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Financial Implications Of Farmers And Herders Conflict In Nigeria

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ABSTRACT:
Situations involving farmers and herders are common, and these conflicts have posed severe dangers to farmers' and herders' ability to survive and earn a living. These situations are linked to the conflict theory which views social and economic institutions as a tool of the struggle between groups or classes, used to maintain inequality and the dominance of the ruling class. Interrogating the conflict theory, this study uses model variables and proxies to evaluate the financial implications for farmers and herders in Nigeria. The study adopted the ex-post facto research design, to shed light on the financial implication of the herders-farmers conflict in Nigeria. The study relied on data accessed from the Armed Conflict Location & Event Data Project (ACLED) and the agricultural sector contribution to real GDP data extracted from the Central Bank of Nigeria (CBN) statistical bulletin 2019. The study clearly shows no significant difference in the herders-farmers conflict occurrences from 1st quarter of 2010 to the last quarter of 2019. This is quite surprising as the *a priori* expectation and prior studies are unanimous that the confrontation between herders and farmers has adverse financial implications. However, the study also corroborates the assertion that there is a significant relationship between the fatalities from herders-farmers conflicts and the agricultural sector's contribution to real gross domestic product in Nigeria.The study recommends that the government, via the security agencies and judiciary, ensure that culprits of the herders-farmers conflicts are lawfully dealt with.

KEYWORDS: *ACLED, Conflicts, Livelihood Farmers and Herders*

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INTRODUCTION

In Nigeria, herder-farmer conflicts have existed for a very long time. Even in biblical times, there were confrontations of this sort. According to the story in the book of Genesis, Abel was a herdsman, and Cain was a farmer. There was great hostility between the two, even if the Bible does not specify how often Abel's cattle damaged Cain's lands. They eventually appeared before God, bearing an offering. In his wisdom, God accepted Abel's offering and rejected Cain's. When Cain felt rejected, he killed Abel to vent his resentment (Genesis Chapter 4: 1–8).

According to Gyong (2007), conflict is a fight for control and supremacy of one person or group by another to subdue or even eliminate the adversary. Conflicts between farmers and herders in Nigeria are predominantly traceable to northern Nigeria based on their primarily pastoralist occupation. To stem the tide of conflicts associated with this occupation, the Northern Nigerian government established a grazing reserve in 1965. In the North, there were reportedly 417 new grazing reserves established. Following this deal, the government gave the herders a place to live and access water, medication, and immunizations in exchange for a tax payment. Farmers and herders shared a largely peaceful existence in the country. Studies found that most conflicts in the 20th century occurred in West Africa's savannah belt. Cattle rearing was primarily prevalent in the Guinea, Sudan, and Sahel Savannah belts, where small-scale crop production was done during the brief rainy season. The herders had plenty of space and time to feed their livestock. With increased pasture withering brought on by industrialization, irrigation, urbanization, demographic shifts, and other national phenomena, herders moved southward toward the coastal region, where the rainy season is longer. The soil retains moisture (Tonah, 2006).

Conflict situations involving herders versus farmers are common and have posed severe dangers to farmers' and herders' ability to survive and earn a living. The fight over access rights to fields and cattle lanes, which are already commonplace and appear to have apparent resolutions, is also particularly controversial (Abbas, 2009). According to Coser (2000), conflicts over the inestimable value of land and its resources are inevitably brought about by competing claims to dwindling resources.

However, as Moritz (2010) described, some people think that pastoralists and farmers have a reciprocal relationship based on exchange and assistance. According to Mwamfupe (2015), their partnership is characterized by conflict and complementing actions. Hussein (1998) states that their relationship has always alternated between competition, cooperation, and disagreements.

Since it is well known that most of Nigeria's herders come from the North and move from the Sahel to the coast, the northern Nigerian government built the grazing routes, which later governments neglected. The herders returned to the seasonal grazing route that had been disrupted by industrialization after the neglect. Herders and farmers engaged in combat afterward. While the animal frequently deviates from the grazing path into the farmland. The farmer, in retaliation, kills the animal or quarrels with the herder, hence the conflict between them. Recently, the conflict between them has threatened national unity and security.
Besides successive governments' and urbanization's closure of the grazing reserve and routes, the shrinking Nigerian Chad basin is another major contributor to the farmers'/herders' clash in Nigeria. The European geographers who surveyed Lake Chad in 1823 documented it as the world's largest lake.

The report states that since 1960, the Lake Chad basin has gone back up to 90% due to climate change, increase in population, irrigation, etc. The basin covers some parts of Nigeria, Chad, Niger, and Cameroun. An estimated population of 30 million people are living within the basin and make means of livelihood through it among them are the herders. As pastureland, animal feed, fishing, and other activities at the basin are reduced, conflicts increase, and migration becomes imminent. The dwindling of Lake Chad has a devastating impact on Nigeria and other African countries.

Violent clashes are not the only consequence of generally increasing aridity and the shrinking Lake Chad for Nigeria. International organizations such as the United Nations (UN) have warned of famine in some parts of Nigeria, particularly North Eastern Nigeria. The possible cause has to do with insurgency in addition to poverty and environmental degradation. The current food crisis is compounded by a lack of water and cattle

destroying the farms. Almost all parts of Nigeria are now affected by the herder/farmers clashes giving rise to food shortage and high prices.

In Nigeria, agriculture has historically made up close to 60% of the country's GDP. It does not now contribute up to 25% of GDP. This may be partly due to migration and conflicts between farmers and pastoralists. Over the past ten years, tensions have risen, and violence has swept across the nation more frequently. Over 2000 individuals, primarily women and children, are known to have died recently in the states of Benue and Kaduna alone. The farming community, as well as survivors and those in camps, were killed. Food prices have increased as a result of these. The herders and farmers, as a consequence, suffer a significant financial loss at the micro and macro levels, which in turn restrains growth.

Accordingly, this study addresses the financial implications of the herders-farmers conflict in Nigeria through hypothesis testing. Based on the link between conflicts and farmers, the paper hypothesizes that (i) there is no significant difference in the number of herders-farmers conflict in Nigeria. (ii) there is no significant difference in the fatalities resulting from herders-farmers conflict in Nigeria. (iii) there is no significant relationship between herders-farmers conflict occurrences and agricultural sector contribution to real gross domestic product in Nigeria, and finally (iv) there is no significant relationship between the fatalities resulting from herders-farmers conflicts and agricultural sector contribution to real gross domestic product in Nigeria.

