



**EFFECTS OF INSURGENCY ACTIVITIES ON LIVELIHOOD OF
SMALLHOLDER RICE FARMERS IN BORNO STATE, NIGERIA**

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ABSTRACT

The study examines the effects of insurgency activities on livelihood of smallholder rice farmers in Borno State, Nigeria. A multi-stage sampling technique was used to select 207 respondents. Data collected through the administration of structured questionnaire and analysed both descriptive and inferential. The findings revealed that the respondent had mean age of 41years, majority (89.4%) were married. The mean years spent in school by the respondents was 5years, with an average farming experience, household size and farm size of 15 years, 4 persons and 2 hectares respectively. Majority (62.3% and 80.7%) of the respondents were members of cooperative society and had no access to credit. Half (50.7%) of the respondent had extension contact. The further revealed that all (100%) of the respondents reported that verbal and written threat was the most pronounced activities of insurgency in the study area. Results on the effects of insurgency activities on rice farmers livelihood established that the yields pre and during insurgency were 41.14 bag and 22.87 bag, the incomes pre and during insurgency were N1,292,188.40 and N818,855.7 and levels of living pre and during insurgency were N2,118,777.77 and N981,502.41 for the farmers respectively. Commercial transport (Taxi, Bus and Napep) was the most used strategy by smallholder rice farmers to mitigate and cope with effects of insurgency, with the highest mean score of 4.40 (SD=0.96). The study concluded that insurgency activities has negative effect on the livelihood of rice farmers as there yield, income and level of living decreases pre and during insurgency. Therefore, it was recommended that government and relevant security agencies should increase the deployment and support for community based security outfits like the CJTF in rice farming communities.

Keywords: Effect, Insurgency, Livelihood, Rice and Smallholder Farmers

INTRODUCTION

Insurgency poses a significant threat to agricultural production and the livelihoods of smallholder farmers in North-Eastern Nigeria. Sani *et al.* (2023a) view insurgency as a rebellion against a recognized and accepted authority in a defined geographical space or territory, while the United States Department of Army (USDA, 2014) defined insurgency as the organized use of subversion and violence to seize, nullify or challenge political control of a region. Persistent insurgency in the form of Boko Haram has become a serious challenge to food production, including rice production, through activities such as mass killings, sporadic shootings, kidnapping, use of improvised explosive devices, and suicide bombing. Boko Haram started in Maiduguri in the early 2000s (Sani *et al.*, 2023b) and led to a protracted armed conflict in Borno, Adamawa and Yobe (BAY) States (PM News, 2015; BBC, 2011). The conflict has resulted in the displacement of more than 1.9 million people, loss of lives, properties, and livelihoods including farmlands and livestock (Sani *et al.*, 2023a; UN-OCHA, 2020b). These insurgent activities disrupt farming operations, particularly timely planting and harvesting, leading to reduced productivity and negatively affecting farmers' livelihoods. The destruction of critical infrastructure such as roads, markets, schools, and irrigation facilities further limits access to inputs, markets, and essential services, thereby worsening poverty and unemployment



among farming households (Abubakar *et al.*, 2017). Thus, insurgency directly undermines the livelihood sustainability of smallholder rice farmers in Borno State, where agriculture is a major economic activity. Efforts have been made by government and development partners to mitigate the effects of insurgency on farmers' livelihoods. Programmes such as the World Bank-supported agricultural development initiatives have focused on improving agricultural services, input supply, and irrigation infrastructure. The Nigeria Integrated Agriculture Activity (NIAA), implemented by IITA-CGIAR and ICRISAT under USAID, donated 17 tons of certified seeds to boost productivity. Other interventions include the World Gospel Mission Africa program (2003--2009), climate-smart agriculture initiatives by CGIAR (2019), and the IFAD-supported Community-Based Agricultural and Rural Development Programme. These interventions aim to improve agricultural productivity, enhance resilience, and provide support services to vulnerable farmers affected by insurgency. However, despite these efforts, rice farmers in Borno State continue to experience hunger, poverty, and livelihood disruptions due to persistent insurgent activities.

Existing literature has not sufficiently addressed the specific impact of insurgency on smallholder rice farmers' livelihoods. Previous studies have examined insurgency from various perspectives, including crop farmers' efficiency (Sani *et al.*, 2023a), livelihood strategies (Sani *et al.*, 2023b), economic impacts (Abdullahi, 2019; Mohammed & Ahmed, 2015), and broader national development and security concerns (Amalu, 2015; Granville, 2020; Uma & Ikpe, 2016). While these studies provide valuable insights, they largely focus on general agricultural production or macro-level impacts, with limited attention to smallholder rice farmers who are particularly vulnerable due to limited resources. This creates a gap in understanding how insurgency specifically affects the production, income, and living standards of smallholder rice farmers in Borno State.

