

Impact of insecurity and insurgency on the livelihood status of livestock farmers in North Central States, Nigeria

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Abstract

This study assessed the impact of insecurity and insurgency on the livelihood status of livestock farmers in North Central States, Nigeria. The States selected for the study were Benue, Kwara and Niger, including the Federal Capital Territory. The respondents of the study were 3285 livestock farmers which were sampled through multi-staged sampling technique. The study's objectives and hypotheses were respectively analysed using descriptive and inferential statistics (t-test and Chi-test statistics). As revealed by the results, majority (84.80%) of the respondents have not received any form of training on livestock farming, all the farmers farming activities were affected by insecurity and this consequently affected their livelihood status to a very high extent (82.28%) and poverty level which was average (70.99%) and very high (85.08%) before and after incidence of insecurity respectively. Insecurity/insurgency significantly and negatively affected livestock farming activities since average income earned before and after insecurity/insurgency was 224,764 and 76,736 respectively. The farmers were challenged by insurgency, banditry, conflict (mean = 4.00), poor capital base for farmers to be meeting up with group's activities (mean = 3.64), lack of government assistance (mean = 3.52) among others. These challenges have in no little measure contributed to the fall in income of the farmers. Hypothesis one revealed significant difference existed in income earned by farmers before and after incidence of insecurity/insurgency in North Central States, Nigeria, while the second one revealed that insecurity/insurgency has significantly affected the livelihood status of the livestock farmers. The study recommended that government needs to do her best to curb and forever keep the insurgents under control so that farmers can begin to do better in their production and as well earn better income to cushion the effect of poverty plaguing then.

Keywords: insecurity, insurgency, livelihood status, livestock farmers, production, income, poverty level

Introduction

Before the advent of oil, the agricultural sector was the major driver of the economy in Nigeria (Uteh *et al.*, 2022). The sector contributed so much to the economic growth of the country and as well contributed as much as 24.18% to the Gross Domestic Product (GDP) of Nigeria and this rose to 24.4% in 2016, thus making agriculture the highest contributor after oil to the nation's GDP (Oyaniran, 2020). Uteh. *et al.* (2022) declared the agricultural sector as rich and capable of supporting a variety of farming enterprises, supplies food and raw materials to our industries, generates income to the farmers and provides variety of jobs for as much as 60% of the Nigerian populace.

On a general consideration, Bourn (2012) stated that the value of livestock, based on the 1991 market price was estimated for 60 billion naira. The value greatly made the livestock to be a major asset to the Nigerian economy. In a speech delivered by former Minister of Agriculture Audu Ogbeh, he remarked that the combined value of these animals and livestock positions Nigeria as the leading country in livestock production in Africa. Audu Ogbeh also expressed regret that despite this high level of production, the country has been unable to meet the population's demand for animal protein and other animal by-products needed for industrial purposes. He also added that for some years now, the livestock sector has

also not been able to contribute significantly to the Gross Domestic Product (GDP) as against what was in the far past (1990s). The issue has been attributed to various challenges, including limited investment capital, insufficient and poor-quality inputs, an unfavorable extension-to-farmer ratio, and most notably, the conflicts and insurgency that have plagued the northern region of the country for nearly, if not more than, a decade (Temesgen *et al.*, 2014).

Insecurity is a state or situation where people's lives and property are not secured and it can manifest in various forms like murder, rape, abduction, theft, high-way robbery, cultism and so on (Abdullahi, 2019). Insecurity has for some years been the order of the day in the northern part of Nigeria. This has resulted to loss of lives and the destruction of property valued at billions of Naira, displacing people from their ancestral homes. Again, many people have been forced to relocate, turning them into internally displaced persons (IDPs) and living in IDP camps (Onwuaroh *et al.*, 2017). Insurgency which is mostly caused by Boko Haram is home-grown and was widely known in the early stages to have mobilized its membership from all members of households ranging from women to children and from school drop-outs to unemployed graduates (Hassan and Lawal 2023). Hassan and Lawal (2023) stated that most of the graduates went on to destroy their certificates due to the fact that they

were; not employed, underdeveloped and widespread sense of hopelessness in society which were attributed to the government's failure to manage the country's resources in their interest, influenced by Western education on them and imposed unfavorable policies on the people but failed. The Sect, known as the insurgents (Boko Haram in Hausa Language) described "Western Education as sinful" (Gilbert, 2014).

