between the 16th and 17th century when cassava was introduced into Nigeria through Warri the then Bendel State by the Portuguese explorers, Nigerians have accepted cassava as one of their main non-cash crop (staple) and cash crop within the domain. The large population of Nigeria depended on daily basis on it as their main dish. Because of its high demand both locally and internationally, it is deemed fit to be cultivated more than it is done now.

Nigeria is the leading producer of cassava, in 1993 – 1995; 84 million metric tons of cassava was produced per year in sub-Saharan Africa. Of this, 75% was produced in 4 countries; Nigeria, 31 million metric tons representing 36.90%, Dr Congo 19 million metric tons (22.62%), Tanzania, 7 million metric tons (8.33%), Ghana, 6 million metric tons, (7.14%). In the same period, 95% of production after (discounting waste) was used for human consumption. According to FAO the remaining 5% was used for feed, industrial raw material and export was minimal. Recently out of 186 million metric ton produced in the world, Nigeria accounted for 36 million metric tons (Tell, 2005) and in 2004 production was 55.69 million metric tons (CBN, 2005).

There is evidence of increase in efficiency of cassava production in Nigeria because national output of cassava increased by 12.1% from 31.7 million tons in 2003 to 36.1 million tons in 2005 while the land cultivated to cassava declined by 11.6% from 4,001 million hectares to 3,535 million hectares during the same periods (NBS, 2006).

Uses of cassava can be classified into two: the industrial use and the local food need use of cassava.Cassava tubers are mostly processed into cassava flour (lafun), gari and fufu in Nigeria. It can also be cooked or eaten, pounded and consumed in its raw form, most especially the sweet variety. By implication therefore, cassava has become a regular item in household diets in Nigeria. The crop has assumed greater attention because of its potential for the production of ethanol which can be used to complement petroleum. Presently, the crop had achieved an 'export status' because of the increasing demand for cassava as industrial raw materials abroad. To meet the export demand and domestic demand, Nigeria needs about 150 metric tons of cassava, hence the Federal government of Nigeria has come out with a policy for cassava production with a view of setting policies that will stimulate domestic production.

In spite of the economic and nutritional importance of cassava to the Nigerian economy, its production in the country is grossly inadequate because of the wide gap between the demand and supply of the products. According to Agwu and Auyaeche (2007) presently Nigeria import 90 million litres annually for industrial use and this could rise to as much as one billion litres when we start using it for automobiles. This means that cassava production capacity has to be increased rapidly to be able to meet with the rising demand. To stem this situation there is a current effort by the Nigerian government to promote cassava production both for local industries and for export. For cassava production to grow in a sustainable manner the present level of technical efficiency and productivity in the cassava industry must be improved upon. However, only little is known about the level of technical efficiency of the Nigerian cassava industry.(Onu and Edon, 2009).

Cassava in Nigeria is currently used for two main purposes: 90% as human food and only 5-10% as secondary industrial material (used mostly as animal feed). About 10% of Nigeria's industrial demand consists of HQCF used in biscuits and confectioneries, dextrin pre-gelled starch for adhesives, starch and hydrolysates for produces and as seasonings. 70% of cassava processed as human food is *gari*. Other common cassava products human foods are *lafun* and *fufu/Akpu.* Processed products can be classified into primary and secondary products. The former, e.g., *gari*, *fufu*, starch, chips, pellets are primary products which are obtained directly from raw cassava roots, while the latter are obtained from the further processing of primary products (e.g. glucose syrup, dextrin, and adhesive are obtained from starch) (Sanni *et al,* 1998 and Sanni *et. al.* 2004).

