



ASSESSMENT OF THE EFFECTS OF INSURGENCY ON FOOD SECURITY AMONG FOOD CROP FARMERS IN BIU LOCAL GOVERNMENT AREA OF BORNO STATE, NIGERIA

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ABSTRACT

The research assessed the effects of insurgency on food security status among food crop farmers in Biu Local Government Area, Borno State, Nigeria. The main objectives of the study were to assess the effect for insurgency on food security in the study area, while the specific objective was to determine the socio-economic status of the respondents, effects of insurgency in Biu LGA of Borno State, examine the socio-economic factors affecting food security in Biu. Majority (51%) of the respondents were at their youthful age (31 – 40). Majority (80%) of the farmers were married. The respondents were fairly educated as (43%) had tertiary education. The size of the farm was okay as majority had 5 – 8 hectares. The sources of Agricultural information were encouraging because 82% had access to information. Access to credit was also encouraging as 56% had access. As for the effect of insurgency on food crop production, majority (90%) of the farmers had low food crop production due to insurgency, 90% has reduced income due to insecurity, 89% have been affected by reduced income and increased hunger due to the effect of insurgency. Multiple regression was used to achieve the socio-economic factors affecting the age, household size, level of education, income, farming experience, access to extension, access to credit were positive and significant at $P \leq 0.01$, respectively. Marital status, farm size, were positive and significant at $P \leq 0.05$.

Keywords: Insurgency, Food security, Respondents, Status.

INTRODUCTION

Insurgency in Nigerian which began in 2009, continues to undermine food security conditions. Since the escalation of violence in 2012, poor households in North Eastern Nigerian have experienced active food insecurity related to this insurgency (Tari, 2016). According to (Emmanuel, 2015), insurgency refers to a violent move by a person or group of persons to resist or oppose the enforcement of law or running of government or revolt against constituted authority of the state or taking part in insurrection. Insecurity as constituted by insurgency in the northeastern part of Nigeria have a large extend displaced tens of thousands of people whose major activities is farming. The protracted violence in the affected areas such as Biu has forced huge number of farmers to abandon their farming activities to protect their lives. This scenario had led to dwindling farming activities in most part of the northeast where the insurgency is prevalent (Akinbi 2015).

The insecurity has brought huge setback to food production and consumption especially among farming household whose livelihood hinges on agricultural production (Mohammed, 2010). Food security is defined as a situation that exist where all people, at all times have physical, social and economic access to sufficient, safe, and nutritious food that meets their dietary needs and food preference for an active and healthy life (Food and



Agriculture Organization [FAO], 2020). Also, according to the FAO (2011), food insecurity exists when people do not have adequate physical, social or economic access to food. The term food crop refers to the major food supply derived from plants; a crop assumes human intervention through agriculture. In the main, food crops consist of grains, legumes, seed, and nuts, vegetables, fruit, herbs and spices, beverages.

Agricultural production in Nigeria according to (Oladele *et al.* 2008), is largely in the hand of peasant farmers predispose them to low productivity. The critical issues in Nigerian Agriculture are low productivity likewise the problem of declining crop productivity in Nigeria most especially in the northern Nigeria particularly northeastern part is compounded again with insurgency. Borno State being part of Northeast with reference to Biu has been affected to some extent in food crop production like maize, groundnut, beans, rice, sorghum. These have led to rural urban migration and most of those migrating is productive age leading to scarcity of labour, farmer who engage in food crop production by taking risk do so at the risk of their lives. Consequently, violent insurgency has interrupted rural people who depend on Agriculture as their livelihood (Ogunrotifa, 2013). The objectives of the study were to:

- i. To determine the socio-economic status of the food crop farmers in the study area;
- ii. To examine food security status of the food crop farmers in the study area;
- iii. To examine effect of insurgency on Biu Local Government food crop farmers; and
- iv. To determine the socio-economic characteristics that effect food security in Biu LGA.

