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Analysis of Food Security of Farming Households in Kwara State

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Abstract- ***Food insecurity remains a significant global problem especially in developing countries like Nigeria. This challenge increases human suffering and predisposes young, adult and aged to disease attack, impaired human growth and reduced life expectancy. Hence, this study analyzed the food security and coping strategies among farming households in Kwara State. The secondary data used for the study were General Household Survey data, wave 4, panel 2018/2019 sourced from the National Bureau of Statistics. Two Hundred and three farming households were purposively selected for the study. Descriptive statistics and food security index were used for data analysis. The result revealed that the households spent the mean amount of ₦5,637.12 on food items in the last thirty days while the mean household size was 5. Also, the mean annual rainfall was 1213.906mm while the mean adult meal frequency was 3 times per day and the mean age was 51years. Majority (73.4%) of the households were food secure during post-harvest season while 26.6% were food insecure. Food expenditure (p=0.0001) was discovered to most likely increase the food security of the households in Kwara State while increase in household size (p=0.096) may probably decrease the food security. It was revealed that three prominent coping strategies that ranked first, second and third according to weighted mean scores result were eating few kinds/varieties of food, eating less preferred food and eating reduced quantity of food in the last thirty days respectively. This study concluded that increase in food expenditure and decrease in household size have the likelihood of affecting food security status of the farming households in Kwara State during post-harvest season. It was therefore recommended that farming households should be encouraged to spend more on cheaper but nutritive food items and should endeavor to maintain a manageable household size that positively contribute to their food security.***

Indexed Terms- ***Food Security, Food Security Status and Coping Strategy***

I. INTRODUCTION

Food, ranking only after air and water, holds paramount importance for all living beings. The availability, affordability, and accessibility of food, however, determine the food security of the world population. Despite its critical role, the absence of available, affordable, and accessible food leads to hunger and food insecurity. Food availability encompasses the supply chain through production, distribution, and exchange (Gregory 2005).

Food security is defined as the constant availability of food and one's unrestricted access to it. A household achieves food security when its members are not plagued by hunger or the fear of starvation. The four pillars of food security are identified as food availability, access to food, utilization, and stability (Global Strategic Framework for Food Security and Nutrition, 2011). On the other hand, food insecurity, as defined by the United States Department of Agriculture (USDA), refers to a state of limited or uncertain access to nutritionally adequate and safe foods, or the inability to acquire acceptable foods in socially acceptable ways. The concept of food insecurity originated in the mid-1970s during discussions of international food problems amid a global food crisis. Initially centered on supply-side concerns, negotiations led to the redefinition of food security, recognizing the critical aspect of potentially vulnerable and affected people (FAO, 2003).

Households can fall into two categories: food secure or food insecure. A household is considered food secure when it can easily access and afford food at reasonable prices. Conversely, a food insecure household faces challenges in accessing and affording food. The global population's sustainability relies

heavily on individual households being food secure. The affordability of food is primarily influenced by income and food prices, with production costs playing a role in determining these prices (Abdulazeez, 2023).

II. PROBLEM STATEMENT

Despite efforts to address the issue of food security, global hunger has been on the rise since 2015, with Africa facing particular challenges (FAO, 2015). Nigeria, despite its agricultural potential, struggles with food security due to factors such as rising global food prices and dependence on food imports (IFRI, 2016). There were some policies that were initiated by government to address food insecurity. Some of the agricultural programs are: Farm Settlement Scheme (FSS/1959), National Accelerated Food Production Program (NAFPP/1972), Agricultural Development Projects (ADP/1974), Operation Feed the Nation (OFN/1976) etc.

Despite several of these policies and programs put in place to combat food insecurity in Nigeria, the problem still persists. Even though some of the policies that were initiated by the government to address the food insecurity achieved a little but were not sustainable and did not completely eradicate it. Even though these aforementioned programs were initiated with very good intentions but were not sustainable because of lack of adequate funding, inconvenience, corruption, insurgency, lack of commitment, improper coordination and evaluation and many more.