This study seeks to address the identified gap by focusing on smallholder rice farmers in Borno State. There is inadequate information on how Boko Haram insurgency affects the livelihood dimensions of smallholder rice farmers, including production, income, and level of living. A focused analysis is necessary to understand the specific challenges faced by these farmers and the coping strategies they adopt in response to insurgency. Therefore, the study specifically aims to:

- i. describe the socio-economic and institutional characteristics of smallholder rice farmers;
- ii. identify insurgency activities affecting them; determine the effects of insurgency on their livelihoods; and
- iii. examine the strategies used to mitigate these effects.

METHODOLOGY

The Study Area

The study was conducted in Borno State, Nigeria. The State is located from Latitudes 11° 30'N and Longitudes 13° 00'E. Has an area of 57,798.2 square kilometres. Its population is 4,171,104 (2006 Census) 7,632,328 projected (2025). The State accounts for 3.0% of annual population growth rate (National Population Commission, NPC, 2006; Abdulsalam *et al.*, 2023). The annual precipitation fluctuates from 500 mm to 700 mm per annum (Nigerian Metrological Agency NMA, 2022; Gaya *et al.*, (2020); Abdulsalam *et al.*, 2023). The rainy season is usually from May to September with low relative humidity and short wet seasons. These climatic conditions are suitable for rice production. The crop is suited for regions with an assured supply of water (about 4-5 months of rainfall or 500 mm to 700 mm), high humidity (60-80% relative humidity) and a prolonged sunshine with an average temperature range of 21-42°C on a soil with high water retention capacity preferably clay or loamy clay soil (Abdulsalam *et al.*, 2023).

Sampling Technique and Sample Size

A multi-stage sampling procedure was used for this study. The first stage involved purposive selection of two (2) LGAs; Jere and Konduga based on the intensity of rice production and high level of Boko Haram insurgency and these LGAs were selected not just because they were affected by the insurgency, but because they are most accessible for questionnaire administration. The second stage involved the random selection of five (5) villages in each LGA making a total of ten (10) villages. The selection of these villages was based on the fact that they were affected by the insurgency and are most



accessible for data collection. The random selection was carried out using card system. These include Zabarmari, Gongulong, Lawanti, Alau, Dusuman, Konduga, Dalori, Bazamri, Kawuri and Kelumri. Random sampling technique was used by card system to select the respondent from the list. The final stage involved using Yamane (1967), formula at 95% confidence level and 5% sampling error assumption to randomly select 207 rice farmers as sampling size from a sampling frame of 430 rice farmers in the study area as obtained from Borno State Agricultural Development Programme (BOSADP). The Yamane formula as used by Sani and Oladimeji, (2017), and Abdulsalam *et al.* (2023), is given as:

$$n = N / 1 + N(e)^2$$

Where: n = the sample size, N = the total population, e = level of significance and in this case is 5%, while 1 = constant.

Data Collection and Analysis

The data generated for this study was collected through primary specifically using Kobo collect App. This study adopts a comparative temporal design to assess changes in livelihood outcomes of smallholder rice farmers across two distinct periods of insurgency intensity. Data were collected for the years 2020 and 2024, which are operationally defined in this study as the "earlier conflict period (pre)" and the "recent conflict period (during)," respectively. The year 2020 represents a period of relatively higher disruption and restricted farming activities, while 2024 reflects a period of partial stabilization characterized by increased but still constrained access to farmlands. Although insurgency has not completely ceased in Borno State, these two periods capture variations in the intensity and manifestation of insurgency activities over time. Thus, the terms "pre" and "during" are used in a relative and analytical sense to denote changes in livelihood conditions between two time points within an ongoing conflict, rather than implying the complete absence or cessation of insurgency. This approach is consistent with conflict and livelihood studies that analyze outcomes across different phases or intensities of protracted crises. The use of two time periods within an ongoing insurgency is justified by the dynamic nature of conflicts, which often fluctuate in intensity rather than follow a clear start--end pattern.

