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*Keywords:* gender, household and food security.

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# Gender Dimensions of Food Security Status of Households in Oyo State, Nigeria

Olabisi Alaba Fawehinmi <sup>α</sup> & Olawamiwa Reuben Adeniyi <sup>σ</sup>

**Abstract-** This research work examined the role of gender on household food security status in Oyo State, Nigeria. Emphasis is placed on the effect of gender on the household food security of both rural and urban households and the factors that determine the household food security status of rural and urban households in Oyo State. The respondents were drawn using stratified multi stage random sampling technique. Information was elicited on the socio-economic characteristics of the households; membership of cooperative societies, household consumption pattern, and possession of durable goods. The data obtained were analyzed using descriptive statistics, Cost of Calorie function, FGT analysis and probit regression analysis. The food insecurity line for the study area is N117.10 per adult equivalent per day that is any household that is subsisting on less than N 117.10 per day is regarded as food insecure. The result of the analysis shows that food insecurity exists between both male-headed and female-headed households but more severe with the latter. This might be due to the fact that male headed households have better access to productive resources which enhances their income generating activities and consequently enhances their food security status compared with their female counterparts. Age has a negative effect on the food security status as the household size increases and has the household head advances in age, the tendency for such households to become food insecure increases. Improved status in formal education, participation in cooperative societies, building up of household are the factors that positively and significantly asset base enhance household food security status.

Therefore for any food security programmes to be effective there is the need to mainstream the female gender group into the development plan in order to enhance their access to productive resources. There is also the need to encourage the rural farming household's to diversify their means of livelihood in order to enhance income generating activities and improve their food security status.

*Keywords:* gender, household and food security.

## I. INTRODUCTION

All living things need food to satisfy hunger and nourish the body. Food also gives a feeling of comfort and satisfaction to man (Oyebamiji 2000). Adequate nutrition is essential for many human functions that include body growth, motivation, work output and educational attainment (Okunmadewa 1999). In order to enjoy a healthy life therefore, there is the need for access to a nutritionally balanced diet, comprising all essential ingredients for growth, energy

and longevity. The recent emphasis on alleviating hunger, reducing malnutrition and the serious consequences of food insecurity on the poor, calls for investigation on food problems in African countries. As reported by FAO (2000), majority of the countries with the most extreme depth of hunger (less than 300 kilocalories per day) are residing in Africa.

Food security exists, according to World Food Summit Plan of November 1996, when all people at all times have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preference for an active and healthy life. Without food, a feeling of insecurity permeates the society, fuelling tension and creating ground for antisocial behaviors.

Within the framework of government goals of ensuring widespread improvements in the well being of households and individual welfare, the issue of food insecurity is of high importance to Nigeria because average calorie intake is only at the threshold of adequacy. The inability of Nigeria to sustainably feed it's rapidly growing population was quantitatively revealed in the early 1970's and estimate shows that at least one percent of the population is food insecure with 16 percent being severely undernourished.

Gender is a central factor in household decision-making, which affects productivity, time allocation, and investment in developing countries (Kenan, Jr. 2004). Gender inequality induced poverty and any poverty alleviation programmes towards household welfare must thoroughly examine the link between gender relations and state of household's food security. Gender analysis is therefore an important factor in poverty and food security analysis. Ingrid Palmer (ILO 1991) referred to Women as "a group operating under the conditions in which their reproductive activities are traded at the margin against their economic ventures". This does not only limit the time at these women's disposal but also restrict them to activities that are compatible with their schedules. Consequently, most women work on small-scale farms for production with attendant low yields and income that can hardly meet their varying family obligations. This therefore places limitation on their purchasing power and invariably their household food security level.

This study therefore set out to examine the food insecurity profiles among the urban and rural households by comparing the level of food insecurity

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among the male headed and female headed households in both urban and rural households, the effect of socio-economic characteristics on the level of household food security level and the factors that influence food security status among the male-headed and female headed households in the study area.

## II. RESEARCH METHODOLOGY

The sample size for this study is 240 households from both urban and rural households in Oyo State. A multi-stage random sampling technique was employed in the selection of the respondents. The first stage was the selection of one local Government from each senatorial district, stage two is the selection of 5 villages from each senatorial district and stage three is the selection of 13 respondents from each of the villages totaling 65 respondents from each of the three senatorial districts in the state. Stage four was the selection of one local Government Area from the urban center (Ibadan North) was chosen randomly. The sixth stage was the stratification of the respondents into male-headed households and female-headed households. For analysis 60 respondents were finally used from each of the local government due to the fact that some questionnaires did not have complete information while some were not retrieved. Equal number of respondents was drawn because the sampling frames for the selected villages in the Local Government Area were not available. This therefore made the selection of the respondents not to be proportionate to size.

