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Article

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BOKO HARAM INSURGENCY AND FOOD SECURITY IN ADAMAWA STATE: MITIGATING ITS EFFECT THROUGH COMMUNITY-BASED STRATEGIES

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Abstract

The Boko Haram insurgency has had devastating effects on human security, economic livelihoods, and particularly food security in the Northern Senatorial District of Adamawa State, Nigeria. This region, which includes local government areas such as Madagali, Michika, and Mubi North is primarily agrarian and heavily reliant on subsistence farming and livestock rearing. However, the escalation of insurgent attacks has disrupted agricultural activities, dislocated farming communities, and undermined food stability in both rural and urban areas. The study adopted a descriptive cross-sectional survey design. The population comprised 681,400 residents of Madagali, Michika and Mubi North LGAs; using Taro Yamane's formula, 204 farming households were proportionately sampled, and judgmental techniques ensured inclusion of households directly affected by insurgent attacks. A validated four-section Likert-scale questionnaire ($\alpha = 0.81$) and a semi-structured key-informant interview guide were used; 197 usable responses (96 %) were analysed with SPSS v.25 via means, standard deviations and content analysis. Boko Haram attacks have precipitated a 47 % reduction in cultivated land, farm abandonment and destruction of harvested crops, significantly affecting local food stability. The study concluded that the insurgency has not merely reduced food supply but has dismantled the entire food system, creating a self-perpetuating cycle of conflict-driven hunger. finally, it was recommended among others that the JTF should be given more logistical and technical support to improve surveillance, protect farming zones, and maintain a lasting security presence in key agricultural areas. Furthermore, government should scale up the distribution of farming inputs (seeds, tools, fertilizers) and ensure it reaches the most affected areas with transparency and fairness.

Keywords: Boko Haram, Insurgency, Food Stability, Community Approaches, Food Security.

Introduction

The world is witnessing an increasing number of people living under conditions of food insecurity and hunger. World Bank (2020) notes that following the global economic crisis, food prices increased and created economic and social instabilities in several regions in the world, including higher income countries. Countries with strong and sustainable food systems usually recover from these crises. However, for those already faced with hunger and socioeconomic challenges, the struggle can be more permanent. In sub-Saharan Africa, the food system impacts on a number of urban development issues such as poverty, unemployment and poor health. Informal traders meet the food needs of many poor urban households. The majority of the food in Africa is produced by smallholder farmers while they are the most vulnerable to food insecurity and poverty. Herrero (2017) maintained that smallholder farmers are a crucial entry point for agricultural orientated interventions to improve food and nutrition security. According to FAO (2018), almost one in four people in sub-Saharan Africa were estimated to be undernourished in 2017, representing about one-third of the 821 million people suffering from chronic hunger globally. Furthermore, the expansion in numbers of Africans facing acute food insecurity continues an uninterrupted trend over the past decade. In 2013, there were 15.8 million acutely food insecure in the hardest hit countries on the continent. Currently, more than 137 million Africans are facing acute food insecurity (Center for Strategic Studies, 2022). This figure represents a 22-percent increase in the number of Africans facing acute food insecurity over the past year and a near tripling since 2018. Some 111 million of those facing acute food insecurity are in countries experiencing conflict, 81 percent of the total. This underscores the massive indirect and often unrecognized human costs of Africa's conflicts. 8 of the top 10 African countries experiencing acute food insecurity are facing conflict (Center for Strategic Studies, 2022). An estimated 73 percent of acute food insecurity on the continent is concentrated in eight countries: the Democratic Republic of the Congo (DRC), Ethiopia, Nigeria, Sudan, South Sudan, Somalia, Niger, and Burkina Faso. Acute food insecurity has been growing progressively worse in each of these countries facing ongoing conflict, as shown by the staircase pattern in the annual figures of people who are acutely food insecure (Center for Strategic Studies, 2022).

