CASSAVA PRODUCTION AND POVERTY ERADICATION AMONG CROP FARMERS IN ONDO STATE, NIGERIA

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Abstract: Poverty is a condition in which one cannot generate sufficient income required to secure minimum standard of living or a sustainable life. Various government administrations have stressed the need for self employment through engaging in agriculture which is a veritable tool for poverty eradication. This study was carried out in Ondo State, Nigeria to assess how cassava production can assist in the eradication of poverty among crop farmers. A total of 70 respondents were sampled and information was elicited from them through the use of interview schedules. Descriptive and inferential statistical tools were used in analyzing the data. The study shows that majority (71.43%) of the respondents were males and married, with family sizes of between 6-10 persons (55.71%). Most of them (77.14%) had formal education. Results from the study also showed that the knowledge of cassava production is rife among the farmers. Majority of them (71.43%) had farming experience of between 7-12 years. The study revealed that 65.71% realized between N10,000-N20,00 monthly ($67-134). Constraints such as lack of adequate fund and pest infestation are the prominent constraints faced by the farmers. Multiple regression analysis shows an R2 value of 0.69. The study therefore recommends that efforts be employed to improve the production of cassava and extension services be made accessible to farmers since cassava production is a veritable tool in alleviating poverty.

Keywords: Cassava production, crop farmer, poverty eradication

I. INTRODUCTION

Poverty is a phenomenon which has generated a lot of interest in recent times. There is no exact description of poverty as a concept but more often than not, it is defined from the perception of the individual and perspective from which the subject is addressed [10]. A precise definition has become a controversial issue both in theory and policy. Poverty is relative to people, countries, geographical location, contexts, developmental approaches and national wealth [13].

Poverty has been described as a social problem whereby the household income is insufficient to ensure suitable livelihoods, consequently leading to hunger, malnutrition, ill health and mortality from illness [9]. It is however generally agreed that poverty is a condition in which one cannot generate sufficient income required to secure a minimum standard of living in a sustainable pattern [11]. Furthermore, poverty is characterized by the lack of purchasing power, exposure to risks, insufficient access to economic services and limited opportunities for income generation.

In Nigeria recent estimates from the National Bureau of Statistics (2008) put incidence of poverty at 54.4% [7]. The incidence was put at 28.8% in 1980, 46.3% in 1985, 42.7% in 1992 and 65.6% in 1996. These figures give a worsening poverty situation in the country which should be a cause for concern. It is therefore not surprising that in recent times the government and civil societies in Nigeria with support from donor agencies have earmarked considerable resources to address the issue of poverty reduction.

The current rate of poverty reduction is too slow to meet the target set for poverty reduction by the year 2015. If this trend continues, poverty incidence would only reduce to 43% as opposed to 21.4% by 2020. To achieve this target therefore, the current environmental and political will of the national poverty eradication programme must be sustained and well monitored for its impact to be felt by people in Nigeria [6]. Therefore, cassava being an important arable crop commonly cultivated by majority of farmers can be fully exploited in addressing the issue of poverty among farmers in Nigeria.

Cassava is simply the most important staple food grown and consumed in the Western Region of Nigeria and it can play a major role in the effort to alleviate the country's food crisis. Cassava roots are

processed by a variety of methods into different products and used in diverse ways according to local customs and preferences of the people to provide a carbohydrate based diet. According to IITA (2003), the raw cassava roots and leaves are not palatable, thus there is need to process its roots into various products such as gari, fufu, lafun (cassava flour) and starch [5]. Thus cassava requires more processing, but not requiring sophisticated tools and equipment and much capital [2].

Cassava is one of the most important food crops in Africa. It derives its importance from the fact that it is starchy, thickened and its tuberous roots are a valuable source of cheap calories especially in developing countries where calories deficiency and malnutrition are wide spread [12], [14].

Akorede (2004) opined that before cassava production can attain its potential of increasing farmer's income and improving their standard of living researches into improved production methods, handling and marketing of its products need to be undertaken [4]. Therefore optimizing the income obtainable from cassava production and increasing the purchasing power of farmers to meet their basic needs can only be achieved through an understanding of what production methods are used by the farmers, income realizable from cassava production, reasons for engaging in cassava production and the extension services required for efficient and effective production. Against this background the study objectives are to:

- Identify the farming operations engaged in by cassava farmers
- Determine the level of income realized from cassava production
- Identify the extension needs of cassava farmer
- Examine constraints to cassava production
- Determine the relationship between socio-economic characteristics of cassava farmers and the perceived effect on poverty alleviation.

