

# Status of Cassava Farmers and Implication for Agricultural Extension and Rural Sociology in Gokana Local Government Area of Rivers State, Nigeria

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**Abstract** The study analyzed the status of cassava farmers and implication for agricultural extension and rural sociology in Gokana Local Government Area of Rivers State, Nigeria. Data were elicited from 120 cassava farmers with the aid of the questionnaire and interview schedule which were randomly distributed to respondents. Analyses of data were done with percentage, mean and multiple regression. Mean results showed that cassava farmers in the area, were 27.74 years old, spent 12.40 years in schooling, had a farming experience of 9.89 years and had a poor (1.68) monthly contacts with extension. Friends and neighbours, with 86.67% were the main sources of extension information on cassava production rather than extension agents which had 6.67%. Status of the use of improved cassava practice was 64.01% which is good enough. Results of the analysis of the relationship between farmers' characteristics and use of improved cassava practice gave an  $R^2$  value of 0.9305. Age, household size, extension contact and farm size were significant determinants of the use of improved cassava practice in the area. Although the farmers were good in the use of improved cassava practice, their exposure to agricultural extension activities was poor. The study recommends urgent and better contacts between extension agents (rural sociologists) and farmers.

**Keywords** Status, Cassava, Farmers, Implication, Agricultural extension, Rural sociology, Rivers State

## 1. Introduction

Cassava originated from Brazil in South America and spread to West Africa by the early Portuguese explorers. Cassava is a latex-producing plant which grows up to the height of 1.8 – 3.6 meters depending on the variety. The two main kinds of cassava commonly grown in West Africa are the sweet cassava (*Manihot palmata*) and the bitter cassava (*Manihot utilisima*). The bitter cassava contains a bitter juice that must be extracted before it could be considered safe for human consumption. The sweet cassava on the other hand does not contain any harmful juice to human and animals and therefore can be eaten in any possible form. Agriculturally, cassava is propagated from cuttings. It is planted as a sole crop or intercropped with maize, yam, Vegetables, etc. Cassava is useful in the production of fufu, gari, flour, tapioca, animal feed, ethanol, starch, gum and glucose.

The top four cassava producing countries in the world as at the end of 2010 according to Oppong-Apene (2013) were Nigeria with 37,504,100 tones, followed by Brazil with 24,524,300 tones, the third was Indonesia with 23,918,199

tones and the fourth was Thailand with 22,005,700 tones. The promulgation of the presidential initiative on cassava production in 2002 played important role in the sustenance of Nigerian position as the leading producer of cassava globally. The aim of the initiative was to produce more cassava for the purpose of producing ethanol, glue, glucose syrup and bread from cassava. Bakers under the initiative were to use 10 percent of cassava and 90 percent of wheat for bread production (Bamidele, et al 2008).

Despite the fact that Nigeria is the largest producer of cassava in the world, the country is not an active participant in the international market on cassava when compared with Brazil, Indonesia and Thailand with lesser production output (Elemo, 2013). Leaders of world trade on cassava today are Thailand and Indonesia.

Elemo (2013) added that 90 percent of the total cassava produced in Nigeria is eaten, while only as low as 10 percent is used for industrial products. President Goodluck Jonathan was emphatic in his desire to promote the export value of Nigerian produced cassava through the import substitution of wheat with cassava flour in the manufacture of bread. This is because in 2010 alone, Nigeria imported wheat worth N636 billion (naira). Elemo (2013) asserted that the substitution of wheat with 10 percent level of cassava in the baking of bread and confectioneries will lead to a high benefit of an annual savings of N63.60 billion (naira),

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creation of more jobs and reduction in the cost of bread.

Irrespective of the fact that majority of farmers in Gokana area are cassava farmers, output of the crop is still struggling to attain its maximum potentials. The problem of the study was to know if cassava farmers in the area are actually exposed to agricultural extension and rural sociological activities. The research question therefore of the study was what is the current status of cassava farmers and their exposure to agricultural extension activities in the Gokana Local Government Area of Rivers State? In order to find answer to this research question, the objectives of the study determined the personal characteristics of the cassava farmers, analyzed the sources of extension information on cassava production and ascertained the status of the use of improved cassava practice. The null hypothesis of the study was that there is no significant relationship between personal characteristics of cassava farmers and the use of improved cassava practice.