Four primary industrial products from cassava stand out as important for Nigeria. These are (a) cassava flour, (b) crude ethanol, (c) native starch, and (d) animal feed/cassava chips and pellets and are discussed

below. These products are commonly traded and show the highest potential for growth in demand, and are associated with medium and large scale processing. In the domestic market, industrial cassava products compete with traditional cassava products, mainly garri. Furthermore, each of the main industrial products (cassava flour, chips for animal feed, chips for food grade ethanol, and cassava starch) faces competition from (a) identical imported products, and (b) substitute products that are either being imported or locally grown. For domestic cassava flour the main competitive product is wheat flour. For cassava chips/pellets it is feed grains. For ethanol it is ethanol from other sources, and for starch it is corn/maize starch. Based on the enterprise analysis, the cost of raw materials (fresh cassava) in Nigeria for the various cassava products are indicated as follows: flour 65%, Starch 63%, Pellets 58%, and Ethanol 59%. Quite clearly, significantly lowering the cost of raw materials (ex-factory price) would greatly reduce the cost of the final product, making them more competitive. One strategy to achieve this is the vertical integration of commercial farms to each processing plant. This strategy is discussed extensively in a later section as one of the action plans for the development of the cassava industry in Nigeria.

Cassava can be processed into various secondary products, including modified cassava starch, glucose syrup, extra neutral alcohol, noodle, bakery and confectionery industries, meat and textile processing. It is also industrially processed as a raw material in the coating of pharmaceutical products, the manufacture of glues and adhesives and oil drilling starch (EFDI-Techno Serve, 2005).

Glucose syrupis a concentrated aqueous solution of glucose maltose and other nutritive saccharin's made from edible starch. Glucose or dextrose sugar is found naturally in sweet fruits such as grapes or honey. It is less sweet than sucrose (cane sugar) and is used in large quantities in fruits, liquors, crystallized fruits, bakery products, pharmaceuticals, and breweries. Also extracted from cassava are noodles which are made by mixing flour, water and eggs and are cooked in soup or boiling water. At 12.5%, cassava starch/flour forms an integral part of the final product (Oduro et al, 2000; Oyewole and Obieze (1985). Cassava based adhesives, like the cereal starch adhesives, are of three main types: Liquid starch adhesives are supplied by the adhesives manufacturer in liquid form usually in plastic or lined metal drums, jerricans and bottles. Pre-gel starch adhesives are produced in dry flakes and milled to specific particles sizes. They are packed in waterproof lined multi-wall paper bags/sacks and are very suitable for export. Dextrin based adhesives are delivered to consumers in liquid and dry forms depending on specification and requirement. The liquid dextrin adhesives are packed as the liquid starch adhesives, while the dry dextrin adhesives are packed as the milled pre-gel adhesives. Dry dextrin adhesives are very suitable for export as intermediate raw materials used especially in Europe and America by the food and industrial companies.

Objectives of the Study

The broad objective of the study is to determine the technical efficiency of small scale farmers in Ogun State.

The specific objectives are to:

i. describe the socio-economic characteristics of cassava producers in the study area.
ii. estimate the cost and returns of cassava production;
iii. determine the factors that affect cassava technical efficiency; and.
iv. identify the constraints faced by cassava producers in the study area.

RESEARCH METHODOLOGY

The Study Area

The study area for this research work is Ewekoro Local Government Area of Ogun State which has its headquarters in Itori. This Local Government Area came into existence in May 22, 1981. It has a land area of about 631.5sq. Kilometers and is bounded by Yewa South Local Government Area in the West, Ifo Local Government Area in the South, Abeokuta North and Obafemi-Owode Local Government Area in the North and East respectively. Going by the 1991 population census, 147,000 is the population of this local government. Ewekoro Local Government is divided into 10 Wards namely Itori, Owowo, Mosan, Abalabi, Wasimi, Papalanto, Arigbajo, Obada, Asa-Yobo and Elere-Owus. The indigenous dwellers of

this local government area are mainly the Egbas, particularly the Egba-Owus. Farming is the primary occupation of the indigenes of this area, trading activities is also common among the people since it is basically a rural settlement. Christianity, Islam and Traditional religion are the three religions of the people of this study area.

