

# PROMOTING IMPLEMENTATION OF SUSTAINABLE DEVELOPMENT GOALS IN RURAL NIGERIA: I. POVERTY ISSUES AND ITS DETERMINANTS AMONG CASSAVA-BASED FARMING HOUSEHOLDS IN AKPABUYO LOCAL GOVERNMENT AREA, CROSS RIVER STATE, NIGERIA

EMMANUEL E. AGBACHOM AND EMEKA M. AMALU

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## ABSTRACT

Issues of poverty and their major determinants among Cassava-Based Farming Households in Akpabuyo, Cross River state, Nigeria were studied. A multi-stage sampling procedure was used in the selection of wards and cassava-based farming households, while primary data were collected using well-structured questionnaires administered to 103 households and analyzed using standard descriptive statistics, poverty indices and logistic regression models. Socio-economic statistics of the households showed that the percentages of male to female farmers differed considerably, with 59% of the households consisting of married men and women, 33% were aged 46 years and above. 98% of the households were Christians, 38% had no formal education, and 48% of the total number of the households had less than 4-member family sizes. The poverty line was estimated at N2, 933.25, equivalence of \$7. Incidence of poverty among the cassava-based farming households was aggregated at 49% percent, but incidences were observed at thirty four (34%) percent for males and (52%) percent for females. The depth of poverty for cassava-based male farmers was 15% while that of females was 20 percent. The severity of poverty was determined at 9 percent and 11 percents for male- and female-headed households respectively. The strength of association between the dependent and the independent variable was estimated at 0.715, using Nagel Kerke's coefficient  $R^2$  ( $p > 0.05$ ). In order that farming households in Akpabuyo LGA contribute their quota to overall aim of Nigeria to end all forms of poverty by the year 2030, it is recommended that more of the young and energetic youth population be encouraged to engage themselves more in cassava production enterprises and more women, especially the female-headed households and the vulnerable should be empowered to engage in cassava farming. Large household sizes should be discouraged and more incentives should be provided for more household heads. More of the cassava-based farming households should be encouraged to optimally expand the sizes of their cassava farm lands and empowered to diversify their sources of income. Finally, more of the cassava-based farmers in the area should be persuaded to form and/or join cooperative societies so as to build and benefit from ensuing "social capital".

## INTRODUCTION

Poverty is one of the greatest challenges facing the world today and it remains one of the unfinished tasks of this century. Though it has been described in several ways as "the lack of certain capabilities such as not being able to participate with dignity in the society" (Sen, 1989); "a living condition in which an entity is faced with economic, social, political, cultural and environmental deprivations laced with vulnerability and powerlessness" (Lipton and Ravallion, 1995; Sen, 2000), its greatest meaning comes when it is seen "as the inability of any individual or a family to command sufficient resources to satisfy basic needs, the threshold level of income needed to satisfy basic minimum food and non-food requirements. An escape from poverty remains as an indispensable requirement for sustainable development. This is reason the Rio de Janeiro +20 outcome document, "The future we want" inter alia, reiterated the commitment of the one hundred and

eighty three countries of the United Nations to freeing humanity from poverty (Sustainable Development Goal Number 1), as a matter of urgency. Poverty eradication, changing unsustainable patterns of consumption and promoting sustainable production and protecting and managing the natural resource base of economic and social development are the overarching objectives of sustainable development. Sustainable Development Goals build on the foundation laid by the Millennium Development Goals, seek to complete the unfinished business of the Millennium Development Goals, and respond to new challenges. Each country has primary responsibility for its own economic and social development and the role of national policies, domestic resources and development strategies cannot be overemphasized.

Nigeria is basically an agrarian nation and the country's socio-economic history and development has been very closely tied to its agricultural sector. The recent poverty and food insecurity situations in Nigeria,

coupled with an overwhelming population figure of over 170 million people and shrinking arable land area show that Nigeria must redouble her efforts at producing enough food if she has to feed her citizens, as well as meet the United Nations Sustainable Development Goal (SDGs) 1(End poverty in all its forms everywhere). Like wealth, poverty is not shared equally around the world. Income poverty, for instance, is also not equally shared. There is no gain saying that agricultural growth is a catalyst for broad based growth and development in most low income countries, and that economic growth, food security and increased productivity are strongly linked to poverty reduction. Of several other countries in the Sub – Saharan Africa, Nigeria holds an unenviable record of having about 110 million of her 170million people (61%) living in abject poverty. Though, various Nigerian governments have adopted and implemented different poverty alleviation programmes dating back to the oil boom era of the 1970s and spanning up to the late 2012; and despite the large financial and material resources invested in the various initiatives, somehow paradoxically, the number of the poor in rural areas of Nigeria has continued to soar (Amalu, 2005).