The rise of Boko Haram has caused many Nigerians, particularly Christians living in the North East, to flee in search of safety and security (Onwuaroh *et al.*, 2017). Onwuaroh *et al.* (2017) acknowledged that the Sect has through different methods unleashed terror inflicted on the people through arson, mass shootings, suicide bombings, and the use of explosives amongst others. According to Gobna *et al.* (2018), insurgency and insecurity can lead to the diversion of foreign direct investment, a decline in trade, the reallocation of public funds to security, the destruction of infrastructure, internal displacement, refugee crises, homelessness, personal insecurity, a rise in the number of widows and orphans, loss of livelihoods, and reduced productivity, among other impacts. The disturbing level of insecurity in Nigeria has consistently resulted in serious repercussions for the livelihoods of many rural households (Oduehie *et al.*, 2023). Rural households engage in activities that provide the means for their survival and long-term well-being. Onwuaroh *et al.* (2017) noted that livelihoods can be categorized into natural resource-based activities, such as crop cultivation and livestock rearing, and non-natural resource-based activities, such as trade. Livelihood outcomes and goals may not exactly be the same amongst households and they are also subject to changes. The impact of insurgency on agriculture, particularly regarding livestock keeping—which is seen as a significant source of income for many rural residents—cannot be overstated. The fear of death in recent times has restricted livestock farmers' participation in farming activities. The surge of insecurity and insurgency in the country, particularly in the North Central poses serious threats to the farm income earning capacity of the farmers as well as their livelihood status. This study therefore examined the impact of insecurity and insurgency on the livelihood status of livestock farmers in North Central States, Nigeria. On a specific note, it was carried out to: analyse the livestock farmers who have received agricultural training on livestock production in the area, ascertain the extent to which insecurity/insurgency has affected the farmers livelihood status, assess the livestock farmers poverty level before and after insecurity/insurgency, analyse livestock farmers income before and after insecurity/insurgency in the area and identify the challenges faced by the farmers that are limiting their livestock production.

Hypotheses of the study

Hoi: There is no significant difference in income earned by farmers before and after incidence of

insecurity/insurgency in North Central States, Nigeria.

Hoi: Insecurity/insurgency has not significantly affected the livelihood status of the livestock farmers in the North Central States, Nigeria

Methodology

Area of Study

North Central Nigeria, commonly referred to as the Middle Belt, is one of the six geopolitical zones of the country. It consists of six states which are: Benue, Kogi, Kwara, Nasarawa, Niger, and Plateau, as well as the Federal Capital Territory (FCT), Abuja (Omachonu & Dalhatu, 2018).

Fig 1 shows the 3 States and the Federal Capital Territory where the study was carried out. They are: Benue, Kwara, Niger States all in North Central geopolitical zone of Nigeria. They are described below as:

Federal Capital Territory

Federal Capital Territory (FCT) Abuja was carved out of its neighboring or surrounding states like old Kwara, Niger, Kaduna and Plateau States. FCT was established in 1976, and became functional as at the 1991 as the capital seat of Nigeria. It has 6 Local Government Councils. Its estimated population as at 2023 according to National Population Commission (NPC, 2023) was 3,840,000 with a land mass of 7,620Km². The coordinates of FCT lies between Latitude 9.07° N and Longitude 7.339°E (Michael *et al.*, 2025). Okwuokenye, *et al.* (2023) stated that the vegetation is of both guinea and shrubs which are suitable for rearing of animals. The area is rich in mineral deposits like clay, feldspar, tin, gold, iron, ore, etc.

Benue State

Benue State was founded in 1976 and its origin was from river Benue. The State's coordinates are 7.200N and 8.45°E. Benue State is composed of 23 Local Government Areas (LGAs) with Makurdi as the capital seat of the State. The estimated population size as at 2023 was 6,141,300 (NPC, 2023) and land area of 30,783 Km². The State is rich agriculturally as it is known to grow crops like oranges, mangoes, sweet potatoes, yam, rice, cassava, soya-bean, guinea corn, etc.