## 2. Methodology

This research work was conducted in Gokana Local Government Area (LGA) of Rivers State, South-South Nigeria. Its headquarters is at Kpor. Gokana Local Government Area has an area of 126 square kilometers and a population of 301,828 by the 2006 census. Gokana Local Government Area was created on 23<sup>rd</sup> September, 1991. It lies on the coastal low land of the Niger Delta in the south eastern part of Rivers State. Gokana is about fifty-four kilometers by road from Port Harcourt the capital of Rivers State and is located between Latitude 4°36' N and Longitude 7°21' E of the equator. It is bounded in the north by Tai Local Government Area and Khana Local Government Area, in the east by the Andoni Local Government Area, in the west by the Bolo people of Okrika Kingdom and in the South by the Ibani (Bonny) and the Atlantic Ocean. The major occupation of the people is agriculture. They produce cassava, yam, cocoyam, vegetables, livestock, fish and tree crops. The area is one of the major producers of cassava in Rivers State. Gokana people are also involved in such occupations as hunting, carving and weaving.

The study population includes all the cassava farmers in Gokana Local Government Area of Rivers State. This population includes farmers who are involved in both the sole and intercropping systems of cassava production in the study area. The sample size of this study was 120 respondents. The sampling procedure adopted the simple random sampling method, in which every member in the population has got equal opportunity of being selected. Firstly, random sampling was used in selecting six communities out of a total of 17 communities in the area. The selected communities were Kpor, Bera, K Dera, Bodo, Yeghe and Deken. Random sampling method was also adopted in selecting 20 cassava farmers from each of the selected communities to have the sample size of 120 respondents. List of farmers used were obtained from the

Area Office of the Rivers State Agricultural Development Programme.

**Table 1.** Personal Characteristics of Respondents

Characteristics	Frequency	Percentage (%)	Mean
<b>Age (in years)</b>			
Less than 20	14	11.67	27.74
20 – 30	51	42.50	
31 – 40	25	20.83	
41 – 50	26	21.67	
51 – 60	4	3.33	
Above 60	-	-	
<b>Total</b>	<b>120</b>	<b>100.00</b>	
<b>Educational Level (Years spent in schooling)</b>			
No formal education	4	3.33	12.40
Primary School Certificate	15	12.50	
Secondary School Certificate	54	45.00	
Diploma	24	20.00	
Degree	23	19.17	
<b>Total</b>	<b>120</b>	<b>100.00</b>	
<b>Household Size (Number of persons)</b>			
1 – 3	43	35.84	4.66
4 – 6	53	44.16	
7 – 9	16	13.33	
10 and above	8	6.67	
<b>Total</b>	<b>120</b>	<b>100.00</b>	
<b>Farming Experience (in years)</b>			
Below 5	21	17.50	9.89
5 – 10	48	40.00	
11 – 15	34	28.33	
Above 15	17	14.17	
<b>Total</b>	<b>120</b>	<b>100.00</b>	
<b>Monthly Extension Contact</b>			
Once in 2 weeks	-	-	1.60
Once in 1 month	5	4.16	
Once in 2 months	2	1.67	
Once in 6 months	14	11.67	
None	99	82.50	
<b>Total</b>	<b>120</b>	<b>100.00</b>	
<b>Size of Cassava farm (hectare)</b>			
Less than 1	10	8.33	3.79
1 – 2	40	33.33	
3 – 4	43	35.84	
5 – 6	18	15.00	
Above 6	9	7.50	
<b>Total</b>	<b>120</b>	<b>100.00</b>	

Field Survey, 2014.

The data for the study were collected from primary sources through the administration of the questionnaire for literate respondents and interview schedule the non-literate respondents. An enumerator who was trained for this purpose was used in the distribution and retrieval of data

collection instruments. Mean, percentage and multiple regression analysis were used for data analyses. The model of the multiple regression analysis used is explicitly presented in agreement with that used by Amamgbo et al (2006) as:

$$Y = a + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + b_5 X_5 + b_6 X_6 + e_1 \dots (1)$$

Where:

- Y = Index of improved practice
- a = Intercept
- $b_1 - b_6$  = Slope of the equation
- $X_1 - X_6$  = Independent variables
- $X_1$  = Age (years)
- $X_2$  = Household size (persons)
- $X_3$  = Educational level (in years)
- $X_4$  = Years of experience (in years)
- $X_5$  = Extension contact (monthly)
- $X_6$  = Farm size (hectare)
- $e_1$  = error term

### 3. Results and Discussion

Table 1 show that the mean age of the respondents was 27.74% years, with 20 – 30 years age range accounting for the highest with 42.50%. This finding implies that cassava farmers in the area are made up of youths and people who can be referred as being in their active and productive years.