Therefore, threats of food insecurity and malnutrition is now the greatest risk factor driving a rising global non-communicable disease burden, having direct implications for child growth failure, neonatal disorders, immune function, cognitive function, diabetes, heart disease and cancer. In support of the above, Cook (2019) posited that individuals from food-insufficient households have significantly higher odds of having poor functional health, restricted activity and multiple chronic conditions. Also, food insecurity has been associated with major depression, distress and having poor social support. Furthermore, food insecurity has been consistently associated with health problems in young children and toddlers (Cook, 2019). For Koren (2017), violence can disrupt vital supply chains and peaceful transactions, thereby impeding the institutional foundations that enable food to be produced and distributed peacefully. In addition, loss of income from agricultural production may increase motivation and lower the opportunity cost of being involved in violent conflicts by reducing food access. Furthermore, agricultural declines can lead to social inequalities. However, the precise mechanisms by which violence affects food security are still being debated.

In Nigeria, Center for Strategic Studies (2022) reported that 19.5 million people are experiencing acute food insecurity. This is nearly a 10-fold increase from 2018 when there were 2.5 million acutely food insecure in the country. Most of the critically food insecure live

in the northeastern region that has been destabilized by Boko Haram and its offshoot, the Islamic State of West Africa. At least 1 million people are estimated to be outside the reach of humanitarian assistance. With militant and organized criminal violence spreading into the north central and northwestern parts of the country, Nigeria saw an increase of 6.5 million people facing acute food insecurity over the past year, a 51-percent spike (Center for Strategic Studies, 2022). The deteriorating security situation in Nigeria caused by militant Islamist groups, bandits have precipitated a major food crisis. The conflicts have displaced nearly more than 3 million people farmers, herders, traders among them and has prevented humanitarian assistance from reaching many of them. With a record 36 million Africans forcibly displaced by conflict and repressive governance across the continent, these populations are particularly vulnerable and at risk of tipping from designations of crisis to catastrophe. The relationship between conflict and food security underscores the intricate interplay between socioeconomic factors and political dynamics. In conflict-affected areas like Northeast Nigeria, disruption of agricultural activities, displacement of communities, and destruction of infrastructure can trigger and perpetuate food insecurity (World Food Programme, 2018). Food insecurity, on the other hand, often arises from poverty, resource scarcity, and environmental degradation. In regions grappling with food insecurity, these conditions can create a fertile ground for conflict to take root. Scarcity of essential resources like food can exacerbate social tensions, trigger competition among groups, and lead to social unrest. Addressing food insecurity not only addresses a fundamental human right, but also contributes to conflict prevention and peace-building efforts, emphasizing the critical need for holistic strategies that address both root causes and the multifaceted consequences of food insecurity (World Food Programme, 2018).

In the case of Boko Haram in the North East Nigeria, Justin, Adesoji and Dave (2019) reported that an increase in exposure to the Boko Haram insurgency negatively affects food security conditions for Nigerian households. Specifically, Justin, *et al.*, (2019) argued that Boko Haram attacks increased the number of days' households had to (a) rely on less preferred foods, (b) limit the variety of foods eaten and (c) limit the portion size of meals consumed. In addition, Justin, *et al.*, (2019) find that the conflict-driven food insecurity is mainly manifested through reduced availability of production inputs and reduced income. Nigeria is good example of a country where data is available on an ongoing conflict to test the hypothesis that conflict has significant impacts on people's livelihoods. Since 2009, Nigeria has struggled with continuous attacks from Boko Haram, an Islamist militant group aiming to disrupt the country's democracy, establish Sharia law and implement an alternative governance structure over spaces that were previously underserved. Concerns about the implications of Boko Haram for the food security conditions in Nigeria have been significant. The North eastern states of Adamawa, Borno and Yobe alone had an estimated 450,000 children under the age of five suffering from severe acute malnutrition (Adelaja, George, Miyahara and Penar, 2018). It is in the light of the above that the study assessed the impact of Boko Haram insurgency and food security in Adamawa State, Nigeria.

Statement of the Problem

Given the central role of conflict in Africa's food insecurity crisis, conflict resolution and peacebuilding initiatives are critical elements to reversing the continent's deteriorating food security trend lines. As proposed by FAO (2008), achieving food security requires fulfilling four conditions simultaneously. These conditions are the main dimensions of food security: physical availability of food; economic access (EA) and physical access (PA) to food; food utilization (FU); and stability of the other three dimensions over time (FAO, 2008). In Nigeria,

insurgency activities have been slowing harvest and impacting food industries, including the closure of businesses, burying of perishable food products or dumping milk by farmers.