MATERIALS AND METHODS

Biu is a town and Local Government Area (LGA) in Southern Borno State of Nigeria. Biu lies on the Biu Plateau at an average elevation of 626m. The region is semi-arid. Biu is located on latitude 10.61285°N and longitude 12.1985°E it has the population of 246,900 as at the year 2020 population projection. Biu covered a total area of 8,641km² and is bounded to east and south by Adamawa State, to west by Gombe State while the north region is bounded by Yobe state, Damboa and Chibok Local Government Area of Borno State. Occupationally, a base line socio-economic survey conducted by (Amaza, *et al.*, 2009) revealed that farming is the main stay of the population economy and most of them are subsistence farmers. Agriculture employs the larger percentage of the working population (78%) in the area, but agricultural land holdings are generally small. Agricultural vegetation, composed of fertile soil for cultivation of different crops such as maize, groundnut, cowpea, and rice and guinea savannah grass land and for rearing animal (Usman, 2019). The effect of insurgency as disrupted the farming activities of the area which cause some farmers to abandon their farm land for fear of attack, thereby creating fall in agricultural activities in the area (Usman, 2019).

Sampling Procedure

Biu Local Government of Borno State consist of 11 wards namely, Burratai, Dugja, Galtimare, Garbula, Gunda, Gur, Mandara-Girau, Miringa, Sil-Umthla, Yawi, Juggal and Zarawuyaku. Multi stage random sampling would be used in this study. The first stage would be purposive selection of six (6) wards. Galtimare, Gunda, Zarawuyaku, Jugal, Yawi, Miringa. The reason for selecting the six is for consistency and accessibility. The second stage would involve proportionate sampling of villages from the selected ward. The third stage would involve proportionate simple (Table 1) random selection of respondents from the sampling frame.

Table 1: Sampling size selection plan

| Wards | Selected villages | Selected farmers |
|------------|-------------------|------------------|
| Galtimare | 5 | 30 |
| Gunda | 4 | 35 |
| Zarawuyaku | 6 | 50 |
| Jugal | 7 | 100 |
| Yawi | 9 | 45 |
| Miringa | 11 | 60 |
| Total | | |

Source: Field Survey (2021).

Method of Data Collection

The data for the study will be obtained from primary and secondary sources. The primary sources will collect from the despondence through the administration of structured questionnaires. Trained enumerators will assist in the administering of the questionnaires, while secondary sources of information or data will be obtained from journals, relevant website, conference proceedings and BOSADP.

Analytical Techniques

Both descriptive and inferential statistics would be used to achieve the objectives of this study. Descriptive statistics in the form of frequencies, mean, and percentage would be used to achieve objective i, ii, and iv, while inferential statistics is the form of multiple regression will be used. Simple regression is a type of regression that use the independent variable to explain the dependent variable Y.

where;

$$Y = a + B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4 + B_5X_5 + B_6X_6 + B_7X_7 + B_8X_8 + B_9X_9 + B_{10}X_{10} + U$$

Where Y= Effects of insurgency

Y = Socio-economic Variables

X₁= Sex (male =0, female = 0)

X₂ = Age (years)

X₃ = Level of Education

X₄ = Farming Experience

X₅ = Farm Size (in hectares)

X₆ = Household Size (number of people in household)

X₇ = Membership of Cooperative Societies (Yes=1 no = 0)

X₈ = Extension Contact (Number of visits)

a = Constant

B₁ - B₁₀ = regression

e = Error term.

RESULTS AND DISCUSSION

The results in Table 2 indicated that male dominated food security in the study area with 67 males and 33 females. The reason behind this was that male traditionally are saddled with the responsibility of family un keep such as feeding the family, clothing, school fees. This could be the reason why male was more engaged than their female counterpart. Additionally, some cultures prevent female from going out and participation in social activity and farming included. Table 2 revealed that (56%) of the respondents were between the ages bracket of 31 to 40 years, additionally, the second most majority (23%) were between the ages bracket of 20 to 30. The implication of these findings was that the majority of the respondents were youth



full of energy, zeal, enthusiasm and risk takers. This means that they can adequately carry any food production task and can ensure food security. From 51- 60 years are mostly old people who have less energy to farm therefore constituting only 3% of the respondents. This study has similarity with the findings of (Adewuyi and Michael, 2020) in a study of assessment of the impact of Boko-Haram insurgency on food crop production in Chibok local area of Borno State) found out that majority of the respondents in Chibok where in their active productive age.