Poverty may be caused by national, sector-specific, community, household or individual characteristics. Most of the “causes” of poverty are immediate (or “proximate”) causes, but not necessarily “deep” causes. The weakest part of poverty analysis – what Howard White called the “missile middle” – is the development of a clear understanding of the

fundamental determinants of poverty. Such an understanding is needed if one is to formulate an effective strategy to combat poverty. Since there is no reason to believe that the root causes of poverty are the same everywhere, discussions of the regional/National, community and household/individual characteristics are necessary. Some of the important characteristics in this category would include the age structure of household members, education, gender of the household head, and the extent of participation in the labor force. At the household and individual level, factors such as demographic, economic and social characteristics determine levels of poverty. The objective of this study was to examine poverty issues and its determinants among cassava-based farming households in Akpabuyo Local Government Area, Cross River State, Nigeria.

## METHODOLOGY

### Description of study area

This study was conducted in ten selected communities of Akpabuyo Local Government Area of Cross River State, Nigeria (Fig. 1). Akpabuyo LGA, which is popularly referred to as the “Food Basket” of Cross River State, lies between latitude  $4^{\circ} 55'$  and  $5^{\circ} 40'$  and longitude  $8^{\circ} 25'$  and  $8^{\circ} 32'$  East. It lies within the Tropical Rain forest vegetation belt of Southern Nigeria and shares the Atlantic coastline water fronts with Bakassi to the east and the Republic of Cameroons to the west (GIS-UNICAL, 2015).