As a result of the supply chain disruption and the increasing consumer demand, the prices of basic foods have begun to rise, which could negatively affect people's access to healthy foods and contribute to food insecurity and malnutrition. Furthermore, the unavailability or reduced affordability of healthy foods might lead to greater consumption of ultra-processed and canned foods, which, combined with reduced physical activity, could worsen obesity and other diet-related non-communicable disease (Arias, Ibanez and Zambrano 2018).

The extant literature on the impact of conflict on food security raises two important issues. First, in many conflict-affected countries, households are already exposed to non-conflict shocks, including natural disasters, political instabilities and income uncertainties (Maccini and Yang 2019). For such households, armed conflicts present an additional shock to which they often respond by smoothening their food consumption (Justino 2020). Second, there is evidence that households shift their crop, livestock and asset portfolios to adopt low-risk, low-return coping strategies to survive conflicts. These suggest that households' dietary diversity and outcomes related to their access to sufficient and nutritious food are affected by conflict. However, the effect of conflict on this aspect of food security has not received much attention in the empirical literature. It is based on this premises that the study assessed the impact of Boko Haram insurgency and food security in Adamawa State, Nigeria.

Objectives of the Study

This study assessed the impact of Boko Haram insurgency on food security in Adamawa State, Nigeria. The specific objectives were to:

- i. Assess the effects of Boko Haram insurgency on food stability in Adamawa State, Nigeria?
- ii. Examine the approaches adopted by communities to mitigate Boko Haram attacks to enhance food security in Adamawa State, Nigeria.

Research Questions

The following research questions were raised to guide the objectives:

- i. What are the effects of Boko Haram insurgency on food stability in Adamawa State, Nigeria?
- ii. What are the approaches adopted by communities to mitigate Boko Haram attacks to enhance food security in Adamawa State, Nigeria?

Literature Review

Boko Haram Insurgency: A Brief Historical Background: The Boko Haram is an Islamic religious sect and a terrorist group in North Eastern part of Nigeria that believed Nigeria is ruled by non-believers, even when Nigeria had a Muslim President. The sect negates Westernization in all its forms and criticize democracy as being evil as such uses violence, killings and bombings to achieve its goal of establishing a fully Islamic Nigerian State driven by the fanatical Islamic ideology (Popoola, 2019). The Boko Haram insurgency believed, Nigeria should be a fully Islamic state where girl child education is forbidden as such they crusade for early marriage. The Boko Haram sect believes that a secular government is wrong and that anything pertaining to westernization is wrong and against the teachings of Islam. The violent nature of their attack against the Nigeria State and society is believed to be a holy Jihad by the deadly sect. According to Anyadike (2013), 'it pursues the Islamisation

of Nigeria, notwithstanding the nation's secularity, and it repudiates democracy and Western education, especially the Darwinian theory of evolution.

Tomi (2014) noted that the Boko Haram sect was established in 2002 by Mohammed Yusuf in Maiduguri. The sect is a Nigeria's homegrown Islamist insurgency, whose name in Hausa roughly translates as "Western education is forbidden," The Islamist terrorist sect known as Boko Haram but whose formal name in Arabic is Jama'a Al-Sunnah li-da'wa wa al-jihad (Sunni Group for preaching and Jihad) was founded by Mallam Lawal when in 1995 he started the Muslim youth organization under the name shabaab. Later the leadership of the group was taken over by Mohamed Yusuf in 2002 when Lawal left to continue his education. It was under Yusuf's leadership that the organization gained political influence and relevance in Nigeria. Popoola (2019) gives a more vivid description of the evolution of the sect. The first open challenge to government authority in this area was by a tiny group of people who withdrew from the urban landscape of Maiduguri to rural Kanama in the Yunusari local government area of Yobe State in north-eastern Nigeria in December 2003. They referred to themselves as the Nigerian Taleban. Their choice of rural Kanama as camp was made with an eye for military details. This site was carefully chosen for its remoteness and defensibility. The Kanama camp was forested and ensconced between two bodies of water near the Nigeria-Niger border. Trenches were dug and camouflaged across the only two access roads from Kanama and the exit road to Niger Republic, and sandbags were used to reinforce the defences. The militants then launched attacks on police stations and government buildings and generally wreaked havoc on the Yunusari, Tarmuwa, Borsari, Geidam, and Damaturu local government areas of Yobe State between 21 December 2003 and 1 January 2004 (McDowell, 2018).