To analyze the data, descriptive statistics such as frequency distribution tables, percentages, means, and standard deviations were used to organize and summarize information for objectives (i), (ii), and (iv). A Z-test analytical tool was applied to achieve objective (iii). The Z-test formula is given as:

$$Z = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}} \quad (1) \quad (\text{Source: Adapted from Mohammed } et al., 2024)$$

Where: X_1 = mean output/income during bokoharam insurgency, X_2 = mean output/income pre bokoharam insurgency, S_1 = standard deviation during bokoharam insurgency, S_2 = standard deviation pre bokoharam insurgency, N_1 = number pre bokoharam insurgency, N_2 = number during bokoharam insurgency

RESULTS AND DISCUSSION

Socioeconomic Characteristics of Rice Farmers

The result in Table1 revealed that half (57.5%) of the smallholder rice farmers were between the age ranges of 31-43 years with a mean age of 41 years. This implies that most rice farmers in the community were in their prime working years, a stage of life when they are most capable of making meaningful contributions to both their farms and their families. This in line with the work of Gwandu and Adewuyi (2022) who reported that the mean age of the respondents in the North-Eastern region of Nigeria was 41 years. The results also revealed that the majority (89.4%) of the respondents were married. This implies that most of the farmers in the study area were married, showing how important family is helping and supporting their farming activities. This is in line with the work of Yahaya *et al.* (2023), who also reported that most farmers in Borno State were married.

In addition, the results revealed that the farmers have different levels of educations, but most of them stopped at primary school (48.8%). The mean year of schooling is 4.9. This implies that there



is a need for simple, practical farming training that suits the farmers' current level of understanding and experience. In contrast, studies by Jare and Bunu (2021) in Northern Adamawa and Reddy *et al.* (2023), in India found a higher prevalence of formal education among crop farmers, with lower rates of illiteracy. Furthermore, the results revealed that these farmers have gathered valuable experience over the years, with an average mean of 15.4 years in farming. This extensive experience likely contributes to their resilience in the face of challenges caused by insurgency. This is in line with the work of Onuwaroh *et al.* (2017), in North-Eastern Nigeria and Jare and Bunu (2021) in Northern Adamawa reported that their respondents were quite experienced in farming.

The results also revealed that the mean household size is 4 members. This implies that many households had lost their members to death from the insurgency activities, thereby reducing family labour which is vital in attaining high productivity. This aligns with the work of Jare and Bunu (2021) in Northern Adamawa, where considerably larger household sizes among crop farmers were identified as a major contributor to their farm labour. The results in Table 1 revealed that these farmers are primarily smallholders, working on mean farm size of 2.4 hectares. This implies that most of the rice farmers in the study area despite cultivating in small scale of land has further lost some portion of their farm to insurgency activities, especially when they can't not pay tax. This is in line with the work of Gwandi and Adewuyi (2022) reported that the majority of the respondents were small-scale farmers, cultivating an average of 3.5 hectares of farmland in the North-Eastern region of Nigeria. Similarly, Onuwaroh *et al.* (2017) who also reported that farmers predominantly operated as smallholders North-Eastern Nigeria. However, it contrasts with that of Mgbanya *et al.* (2019), in the Ishielu Local Government Area of Ebonyi State, Nigeria, where nearly half of the rural farmers had medium sized landholdings, followed by smallholder farmers.

Table 1: Socio-economic Characteristics of Rice Farmers in the Study Area

Variables	Freq.	%	Mean	Std. Dev
Age				
18-30	14	6.8	41	
31-43	119	57.5		
44- 56	74	35.7		
Marital status				
Single	22	10.6		
Married	185	89.4		
Years in school				
1-6	101	48.8	5	2.66
7-12	42	20.3		
13-18	13	6.3		
19 -24	51	24.6		
Farming experience				
1-5	41	19.8	15	10.06
6-10	46	22.2		
11-15	21	10.1		
16-20	49	23.7		
21-25	50	24.2		
Household size				
1-5	69	33.3	4.0	2.18
6-10	68	32.9		
11-15	48	23.2		
16-20	4	1.9		
21-25	18	8.7		
Farm size				
1-2	72	34	2	1.98
3-4	84	40.6		
5-6	51	24.6		