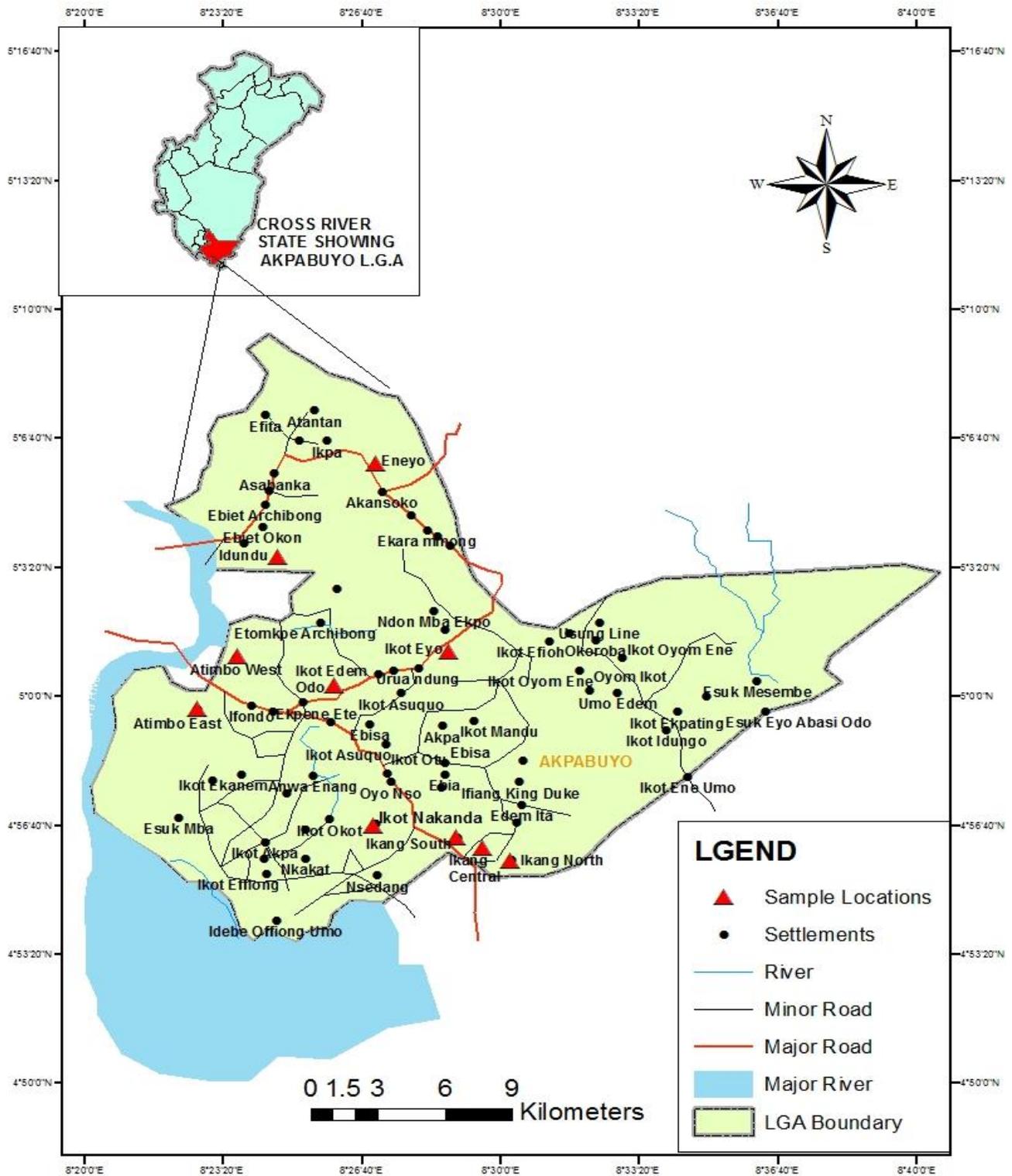


**Fig. 1:** Map of Cross River State showing Akpabuyo Local Government Area, the study Area.

**Source:** (GIS-UNICAL, 2015).

The communities are Idundu/ Anyananse , Atimbo East, Atimbo West, Ikot Edem Odo, Eneyo, Ikot Nakanda, Ikot Eyo, Ikang North, Ikang South, and Ikang Central(Fig. 2), which are found in Akpabuyo LGA in the Eastern Coastline area of Cross River state. Akpabuyo LGA was created on Tuesday 27<sup>th</sup> August 1991, out of the former Odukpani LGA of Southern Senatorial zone of Cross River state. It became the 14<sup>th</sup> and 589<sup>th</sup> LGA in Cross River state and Nigeria respectively. According to the Millennium Year Book of Local Government Councils in Cross River State (Anon, 2010), Akpabuyo LGA had a total

population of 360,000 persons. The total area of the districts is about 28.5 square kilometers of which 60% is arable (AfDB, 2013). The study areas represent some of the major cassava-and maize-growing areas of the State. The agricultural production system is mixed crop-livestock (traditional) agricultural system whereby a smallholder farmer practices food-crops and livestock production under the same management. The major crops grown in Akpabuyo include Cassava, cocoyam, plantain/bananas, Kola nut, coconut, and Oil palm produce as well as sea foods.



**Fig. 2:** Map of Akpabuyo showing the sample locations and with the various cassava producing communities  
**Source:** (GIS-UNICAL, 2015).

**Sampling techniques and data collection.**

A multi-stage sampling procedure (Ebo, 2009) was used to select wards, communities and farming

households. In the first stage, the ten wards were purposively selected from the major cassava producing areas based on the intensity of “Garri” production, agro-ecology and accessibility. Varying numbers of

households from each of the communities were randomly selected (Table 1). Out of a total of 176 farm households randomly selected, 103 farm households were cassava-based farming households from 53 communities respectively. For the sake of homogeneity among farm households, the 103 households who engaged in cassava productions were considered for the study. Data were collected by 19 enumerators from

cassava-based households using structured interview questionnaire schedule. The survey collected valuable information on several factors including household composition and characteristics, land and non-land farm assets, household membership in different rural institutions, cassava-farm hectareage, costs of production, yield data, and indicators of access to infrastructure and household market participation.

**Table 1:** Selected communities, Numbers of Farming households, numbers of cassava-based households and field work Enumerators

Communities	Number of Households	Number of Cassava-Based Households	Percent of Total
Idundu/ Anyanase	13	08	61.5
Atimbo East,	12	09	75.0
Atimbo West,	17	11	64.7
Ikot Edem Odo,	20	10	50.0
Eneyo,	21	12	57.1
Ikot Nakanda,	17	10	58.8
Ikot Eyo,	21	07	33.3
Ikang North,	18	10	55.6
Ikang South,	19	12	63.1
Ikang Central	18	14	77.8
<b>TOTALS</b>	<b>176</b>	<b>103</b>	<b>59.7*</b>

**Source:** Author's Field survey data, 2015; \*Mean value

### Sources and Methods

The primary data were obtained through solicited responses by cassava-based household farmers (units of analysis) in personal interviews and questionnaires distributed. One hundred and three (103) questionnaires were administered to the identified cassava-based farming households and on completion; these completed questionnaires were retrieved for collation, coded/encoded, analysed and interpreted. Descriptive statistics were used to analyze socioeconomic characteristics. Poverty index and logistic regression model were used to analyze poverty incidence and determinants of poverty. Food security index and logistic regression model were used to analyze food security status and its determinants.

