EFFECT OF CASSAVA PRODUCTION ON RURAL HOUSEHOLD FOOD SECURITY STATUS IN KWARA STATE, NIGERIA

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ABSTRACT

Malnutrition is a direct result of inadequate physical, social and economic access to sufficient, safe and nutritious food. Where it exists, economic growth and development of an agrarian country such as Nigeria is hampered because the rural households are the main drivers of the economy in term of food and livestock production. Evidence of food insecurity is a common phenomenon among rural households in Nigeria. Hence, this study investigated the role cassava production has played in improving the food security status of the rural households in Kwara, State, Nigeria. Survey questionnaires were used to elicit primary data from 120 respondents and the data were analyzed using descriptive statistics, logit and Likert attitudinal scale (LAS) models. The result of the analysis of the socio-economic characteristics of the households revealed a high illiteracy level, large household size with the average household's monthly income of less than ₦*50,000.00 Household members within 15-60 years actively participated in cassava production, though there was high gender differential in the number of females' participation in comparison to male gender. The result also revealed high incidence of food insecurity among rural households in the study area. The logistic regression result in terms of the p-values revealed that cassava output, age, marital status, household size, farm size, access to credit, farm income and off-farm income were all significant at different levels of probabilities. However, the odd ratio value revealed that cassava output, farm and off-farm income did not improve the food security status of the households. Conversely, access to credit and increase in farm size increased the odds of being food secure. The likely coping strategies employed by the households against food insecurity included diversification of income sources, reduced spending and acquisition of loan to meet basic food needs among others. It is therefore recommended that relevant agricultural policies that will enhance food security status of the households should be formulated and implemented.*

KEY WORDS: Food insecurity, cassava, income

INTRODUCTION

Agriculture is the single largest economic sector that employs the largest share of Nigeria's labour force of about 70% (Ewepu, 2016). It is also saddled with the responsibility of feeding about 182.2 million Nigerians and its contribution to GDP increased from 20.5% in 2015 to 24.43% in 2016 (NBS, 2016). However, despite the increased contribution of agriculture to GDP which is made possible by the small holder farmers who vigorously engaged in crop and livestock production, they are not economically empowered to meet the minimum calorie daily requirement even with the various interventions by government to diversify the economy. Food is a basic necessity for both man and animals' existence on earth. Many people in developing countries have deprivation to healthy lifestyle due to lack of access to right quality and quantity of food in the right proportion and time. Food security simply refers to access by all people at all times to safe and nutritious food needed to maintain a healthy and active life (FAO, 2010). It exists when every person has physical and economic access at all times to healthy, nutritious food in sufficient quantity to cover the need of their daily ration and food preferences, in order to live healthy and active life (Adebayo *et al*., 2012). But such is not the case of the most vulnerable people of Nigeria. Incidence of food insecurity is glaringly reflected on the faces of hunger and poverty stricken individuals in semi urban and remote areas of the country.

According to Perret *et al*. (2005), poverty occurs when there is inability to attain a minimal standard of living, measured in terms of basic consumption needs or the income required to satisfy them. This results from high population growth, rural-urban migration and doubling of unemployment despite the high and sustained economic growth in the country (UNECA, 2017). UNECA (2017) further reported that while other rapidly growing countries have successfully converted economic gains into lower poverty rates, the percentage point reduction in poverty for every percentage point of GDP growth between 1999 and 2010 has been low in Nigeria (0.05) compared with Botswana (0.32), Ghana (0.25), South Africa (0.30) and Indonesia (0.52). The relatively low gross national income (GNI) per capita of $2820 and the low human development

index score (0.471) that ranked Nigeria as 152nd out of 187 countries in 2015 are also reflections of widespread poverty. Hence, it will not be out of place to say that food insecurity is an aftermath of incidence of poverty. This pathetic situation in line with Perret *et al.* (2005) has resulted in malnutrition, high illiteracy level, low life expectancy, high incidence of ill health because of low body immunity, financial insecurity, fragmentation of the family units, inefficiency, and low self-esteem.

