

Analysis of Nomadic Herdsmen and Crop Farmers' Conflict in Rural Communities of North-Central Zone, Nigeria

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Abstract

This study was carried out to analyze the effect of nomadic herdsmen and farmers' conflict in rural communities of North Central, Nigeria. Six research questions were asked and answered by this study. Also, six null hypotheses were formulated and tested at a 0.05 level of significance. A descriptive survey research design was adopted for the study. The sample size of this study was 400 made up of 250 registered farmers, 120 nomadic herdsmen, and 30 agricultural extension agents, all from North Central, Nigeria. A multistage sampling technique was used during the sampling procedure. The questionnaire items were face validated by five experts. The internal consistency of the questionnaire items was determined using the Cronbach alpha coefficient. A coefficient of 0.87 and 0.97 was obtained for part 2 section A-F of the questionnaire items. Mean and standard deviation was used to answer the research questions while Analysis of Variance (ANOVA) was used to test the null hypotheses. The findings on hypotheses revealed that there was a significant difference in the mean ratings of the responses of nomadic herdsmen, crop farmers, and agricultural extension agents in North Central, Nigeria. The results of Scheffe's and Tukey HSD Tests indicated that all the three comparisons between the nomadic herdsmen, crop farmers, and extension agents had statistically significant mean differences. It was recommended among others that as an interim remedy for peace, grazing lands should be clearly and legally acquired and demarcated in rural communities where fallow lands are surplus and fallow for cattle grazing.

Key words: Conflict, Crop farmers, and Nomadic herdsmen

Background

The nomadic herdsmen and farmer's conflict has gained a lot of prominence in West Africa, most especially Nigeria in recent times. This menace has not been given adequate attention by the government and its agencies in the agricultural sector due to political, social-economic, and religious sentiments prevailing in Nigeria. Adeoye (2017) observed that Conflicts among the farmers and nomadic herdsmen in Africa are not a new story. They have existed for many years. However, in recent years the conflicts seem to surpass measures for mitigating them. Hence, it leads killing, destruction of properties amongst farmers and the nomadic herdsmen.

Nomadic herdsmen are people who rear cattle, sheep, and goats that migrate from one place to the other in search of pastures and fresh water for their animals (Aliyu, 2015). These group of herdsmen are among those herders who leave their original homes searching for greener pasture for their cattle. Nzeh (2015) opined that in their culture, tradition, and occupation, nomadic herdsmen have not remained a migrant race who does not own lands nor have any permanent abode but, continue wandering from place to place in search of good grazing land for their livestock to feed on. Also, blench (2003) asserts that nomadic herdsmen earn their livelihoods by herding animals. This group of herdsmen is always in loggerheads with farmers in North-Central Nigeria.

Farmers, also called agriculturists are persons who engaged in agriculture, raising living organisms for food or raw materials. This then therefore, applies to people who do some combination of raising field crops, orchards, vineyards, poultry or other livestock. Based on this definition, farmers are both the herdsmen who herd or keep livestock like cattle, goats and sheep, and crop farmers. However, for the purpose of this study, farmers are the crop farmers (those who raise field crops) also called peasant farmers/subsistence cultivators only. According to Amonjenu and Wombo (2016), farmers are group of people who grow plants or rears animals for the benefit of mankind. But, Sigalla (2013) opined that farmers are individuals who own or manage

crops or farm animals. The author further stated that different names are used to denote farmers for instance, in the United States of America, farmers are those who rear livestock such as cattle, sheep, goats, camels, and horses are called ranchers. In Australia and the United Kingdom, they are referred to as stockmen. Crop farmers and cattle herders have been known to live harmoniously over the years and have enjoyed mutual symbiotic relationship. This mutual symbiotic relationship has been very beneficial to the two groups. However, these groups of farmers have been in serious conflict in North Central Zone, Nigeria over some reasons suspected to be ownership and utilization of natural resources among other factors that usually precipitate conflict in the affected States.