LITERATURE REVIEW

Conflict is a struggle or contest among person(s) or people with opposing needs, ideas, beliefs, values, or goals. Conflict denotes the incompatibility of subject positions (Diez*et al.,* 2006).

Conflict theory focuses on the competition between groups within society over limited resources. These theories view social and economic institutions as a tool of the struggle between groups or classes, used to maintain inequality and the dominance of the ruling class. Many factors lead to conflict which include but are not limited to rapid or slow growth in the human population, unequal distribution of material resources, national power struggle and struggle over communal values, and orientation between the older and younger generations. There is neither a monolithic theory of conflict nor is there any monolithic school of thought that explains the causes of conflict. Conflict is all about power struggle, and struggle is not separated from social life itself (Dunne *et al.,* 2007). This study is anchored on culture conflict theory.

The culture conflict theory suggests that crime is caused due to the clash of values that arises when different social groups have different ideas of acceptable behavior. Cultural conflicts are difficult to resolve as parties have different beliefs. Cultures are like underground waters that run through our lives and relationships, giving us messages that shape our perceptions, attributions, judgments, and ideas of self and others. Though cultures are powerful, they are often unconsciously influencing conflict.

The conflict among herders-farmers in Nigeria is mainly traceable to culture. Notably, culture is constantly changing and relates to the symbolic dimension, where we constantly make meaning and enact our identities. At the early stage, most conflicts do not come with violence. If it continues unabated, it leads to physical assaults and killings. This is the case in Nigeria among the herders and farmers. Deadly conflicts can result in a transformation in the way things are done. In Nigeria, we have not taken seriously the conflicts between herders and farmers, otherwise, we should have found a middle point for settlement that will be beneficial to all. In measuring conflicts, the following are frequently used as variables:

1. Conflict: The number of herders-farmers' conflict cases may be extracted in Nigeria from the Armed Conflict Location & Event Data Project (ACLED).
2. Fatalities: The number of deaths resulting from herders-farmers' conflict cases in Nigeria, as extracted from the Armed Conflict Location & Event Data Project (ACLED).

Financial Implications of Herders-Farmers Conflict

Armed conflicts pose various risks to a country's economic growth and development. In an attempt to measure the impact of conflict on economic growth and development, it may bring resilience strategies and drive resources towards conflict prevention.

It is important to note that accurate conflict measurement is difficult. The existence of conflict makes economic activities difficult, and conflict does interact with the economy through multiple, complex pathways. Besides the immediate effect of conflicts on economic growth and development, other indirect effects may last long after the conflict has receded. When conflicts are allowed to reoccur in a given situation, the threat to economic growth and development is threatened more than ever. Most conflicts lead to shock, unemployment, loss of investment, refugees in their country, reduction in health care provision, and large out-of-school children.

The financial implications of the herders-farmers conflict are but not limited to killing, destroying houses, destroying farmlands, polluting the water sources of the people, and displacing people from their homes (Opoku, 2014). The killing of people, including farmers, has continued unabated- it is on record that over two thousand persons were killed in Benue and Kaduna States, respectively, since 2015. This lowers the productivity of the nation. The source of livelihood is destroyed. As the herds destroyed many farmer lands, the farmer's livelihood was dropped. Both farmhouses and living houses are destroyed in the process of this conflict. Herdsmen inflicted injuries on people and brought communities down just because the farmer did not allow the cattle to destroy his farm or one of his cattle was killed.

In Nigeria, the farming populace mainly consists of women and children. They are in internally displaced homes, thereby reducing the farming populace and giving rise to the high cost of food in the market. All these contributed to Nigeria's low Gross Domestic Product (GDP).

Again, the financial implication of conflict is that it causes inflation (Caldara *et al.,* 2022). Their study found that a heightened risk caused by the Russia-Ukraine war led to a 1.3% increase in average global inflation in the second half of 2022.

The conflict negatively impacts income, deteriorating investment and financial flows like aid, remittances, trade and supply chains, and even tourism and transport. It affects public expenditures as the government will spend less on social infrastructure and more on military hardware to bring the conflict under control. In a conflict situation such as the herders-farmer's, research on the impacts of conflicts across a panel of 42 Sub-Saharan African countries finds that the outbreak of violence reduces tax revenue per capita by an estimated average of 1.7% (Dama, 2021).

In Sub-Saharan Africa and the world over, there has been an intensity of conflicts since early 2000; an uptick in conflict mirrors the global increase. History has repeatedly shown that conflicts impose immeasurable human suffering and significant economic and social costs. The loss of life, destruction of infrastructure, human capital institutions, political instability, and greater uncertainty associated with conflicts have impeded investment and economic development during and after the conflicts. This usually leads to a conflict trap.

During and after conflict, public finance is affected frequently, lowering revenue by destroying part of the tax base while raising military expenditure, such as in the North East in Nigeria. Fiscal and Public debts rise, and resources shift from social and developmental spending, increasing the conflict. When conflict is unabated, it poses additional challenges because there will be a spillover effect. Hegre and Sambanis (2006) said that conflicts can spread to neighboring states, a direct spillover effects. It is an indirect situation where it depresses economic activities due to increased uncertainty, trade disruption, or social strains due to an increased influx of refugees. (Qureshi, 2013).

The Gross domestic product of countries will most likely be diminished due to conflicts. For instance, if we compare real GDP per capita before the start of a conflict with the actual outcome following the onset of the conflict, the outcome is predictable.

The literature has given significant attention to the effect of conflicts between farmers and herders on various socio-economic issues, with mixed outcomes, as documented below.

In a paper titled "Effect of Communal Conflict on Economic Activities in Osun State, Nigeria," Popoola (2020) examined this issue. 120 people were surveyed to gather information. The results of a descriptive investigation showed that all commercial activity, including banks, government offices, stores, and private investment outlets, had been completely shut down. The study concluded that intergroup conflict has a detrimental impact on investment activity.

Tersoo (2016) investigated the tension between farmers and herders in Taraba State, Nigeria. The tragedy of the common theory, which holds that when a group shares a resource, it will be destroyed, was selected for the study. The data showed several human fatalities, destruction of farmland, homes, and schools, as well as a loss of human capital. A strict localization policy for pastoralists by international best practices will help avoid such disputes.