II. METHODOLOGY

The study was carried out in Ifedore Local Government Area of Ondo State, Nigeria. It has an estimated land area of 126,341 hectares and population of 217,000 people [8]. The Local Government Area is divided into ten wards under which several villages are grouped. It has two distinct seasons which are the wet and dry seasons. Farming is the predominant occupation of the residents. Other activities engaged in by the residents are trading, hunting and tailoring amongst others.

III. SAMPLING PROCEDURE AND SAMPLE SIZE

The population of this study comprise of cassava farmers. Simple random sampling technique was used in selecting respondents from three different villages which are Ipogun, Ikota and Isarun. 20 cassava farmers were sampled from Ipogun village, 25 from Ikota and 25 from Isarun. This gave a total of 70 cassava farmers that were sampled for this study. Interview schedules were designed and used to elicit information from the respondents on their socio-economic characteristics and cassava farming activities.

IV. MEASUREMENT OF VARIABLES

Independent variables measured were age, marital status, level of education, household size, farming experience, farm size and income realizable from cassava production. The dependent variable which is the perceived effect of cassava production on poverty alleviation among farmers was measured using a three point rating scale of high effect = 3 points, moderate effect = 2 points and no effect = 1 point. Hence the total scores of respondents on the effect of cassava production on poverty alleviation were expressed with the maximum score of 21 points and minimum score of 7 points.

V. DATA ANALYSIS

Data collected were analyzed using descriptive and inferential statistics. Descriptive statistics such as frequency distributions, percentages and means were used to describe the demographic characteristics. Multiple regression analysis was used to determine if any significant relationships existed between socio-economic characteristics and perceived effect of cassava production on poverty alleviation. Equation of the estimated regression is

$Y = Bn + B1\ X1 + B2\ X2 + B3\ X3$ ------ $Bn\ Xn$

Where Bn is the coefficient of the regression

B1 = intercept of Y

Y = Perceived effect of cassava production on poverty alleviation

X1 = GenderX2 = Age

X3 = Level of education

VI. RESULTS AND DISCUSSION

A. Socio-economic characteristics of cassava farmers

Table 1 indicates that 71.43% of the respondents of this study were males and most of them (65.71%) were between the ages of 30-50 years. This shows that most of the cassava farmers are middle aged.

Also, about 79% of them were married with more than half of them (55.71%) having between 4-6 people in their household. The educational background of the respondents shows that almost a quarter of them (22.86%) never had any form of education, while majority (77.14%) had completed one form of formal schooling or the other. Majority of them (71.43%) had farming experience of between 7-12 years. This trend in their farming experience may likely encourage the increased production of cassava. This finding is in agreement with the views of Akorede (2004) and Ajao (2000) who asserted that the more the farming experience of farmers, the more exposed to farming operations they become and the better use of management practices in cassava production [4], [2].

TABLE 1: SOCIO-ECONOMIC CHARACTERISTICS OF CASSAVA FARMERS

VARIABLES	CATEGORIES	FREQUENCY	PERCENTAGE
GENDER	MALE	50	71.43
	FEMALE	20	28.54
AGE	LESS THAN 30	11	15.71
	31-40	22	31.43
	41-50	24	34.29
	51-60	9	12.86
	ABOVE 60	4	5.71
MARITAL STATUS	SINGLE	15	21.43
	MARRIED	55	78.57
EDUCATIONAL LEVEL	NO FORMAL EDUCATION	16	22.86
	PRIMARY EDUCATION	35	50.00
	SECONDARY EDUCATION	17	24.28
	TERTIARY EDUCATION	2	2.86
HOUSEHOLD SIZE	1-5	29	41.43
	6-10	39	55.71
	ABOVE 10	2	2.86
FARM SIZE	1-3	2	2.86
	4-6	3	4.28
	7-9	44	62.86
	ABOVE 10	21	30.00
FARMING EXPERIENCE	1-3	7	10.00
	4-6	5	7.14
	7-9	24	34.29
	10-12	26	37.14
	ABOVE 12	8	11.43

B. Cassava farming operations of the respondents

Table 2 reveals ten farming operations cassava farmers often engage in. The major farming operations cassava farmers were engaged in include planting ($\bar{X}$ = 1.96), weeding ($\bar{X}$ = 1.94), manure application ($\bar{X}$ = 1.85) and land clearing ($\bar{X}$ = 1.81). The mean was set at 2.00. Most of the farmers did not engage in storage ($\bar{X}$ = 1.51) and processing operations ($\bar{X}$ = 1.58). This may be attributed to the fact that cassava is a highly perishable produce that cannot be stored for more than a few days.