Conflict is defined by Tonal (2006) as the rift between two or more persons which involves destruction of lives and properties. Although, Abbass (2012) stated that, conflicts resulting from cattle grazing have existed for as long as the practice of agriculture is a concern. Many factors are interwoven and interrelated in causing conflicts among nomadic herdsmen and other group of farmers in Nigeria (Okoli & Atelhe, 2014). Similarly, Bello (2014) stated that the nomadic herdsmen and crop farmers conflict exists in Nigeria with serious consequences on the parties involved. Nomadic herdsmen and crop farmer's activities are growing at a geometric rate in both the developed and developing countries of the world. In Nigeria, the increase in these activities is inevitable due to the quest for agricultural benefits. The existence of these nomadic herdsmen and crop farmers has been known to be mutual in the previous years with regulation and minor destruction to the ecosystem. Recently, the exodus of these nomadic herdsmen activities has led to the existence of rift and conflict as the animal(s) hamper into the environment searching for a greener pasture and freshwater for grazing which at times destroyed to crop plants and other resources in the environment.

An attempt by the farmers to resist this destruction always resulted in serious conflict between the two parties resulting in lethal consequences. The conflict sometimes results in wars that precipitate the displacement of people from their places of abode, loss of lives, properties including important household belongings, food, and other means of livelihood. The farmers who succeed in escaping the tragedy have become incapacitated, educationally, economically, socially, materially, and psychologically. In addition, most of them have turned into mere beggars due to poverty and hunger. Moritz (2016) found out that the nomadic herdsmen and farmers conflict has created a vicious cycle of poverty in many communities and how it has affected the education of the farmer's children. Chigozie (2012) asserted that conflicts arising across North Central Nigeria have grown into widespread violence, death, and internal displacement and the increase in the conflict has brought the mutual relationship between these groups of farmers to worse enemies. Amaza (2016) reported that out of 389 incidents of nomadic herdsmen and farmers conflicts from 1997 to 2015, 371 occurred in the Middle Belt otherwise known as North Central, Nigeria. The North-Central States of Benue, the Federal Capital Territory, Kogi, Nasarawa, Niger, Kwara, and Plateau have suffered serious destructions of properties, loss of lives, and livestock among other means of livelihood. Considering the above experience, it is worthy to find out the likely effects of the conflict between the nomadic herdsmen and farmers in rural communities of North Central Zone, Nigeria and suggest possible measures to better the lives of the citizenry in these communities.

Inquiring on any form of conflict is complex, as it involves numerous perspectives and orientations such as different styles of communication, ambitions, social, political, or religious views, and different cultural backgrounds thus it becomes difficult undertaking such a study. Further, it has been observed that not enough findings have been published on the analysis of the effect of conflict on rural communities in Northern Nigeria. It is against this backdrop that the researcher has posed to undertake the study on the analysis of nomadic herdsmen and farmers conflict in rural communities of North-Central, Nigeria.

Purpose of the Study

The major purpose of this study is to analyze the effect of nomadic herdsmen and farmers' conflict in rural communities of North Central, Nigeria. Specifically, the study sought to:

- identify causes of nomadic herdsmen and farmers conflict in the rural communities in North Central, Nigeria;
- ascertain the effect of nomadic herdsmen and farmers conflict on education in rural communities;
- identify the effect of nomadic herdsmen and farmers conflict on income in rural communities and
- determine the effect of nomadic herdsmen and farmers conflict on food security of rural communities in North Central, Nigeria;

Research Questions

The following research questions were answered by the study.

- What are the causes of nomadic herdsmen and farmers' conflict in the rural communities in North Central, Nigeria?
- What are the effects of nomadic herdsmen and farmers' conflict on education in rural Communities?
- What are the effects of nomadic herdsmen and farmers' conflict on income in rural communities?

- What are the effects of nomadic herdsman and farmers' conflict on food security of rural communities in North Central, Nigeria?

Hypotheses

The following research hypotheses were formulated and tested at 0.05 level of significance

- There is no significant difference in the mean ratings of nomadic herdsman, farmers, and extension agents on the causes of conflict in rural communities of North Central, Nigeria
- There is no significant difference in the mean ratings of nomadic herdsman, farmers, and extension agents on the effect of conflict on education in rural communities of North Central, Nigeria
- There is no significant difference in the mean ratings of nomadic herdsman, farmers, and extension agents on the effect of conflict on income in rural communities of North Central, Nigeria
- vi. There is no significant difference in the mean ratings of nomadic herdsman, farmers, and extension agents on the effect of conflict on food security in rural communities of North Central, Nigeria.