Majority of the respondents are married, accounting to 80% which signifies they are married and settled for farming, followed by single ones, 14% and divorced 6% only. This study concurs with the findings of Sulum *et al.* (2021) who found that 87% were married. The respondents that have the highest household size from 5-8 are 62% while those with household size 9-12 are 23%, the less than 5 household are only 15%. Year's education experience is the majority with 43% followed by those who don't possess any educational experience 32%, while those with 1-6 years of educational experiences 25%. Respondents that have largest farm size from 17 and above are only 4%, those who have 13-16 hectares are just 7%, 9-12 hectares account for 12%, followed by 5-8% hectares having the highest rate of respondents 43% and the second highest number of respondents fell under less than 5%. The result shows that majority of the farmers don't have excessively by farms rather they have moderate farm land, this will go against by commercial farming system and also it indicates most of the farmers engage in both subsistence and commercial farming to a moderate level.

About 45% of the farmers earned between ₦71, 000 to ₦100, 000 annually as they sold on fraction of their farm product and consume the rest for sustenance. 23% earn ₦50,000 to ₦70,000 from the surplus of their farms, 22% earned ₦101,000 and above as they have bigger farmlands and only 10% earned below ₦50,000. This finding is in agreement with Bwala *et al.* (2021) who found out in Hawul LGA of Borno State, Nigeria that majority earned between ₦101,000 and above. From indication of this research work, Biu area is an old agricultural local government with majority of the populace as farmers and this could be clearly seen as majority of the respondents have long time experience of farming as 42% of the respondents have more than 13 years of farming experience, the 35% having 9-12 years of experience followed by 18% respondents who has 4-8 years of farming experience due to their young age, while less than 5% have less than 4 years of experience because they do well otherwise in government work or travelled a lot.

A significant percentage of 73% of the farmers belong to an organization or members for the purpose of identity, credit and loan and any farming advantages that may come along their way, only minimum of 27% did not belong to any organization. Respondents who have spent less than 5 years as organizational membership are only 8% as awareness was not created much before until later times. 23% have 5-8 years of membership, 32% have 9-12 years of membership of agricultural organization and only 10% stayed long as members of organization for more than 14 years. This study has similarity with the findings of Msuta and Urassa (2015) who found that in Tanzania, registered farmers organization contributed to access to goods and services increases the area (acreage) under cultivation, improved seeds, access to credit, market linkage and possible intervention from the government. High percentage 82% of the respondents have contact with extension workers because Biu is zonal point for ADP in Borno State. Only 18% said they do not have contact

Table 2: Socio-Economic Characteristics of the Respondents

| Socio-economic characteristics | Frequency | Percentage |
|--------------------------------|-----------|------------|
| Sex | | |
| Male | 67 | 67.0 |
| Female | 33 | 33.0 |
| Age | | |
| <20 | 1 | 1.0 |
| 20-30 | 23 | 23.0 |
| 31-40 | 56 | 56.0 |
| 41-50 | 17 | 17.0 |
| 51-60 | 3 | 3.0 |
| Marital status | | |
| Married | 80 | 80.0 |
| Single | 14 | 14.0 |
| Divorced | 6 | 6.0 |
| Household size | | |
| <5 | 15 | 15.0 |
| 5—8 | 62 | 62.0 |
| 9—12 | 23 | 23.0 |
| years education | | |
| None | 32 | 32.0 |
| 1—6 | 25 | 25.0 |
| 7—12 | 43 | 43.0 |
| None of the above | 0 | 0.0 |
| Farm size | | |
| <5 | 34 | 34.0 |
| 5—8 | 43 | 43.0 |
| 9—12 | 12 | 12.0 |
| 13-16 | 7 | 7.0 |
| 17 and above | 4 | 4.0 |
| Annual income | | |
| <50000 | 10 | 10.0 |
| 50000-70000 | 23 | 23.0 |
| 71000-100000 | 45 | 45.0 |
| 101,000 and above | 22 | 22.0 |

Source: Field Survey (2021)

With extension workers due to one reason or the other. As the number of extensions contact 50% is less than 5 years, 23% from 5-10 years while 11 years and above are 17%. Source of information on agriculture indicate that 21% got agricultural information from friends and relatives, 6% from neighboring community while 28% from input supply agencies and the majority of the farmers got their major information from BOSADP. 56% of the farmers have access to credit from either credit institutions, organizations and families while nearly half 44% don't have access to credit due to obstacle like being contended with their conditions, lack of technical knowledge to borrow from credit institution or fear of failure to repay.