Institutional Characteristics of Rice Farmers

The results in Table 2 revealed that majority (62.3%) of rice farmers were members of cooperative societies, with mean membership duration of 6.9years. This shows that despite the catastrophic effect of insurgency in the study area, rice farmers were still determined to continue producing through helps from their cooperative society and supports from agricultural oriented Non-governmental Organizations (NGOs). They are vital for giving farmers access to resources like fertilizers, agro-chemicals, and equipment that would otherwise be hard to get. This is in line with the work of Onuwaroh *et al.* (2017), in North-Eastern Nigeria and Adisa *et al.* (2019), in Kogi State, which both found that majority of farmers, were members of one cooperative or another in their respective study areas. The results also revealed that few (19.3%) rice farmers had access to credit with a mean credit received of ₦331,750. This implies that there is a high demand for capital that is largely unmet not only because of strict loan conditions but also the insurgency activities that has limited creditors/financial institution to operate in the study area. This finding is in contrasts with the work of Adisa *et al.* (2019), in Kogi State and Silong *et al.* (2020), in Nigeria, who reported that a majority of farmers in their respective study areas had access to credit. This discrepancy highlights the regional variations in access to financial services within Nigeria's agricultural sector.

The results in Table2 further revealed that slightly above half of the farmers (50.7%) have access to extension services, with a mean of 3 visits per year. This suggests that insurgency activities have create a significant gap in farmer's access to extension services, despite how crucial farming information and new techniques is to farmers for optimum productivity. Strengthening these services is through e-extension is essential to reach the other half of the farming population and improve productivity. This moderate level of contact aligns with the work of Viswanatha *et al.* (2014), who, in their study of rural youth practicing agriculture, found that less than half had a medium level of extension contact, and even fewer had high levels of contact. This suggests that limited extension reach is a challenge in engaging even younger generations in agriculture. However, my finding contrasts with Adisa *et al.* (2019), in Kogi State, Nigeria, who reported that most farmers had a good number of extension contacts.

Table 2: Distribution of Rice Farmers according to Institutional Affiliation

Variables	Freq.	%	Mean	Std. Dev
Membership of cooperative societies				
Member	129	62.3		
Non member	78	37.3		
Years in cooperative				
1-5	49	38		
6-10	67	52	7	5.04
11-15	7	5.4		
16-20	3	2.3		
21	3	2.3		
Access to credit				
Accessed	14	19.3		
Not accessed	167	80.7		
Amount of credit received				
<100000-300000	18	45		
300001-500000	18	45	331,750.00	195,45984
500001	4	10		
Extension contacts				
Contacted	102	50.7		
Not contacted	105	49.2		
1-2	33	32.4		
3-4	45	44.1	3	2.01
5	24	23.5		



Activities of the Insurgents Affecting Smallholder Rice Farmer's Livelihood

The results in Table 3 revealed that verbal and written threats (100%) ranked first and were the most common experience, reported by every farmer. This implies that the insurgent create a climate of fear that "dictated daily life" and limited movement. This study is in line with Adewale and Sani (2021) who revealed that persistent threats created an invisible prison around farmers, limiting their movements. Also, Abubakar *et al.* (2022) who revealed that intimidation keeps workers away from farms, while Iliyasu *et al.* (2020) who revealed that the constant sense of danger prevents households from making long term investments. The results also revealed that sporadic shootings (98.6%) ranked second; this has made every trip to the farm a life-threatening gamble. This unpredictable gunfire discouraged farming activity. This study is in line with Adewale and Sani (2021) revealed that unpredictable gunfire discourages farming activity. Abubakar *et al.* (2022) revealed that many families simply abandoned their farms due to the danger, while Iliyasu *et al.* (2020) revealed how casual labourers avoided insecure areas altogether, leaving crops unattended.

In addition, the results revealed that stealing (97.6%) was the third most reported activity. Insurgents took rice, livestock, and farm tools, leaving households unable to recover. This theft stripped households of income and blocked reinvestment. This study is in line with Abubakar and Umar (2020) who revealed that theft strips households of income sources and blocks reinvestment. Iliyasu and Garba (2021) who revealed that when seeds and equipment are stolen, farmers are forced to reduce the size of their farms, while Okoli (2019) who revealed that repeated looting locks families into poverty.