Methodology

The study was carried out in North-Central, Nigeria which comprises six States namely; Nasarawa, Benue, Plateau, Kogi, Kwara, Niger, and Federal Capital Territory FCT, Abuja. The zone is known with crop farming as the major occupation. The zone has witnessed many conflicts ranging from religious violence, ethnoreligious conflicts, 'indigeneity' and 'settlement,' as well as access to land and livelihoods. The study made used a descriptive survey research design. Descriptive survey research design, according to Adikwu, Aduloju, and Emaikwu (2013) the design is concerned with the collection of data to describe and interpret existing conditions on practices, beliefs, attitudes, points of view that are held, processes that are going on religious preference among others.

The total population of this study was one thousand three hundred and twenty-five (1,325) persons consisting of 825 registered farmers, 400 nomadic herdsman, and 100 extension agents in the seven North Central States of Nigeria under study. Agricultural extension agents are among the respondents of this study because they are involved in educating farmers on the modern farming practices in rural areas and were familiar with farmers and herders conflict in North Central, Nigeria. The sample for this study is 400 respondents drawn from 250 farmers, 120 nomadic herdsman, and 30 agricultural extension agents in the five (5) States of North Central, Nigeria. The multi-stage sampling techniques were used to obtain the above sample since it is a technique that occurs when different sampling techniques are applied at several stages of a research study. In determining the sample size, Taro Yamane's, formula (2001) was adopted. The instrument used for data collection was a structured questionnaire titled Nomadic Herdsman and Farmers Conflicts Questionnaire (NHFCQ) developed by the researcher. The instrument was subjected to face validation by five experts. The internal consistency of the questionnaire items was determined using the Cronbach-Alpha formula which yielded .876, meaning that the NHFCQ items were reliable enough for the study.

The researcher employed the assistance of ten research assistants (two from each state) to help in the administration of the NHFCQ on the respondents in their respective states. A total of 400 copies of the questionnaire were distributed to the respondents by the researcher through five research assistants. Out of 400 copies distributed, 388 copies of the questionnaire were retrieved from the respondents, checked for correctness of their response options on questionnaire items. The data collected from the respondents were analyzed using descriptive statistics precisely mean and standard deviation to answer the research questions, while inferential statistics Analysis of Variance (ANOVA) was used to test null hypotheses at 0.05 level of probability using Statistical Package for Social Sciences (SPSS), version 25. SPSS is used because, it can take data from almost any type of file and use them to generate tabulated reports, charts and plots of distributions and trends, descriptive statistics and conduct complex statistical analyses.

Results

The results for the study were obtained from the research questions answered through data collected analyzed.

Research Question 1

What are the causes of nomadic herdsman and farmers conflict in the rural communities in North Central, Nigeria?

The data for answering research question 1 were presented in Table 1.

Table 1: The mean ratings of the responses of nomadic herdsman, farmers, and extension agents on the causes of conflict in rural-communities of North Central, Nigeria

Section Items	\bar{X}	SD	Remarks
A: Causes of Conflict			
1. Destruction of farm crops	3.12	.330	Agreed
2. Cattle rustling	2.78	.878	Agreed
3. Blockage of grazing routes	2.53	.610	Agreed
4. Denial of access to crop residues	2.58	.611	Agreed
5. Overgrazing/hardening of soil	2.98	.338	Agreed
6. Increase in farming activities	3.05	.406	Agreed
7. Burning of rangeland and fadama	2.58	.711	Agreed
8. Inadequate land	3.91	.279	Agreed
9. Increase in the population of people	2.57	.930	Agreed
10. Increase in the population of cattle	3.00	.340	Agreed
11. Desertification/desert encroachment	2.63	.815	Agreed
12. Loss of wetland/drought	2.71	.985	Agreed
13. Freshwater scarcity	2.52	.701	Agreed
14. Poisoning of stream water by the host community	1.56	.898	Agreed
15. Contamination of stream by cattle	3.57	.633	Agreed
16. Sexual harassment/rape	3.35	.489	Agreed
17. Harassment of nomads by youth in the community	2.55	.910	Agreed
18. Disregard to traditional authority	3.22	.501	Agreed
19. Indigene-settler	2.40	.908	Disagreed
20. Resource competition	32.47	.904	Agreed
21. Sentiment	0.42	.976	Disagreed
22. Government policies	1.92	.417	Disagreed
23. Ownership of land	1.47	.913	Disagreed
24. Unnecessary charges placed on nomadic herdsman	1.31	.480	Disagreed
25. Land and boundary struggle	1.90	.306	Disagreed
26. Chieftaincy	1.37	.483	Disagreed
27. Religious-	1.63	.482	Disagreed
28. Depletion of air, soil and habitat destruction	3.15	.878	Agreed
29. Youth crime/illegal possession of firearms	2.54	.981	Agreed
Grand Mean	3.51	0.65	Agreed
Coefficient of Variation (C V%).	18.76		Good

\bar{X} = Mean, SD= Standard Deviation.