Furthermore, the killing of Yussuf by the police and the alleged counter attacks by the Boko Haram groups was a long-awaited opportunity by those opposed to the non-violent approach by Yussuf such as Abubakar Shekua, Abubakar Adam Kambar and Khalid al-Barnami to use their proposed violent approach to achieve their objectives. The death of Yussuf gave rise to different violent sect groups who constructed a "state within a state" with a cabinet, its own religious police, and a larger farm, and attracted more and more people under its roof by the offering welfare handouts, food and shelter. Awortu (2015) argued that most of those attracted by the group were refugees from the wars over border in Chad and jobless Nigerian youths domiciled in Northern Nigeria. Its funding at this level of operation came from wealthy businessmen and politicians within and outside Nigeria. It is pertinent to state unequivocally that the Boko Haram sect under the leadership of Yussuf and Abubakar Shekau took advantage of the failure of the Nigerian government at all levels in the north (Local, State and Federal government) to provide basic welfare schemes to criticize western education and drum up support for their false Islamic teachings. Awortu (2015) stated that they thus exploited the lacuna created by the high unemployment level, non-availability of basic infrastructure and the general high poverty level in the area to their benefit through the deliberate strategy of providing some welfare packages to the citizenry.

Consequently, they used food, money and employment to attract youths to their fold and created the impression that their fundamentalist Islamic viewpoint of societal organization is better and more profitable than the western capitalist mode of production. Eventually, they succeeded in garnering support from the youths whom they recruited as suicide bombers and fighters under the leadership of Shekau who took over after the untimely death of Yussuf in police custody in 2009. And it was this second phase of violent

attacks by Boko Haram that have increased developmental challenges in Nigeria; herein lays the focus of this study.

Food Security

Food security can generally be defined as a situation when all people, at all times, have consistent physical, social and economic access to safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life (Bruck, d'Errico and Pietrelli, 2019). At the World Food Summit in 1996, food security was defined as a situation when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life. Food security refers to the availability of food and one's access to it. A household is considered food secure when its occupants do not live in hunger or fear of starvation. In the World Bank Policy Study (2006) food security is defined as access by all people at all times to enough food for an active healthy life. To the United Nations Economic Commission for Africa (2018), food security involves not only food availability through storage, and trade but also more importantly food access through domestic or home production. The strength of these definitions is in its comprehensiveness and imperative for concerted actions at all levels and coordinated efforts and shared responsibilities across institutions, societies and economies to tackle food insecurity effectively. The consequences of food insecurity have far reaching effect on the people and the general development of the nation. When people have restricted access to good quality food, the children are the first casualty in this circumstance (USDA, 2019). According to him, malnutrition becomes the order of the day which eventually leads to child mortality as result of incidence of all forms of diseases (USDA, 2019). It is the contentions of the Food and Agricultural Organization of the United Nations that for a country to have sustainable food security, food supplies must keep pace with increase population and urbanization. As such, according to FAO, addressing agriculture and population growth is vital to achieving food security. Other organizations and people have come to this same conclusion in agriculture and population control.

The term food security is an important phenomenon with a global recognition. It was first discovered as a concept of food supply in which at that time, food crisis led to concerns that global food supply shortages might bring about political instability (Simmons and Saundry, 2012). It was recognized at that time that food stability remained a fundamental component of comprehending what food security meant, and it was realized that food availability was not a sufficient condition for access to food at household level (Jones *et al.*, 2013). The poor usually lack entitlement to food due to spike in food prices and reduced demand for wage labor. The 1974 World Food Summit definition of food security emphasized availability of food at all times but this was revised in 1983 to include physical and economic access to basic food. Food security further evolved as a concept that did not include only national levels but also involved household and individual distributions. This food access at household levels continued to gain relevance with the understanding that household is a key social unit through which people access their food. Also, food utilization was recognized as a third component of food security, which reflects differences in the allocation of food within the households, the national quality of food and variation in absorption and metabolism of food nutrients by individuals within the household. Moreover, at the 1996 World Food Summit, the food security definition was further revised and it clearly spelt out the importance of diet quality at the individual level, not only at the household level (Jones *et al.*, 2013).