## III. ANALYTICAL TECHNIQUES

The data collected were analyzed using descriptive and quantitative tools. Descriptive statistics (tables, percentages mean and frequencies among others) was employed to analyze the socio-economic characteristics of the households and their effect on household food security status. It was also used to disaggregate the respondents on the characteristics of incidence, depth and severity of household food security status based on gender. Objective one involves generating food insecurity indices for the households in the study area. This is done by the use of Cost of Calorie Function (COC). In order to measure the extent of food insecurity among the two gender groups; an

$$\text{Per capita expenditure} = \frac{\text{total household monthly food expenditure}}{\text{Household size}} \quad (4)$$

and;

Mean per capita expenditure is calculated as:

$$\frac{\text{Total per capita expenditure for all households}}{\text{Total number of households}} \quad (5)$$

From this mean per capita household expenditure (MPPCHE), two lines are set relative to the standard of living in the area. A food poor poverty line

index of food security is constructed for the study through Identification. Identification is the process of defining a minimum level of nutrition necessary to maintain a healthy living. This minimum is referred to as "Food insecurity line" for the society under study, below which people are classified as food insecure implying subsistence on inadequate nutrition.

Calorie adequacy is estimated by dividing estimated calorie supply for household size adjusted for adults using the consumption factors for age-sex categories (Runge- Metzger and Diehl 1993). In order to generate food insecurity indices in this study therefore, the cost of calories (COC) method as proposed by Greer and Thorbecke (1986) was used. Using this procedure, a cost of calorie function is estimated as:

$$\ln x = a + bc$$

where x is the food expenditure in Naira (₦)

C is the calorie consumption in Kcal

The calorie contents of the recommended daily nutrient level (L) will be used to derive the food insecurity line K is given as:

$$K = e^{(a+bc)} \quad (1)$$

Based on K the head count ratio is calculated as

$$H = \frac{M}{N} \quad (2)$$

$$G_i = \frac{K - X_i}{K} \quad (3)$$

where: K gives the cost of buying the minimum calorie intake L

L is the recommended daily energy (2700 kcal) by the National Bureau De Statistics

G<sub>i</sub> is the food expenditure deficiency for household i

M is the number of food in secured household

N is the total population.

Objective two, which is to determine the incidence, depth and severity of household food security level was analyzed using the FGT test.

The food poverty line was calculated by using the total food expenditure of the respondents on a monthly basis corrected for the household size. This is obtained by dividing household's monthly food expenditure by its adult equivalent as follows:

equivalent to 2/3 of the mean per capita expenditure of the household is calculated and from this the households are classified into food poor and non-food

poor. Then a 1/3 of the mean per capita expenditure of the household is calculated and from this the households are classified into core food poor

The FGT measure of the  $i^{th}$  sub group is given as:

$$P_{ci}^i = \frac{1}{n} \sum_{i=1}^q \left[ \frac{(z - y)}{Z} \right]^\alpha$$

when  $\alpha = 0, P_0 = \frac{1}{n} \sum_{i=1}^q \left[ \frac{(z - y)}{Z} \right]^0 = \frac{q}{n} \rightarrow$  *Poverty incidence or head count*

$\alpha = 1, P_1 = \frac{1}{n} \sum_{i=1}^q \left[ \frac{(z - y)}{Z} \right]^1 \rightarrow$  *Poverty gap or depth*

$\alpha = 2, P_2 = \frac{1}{n} \sum_{i=1}^q \left[ \frac{(z - y)}{Z} \right]^2 \rightarrow$  *Poverty severity*

where:

- $P\alpha_i$  is the weighted poverty index, n is the total number of households,
- Y is the per capita expenditures of households in food poverty
- Z is the poverty line and  $\alpha$  is the degree of concern for the depth of poverty
- $\alpha = 0$  gives the incidence of poverty,
- $\alpha = 1$  gives the depth of poverty, and;
- $\alpha = 2$  gives the severity of poverty.

Objective three, which is to determine the factors that influence household food security level

among the male and female headed households is analyzed using the bi-variate probit regression model.