According to Ogunwande *et al.* (2018) in a similar study conducted in Oyo State, Nigeria, extension contact is of paramount importance to disseminating information which in turn results in good farm output. About 58% of the farmers under study were found to record null extension visits in the previous planting season. This is not good for the farming profession. This inability of farmers to benefit from extension programs usually lead to

information gap which invariably results in poor performance and attendant un- impressive output.

Table 2: Socio-Economic Characteristics of the Respondents Cont'd.

| Socio-economic characteristics | Frequency | Percentage |
|--|-----------|------------|
| Farming experience | | |
| <4 | 5 | 5.0 |
| 4—8 | 18 | 18.0 |
| 9—12 | 35 | 35.0 |
| 13 and above | 42 | 42.0 |
| membership of famers organization | | |
| Yes | 73 | 73.0 |
| No | 27 | 27.0 |
| years of membership | | |
| <5 | 8 | 8.0 |
| 5-8 | 23 | 23.0 |
| 9-12 | 32 | 32.0 |
| 14 and above | 10 | 10.0 |
| Access to extension | | |
| Yes | 82 | 82.0 |
| No | 18 | 18.0 |
| Number of extensions contact | | |
| <5 | 50 | 50.0 |
| 5-10 | 23 | 23.0 |
| 11 and above | 9 | 9.0 |
| source of information | | |
| A Friend and relative | 21 | 21.0 |
| Neighboring community | 6 | 6.0 |
| Input supply agencies | 28 | 28.0 |
| BOSADP | 45 | 45.0 |
| Access to credit | | |
| Yes | 56 | 56.0 |
| No | 44 | 44.0 |

Source: Field Survey (2021)

Table 3 shows that majority of the respondents (65%) were not food secure and only (35%). The implication of these findings was that the insurgency in the study area has pushed many of the food crop farmers out of production and or access to market to sell or buy food stuff was hindered. The above results shows that hunger and famine is inevitable because of poor access to farm land and access to market. This may create food in availability and accessibility. It can be deduced that Biu local government area of Borno State is not food secure and many will lose their livelihood especially those that depend on the off- farm activities. Such as selling of fertilizer, insecticides, herbicides, seeds. On those that depend on- farm activities will also be hindered. This study concurs with the findings of Madu (2019) who opined that food security status among the farmers in Chibok LGA of Borno State has considerable degree reduced as a result of the Boko-haram insurgency. The output among farmers has been significantly reduced as a result of the saga. This could be connected with lack of adequate access to agricultural lands. Farmers cannot visit farms distance away from their residential area for fear of losing their lives or be adopted by the Boko Haram on the farm.

The decline in output may as well be as a result of high cost of inputs such as fertilizers, agrochemicals and improved seeds.

Table 3: Food Security Status of Farmers

| Status | Frequency | Percentage |
|-----------------|-----------|------------|
| Food secure | 35 | 35.0 |
| Not food secure | 65 | 65.0 |
| Total | 100 | 100.0 |

Source: Field Survey (2021)

The effect of insurgency in food crop production is on the Table 4. It is evidence that insurgency have been creating havoc and socioeconomic setbacks for over a decade now. The above results show the effect of insurgency in the study area where low food production, reduced income was having the highest percentages as understood by the respondents (90%, 90%), respectively. These results indicated that because of low production that could be probably because of inaccessibility to farm land, this could affect the income derived from food crop production. Additionally, unemployment, poor nutrition, in inaccessibility to market were found to have (89%, 89% and 89 %), respectively. The implication of these finding where the effect of insurgency has crippled on the farm and off the farm activities, thereby prevent many from having livelihood activities. Consequently, having no access to market because of insurgency may have resultant consequences in the form of increased hunger and nutrition. The results in Table above indicated that, hike in prices and rural urban migration were having percentages of (75% and 75%) and rural urban migration having (46%). These results indicated that because insurgency where access to market and livelihood was constrained, hike in prices will result and this could make social vices prevalent and could also pushed some individual in search of greener pasture. In a similar study conducted in Gulani community of Yobe State, Nigeria, Musab and Otovwe (2021) found out the effect of insurgency affecting food crop production; increased food prices, food unavailability, inaccessibility, poor utilization, poor quantity of stable food, in accessibility to farm land, hunger as a result of poor nutrition and poor harvest.