However, the insurgence in the Northern States and the frequent clashes between herdsmen and farmers in the predominantly farming areas of the Middle Belt region have resulted in the destruction of lives and farmlands and have become a major threat to efforts in boosting food production. The lack of access to quality and sufficient food negatively affects the productivity of human resources, hindering the overall economic development of the nation (Omonona and Agoi, 2007). Even though, food insecurity is a general problem found around the entire country and in all states, Northern Nigeria appeared to be the most affected. In addressing these challenges, it is crucial to examine the factors contributing to insufficient food consumption and implement effective measures to achieve food security. Therefore, this study intends to analyze food security among farming households in the study area by achieving the following objectives;

III. OBJECTIVES OF THE STUDY

The main objective of this study is to analyze food security among farming households in Kwara State. The specific objectives are to;

1. determine the food security status of respondents in the study area;
2. examine the factors affecting food security in the study area;
3. examine the coping strategies adopted by the respondents in the study area.

IV. JUSTIFICATION

Farming households form a bedrock of food production in Kwara, unpacking their food security status is essential for formulating interventions that address the roots barriers they face in achieving sustainable access to food. Also, while there are studies that have explored certain dimensions like migration or conflict, a coherent, integrated analysis focused on food security among farming households, using FAO method measure in Kwara remains uncommon, this research is set to bridge the gap. This study is essential as it will contribute to Nigeria's larger objective of combating hunger within the framework of Sustainable Development Goal 2; Zero Hunger. It will also support initiatives aimed at ensuring food affordability, boosting resilience and promoting nutrition among rural communities. By incorporating structural, sociocultural, economic and institutional factors, the study will enable stakeholders- government, NGOs, academic institutions and local communities develop strategies that strengthens food systems, empower vulnerable households and enhance resilience. By identifying and addressing the factors responsible for food security, formulation of effective policies to enhance household welfare and sustainable development goals will be achieved and multifaceted challenges associated with food insecurity would have also been addressed.

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V. METHODOLOGY

A post-harvest, secondary data from the General Household Survey, wave 4, panel 2018/2019, obtained from the National Bureau of Statistics was used. A total number of 203 farming households were selected from Kwara State. The dataset comprised socio-economic characteristics of farming households, food consumption data and variables influencing food security, such as household size, annual rainfall, adult meal frequency, input prices and food expenditure over the last 30 days. Descriptive statistics, including percentages, frequency tables and bar charts were employed to describe the socio-economic characteristics of farming households and also for coping strategies and Weighted Mean Score was used for the ranking.

A food security index was constructed to evaluate and compare the food security status of farming households. Utilizing the FAO food security baseline (2500kcal/adult equivalent/day), households were categorized as either food secure or food insecure.

VI. MODEL SPECIFICATION

The food security model specification used for this study was according to the design of Ahungwa *et al.* (2013) and expressed empirically as:

$$Z = \frac{\text{Household's daily per capita calorie availability (A)}}{\text{Household's daily per capita calorie requirements (R)}} \quad \ldots\ldots\ldots\ldots\ldots\ldots\text{(i)}$$

Based on Z, some food security measures were calculated: the shortfall or surplus index, P, as

$$P = \frac{1}{M} \sum_{i=1}^{m} GK \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \text{(ii)}$$

$$GK = \frac{(Xk-1)}{I} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\text{(iii)}$$

P= shortfall or surplus index

X_k= Average daily calories availability to the j^{th}

M = the number of households that are food secure (surplus index) or food insecure (shortfall index)

The head count ratio (h) is given as

$$H = \frac{m}{n} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \text{(iv)}$$

Where m = the number of food secure or insecure members of the sample population

n = total population understudy.

$$HFS_i = \frac{\text{Total net calorie consumed by a household daily}}{\text{Household size measured by adult equivalent}}$$

Where: HFS_i is Household Food Security of the ith household and i=1, 2, 3…130. Therefore, based on the HFS_i value, the households' food security status was determined that those households whose HFS_i is greater or equals to 2500 kcals per day were generalized as food secured and the others were concluded as food insecure.

