



Implications of terrorism/farmers-herders conflicts on small-scale maize farmers in Agatu local Government Area of Benue State, Nigeria

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Abstract

This paper examined the implications of terrorism/farmers-herders conflict on small-scale maize farmers in Agatu LGA of Benue state. The responses collected from the questionnaire distributed were analyzed using the multiple regressions model, independent sampled t-test and Spearman's correlation coefficient. The R^2 shows the extent to which the socio-economic characteristics predict the output of maize production (0.143). While the adjusted R of 0.080 shows that 80% variance in the maize yield/output was accounted for by the combined effect of socio-economic characteristics. Durbin Watson's statistics was 1.847, which is within the acceptable level. Therefore, it has been statistically established that labour in the study area has a coefficient level of -11.637 and a $p < .01$). The result of the independent sampled t-test showed that the mean value of ₦157640.00 and 30,646.82 for farmers before and during the major conflicts shows that the farmer-herder conflict had a devastating and negative effect on farmer's income. The Spearman's correlation coefficient also indicated that the herders-farmers conflict has negatively affected maize production in the study area. This study discovered that the continuous terror attacks and the farmer-herder conflict in the studied communities of Agatu LGA of Benue State have a significant negative impact on maize output. The government should ensure that necessary measures are put in place to check this mayhem. Therefore, it is recommended that government should come up with a new grazing resolution and deployment of modern technology in conflict-prone communities.

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Introduction

In recent times, Nigeria has witnessed an unprecedented plague of crisis and insecurity, each leading to loss of lives and destruction of properties; notable is the Boko haram terrorist group and the farmer-herder conflict operating in different parts of northern Nigeria, which has negatively affected the state of affairs as well as agricultural productivity. According to Adeladja and George (2019), terrorism is “the premeditated use or threat to use violence by individuals or group of individuals to achieve political or social control with the aim of intimidation of a large audience beyond that of the immediate victims”. The major reason behind some of these attacks was to overthrow and take absolute control of the farmland and communities of their victims. FAO, (2021). As mentioned, in some insurgencies, groups use terrorist tactics such as extreme violence against rural farmers, state facilities, critical national infrastructure and assets to achieve their political and selfish objectives (George *et al*, 2020).

Oftentimes, the attack carried out by terrorists on government infrastructures was to capture the state of affairs of the country with self-preservation objectives. Territorial terrorism clearly has implications for crop production in north-central states. Despite the potential of the agricultural activities in Benue state, known as the food basket of the nation, the farmers/herders conflicts have affected agricultural activities to a reasonable extent. Oftentimes, the entire agriculture sector in Sub – Saharan Africa has faced a series of attacks as a result of consistent conflicts. First, the recently emerged terrorist organizations such as ISIS in Iraq and Syria, Boko Haram in Nigeria and Al-Shabaab in Somalia have ambitions to control territories and establish parallel states. Both require a stable food supply and a strong agricultural base. Secondly, they try to gain access and control through attacks so they can create an artificial scarcity of resources in target areas. Failure of the government to provide a strong security force within the area that will be capable of solving the problem. Most times, in conflict-affected areas, the primary provider of resources is the agricultural

sector and hence, it is particularly vulnerable to insurgent activities. Third, conflict results in deaths and large population displacements, causing a shortage of labor supply. This will adversely affect farming in developing countries where agriculture is a dominant industry and is largely labor-intensive. Finally, the security risks due to frequent episodes of violent conflicts could prevent farmers from leaving their villages and working in remote farm fields. This will eventually delay planting and harvesting activities which also affect the output of maize negatively in the study.

Undoubtedly, there is so much potential in the agriculture sector in Nigeria. When properly managed and harnessed, it has the capacity to boost the livelihood and income potential of small-scale farming households and will improve the food and nutritional security and employment opportunities as well as elevate the country to the rank of leading players in global food markets.

However, there are various barriers to repositioning Nigeria’s agricultural sector. These include, among others, the farmers-herders crisis, terrorism, corruption, and lack of access to credits as well as quality agricultural inputs, weak implementation of policies, poor market access and national insecurity (Downie, 2017).