The data in Table 1 showed that 29 items had their mean values ranged from 2.53 to 3.57. The grand mean for this cluster was 3.51 above the bench mark of 2.50. This implies that the respondents agreed with the causes of conflict in the rural communities of North Central, Nigeria while 8 items had their mean values ranged from .42 to 2.42 below the bench mark of 2.50. This implies that 8 respondents disagreed with the causes of conflict in rural communities in North Central, Nigeria. The standard deviations of the 29 items ranged from .279 to .981 and the grand standard deviation was 0.65 with Coefficient of Variation (C V%) of 18.76 which is good. This indicated that the respondents were not far from the mean and from one another in their responses. This added value to the reliability of the mean.

Hypothesis 1

There is no significant difference in the mean ratings of nomadic herdsmen, farmers, and extension agents on the causes of conflict in rural communities of North Central, Nigeria.

Data for testing hypothesis 1 were presented in Table 2.

Table 2: Analysis of Variance (ANOVA) of the mean ratings of nomadic herdsmen, farmers, and extension agents on the causes of conflict in rural communities of North Central, Nigeria

Sources of Variation	DF	Sum of Square	Mean Square	F-ratio	P-value	Alpha-Value	Decision
Between Groups	2	2250.893	1125.446	663.691	.000	0.05	S, R
Within Groups	385	652.860	1.696				
Total	387	2903.753					

KEY: DF=degree of freedom, S=Significant, R=Rejected

The result in Table 2 showed a P-value of .000 which was less than the alpha value 0.05 at 2 and 385 degree of freedom (i.e. $.000 < 0.05$). This implies that there was a significant difference in the mean ratings of responses of the nomadic herdsmen, farmers, and extension agents on the causes of conflict in rural communities of North Central, Nigeria. Therefore, the null hypothesis is rejected while the alternative hypothesis upheld. To identify group of respondents that had mean differences, a post-hoc multiple comparison test was performed using Scheffe's test.

In addition, the result of post hoc Pair-Wise comparison analysis indicated that the mean of extension agents vs farmers, farmers vs nomadic herdsmen and extension agents' vs nomadic herdsmen differ significantly because the three groups all had p-value of .000 less than the alpha value of 0.05. Therefore, it is clear that serious conflict exists among farmers and nomadic herdsmen with different opinions on the causes the differences in their opinions showed a glary evidence that the conflict has grown worse and will be of increase if nothing is done to mitigate the causes in rural communities of North Central Nigeria.

Research Question 2

What are the effects of nomadic herdsmen and farmers' conflict on education in rural Communities?

The data for answering research question 2 were presented in Table 3

Table 3: The mean ratings of the responses of nomadic herdsmen, farmers, and extension agents on the effect of conflict on education in rural communities of North Central, Nigeria

Section	\bar{X}	SD	Remarks
B Effect of conflict on education			
1. Closure of schools	3.71	.455	Agreed
2. Extension of school calendar	3.09	.875	Agreed
3. Low enrollment of pupils/students	3.63	.488	Agreed
4. Obstruction of both internal and external examination	3.37	.484	Agreed
5. The high number of school dropout	3.64	.481	Agreed
6. Teachers not willing to be posted to rural schools	3.29	.456	Agreed
7. Displacement of both teachers and students	3.01	.887	Agreed
8. Destruction of school building/structures	3.96	.193	Agreed
9. Destruction of instructional materials	2.55	.993	Agreed
10. The vandalization of school properties	2.50	.905	Agreed
11. Brain drains	3.65	.478	Agreed
Mean	3.39	0.61	Agreed
Coefficient of Variation (C V%).	18.39		Good

\bar{X} = Mean, SD= Standard Deviation.