Sampling Procedure and Sample Size

For this study, multi-stage sampling technique was used. In stage one, six wards were purposively selected (which are Itori, Papalanto, Mosan, Arigbajo, Wasimi and Obada) because of the prevalence of small scale farmers in these areas, and in stage two, 20 cassava farmers were randomly selected from each of the chosen wards making a total of 120 sampled respondents.

Sources and Methods of Data Collection

This study utilized primary data which were obtained from a cross-section of 120 randomly selected cassava farmers in the study area. The data were obtained with the use of a well-structured and personally administered questionnaire.

Methods of Data Analysis

Descriptive analytical technique was used to examine the socio-economic characteristics of cassava farmers, and to identify the constraints facing cassava farmers in the study area.

Budgetary Analysis

Budgetary analytical technique was used to estimate the cost and return structure of cassava production in the study area.

Estimates of profit, outlays, revenue, gross margin and net margin income from cassava production were derived as follows:

$$\Pi = TR - TC$$

$$TR = PQ$$

$$TC = TVC + TFC$$

$$GM = TR - TVC \text{ and}$$

$$NI = GM - TFC$$

$$PI = \frac{NI}{TR}$$

$$RRI = \frac{NI}{TC} \times \frac{100}{1}$$

$$RRVC(\%) = \frac{TR - TFC}{TVC} \times \frac{100}{1}$$

$$OR = \frac{TVC}{TR}$$

Where P = Price of Cassava tuber per heap.

Q = Quantity of Cassava heaps sold

Π = Profit

TR = Total Revenue from cassava production

TVC = Total Variable Cost associated with cassava production which includes cost of planting materials, cost of land preparation, cost of other management practices like (planting, weeding, fumigation), cost of transportation e.t.c

TFC = Total Fixed Cost which includes cost of physical asset like land, cutlass, hoes, baskets and so on

TC = Total Cost

GM = Gross Margin

PI = Profitability Index

RRI = Rate of Return on Investment

RRVC = Rate of Return on Variable Cost

OR = Operating Ratio

3.4.3 Stochastic Production Frontier Model

The empirical stochastic production frontier model (via Cobb Douglass) that was applied in the analysis to measure the technical efficiency of cassava based farmers is specified as follows:

$LnQ= \alpha 0 + \alpha_1 LnX_1 i + \alpha_2 InX_2 i + \alpha_3 LnX_3 i + \alpha_4 LnX_4 i + \alpha_5 LnX_5 i + (vi + \mu i)$ …….. (1)

Where:

Q = Total output (tonnes);
X_1 = Fertilizer (kg/ha);
X_2 = Labour (man-days)/ha
X_3 = Herbicides (litres)/ha;
X_4 = Planting materials (number of stem cuttings/ha).

The inefficiency model (μi) is expressed thus: $\mu i = \delta_1 Z_1 i + \delta_2 Z_2 i + \delta_3 Z_3 i + \ldots + \delta_7 Z_7 i$

μ_I = Technical inefficiency term (The μ_1 S are non-negative random variable and are associated with technical inefficiency of production of the cassava flour processors)

$\delta_0 - \delta_1$ =Coefficients to be estimated

Where:

Z_1 = Age of the respondents
Z_2 = Household Size of the respondents
Z_3 = Cost of herbicides
Z_4 = Years of farming experience
Z_5 = Educational level of the respondents
Z_6 = Cost of planting materials
Z_7 = Amount of loan obtained from Cooperative