The probit regression model is given as:

$$Y(\beta X_i) = \int_{-\infty}^{\beta x_i} \frac{1}{\sqrt{2t}} \exp\left(-\frac{t^2}{2}\right) dt \tag{6}$$

where:

- Y is the dependent variable, which is the poverty status of the household.
- 0 = non - food secured household
- 1 = food secured household.
- t is the random variable, which is distributed as a standard normal deviate.  $\beta$  is a vector of unknown coefficients
- $X_i$  is the vector of characteristics of the  $i^{th}$  individual and are the independent variables, which are defined as follows.

- $X_1$  = location (1 = Urban, 0 = Rural)
- $X_2$  = Age (Actual age in years)
- $X_3$  = Gender (1=Male 0=Female)
- $X_4$  = Household size (Actual number)
- $X_5$  = Marital Status (1 = married 0 = otherwise)
- $X_6$  = Educational level (Years of formal education)
- $X_7$  = Asset ownership (0 = non- possession of asset, 1 = Asset ownership)
- $X_8$  = Membership of cooperative society (0 = non-membership of cooperative societies 1 = membership of cooperative societies)
- $X_9$  = Age (Actual age in years)
- $X_{10}$  = Non-food expenditure (Per adult equivalent per day)

$Y \beta X_i$  is the probability that the  $i^{th}$  individual will be poor. Thus, the probability of poverty is the area under the standard normal curve between  $-\infty$  and  $\beta X_i$ .

The larger the value of  $\beta X_i$ , the more likelihood that the household will be food insecure (the higher the  $\beta X_i$ , the higher the depth of food insecurity)

An iterative maximum likelihood algorithm was used to estimate the empirical model in order to obtain asymptotically efficient parameter estimate. The statistical power of the estimated model is evaluated by using the percent of correct predictions of food insecure and food secured household and the likelihood ratio test.

#### IV. RESULTS AND DISCUSSION

##### a) Food insecurity indices for the study area

Table 1 presents the summary statistics of food insecurity indices among the households. Based on the recommended daily energy level (L) of 2700 Kcal, the food insecurity line (Z) for the household was estimated at N117.10 per day for the study area. About 55.5% of the male headed household and 55.3 % of the female headed household are food insecure with average food expenditure below N 117.10 per adult equivalent per day hence subsisting on less than the recommended daily per capita calorie requirement of 2700 kcal. This implies that food insecurity exists among both male-headed households and female-headed households.

The depth of food insecurity, which is also known as food expenditure deficiency is 0.37 and 0.55 for the male and female headed households

respectively. This implies that female-headed household's needs 55% while the male headed households needs 37% increase in their food expenditure to become food secured.

The severity of food insecurity for households in the study area is 0.17 for the male-headed households and 0.37 for the female-headed households. This shows a higher level of severity of food insecurity among the female-headed households than the male-headed households in the study area.

This observation might be due to the fact that male headed households have better access to

productive resources and asset base such as credit facilities, access to improved seed varieties, land, access extension services among others compared to their female counterpart. This enhances their productivity level and therefore their household food security status. This inequality might be due to the way biological difference between male and female is being translated into socially constructed differences, which invariably lead to inequality in access to productive resources.

*Table 1* : Summary statistics of household food insecurity indices

Variables	Values	
Cost of calorie equation	Ln x = a+ bc	
Constant	4.655	
Slope coefficient	0.00003753	
Recommended daily calorie intake	2700Kcal	
Food security line (Z): Cost of recommended calorie intake	₦117.10per day	
Food insecurity indices:	Male	Female
<b>Incidence of food insecurity</b>		
Head count ratio	0.55	0.53
Depth of food insecurity	0.37	0.55
Severity of food insecurity	0.17	0.37

## V. DISAGGREGATION OF THE HOUSEHOLD FOOD SECURITY STATUS ALONG THERE SOCIO-ECONOMIC CHARACTERISTICS

In order to assess the influence of some socio-economic characteristics / variables on the level of household food security, the household's food security level were disaggregated along their socio-economic characteristics and the households were classified by gender of the household head in order to see the effect of gender on other socio-economic variables and household food security status.

### a) *Distribution of household food security status by location*

Distribution of the level of food security status of household head by location is presented in table 2. The table revealed that for the male headed household about 87 out of the 122 respondents that resides in rural areas was food insecure i.e. 71.3% of the respondents in the rural areas are living on less than ₦117.10 per day, while 38 out of the 42 (90.5%) male headed

households that reside in urban area are food secured. For the female headed households that reside in the rural areas about 64.3% of her respondents are food insecure while 70% of the female headed households residing in the urban centers belong to the food secured category.