TABLE 2: DISTRIBUTION OF RESPONDENTS BY THEIR CASSAVA FARMING OPERATIONS

FARMING OPERATIONS	FREQUENCY	PERCENTAGE	MEAN
LAND CLEARING	65	92.86	1.81
PLANTING	68	97.14	1.96
WEEDING	67	95.57	1.94
MANURE APPLICATION	66	94.28	1.85
DISEASE CONTROL	62	88.57	1.74
PEST CONTROL	54	77.14	1.69
HARVESTING	63	90.00	1.77
PROCESSING	41	58.57	1.58
MARKETING	52	74.28	1.62
STORAGE	38	54.28	1.51

Scale: Always engaged 3, Regularly engaged 2, Never engaged 1.

C. Monthly income realized from cassava production

Table 3 reveals the level of income realized by the farmers from cassava production. Majority of the farmers (65.71%) realized between N10, 000 - N20, 000 per month ($67-134) from their cassava farms. This indicates that most of the cassava farmers earn more than the one dollar per day poverty line adopted by the United Nations.

TABLE 3: DISTRIBUTION OF RESPONDENTS BY THEIR MONTHLY INCOME FROM CASSAVA PRODUCTION

INCOME (NAIRA/MONTH)	FREQUENCY	PERCENTAGE
LESS THAN N5000	4	5.71
N5001-N10000	11	15.71
N10001-N15000	21	30.00
N15001-N20000	25	35.71
N25000-N30000	6	8.58
ABOVE N30000	3	4.29

Note that N150 = $1.00

D. Respondents' perceived effect of cassava production on poverty alleviation

Table 4 shows that 67.14% of the respondents were of the opinion that the income realized from cassava production had a high effect on their ability to purchase clothing materials, while 64.29% were of the view that it had a high effect on their ability to purchase household utensils/needs. This indicates that the respondents are of the view that the income realized from cassava production is used in taking care of their immediate needs.

TABLE 4: EFFECT OF CASSAVA PRODUCTION ON POVERTY ALLEVIATION AMONG FARMERS

	HIGH EFFECT	LITTLE EFFECT	NO EFFECT
PURCHASE OF CLOTHING MATERIAL	47 (67.14)	21 (30.0)	2 (2.86)
PAYMENT OF CHILDREN'S SCHOOL FEES	43 (61.43)	19 (27.14)	8 (11.43)
PAYMENT OF HOUSE RENT	41 (58.57)	20 (28.37)	9 (12.86)
PAYMENT OF HEALTH CARE SERVICES	44 (62.86)	21 (30.00)	5 (7.14)
PURCHASE OF HOUSEHOLD UTENSILS/NEEDS	45 (64.29)	19 (27/14)	6 (8.57)
TRADING ACTIVITIES	34 (48.57)	20 (28.57)	16 (22.84)

E. Extension services needs of respondents

Extension service is an essential ingredient for effective production and transfer of technologies that are designed to boost agricultural production. Every farmer whether literate or non-literate needs extension services in order to increase productivity. Table 5 shows that 72.86% and 70% of the respondents need extension services on varieties of cassava to plant and harvesting information. However, only 44.29% of them need extension services on implement and equipment used on the farm. This indicates that there is a need for extension organizations to disseminate improved varieties of cassava that have been developed to the farmers in order to enhance their production level.

TABLE 5: DISTRIBUTION OF RESPONDENTS ACCORDING TO EXTENSION SERVICES NEEDED

EXTENSION SERVICES NEEDS	FREQUENCY	PERCENTAGE
PEST AND DISEASE CONTROL	43*	61.43
IMPLEMENT AND EQUIPMENT USE	31	44.29
PEST AND DISEASES CONTROL	38	54.28
VARIETIES OF CASSAVA PLANTED	51	72.86
AGRONOMICAL PRACTICES NEEDS	42	60.00
HARVESTING INFORMATION NEEDS	49	70.00
CASSAVA UTILIZATION NEEDS	48	68.57

*Multiple responses provided

Table 6 shows farmer's constraints to cassava production. Lack of adequate funds in form of credit facilities (81.43%), pest and disease attack (78.57%), high cost of inputs (71.43%) and lack of processing facilities (70.00%) were ranked highest as constraints to cassava production by the farmers. This finding reveals that with more capital, the farmers can expand on their production level. However, capital should be in the form of subsidized inputs and equipment due to the high level of diversion of capital by beneficiaries.