The data in Table 3 showed that all the 11 items had their mean values ranged from 2.50 to 3.96. The grand mean for this cluster was 3.39 above the bench mark of 2.50. This implies that the respondents agreed with the effects of conflict in the rural communities of North Central, Nigeria. The standard deviations of the 11 items ranged from .193 to .993 and the grand standard deviation was 0.61 with Coefficient of Variation (C V%) of 18.39 which is good. This indicated that the respondents were not far from the mean and from one another in their responses. This added value to the reliability of the mean.

Hypothesis 2

There is no significant difference in the mean ratings of nomadic herdsmen, farmers, and extension agents on the effect of conflict on education in rural communities of North Central, Nigeria.

Data for testing hypothesis 2 were presented in Table 4.

Table 4: Analysis of Variance (ANOVA) of the mean ratings of nomadic herdsmen, farmers, and extension agents on the effects of conflict on education in rural communities of North Central, Nigeria

Sources of Variation	DF	Sum of Square	Mean Square	F-ratio	P-value	Alpha-Value	Decision
Between Groups	2	1631.374	815.687	663.691	.000	0.05	S, R
Within Groups	385	326.966	.849				
Total	387	1958.340					

KEY: DF=degree of freedom, S=Significant, R=Rejected

The result in Table 4 showed a P-value of .000 which was less than the alpha value 0.05 at 2 and 385 degree of freedom (i.e. $.000 < 0.05$). This implies that there was a significant difference in the mean ratings of responses of the nomadic herdsmen, farmers, and extension agents on the effects of conflict on education in rural communities of North Central, Nigeria. Therefore, the null hypothesis is rejected while the alternative hypothesis upheld. To identify group of respondents that had mean differences, a post-hoc multiple comparison test was performed using Turkey HSD Test

Table 5: Pair Wise Comparison Between the Mean of Extension Agents, Farmers and Nomadic Herdsmen on the Effects of Conflict on Education in Rural Communities of North Central, Nigeria Using Tukey HSD Test.

Dependent Variable		Mean Difference (J)	Std. Error	Sig.	95% Confidence Interval	
Respondents I					Lower Bound	Upper Bound
EXTENSION AGENT	FARMER	-.90441*	.17838	.000	-1.3241	-.4847
	NOMADIC HERDSMEN	3.64425*	.18876	.000	3.2001	4.0884
FARMER	EXTENSION AGENT	.90441*	.17838	.000	.4847	1.3241
	NOMADIC HERDSMEN	4.54866*	.10407	.000	4.3038	4.7935
NOMADIC HERDSMEN	EXT AGENT	-3.64425*	.18876	.000	-4.0884	-3.2001
	FARMER	-4.54866*	.10407	.000	-4.7935	-4.3038

*. The mean difference is significant at the 0.05 level.

The results of post hoc Pair-Wise comparison are displayed in Table 5. The analysis indicated that the mean of extension agent's vs farmers, farmers' vs nomadic herdsmen and extension agents' vs nomadic herdsmen differ significantly because the three groups all had p-value of .000 less than the alpha value of 0.05. Therefore, the differences in their opinions showed a glary evidence that farmers and nomadic herdsmen conflict has grown worse with a great effect on education in rural communities of North Central Nigeria.

Research Question 3

What are the effects of nomadic herdsman and farmers' conflict on income in rural communities?

The data for answering research question 3 were presented in Table 6

Table 6: The mean ratings of the responses of nomadic herdsman, farmers, and extension agents on the effects of conflict on income in rural communities of North Central, Nigeria

Section	\bar{X}	SD	Remarks
C Effect of conflict on income			
1 Loss of crops/farm animals	3.09	.883	Agreed
2. Low yield	3.65	.476	Agreed
3. Hike in prices of food crop products	3.10	.604	Agreed
4. Scarcity of labour	3.34	.902	Agreed
5. High cost of labour	3.29	.304	Agreed
6. Poor savings	3.40	.454	Agreed
7. Drop-in household capital	3.28	.450	Agreed
8 Low patronage of agricultural commodities	3.90	.298	Agreed
9 Displacement of traders from the rural areas	3.05	.875	Agreed-
10. High cost of transportation of farm products	3.01	.877	Agreed
11. Closure of rural markets	3.36	.346	Agreed
12. Destruction of roads and bridges	3.16	.298	Agreed
Grand Mean	3.30	0.56	Agreed
Coefficient of Variation (C V%).	17.08		Good

\bar{X} = Mean, SD= Standard Deviation.

