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**ASSESSMENT OF FOOD SECURITY PROBLEMS AND COPING STRATEGIES
AMONG FARMING HOUSEHOLDS IN MAFA LOCAL GOVERNMENT AREA,
BORNO STATE, NIGERIA**

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ABSTRACT

The study assessed the food security problems in Mafa Local Government Area of Borno State. Primary data were used for the study and were collected from 96 farming households. The data were analysed using both descriptive and inferential statistics. The study revealed that the respondents were involved in the production of crops such as cowpea (92.71%), millet (89.58%), groundnut (72.92%) and rice (62.50). Livestock's kept include cattle (27.18%), sheep (45.83%), goats (51.04%) and poultry (68.75%). The study also indicates that majority of the respondents adopted up to 50% of the coping strategies identified, indicating that they were food unsecured as reflected by the degree of adoption of coping strategies with only 12.50% of the respondents having compatible coping strategies. The major constraint to food security was the high level of rural poverty representing 93.75% of the respondents. The results equally revealed that there were significant differences in both adoption of coping strategies (calculated $X^2 = 57.000$; tabulated $X^2 = 16.919$ at $P \leq 0.05$) and constraints to food security (calculated $X^2 = 76.340$, tabulated $X^2 = 23.685$ at $P \leq 0.05$) respectively in the study area. Policy recommendations were made to include improvement in the efficiency of food production through better cropping practices, improved farm technologies and provision of credit facilities in the study area.

Key Words: Food security; coping strategy

INTRODUCTION

Food consumption is a basic means of sustenance at the household level and adequate intake of food is a key requirement for a healthy and productive life (Ojo, 1991). To accomplish this, we must have a production system that produces enough in the short run, sustainable in the long run and does not place undue risk on agricultural producers. It also must respond rapidly to disruptions in the food supply due to natural disasters and environmental imbalances. In Nigeria, the food problem is caused by declining farm productivity which led to rapid increase in domestic food prices (Ndanusa, 1992).

USDA (2000) defined food security as having access to enough food at all times for an active healthy life. According to FAO (1996), Africa has more countries with food security problems than any other region. It further stressed that the food problems were most acute in those countries where there is shift to cash/export crop production. Muhammed (2007) reported that in more recent time, many rural farmers particularly in some parts of Borno and Yobe States embarked upon water melon production at the expense of food crop production. Spore (1988) asserted that the food production and supply situations in many countries are becoming more precarious due to increasing food supply short falls and high degree of seasonal and annual fluctuation in both production and supply. The many dimensions of these food problems are now collectively referred as the food security problems in this study.

Coping strategies refers to fallback mechanism to deal with a short term insufficiency of food (Agbola, 2002). He reported that during food crisis, affected households adopt a variety of coping mechanism to survive. Such strategies include reducing or rationing consumption and eating foods that are less preferred. With the recent emphasis on relieving food crisis and reducing the severe consequences of famine and malnutrition on the poor, there is an urgent need for research into food problems that are caused by poverty such as Nigeria. Thus, the study assesses the food security problems and the coping strategies in Mafa Local Government Area of Borno State. Based on the findings, the study provided some policy recommendations towards alleviating food security problems in the study area

Objectives of the Study

The main objective of the study was to assess the food security problems and coping strategies among the farming in Mafa Local Government Area of Borno State. The specific objectives were to:

- a) Identify the types of crop and livestock produced among the farming households;
- b) Examine the coping strategies adopted by the farming households;
- c) Categorize the farming households on the basis of the degree of adoption of coping strategies and
- d) Investigate the constraints to food security among the farming households.

Statement of Hypotheses

The following hypotheses were tested at 5% level of significance:

Ho1 : there was no significant relationship between the coping strategies adopted by the farming households.

Ho2 : **There was no significant relationship between constraints to food security among the farming households.**

METHODOLOGY

The study was carried out in Mafa Local Government Area of Borno State. Multistage random sampling was employed in the study. Six wards were selected at random from the local government area. Then, two villages were selected from each of these wards making 12 villages selected for the study. Lastly, eight farming households were selected from each of the 12 villages making the total sample size to be 96.