The reason for the high level of food insecurity in rural areas might not be far fetched in view of the fact that poverty is largely rural in nature as majority of the poor live in rural area. This fact is further ascertained by World Bank (1996) that indicated that rural areas account for 66% of the incidence of poverty, 72% of the depth and 69% of the extreme poor. Poverty status of households also determines the household welfare status, which in turn affects their food security status. This is further complicated by the fact that most rural farmers still use traditional means of agriculture which is usually accompanied by low efficiency, low productivity and in turn low output. In addition, most of the farmers tend to sell off the best part of their produce to purchase other food items that they do not cultivate and to acquire non-food items that the family needs

*Table 2* : Distribution of household food security status by location

Variable	Male headed			Female headed		
	Non Food secure	Food secure	Total	Non Food secure	Food secure	Total
Rural	87	35	122	36	20	56
Urban	4	38	42	6	14	20
Total	91	73	164	42	34	76

b) *Distribution of household food security status by age*

Table 3 shows the distribution of the level of food security of respondents by age. As shown, 90.5% of the households that are headed by male and 62.5% of those headed by females whose household heads are not older than 31 years of age are food secured while 96.6% of the male headed households and 60% of female-headed households whose household heads are older than 60 years of age are food insecure. This

indicates that households with younger household heads irrespective of sex are able to attain food security level. This might be due to the fact that this younger household heads are still in their productive years and are able to engage themselves in various income generating activities through livelihood diversification thereby increasing their income base hence the purchasing power, which makes them more food secured

*Table 3* : Distribution of Household food security Status by age

Variable	Male headed			Female headed		
	Non Food secure	Food secure	Total	Non Food secure	Food secure	Total
< 31 yrs	2	19	21	3	5	8
31- 60 yrs	61	53	114	30	23	53
> 60 yrs	28	1	29	9	6	15
Total	91	73	164	42	34	76

c) *Distribution of household food security status by Household Size*

Table 4 shows the disaggregation of the household food security level by their household size. For the male-headed households the result revealed that 62 out of 92 (67.4%) households that have their household size less than 6 were food secured. For the female-headed households, 21 of the 35 (60%) respondents that have their household size less than six were food secured. Only 1 out of 8 (12.5%) male-headed households that have their household size greater than 10 and also only 1 out of 6 (16.7%) female-

headed households that have household size greater than ten were food secured. This indicates that households with fewer household sizes are food secure while households with higher households' size have the highest incidence of food insecurity. This implies that the lower the household size, the higher the level of food security. This might be due to the fact that households with higher household size have the tendency to have a reduced per capita expenditure since a larger number of people are competing for the limited resources available within the households.

*Table 4* : Distribution of Household food security status by household size

Variable	Male headed			Female headed		
	Non Food secure	Food secure	Total	Non Food secure	Food secure	Total
< 6	30	62	92	14	21	35
6- 10	54	10	64	23	12	35
>10	7	1	8	5	1	6
Total	91	73	164	42	34	76

d) *Distribution of Household Food security status by educational level*

Table 5 shows the effect of the educational level of household's heads on the food security status of their households. The result revealed that only 2 of the 27 respondents of the male-headed households that have no formal education were food secured while 92.6% were food insecure. For male-headed households that had tertiary education 38 of the 45 were food secured while just 15.6% respondents of households headed by male and had up to tertiary education were food insecure.

The table also reveals that only one out of the 24 (4.2%) female headed households that were without any form of formal education were food secured while the remaining 95.8% were food insecure. Those that were educated up to tertiary education level had about

88.9% of its respondents food secured while just 11.1% of them were food secure.

This implication of these observations is that the higher the literacy levels the higher the level of food security status. This is expected since the higher the educational level, the more improved the skill and human capital of the individuals will be. High literacy level also helps households to be able to understand and adopt new technology because of the improvement in their technical know- how. In addition, educational level is a major determinant of wages and salaries since it is believed that the number of years spent in school positively determines level of skill acquirement and state of capacity building.