Table 4: Effects of Insurgency on Food Crop Production

| Effects of Insurgency on Food Crop Production | Responses in Percentages |
|---|--------------------------|
| Low food crop production | 90 |
| Inaccessibility of Farm Land | 76 |
| Inaccessibility of Rural Market | 89 |
| Poor Nutrition | 89 |
| Unemployment | 89 |
| Reduced income | 90 |
| Rural Urban Migration | 75 |
| Increased Social Vices | 46 |
| Increased Hunger | 89 |
| Hike in prices of commodities | 75 |

Source: Field Survey, (2021).

Factor Affecting Food Security among Farmers

To estimated factor affecting food security among farmers. The researcher employed multiple regression analysis. The model shows and R^2 of 0.89, meaning about 89.0 of variation

in dependent variable were explained by independent hence the model fit the data very well the results are presented in Table 5. The coefficient of age was positive and significant at 1% level indicated that age has a significant relationship with food security that an increase in age of farmer will resulted to increase of food security. Marital status was found to be positive and significant at 5% level, this implies that married respondents are having more tendencies of becoming food secured than unmarried.

Table 5: Socio-economic Factor Affecting Food Security among Farmers

| Variables | Coefficient | Std err | T-value |
|---------------------|-------------|----------|---------|
| Sex | 0.002919 | 0.229442 | 0.01 |
| Age | 0.367504 | 0.117327 | 3.13*** |
| Marital Status | 0.586392 | 0.239672 | 2.45** |
| Household Size | 0.638516 | 0.203849 | 3.13*** |
| Level of Education | 0.71068 | 0.232918 | 3.05*** |
| Farm Size | 0.494206 | 0.246008 | 2.01** |
| Household Income | 0.456449 | 0.111353 | 4.1*** |
| Farming experience | 317113 | 0.103931 | 3.05*** |
| Access to extension | 0.499877 | 0.092306 | 5.42*** |
| Access to Credit | 0.784597 | 0.277863 | 2.82*** |
| _cons | 5.457577 | 0.643324 | 8.48*** |
| R ² | 0.8934 | | |

Note: **, *** are significant at 5% and 1%, respectively.

Source: Field Survey (2021)

Table 5 indicated that household size, level of education, household income, farming experience, access to credit and access to extension were found to be positive and significant at 1% level. This indicated that an increase in any of the above mention parameter, the respondents tend to be food secure. Additionally, farm size was found also to be significant at 5%. This implies that increase in the size of farm will in turn ensure food security. Consequently, household income, farming experience, access to credit and access to extension were significant at 1%, respectively. The implication of this finding any increase in the above mention unit will increase the food security status of the respondents. In a similar study, Haddabi *et al.* (2019) found out that age, education, farm size, farming experience, gender, source of labor and income were significant factors influencing food security status of farming households in Mubi local government of Adamawa State Nigeria. They further revealed that any increase in the variable of socioeconomic characteristics will increase the chances of food security.

CONCLUSION AND RECOMMENDATIONS

Activities of insurgency in the Northeast part of Nigeria most especially Borno State has really created negative influences on farmers' cultivation and agriculture in general. Many community members were displaced and as a result of that they have abandoned their means of livelihood. Consequently, agricultural output, income and food security status has reduced among household. Most household cannot carter fully for their family as required like before. The activities of the insurgency have rendered farming communities vulnerable to poverty in the affected regions. There were significant number of households that were not food secured. It is of paramount importance for the government, stakeholders to ensure easy access to credit in order to boost food availability. The study recommended as follows:

1. There was low food crop production which made the study area not food secured. Therefore, the government should assist in supporting the farming with improved varieties



- of crops that have high yield and of high nutritional values from agricultural research institutes so as to help close gaps of food security.
2. From the research work, most of the farmers are active age, therefore there is societies to help encourage them in accessing credit, community support and advice in agriculture.
 3. There should be adequate extension contact from the government.
 4. Development partners (like NGOs) and other actors of development should gear effort toward promoting the empowerment of rural communities through integrated development approach and technical training so as to promote remunerative and diverse livelihood income activities. Similarly, support for inclusive group-based activities should be encouraged and included in any rural development programmes or project. This will help promote social cohesion and reduce conflict among community members to promote their wellbeing.
 5. All the ties of government should put hands together and ensure adequate provision of easy access to credit, provision of incentives to boost rural agriculture and socio-economic status of the rural areas. Provision of adequate infrastructure to ease the life of the farmers to allow them put more emphasis on farming and to reduce active ages from migrating from rural to urban areas.

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