The variables identified for the study included the following: (a) The dependent variable, used in the logistic regression to determine the factors that influence poverty was the poverty status of the households, which

could be poor or non-poor, represented as 0 and 1 respectively. To arrive at the categorization, two-third (2/3) of the average yearly expenditure per capita of the households was used as the poverty line; and (b) The independent variables which are the determinants of poverty among cassava-based farming household in Akpabuyo Local Government Area. These included (a) Age of household head (years), (b) Gender (male/female), (c) Household size (Number of persons), (d) Educational Level (years), (e) Farm size (hectares) and (g) Poverty status.

This study made use of poverty index and logistic regression model to analyse the poverty incidence and determinants of poverty in the study area. The binary logistic regression model was used because of the fact that the explained (predicted) variable has two outcomes, namely poor or non-poor given the values assumed by the explanatory variable. This is so because the explained variable is not continuous and in

this case, dichotomous. The variables were the Dependent(poverty status categorized into poor and non-poor) and independent variables (Age of Household head, gender, household size, educational level and farm size.)

$$Y = f (X_1, X_2, X_3, X_4, X_5, X_6, U_i)$$

Where

Y= Poverty status of the Household

$X_1$  = Age of Household head

$X_2$  = Gender

$X_3$  = Household size

$X_4$  = Educational Level

$X_5$  = Farm size

$X_6$  = Food Security status

$U_i$  = Error term

$$L_i = \frac{P_i}{1-P_i} = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + U_i$$

Where

$b_0 - b_6$  = Parameter estimates

$L_i$  = Logit estimate

$P_i$  = Probability of being poor

$1-P$  = Probability of being non-poor

$X_1$  = Age of Household head (continuous variable)

$X_2$  = Gender (categorical covariate)

$X_3$  = Household size (continuous variable)

$X_4$  = Educational Level (continuous variable)

$X_5$  = Farm size (continuous variable)

$X_6$  = Food Security status (categorical covariate)

$U_i$  = Error term

In the foregoing model equation, a *priori* assumptions were made including that  $b_1$  and  $b_2$  are expected to be negative,  $b_3$  and  $b_6$  are expected to be positive or negative, while  $b_4$  and  $b_5$  are expected to be positive. The dependent variable was dummy with those households that are poor represented as 0 and 1 for non-poor households, implying that those factors that negatively influence the dependent variable are those that reduce the prevalence of poverty, while those with positive effects increase poverty.

Table 2 presents explanatory variables with their hypothesized effects on the poverty status. Access to credit is theoretically expected to reduce poverty through cash investment in productive activities and also smoothening consumption. The aged household head is perceived to be more productive and consequently the household is expected to be non-poor. Educational level was hypothesized to reduce poverty, implying that the more educated the decision maker, the better skilled and productive he or she is and consequently experiences less poverty. Female involvement in decision making was hypothesized to have a negative effect on poverty. Farm size on the other hand releases the binding of land constraints for all sorts of enterprises and is also an asset which enables households to easily access both inputs and credit markets. The size of household is hypothesized to have a positive effect on the poverty status of the household.

**Table 2:** Hypothesized Effects of Explanatory Variables (Determinants) on the Poverty Status of Households.

Variables	Definition	Hypothesized effects of Poverty
Access to credit	Cash investment in productive activities	+
Age of household Head	Age of Decision maker in years	+/-
Gender	Involvement in Decision-making	+/-
Household size	Number of persons in a household	+/-
Educational Level	Formal education of Decision make in years	+
Farm size	Size of farm land in hectares	+
Food security status	Food security index (food secure 1/food insecure 0)	+/-