Table 6: Distribution of respondents by their constraints to cassava production

CONSTRAINTS TO CASSAVA PRODUCTION	FREQUENCY	PERCENTAGE
PROBLEMS OF LAND TENURE	48*	68.57
UNAVAILABILITY OF LABOUR	39	55.71
PILFERING	41	58.57
LACK OF PROCESSING FACILITIES	49	70.00
LACK OF STORAGE FACILITIES	40	57.14
SOCIO CULTURAL CONSTRAINTS	36	51.42
BAD WEATHER EFFECT	38	54.29
LAC OF ADEQUATE FUND	57	81.43
HIGH COST OF INPUT	50	71.43
PEST AND DISEASE ATTACK	55	78.57

** Multiple responses provided*

F. Result of regression analysis.

For the linear functional form, the coefficients of age (X2), level of education (X3), family size (X4), farming experience (X5) and income from cassava production (X6) were positive which implies that an increase in age, level of education, family size, farming experience and income from cassava production will translate to an increase in the perceived effect of cassava production towards alleviating poverty. For the semi-log functional form, an increase in the coefficients of gender, level of education, family size and income from cassava production will decrease the effect of cassava production on alleviating poverty because they all have negative coefficient values. While an increase in the coefficients of age and farming experience will have a high effect on alleviating poverty.

For the double-log functional form, an increase in age and farming experience result in a high effect of cassava production on alleviating poverty, while the other variables have a negative effect on alleviating poverty if they are increased because they have negative coefficients.

The choice of the lead equation was predicated on the value of the adjusted R2 and the number of significant coefficients in a given functional form. Therefore, the linear functional form, which has the highest adjusted R2 of 0.692 as well as four (4) significant coefficients, was chosen as the lead equation. It shows that 69% of the variables were explained by the explanatory variables included in the model.

The equation is stated thus:

$$Y = 20.536 - 2.329X1 + 2.33X2 + 0.808X3 + 4.411X4 + 5.250X5 + 2.081X6$$

(17.824) (-4.867) (0.105) (3.242) (0.051) (0.341) (4.985)

TABLE 7: RESULT OF REGRESSION ANALYSIS OF FACTORS AFFECTING CASSAVA PRODUCTION

FUNCTIONAL FORM	CONSTANT	X1	X2	X3	X4	X5	X6	ADJUSTED R2	F-VALUE
LINEAR	20.536*** (17.824)	-2.329*** (-4.867)	2.333E-03 (0.105)	0.808*** (3.242)	4.411E-03 (0.051)	5.250E-03 (0.341)	2.081E-05*** (4.985)	0.692	11.555
SEMI-LOG	2.093*** (9.270)	-0.121*** (-4.271)	5.258E-02 (0.973)	-2.28E-02 (-1.064)	-1.31E-02 (-0.886)	7.882E-02*** (4.639)	-9.80E-02*** (-3.481)	0.583	10.938
DOUBLE-LOG	4.938 (1.298)	-1.967*** (-4.106)	0.746 (0.820)	-0.360 (-0.996)	-0.292 (-1.172)	1.360*** (4.789)	-1.704*** (-3.593)	0.386	11.163

Source: Field Survey, 2008

Figures I parenthesis represent t-values

Y = Perceived effect of cassava production on poverty alleviation

X1 = GenderX2 = Age

X3 = Level of educationX4 = Family size

X5 = Farming experienceX6 = Income from cassava production

*** Significant at 1%

VII. CONCLUSION AND RECOMMENDATIONS

Based on the findings of this study it can be concluded that of all the ten farming operations identified in cassava production in the study area, four had the highest percentage and were commonly engaged by the farmers in their farming operations. These are planting, manure application, weeding, and land clearing. Also, the study revealed that majority of the respondents realized between N10,000 – N20,000 monthly ($67-134). The study also revealed that income from cassava production had an effect on the purchase of clothing material, payment of school fees and payment of health care services. Lack of adequate fund and pest and disease attack were the major constraints faced by the respondents. Multiple regression analysis showed that all the independent variables gave R2 of 0.692. This implies that the variables explained 69.2% of the variance in cassava production to alleviate poverty among farmers.

Therefore the study recommends that efforts be employed to promote and improve the cultivation of cassava through intensified extension services which should be made accessible to farmers since cassava production is a veritable tool in alleviating poverty.

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