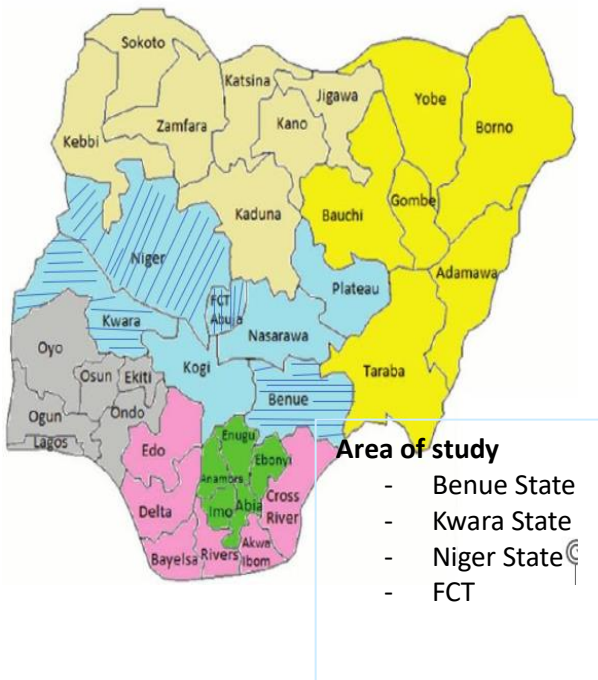
Kwara State

Kwara State is an old State founded in 1967 with 16 LGAs and has its capital at Ilorin. The estimated population size as at 2023 is 3,551,000, while the land area size is 33,433 Km² (NPC, 2023) The geographical coordinates of the State is 8.9669°N and 4.3874°E (Michael *et al.*, 2025). Michael *et al.* (2025) also stated that the State is hot all year round and its temperature typically varies between 64°F to 95°F and is rarely below 57°F and above 100°F. On economic trend, the inhabitants are mostly engaged in growing crops (coffee, kola nut, groundnut, cotton, cocoa, etc.) and rearing animals (cattle, sheep and goats) (Ayinde, 2008)

Niger State

Niger State is the largest State in Nigeria and was created in 1967 and presently has 25 LGAs with Minna as State's capital. Its population size as at 2023 was

27,202,843 and a land area of 1,266,700 Km² (National Bureau of Statistics (NBS), 2023). The State's coordinate is Latitude 8.20°N and 11.30°N and Longitude 3.30° and 7.20°E (Michael et al., 2025). The monthly average temperature of the State is between 23°C and 37°C, while the annual rainfall is between 1100 and 1600mm with vegetation that is mainly composed of short grasses, shrubs and scattered trees. The Residents' major livelihood is centered around farming of crops and rearing of animals (Tanko and Madu, 2010).



Map showing States used for the study

Figure 1: Shaded States show area of study

Sampling technique and sample size

The sample of this study was drawn from a multistage sampling procedure. Stage 1 started with purposive selection of 3 states amongst those that were worst hit (they include: Benue, Kwara, Niger States) including FCT, Abuja, North Central, Nigeria. Stage 2 involved the purposive selection of all three (3) agricultural zones the States are made up of and this made it 9 agricultural zones and the FCT Local Government Councils. Stage 3 has to do with the random selection of three (3) LGAs/councils per Agricultural zone in each State and the FCT and this brought the LGAs/councils that were used to 30. Following this is the random selection of four (4) towns/communities in each of the LGAs/Councils, thus making it a total of 120 towns/communities that were used for the study (stage 4). Next was the random selection of 30 livestock farmers in the randomly selected towns/communities and this made it a total of 3,600 respondents used for the study (Stage 5). The researchers put in their best to be sure that the respondents administered with the data collection instruments were really livestock farmers. Out of the data

collection instruments administered, 3285 (i.e. 91.25%) which were properly filled and appropriate for analysis were used for the study (see Table 1 for the sampling of respondents).

Efforts were made by the researchers to part-take in the administration and retrieval of the question instruments. The researchers did well to employ the services of competent enumerators who are residents of the respectively visited communities. The essence is to guarantee trust and confidence between the researcher, the research and the respondents. The use of local residents as enumerators was also to bridge language difference and communication gap.

Data collection instrument and sources of data

Data collection instruments were questionnaire and interview schedules which were respectively administered to literate and illiterate farmers. The data were gathered from primary and secondary sources. Primary data were sourced from the study's respondents while secondary data used for literature of the study were sourced from documented sources like: journal articles, textbooks and other documented sources.

