# **Innovations**

# Effects of Farmers-Headers Conflicts on Food Production and Security in Delta State Nigeria

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#### **Abstract**

The study was design to examine the effects of farmer/herders conflict on food security in Delta State, Nigeria. Simple random sampling proceedure was used to sample 240 respondents for the study and interview schedule was the main instrument for data collection. Result from the study revealed that the mean age of farmers were 38.65years, 69.75% of the farmers were married, about 40.65% had primary education, majority (69.75%) of farmers were female. 21 years of farming experience was recorded, the mean family income was #41,750 with a mean household size of 6 persons. Majority (69.75%) of the respondents were into farming as their major occupation. The result showed that the major (80.75%) causes of the conflict was destruction of crops and farmland other notable causes were raping of women, killing of farmers and land dispute between herders and farmers. the result revealed that nine communities out of ten, had conflicts incidence of which three (obiaruku, umutu, Abavo communities) out of the nine had more frequent conflict. The result of the hypotheses showed that there was a significant difference in the level of agricultural production the year 2017 and 2021 (p=0.042<0.05) the implication of this was that conflict had more effect in agricultural production in the year 2021 indicating that there was greater incidence of conflict in the year 2021. The ANOVA result showed that there was significant (p=0.03<0.05) difference in the level of agricultural production and food security status in the three agricultural zones of Delta State. The Pearson correlation result showed that there was a significant relationship between farmer herder conflict and food security in Delta state. It was recommended that farmers should be encouraged to keep on engaging in their backyard farming in other to maintain food security status.

### Introduction

The primary source of livelihood for most people in developing countries including Nigeria which make them depend mostly on renewable resource is pastoralism and farming. The primary source of food for rural and urban population in developing countries is derived from produce of smaller farmers and pastoralists. According to IFAD (2013), 80% of food consumed is produced by smallholder farmers in Asia and sub-Saharan Africa and this constitute the major food security. But in several West African countries like Nigeria recurrent farmer–herder conflicts threaten peace, food security, and the economy, since such conflicts are on the rise and often violent in the sub-region. In Nigeria despite the great potentials and vast land available to boost agricultural output and secure food, specifically in northern regions, overwhelming conflicts have hindered this process and increased the seeming threat of climate and other natural phenomena on agricultural services. According to Mohammed (2015) farmers-headers' conflict in Nigeria has resulted to the

destruction of crops and other farm utilities, through cattle grazing, thus affecting food production. Tonah,( 2006). Stated that Conflict between farmers and herders have been a common features of people's livelihood in West Africa. Previously before the beginning of 20thcentury, such problems were mainly witnessed in the savanna belts of West Africa. Cattle rearing were mainly prevalent in the Guinea, Sudan and Sahel Savanna where crop production was carried out according to short raining season and small scale. This gave the herders an opportunity to have a vast area of grass land available to them. But as time passes by with the introduction of irrigation farming in the region farmers now begin to cultivate their lands all through season and thus this made the herders to move down south, where raining season is longer and the soil tends to retain more moisture for longer period in search for pasture. (Ofuoku and Isife, 2010). In Nigeria there are wide spread of cases of farmers herders conflict for example in Nasarawa and Benue state borders there have been conflicts between herders and farmers which have resulted to the death of over 50 persons and displacement of 20,000 persons across 10 communities in the states. Hussein (2000). Sequal to this, the National Early Warning System (NEWS) (2018) believed that the conflicts have increased in frequency, intensity and geographical scope with serious humanitarian, social, political and economic consequences. Brikman and Henrix (2011) opined that violet conflict is not only caused by difference in ideology nowadays as it was in the 20th century but it is as a result of fierce competition over the control of renewable resources and scarce resources like land and water. This competition may degenerate into serious conflict among users of natural resources.

Therefore, it can be argued that natural resource conflict now forms part of the fabric of societies especially at the local level since most rural folks' livelihood depends on natural resources. These conflicts help to tackle the trouble of perceived inequalities in resource allocation and distribution but can negatively affect livelihoods if not addressed effectively Homer-Dixion,(1999a). It was confirmed by Ghanaweb.com. (2011),Olaniyan et al.(2015) that conflict between herders and farmers has increased in the Northern part of Ghana and this is allied to the struggle over access for scarce resources. The beginning of this struggle has been mainly on crop destruction by cattle that enter into farmer's farms, occasionally in the attendance of the herding owners. Fierce competition over shrinking arable lands, and the inability of government institutions to solve the conflict (Abubakari and Longi, 2014; Tonah 2002, 2005)...

Despite the adverse effect of the conflicts such as death and injury Fulani herders continue to migrate to Nigeria especially from Sahel countries to the southern part because of availability of pasture. This has been attributed to their strong ties to powerful individuals such as the president, service chiefs and cattle owners who are in control of power in Nigeria (Bukari 2017; Olaniyan et al, 2015). Despite the conflicts, herders have also continued to tend their flocks as this is their major sources of livelihood. Various measures have been put in place by state government to be able to cub this menace of conflict but all to no avail because of the backing they have from their ethnic men in authority. Studies have been carried out on farmer herders conflicts in the study area but not much studies have been done on the effects of farmers-herders conflicts on food security in Delta state and this bring the question as to what is the effect of farmers herders conflicts on food security in Delta state Nigeria. There have been reports in daily newspaper about how farmers are no longer being able to go to access their farms because of the menace posed by the herders. This is expected to cause food insecurity. Thus this study was thought of to be worth undertaken to know the actual situation of food insecurity in Delta State Nigeria.