Data were collected mainly from primary sources. This consisted of information received through the use of a structured interview schedule administrated by well trained enumerators for the study. Descriptive statistics were used in analyzing the stated objectives, while inferential statistics (chi-square) was used in testing the stated hypotheses.

Measurement of Degree of Adoption of Coping Strategies

The dependent variable was the degree of adoption of coping strategies. Ten coping strategies were identified. The respondents were asked to indicate as many as possible the coping strategies they had adopted in times of household food shortage. For ally one a respondent adopts, he got a score of one. The total score per respondent for the number of adoptions indicated was expressed as percentage of the over all score for the ten coping strategies, expressed as:

$$Z = \frac{x}{y} \times 100/1$$

Where; Z = degree of adoption of coping strategies of the respondent,

X= participatory score of the respondent on the number of coping strategies adopted;

V= total score of all the coping strategies (ten strategies).

Based on the respondent "Z value" they were grouped in to the following categories.

- i. Compatible coping strategy ($\leq 33\%$)
- ii. Unfriendly coping strategy (34-66%)
- iii. Damaging coping strategy ($\geq 67\%$)

RESULTS AND DISCUSSION

a) Crops and Livestock Enterprises

Crop Enterprises

Table 1: Distribution of Crops Grown by Respondents in the Study Area

Type of crop*	Frequency	Percentage (%)
Maize	45	46.87
Sorghum	40	41.67
Millet	86	89.58
Groundnut	70	72.92
Cowpea	89	92.71
Rice	60	62.50
Tomatoes	40	41.67
Onion	36	37.50
Pepper	28	29.17
Okra	18	18.75

Source: Field survey; 2008

**Multiple responses exist.*

As shown in Table I, the respondents generally cultivate different types of crop. It can be observed that the fanning households were involved in the production of cowpea (92.71%), millet (89.58%), groundnut (72.92%) and rice (62.50%). This might be attributed to the fact that these crops could be consumed in the home and also sold to small scale entrepreneurs. These crops have emerged as commercial cash crops for the fanning household because of the high market that has been opened up to them in the study area.

Livestock Enterprises

Table 2: Distribution of type and number of livestock kept (N=96)

	Frequency	Percentage
Cattle (number)		
0	70	72.92
1-4	19	19.79
5 and above	7	7.29
Sheep (size of herds)		
0	52	54.17
1-4	26	27.08
5 and above	18	18.75
Goats (size of herds)		
0	47	48.96
1-4	30	31.25
5 and above	19	19.79
Chicken (size of flock)		

0	30	31.25
1-4	15	15.63
5 and above	51	53.12

Source: Field Survey; 2008

The animals kept by respondents include cattle, sheep, goats and chickens (Table 2). Table 2 shows that about two-third, one -half and a quarter of the farming households do not keep cattle, sheep and goats and chickens respectively. Only about 7.29% of the respondents have more five or more heads of cattle as against 18.75%, 19.79% and 53.12% who have more than five (size of herd) for sheep & goats and chickens respectively. Field observations showed that the livestock were kept as a source of additional income among the respondents.

b) Coping Strategies Adopted

Table 3: Distribution of Coping Strategies among Respondents

Coping strategy	Frequency	Percentage
Reduction of frequency of eating by adults	92	95.83
Eating foods that are less preferred	61	63.54
Skipping meals by adducts	70	72.92
Children engaged in income generating activities	18	84.37
Traveling out of adults in search for jobs	42	43.75
Mortgaging and sales of assets to purchase food items	37	38.54
Borrowing money from friends and relatives to buy food stuff	52	54.17
Reducing quantity of food consumed by adults	47	48.96
Short term alteration in crop and livestock production	26	27.06
Reducing quantity of food consumed by children	39	40.62

Source: Field's Survey; 2008; Multiple response resists

Table 3 indicates that majority of the respondents adopted up to 50 % of the coping strategies identified. These were; reduction of frequency of eating by adults (95.83%), eating foods that are less preferred (63.54%), skipping meals by adults (72.92%), engaging children in income generating activities (84.37%) and borrowing money from friends and relatives to buy food snuff (54.17%). The implication was that the respondents were food unsecured.