## RESULTS AND DISCUSSION

The demographic and social characteristics of cassava-based farmers in Akpabuyo Local Government Area are presented in Table 3. Majority of the cassava-based households were males who pooled 59% of the total, with women occupying the remaining 41% of their population. This result is rather surprising because in Africa and particularly in Nigeria, cassava is socio-culturally presumed to be a woman's crop, while yam – generally regarded as king of all crops is in turn presumed to be a man's crop; but the reasons for this discrepancy are not far-fetched. The reasons are simply ecological and economic. Whereas cassava can grow well in virtually all agro-ecological conditions in the hot, humid tropical areas of Africa, yams are choosy and intolerant of excessive water or moisture conditions, persistent cloudy weather and high insolation conditions in the study area. Culturally, no premium is attached to yam consumption in Akpabuyo, whereas cassava-based meals are highly cherished. As a result of the premium attached to cassava-based meals, the favourable soil and climate conditions and the relative ease of management of cassava cultivation in the field, cassava-based enterprises are preferred to yam-based enterprises in this local government area. This explains the predominance of male-headed respondent household in cassava cultivation in Akpabuyo Local Government Area

The age range of respondents involved in active cassava farming in Akpabuyo LGA is 21 to 45 years, as the this age bracket pooled an overwhelming 94% of the respondents' population actively involved in cassava cultivation (Table 3). This is in line with works of Ali and Samad (2013) which reported an overwhelming majority of farmers within 31 and 50 years. The range of 26-45 years had sixty seven percent (67%) of the total population, while those above 46 years were only thirty three percent (33%). The predominance of the younger farmers in cassava production is an indication of the ease of management of cassava cultivation.. The cassava enterprise is usually not capital intensive at subsistence level and very minimal cultural practices are required for profitable production, thus both the young

and old enter cassava production with little capital and own labour for profit. Studies have shown however that cassava responds well to fertilization.

In Akpabuyo Local Government Area cassava cultivation is basically in the hands of married men and women, as this group pooled up fifty nine percent 59% of the total population of respondents. This group is remotely followed by widows/widowers (15%) and single parents (13%), while the divorcees/Separated men and women and single youngsters were the least involved as they pooled approximately ten percent (10%) and four percent (4%) respectively of the total population of respondents. The reasons for the low level of involvement of divorces/separated men and women and single person were not readily discerned in this work, but may not be unconnected with the culture of the people of this area which denies divorced women access to family lands. Single persons find alternative means of livelihood, other than cassava farming.

The educational assessment of the cassava farmers in Akpabuyo (Table 3) shows that a very high 38% of the population had no formal education; only 36% had primary school certificate, while those that had secondary school education were only 20%, and an abysmally low 6% of the total population proceeded to any post-secondary school education. The statistics here imply that over 90% of the cassava farmers in Akpabuyo have little (primary level) or no education at all. Although level of education has no direct link with food security, it does affect their farming activities and farmers' responses to new ideas and/or innovative technologies. Agricultural extension agents have reported that farmers with higher educational qualifications always want to adopt new agricultural technologies more than those without or with lower educational qualifications. (Ali and Samad 2013). Elias and Hossain, 1983 found positive relationship between education and productivity, as well as that farmers with four or more years of schooling caused an increase in productivity. In this context, no education at all or little education does hamper degrees of adoption and adaptation of food production technologies by the farmers and ultimately food security and poverty status.

**Table 3:** Demographic and Social Characteristics of Cassava-based farmers in Akpabuyo Local Government Area.

Characteristics	Number of Respondents	Percentage of Totals(%)
<b>Gender of Respondents</b>		
Male	61	59.2
Female	42	41.8
<b>Totals</b>	<b>103</b>	<b>100</b>
<b>Age of Respondents</b>		
21 – 25 years	6	5.8
26 - 30 years	13	12.5
31 - 35 years	12	11.5
36 - 40 years	17	16.3
41 - 45 years	22	21.2
>46 years	33	32.7
<b>Totals</b>	<b>103</b>	<b>100</b>
<b>Marital Status of Respondents</b>		
Married	61	59.22
Single	13	12.62
Divorced/Separated	10	9.71
Widow/Widower	15	14.57
Never Married	4	3.88
<b>Totals</b>	<b>103</b>	<b>100</b>
<b>Educational attainment of Respondents</b>		
Post-Secondary School Certificate	6	05.82
Secondary School Certificate	21	20.38
Primary School Certificate	37	35.92
No Formal Education	39	37.88
<b>Totals</b>	<b>103</b>	<b>100</b>
<b>Religion affiliation of Respondents</b>		
Christianity		
Traditional	101	98.06
<b>Totals</b>	<b>2</b>	<b>1.94</b>
	<b>103</b>	<b>100</b>