Validity and reliability of research instrument

Both the validity and reliability methods were used to validate the question instruments. The validity process involved presentation of the instrument to specialists in the field of Agricultural Economic and Extension for criticisms in other to ensure that it could be able to analysed the study's objectives and hypotheses. The instrument's reliability was conducted to ensure its consistency in the responses of respondents. This was carried out through the test-re-test method where the instruments were administered at 2 different times, given an interval of 6 weeks to the same set of respondents. Results from the 2-sets of responses were analysed and the result produced a Correlation Coefficient ('r') of 0.716 which thus indicated the instrument's reliability. Reliability of instrument is assured when 'r' is greater than 0.5. (Okwuokenye, et al., 2023).

Analytical techniques of the study

The study's data were analyzed using a combination of descriptive and inferential statistics. The descriptive analysis involved the use of frequency counts, tables, percentages, means, and standard deviations. The techniques were used to examine farmers who received training, the extent to which insecurity/insurgency has affected their livelihood, poverty level and income level. A four-point Likert scale was employed to assess the challenges limiting livestock production among farmers. The scale was rated as follows: Strongly Agree (4), Agree (3), Disagree (2), and Strongly Disagree (1). The weighted mean was calculated to be 2.50, derived from the formula: $[4 + 3 + 2 + 1] / 4 = 2.5$. A mean score of ≥ 2.50 was considered indicative of a significant challenge faced by the farmers that is limiting livestock production. On the other hand, factor with mean score < 2.50 is not a challenge.

Inferential statistics were employed to test the study's hypotheses. Hypothesis one was analyzed using a t-test, which was applied to determine whether a significant difference existed between the mean incomes of livestock farmers before and after incidence of insecurity/insurgency. Okwuokenye *et al.* (2022) concluded that the t-test is used to compare the means between two groups. The formula for the t-test is presented below:

Where: \bar{x}_1 = mean of the farmers income before

$$t = \frac{(\bar{x}_1 - \bar{x}_2)}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}}$$

insecurity/insurgency;

\bar{x}_2 = mean of farmers income after insecurity/insurgency

S_1 = standard deviation of the farmers income before insecurity/insurgency;

S_2 = standard deviation of the farmers income after insecurity/insurgency;

S_1^2 = variance of the farmers income before insecurity/insurgency;

S_2^2 = variance of the farmers income after insecurity/insurgency;

n_1 = size of the farmers before insecurity/insurgency;

n_2 = size of the farmers after insecurity/insurgency;

$\sqrt{\quad}$ = square root

Decision rule for t – statistics: i.e. if t-cal > t-tab = reject null and accept alternative hypothesis t-tab > t-cal = accept null and reject alternative hypothesis

Hypothesis two was analyzed with Chi-square statistics. The statistical tool is used to test the significant effect of insecurity/insurgency on livestock farmers' livelihood status. The Chi-square is a non-parametric statistical test used when research data are presented as frequency counts (Uzoagulu, 2018). Usually, the frequency counts are placed in two or more categories. Uzoagulu (2018) stated that Chi-square is used to find out if the frequency with which each of the 2 or more categories endorsed by each group or respondents differ from the frequency that could be expected. Thus, the greater the difference between the expected and the observed frequencies, the larger the Chi-square value. The Chi-square is as shown below

$$\chi^2 = \sum \frac{O_i - E_i}{E_i}$$

Where O_i = Observed value (actual value)

E_i = Expected value

χ^2 = Chi – square

Results and Discussion

Respondents that received training on livestock farming

The various livestock reared by the farmers in the various areas of study include: Cattle, Goats, Sheep, Pigs, Poultry, Other birds, Horses, Camels, Dogs, Cats, Donkeys, Rabbits and other animals (that is other

animals not captured in the study). The number in size of the various livestock are as follows: Cattle (14,915), Goats (15,890), Sheep (7,230), Pigs (24,575), Poultry (40,415), Other birds (9,675), Horses (1,505), Camels (390), Dogs (8,650), Cats (4,185), Donkeys (1,735), Rabbits (3,750) and other animals (8,695). This brought the total of the livestock to 141,610 livestock.