IITA (2017) opined that achieving food security in Nigeria requires new and productive investments, innovations, and policy actions in agriculture since it is the predominant sector on which the majority of food insecure households directly depend for their livelihood. One of the ways out of this problem therefore, is to increase financial security of the farmers through increased and massive production of improved varieties of cassava as a subset of food crop production in the country. This could increase their income and pave way for better quality of life**.** Cassava is a staple of choice across cultures and social divides in Nigerian households. It is not only important as food crop but even more, as a source of income for rural households. As a cash crop, it generates employment and cash income for the largest number of households in comparison to other staples (FAO, 2009) and its comparative production advantage over other staples for its tolerance to poor soil, adverse weather, pests and diseases more than other major staples in Nigeria serves to encourage its cultivation even by resource poor households (Bamidele *et al.,* 2008:, FAO, 2010; Osondu *et al.,* 2014*)*.

Though cassava in itself is low in vitamins, protein and nutrients, its consumption can be used as a vehicle for improved nutrition for the millions of Nigerians who consume it through the bio-fortification of cultivated cassava varieties. Moreover, it is the Nigeria most important crop by production, and the second most important by consumption (FAO, 2014). Africa produces over 54% of the world's cassava, with Nigeria taking the global lead with a production of about 54.8 million MT in 2014 (FAO, 2014). The rising food demand due to ever increasing population growth could have adverse effect on the nutritional status of the rural folks. Hence this study attempted to assess how cassava production has fared in improving the food security status of the farmers in Kwara State. Specifically, the study attempted to describe the socio-economic characteristics of the rural households, determine the effect of cassava production on food security of the households and identify the coping strategies against food insecurity in the study area.

METHODOLOGY

Study Area

The study was conducted in Kwara State which is located in the North Central Zone of Nigeria. The State lies within latitude 8° 30' and 8° 50' N and longitude 4° 20' and 4° 35'E of the equator (KSG, 2017). The State shares boundary with Osun, Oyo, Ondo, Kogi, Niger and Ekiti States (Kwara State Ministry of Environment, 2017). The total estimated population of the State is 2.37million people according to the 2006 census out of which farmers account for about 70%. The projected population of the State as at 2016 was 3.2 million people (National Population Commission of Nigeria, 2017). It has a total land mass of 3,682,500 hectares. A humid tropical climate prevails over the State and it has two distinct seasons, *viz,* the wet and dry seasons. The wet season is between April and October while the dry season is between November and March. The average rainfall distribution ranges from 50.8mm to 2413.3mm per annum. The minimum average temperature ranges between 21.1˚C and 25.0˚C while the maximum average temperature ranges from 30˚C -35˚C (Adeoye, Adeolu and Ibrahim, 2013). Kwara State is primarily agrarian with great expanse of arable land and rich fertile soil. It comprises sixteen Local Government Areas (LGAs) with the farmers' cultivating arable crops such as yam, maize, rice, cassava, groundnut, cowpea, sorghum, melon, okra, leafy vegetables as well as cash crops such as cashew and palm trees. Moreover, majority of the food produced are consumed while some households sell portions of their agricultural produce in the market to earn additional income for households' upkeep (Kwara State Agricultural Development Project, 2007).

Sampling Technique

An important decision that has to be taken while selecting a sampling technique is about the size of the sample for the study. Appropriate sample size depends on various factors relating to the subject under investigation like the time, cost and the degree of accuracy desired. The sample size may be too small or too large. If the former exists, it may be difficult to achieve the aim of the research and if the latter occurs, it could amount to wastage of resources. Hence, an appropriate sample size has to be decided upon in order to get good representative data (Abdirahman, 2015

and Gupta, 2002). Primary data were collected by means of survey questionnaire and through interviewing the respondents. Household and individual data including information on socio economic characteristics of the farmers, land ownership, size of farmland, monthly food and non-food expenditure, farm and off-farm income, job of all household members and various coping strategies against food insecurity were collected mainly from the heads of the households during the household level survey. Attempt was made to get the list of registered cassava farmers from the Agricultural Development Programme Office in the State to no avail. Hence, there was no sampling frame for drawing the final study sample. Multistage random sampling technique was thus used in the selection of the respondents in the study area. The first stage involved the random selection of four LGAs out of the 16 LGAs namely, Asa, Ekiti, Moro and Oyun LGAs while the second stage involved the simple random selection of three villages from each of these four selected LGAs. The third stage involved a random selection of ten households that were engaged in cassava production in the selected villages; thus making a total of 120 respondents for the study.