Source: Author's Field Survey Data, 2015

On the other hand, the economic characteristics of cassava-based farmers in Akpabuyo local Government area are presented in Table 4. In this study, household size was described as the total number of persons living together under the administration of a single head of the family (Earfan Ali and Samad, 2013). National household size in Nigeria is stipulated at six (6) persons per household. Forty eight percent (48%) of the cassava farmers had less than 4 persons per household; followed very closely by 42% of the total number of cassava farmers who have household sizes approximately at the National average of 6. Only very little 7% of the farmers had more than 10 persons per household (Table 4). Both paganism and the Islamic religion, for example, permit and promote large

household sizes with the encouragement of early marriages and polygamous family systems. On the other hand, Christianity promotes monogamy, even as it prohibits even the most effective and safest forms of contraception, thus limiting population increases. Whereas reasonable household sizes ensure optimal food production and food security, overpopulated household sizes do the opposite, further depleting scarce resources and exacerbating food insecurity and poverty status.

In terms of primary daily occupation of the cassava based respondents, the community is dominated by mainstream cassava farmers, as nearly half (49%) of the respondents are engaged on daily basis exclusively farming activities (Table 4), while the

remaining 51% of the cassava based farmers are either in self-employment in off-farm activities such as tailoring, hair-dressing, photography etc, (26%) or gainfully employed in the public/civil services of the local government council (11%). Within this group are found house-keepers of various categories (such as housewives, disabled persons, people incapacitated etc) who pooled a little 5% of the total population and youngsters/youths (10%) who are engaged in sundry income generating ventures such as transport businesses (Taxis and bicycle and tri-cycles), automobile repairs, generating sets repairs or hired in sand-dredging, masonry jobs, etc as hired labour.

The results showed also that the age at which children born and living in Akpabuyo experienced any form of farming activities was from 6 years (Table 4). No respondent agreed to having been exposed to any form of farming activity when he or she was below six years of age. Majority of the adult population who had no experience in farming were mostly stranger-elements residing in the local government area. Children of all ages do benefit enormously from visiting their parents' crop fields, grazing grounds and assisting in the processing of harvested food-crops at home or in distant farm lands. An overwhelming 91% of the cassava-based farming population experienced farming activities from their middle teenage (>15) years. Only approximately 9% of the cassava-based farmers agreed to have had the privilege of non-formal learning of farming activities.

Non-formal learning of farming activities takes place naturally and spontaneously, as part of other activities in the family.

The monthly income categorizations of cassava-based respondents are presented in Table 4. The monthly income composition table revealed that 61.17% of the respondents earned between 1000 and 30,000 Naira monthly and this was the highest income range amongst the cassava-based farming households. Other respondents who earned between 30,001 and 50,000 Naira were 28.16%, while those that earned well over 50,000 Naira were about 10.67%. These results show that the farmers that earned well over N50,000 were the cassava-based farmers who were engaged also in one form of off-farm activity or the other. Most of the farmers in this category owned small-sized farm lands, and small-scale to medium scale off-farm businesses. Majority of the farmers who earned between 1000 and 30,000 Naira belonged to the group that depended wholly on Cassava farming, as shown in Table 4. Those cassava farmers who engaged themselves also in only one or two off-farm activities earned between 30,001 and 50,000 Naira. The monthly income earned by the farming households appear to have depended on sizes of the farms, which were not determined in this study and on the number of off-farm activities engaged on by the cassava farmers; altogether determining the poverty status and levels of food insecurity of the farming population in Akpabuyo.

**Table 4:** Economic Characteristics of Cassava-based farmers in Akpabuyo local Government area.

<b>Characteristics</b>	<b>Number of Respondents</b>	<b>Percentage of Totals(%)</b>
<b>Size of Respondents' Households</b>		
< 4	49	47.58
5 – 6	43	41.75
7 – 9	4	3.88
>10	7	6.79
<b>Totals</b>	<b>103</b>	<b>100</b>
<b>Major occupation of Respondents</b>		
House-keeping (Housewife, etc)	5	4.85
Off-farm activities (Self-employed)	27	26.21
Off-farm activities (Civil service)	11	10.68
Farming activities	50	48.54
Others(Hired Labour etc)	10	9.71
<b>Totals</b>	<b>103</b>	<b>100</b>
<b>Age at which respondents experienced farming activities</b>		
< 6 years	0	0.0
6 – 15 years	9	8.74
>15years	94	91.26
<b>Totals</b>	<b>103</b>	<b>100</b>
<b>Monthly Income group (N)</b>		
1000 – 30,000	63	61.17
30,001 – 50,000	29	28.16
50,0001>	11	10.67
<b>Totals</b>	<b>103</b>	<b>100</b>