Dimelu and Audu (2017) looked at issues with livelihood in the herdsmen-farmers conflict in Nigeria's Kogi State. The study examined the reasons behind and repercussions of the conflict between farmers and herders in Kogi State. Most crop farmers were men (85.2%), were married (84.9%), and were generally 51 years old. They were small-scale farmers who cultivated yam (97.8%), cassava (92.6%), and maize (92.6%) primarily for income and household nourishment. Their average farmland size was 2.9 hectares. Farmers claimed that cultural differences, interference with livelihoods, and infringement of laws and traditions were the leading causes of conflict. The report recommended that governments and non-governmental groups support multi-stakeholder initiatives that examine, among other things, how to involve the general public in the development of policies and techniques for resolving disputes.

Ahynetal (2018) investigated the effects of the herder-farmer conflict on national integrations in Nigeria. The study investigated the herders-farmers dispute in the South-West, North Central, North-East, North-West, South-East, and South-South using historical descriptive research. The study concluded that not addressing the herders-farmers issue will have far-reaching implications for Nigeria's national cohesion.

On the other hand, Rukwe (2019) and Ijirshar*et al.* (2015) undertook various studies on the impact of the herders-farmers conflict in the agricultural sector. Their studies found that the conflict hurts food security, agricultural productivity, farmers' incomes, poverty status, farmers' produce in storage, residents, farm household properties, farm labor, infrastructural facilities, and public and private facilities.

METHODOLOGY

Using an *ex-post facto* research design, this study examines the financial implications of the herders-farmers conflict in Nigeria. The scope of the study covers the reported cases of herders-farmers conflict in Nigeria as documented by the Armed Conflict Location & Event Data Project (ACLED) and the agricultural sector contribution to real GDP data as captured by the Central Bank of Nigeria (CBN) statistical bulletin 2019. The study period spans from the 1st quarter of 2010 to the 4th quarter of 2019. The period marks a period of heightened reports of conflicts between herders and farmers. Providing a window for comparing how farmers and herders related before and after is the reason for the 1st quarter of 2010 to the 4th quarter of 2019.

The information collected spans the first quarter of 2010 through the fourth quarter of 2019. It includes information on the number of fatal herder-farmer conflicts and the agricultural sector's contribution to GDP (AGDP).

The models used in this investigation involved comparing the annual means of the number of herders-farmers conflicts and fatalities during the years under review to assess whether significant differences existed. This was done using the one-sample t-test model. However, a linear regression model examined the association between the number of conflicts between herders and farmers, the number of fatalities resulting from those conflicts, and the agricultural sector's GDP contribution.

The one-sample t-test was used to test the hypotheses one and two of this study. The one-sample t-test is usually modeled as follows:

$$t = \frac{\bar{x}-\mu}{\sqrt{s^2/n}} \quad (1)$$

Where,
t = Student t-statistic
x bar = Sample mean
μ = Population mean
s^2 = The sample variance
n = The sample size

Regression Model
A linear regression model was used to ascertain the degree and dimension of the relationship among the variables outlined in the study

$$ARGDP = \beta_0 + \beta_1 Conflict + \beta_2 Fatalities + e \quad (2)$$

Where,

ARGDP	=	Agricultural Sector Contribution to Real Gross Domestic Product
Conflict	=	Number of Herders-farmers' Conflict
Fatalities	=	number of deaths resulting from Herders-farmers' Conflict
β_0	=	constant
β_1 to β_2	=	coefficients to be estimated
e	=	stochastic variable or error term.

Description of Variables
As derived from the conflict theory, the following metrics are frequently used for studying conflicts in literature.

Dependent Variable
- ARGDP: This accounts for the agricultural sector's productivity. The variable was extracted from the real sector section of the CBN Statistical Bulletin 2019.

Independent Variables
- Conflict: The number of herders-farmers' conflict cases extracted from the Armed Conflict Location & Event Data Project (ACLED).
- Fatalities: The number of deaths from the herders-farmers' conflict cases extracted from the Armed Conflict Location & Event Data Project (ACLED).

RESULTS AND DISCUSSIONS
The data presented below were sourced from the Armed Conflict Location & Event Data Project (ACLED) and Central Bank of Nigeria (CBN) Statistical Bulletin 2019.

Table 1: Data Presentation

Year	Quarter	RAGDP	Conflict	Fatalities
2010	1	2,594.76	28	879
2010	2	2,873.38	10	181
2010	3	4,000.03	0	0
2010	4	3,580.73	1	6
2011	1	2,653.86	13	120
2011	2	2,955.29	23	1169
2011	3	4,130.57	1	15
2011	4	3,689.65	2	11
2012	1	2,805.80	1	9
2012	2	3,160.09	6	37
2012	3	4,307.97	14	153
2012	4	4,055.84	14	56
2013	1	2,874.85	31	236
2013	2	3,241.18	23	248
2013	3	4,456.11	38	128
2013	4	4,178.39	24	183
2014	1	3,033.97	49	577
2014	2	3,360.45	45	667
2014	3	4,655.32	36	296
2014	4	4,330.65	33	216
2015	1	3,176.60	36	271
2015	2	3,477.85	43	352
2015	3	4,816.52	16	103
2015	4	4,481.26	18	80
2016	1	3,274.73	34	429
2016	2	3,635.53	39	286
2016	3	5,035.07	27	206
2016	4	4,662.01	14	152
2017	1	3,385.60	55	166
2017	2	3,745.09	31	107
2017	3	5,189.37	13	57
2017	4	4,859.44	50	244
2018	1	3,487.31	182	750
2018	2	3,789.72	187	987
2018	3	5,288.34	50	186
2018	4	4,978.78	9	5
2019	1	3,597.92	26	246
2019	2	3,857.71	38	107
2019	3	5,408.98	38	48
2019	4	5,093.98	41	77

Source: Armed Conflict Location & Event Data Project (ACLED) and Central Bank of Nigeria (CBN) Statistical Bulletin 2019.

Data Analysis and Interpretation

This section of the study presents the statistical results and interpretations. It was divided into two parts: descriptive statistics and inferential statistics.

Descriptive analysis

The descriptive statistics result is presented as follows:

Table 2: Descriptive Statistics

Variables	Mean	Maximum	Minimum	Std. Dev.	Observations
ARGDP	3904.52	5408.98	2594.76	803.3	40
CONFLICT	33.48	187.00	0.00	38.37	40
FATALITIES	251.15	1169.00	0.00	280.56	40

Source: formatted from EViews Descriptive result (See Appendix A).