The finding portends a good future for cassava production in that the youths are reasonably involved in its production. This situation tends to defer from the current observation in many farming communities where the youths with enough energy are abandoning farming for the old and retiring members of the society. This finding was corroborated in the fact that as the age of the respondents increases, the lower the number of those who are involved in cassava production.

More findings indicated that the mean number of years spent in schooling by the respondents was 12.40 years. This result shows that the highest level of education attained by the respondents was secondary school certificate with 45.00%. The finding shows that cassava farmers in the area are reasonably educated. The fact that good proportions (20.00% and 19.17%) of them have both diploma and degree certificates respectively support the fact that the educational attainment of cassava farmers in the study area is high. The result agrees with the study of Awoyinka (2009) in Oyo State which showed that cassava farmers were reasonably educated.

The mean household size among these respondents was 4.66 persons. This implies a good household size and indicates that the number of persons to cater for per household of cassava farmers in the area is good enough. With this household size, the farmers would be able to feed their families and also save for expansion from their cassava production outputs. The mean farming experience of these respondents was 9.89 years. This result connotes that the respondents were reasonably experienced in cassava

production business. This finding agrees with the study of Echebiri and Edaba (2008) in South-East, Nigeria where most cassava farmers among other things were known to be well experienced in cassava production. In view of the fact that increase in the number of years of a person on a particular production activity results into improved performance, it is believed that the reasonable years of experience acquired by these respondents in cassava production would make them suitable for enhanced cassava production.

The study shows that the mean monthly contact between the respondents and extension workers was 1.66 times. The number of contacts here was below the minimum standard of two visits per month which was recommended by Berror and Baxer (1984) and cited by Nlerum (2009) as the productive contact between farmers and extension workers. The fact that as much as 82.50% of the respondents indicated they had no contacts with extension workers has further confirmed that the contacts between cassava farmers and extension workers in the study area were poor. The results also showed that 3.79 hectares was the average cassava farm size of the respondents. Cassava farm as used in this study covers all plots containing cassava as sole or intercrop. The result indicated that cassava farmers here have reasonable hectares of farm under cultivation.

Table 2 indicates that the main source of extension information to cassava farmers in the study area were friends and neighbours which accounted for 48.33%. This finding agreed with the results of an earlier study by Nlerum et al (2012) which showed that friends and family members were the major sources of extension information to farmers in Eleme area of Rivers State, Nigeria. Extension Agents (Rural Sociologists) represented the least (6.67%) source of information to these respondents. This result disagreed with the findings of Nsoanya et al (2011) where the Extension Agents were the major sources of information to farmers and accounted for 45.00% of the result in Anambra State, Nigeria. These poor sources of information by Extension Agents and Rural Sociologists have elucidated the findings in Table 1 of this study which indicated that as high as 80.50% of the respondents had no contacts with extension workers.

**Table 2.** Sources of Information on Cassava Production

Source of extension information	Frequency	Percentage (%)
Media	10	8.33
Extension Agents (Rural Sociologists)	8	6.67
Friends and Neighbours	44	36.67
<b>Total</b>	<b>120</b>	<b>100.00</b>

Source: Field survey July, 2014.

The results in Table 3 shows that the major improved practiced used by the respondents were keeping of farm weed free with 100.00%. The finding revealed that all the respondents adopted the technology because a weed free farm provides a better resistance of crops to incidence of

diseases and pests infestation. It also improves yield and increases the output of cassava. The findings also indicated that the second main practice used by the respondents was harvesting as at when due with 96.67%. Harvesting as at when due is important to prevent the decay of cassava roots due to delayed harvesting of farms. Harvesting and processing the cassava roots into other food forms that improves the shelf life of the product like garri, flour, etc is more preferable than allowing the roots to overstay in the soil which may lead to root decay. The least used improved practice by these respondents was planting at the recommended spacing of 1 metre by 1 metre (1x1) m spacing with 5.00%. Farmers planted at much lesser spacing. The (1x1) m spacing reduces crop competition for available fertilizer, water, sunlight, etc and therefore guarantees improved yield of the crop. The study however shows that the mean use of improved cassava practice was 64.01% in the area. The implication of this finding is that cassava farmers in the study area are making good use of improved cassava production technologies introduced in the area. This 64.01% rate of use of improved cassava practice among Gokana farmers is however lower than the 80.78% rate of application recorded by Rivers State farmers in a study

carried out by Nlerum *et al* (2011) on cassava based improved practice in the Niger Delta, Nigeria.