FAO (2021), reported that despite achieving remarkable progress in the first-millennium development goal (MDGs) of eradicating extreme poverty globally, food and nutrition security concerns persist in many low-income countries like Nigeria. Sub-Saharan African countries are yet to make any reasonable progress in sustainable development and food security, especially in regions prone to conflicts. WHO (2021), estimated that about 381.4 million malnourished and stunted growth people in 2019 originated from countries plagued with conflict. Mbih (2020), reported that herder-farmer conflicts have been ongoing historically, and the frequency and the level of impact on crop production are increasing on a daily basis. These terror attacks/conflicts have a

positive direct impact on small-scale rural maize farmers, which results in insecurity and farmers' inability to cultivate their farmlands.

In the north-central of Nigeria, the sustained farmers-herders activities have had a negative impact on agricultural activities as well as crop production. Due to the incessant attacks on farmers in the study area, farmers are always afraid of cultivating their farmlands under such unsaved conditions. (Eigege and Cooke, 2016). Herdsmen have become a major threat to farming communities due to continuous attacks on these communities with a lot of casualties. The resultant effect of these incessant attacks would lead to food shortages and worsen the already bad food insecurity profile of Nigeria.

It is therefore important to investigate the implications of terrorism/farmers-herders conflict in Benue state so as to proffer solutions by suggesting necessary policy recommendations that will help curtail banditry and farmers-herders conflict in the study area.

Previous studies (Minoiu and Shemyakina, 2014; Adelaja and Awokuse, 2021; Verwimp and Munoz-Mora, 2018; Rockmore, 2012) have carried out a study on the effects of armed conflicts on the level of nutrition status of children, as captured by anthropometric measures. While some studies (Pietrelli 2019; George, Adelaja and Awokuse 2021) focused on conflicts and food security as well as violent conflicts causing deaths. Akresh et al, (2014) Akresh. Verwimp, (2015) investigated the relationship between armed conflicts and food consumption, but yet, there is an obvious lack of studies to the best of my knowledge detailing the effects of farmers-herder conflict on small-holders maize farmers in Benue state. This study intends to investigate the relationship between farmer-herders conflicts and how it affects maize cultivation in the study area and how it has negatively affected the household food security of farmers as well as some policy decisions that will help to improve and boost crop production as well as minimize conflict in the

study area.

The insecurity in Nigeria is having a serious negative impact on farming communities as it prevents them from engaging in crop production at optimal levels. Aliyu (2015) reported that between 2011 and 2015, reasonable progress was made in reviving the efforts of the Nigerian government. For instance, through the initiative known as the Growth Enhancement Scheme (GES), a database of smallholder farmers was created, which facilitated the efficient distribution of farm inputs, especially fertilizer and improved higher-yielding crop varieties to these farmers. Despite the fact that some studies have been conducted on farmers and herdsmen crisis in Nigeria, none has specifically focused on the correlation between farmers-herder conflict on maize cultivation and food security in Benue state. The broad objectives of this study are to investigate farmers-herders conflicts and their effects on crop production in the study area, while the specific objectives of the study are to; Identify the socio-economic characteristics of respondents in the study area, determine the factors affecting small-scale maize farmer's output/yield in the study area; compare the income level of maize farmers before and during the conflicts; evaluate the correlation between farmers-herders conflicts and crop production in the study area.

Material and Methods

Sampling and Data Collection and Study Area

This study employed a purposive sampling procedure, where Agatu local government areas were selected. The paper relied on primary data from maize farmers in Agatu Local Government Areas in Benue State, Nigeria. The LGA has about 30-60 communities. Twelve (12) communities were randomly picked for the study and 12 maize farmers were selected from each of the communities. This is because maize is grown in all communities of Agatu LGA. During data entry and analysis, we observed that eight (12) returned questionnaires were not properly completed by the farmers. These uncompleted questionnaires were not included in the final analysis. This reduced the number of questionnaires from 132 maize farmers

proposed to 120 farmers. We collected data on socio-economic, factors affecting maize farmers, yield/output, and income level of maize farmers before and during the conflict.