The mean value for agricultural sector contribution to real gross domestic product (ARGDP) indicates that the sector contributed a quarterly average of about ₦3904.52billion for the periods under review. This means that from the first quarter of 2010 to the fourth quarter of 2019, the average quarterly contribution of the agricultural sector to real GDP was ₦3904.52billion. During the period under review, the agricultural sector made a minimum and maximum contribution of ₦2594.76Billion and ₦5408.98, respectively. Considering the standard deviation, the agricultural sector's contribution to real GDP experienced a high level of variability, as indicated by the standard deviation value of 803.3. On the other hand, the herders/farmers' conflict has an average quarterly occurrence of 33.48 between the 1st quarter of 2010 and the 4th quarter of 2019. During this period, the average quarterly fatality stood at 251 persons. The fatalities fluctuated between the minimum number of 0.00 and the maximum of 1169 deaths. The standard deviation indicates that the conflict and fatalities variables were 38.37 and 280.56, respectively. This indicated that there was a very high volatility in the number of fatalities with fewer variations in the number of occurrences.

Inferential Statistics and Test of Hypotheses

The study's hypotheses were tested using a one-sample t-test and Ordinary Least Square (OLS) regression estimates. Hypotheses 1 and 2 were tested using the one-sample t-test, while hypotheses 3 and 4 were tested using OLS regression estimates. The results are presented and interpreted below. The study hypothesizes and tests the hypothesis below:

$H_0 1$: ***There is no significant difference in Nigeria's number of herders-farmers conflict***

.

The one-sample t-test was used to test this study's hypothesis. The results were presented in two tables; the first table highlighted the descriptive statistics of the variable being considered, while the second table presented the t-test result.

Table 3: One-Sample Descriptive Result for Hypothesis 1

Variable	N	Mean	Std. Deviation
Conflict	40	33.475	38.36932

Source: formatted from SPSS One sample t-test result (see Appendix B1)

From Table 3, the N column indicates that the number of observations was 40. Meaning that the number of 40 quarters for the years 2010 – 2019. The mean column shows that the average number of conflict occurrences in each quarter of the year 2010 to 2019 was 33.475, approximately 34 conflict occurrences per quarter. The frequency of the conflict occurrences recorded a standard deviation of 38.36932. How has the frequency of herders-farmers conflict changed from the number of occurrences from the 1st quarter of 2010 till 2019? To answer this question and test hypothesis 1 of this study, one sample t-test has been conducted, and the result is presented below.

Table 4: One-Sample T-test Result for Hypothesis 1

Variable	T	Df	Sig. (2-tailed)	Mean Difference
Conflict	0.5902	39	0.372	5.47500

Source: formatted from SPSS One sample t-test result (see Appendix B1)

Table 4 shows the t-test statistic (t) value as 0.5902, the degree of freedom (Df) as 39, and the Sig. (2-tailed) as 0.372. Since the Sig. (2-tailed) was greater than a 0.05 significance level, this implied no statistically significant difference in the herders-farmers conflict occurrences from 1st quarter of 2010 to the last quarter

of 2019. Thus, the study accepted the null hypothesis that there was no significant difference in the herders-farmers conflict occurrences from 1st quarter of 2010 to the last quarter of 2019. This implies that the move to resolve or control the herders-farmers conflict from 2010 to 2019 has made no statistically significant difference.

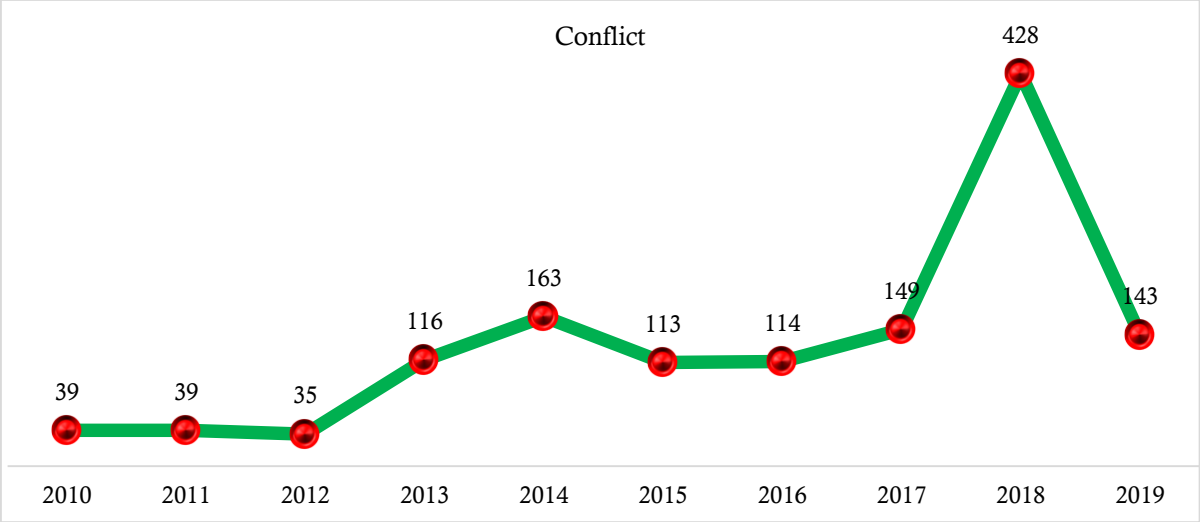

Figure 1: Conflict Occurrences

Considering Figure 1 above, it can be seen that there was a strong upward trend in the number of herders-farmers conflicts from 2010 to 2019. This affirmed the conclusion of the hypothesis one test: no significant difference in the herders-farmers conflict occurrences occurred from the first quarter of 2010 to the last quarter of 2019. Conclusively, no statistically significant difference existed in the herders-farmers conflict from 2010 to 2019.

To shed light on the fatalities from conflicts that have financial implications, the work hypothesizes:
$H_0$2**: **There is no significant difference in the fatalities resulting from herders-farmers conflict in Nigeria.

Table 5: One-Sample Descriptive Result for Hypothesis 2

Variable	N	Mean	Std. Deviation
Fatalities	40	251.1500	280.56075

Source: formatted from SPSS One sample t-test result (see Appendix B2)

From Table 5, the mean column shows that the average number of herders-farmers conflict fatalities in each quarter from 2010 to 2019 was 251.15, approximately 251 deaths per quarter. The conflict fatalities recorded a standard deviation of 280.56075. This implies a high volatility rate in the deaths of the herders-farmers conflict.