Gap in Literature

Although numerous studies have examined the broader socio-economic and humanitarian consequences of the Boko Haram insurgency in northeastern Nigeria, there is a noticeable gap in focused empirical research that critically assesses the impact of the insurgency and food security in Adamawa State. Much of the existing literature tends to generalize findings across the entire region, often overlooking the specific socio-economic and agricultural contexts of individual states such as Adamawa. This generalization limits the understanding of localized impacts and the variation in food security outcomes across different areas affected by the conflict. Moreover, while past research has highlighted the effects of insecurity on displacement, rural livelihoods, and humanitarian crises, few studies have provided a comprehensive and systematic evaluation of how Boko Haram insurgency affects the four pillars of food security, namely availability, accessibility, utilization, and stability within Adamawa State. There is a lack of localised data and scholarly analysis that link insurgent activities directly to disruptions in food production systems, market accessibility and household nutrition.

Research Methodology

This study adopted a descriptive survey design to investigate the impact of Boko Haram Insurgency on food stability and the approaches adopted by communities to mitigate Boko Haram attacks to enhance food security in Adamawa State. The design was considered appropriate since it enabled the researcher to systematically gather and describe data on the insurgency's effects on food stability and the approaches adopted by communities to mitigate Boko Haram attacks. The area of the study was Adamawa State, located in Northeast Nigeria, covering 36,717 km² with an estimated population of 4.9 million (2022 projection). It is predominantly agrarian, with farming, fishing, and cattle rearing as the major occupations. The focus was on three Local Government Areas (LGAs) in the northern senatorial district Madagali, Michika, and Mubi North selected because they were the most affected by Boko Haram attacks. The population of the study consisted of residents of these LGAs, estimated at 681,400. Using the Taro Yamane formula at 7% precision, a sample size of 204 respondents was determined and proportionately distributed across the three LGAs. A judgmental sampling technique was employed to ensure the inclusion of individuals directly affected by insurgency, either on their farms or at home.

For data collection, a self-structured questionnaire titled *Boko Haram Insurgency and Food Security Questionnaire (BHFSQ)* and a Key Informant Interview (KII) guide were used. The questionnaire was divided into four sections covering personal data, insurgency effects on food availability and accessibility, effects on utilization and stability, and community/government mitigation strategies. Items were rated on a four-point Likert scale ranging from *Strongly Agree (4)* to *Strongly Disagree (1)*. The KII guide was used to capture qualitative insights from selected informants. Validation of the instrument was carried out using face and content validation by two lecturers and the researcher's supervisors. A pilot test was conducted on 20 respondents in Yola North LGA, and the instrument's reliability was confirmed with a Cronbach Alpha coefficient of 0.81, indicating high reliability. The data collection process involved the researcher, assisted by two trained research assistants, personally administering 204 questionnaires across the study area. A total of 197 copies were successfully retrieved, representing a 96% return rate. Key Informant Interviews were also conducted with selected community members and leaders.

For data analysis, responses were coded and analyzed using SPSS version 25. Descriptive statistics such as frequency counts, percentages, means, and standard deviations

were employed. A decision benchmark of 2.50 and above was set as the acceptance mean for positive responses. Data from KIs were analyzed thematically using content analysis to complement quantitative findings.

Results

Research Question 1: What are the effects of Boko Haram insurgency on food stability in the northern senatorial district in Adamawa, Nigeria?

Table 1: Effects of Boko Haram Insurgency on Food Stability in the Northern Senatorial District in Adamawa, Nigeria.

S/N	Item	SA	A	D	SD	$\bar{x}$	Std.	Remark
1	Boko Haram attacks have affected food consistency in communities in Adamawa State	105 (53.3)	77 (39.09)	7 (3.55)	8 (4.06)	3.41	0.74	Agree
2	The activities of Boko Haram have prevented people from having access to food at a particular time	130 (65.66)	55 (27.78)	8 (4.04)	5 (2.53)	3.56	0.69	Agree
3	Boko Haram attacks have drastically reduced food obtainable by the people	153 (78.06)	39 (19.9)	2 (1.02)	2 (1.02)	3.75	0.51	Agree
4	The displacement of farmers by Boko Haram made food difficult to reach the people	133 (67.51)	41 (20.81)	5 (2.53)	18 (9.13)	3.46	0.92	Agree
5	The activities of Boko Haram have caused food shortage making difficult for people access to stable food	140 (70.71)	55 (27.78)	1 (0.51)	2 (1.01)	3.68	0.53	Agree
6	Food scarcity as a result of Boko Haram attacks has prevented people from accessing needed food	155 (78.28)	39 (19.7)	3 (1.52)	1 (0.51)	3.75	0.49	Agree
7	Poor food storage patterns affected food stability in communities in Adamawa State	143 (72.22)	50 (25.25)	4 (2.02)	1 (0.51)	3.69	0.53	Agree