The data in Table 6 showed that all the 12 items had their mean values ranged from 3.01 to 3.66. The grand mean for this cluster was 3.30 above the bench mark of 2.50. This implies that the respondents agreed with the effects of conflict on income in rural communities of North Central, Nigeria. The standard deviations of the 12 items ranged from .298 to .902 and the grand standard deviation was 0.56 with Coefficient of Variation (C V%) of 17.08 which is good. This indicated that the respondents were not far from the mean and from one another in their responses. This added value to the reliability of the mean.

Hypothesis 3

There is no significant difference in the mean ratings of nomadic herdsman, farmers, and extension agents on the effects of conflict on income in rural communities of North Central, Nigeria.

Data for testing hypothesis 3 were presented in Table 7.

Table 7: Analysis of Variance (ANOVA) of the mean ratings of nomadic herdsman, farmers, and extension agents on the effects of conflict on income in rural communities of North Central, Nigeria.

Sources of Variation	DF	Sum of Square	Mean Square	F-ratio	P-value	Alpha-Value	Decision
Between Groups	2	294.794	147.397	531.740	.000	0.05	S, R
Within Groups	385	106.721	.277				
Total	387	401.515					

KEY: DF=degree of freedom, S=Significant, R=Rejected

The result in Table 7 showed a P-value of .000 which was less than the alpha value 0.05 at 2 and 385 degree of freedom (i.e. $.000 < 0.05$). This implies that there was a significant difference in the mean ratings of responses of the nomadic herdsman, farmers, and extension agents on the effects of conflict on income in rural communities of North Central, Nigeria. Therefore, the null hypothesis is rejected while the alternative hypothesis upheld. To identify group of respondents that had mean differences, a post-hoc multiple comparison test was performed using Scheffe's test.

Table 8: Pair Wise Comparison Between the Mean of Extension Agents, Farmers and Nomadic Herdsmen on the Effects of Conflict on the income in Rural Communities of North Central, Nigeria Using Tukey Cheffe's Test.
Dependent Variable

Respondents I		Mean Difference		95% Confidence Interval		
		(J)	Std. Error	Sig.	Lower Bound	Upper Bound
EXTENSION AGENT	FARMER	.02920	.10191	.960	-.2212	.2796
	NOMADIC HERDSMEN	1.92989*	.10784	.000	1.6649	2.1949
FARMER	EXTENSION AGENT	.02920	.10191	.960	-.2796	.2212
	NOMADIC HERDSMEN	1.90068*	.05946	.000	1.7546	2.0468
NOMADIC HERDSMEN	EXT AGENT	-1.92989*	.10784	.000	-2.1949	-1.6649
	FARMER	-1.90068*	.05946	.000	-2.0468	-1.7546

*The mean difference is significant at the 0.05 level.

The results of post hoc Pair-Wise comparison are displayed in Table 8. The analysis indicated that the mean of extension agent's vs farmers, farmers' vs nomadic herdsmen and extension agents' vs nomadic herdsmen differ significantly because the three groups all had p-value of .000 less than the alpha value of 0.05. Therefore, the differences in their opinions showed a glaring evidence that farmers and nomadic herdsmen conflict has grown worse with a great effect on income in rural communities of North Central Nigeria

Research Question 4

What are the effects of nomadic herdsmen and farmers' conflict on food security of rural communities in North Central, Nigeria? The data for answering research question 4 is presented in Table 9.

Table 9: The mean ratings of the responses of nomadic herdsmen, farmers, and extension agents on the effect of conflict on food security in rural communities of North Central, Nigeria

Section	\bar{X}	SD	Remarks
F: effect of conflict on food security			
1. No access to farm	3.10	.801	Agreed
2. No storing of farm produce like before	2.64	.708	Agreed
3. No storing of food	3.08	.847	Agreed
4. No availability of farm produce	3.64	.682	Agreed
5. No access to food like before	3.36	.680	Agreed
6. Very high cost of foodstuff	2.54	.779	Agreed
7. Inadequate food supply	3.35	.679	Agreed
8. Scarcity of dairy product	2.63	.780	Agreed
9. Scarcity of fish products	3.37	.582	Agreed
10. Scarcity of perishable food items like onions, vegetables e.t.c			
11. No market for agricultural commodities	3.02	.851	Agreed
12. Killing of working population	3.29	.654	Agreed
Grand Mean	3.11	.817	Agreed
Coefficient of Variation (C V%).	3.09	0.73	Agreed
	23.86		Acceptable