Table 6: One-Sample T-test Result for Hypothesis 2

Variable	T	Df	Sig. (2-tailed)	Mean Difference
Fatalities	-14.153	39	0.000	-627.85000

Source: formatted from SPSS One sample t-test result (see Appendix B2)

Table 6 shows the t-test statistic (t) value as -14.153, the degree of freedom (=df) as 39, and the Sig. (2-tailed) as 0.000. This implied a statistically significant difference in the number of fatalities resulting from the herders-farmers conflict from 1st quarter of 2010 to the last quarter of 2019 since the Sig. (2-tailed) was less than a 0.05 significance level. Thus, the study rejects the null hypothesis that there is no significant difference in the fatalities resulting from herders-farmers conflict from 1st quarter of 2010 to the last quarter of 2019.

Hence, the study accepted the alternative hypothesis that there is a significant difference in the fatalities resulting from herders-farmers conflict. This implies that there have been significant changes in the fatality rate of herders-farmers conflict.

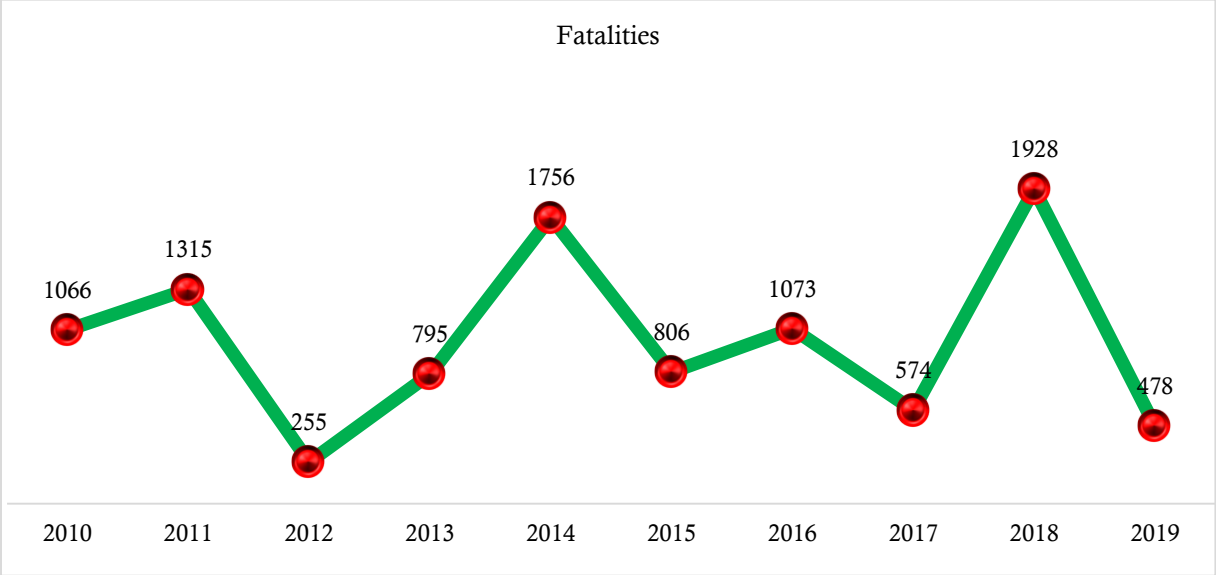

Figure 2: Fatalities

Considering Figure 2 above, it could be seen from the graph that there was a high fluctuation in the fatality rate. The highest number of deaths during the period under study was recorded in 2018, with 1928 deaths; the lowest fatalities were recorded in 2012, with 255 reported deaths. Thus, there was a statistically significant difference in the fatalities resulting from the herders-farmers conflict from 1st quarter of 2010 to 4th quarter of 2019.

The Ordinary Least Square was adopted to evaluate the financial implications of herders-farmers conflict, and the results were presented and interpreted below.

Table 7: Regression Estimates for the Financial Implication of Herders-Farmers Conflict in Nigeria

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CONFLICT	7.002497	3.785921	1.849616	0.0724
FATALITIES	-1.712484	0.51776	-3.307486	0.0021
C	4100.199	161.9899	25.31144	0.0000
R-squared	0.228701			
Adjusted R-squared	0.187009			
F-statistic	5.485509			
Prob(F-statistic)	0.008196			
Durbin-Watson stat	1.560277			

Source: formatted from EViews 10 result (see Appendix C)

The presentation in Table 7 above indicates that the R-square of the regression estimate was 0.228701. This implies that the independent variables in the model explained 22.87%of the total variation observed in the dependent variable. This means that the herder-farmers conflict variables explained about 22.87% of the total variations observed in the agricultural sector contribution to real gross domestic product. However, the R-square was inflated due to an increase in the number of independent variables in the model, causing the model to be over-fitted. The adjusted R-square was considered to adjust this inflation caused by the additional variables in the model. The adjusted R-square represented the unbiasedly explained proportion of variation observed in the dependent variable by the independent variables. Thus, the unbiased proportion of the total

variation observed in the dependent variable explained by the independent variables was 0.187009. This means the conflict variables explained about 18.70% of the total variation observed in the agricultural sector's contribution to real gross domestic product.

Simply put, the conflict variables exert about 18.7% influence on the agricultural sector's contribution to the gross domestic product in Nigeria, and this was statistically significant since the F-statistic value was 5.485509. Its associate probability of 0.008196 was less than 0.05. Hence, the herders-farmers conflict significantly influences the agricultural sector's contribution to real gross domestic product.

Model Diagnostics

Model diagnostic tests, including a serial correlation test, normality test, and stability test, were conducted to examine the suitability of the model estimate presented in Table 4.7 above.

Serial Correlation Test

The study tested the estimated model for serial correlation using the Breusch-Godfrey Serial Correlation LM Test, and the result is presented in the table below.

Table 8: Breusch-Godfrey Serial Correlation LM Test

Test	value	Prob.
F-statistic	1.743417	0.1950
Obs*R-squared	1.847652	0.1741

Source: Formatted from EViews 10 Result

Table 8 indicated no evidence of serial correlation in the model. This was because the f-statistical probability of the Breush-Godfrey Serial Correlation LM test was greater than 0.05. Hence, the study could not reject the null hypothesis since the model had no serial correlation. Implying that there was no evidence of serial correlation

Normality Test

Normality is one of the assumptions of the ordinary least-squared model. This study equally evaluated the model developed for this study in the light of residual normality.