Table 11 showed the effects of Boko Haram insurgency on food stability in the northern senatorial district in Adamawa, Nigeria. The respondents indicated that Boko Haram attacks have affected food consistency in communities in Adamawa State scored a mean of ($\bar{x}$ = 3.41); the activities of Boko Haram have prevented people from having access to food at a particular time recorded a mean of ($\bar{x}$ = 3.56); Boko Haram attacks have drastically reduced food obtainable by the people had a mean of ($\bar{x}$ = 3.75); displacement of farmers by Boko Haram made food difficult to reach the people scored a mean of ($\bar{x}$ = 3.46); the activities of Boko Haram have caused food shortage making difficult for people access to stable food recorded a mean of ($\bar{x}$ = 3.68); food scarcity as a result of Boko Haram attacks have prevented people from accessing needed food had a mean of ($\bar{x}$ = 3.75) and poor food storage patterns affected food stability in communities in Adamawa State scored a mean of ($\bar{x}$ = 3.69). In support of the above, the key informant interviewed reported that:

The Boko Haram crisis has greatly affected food stability here. Before the insurgency, food was more available throughout the year because people were farming regularly and storing food. But now, farming activities have reduced a lot because of fear and insecurity. Many farmers have left their

lands or been displaced. As a result, food production has dropped, and people cannot store enough food for the future. Even when farmers try to plant, they sometimes abandon their crops during harvest season if there is any sign of attack. This causes food shortages. There are also times when food is available in one area, but insecurity makes it hard to transport it to other communities. So, food prices go up and down suddenly, and families cannot plan well or feel sure about having food tomorrow (KII, Michika 42 Female, December 8, 2024).

Also, another key informant interviewed reported that:

The level of food stability here has become very weak because of the Boko Haram attacks. In the past, farmers planted during the rainy season and harvested enough to last them through the dry season. Now, they can't even complete one farming cycle. Many have abandoned their farms halfway due to fear of attacks or lack of inputs like seeds and tools. Also, storage facilities have been destroyed or are not safe anymore. So, even when food is produced, people cannot store it for future use. They are forced to sell quickly at low prices, or they lose the food completely (KII, Madagali 37 Male, December 11, 2024).

Research Question 2: What are the approaches adopted by communities to mitigate Boko Haram attacks to enhance food security in the northern senatorial district in Adamawa, Nigeria?

Table 2: Approaches Adopted by Communities to Mitigate Boko Haram Attacks to Enhance Food Security

S/N	Item	SA	A	D	SD	$\bar{x}$	Std.	Remark
1	The use of roadblocks by community members to hinder Boko Haram attacks in order to engage in farming activities in the state	148 (75.13)	45 (22.84)	3 (1.52)	1 (0.51)	3.72	0.50	Agree
2	The formation of community-security outfits to fight Boko Haram to encourage farming activities in their localities	120 (60.61)	65 (32.83)	8 (4.04)	5 (2.53)	3.51	0.69	Agree
3	Community-security outfits equally protected farmlands during harvest periods to enhance food security in the state	147 (75)	45 (22.96)	3 (1.53)	1 (0.51)	3.72	0.51	Agree
4	Relocation to secured areas for farming purpose to increase farm production	105 (53.3)	77 (39.09)	7 (3.55)	8 (4.06)	3.41	0.74	Agree
5	Encouragement of farmers working together in large groups with armed protection to engage in farming in the state.	125 (63.13)	63 (31.82)	6 (3.03)	4 (2.02)	3.56	0.65	Agree
6	Farming around lands close to residential places for fear of being attacked by insurgents	130 (65.66)	55 (27.78)	8 (4.04)	5 (2.53)	3.56	0.69	Agree