However, the proportion of respondents that received training and those that did not received training on livestock farming is shown in Table 2. Results showed that only very few (15.20%) of the farmers indicated to have received one form of training or the other from the government and this stands the only source from which training has reached them. The larger fraction (84.80%) of the respondents indicated not to have received any form of training from any source on their farming activity. Training of farmers usually has to do with impacting knowledge and skills on the people and this instills a kind of empowerment on the people. Such empowerment and capacity building helps to bring forth several positive implications for their farming operations. This may include improved knowledge on management that will perhaps lead to increased productivity and income, breeding, nutrition, health and disease control. This finding agrees with work of Hassan and Lawal (2023) that, the activities of Boko Haram insurgents have had a detrimental impact on Northern Nigeria. Their findings however expressed that sometimes farmers, administrators and extension agents have been kidnapped, attacked through suicide bombing, destroyed in their rural communities and killed. These activities have lowered extension agents' morale and the required vigor to go into the hither land to train farmers on agricultural capacity building and this consequently will negatively impact on productivity and income.

Effects of insecurity/insurgency on livelihood status of livestock farmers

Table 3 illustrates the extent to which insecurity and insurgency have impacted the livelihood status of livestock farmers. Results revealed that all (100%) the respondents reported that livestock farming activities were in one way or the other affected by insecurity/insurgency. On the extent of the impact of insecurity/insurgency on livestock farmers' livelihood status, majority (82.28%) of the farmers indicated that insecurity has affected their livelihood status to a very high extent. Insecurity can to a large extent result to loss of livestock, limited access to inputs and services, displacement of the farmers from their ancestral homes, thereby causing some level of psychological stress and trauma on the farmers. The resultant of the aforementioned effects is that, insecurity can severely impact on the livelihoods of livestock farmers, resulting to poverty, food insecurity and crisis situation in worst case scenario. This finding aligns with the report by Onwuaroh *et al.* (2017), which stated that insurgency in the North has had a devastating impact on families and the livelihoods of various economic groups, leading to reduced incomes and heightened poverty levels.

Assessment of respondents' poverty level before and after insecurity/insurgency

An assessment of the poverty level of livestock farmers before and after insurgency requires the consideration of income level, source of income and possibly the asset owned by the farmers. The poverty levels are in categories ranging from low, average, high and very high (see Table 4). As shown, majority (70.99%) of them ranked their poverty level to be of average level before the advent of insecurity/insurgency. The poverty level later increased to a very high level as indicated by majority (85.08%) of them after the incidence of insecurity/insurgency. The implication of the result is that the prevalence of insecurity/insurgency consequently leads to poverty. In support of this result, findings from Oduhie *et al.* (2023) highlighted the consequences of insecurity, including loss of wealth, loss of livelihood and income, loss of lives, disruption of agricultural input and output supply chains, destruction of crops, and an increase in poverty among the population

Effects of insecurity/insurgency on farmers' income

Results in Table 5 reveal the income earned on an annual basis by the respondents before and after insecurity/insurgency. The study revealed that large numbers (44.11%) of farmers in the area were able to obtain high income of between ₦201,000 – ₦300,000, while about 20% and 35.89% respectively earned more than ₦300,000, and less than ₦201,000 before insecurity/insurgency. On the other hand, majority (75.21%) earned less than ₦100,000 with about 24.79% earning more than ₦100,000 after insecurity/insurgency.

The average income earned before and after insecurity/insurgency was ₦224,764 and ₦76,736 respectively. Based on findings, it could be inferred that livestock farming activities in the area were appreciable and generating appreciable income prior to the onset of insecurity/insurgency, because farmers operated under conducive atmosphere. The number of livestock farmers now producing fewer numbers of livestock will eventually result to lower output and income when compared with what was produced before the insurgency attack in the area of study. The few farmers who managed to return to their farming activities after the incidence of insecurity/insurgency could not operate at a maximum level of production. The result agreed with reports of Sani *et al.* (2022) who observed that farmers not affected by insurgency were earning more income than those farmers that were affected. Findings of Oduhie *et al.* (2023) also showed that loss of wealth and farm income were among consequences of insecurity.