b) Categories of households on the Basis of Adoption of Coping Strategies

Table 4: Distribution of respondents by degree of adoption of coping strategies (N= 96)

Degree of adoption of coping strategies	Frequency	Percentage
Compatible coping strategies ($\leq 33\%$)	12	12.50
Unfriendly coping strategies (34 66%)	64	66.67
Damaging coping strategies ($\geq 67\%$)	20	20.83

Source: Field survey; 2008

Table 4 revealed that the respondents were categorized on the basis of degree of adoption of coping strategies. Only 12.50% of the respondents had compatible coping strategies indicating that majority of the respondents (87.50%) were food unsecured.

d) Constraints to Food Security

Table 5: Rank order distribution of respondents by constraints to food security

Constraints*	Frequency	Percentage	Rank order
High level of rural poverty	90	93.75	1 st
High degree of seasonal fluctuation in production	83	86.46	2 nd
Low level of income	80	83.33	3 rd
Poor agricultural credit facilities	76	79.17	4 th
Large size of household	70	72.92	5 th
Drought	66	68.75	6 th
Pests and diseases infestation	52	54.17	7 th
Lack of effective extension communication	48	50.00	8 th
Neglect of women in agriculture	45	46.87	9 th
High price of food items	43	46.89	10 th
Poor knowledge of improved practices	41	42.71	11 th
Poor application of Improved technologies	39	40.62	12 th
Food supply short falls	36	37.50	13 th
High Market food demand	35	36.46	14 th
Shift to cash crop production	30	31.25	15 th

Source: Field Survey; 2008

*Multiple response exits

Table 5 shows constraints identified by respondents to food security. They identified that the major constraint to food security was high level of rural poverty representing 93.75% of the respondents, while the least constraint was shift to cash crop production representing 31.25% of the respondents. This indicates that the respondents were unable to produce enough for their households and market surplus others to purchase other food necessities such as fruits, vegetables and beverages among others for their consumption. This was as a result of the level of poverty of the respondents, thus requiring agricultural credits to assist them increase their productivity so that they would have surplus to sell for cash.

Test of Hypothesis

Table 6: Summary of chi-square analysis

Hypothesis	DF	Calculated X ²	Tabulated X ²	Remark
HO ₁	9	57.000	16.919	S
HO ₂	14	76.340	23.685	S

Source: Field survey, 2008

HO₁: = Null hypothesis number one

HO₂: = Null hypothesis number two

DF = Degree of freedom

X² = Chi-square

S = statistically significant at $P \leq 0.05$

The results of the chi-square analysis are presented in Table 6. It shows that the calculated X² of 57.000 for HO₁ was greater than the tabulated X² of 16.919. Therefore, the null hypothesis HO₁ could be rejected, indicating that, there were significant differences in adoption of coping strategies among the respondents. Table 6 also reveals that the calculated X² of 76.340 for HO₂. This was greater than the tabulated X² of 23.685. Here also, the null hypothesis HO₂: could be rejected. Thus, there was a significant relation between the constraints to food security among the respondents in the study area.

CONCLUSION

Majority of the respondents adopted about half of the coping strategies identified. This indicates that they were food unsecured. The major constraint to food security was high level of rural poverty, indicating that they were in need of credit facilities in order to making them more productive to provide enough for their households and surplus for the market.

RECOMMENDATIONS

Based on the findings of the study, the following recommendations are made:

- a) The farm families are food unsecured. There is, therefore, need to enhance food security of the respondents through more farm and off-farm income generating activities such as vegetable farming and trading.
- b) The major constraint to food security of the respondents is their high level of poverty and high seasonal fluctuation in crop production. It is, therefore, recommended that efforts be made to alleviate the poverty of respondents through relevant government ministries and agencies such as the Poverty Eradication Programme (NAPEP).
- c) There is also need to improve the rural infrastructural facilities such as roads, electricity, rural banking and health care facilities. These will help to reduce rural poverty and enhance crop and livestock production

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