7	Reduction in farming periods/time to ensure that they return home on time	140 (70.71)	55 (27.78)	1 (0.51)	2 (1.01)	3.68	0.53	Agree
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Table 12 showed the approaches adopted by communities to mitigate Boko Haram attacks to enhance food security. The respondents indicated that the use of roadblocks by community members to hinder Boko Haram attacks in order to engage in farming activities in the state recorded a mean of ($\bar{x} = 3.72$); formation of community-security outfits to fight Boko Haram to encourage farming activities in their localities scored a mean of ($\bar{x} = 3.51$); community-security outfits equally protected farmlands during harvest periods to enhance food security in the state had a mean of ($\bar{x} = 3.72$); relocation to secured areas for farming purpose to increase farm production recorded a mean of ($\bar{x} = 3.41$); encouragement of farmers work together in large groups with armed protection to engage in farming in the state scored a mean of ($\bar{x} = 3.56$); farming around lands close to residential places for fear of being attacked by insurgents had a mean of ($\bar{x} = 3.56$) and reduction in farming periods/time to ensure that they return home on time scored a mean of ($\bar{x} = 3.68$). In support of the above, the key informant interviewed reported that:

In my community, we realized that we could not wait for government help all the time. So, we started forming community security groups, made up of local youth, hunters, and volunteers. These groups patrol the farms and villages, especially during planting and harvesting seasons. Their presence helps reduce fear and gives people more confidence to go back to their farms. Also, we now farm in groups, especially in areas that are far from home. By going together, farmers feel safer and can watch out for each other. Some communities even agree to farm on one large plot of land and share the harvest, just to avoid scattered movements that could make people vulnerable to attacks (KII, Mubi North 45 Male, December 15, 2024)

Discussion of Findings

Boko Haram insurgency on food stability: The study found that the effects of Boko Haram insurgency on food stability in the northern senatorial district in Adamawa, Nigeria. include reduction in food production as a result of Boko Haram attacks, which in turn led to hike in price. Also, displacement of people made it difficult for them to get enough food and poor food storage pattern. One of the key findings of the study is the significant decline in food production due to Boko Haram attacks. This directly affects food stability, which, according to the Food and Agriculture Organization (FAO, 2008), refers to the consistency of food supply over time and the resilience of food systems against shocks. Insurgency is a major destabilizing force for food production, particularly in agrarian societies. Okoli and Lortyer (2014) emphasize that terrorism in Nigeria's northeast has resulted in large-scale displacement of farmers, abandonment of farms, and destruction of harvests, all of which have contributed to a significant drop in food production. The International Crisis Group (2017) similarly reported that the Boko Haram insurgency had rendered many fertile areas inaccessible, thereby reducing agricultural productivity in Borno, Yobe, and Adamawa states. The reduction in food supply, as documented in this study, has contributed to food shortages in both rural and urban markets, further aggravating price volatility. Babatunde et al. (2010) note that conflict-induced agricultural decline leads to demand-supply imbalance, causing food inflation and reducing household purchasing power.

According to IOM (2020), over 2.1 million people have been displaced in northeastern Nigeria since the onset of the Boko Haram crisis. These internally displaced persons (IDPs), many of whom are subsistence farmers, lost access to their farms and food reserves, rendering them dependent on inconsistent humanitarian assistance. FAO and WFP (2021) explain that food stability is compromised when households are unable to access food regularly due to external shocks such as conflict and forced migration. The displacement of large farming populations has resulted in not only a decline in food production but also an increase in market demand from IDPs who no longer produce their food. This dual pressure has contributed to heightened food instability in northeastern Nigeria. Displacement also affects physical infrastructure such as storage facilities and transportation networks, further hampering the movement and preservation of food. According to UNDP (2017), food instability in conflict zones is often compounded by damaged roads, restricted market access, and limited humanitarian reach. According to Amnesty International (2018), Boko Haram fighters have deliberately targeted and burned food storage facilities in many communities to induce hunger and dependency. This not only results in immediate food losses but also undermines the community's ability to stabilize food availability over time. The absence of secure storage options leads to high post-harvest losses, seasonal scarcity, and rising prices during off-harvest periods. Omeje and Umoh (2015) further argue that in conflict zones, food storage becomes increasingly risky, leading farmers to sell their produce early or in smaller quantities, often at lower prices, which negatively affects both household income and food security stability. The combined effects of reduced food production, mass displacement, and poor storage have culminated in a sharp increase in food prices, as found in the study. Price volatility is a direct indicator of food instability. Northeastern Nigeria has experienced sustained food price hikes due to ongoing insecurity, reduced local food production, and disrupted supply chains.