Challenges faced by farmers in livestock production

The challenges identified by livestock farmers in the study area are presented in Table 6, arranged in order of decreasing magnitude based on their mean scores. From the study, livestock farmers identified insurgency, banditry, conflict (mean = 4.00), insufficient capital for farmers to participate in group

activities (mean = 3.64), lack of government assistance (mean = 3.52) and water unavailability/scarcity (mean = 3.38) as challenges livestock farmers face that limit them in livestock production. Other challenges include lack of knowledge in livestock rearing (mean = 3.08), pilfering/theft (mean = 3.06), lack of grazing fields or animal feeds (mean = 2.98) and pest and diseases (mean = 2.73). Livestock farmers face numerous challenges in the face of insecurity/insurgency, which can significantly impact on their livelihoods, income, well-being and poverty status.

Results showing challenges on theft/pilfering, insufficient funds/poor capital base and diseases were in line with findings of Offor *et al.* (2018) as major challenges facing small ruminant production in Abia State, Nigeria. Lack of government assistance (through service rendering in the form of inadequate extension services, lack of good roads, poor sanitary condition and lack of shade), insecurity and farmers/herdsmen clashes were challenges supported by Ishaya *et al.* (2018). The lack of grazing fields or animal feed was also identified by Nkonki-Mandleni *et al.* (2018) as one of the challenges affecting livestock production.

Effect of insecurity/insurgency on income level of respondents (t-test)

A t-test was conducted to evaluate hypothesis one, which asserts that there is no significant difference in the income earned by farmers before and after the onset of insecurity and insurgency in the North Central States of Nigeria. The results in Table 7 indicate that the average income of livestock farmers was higher (₦224,756.39) before the incidence of insecurity/insurgency than that earned after insecurity/insurgency (₦76,735.69). The result thus suggests that the incidence of insecurity/insurgency impacts negatively on the production and income earning capacity of livestock farmers. The difference in income levels before and after the onset of insecurity and insurgency is ₦148,020.70, and this difference is significant at the 1% level, as the calculated t-value (71.47) exceeds the tabulated t-value (2.326) at the 1% level. Consequently, the null hypothesis was rejected in favor of the alternative hypothesis, which asserts that there is a significant difference in the income earned by farmers before and after the incidence of insecurity and insurgency in the North Central States of Nigeria. The result implies that insecurity/insurgency impoverishes the people of the area where such is prevalent with poverty and lower livelihood status. This result is backed by that of Oduhie *et al.* (2023) as they summed that insurgency can disrupt farmers of their farming activities and as well face challenges associated with risk of attack if seen outside, restricted movement, limited access to markets, and reduced availability of inputs, leading to decreased productivity and income.

Effect of insurgency on livelihood status

Hypothesis 2 which states that: Insecurity/insurgency has

not significantly affected the livelihood status of the livestock farmers in the North Central States; Nigeria was analysed in Table 8. From Table, χ^2 calculated at 0.01% is 3589.9. In making a decision based on result, since the Chi-square value calculated (3589.9) was greater than Chi-square tabulated (2.706), the null hypothesis was rejected in favor of the alternative, which states that insecurity and insurgency have significantly affected the livelihood status of livestock farmers in the North Central States of Nigeria. This finding aligns with the conclusions drawn by Sani *et al.* (2022) that insurgency has impoverished the people in the area where they operate and this has consequently lowered the livelihood status of the residents.

Conclusion and Recommendations

The study found that most of the farmers were denied training capacity that are necessary for improvement of their farming activities and the denial was linked to the nefarious activities of insurgents. Insecurity/insurgency activities were very prevalent in the area and this have consequently affected the income earning capacity of the livestock farmers. The average income earned before and after insecurity/insurgency was ₦224,756.39 and ₦76,736.69 respectively. The difference in income earned was in favour of the farmers before the incidence of insecurity/insurgency. Reduction in the income earned has dampened the livelihood status of the people and also increased their poverty status. Several challenges linked to insecurity/insurgency were faced by the livestock farmers and they have consequently led to low or poor level of production and income.

Based on the findings, the study recommends that, given the significant impact of insurgent activities on the residents of the study area, appropriate measures be taken to address the resulting challenges.

Government needs to do her best to curb and forever keep the insurgents under control. It is believed that this is possible so that the livestock farmers can regain their freedom and begin to practice their livestock farming again without fear. Doing this will make them re-bounce back economically and reduce their poverty level and have their livelihood status improved.