Agatu local government area is located in Benue state (Benue state is located in north-central Nigeria) between Latitude 7° 52' 19" N and longitude 8° 0' 29" E with a total population of about 80,000. It is acclaimed as one of the food baskets of Benue state because of its diverse, rich agricultural produce such as maize, rice, beans, cassava, yam, soya beans, sorghum, millet, beniseed, melon and many more production. Agatu LGA also accounts for over 80% of fish production. It has a vast fertile landmass which is tilled by the farming population that treasures agriculture as the bedrock of its livelihood, but the farmers-herders conflict has discouraged small-scale farmers from effectively engaging in crop production for fear of being attacked by killer herdsmen. The communities affected in Agatu LGA include Aila, Akwu, Adagbo, Okokolo, Ugboju, Odugbeho, Obagaji and Egba (Premium Times <http://www.imbenue.com>, 2022).

Both descriptive and inferential statistics were used for the analysis of data. Frequency distribution tables, mean and percentages were used to analyze the socio-economic characteristics of respondents in the study area, and multiple regression analysis was used to determine factors affecting maize farmers' yield/output; an independent sampled t-test was used to compare the mean income of maize farmers before and during the conflict while correlation coefficient was used to estimate whether the farmers-herders conflict has negative effects on maize production and food security in the study area. These methods are in agreement with the research conducted by Enwa *et al.* (2023) on the impact of farm mechanization on rice production. Ugwuja and Onwuachu (2019) make an assessment of Nigeria, where a multiple regression model was adopted, as well as the independent sampled t-test to measure and compare the mean income of maize farmers before and during the major conflict in the study area.

Model Development

Multiple regression model: The multiple regression model was used to determine factors affecting maize yield in Agatu LGA. The regression model is specified as follows:

$$Y = b_0 + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + b_5 X_5 + b_6 X_6 + b_7 X_7 + b_8 X_8 + e_i$$

Where;

Y = Output

X₁ = age of farmers (in years);

X₂ = educational level (years in formal school);

X₃ = herders/farmers conflict

X₄ = farmers experience (in years);

X₅ = labour

X₆ = Sex of the respondents (dummy variable; 1=female; 0=male);

X₇ = farm size

X₈ = Membership of association

Pearson's correlation coefficient

The relationship between the dependent and independent variables is given as follows:

$$Y = f(X_i) \dots \dots \dots (2)$$

$$r = \frac{n \sum x_i y_i - \sum x_i \times \sum y_i}{\sqrt{n \sum x_i^2 - (\sum x_i)^2} \sqrt{n \sum y_i^2 - (\sum y_i)^2}}$$

Where:

r = Correlation Coefficient

x_i = Values of the X-variable in a sample

x = Mean of the values of the x- variables

y_i = values of the y-variable in a sample

y = Mean value of y-variables

T-test

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{s_1^2}{N_1} + \frac{s_2^2}{N_2}}}$$

Where:

= mean of the first set of observation

= mean of the second set of observation

S₁ = standard deviation of the first set of observation

S2 = standard deviation of the second set of observation

N1= total number of observations in the first set

N2 = total number of observations in the second set.

Results and discussion

Table 1 shows the socio-economic features of the respondents, and the table revealed that 60.6% of the

respondents were male. While 39.4% were female. The majority (60.6) of the farmers were males. This implies that there were more male farmers than female farmers in maize production. The result agrees with the study carried out by Chisom (2021) on the impact of the food crisis on the supply chain, where the male respondents were more than their female counterparts.

Table 1. Socio-economic characteristics of respondents in the study area.

| Variable | Frequency | Percent | Mean/mode |
|---------------------------|-----------|---------|-----------|
| Gender | | | |
| Male | 63 | 60.6 | Male |
| Female | 41 | 39.4 | |
| Age | | | |
| Less than 20 years | | | |
| 20 – 40 years | 54 | 51.9 | |
| 41 – 61 years | 20 | 19.2 | 41 years |
| 62 – 82 years | 20 | 19.2 | |
| Above 82 years | 10 | 9.6 | |
| Household size | | | |
| Less than 3 persons | 15 | 14.4 | |
| 3 – 5 persons | 49 | 47.1 | 6 persons |
| 6 – 8 persons | 24 | 23.1 | |
| Above 8 persons | 16 | 15.4 | |
| Farming experience | | | |
| Less than 5 years | 14 | 13.5 | |
| 5 – 15 years | 50 | 48.1 | 11 years |
| 16 – 26 years | 28 | 26.9 | |
| 27 – 37 years | 12 | 11.5 | |
| Size of farm | | | |
| Less than 2 | 28 | 26.9 | |
| 2 – 5 | 63 | 60.5 | 5 |
| 6 – 9 | 9 | 8.7 | |
| Above 9 | 4 | 3.8 | |
| Impact of Conflict | | | |
| Yes | 98 | 94.2 | Yes |
| No | 6 | 5.8 | |
| Income Level | | | |
| 100,000-400000 | 27 | 25.9 | |
| 400,000-700000 | 66 | 63.5 | 55000 |
| 700000-1000000 | 11 | 10.5 | |