The results in Table:3 revealed that Collection of taxes from farmers (91.8%) was ranked fourth, this activity forced farmers to pay tax to insurgents if they are to continue farming. This extortion drained household finances and crippled productivity. This finding is in line with Amadi *et al.* (2021), who reported that trapping families into poverty with no hope of breaking free. The results in Table 3 revealed that rustling (90.3%) was ranked fifth. This involved the theft of livestock, which left farmers with little or no cattle, crediting financial stress for households and reduced investment in rice production. Other activities include; destruction to rice farms (89.4%), kidnapping for ransom (86%), inability to go to farm (85.5%), use of improvised explosive devices (72.9%), forced marriage (72%), forced Recruitment (67%), raping (61.8%), exiling or banishing (56%), Arson (54.1%), suicide bombing (26.1%), they ranked from sixth to fifteenth accordingly. This study is in line with Okoli 2019; Abubakar& Umar (2020), who reported that cattle rustling is an assault on rural economies, losing animals meant losing both food and fertility for rice fields and also Iliyasu and Garba, (2021), reported that the fear of theft discouraged farmers from keeping animals at all.

Table 3: Distribution of Rice Farmers according to Activities of Insurgents

Insurgency Activities	*Freq.	%	Rank
Verbal and written threats	207	100.0	1 st
Sporadic shootings	204	98.6	2 nd
Stealing	202	97.6	3 rd
Collection of taxes from farmers	190	91.8	4 th
Rustling	187	90.3	5 th
Destruction to rice farms	185	89.4	6 th
Kidnapping for ransom	178	86.0	7 th
Inability to go to farm	177	85.5	8 th
Use of improvised explosive devices	151	72.9	9 th
Forced marriage	149	72.0	10 th
Forced Recruitment	139	67.0	11 th
Raping	128	61.8	12 th
Exiling or banishing	116	56.0	13 th
Arson	112	54.1	14 th
Suicide bombing	54	26.1	15 th

***Multiple responses**



Effects of Insurgency on the Livelihood of Smallholder Rice Farmers

The result of Z-test statistics in Table 4 showed a statistically significant decrease in agricultural yield during the insurgency. Pre insurgency mean yield was 41.14 bags (4,114kg), with 52.7% of farmers reporting yields to be between range of 101-150 bags. However, during insurgency the mean yield dropped drastically to 22.87 bags (2, 287kg), with 44.9% of farmers yield was between the range of 10-50 bags while only 9.2% could still achieve yields above 150 bags. This change is highly significant (Z-value =10.927). This decline reflects how insurgency disrupted agricultural activities through restricted access to farmlands, destruction of farm facilities, displacement of farmers and fear of attacks. Many farmers either abandoned their fields or reduced the size of their farm. This finding is in line with the finding of Adu *et al.* (2024), who reported that farmers productivity measured in yield per hectare was significantly higher before the insurgency than after in Benue State.

Also, the results revealed that the mean income pre insurgency was ₦1,292,188.40, with 58.9% of farmers earning between the range of ₦500,001 and ₦1,000,000. During insurgency the mean income declined drastically to ₦818,855.70, with 63.3% of farmers now earning between range of ₦100,000 and ₦500,000. This change is highly significant (Z-value = 7.510). This drop in income had direct implications for livelihood sustainability and poverty levels. Reduced earnings mean lower capacity to purchase inputs for subsequent farming seasons, pay school fees, access healthcare, and maintain general welfare. Consequently, many household may fall into a cycle of poverty and dependency. This finding is in line with that of Nur *et al.* (2024), who reported that there was a significance difference in rice farmers' mean farm income before and during the insurgency, because mean farm income of rice farmers decreased significantly during the peak period of the Bokoharam insurgency, compared to before insurgency in Mafa Local Government Area, Borno State, Nigeria.

In addition, the result revealed that the mean level of living pre insurgency was ₦2,118,777.77, with 46.9% of farmers in the ₦800,001 - ₦1,000,000 range. During insurgency the mean level of living dropped drastically to ₦981,502.41, with 65.2% of farmers in the ₦100,000 - ₦400,000 range. This implies that insurgency not only reduced farmers earnings but also lowered their level of living, as households cut down costs on food quality, education, healthcare, and other essential needs, families that once enjoyed modest comfort were pushed into economic hardship. This finding aligns with the findings of Adelaja and George (2019), who identified the direct effects of conflict as losses in output, input, infrastructure, and human capital, alongside indirect effects such as talent depletion and adverse environmental impacts in Nigeria.