*Table 5* : Distribution of Household Food security level by educational status

Variable	Male headed			Female headed		
	Non Food secure	Food secure	Total	Non Food secure	Food secure	Total
No formal	25	2	27	23	1	24
Primary	37	7	44	10	3	13
Secondary	22	26	48	7	14	21
Tertiary	7	38	45	2	16	18
Total	91	73	164	42	34	76

e) *Distribution of Household food security level by primary occupation*

Table 5 shows that for both the male-headed households and female that were interviewed who were engaged in non-farming activities were more food secured than those who had farming as their main occupation. For the male-headed household, 18.8% of respondents that were engaged in agriculture were food secured. Also, only 13% of the female-headed households that were engaged in farm work have their

main occupation were food secured. The low level of food security among respondents that were engaged in agriculture might be due to high rural-urban migration which has left agriculture into the hands of the old people in the rural area who are also using traditional means of production in addition to the fact that they plant low yielding variety which leads to low productivity. This therefore leads to low purchasing power, which invariably determines their food security status

*Table 6* : Distribution of Household food security level by primary occupation

Variable	Male headed			Female headed		
	Non Food secure	Food secure	Total	Non Food secure	Food secure	Total
Primary Occupation						
Farming	52	12	64	27	4	31
Non-farming	39	61	100	15	30	45
Total	91	73	164	42	34	76

f) *Distribution of Household food security level by years of experience*

Table 7 presents the disaggregation of male-headed households and female-headed household's food security status according to their years of working experience. The table indicates that for the male-headed households 10 out of 43 respondents with years of experience less than 10 were food secured while 70% of the respondents that had years of experience greater than 20 were also food secured. This implies that the

greater the years of experience, the higher the tendency to have household that is food secured. This might be due to the fact that the higher years of experience, helps to improve qualities acquired by such individuals over time. This will in turn enhance their productivity and efficiency level and consequently their food security level. This might also be because years of working experience usually enhances wages of workers, thus improving their purchasing power and therefore their food security status.

*Table 7* : Distribution of Household food security level by years of experience

Variable	Male headed			Female headed		
	Non Food secure	Food secure	Total	Non Food secure	Food secure	Total
< 10 years	35	10	43	21	8	29
10-20 years	37	21	51	15	11	26
> 20 years	19	42	60	6	15	21
Total	91	73	164	42	34	76

g) *Distribution of Household food security level by membership of cooperative societies*

Table 8 indicates that 12 out of the 82 (14.6%) male headed households and 33.3% of the female headed households that belongs to cooperative societies are food insecure, while 70 out of 82 (85.4%) of the male headed households and 34 out of 38 (89.5%) of the female headed households that do not belong to cooperative societies are food insecure.

This implies that respondents who participate in cooperative society are more food secure than non-members of cooperative societies. This might be due to advantage of economies of scale that members of cooperative societies enjoy like access to production input at a cheaper rate and ability to secure credit for various income-generating activities and also for consumption purposes from members of such societies.

Table 8 : Distribution of Household food security level by cooperative society

Variable	Male headed			Female headed		
	Non Food secure	Food secure	Total	Non Food secure	Food secure	Total
Cooperative membership						
Yes	12	70	82	8	30	38
No	79	3	82	34	4	38
Total	91	73	164	42	34	76

#### h) Factors influencing Food insecurity in the Study area

This section presents the result of the determinants of household food insecurity among rural households in the study area. The relationship between household food security status and various socio-economic variables and institutional factor was examined. The probit model was employed to identify the factors influencing household food insecurity among households.

Table 9 summarizes the result of the probit model. In estimating the determinants of food security among the households, regression model made of 10 regressors were specified. The factor that influences food security status of households are gender, age, household size, years of formal education, membership of cooperative societies and level of asset ownership. Gender of the household head significantly ( $P \leq 0.05$ ) and positively influences household food security status. The result revealed that empowering the female folk enhances the household food security status.

Age significantly ( $P \leq 0.1$ ) but negatively influence household food security level at 10% level irrespective of gender. This might be because household heads that are young are more agile and active thus enhancing their productivity level, rate of adoption of new technology and level of diversification, which helps them to engage in other income generating activities thus enhancing their purchasing power and invariably their food security status.

Years of formal education also significantly ( $P \leq 0.1$ ) and positively affect the food security status of households, hence households with more years of formal education are more food secured compared with households with others having none or few years of

formal education. This might be due to the fact that years of formal education are a major factor in wage determination especially in Nigeria where the higher the academic qualification, the higher the wage. In addition, formal education improves human capacity and technical know how which aids rate of adoption thus improving the productivity level of such households and consequently their food security status.

Ownership of asset ( $P \leq 0.05$ ) significantly and positively affects food security status of households. Households that have access to key assets are more food secured since they are able to use such asset to secure loans which can be invested in other productive enterprises which they can translate into cash if such households experiences shock. This can be used to smoothing their consumption pattern then.