Source: (Field survey 2022).

The study also revealed that the majority of the respondents (59.1%) in the study are between the age brackets of 41- 61 years of age, and 19.2% of the respondents fall between the age bracket of 41-61 years. This implies that most of the respondents in the study area are in the active age group, meaning that at this age, they are more efficient and productive. Age is a key factor in the agriculture sector because it influences farmer's productivity.

This implies that the younger a farmer is, the more active and productive he/she may be. The study also showed that a larger proportion of the respondents have spent between 5-15 years (48.1%) on their respective farms, and 26.9% of the respondents spent 16-20 years in their farming business. The study also revealed that 60.5% of the respondents in the study area have farm sizes of at least 2- 5ha, while 26.9% have about 2ha this study implies that more than half

of the respondents are small-scale farmers, which could be the reason why they were so affected by the continuous conflict. The study is in agreement with the report of Okoro (2018), which stated that the herders/farmers conflict had been a contributory factor to low socio-economic development and low

disposable household income and has destroyed a lot of livelihood in Nigeria. The majority (94.2%) of the respondents also affirmed that the herder- farmers' conflict has destroyed their sources of livelihood to a great extent, while 5.8% of the respondents said their crops were not destroyed.

Table 2. Showing the regression result of factors affecting the production/cultivation of maize output.

| Variables | Coefficient | Standard error | t-test | p -value |
|---------------------------|-------------|----------------|--------|----------|
| (Constant) | 50.431 | 11.079 | 4.552 | 0.000 |
| Age | 0.070 | 0.156 | 0.450 | 0.654 |
| Educational level | -0.630 | 0.535 | -1.176 | 0.242 |
| Experience Conflict | 4.094 | 3.478 | 1.177 | 0.242 |
| Farming experience | -0.131 | 0.190 | -0.687 | 0.493 |
| Labour | -11.637 | 3.443 | -3.380 | 0.001 |
| Sex | -0.019 | 4.063 | -0.005 | 0.996 |
| Farm size | 0.087 | 0.267 | 0.326 | 0.745 |
| Membership of Association | 6.658 | 3.364 | 1.979 | 0.050 |
| R Squared | 0.143 | | | |
| Adjusted R Square | 0.080 | | | |
| Durbin- Watson | 1.847 | | | |

Significant at $p < .01$; * = Significant at $p < .05$.

Results of the multiple regression model revealed that R^2 shows the extent to which the socio-economic characteristics predict the output of maize production (0.143). While the adjusted R of 0.080 shows that 80% variance in the maize yield/output was accounted for by the combined effect of socio-economic characteristics. In contrast, the Durbin Watson statistics was 1.847, which is within the acceptable level. Therefore, it has been statistically established that labour in the study area (coefficient -11.637; $p < .01$) has a significant negative effect on maize output in the study. This implies that, during the conflict, maize farmers in Agatu local government could not employ labour due to the fact that farmers and labourers were afraid to work in conflict-prone communities as a result, the maize output was drastically reduced/affected. Farmer-herder conflict (coefficient 4.094; $p < .005$) has a positive and significant effect on maize output/yield; this implies that a percentage increase in farmer's- herder conflict will result in a 4.094% decrease in the output of maize. The study also revealed that membership of association (coefficient 6.658; $p < .005$) has a positive

and significant effect on maize yield. This also implies that a percentage increase in farmers belonging to an association will result in a 6.658% increase in maize yield. The regression result is in agreement with the study carried out by Akinpelu and Aroriode (2021); Audu (2013), where it was revealed that as a result of the farmer-herder crisis, labourers are not willing to work in the farmland of conflict-prone areas. Farmers who belong to an association tend to do better than those farmers operating outside an association.