The data in Table 9 showed that all the 12 items had their mean values ranged from 2.54 to 3.63. The grand mean for this cluster was 3.09 above the benchmark of 2.50. This implies that the respondents agreed with the effects of conflict on the food security in rural communities of North Central, Nigeria. The standard deviations of the 12 items ranged from .582 to .851 and the grand standard deviation was 0.73 with Coefficient of Variation (C V%) of 23.86 which is acceptable. This indicated that the respondents were not far from the mean and from one another in their responses. This added value to the reliability of the mean.

Hypothesis 4

There is no significant difference in the mean ratings of nomadic herdsmen, farmers, and extension agents on the effect of conflict on food security in rural communities of North Central, Nigeria.

Data for testing hypothesis 4 were presented in Table 10.

Table 10: Analysis of Variance (ANOVA) of the mean ratings of nomadic herdsmen, farmers, and extension agents on the effects of conflict on food security in rural communities of North Central, Nigeria

Sources of Variation	DF	Sum of Square	Mean Square	F-ratio	P-value	Alpha-Value	Decision
Between Groups	2	97.283	48.641	206.010	.000	0.05	S, R
Within Groups	385	90.903	.236				
Total	387	188.186					

KEY: Df=degree of freedom, S=Significant, R=Rejected

The result in Table 10 showed a P-value of .000 which was less than the alpha value 0.05 at 2 and 385 degree of freedom (i.e. $.000 < 0.05$). This implies that there was a significant difference in the mean ratings of responses of the nomadic herdsmen, farmers, and extension agents on the effects of conflict on food security in rural communities of North Central, Nigeria. Therefore, the null hypothesis is rejected while the alternative hypothesis upheld. To identify group of respondents that had mean differences, a post-hoc multiple comparison test was performed using Scheffe's Test.

Table 11: Pair Wise Comparison between the Mean of Extension Agents, Farmers and Nomadic Herdsmen on the Effects of Conflict on Food security in Rural Communities of North Central, Nigeria Using Scheffe's Test

Respondents		Mean Difference (J)	95% Confidence Interval			
			Std. Error	Sig.	Lower Bound	Upper Bound
EXTENSION AGENT	FARMER	1.87989*	.09405	.000	1.6488	2.1110
	NOMADIC HERDSMEN	1.86322*	.19953	.000	1.6186	2.1078
FARMER	EXTENSION AGENT	-1.87989*	.09405	.000	-2.1110	-1.6186
	NOMADIC HERDSMEN	1.16677*	.05487	.000	-.1515	1.182
NOMADIC HERDSMEN	EXT AGENT	-1.86322*	.09953	.000	-2.1078	-3.20013
	FARMER	1.6677*	.05487	.000	-.1182	.1515

* The mean difference is significant at the 0.05 level.

The results of post hoc Pair-Wise comparison are displayed in Table 11. The analysis indicated that the mean of extension agent's vs farmers, farmers' vs nomadic herdsmen and extension agents' vs nomadic herdsmen differ significantly because the three groups all had p-value of .000 less than the alpha value of 0.05. Therefore, the differences in their opinions showed a glary evidence that farmers and nomadic herdsmen conflict has grown worse with a great effect on food security in rural communities of North Central Nigeria.

Findings

The following findings emerged from the study based on the research questions answered and hypotheses tested.

1. The findings in research question 1 and hypothesis 1 revealed 21 causes of herdsmen and farmers conflict in rural communities and there was a significant difference in the responses of the respondents.
2. The findings in research question 2 and hypothesis 2 agreed with the effects of nomadic herdsmen and farmers conflict on education in rural communities and there was a significant difference in the mean responses of the respondents.
3. The findings in research question 3 and hypothesis 3 agreed with the effects of nomadic herdsmen and farmers conflict on income in rural communities and there was a significant difference in the mean responses of the respondents.
4. The findings in research question 4 and hypothesis 4 agreed with the effects of nomadic herdsmen and farmers conflict on health in rural communities and there was a significant difference in the mean responses of the respondents.
5. The findings in research question 5 and hypothesis 5 agreed with the effects of nomadic herdsmen and farmers conflict on occupation in rural communities and there was a significant difference in the mean responses of the respondents.
6. The findings in research question 2 and hypothesis 2 agreed with the effects of nomadic herdsmen and farmers conflict on food security in rural communities and there was a significant difference in the mean responses of the respondents.