The livestock farmers complained of poor capital base to be meeting expectations. To overcome this challenge, farmers should form cooperatives where they can pool their limited resources with the goal of eventually generating greater financial capacity and use such to meet up with their farm demands and earn more money that is sufficient to take them off the poverty circle.

There is need for the government to meet up with their social responsibilities of road construction, provision of shade for the farmers and maintenance of proper sanitary contributions which will help to overcome issues of pest and diseases plaguing the livestock.

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Conflict of Interests

The author declares that there is no conflict of interest.

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Table 1: States, Agricultural Zones, LGAs and Communities/Towns used for the study.

State	Agric. Zone	LGAs Used for the study	Towns/Communities	No. of farmers
Benue	Benue North -East	Katsina-Ala	Katsina-Ala (30), Yooyo (30), Utange (30) & Mbajir (30)	120
		Logo	Ugba (30), Zanzan (30), Anylin (30) & Abeda (30)	120
	Benue North -West	Kwande	Dio (30), Gube (30), Adikpo (30) & Ahundu (30)	120
		Buruku	Mbaya (30), Etulo (30), Shorov (30) & Mbaazager (30)	120
		Gboko	Mbatan (30), Mbadam (30), Mbaanku (30) & Mbakwen (30)	120
		Makurdi	Aki (30), Agam (30), Adaka (30) & Akaan (30)	120
	Benue South	Ado	Igah (30), Oturukpo (30), Osabo (30) & Olek (30)	120
		Apa	Ugbokpo (30), Adija (30), Amoke (30) & Igoro (30)	120
		Otukpo	Adoka (30), Otobi (30), Pgobia (30) & Upu (30)	120
		Ilorin South	Owode-Ofaro (30), Omupo (30), Ganmo (30) & Oke-Ode (30)	120
Kwara	Kwara Central	Ilorin West	Ajikobi (30), Oko-erin (30), Baboko (30) & Alanamu (30)	120
		Asa	Aboto (30), Laduba (30), Ogele (30) & Afon (30)	120
	Kwara South	Ekiti	Koro (30), Osi (30), Etan (30) & Eruku (30)	120
		Offa	Balogun (30), Essa (30), Shawo central (30) & Ojomu Central (30)	120
		Oke-Oro	Ilofffa (30), Ekan (30), Odu-Owa (30) & Idofin (30)	120
	Kwara North	Baruten	Igbogi (30), Gwanara (30), Haruna Buran (30) & Ibrahim Zamari (30)	120
		Edu	Igbaja (30), Edidi (30), Gure (30) & Buari (30)	120
		Pategi	Pategi (30), Bide (30), Ebu (30) & Eka-Cheja (30)	120
		Tafa	Ija (30), Iku (30), Zuma (30) & Wuse (30)	120
	Niger	Niger East	Rafi	Dada (30), Bangu (30), Ankawa (30) & Agwai (30)
Suleja			Chimbi (30), Apia (30), Dwakoro (30) & Buru (30)	120
Bida			Wagini (30), Bamisu-Wuya (30), Agibogga (30) & Baba Ko (30)	120
Niger South		Edatti	Sakpe (30), Etsu-Tasha (30), Edati (30) & Enagi (30)	120
		Lapai	Muye (30), Yamma (30), Tashibo (30) & Kpada (30)	120
Niger North	Borgu	Agumu (30), Aranguru (30), Adamu (30) & Bakuta	120	
	Rijan	Doka (30), Dawaworo (30), Bini-Edrira (30) & Gbako (30)	120	
	Magama	Kawo (30), Ibelu (30), Nnali (30) & Auna (30)	120	
	Abaji	Gbagyi (30), Ganagana (30), Basa (30) & Egbira (30)	120	
FCT	3 LGCs	Kuje	Agwai (30), Achmbi (30), Bamishi (30) & Atsauna (30)	120
		Gwagwalada	Atopi (30), Agota (30), Alu Wamo (30) & Akwayi (30)	120
		Total	9 Agric. Zones + 3 LGCs of FCT	30 LGA

Table 2: Livestock farmers that received agricultural training

Training of livestock farmers	Frequency	Percent
Yes	499	15.2
No	2786	84.8
Total	3285	100.0