**Source:** Field Survey Data, 2015

The incidence, depth and severity of poverty among cassava-based farming households in Akpabuyo local government area are presented in Table 5. Incidence of poverty among cassava-based farming households in Akpabuyo local government area is aggregated at 48.54% percent. When disaggregated according to gender, incidences were observed at thirty four (34%) percent for the males and (52%) percent for the females, implying that the female-headed cassava-based farming households were poorer than the male-headed households. While the incidence of poverty in male-headed households was very close (less by 6%) to

the national average incidence of 54.4 percent, the incidence in female-headed household was considerably far away (less by 20%) from the national average, again emphasizing that incidence of poverty is more prevalent among female-headed households than among the male-headed households. The depth of poverty for cassava-based male farmers was 14.52% while that of females was 19.50 percent. The results of severity of poverty were similar to those of incidence and depth, as they were determined at 8.96 percent and 10.87 percent for male and female headed households respectively.

**Table 5: Poverty Incidence, depth and severity in Akpabuyo L.G.A.**

Gender	Number of Observations	Observations below poverty line	Poverty Headcount (%)	Depth	Severity
Males	61	22	33.78	14.52	8.96
Females	42	28	52.38	19.50	10.87
All	103	50	48.54	15	9.30

**Assumption of Poverty line of N2,933.25**

**Source: Field Survey Data, 2015**

The Diagnostic statistics and parameter estimates of determinants of poverty status among Cassava-based farming households in Akpabuyo Local government Area are presented in Table 6. The improvement in fit made by the explanatory variables included in the model is measured by the chi square statistics of 121.818, which is significant at the 1% level of probability, indicating that the independent variables included in the model significantly predicted the dependent variable in the logistic regression. The strength of association between the dependent and the independent variable is captured by the Nagel Kerke's  $R^2$ , with an estimated value of 0.715. This indicates that the strength of association between the dependent and the independent variable is about 71 percent.

On the other hand, the parameter estimates indicate that four of the logit (effect) coefficients are significant at 10% level of significance or less in predicting if food crop farming households in Akpabuyo were poor or non – poor. These include Age of household head, Household size, size of the farm and food security status. However, gender and educational level of household heads did not significantly contribute in predicting the poverty status of food crop farmers in Akpabuyo. The interpretations of the coefficients were based on both the logit estimates and odds ratio.

Age of Heads of Households of Respondent - farmers in Akpabuyo Local Government area and the effect of poverty status are presented in Table 6. The results show that age of the head of household has a positive logit effect of 0.022. This implies that as the head of farming household gets older his knowledge and experiences in methods of farming generally increase, leading directly to increased production, productivity and income, both of which enhance his/her probability of escaping from poverty trap and entering the non-poor group. However, the odds ratio of 1.022 indicates that if the heads of farming households in Akpabuyo add one more year to their respective ages, there would be enhanced likelihood of their escaping from poverty trap by a level of 0.022 percent. All the above results are true provided that the farmer is fully engaged in cassava farming and willing to plough back his improved experiences into cassava farming, not into some forms of off-activities such as tailoring, transportation etc., or the other. Again, so many of the factors of production (capital, labour, land etc.) and productivity (fertility of

available soils, varieties of specified crop, managerial capacity etc) may influence production, productivity and level of income. Furthermore, knowledge may be wasted and experiences be rendered redundant and not utilized at all.

#### **Household size of Respondent - farmers in Akpabuyo Local Government area.**

The size of Households of respondent- farmers had profound influence on standard of living (poverty status and food security status) in Akpabuyo Local Government area. The size of Household of the respondent farmers has a negative logit effect of 1.499, implying that the smaller the size of a household, the greater the chances and likelihood of the same family scaling up in the poverty ladder and escaping from the poverty trap, granting again that all things are equal and mutually encouraging. The foregoing implies that if the size of household members is less by 1.499, the likelihood of getting out of poverty increases by 0.149 percent, while the likelihood of getting poorer will increase by the odds ratio of 0.223 should the size of the household increases by same logit effect of 1.499, all other factors being the same and equal. From the foregoing, the probability of being poorer increases as the size of the household increases primarily because given a constant income, additional responsibilities and expenses will lead to an increased poverty level as a result of a decrease in the amount each person will survive on. This position is supported by Lipton and Ravillon (1995) who found out that there is a considerable evidence of a strong negative correlation between household size and consumption (or income) per person in developing countries.