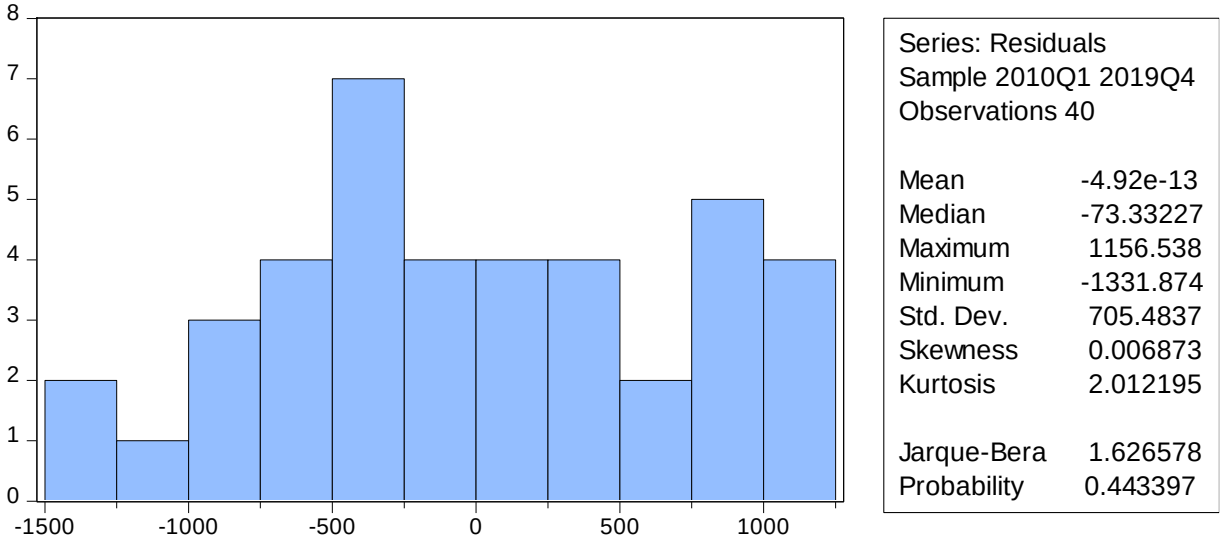

Figure 3: Normality Test

The Jarque-Bera value of 1.626578 with an associated probability of 0.443397 indicates that the variables in the model are normally distributed. This was because the probability value of the Jarque-Bera test was greater

than 0.05. Thus, the study concludes that the variables in the model are normally distributed, thereby validating the result of the model as suitable for empirical conclusions.

Model Stability

Lastly, on the model diagnostic, the study conducted the CUSUM test to evaluate the stability of the model estimated. The cumulative sum of recursive residuals (CUSUM) test was used to test the parameter constancy. The CUSUM test result in the graph indicated that the model was statistically stable since the CUSUM line lies within the 5% significance boundary. Thus, the study concluded that the model was statistically stable for empirical conclusions.

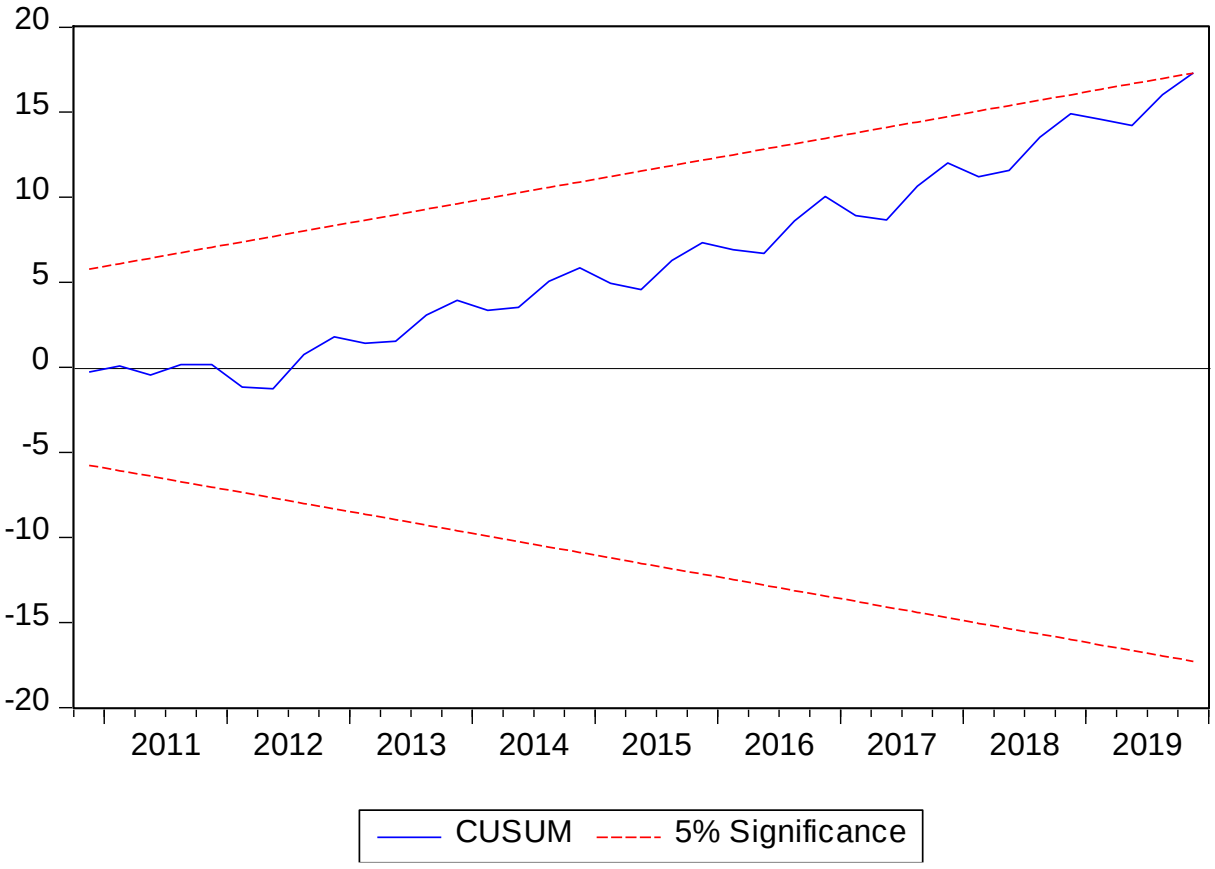

Figure 4: CUSUM Test

***$H_0$3**: There is no significant relationship between herders-farmers conflict occurrences and agricultural sector contribution to real gross domestic product in Nigeria.*

Table 7 indicates that the coefficient of conflict was 7.002497, meaning that there was a positive relationship between the number of herders-farmers conflict occurrences and the agricultural sector's real GDP. This implies that an increase in conflicts leads to a 7.002497 increase in the agricultural sector's gross domestic product. The t-statistic (-1.849616) and probability value (0.0724) indicated that the positive relationship between herders-farmers conflict and agricultural sector contribution to real GDP was not statistically significant at a 5% significance level since the probability value was greater than 0.05. Thus, the study accepted the null hypothesis that no significant relationship exists between herders-farmers conflict occurrences and agricultural sector contribution to real gross domestic product. This implies no statistically established relationship between the herders-farmers conflict and the agricultural sector's contribution to real GDP.