Methods of Data Analysis

These involved the use of descriptive statistics such as mean, frequency and percentages, food security index and LAS models. Specifically, the household food security status was measured in terms of the amount expended on household food consumption per month by the households. The households' mean per capita monthly food expenditure was calculated by dividing the households' monthly food consumption expenditure by the family size. Therefore the food security status of the households was determined by dividing the *ith* household's mean per capita monthly food expenditure by the two-third of mean per capita monthly food expenditure of all the sampled households.

In order to determine the effect of cassava production on food security status of the households, first, the Food Security Index (FSI) was computed. A food secure household was taken as one whose per capita monthly food expenditure exceeds or equal to two-third of the mean per capita food expenditure of all the households and was assigned the value of 1 while a food insecure household was vice versa and assigned the value of 0. These values (0, 1) were used as the dependent variable in the logit regression model analyse the effect of cassava production on food security status of the rural households in the study area.

$$FSI = \frac{Mean\ per\ capita\ food\ expenditure\ of\ the\ ith\ household}{\frac{2}{3} mean\ per\ capita\ food\ expenditure\ of\ all\ households} \text{----------(1)}$$

Where,

FSI = Food security index

y_i =Food security threshold given as 2/3 mean per capita food expenditure

FSI $\geq y_i$ = 1: Food secure *ith* household

FSI < y_i = 0: Food insecure *ith* household

The term "regression analysis" describes a statistical technique which serves as the basis for drawing inference as to whether or not a relationship exists between two or more quantities within a system, or within a population. More specifically, regression analysis is a method to quantitatively characterize the relationship between a response variable Y, which is assumed to be random, and one or more explanatory variables (X), which are generally assumed to have values that are fixed. Logit regression is a type of regression commonly used in literature when the dependent variable is dichotomous or binary in nature. It uses the maximum likelihood estimation method rather than the least squares estimation method used in traditional multiple regression analysis (Abdirahman, 2015).

The logistic regression model is thus used to explain the effects of the explanatory variables on the binary response, Y. The implicit form of logit regression model applied to analyse the effect of cassava production on food security status of farming households in the study area was as stated thus:

$$P_i = \frac{1}{1 + e^{-(\beta_0 + \beta_1 X_{i1} + ... + \beta_k X_{ik}}} \text{ ----------(2)}$$

Where,

P_i = Probability that food security existed, β_0 = Constant, $\beta_{1....k}$ = Coefficients to be estimated, $X_{i1.....ik}$ = Predictors, i = *ith* observation.

Let $Z = \beta_0 + \beta_1 X_{i1} ..... \beta_k X_{ik}$

Therefore, the probability of being food secure is:

$$P_i = \frac{1}{1 + e^{-zi}} \text{ .....(3)}$$

While the probability of being food insecure is:

$$1 - P_i = \frac{1}{1 + e^{-zi}} \quad \text{.....(4)}$$

Hence,

$$\frac{P_i}{1 - P_i} = \frac{1 + e^{zi}}{1 + e^{-zi}} = e^{zi} = OR \quad \text{.....(5)}$$

Where OR is the Odd Ratio

As Z_i ranges from $-\alpha$ to $+\alpha$, p_i ranges from 0 to 1 and p_i is non-linearly to Z_i. The logit of the unknown binomial probabilities, i.e, the log of the odds, are modelled as a linear function of the X_i. . Therefore, the model in its log form is expressed as:

$$Logit(P_i) = \ln \frac{p_i}{1 - p_i} = Z_i = \beta_0 + \beta_1 X_{i1} ..... \beta_k X_{ik} + U_i \quad \text{.....(6)}$$

Thus, the model is explicitly expressed as:

$$Y = \beta_0 + \beta_1 X_{i1} + \beta_2 X_{i2} + \beta_3 X_{i3} + \beta_4 X_{i4} + \beta_5 X_{i5} + \beta_6 X_{i6} + \beta_7 X_{i7} + \beta_8 X_{i8} + \beta_9 X_{i9} + U_i \quad \text{.....(7)}$$

Where,

Y = House hold food security status (Y = 1 if food secure and 0 otherwise)

X_1 = Output (kg)

X_2 = Farm size (Ha)

X_3= Education level of household head (Years)

X_4 = Household size (No.)