RESULTS AND DISCUSSION

Table 1: Socio-Economic Characteristics of Respondents

Variables	Frequency	Percentage	Cumulative Percentage
Age (years)			
30-49	73	60.8	60.8
50-69	47	39.2	100.0
Gender			
Male	120	100	100.0
Marital Status			
Single	31	25.8	25.8
Married	89	74.2	100.0
Religion			
Christianity	74	61.7	61.7
Islam	12	10.0	71.7
Traditional	34	28.3	100.0
Educational Level			
Primary Education	83	69.2	69.2
Secondary Education	37	30.8	100.0
Years of Experience			
10 – 19	40	33.3	33.3
20 – 29	60	50.0	83.3
30 – 39	20	16.7	100.0
Household Size (members)			
1 – 7	61	50.8	50.8
8 – 15	59	49.2	100.0
TOTAL	**120**	**100.0**	

Source: Field Survey, 2017

Results from Table 1 revealed the age distribution of cassava producers that majority (60.8%) of the cassava producers in the study area are between 30 and 49 years of age and the rest 39.2% are between 50 and 69 years of age. This indicates that most of the cassava produces in the study area are young and within the work-active age bracket and this would tend to increase the rate of production in the study area.

The gender status of a farmer or cassava producer is to a high extent a determinant of the level of efficiency and output. The gender status of the cassava producers in the study area was investigated and observed that all the cassava producers that were sampled are males and no females were sampled at all. Finding showed that 74.2% of the respondents are married and only 25.8% are single. This result implies that high productivity level of cassava in the study area, because married individuals are more prone to have large households (to help out on the farm), than producers who are not yet married. As shown in the Table 1, majority (61.7%) of the cassava producers in the study area are Christians, 10% are Muslims, while the rest 28.3% are traditional worshippers. Thus implies that cassava production is mostly dominated by Christian. However, religion does not necessary affect production of cassava or increase productivity but it is a means of production as Creator intervene in the expansion of production activities.
The level of education an individual attains in life can to a very great margin aid his productivity, so the educational level of the cassava producers in the study area was analyzed. The findings revealed that majority (69.2%) of the cassava producers in the study area have primary education, while the rest 30.8% have attained secondary school level of education. This factor may tend to enhance reduced efficiency in the operational level of the cassava producers. Much experience years in any business enterprise most times translate into effectiveness in operation and efficiency in cost reduction. The years of experience of the cassava producers in the study area was analyzed and that majority (50%) of the cassava producers in the study area have between 20 to 29 years of experience. 33.3% of the respondents have between 10 and 19 years of experience and only 16.7% have above 29 years of experience. This result indicates that the cassava producers in the have substantial and adequate experience years in the business and this would inevitably increase their level of efficiency.
Household size is an important factor especially in determining labour for farm work. The results from Table 1 revealed that majority (50.8%) of the cassava producers in the study area have between 1 to 7 household members and another 49.2% have between 8 and 15 household members. This implies that a farmer with a large household size have chances of using them for farm labour and this will affect the size of land cultivated and in turn enhance productivity and returns.

Cost and Returns Estimates of Cassava Production

The cost and returns estimate of cassava production in the study area was conducted using budgetary analytical technique and the result is presented in Table 2.

Table 2: Budgetary Analysis of Cassava Production

Components	Statistic Mean (₦)	Standard Error
Indian Hoe	1232.5	50.85
Cutlass	1919.58	76.51
File	1094.17	67.76
Weeding Hoe	1207.5	57.81
Axe	907.5	32.95
Basket	1132.08	66.05
Sprayer	2388.75	168.54
Depreciated Value (Fixed Cost)	**823.51**	**24.95**
Planting Materials	653.33	36.53
Farm Maintenance	3501.67	202.36
Fertilizer	17358.33	733.55
Herbicide	6404.67	671.05
Feeding	14861.67	543.94
Transportation	2429.58	360.43
Labour cost	9335.42	516.32
Total Variable Cost	**54,546.67**	**1,459.41**
Total Cost	**55,370.17**	**1.459.61**
Total Revenue	**61,266.67**	**1,334.25**
Gross Margin	**6,720.00**	**1,615.84**
Profitability Index	**0.06**	**0.03**
Net Income	**5,896.49**	**1,612.03**
Rate of Return on Investment	**17.87**	**3.50**
Rate of Return on Variable Cost	**118.36**	**3.59**
Operating Ratio	**0.92**	**0.03**