Again, to ascertain the nature of the relationship among the variables identified in the study, the work hypothesizes:

$H_0$4**: **There is no significant relationship between the fatalities from herders-farmers conflicts and the agricultural sector's contribution to real gross domestic product in Nigeria.

The coefficient of "fatalities" was -1. 712484. This indicated a negative relationship between the fatalities and the agricultural sector's contribution to real GDP. Simply put, an increase in fatality will lead to about 1.712484 proportional decrease in agricultural sector contribution to real gross domestic product. Considering the t-statistic and probability of -3.307486 and 0.0021, respectively, the relationship between fatalities and agricultural sector contribution to real gross domestic product was statistically significant at a 5% significance level since the probability value was less than 0.05. Thus, the result indicates that fatality has a positive and significant relationship with the agricultural sector's contribution to real gross domestic product. Therefore, the study rejected the null hypothesis and accepted the alternative hypothesis that there is a significant relationship between the fatalities resulting from herders-farmers conflicts and the agricultural sector's contribution to real gross domestic product in Nigeria.

Discussion of Results

The study clearly shows no significant difference in the herders-farmers conflict occurrences from 1st quarter of 2010 to the last quarter of 2019. This is quite surprising as the a priori expectation and prior studies are unanimous that the confrontation between herders and farmers spiralled in dimension and degree of fatalities between these periods, as captured in a study on the effect of Communal Conflict on Economic Activities in Osun State, Nigeria," Popoola (2020) reported that all commercial activities, including banks, government offices, stores, and private investment outlets, had been completely shut down. The study concluded that intergroup conflict has a detrimental impact on investment activity, a view not supported by this study. This report also challenges the outcome of the study by Tersoo (2016). However, a cursory examination of the data provides a first-line explanation of this insignificant outcome. On the pages of newspapers across Nigeria, there were hues and cries of herders and farmers in conflict. Unfortunately, the data shown in that table posted only a marginal increase, which may have resulted in the surprising outcome posted in this study. When the effect of these conflicts is considered by looking at the fatalities, the study reports an outcome consistent with the a priori expectation. Accordingly, there was a significant difference in the fatalities resulting from the herders-farmers conflict in Nigeria from the first quarter of 2010 to the last quarter of 2019. Fatalities are expected to be significant, and the study agrees with this. This is because even the loss of a few herdsmen or farmers has grave consequences.

One would have expected these fatalities and conflicts to affect the agricultural sector significantly. Again, the results reported no significant relationship between herders-farmers conflict occurrences and agricultural sector contribution to real gross domestic product in Nigeria. This contrasts sharply with the works of Rukwe (2019), Ijirshar, Ker, and Terlumun (2015), who undertook various studies on the impact of herders-farmers conflict in the agricultural sector. Their studies found that the conflict negatively impacts food security, agricultural productivity, farmers' income, poverty status, farmers' produce in storage, residents, farm household properties, farm labor, infrastructural facilities, and public and private facilities.

One way to resolve this apparent paradox is that there are so many other agricultural products that are not affected by the negative activities of the pastoralists, thus cancelling the adverse effects of the conflicts on the contribution of this small sector to the overall contribution of the agricultural sector to the gross domestic product.

CONCLUSION, POLICY IMPLICATIONS AND RECOMMENDATIONS

It is not erroneous to say that studies on the influence of herders-farmers conflict on economic and financial indices are still in the developing stage. However, this study presented empirical evidence based on secondary data from the Armed Conflict Location & Event Data Project (ACLED) and Central Bank of Nigeria (CBN) Statistical Bulletin 2019. The study also used a highly suitable and stable model, as suggested by the model diagnostics, to test the study's hypotheses. Thus adding significantly to the existing empirical literature on the subject matter in Nigeria. The study adopted the e*x post facto* research design. Time series data spanning from

the 1st quarter of 2010 to the 4th quarter of 2019, obtained from the Armed Conflict Location & Event Data Project (ACLED) and Central Bank of Nigeria (CBN) statistical bulletin 2019, were used for the study. One sample T-test and ordinary least square regression technique were used to analyze the data with Statistical Package for Social Sciences (SPSS) version 25 and Econometrics Views (EViews) 10. The result indicated that herders-farmer conflicts have significant financial implications in Nigeria.The following recommendations were offered based on the findings of this study:

1. Based on the finding that there is no significant difference in the herders-farmers conflict occurrences from 1st quarter of 2010 to the last quarter of 2019, the study recommends that government should apply world best practices in cattle rearing which does not allow cattle to move about, but intensively taken care by herders.
2. The government should do more to sustain the protection of the lives and properties of its citizens by increasing the number of security officers and providing good incentives since there was a significant difference in the fatalities resulting from herders-farmers conflict in Nigeria from the first quarter of 2010 to the last quarter of 2019.
3. The conflict has never improved any organization or institution. Hence, the positive but insignificant relationship between herders-farmers conflict occurrences and agricultural sector contribution to real gross domestic product cannot be interpreted as explicit but implicit. The herders-farmers conflict has become a normal way to live in Nigeria. However, the conflict occurrences significantly negatively impact Nigeria's social and economic activities.
4. Finally, based on the negative and significant relationship between the fatalities resulting from herders-farmers conflicts and the agricultural sector's contribution to the real gross domestic product in Nigeria, the study recommends that the government, through the security agencies and judiciary, ensure that culprits in the herders-farmers conflicts are lawfully dealt with.

The study provided evidence that the herders-farmers conflict has significant financial implications. The specific findings include that:

1. There was no significant difference in the number of herders-farmers conflict occurrences from the first quarter of 2010 to the last quarter of 2019.
2. There is a significant difference in the fatalities resulting from the herders-farmers conflict in Nigeria from 1st quarter of 2010 to the last quarter of 2019.
3. There is no significant relationship between herders-farmers conflict occurrences and agricultural sector contribution to real gross domestic product in Nigeria.
4. There is a significant relationship between the fatalities resulting from herders-farmers conflicts and the agricultural sector's contribution to Nigeria's real gross domestic product.