The factors affecting food security were analyzed using Ordinary Least Square (OLS) regression model and the model specification for the study was written as follow:

$$InY_i = \beta_0 + \beta_1 In_{HHA} + \beta_2 In_{AMFr} + \beta_3 In_{HZ} + \beta_4 In_{AP} + \beta_5 In_{FEXP} + \varepsilon \ldots\ldots\ldots\ldots (vii)$$

Where

Y_i = Food consumption (Kcal/Adult Equivalent (AE))

β_0 = Constant estimate

HHA = Household head age (yrs)

$AMFr$ = Adult meal frequency (number)

HZ = Household size (number)

AR = Annual Rainfall (mm)

$FEXP$ = Food expenditure (₦)

$INCIP$ = Increase in Input Price

ε_i = Error term

VII. RESULTS AND DISCUSSION

The result for this study was gotten from a pool data from general household survey, wave 4, 2018/2019 of Kwara State. Table 1 revealed that the average household size was 5 persons, indicating a manageable size that likely contributes positively to their food security. Furthermore, the mean monthly food expenditure was ₦5637.11, reflecting a comparatively lower spending on food items. This may be attributed to their reliance on self-produced food, complemented by various acts of generosity from affluent individuals in the society. The mean annual rainfall recorded was 1213.906mm, representing a moderate level conducive for farming activities. Adults within the selected households consumed meals three times a day on average, meeting the standard of three-square

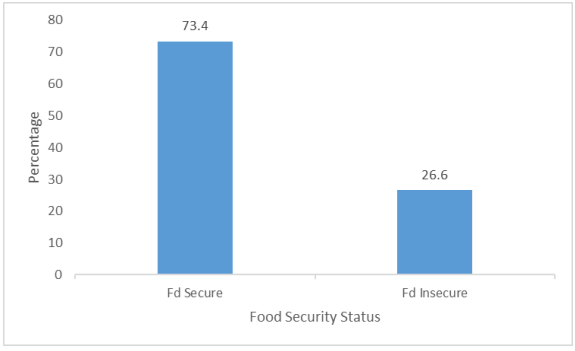
meals per day. The mean age of household heads was 51 years, indicating a predominantly mature, responsible and agile leadership within the households, contributing positively to their farming endeavors.

Variable	Obs	Mean	Std Dev	Min	Max
Household Size	203	4.488	2.669	1	13
Food Expenditure	203	5637.118	4239.675	150	25050
Annual Rainfall	203	1213.906	48.746	1139	1277
Adult Meal Freq	203	2.872	0.363	2	4
Household Head Age	203	51.094	17.260	18	92

VIII. FOOD SECURITY STATUS

Figure 1 revealed that majority (73.40%) of the households were food secure while just (29.26%) were not food secure. This could be because of the intervention received from different organizations and also the presence of alms giving and benevolence that is prominent among Muslims and Christians in the State.

Figure 1



IX. FACTORS AFFECTING FOOD SECURITY

Table 2 illuminates the factors affecting food security status among the surveyed farming households in the Kwara State. It was unveiled that household size and food expenditure were statistically significant at 10% and 1% respectively. Household size exhibited a negative relationship with food security, resulting in a reduction of food security by 0.1115565. This signifies that an increase in household size leads to a decrease in the food security of the household. In situations where the income remains constant, a larger household size implies a diminished portion allocated to each individual member, inevitably contributing to a decline in food security. This finding aligns with the perspective of Ahmed et al. (2015), who argued that an expanding household size increases the likelihood of food insecurity due to heightened food requirements and potential reductions in food quantity and quality, primarily driven by a reliance on limited household income. Conversely, food expenditure demonstrated a positive relationship with food security, contributing to an increase in food security by 0.1994523. This implies that as households allocate a greater amount to food expenses, their level of food security also rises. This observation aligns with the conclusion of Obayelu and Akinmulewo (2020), who emphasized that an augmentation in household per capita food expenditure enhances overall food security.

Variable	Coef.	T	P >/t/
lnAP	0.2729854	0.30	0.764
lnHZ	-0.1115565	-1.92	0.056*
lnAMFr	0.1263357	0.51	0.611
lnHHA	-0.0191838	-0.21	0.836
lnEXP	0.1994523	3.66	0.000***
lnput-Price	0.0626009	0.57	0.566
Constant	4.572254	0.72	0.475

R^2 = 0.063
F (6, 196) = 3.05
Prob > F = 0.007
Note: *** represents level of significant at 1%
** represents level of significant at 5%
* Represents level of significant at 10%

X. COPING STRATEGIES

As a means of coping, a little below average (40.89%) of the surveyed households resorted to consuming a limited variety of food types in the preceding 30 days while 38.92% faced the challenge of being unable to consume their preferred food during the same period. 30.54% implemented the strategy of consuming reduced quantities of food while 21.57% restricted

their own consumption to ensure their children had enough to eat. 20.69% adopted meal skipping or intermittent fasting in the past month while 5.91% resorted to borrowing food or relying on friends and relatives for sustenance during the last 30 days. Among these strategies, the first three most prominent were the consumption of limited varieties of food, opting for less preferred food items and strategy of reducing the quantity of food consumed in terms of Weighted Mean Score (WMS).