Source: ***Field Survey, 2017.***

It can be deduced from Table 2 above that the estimated depreciated mean Total Fixed Cost of cassava producers in the study area (TFC) is ₦823.51, while the estimated mean Total Variable Cost (TVC) was ₦54,546.67. The average Total Cost (TC) was estimated to be ₦55,370.17. The Total Variable Cost (TVC) contributed majorly to the Total Cost (TC), having an overall cost percentage of 98.5%. Cost of Fertilizer contributed the largest quota of the Total Variable Cost (TVC), having a percentage of 32%. The estimated Total Revenue (TR) and Net Income (NI) values for cassava production in the study area were revealed to be ₦61,266.67 and ₦5,896.49 respectively, indicating profitability for the business in the study area.

An Operating Ratio of 0.92 was obtained for the cassava producers in the study area. This shows that the cassava producers gain because this result translates that for every naira gained as revenue by the cassava producers, 92 Kobo is the value of the Variable Cost in it. An operating ratio that is less than 1 is good because it indicates a higher Total Revenue (TR) over Total Variable Cost (TVC).

Technical Efficiency of Cassava Farmers

The Empirical Stochastic Production Frontier Model was applied in analyzing technical efficiency of cassava farmers in the study area. The regression estimates results are presented in Table 3.

Table 3: Technical Efficiency of Cassava Production

VARIABLES	**OLS Coefficient**	**OLS Standard Error**	**MLE Co-efficient**	**MLE Standard Error**
Production Function				
Constant	0.340***	0.190	0.340***	0.284
	(3.522)		(3.456)	
LnFertilizer (Kg/ha)	0.195***	0.060	0.284**	0.226
	(2.672)		(2.321)	
Ln Labour (Man-days/ha)0.272**	0.059	0.335*	0.968	
	(2.013)		(1.948)	
Ln Herbicides (Litres/ha)	0.082**	0.062	0.108**	0.123
	(2.031)	(1.972)		
Ln Planting Materials	-0.341	0.052	-0.465***	0.137
(Stem Cuttings/ha)	(-0.654)		(3.562)	
Inefficiency Parameters				
δ_0 (Constant)	-	-	0.035	0.975
			(0.035)	
δ_1 (Ln Age of the Respondent)	-	-	0.438***	0.777
			(4.143)	
δ_2 (Ln Household Size)	-	-	-0.224**	0.516
			(-2.234)	
δ_3 (Ln Cost of Herbicides)	-	-	0.112*	0.175
			(1.731)	
δ_4 (Ln Years of Farming Experience)	-	-	-0.671**	0.101
			(-2.452)	
δ_5 (Ln Educational Level)	-	-	-0.285	0.971
			(0.294)	
δ_6 (Ln Cost of Planting Materials)	-	-	0.163**	0.578
			(2.013)	
δ_7 (Ln Loan Amount)	-	--0.133***	0.145	
			(-4.253)	
Diagnosis Statistics				
Sigma Squared σ^2	0.526			
Gamma γ	0.668			
Log Likelihood Function	0.316			
LR Test	0.110			
Mean Technical Efficiency	**0.862**			

Source: ***Field Survey, 2017.*** **Figures in parenthesis are t values**

* Significant at 10% level; ** Significant at 5% level; *** Significant at 1% level

Data in Table 3 presents the OLS regression estimates and the Maximum Likelihood Estimates of the technical efficiency of cassava production in the study area. It can be observed that slope coefficients: Amount of Fertilizer (Kg/ha) (X_1), Number of Labour (Man-days/ha) (X_2), Amount of Herbicide used (Litres/ha) (X_3), Quantity of Planting Materials (Stem Cuttings/ha) (X_4), were significant at 1%, 5%, 10% and 1% probability levels respectively and all showed positive signs. This result indicates compliance with the *a priori* expectation, which translates that as these variables are increased, there is enhancement in the efficiency level of cassava producers in the study area.