X_5 = Marital Status (Married = 1; 0 otherwise)

X_6 = Access to credit (₦)

X_7 = Age of household head (Years)

X_8 = Total farm income (₦)

X_9 = Off-farm income (₦)

U*i* = Error term

The 5-point likert scale was used to identify the coping strategies against food insecurity by the households. The method entails defining a scale of statement that mirrors the respondents' perception towards an underlying variable (*that is*, coping strategies adopted) and establishing a score reflecting a quantitative measurement of the perception of each household. Their responses

were: strongly agree, agree, undecided, disagree, and strongly disagree. The responses were given scores of 1, 2, 3, 4 and 5, respectively. These values were added together to obtain an aggregate score of 15, which was then divided by 5 to obtain 3.0 which was taken as the cut-off mean. Coping strategies with mean scores less than 3.0 were taken as unlikely coping strategies (UCS) while those with mean scores equal or greater than 3.0 was taken as likely coping strategies (LCS) adopted by the households in the study area.

RESULTS AND DISCUSSION

Socio-Economic Characteristics of Cassava Producers

Socio-economic characteristics of the cassava farmers presented in Table 1 included but not limited to age, gender, marital status, household size and educational status of the farmers. The result revealed that they were mostly male (59.2%) and married (82.5%) with mean age of 42 years. The mean household size was 7 while the mean years of experience was 17 years. The illiteracy level was high in the area as majority (94.2%) of them did not obtain minimum formal education qualification. This could have a negative effect on their productivity and farm level decision making including those relating to improved technology adoption on cassava production and processing techniques, utilization of the scarce resources (inputs) and general management of their farms. The result also showed that land ownership by inheritance was prevalent (96.7%) in the area which could negatively affect the size of land available for cassava production due to incessant land fragmentation. Furthermore, the main goal for farming by the majority (75.0%) of the cassava farmers was family consumption and sale. Only 15% and 10% of the farmers cultivated cassava specifically for sale and family consumption, respectively. In addition, most of the households' monthly income was less than ₦50,000.00

Table 1: Distribution of Cassava farmers according to socio-economic characteristics

Socio-Economic Characteristics	Frequency	Percentage (%)	Mean
Age			
20-30	19	15.8	42
31-40	40	33.3	
41-50	36	30.0	
51-60	17	14.2	
> 60	8	6.7	
Total	**120**	**100.0**	
Gender			
Male	71	59.2	
Female	49	40.8	
Total	**120**	**100.0**	
Marital status			
Married	99	82.5	
Widowed	13	10.8	
Divorce	8	6.7	
Total	**120**	**100.0**	
Educational status			
Non-formal	113	94.2	
Primary	7	5.8	
Total	**120**	**100.0**	
Household size			
1-5	50	41.7	7
6-10	66	55.0	
11-15	4	3.3	
Total	**120**	**100.0**	
Land ownership			
Inheritance	116	96.7	
Gift	4	3.3	
Total	**120**	**100.0**	
Farming experience			
<20	87	72.5	17
21-30	28	23.3	
>40	5	4.2	
Total	**120**	**100.0**	
Income of household members			
< ₦50,000.00	71	59.2	
₦50,000.00-100,000.00	49	40.8	

Source: Field Survey, 2017

Age-sex distribution of household members by their involvement in cassava production

Table 2 showed the age-sex distribution of farmers' household. It revealed that household members were more of male than female gender in all the categories and that the male gender participated more in cassava production across board. The dependants (≤ 14 and > 60 years of age) were grossly less involved in cassava production while each of the age ranges between 15-60 years had more than 70% participation for male category in the area. The justification for this may be due to the fact that the age group seems to be the most active and economically inclined age of human being. At this age, it is expected that majority of them would be physically matured for farm activities, married and with added responsibilities of catering for their families and loved ones. Findings also revealed gross gender differential especially for economically active age range of 15-60 years for females. Though in the rural settings, exceptions abound for some female gender who seemingly may be stronger than some men in terms of cassava production and other types of farming operations, but the socio-cultural and religious beliefs still affect female gender disposition to production activities. This is because many of them were constrained to taking part in post harvest activities even when they wish otherwise.