In Table 4, the linear function was chosen as the model of best fit for the analysis because it gave the highest coefficient of multiple determination ( $R^2_{0.9305}$ ) and conformed to the *apriori* expectation. This means that about 93.05% of the variation in the use of improved practice of cassava production was accounted for by the joint action of the six personal characteristics of the respondents. The coefficients for age ( $X_1$ ), household size ( $X_2$ ), extension contact ( $X_5$ ) and farm size ( $X_6$ ) had positive and significant relationship with technology use at 0.05% level. The results indicate that these variables were important determinants in the use of improved production practice among the cassava farmers in the study area. Conversely, the coefficient for education ( $X_3$ ) and years of experience ( $X_4$ ) were not significant and therefore unimportant determinants of the use of improved cassava practice among these respondents. The decision emanating from the results was that the null hypothesis was rejected for the significant variables of age, household size, extension contact and farm size and subsequently accepted for the non-significant variables of education and years of experience.

**Table 3.** Use of Improved Agricultural Practice by Cassava Farmers (n=120)

Improved Practices	Frequency	Percentage (%)
Planting in well drained flood free soil	107	89.19
Planting of improved varieties	107	89.17
Inter cropping cassava with maize, vegetable, etc.	93	77.50
Planting healthy cassava stem	115	95.84
Planting stem at 45 inches slanting	21	17.50
Planting at (1x1) metre spacing	6	5.00
Planting in rows	45	37.50
Keeping of farm weed free	120	100.00
Application of appropriate fertilizer	107	89.17
Treating cassava cuttings with slurry of wood ash before planting to prevent soil born diseases.	8	6.67
Harvesting as at when due	116	96.67
<b>Mean Use of Improved Practice</b>		<b>64.01</b>

Source: Field Survey, 2014. Multiple responses were used.

**Table 4.** Summary of Multiple Regression Analysis of the Relationship between Personal Characteristics of Cassava Farmers and Use of Improved Practice

Parameters	Linear Function	Semi-log Function	Double-log Function
Multiple R Square ( $R^2$ )	0.9305	0.1426	0.1888
F-ratio	25.63	0.7874	0.1478
P-value of the f-ratio	0.007	0.08	0.7214
Variables	2.23	1.04	0.003
$B_0$ (Intercept)	-15.3823	-0.046	-0.058
$X_1$ (Age)	7.21(0.749)*	-0.046	-0.058
$X_2$ (Household size)	4.98(0.518)*	0.02(0.21)*	0.01(0.219)*
$X_3$ (Education)	16.40 (1.716) <sup>NS</sup>	0.08 (0.734)*	0.04 (0.806)*
$X_4$ (Years of Experience)	6.68 (0.694) <sup>NS</sup>	0.09 (0.863) <sup>NS</sup>	0.04 (0.818)*
$X_5$ (Extension Contact)	3.47 (0.361)*	0.16 (1.475) <sup>NS</sup>	0.04 (0.818)*
$X_6$ (Farm Size)	7.510 (0.781)*	0.13 (1.207)*	0.05 (1.066)*

Source: Field Survey, 2014. \*Significant at 0.05% level. Figures in parentheses are t-ratios.

#### 4. Conclusions and Recommendations

The study has shown that the current status of cassava farmers in the study area has a good future for cassava production because more farmers are in their active and productive ages, have a good farming experience and are cultivating sizeable hectares of cassava farms. Although, there was an appreciable use of improved cassava production practice by the farmers, their exposure to agricultural extension and rural sociological activities was poor. Poor extension contact of the farmers with a higher sourcing of production information from friends and neighbours, rather than the extension agents (the rural sociologists) were identified as problems. The study recommends better contacts between extension agents and cassava farmers and higher activities of agricultural extension and rural sociological workers to assist farmers access firsthand and direct production information from informed experts in the area.

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