Discussion of Findings

The discussion of the findings is done based on the research questions answered and Hypotheses tested. The finding on research question 1 and hypothesis 1 agrees with Tonah (2006) who found that crops damaged by cattle, land encroachment, inadequate grazing reserves, lack of access to the water point and pollution of water points, killing of stray cattle, cattle rustling, indiscriminate bush burning, disregard to rules and regulations and so on are among the causes of conflict nomadic herdsmen and farmers.

The finding on research question 1 and hypothesis 1 is in consonance with the findings of Moritz (2016) on Understanding Herder-Farmer Conflicts in West Africa. It was found that nomadic herdsmen and farmers conflict has created a vicious cycle of poverty in many communities and how it has affected the education of the farmer's children.

The finding on research question 3 and hypothesis 3 are congruent with the findings of Ndubuisi (2018) A critical analysis of conflicts between herdsmen and farmers in Nigeria: Causes and socio-religious and political effects on national development. It was found out that the activities of the Fulani herdsmen against the farmers have resulted to the loss of properties, and a huge economic setback in Nigeria today.

The finding on research question 4 and hypothesis 4 agreed with the findings of Idakwoji, Ojomah, and Orokpo (2018) That revealed economic stagnation, loss of livelihood opportunities, loss of revenues to government, food insecurity and hunger. The findings of the authors cited above helped to add validity to the findings of this study on Analysis of Nomadic herdsmen and farmers conflict in Rural communities of North Central, Nigeria.

Conclusion

Based on the findings of the study, this study concludes that nomadic herdsmen and farmers' conflicts are prevalent in North Central, Nigeria with formidable effects on the rural communities. It argued that the conflicts are caused by a combination of factors such as destruction of farm crops, cattle rustling, blockage of grazing routes, denial of access to crop residues, overgrazing/hardening of soil, increase in farming activities, burning of rangeland and fadama, inadequate land, increase in the population of people, increase in the population of cattle, contamination of stream by cattle, sexual harassment/rape, harassment of nomads by youth in the community, disregard to traditional authority, resource competition, depletion of air, soil and habitat destruction, and youth crime/illegal possession of firearms. The results point to problems of incompatibility of livelihood strategies, competition for access and use of natural resources such as land and water. It is also concluded that nomadic herdsmen and farmers' conflict has education, health, economic occupation and food security consequences.

Recommendations

Based on the findings of this study, the following recommendations are made to stem the rising cases of farmers and nomadic herdsmen conflicts in North Central, Zone, and Nigeria at large.

1. Since the conflict between nomadic herdsmen and farmers are of increase in the Zone and appears to be caused by the identified causes with major effects on rural communities, there should be immediate enactment of new and definite law on the use of land resources as it relates to grazing lands since the present Land Use Act is rather a curse than a blessing to agricultural practices as glary shreds of evidence of failure on the control and use of land resources in this respect in Nigeria.
2. As an interim remedy for peace, grazing lands should be clearly and legally acquired and demarcated in rural communities of North Central, Nigeria where fallow lands are surplus and fallow for cattle grazing.
3. All educational institutions in rural communities of North Central Nigeria be properly fenced and equipped with security operatives to safeguard lives, properties and also, there should be peaceful coexistence between farmers and nomadic herdsmen through public enlightenment, education, or training on the best global farming practices that will ensure harmonious farming practices in agrarian communities for better income generation.
4. For sustenance of food security, more Agricultural Extension Officers should be employed to educate farmers about modern technologies that will help increase their yields such as applying standard fertilizers, pests-diseases and weeds control. Moreover, farmers are supported with finances to go into irrigation farming during the dry season to avoid farmers planting along and around river banks where cattle also depend during the season. Also, herders should be encouraged to start Agro-pastoralism which combines crop production and cattle rearing. This will reduce herder's dependence on farmers for food. Their cattle could feed on the crop residues.

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