Table 2: Age distribution of household members by gender and their level of participation in cassava production

Age range	NMH	NFH	NMCPP	NMCPP (%)	NFCPP	NFCPP (%)
≤ 14 years	125	116	34	27.20	19	16.37
15-25 years	119	72	98	82.35	20	27.77
26-40 years	148	98	112	75.70	48	49.97
41-60 years	169	144	142	84.02	50	34.7
> 60 years	62	83	18	29.00	21	25.3

Source: Field Survey, 2017 NMHM-Number of male household members; NFHM-Number of female household members; NMCPP-Number of male cassava production participant; NFCPP-Number of female cassava production participant

Cassava Farmers and their Households' Food Security Status

Monthly food and non-food expenditure pattern: The monthly food and non-food expenditure pattern is revealed in Table 3**.** The food consumed was mainly carbohydrate (rice, maize, yam, garri, yam flour, guinea corn) and protein (beans) eaten occasionally while most of them consumed fruits from their own or neighbours' farm. Most of the food items were harvested from own farms while others were purchased from the market. The Table showed that most of the households expended an average of ₦16,000.00-₦20,000.00 per month on food items. On the contrary, most of the households expended less than ₦5,000.00 on non-food items such as transportation, household repairs, clothing and school fees, which suggested that they only struggled to survive, without acquired assets or wealth accumulation. Hence, revealing deep poverty among the sampled households.

Table 3: Monthly food and non-food expenditure pattern of sampled households

Expenditure Range (₦)	Frequency (Food)	Frequency (Non-food)
< 5,000	0	90
5,000-10,000	13	22
11,000-15,000	76	8
16,000-20,000	31	0

Source: Field Survey, 2017

The food security status of the cassava farmers: The food security status of the cassava farming households as shown in Table 4 reveals that 84.17% of the cassava farming households in the study area were food insecure while only 15.83% of them were food secure. The result confirmed the pathetic situation of the cassava farming households in the study area.

Table 4:Cassava farming households' food security status in the study area

Food security status	Frequency	Percentage
Food insecure	101	84.17
Food secure	19	15.83
Total	120	100.00

Source: Field Survey 2017

Effect of cassava production on food security status of sampled households: The result of logit regression analysis which revealed the effect of cassava production on the food security status of cassava farming households was presented in Table 5**.** The Prob > chi-square value showed that the whole model was statistically significant at $P < 0.01$. Out of the nine variables included as predictors in the model, only marital status was a binary variable while all others were continuous variables. Also, all variables except educational attainment were significant at different probability levels. The significant variables were age (X_1), marital status (X_2), household size (X_4) and farm size (X_5) which were all significant at $P < 0.05$ while access to credit (X_6), farm income (X_8) and off-farm income (X_9) were all significant at $P < 0.10$. Only output (X_7) was significant at $P < 0.01$. Furthermore, since the analysis involved the interpretation of the result is better presented using the odd ratio. A greater than one odd ratio shows a positive relationship while a less than odd ratio depicts a negative relationship. From the result, the odd ratio of marital status of 26.82 showed that there was a positive relationship between marital status and food security. This implied that being married made the farmers 26 times greater in the odds of being food secured. However, the odd ratios of age and household size were less than one (that is, 0.84 and 0.45, respectively) which revealed negative relationships between food security and the two predictors. These estimate implied that a one-unit increase in age and household size made the odds of being food secured decreased by 16% and 55%, respectively. Decrease in probability of cassava farming households being food secured by reason of an additional one year increment in age could occur when a farmer-household member is no longer economically active nor productive and such could not actively get involved in productive activities that can put food on the table. In the same vein, an increase in the household size by one person means more financial obligation in feeding additional

mouth with the limited available resources at the family's disposal and hence, could make the family food insecure.