The Pearson correlation coefficient of crop output during the conflicts (0.830; $p > 10\%$) was positive but not statistically significant.

Table 2 shows the relationship between herders-farmers' conflicts on farm output. The correlation matrix was used to determine the relationship between herders-farmers conflict and maize production in the study, and the result indicated that the herders-farmers conflict has negatively affected maize production in the study area.

Table 3. Correlation between herder-farmers conflict and crop production in the study area.

| Correlations | | | |
|-----------------------------|---------------------|-----------------------------|-----------------|
| | | HERDER-FARMERS CONFLICTS | CROP PRODUCTION |
| HERDERS-FARMERS CONFLICT | Pearson Correlation | 1 | .011 |
| | Sig. (2-tailed) | | .830 |
| | N | 399 | 399 |
| CROP PRODUCTION | Pearson Correlation | .011 | 1 |
| | Sig. (2-tailed) | .830 | |
| | N | 399 | 399 |

Source: (Field Survey 2022).

This also implies that the conflicts between- farmers and herders in Agatu LGA of Benue State have led to the scarcity of some farm produce and also a huge loss and reduction in the income of farmers. This is evidenced by the positive relationship of the correlation coefficient at 0.830 $p > 10\%$. Finally, the result shows that the crises have led to the displacement of farmers in the LGA of the state. It also showed that farmers experienced a negative impact of the crisis as compared to the herders in the

study area. However, some of the cattle owned by the herders were also murdered. A similar study was conducted by Obasanmi and Enuma (2022) on the effects of farmer-herder conflict on socio-economic development in Nigeria, where the conflict took a negative toll on economic development in Nigeria. Another study conducted by Okafor and Chikalipah (2021) and found that terrorism had a negative and devastating effect on agricultural production in Nigeria.

Table 4. T-test results showing the income of farmers before the major Conflict and During the Major Conflict.

| Paired Samples Statistics | | | | |
|----------------------------------|-----------|-----|----------------|-----------------|
| | Mean | N | Std. Deviation | Std. Error Mean |
| INCOME BEFORE THE MAJOR CONFLICT | 157640.00 | 399 | 299537.805 | 14995.647 |
| INCOME DURING THE MAJOR CONFLICT | 30,646.82 | 399 | 179042.260 | 8963.324 |

Source: (Field Survey 2022).

The result in Table 4 revealed that due to the conflict between the two selected groups, the quality of social life and livelihood was greatly affected. This is evidenced by the mean value of #157640.00 and 30,646.82 for farmers before and during the major conflicts. This finding also shows that conflict between these groups has hindered their social relations in an adverse way. Furthermore, the result shows that the farmers/herdsmen's crisis has caused the loss of life and properties/ farm produce in the affected communities of Agatu Local Government Area of Benue State. This finding indicates that both actors and community members have lost some of their properties as a result of the crises. Finally, the finding shows that conflict between these two groups

has rendered a lot of the respondents jobless this is a result of fear of attack on their farms and versa visa in concordance with the study conducted by Nnaji et al. (2023); David et al. (2023) where they discovered that crisis generally affected the growth and development of industries in developing economies.

Conclusion

Tremendous efforts of the federal and state governments towards finding a solution to the crisis between herders and farmers in the study area has been a difficult nut to crack due to religious, ethnic and political issues. The study concludes that socio-economic activities would continue to be affected unless the root causes of the conflict which ranges

from the destruction of crops by cattle and harassment of Nomads by host community youths amongst others are addressed. The following policy based recommendations are suggested for proper conflict resolutions between the Fulani herdsmen and farmers in Agatu local government area of Benue state.

First, both formal method (police/courts) and informal method (traditional leaders) of settling disputes between herders and farmers should be explored to restore normalcy in every crisis situation relating to herding and farming.

Second, members of the communities and herders alike should work together and embrace peace, promote and inculcate the spirit of commitment to peaceful co-existence so as to reduce the impact of conflict on food security;

Third, government should implement the Livestock Transformation Plan (NLTP) amidst constant clashes; Fourth, government should come up with new grazing resolve and deployment of modern technology in conflict prone area.

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