Estimates of inefficiency parameters revealed that Age of the Respondent (Z_1) Cost of Herbicides (Z_3) and Cost of planting materials (Z_6) were significant at 1%, 10% and 5% probability levels respectively and all had a direct correlation with inefficiency level, which means they brought about inefficiency. This result means that the older the farmers become, the lesser they become efficient in production. This is so because at old age, strength and energy to function very well is reduced. Results also mean that if the value of money spent on herbicides and planting can be reduced, the technical efficiency of cassava producers in the study area would improve. Household Size (Z_2), Years of Farming Experience (Z_4) and Amount of Loan Obtained (Z_7) all showed a significant but negative relationship with the inefficiency. This means that increase in household size, years of experience and amount of loan obtained brought about efficiency in cassava production in the study area.

A large household possessed by a cassava farmer means that he would have more labour (family) to work with on the farm, while incurring lesser cost on them. A farmer that has been in the business for long would definitely know the nooks and cranny of the business and so would perform better than individuals who are just getting into the business. Increase in the amount of loan obtained can cause the technical efficiency level of a farmer to increase because, he would have more money to purchase the needed inputs and at adequate proportions. Educational status of the cassava farmers showed positive correlation with their efficiency level.

Constraints Facing Cassava Producers

In analyzing the constraints facing cassava producers in the study area, descriptive analytical technique was employed and the result is presented in Table 4.

Table 4: Constraints Confronting Cassava Producers

Cassava Production Problems	Percentage (%) (Frequency)		Total (%) (Frequency)
	Yes	No	
1. Low Soil Fertility	100.0 (120)	0.0 (0)	100.0 (120)
2. High Cost of Farm Input	30.8 (37)	69.2 (83)	100.0 (120)
3. High Cost of Labour	95.0 (114)	5.0 (6)	100.0 (120)
4. Low Output	24.2 (29)	75.8 (91)	100.0 (120)
5. Bad Weather	18.3 (22)	81.7 (98)	100.0 (120)
6. Pest and Disease Infestation	66.7 (80)	33.3 (40)	100.0 (120)
7. Lack of ready-made market for produce	5.8 (7)	94.2 (113)	100.0 (120)
8. Bad Transportation System	10.8 (13)	89.2 (107)	100.0 (120)
9. Inaccessibility to Market	10.8 (13)	89.2 (107)	100.0 (120)

Source: ***Field Survey, 2017***

From results presented in Table 4, it can be deduced that the problem that affected cassava production most was low soil fertility followed by high cost of labour. The constraint facing cassava production the least in the study area was revealed to be lack of ready-made market for farm produce.

CONCLUSIONS

This study focused on technical efficiency of small scale cassava farmers in Ogun State. The socio-economic characteristic components that were analyzed which includes: age of the respondents, gender status, marital status, educational level and household size. An operating ratio of 0.92 was obtained for the cassava producers indicating profitability for cassava production in the study area. It was found that increase in household size of the respondents, years of farming experience and amount of loan obtained reduced the inefficiency of the cassava farmers. Based on results obtained from this study, the following conclusions are drawn: (i) The business of cassava production is a profitable one in the study area; (ii) Cassava producers are technically efficient in production; and (iii) Increased Cassava production is mostly hindered by low soil fertility in the study area.

RECOMMENDATIONS

For the purpose of improving the level of cassava production in the study area, the following recommendations are proffered:

(i) More young lads should be encouraged to go into the production if cassava as this would help in reducing the rate of youth unemployment in the study area.

(ii) Government should provide very favourable performance grounds for individuals that are in the business by providing them with production inputs at very subsidized amounts.

(iii) Cassava farmers should be advised to preserve the fertility of the soil they use for cultivation through improved and integrated soil conservation means.

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