Furthermore, the odd ratios of output, farm income and off-farm income were approximately one which showed that the output, farm income and the off-farm income of the farmers did not affect the odds of cassava farming households being food secure in the area .Conversely, farm size and cooperative membership of 286.94 and 7.42 implied that a one-unit increase in farm size and access to credit made the farmers 286 and 7 times stronger in the odds of being food secure in the study area. These findings agree with the those of Bamidele *et al*., (2008) who in their study on the productivity analysis of cassava-based production systems in the Guinea savannah using Kwara State as a case study, found that age and farm size were significant factors that affected household's food security status of the farmers in the area.

Table 5: Logit regression estimation of effect of cassava production on food security status of cassava farming households

Variables	Coefficient	Standard Error	Odd Ratio	Z-value	P-value
Age (X_1)	-0.171605	0.0753	0.842312	-2.28**	0.023**
Marital status (X_2)	3.289322	1.3664	26.824670	2.41**	0.016*
Educational status (X_3)	-0.148468	0.1711	NS	-0.87	0.387
Household size (X_4)	-0.790363	0.3797	0.453680	-2.08**	0.037**
Farm size (X_5)	5.659289	2.3444	286.944552	2.41	0.016**
Access to credit (X_6)	2.004427	1.1793	7.421840	1.70*	0.089*
Output (X_7)	0.003756	0.0013	1.003763	2.74***	0.006***
Farm income (X_8)	0.000052	0.0000	1.000052	1.71**	0.087*
Off farm income (X_9)	0.000051	0.0000	1.000051	1.88*	0.060*

Source: Field Survey, 2017 NS- Not significant; Log likelihood = -17.9226; Wald chi-Square = 66.01; Prob> chi-square =0.0000; Pseudo R-Square= 0.6581; *** = significant at 1% level of probability, ** = significant at 5% level of probability, * = 10% level of probability

Estimation of marginal effects and partial/quasi elasticity: Analysis of marginal effect and partial elasticity was carried out on the significant variables of the Logit regression analysis of the effect of cassava production on the food security status of the cassava farming households in the study area (Table 6). The estimates of the marginal effect showed that one percent increase in marital status and farm size led to 0.155 and 0.266 per cent increase in the probability of the cassava farming households' being food secure. Conversely, one per cent increase in age and household size of cassava farming households led to 0.008 and 0.037 decrease in the probability of the households being food secure. The marginal effects of output, income and off-farm income on food security status of the cassava farming households were however negligible. The result of the partial elasticity of the significant variables revealed that marital status, farm size, output and off-farm income were elastic, that is, a one per cent or a unit change in any of these explanatory variables led to a more than proportionate change in the probability of cassava farming households being food secure. On the contrary, the partial elasticity estimates for age, household size, membership of cooperative society and income were inelastic, that is, a one per cent unit change in any of these explanatory variables led to a less than proportionate change in the probability of cassava farming households being food secure.

Table 6: Estimates of marginal effect and partial elasticity

Variables	Marginal Effect	Partial elasticity
Age	-0.0080	-2.83
Marital status	0.1549	2.92
Household size	-0.0372	-2.36
Farm size	0.2663	2.90
Cooperative	-0.0944	-1.92
Output	0.0001	3.48
Farm income	-2.43e-06	-1.92
Off-farm income	2.38e-06	2.06