Source: Field survey, 2023

Table 3: Effects of insecurity/insurgency on poverty level

Variables	Category	Freq	%	Mean
- Insecurity/insurgency affected your livestock production	Yes	3285	100.00	
	No	0	0.00	Yes
• Extent insurgency affected livelihood status	Poor	0	0.00	
	Low	0	0.00	
	Average	129	3.93	
	High	453	13.79	
	Very high	2703	82.28	Very high

Source: Field survey, 2023

Table 4: Assessment of respondents' poverty level before and after insecurity/insurgency

Variable	Category	Frequency	Percentage	Mean
Perceived poverty level before insecurity	Low	528	16.07	
	Average	2332	70.99	
	High	425	12.94	
	Very high	0	0.00	

Perceived poverty level after insecurity	Total	3285	100.00	Average
	Low	0	0.00	
	Average	0	0.00	
	High	490	14.92	
	Very high	2795	85.08	
	Total	3285	100.00	Very high

Source: Field survey, 2023

Table 5: Effects of insecurity/insurgency on farmers income

Effect of insecurity/insurgency on income	Income range (₹)	Frequency	Percentage	Mean (₹)
Income before insurgency or insecurity	< 100,000	526	16.01	
	101,000 – 200,000	653	19.88	
	201,000 – 300,000	1449	44.11	
	301,000 – 400,000	438	13.33	
	401,000 – 500,000	219	6.67	
	501,000 – 600,000	0	0.00	
	Total	3285	100.00	224,764
Income after insurgency or insecurity	< 100,000	2470	75.21	
	101,000 – 200,000	750	22.84	
	201,000 – 300,000	64	1.95	
	301,000 – 400,000	0	0.00	
	Total	3284	100.00	76,736

Source: Field survey, 2023

Table 6: Challenges faced by farmers in livestock production

Variables	SD		D		A		SA		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Mean	SD
Insurgency, banditry, Conflict	0	0.00	0	0.00	0	0.00	3285	100.00	4.00*	0.0
Insufficient capital for farmers to participate in group activities	0	0.00	1	0.03	1185	36.07	2099	63.90	3.64*	0.5
Lack of government assistance	0	0.00	366	11.14	832	25.33	2087	63.53	3.52*	0.7
Water unavailability/scarcity	0	0.00	366	11.14	1300	39.57	1619	49.28	3.38*	0.7
Lack of knowledge in livestock rearing	0	0.00	227	6.91	2561	78.01	495	15.08	3.08*	0.5
Pilfering/theft	62	1.89	145	4.41	2621	79.79	457	13.91	3.06*	0.5
Lack of grazing fields or animal feeds	0	0.00	525	15.98	2306	70.20	454	13.82	2.98*	0.5
Pest and diseases	0	0.00	432	13.15	2427	73.88	426	12.97	2.73*	0.6
Lack of Veterinary attention	1542	46.94	1196	36.41	355	10.81	192	5.84	1.76	0.9
Lack of technical knowledge of how to manage the animals properly	2097	63.84	1125	34.25	63	1.92	0	0.00	1.38	0.5
Unavailability of labour	2633	80.15	652	19.85	0	0.00	0	0.00	1.20	0.4
Poor weather conditions	2844	86.58	244	7.43	165	5.02	32	0.97	1.20	0.6
Farmer willingness to rear animals	2994	91.14	70	2.13	221	6.73	0	0.00	1.16	0.5

Source: Field survey, 2023

*Agreed factor (mean \geq 2.50)

Table 7: Test of difference in income earned by farmers before and after incidence of insecurity

Income	Income (₹)				Mean difference	t-test	Remark
	N	Mean (₹)	Std. Deviation				
Before insurgency or insecurity	3284	224,756.39	108456.4				
After insurgency or insecurity	3284	76,735.69	48469.1	₹ 148,020.70	71.47*	P<0.01	

Source: Computed from field data, 2023

*Significant at 1% level (critical t-value = 2.326)

Table 8: Extent insurgency affected livelihood status of livestock farmers

Category	Observed N	Observed. %	Expected N	Expected %	Chi-square (χ^2)
Average	129	3.93	1095.0	33.33	
High	453	13.79	1095.0	33.33	
Very high	2703	82.28	1095.0	33.33	
Total	3285	100.00	3285	99.99	3589.9 (p< 0.01)

Source: Calculated from field data, 2023