REFERENCES

Abbas, I.M. (2009). No retreat No surrender conflict for survival between Fulani cattle herders and farmers in northern Nigeria. *In European scientific journal*, 8(1), 331-349.

Abubakar, M.B. (2012). *Sociological assessment of nomadic pastoralist and sedentary farmers conflicts in Kastina State*. An unpublished M.Sc. thesis submitted to sociology department, ABU Zaria.

Adisa, R.S. (2012*). Land Use Conflict between farmers and herdsmen. Implications for agricultural and rural development*, department of agricultural extension and rural development, university of Ilorin, Nigeria.

Ahynetal, L. (2018). *Nigerian media coverage of herdsmen-farmers conflict*: A content analysis of some selected Nigerian national dailies, (paper presented at faculty of social sciences) university of Port Harcourt, Choba.

Antonio, O. & Silvia, S. (2009). Livestock and pastoralist: livestock thematic papers: tools for project design.*International Fund for Agricultural Development:* retrieved from www.ifad.org/irkm/index.htm.

Aron, A. Aron, E. N. & Smollan, D. (1992). Inclusion of others in the self-scale and the structure of interpersonal closeness. *Journal of personality and social psychology.* 63, 596-612.

Bennett, O. (1991). *Green war*: Environmental and conflict. London: Panos publications.

Blench, R.M. (1996). Aspects of resource conflict in semi-arid Africa. *Natural resource perspective*, 15, 1-8.

Caldara, D.Conlisk, S., Lasoviello, M. & Penn, M. (2022). *The Effect of the war in Ukraine on global activities and Inflation FEDS* Notes. Washington D.C board of governors of the federal reserve system.

Chris, B. (2008). *Introductory econometrics for finance*, 2nd edition. New York. Cambridge university press.

Collier, P. (2000). Economic causes of civil conflict and their implications for policy in Le Billion P (2001). *political geography* 20, 561-584.

Coser, L.A. (2000). *Continuities in the study of social conflict. London*: Macmillan publishers. Retrieved from www.amazon.com.

Dama, A. (2021). *Exploring Tolly's theory*: violent conflicts and tax revenue in Sub-Saharan Africa. HAL open science. Oct.

Diez, T., Stetterm S. & Albert, M. (2006). The European union and border conflicts. The transformative power of integration. *International organization,* Vol 60, No. 3.

Dimelu, O. &Audu, S.D. (2017). Conflicts among herders and farmers in northern Nigeria induced by freshwater scarcity. *International institute for science technology and education journal,* 3(12); 25-32.

Dunne, T., Milja, K. & Steve, S. (2007). *International relations theories: discipline and diversity*. New York and Oxford: Oxford university press.

Gyong, J. (2007). The structure of communication in peace and conflict resolution, identity crisis and development in Africa (B.A Celestine, Ed) Lagos, Malt-house press.

Hegre, H. &Sambanis, N. (2006). Sensitivity analysis of empirical results on civil war onset. *Journal of conflict resolution.* 50(4): 508-35.

Hendrickson, D. (1997). Supporting Local capacities for managing conflicts over natural resources in the Sahel: *A review of issues with an annotated bibliography*.

Hoffmann, I., Umar, B.F &Tukur, H.M. (2008). *Crisis and cooperation over control and management of Zamfara reserve*, Nigeria national animal production research institute.

Homer-Dixton, T.F. (1999). *Environment, scarcity, and violence Princeton*: university press.

Huntington, S.P. (1996). *The clash of civilizations and the remaking of world order.* Simon &Schuster. New York, USA.

Hussein, K. (1998). Conflict between farmers and herders in semi, Sahel and east Africa. A review pastoral land tenure series 10; *London international institute for environment and development* (IIED)/OD group.

Ijirshar, V.U., Ker, G. &Terlumun, Y.C. (2015). "Socio-economic effects of Fulani herdsmen's-farmers conflicts on farmers output in Benue, Nigeria" In Bakpo FS and FE Ugbeda (2015) Eds. *Proceeding of an international academic conference of international multidisciplinary research and academic society*, Obudu, Cross River state, Nigeria.

Ingawa, S. A., Ega, L.A. &Erhabor, P.O. (1999). Farmer pastoralist conflicts in the core states of the national fadama project, Abuja, FACU.

Kumar, R. (2011). *Research Methodology*. A step-by-step guide for beginners. 3rd edition SAGE.

Mark, M. (2010). Understanding herders-farmers conflicts in west Africa: outline of a processual approach. *Human organization* vol.69.no 2

Momale, S.B. (2013). *Resource use conflicts in agricultural and pastoralist areas of Nigeria*. In: Gefu J.O. (ed) Land tenure system, systems in Nigeria; evolving effective land use policy for poverty alleviation in Nigeria: land network.

Moritz, M. (2010). Understanding herder- farmer conflicts in west Africa: outline of a processual approach. *Journal of human organization,* 69(2), 138-148.

Mwamfupe, D. (2015). Persistence of farmer herder conflict in Tanzanian, *int. j. sci. res. pub.* 5(2): 1-8.

Okoli, A.C, &Ateihe, A.G. (2014). Nomads against natures: A political ecology of herders-farmers conflict in Nasarawa state, Nigeria. *American international journal of contemporary research,* 4(2); 76-88.

Opoku, P. (2014). Exploring the causes and management of pastoralists-farmers conflicts in Ghana *JENRM*, 1(3); 170-175.

Osuala, A.E. (2010). *Econometrics theory and problems.* (1st edition). Aba. Toni Print Services.

Popoola, M.A., Adewale, J.A., Idachaba, O. I. &Shittu, M.O. (2020). *Analysis towards effective policing in crime control and prevention of Nigeria*. (IJARW /ISSN (0)-2582-1008.volume 1, issue 1.

processual approach. *Human organization* vol.69, No.2

Qureshi, M.S. (2013). Trade and thy neighbor's war. *Journal of development economics* 105(c) 178-95.

Rukwe, D.T. Abdullahi, Y.M., Faruk, A.U. and Nwaeze, U. (2019). The effects of herders-farmers conflict on farming households in southern Taraba State, Nigeria. *South Asian research journal of agriculture and fisheries*, 1(3); 106-111.

Tersoo, J. (2016). *The political economy of crisis and underdevelopment in Africa*: selected work of Claude Ake Port-Harcourt. Jad publishers.

Tonah, S. (2006). Managing farmer-herder conflicts in Ghana and Volta basin. Ibadan. *Journal of social science* 4(1): 33-45.