Participation in cooperative societies ( $P \leq 0.05$ ) significantly influences household food security positively. This is probably due to the fact that cooperative society members have access to information dissemination, new technology, economies of scale, access to credit and other input dissemination that help to improve their standard of living.

Marginal effects as presented in table 10 were estimated for continuous variables only, because they may not be meaningful for binary variables. It therefore means that 1% change in the positive and significant variables will increase the probability of households being food secured. Reverse is the case for negative and significant variables. The marginal effect for the probit model revealed that for household size and age of the respondents, a 1% change in the size of the households and age of the household head will decrease the probability of the household to be food secured by 0.143 and 0.489 respectively.

#### Factors that determines household food insecurity status

Variables	Coefficient	SE	t-value	P ( Z >Z)
Constant term	-0.929	2.664	-0.349	0.7273
Location	0.844	13.383	0.063	0.9497
Gender	0.001	0.008	1.200	**0.2300
Household size	-0.628	0.484	-1.299	0.1938
Marital Status	-5.335	2613.685	-0.002	0.9984
Primary Occupation	-0.482	1.226	-0.393	0.6942
Educational level	0.456	0.246	1.852	*0.0640
Asset Ownership	5.704	2.896	1.969	**0.0463
Membership of cooperative society	6.159	3.091	1.992	**0.046
Age	-0.215	0.117	-1.832	*0.0670
Non-food expenditure	-0.190	1.377	-0.138	0.890

N.B: \* shows level of significant of the explanatory variables

\* Significant at 10%, \*\* Significant at 5%, \*\*\* Significant at 1%



Table 10: Marginal effect of the probit regression model

Variable Specification	Coefficient	SE	t-value	P ( $ Z  > Z$ )
Constant term	-0.212	85.389	-0.002	0.
Location	0.844	13.383	0.063	0.9497
Gender	0.001	0.008	1.200	0.2300
Household size	-0.628	0.484	-1.299	0.1938
Marital Status	-5.335	2613.685	-0.002	0.9984
Primary Occupation	-0.482	1.226	-0.393	0.6942
Educational level	0.456	0.246	1.852	0.0640
Asset Ownership	5.704	2.896	1.969	0.0463
Membership of cooperative society	6.159	3.091	1.992	0.046
Age	-0.215	0.117	-1.832	0.067
Non-food expenditure	-0.190	1.377	-0.138	0.890

## VI. CONCLUSION

The study examined the effect of gender on household food security status among rural and urban households in Oyo State. The study revealed that female-headed households are more food insecure than male-headed households and that the incidence of household food insecurity is higher among the rural populace than the households in urban centers.

The result of the analysis indicates that age and household size have negative effects on the food security of households while educational level, membership of cooperative societies, asset ownership have positive influence. The type of occupation that household head is engaged in also has a significant influence on the food security status of household size.

The result of the analysis further shows that advancing in age, non-membership of cooperative societies, asset ownership and largeness in the size of household are the factors that determine the food insecurity level among households.

Due to high incidence of food insecurity among rural farming households, they should be encouraged to adopt new improved production practices in order to increase their yield and also they should be encouraged to diversify their source of livelihood in order to enhance their income.

Therefore, for any successful food security programmes, households should be encouraged to build their capacity through training by enhancing their skill acquisition process. Also household heads should be encouraged to join cooperative societies and build up their asset base. The female gender group should be involved in the implementation area and this should also start from the grassroots levels that are the most vulnerable group.

## VII. POLICY IMPLICATIONS AND RECOMMENDATIONS

1. Rural dwellers should be encouraged to improve on their literacy level so as to enhance their human capacity. There is need for adult literacy class,

extension services and other forms of informal education especially for the female gender group who have low literacy level compared to their female counterpart. This is expected to help the rural populace to improve their food security level

2. Investments in capital goods have been shown to have significant effect on the food security status of households. Household heads should therefore be encouraged to invest in capital goods in order to develop their asset base, which they can use as collateral to obtain loan or dispose off to overcome shock.
3. Household heads should be encouraged to participate in cooperative societies in order to have improved access to productive resources such as seed input, information dissemination and credit facilities so as to enhance their productivity level which will invariably improve their household food security status.
4. Household head that are old should learn means of income generating activities that are not too energy demanding for their age so as to enhance their purchasing power especially for rural dwellers where farming is the primary occupation.

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