#### **Size of Farm lands of Respondent - farmers in Akpabuyo Local Government area.**

The size of farm owned and effectively utilized by the farmers has a positive logit effect of 0.048, implying that as the size of land owned by a farmer increases, the probability of improved production and productivity increases leading the farmers towards being non-poor. The odds ratio of 1.050 implies that if the farmers add approximately on hectare of land to their existing farm land, they would increase their likelihood of escaping from poverty and being non-poor by 0.50 percent. The implication of these findings, all things being equal and

mutually beneficial, is that the size of farm usually translates into higher yields and income thus lowering the incidence, depth and severity of poverty. The situation explained above is not as simple as has been interpreted? Recently, issues of and debates on expansion of acreages of farmlands (extensive agriculture) versus efficiency of use of available farmlands (intensification) have occupied the front-burner of agricultural discourse. Extensive agriculture comes with it increasing requirements of factors of production and productivity, even in the face of

agonizing land tenure systems, rapid urbanization and industrialization, while on the other hand intensification comes with it huge financial outlay, high-input technologies and degrading environmental concerns. While the ultimate target of eradicating poverty and ensuring food security of our farmers is vigorously pursued, efforts must be put in place towards striking and managing a balance between expanding the sizes of farmlands and managing effectively and efficiently the available sizes of farmlands in Akpabuyo local government area.

**Table 6:** Determinants of poverty status among food crop farming households in Akpabuyo Local Government Area.

Independent Variables	Logit Estimate	Odds ratio Exp	Standard error	Wald	Significance
Gender	-0.236	0.790	0.311	0.575	0.448
Age of household head	0.022	1.022	0.011	4.202	0.040**
Household size	-1.499	0.223	0.387	15.026	0.000***
Educational level	-0.180	0.835	0.064	8.030	0.005
Farm size	0.048	1.050	0.027	3.304	0.069*
Food security	-6.921	10.556	1.855	13.919	0.000***
Constant	3.136	23.009	1.920	2.669	0.102

Source: Field Survey Data, 2015

Nagel Kerke's  $R^2 = 0.715$   
 Chi Square = 121.818\*\*\*  
 - 2 Log likelihood = 94.361

No of iterations = 6 Note \*\*\* Significant at 1%, \*\* Significant at 5%, \* Significant at 10%

## CONCLUSIONS AND RECOMMENDATIONS

Based on the results above, it is evident that the poverty situation and food security status of cassava-based farming households in Akpabuyo local government area of Cross River state were and still are heavily dependent upon the socio-economic characteristics (ages of household heads, gender of heads of households, household sizes, educational level of household members, sizes of own farm lands and income-earning capacities of household members) of the cassava-based farming households. In consideration of the estimated poverty line of N2, 933.25, twenty-two percent (22%) of male cassava farmers and (28%) of the female farmers were clearly below poverty line implying that an overwhelming majority of cassava-based farming households in Akpabuyo LGA could be classified as poor. On the other hand, considering the food security line estimated at N1, 132.27, only thirty

seven percent (37%) of the cassava-based farming households were food insecure; again, implying that an overwhelming sixty-three percent. Yet, ages of household heads, gender of heads of households, household sizes, educational level of household members, sizes of own farm lands and income-earning capacities of household members largely determined the poverty and food security situations in Akpabuyo local government area of Cross River State. With the foregoing conclusions, it is hereby recommended that any intervention strategies aimed at alleviating poverty and mitigating in Akpabuyo local government area of Cross River State should necessarily be targeted at (a) encouraging the young and energetic youth population to engage themselves more in cassava and other crops' enterprises, (b) encouraging more women to engage in cassava farming and empowering more of the women and the vulnerable into investing more in cassava farming, and discouraging large household sizes,

possibly with campaigns on family planning, (c) providing more incentives for more household heads, regardless of their gender and their children to acquire education even while cultivating cassava.

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