Coping Strategy	Yes	No	WMS	Rank
Eating less preferred food in the last 30 days	79	124	1.39	2nd
	(39.92)	(61.08)		
Eating few kinds/varieties/types of food in the last 30 days	83	120	1.41	1st
	(40.89)	(59.11)		
Skipping meals/fasting in the last 30 days	42	161	1.21	5th
	(20.69)	(79.31)		
Eating reduced quantity of food in the last 30 days	62	141	1.31	3rd
	(30.54)	(69.46)		
Restrict consumption for children to eat in the last 30 days	44	159	1.22	4th
	(21.67)	(78.33)		
Borrow food/rely on friends or relatives in the last 30 days	12	191	1.06	6th
	(5.91)	(94.09)		

CONCLUSION AND RECOMMENDATION

This study concludes that food-secure farming households outstripped insecure ones in the study area demonstrating superior food security. Household heads were characterized as older adults exhibiting disciplined food consumption habits. Increased food expenditure significantly shoots up food security while larger household sizes diminished security. Coping strategies, particularly limited food variety, consuming less preferred food and reduced quantity of food, played a critical role in determining food security, even though farming households in Kwara State did not truly implement coping strategies but the few that did has must be responsible for their food security status.

Based on the findings, the following recommendation were given;

Farming households should be encouraged to allocate more resources to affordable yet nutritious food items.

Farming households should endeavor to maintain smaller household sizes so as to strengthen their food security status.

Households should develop and adopt means of coping with lack of food.

REFERENCES

[1] Abdulazeez, R. O., Abdulrahman, S. and Oladimeji, Y. U. (2019), Economic Diversification Strategies of Farmers Under the Kogi Accelerated Rice Production Programme (KARPP). *Nigerian Journal of Agricultural Economics (NJAE),* Volume 9(1), 2019: Pg 56-69

[2] Adepoju, A. O. and Adejare, A. K. (2013). Food Insecurity Status of Rural Households during Post-planting Season in Nigeria. *Journal of Agriculture and Sustainability.*Vol. 4, No 1: 16-35. ISSBN 2201-4357.

[3] Ahmed, F. F., Eugene, C. E. and Abah, P. O. (2015). Analysis of Food Security among Farming Households in Borno State, Nigeria. *Journal of Agricultural Economics, Environment and Social Sciences,* 1(1): 130-141 ISSN: 2476-8423.

[4] Ahungwa, G., Umeh, J., and Muktar, B. (2013). Empirical analysis of food security status of farming households in Benue state, Nigeria. *OSR J. Agric. Vet. Sci.* 6, 57–62. doi:10.9790/2380-0615762

[5] FAO. (2003).Trade reforms and food security. Food and Agriculture Organization.

[6] FAO. (2015). The state of food and agriculture social protection and agriculture: Breaking the cycle of rural poverty. *Food and agriculture organization of the United Nations* (pp. 1–151). *Governance and Social Development Resource Centre.* https://www.eldis.org/ organisation/A6247

[7] FAO, IFAD, UNICEF, WFP and WHO (2021). The State of Food Security and Nutrition in the World. Transforming food systems for food security, improved nutrition and affordable healthy diets for all. Rome, FAO. doi: 10.4060/CC0639EN

[8] Gregory, P.J. and Ingram, J.S.I., Climate Change and the Current Food Crisis: *Perspectives in Agriculture, Veterinary Science, Nutrition and Resources,* 2008. 3 (99)

[9] Obayelu, A. E. (2012). Households' food security status and its determinants in the North-Central Nigeria. *Food Econ.* 3 *(*9): 241–256. doi: 10.1080/2164828X.2013. 845559

[10] Omonona, B.T. and G.A. Agoi, (2007). An Analysis of Food Security Situation among

[11] Nigerian Urban Households: Evidence from Lagos State, Nigeria. *Journal of Central European Agriculture*, 8(3): 397-406.