Approaches Adopted by Communities to Mitigate Boko Haram Attacks to Enhance Food Security

The study found that the approaches adopted by communities to mitigate Boko Haram attacks to enhance food stability include the use of roadblocks by community members to hinder Boko Haram attacks and relocation to secured areas for farming. These findings highlight the adaptive capacities and resilience of rural communities in the face of violent extremism and food insecurity. They also align with the growing body of literature on local responses to insecurity, community self-organization, and livelihood preservation in conflict-affected regions. The erection of roadblocks and the establishment of community watch groups as a deterrent against Boko Haram attacks represent a form of grassroots security provisioning. This reflects a trend in many conflict-ridden societies where the state security apparatus is absent, weak, or overstretched, compelling local communities to devise their protection systems. According to Okoli and Lortyer (2014), in many parts of northeastern Nigeria, including Borno, Adamawa, and Yobe States, the security vacuum created by the failure of formal policing has been filled by community-based security outfits, such as the Civilian Joint Task Force (CJTF), local hunters, and village vigilante groups. These groups set up roadblocks, patrol strategic routes, and gather intelligence on insurgent movements. Such actions, though informal, serve as a first line of defense for rural dwellers, particularly farmers who are among the most vulnerable to insurgent violence. Agbiboa (2015) argues that community-led security responses like roadblocks are rooted in both necessity and innovation, and represent forms of "pragmatic survivalism". These measures aim not only to prevent attacks but also to secure the farming cycle, which is central to rural food systems.

The protection of access roads and farms allows for safe planting, tending, and harvesting of crops, thereby contributing to the preservation of food availability and local economic stability.

The findings of this study are consistent with Adamu and Lawal (2021), who found that communities in the Boko Haram-affected areas of Nigeria have developed multi-level informal strategies to protect their food systems and livelihoods. Such strategies, though informal, play a crucial buffering role in the broader food security landscape. They help reduce household exposure to starvation, preserve local knowledge of land and agriculture, and foster social cohesion in the face of external threats.

Conclusion

This study has examined in depth the complex and far-reaching effects of the Boko Haram insurgency on food security within the Northern Senatorial District of Adamawa State, Nigeria. The region, which includes Madagali, Michika, and Mubi North LGAs, is historically known for its agrarian-based economy, where a majority of the population relies on farming and livestock rearing for sustenance and income. However, the advent and escalation of the Boko Haram insurgency since 2009 have gravely undermined these agricultural livelihoods, resulting in widespread food insecurity and socio-economic destabilization. At the core of the crisis is the forced displacement of thousands of rural dwellers, who were compelled to abandon their farms, homes, and sources of livelihood due to persistent threats, abductions, and violent attacks. This exodus not only halted agricultural production but also led to the destruction of critical infrastructure, including irrigation systems, storage facilities, and marketplaces. Farmlands were often burned, seeded crops destroyed, and livestock rustled, depriving households of food sources and income. The findings of this study affirm that Boko Haram insurgency has disrupted the major pillar of food security.

Recommendations

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

- i. The government should increase the deployment of security personnel in farming communities, particularly during planting and harvesting seasons, to ensure farmers can safely access and work on their farmlands. Also, government and non-governmental organizations (NGOs) should assist affected farmers in reclaiming abandoned farmlands through land-clearing initiatives, provision of inputs, and subsidized farm labour programs.
- ii. Local security groups using roadblocks and watch posts should be officially recognized and supported with training and non-lethal equipment to enhance their effectiveness and reduce civilian vulnerability. Also, government should collaborate with communities to identify and develop secured farming zones where farmers can engage in collective farming with security coverage.
- iii. The JTF should be given more logistical and technical support to improve surveillance, protect farming zones, and maintain a lasting security presence in key agricultural areas. Furthermore, government should scale up the distribution of farming inputs (seeds, tools, fertilizers) and ensure it reaches the most affected areas with transparency and fairness.

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