Table 4: Effects of Insurgency on the Livelihood of Smallholder Rice Farmers

Variables	Pre insurgency		Mean	During insurgency		Mean	Z-value
	Freq	%		Freq.	%		
Yield (bags/kg)							
<10-50	16	7.7	41.14	93	44.9	22.87	10.927***
51-100	40	19.3		57	27.5		
101-150	109	52.7		38	18.4		
151 above	42	20.3		19	9.2		
Income (₦)							
<100000-500000	49	23.7	1292188.40	131	63.3	818855.7	7.510***
5000001-1000000	122	58.9		54	26.1		
1000001 above	36	17.4		22	10.6		
Level of living (₦)							
<100000-400000	27	17.9	2118777.77	135	65.2	981502.41	11.926***
400001-600000	16	7.7		29	14		
600001-800000	32	15.5		24	11.6		
800001-1000000	97	46.9		6	2.9		
1000000 above	25	12		13	6.3		

***= Significant at 1%, levels of probability.



Strategies Used by Smallholder Farmers to Mitigate and Cope with the Effects of Insurgency

The result in Table 5 revealed that various strategies employed by smallholder rice farmers in response to insurgency. The effectiveness of these strategies varies, ranging from highly effective to somewhat effective or neutral. The most effective strategies, indicated by mean scores above 4.00, are those that provide significant security or stable alternative income. These include Commercial transport (Taxi, Bus and Napep) (mean= 4.40), sought support from government (mean 4.33), dry season farming (mean=4.39), and temporary relocation to safer places (mean=4.16), and changed farming practices (mean=4.05. Other strategies such as sales and repairs of handset (mean=3.94), begging (mean=3.05), tailoring (mean=2.42), carpentry (mean=2.32), participation in the Civilian Joint Task Force (CJTF) (mean=2.24) sales of charcoal (mean=2.18), bicycle repairs (mean=2.14), and cap making and washing (mean=2.07) provided limited or temporary support, often acting as last resorts. This study is in line with Dabugat (2018), who reported that the Bokoharam insurgency led to the closure of businesses and mass migration, with people fleeing to safe cities as a coping strategy against violence. Granville (2020), who reported that victims in Borno State primarily coped through support provided by national and international organizations.

Table 5: Description of Strategies Used by Smallholder Farmers to Mitigate and Cope with the Effects of Insurgency

Strategies	Weighted score	Mean score	Std. Dev	Remark
Changed farming practices	839	4.05	1.07	Effective
Sought support from government	898	4.33	0.98	Effective
Joined a cooperative	436	2.10	0.94	Somewhat effective
Sales of charcoal	452	2.18	1.00	Somewhat effective
Tailoring	501	2.42	0.89	Somewhat effective
Commercial transport (Taxi, Bus and Napep)	912	4.40	0.96	Effective
Sales and repair of handsets	818	3.94	0.95	Effective
Cap making and washing	429	2.07	0.95	Somewhat effective
Carpentry	4.81	2.32	1.04	Somewhat effective
Petty trading	488	2.35	1.09	Somewhat effective
Beggars	632	3.05	0.94	Neutral
Dry season farming	910	4.39	0.98	Effective
Bicycle repairs	444	2.14	1.04	Somewhat effective
Civilian joint task force	464	2.24	1.05	Somewhat effective
Temporary relocation to safer places	862	4.16	0.95	Effective
Dialogue with terrorists	413	1.95	1.09	Somewhat effective

Note: 1=Not effective, 2=somewhat effective, 3=Neutral, 4=Effective, 5=Very effective

CONCLUSION AND RECOMMENDATIONS

Based on the findings of the study, it is concluded that insurgency activities have had a significant negative effect on the livelihood of smallholder rice farmers in Borno State, Nigeria. Also there was a marked decline in major livelihood indicators following the onset of insurgency. Rice yields reduced substantially from the period pre insurgency to the period during insurgency. In a similar pattern, farmers' income experienced a significant decrease, while their overall level of living also declined considerably during the insurgency. These declines clearly demonstrate the adverse impact of insurgency on agricultural productivity, income generation, and the general welfare of smallholder rice



farmers. In response to these challenges, farmers adopted various coping strategies, with engagement in commercial transportation activities such as taxi, bus, and tricycle operations emerging as the most commonly used means of livelihood diversification. Based on the findings of the study, the following recommendations were made:

1. Government and relevant security agencies should increase the deployment and support for community-based security outfits like the CJTF in rice farming communities.
2. Government, non-governmental organizations and other stakeholders should compensate those that lost their means of livelihood through displacement, arson, theft or violence.
3. Government, financial institutions (such as Bank of Agriculture and NIRSAL) and development partners should provide soft loans, collateral-free credit, and agricultural insurance to smallholder rice farmers.
4. The Borno State Agricultural Development Programme (BOSADP) and relevant agencies should strengthen extension delivery through e-extension, radio programs, and mobile advisory services.

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