Source: Field survey, 2017

Coping Strategies against Food Insecurity

According to Snel and Staring (2001), coping strategy refers to all the strategically selected acts that individuals and households in a poor socio-economic position use to restrict their expenses or to earn some extra income to enable them pay for the basic necessities (food, clothing, shelter) and not fall too far below their society's level of welfare. As shown in Table 7, several coping measures were adopted against food insecurity by the households. Out of about twenty coping strategies available in the area, diversification of income sources ranked first with weighted mean score, $\overline{X}$ = 4.67. Reduced spending and acquisition of loan to meet basic food needs ranked second with weighted mean score, $\overline{X}$ of 4.53. Others measures included reduced size and number of meals, sale of stored agricultural produce for financial gains, eating food that are less preferred and less expensive, seeking relatives' assistance, and collection of food from the wild which ranked 3rd, 4th, 5th, and tied to 6th with weighted mean score of 4.50, 4.42, 4.35, 4.23, 4.23, respectively. The unlikely coping strategies noted among the sample included black marketing, street begging, short term seasonal migration, engagement in hunger strike for a whole day and prostitution among others. Comparatively too, Sheriff and Linkhor (2008) in a study conducted on household food insecurity and coping strategies in rural communities of Malaysia opined that more of the food secured households were able to adopt the strategies of selling valuable materials and borrowing money compared to food non-secure households. Conversely, Ragassa (2011) reported that households surveyed employed coping strategies ranging from minimizing the number of meals and amount of food consumed to, out-migration of household members. Dore *et al*(2003) also reported the patronage of less expensive food and consumption of home prepared meals as the were prevalent coping mechanism among low income Russian households in the effort to sustain the dietary intake of children.

Table 7: Coping strategies against food insecurity

Coping strategies	SA	A	UD	D	SD	WS	WM	Rank	Rmk
Diversification of income sources	80	40	0	0	0	560	4.67	1st	LCS
Reduced spending	70	47	1	0	2	543	4.53	2nd	LCS
Acquisition of loan for food	87	33	0	0	0	472	4.53	2nd	LCS
Reducing size and no. of meals	0	0	10	86	24	226	4.50	3rd	LCS

Sale of stored agricultural produce	56	60	2	2	0	530	4.42	4th	LCS
Eating food that are less preferred and less expensive	58	52	5	4	1	522	4.35	5th	LCS
Seeking relatives' assistance	44	66	3	6	0	508	4.23	6th	LCS
Collection of food from the wild	47	63	3	7	0	510	4.23	6th	LCS
Reduction of household members	43	66	4	7	0	505	4.21	7th	LCS
Use of personal savings	52	55	4	2	7	503	4.19	8th	LCS
Sale of fire wood	64	26	10	10	10	484	4.03	9th	LCS
Borrowing food or money to buy food	71	11	11	11	16	470	3.92	10th	LCS
Black marketing	9	37	33	22	19	355	2.96	11th	UCS
Street begging	6	22	40	27	25	317	2.64	12th	UCS
Short term seasonal out –migration	70	45	2	1	2	540	1.88	13th	LCS
Not eating for the whole day	0	0	9	87	24	225	1.88	14th	UCS
Mutual exchange of labour	0	0	3	89	28	215	1.79	15th	UCS
Sale of livestock than usual	0	0	2	89	29	213	1.78	16th	UCS
Sale of assets	0	0	2	88	30	212	1.77	17th	UCS
Prostitution	4	6	4	22	84	184	1.53	18th	UCS

Source: Field Survey, 2017

Notes: SA = Strongly Agree A = Agree UD= Undecided D = Disagree SD = Strongly Disagree WS = Weighted Sum WM = Weighted Mean RMK = Remark LCS= Likely Coping Strategies UCS = Unlikely Coping Strategy

CONCLUSION AND RECOMMENDATIONS

The study has revealed that the sampled cassava farming households were mostly low income earners with a high illiteracy level. The mean age, household size and years of experience was 42 years, 7 and 17 years, respectively while the system of land ownership was mainly by inheritance. About 84% of the farmers were food insecure and the odd ratio value of approximately one for cassava output, farm income and off-farm income which thus revealed that cassava production and income did not improve the food security status of the cassava farming households while improved

access to credit and farm size did enhanced cassava farming households' food security status in the study area. The coping strategies employed by the households against food insecurity included diversification of income sources, reduced spending, acquisition of loan to meet basic food needs and, reduced size and number of meals among others. Based on the outcome of this study, it is therefore recommended that relevant agricultural policies that will enhance food security status of the cassava farming households should be formulated and implemented. Specifically, government at all levels should ensure that cassava farming households are enlightened and enrolled for universal basic education and, more efforts should be geared towards off-farm sources of income for reduced food insecurity in the area.

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