#### **Objectives of the Study**

The main objective of the study is to examine the effects farmers-herders conflict had on food security in delta state.

The specific objectives are to:

i. Identify the causes of farmers-herders conflict

- ii. Ascertain the frequency of conflict incidents.
- iii. Determine their productivity level for the past 5 years and
- iv. Determine the effect of the conflict on agricultural activities and production

# **Hypotheses**

 $\mathrm{H0_{1}}$  farmers-herders conflict does not significantly affect agricultural production in delta state.

 $\mathrm{H0}_2$  there is no significant difference in the level of agricultural production within the five years under study.

### **Materials and Method**

This study was carried out in Delta State, Nigeria. Data for the study was collected with the use of interview schedule, administrated to 240 farmers that was randomly selected from the three agricultural zones of the state using the register of Delta State Agricultural Development Programme

Data collected were subjected to statistical analysis such as frequency counts, percentages and means derived from 4- point likert- type scale of strongly agree 4, agree 3, disagree 2, strongly disagree 1 using a cutoff point of 2.5. The hypothesis was tested using Pearson moment correlation coefficient (PPMC) and Analysis of variance (ANOVA).

#### Results and discussion

# **Demographic characteristics of respondents**

Table 1 shows that most (45%) of the respondents are in the age bracket of 40-49 years, about 20% falls between the age bracket of 20-29years, 19.20% falls under the age bracket of 30-39years, 10% falls under the age bracket of 50-59 years while 5% falls under the age bracket of 60 years and above, this implies that the percentage of farmers that falls under the age bracket of 40-49 years are more than the ones remaining having a mean age of 38.65 years, indicating that most of the farmers are still in their youthful age and thus have the ability to work. Majority of the farmers are married (69.75%), while 15.23% of them are single, 10.08% are widowed/widower and 5.04% are divorced. This indicates that majority of them has responsibilities and such the conflict may have serious impact on their lives and that of their households. Most 69.75% of farmers are females while 30.25% are male this shows that people who are mostly engage in farming are females, this is in consonant with Ofuoku, (2017) who found that women are dominating and taking over the farming activities. Majorly 40.34% of the farmers had primary education, while 24.37% had no formal education, 20.17% of farmers had secondary education while 15.13% had tertiary education. This shows that majority of the farmers had basic education. The mean household size was six persons, consisting mostly 70.59% having 5-8 persons, this is in line with the average household size in Nigeria. Most farmers had farming experience between 1-10years (51.68%) while 28.75% of them have farming experience between 11-20 years mean farming experience of 21 years, this implies that majority of the farmers have been farming for a considerable number of years and thus have a stake in the land in which they have been farming. The mean family income/month of the respondents was #41,750 this implies that most of the respondents earn their living from farming. Most 69.75% of the respondents are into farming this means that they depend on their land and farming activities for sustenance.

**Table 1: Socio-economic Characteristics of Respondents** 

VARIABLES	FREQUENCY	PERCENTAGE%	MEAN
Age (Years)			
20-29	48	20.00	38.65
30-39	46	19.20	Years
40-49	108	45.00	
50-59	24	10.00	
60& Above	12	5.00	
Marital Status			
Married	166	69.75	Married
Single	36	15.13	
Divorced	12	5.04	
Widowed/Widower	24	10.08	
Sex			Female
Male	70.72	30.25	
Female	166	69.75	
<b>Educational Status</b>			
No Formal Education	58	24.37	Primary
Primary Education	96	40.34	Education
Secondary Education	48	20.117	
Tertiary Education	36	15.13	
House Hold Size			
1-4	47	19.74	6 Persons
5-8	168	70.59	
Above 8	23	9.66	
Farming Experience			
5-10	123	51.68	
11-20	69	28.75	21 Years
21-30	38	15.83	
Above 30Years	8	3.33	
Family			
Income/Month (#)			
5,000 - 15,000	82	34.45	
16,000 - 34,000	48	20.16	#41,750
35,000 – 70,000	60	25.21	
Above 70,000	48	20.17	
<b>Primary Occupation</b>			
Farming	166	69.75	Farming
Artisan	12	5.04	
Hunting	36	12.17	
Trading	24	10.08	

Source: field survey, 2022.

## **Causes of Farmers herders Conflict**

Table 2 shows that majority of the respondents (80.25%) reported that the most serious causes of farmers herder conflict is destruction of crops and farm lands which could be as a result of competition for scarce resources. Which is in consonant with Abubakari and Longi, (2014) and Enimu, et al (2019), who reported that destruction of crops and farmland among other scarce resources were earlier causes of farmer herder conflicts, 50% see rape of women as also a very serious cause, while 40.33% agrees that killing of farmers is also a cause, while 20.16% agrees that disputed land is also one of the causes of farmers herders conflict in the study area. This is also in line with the work of Odoh and Chigozie,(2012) who stated that the main cause of farmer herders violence is as a result of farmland invasion by herders and destructions of agricultural farmlands of the people within the communities. In the same vein, Mohammed (2015) argued that farmersherders' conflict in Nigeria has caused the destruction of crops and other farm utilities, through cattle grazing, thereby affecting food production.

Table 2: Causes of Famers Herder Conflict.

Causes	Frequency	Percentage %	Rank
Destruction of crops/farmlands	191	80.25	1 <sup>st</sup>
Rape Of Women	119	50.00	2 <sup>nd</sup>
Killing Of Farmers	96	40.33	3 <sup>2d</sup>
Disputed Lands	48	20.16	4 <sup>th</sup>

Source: field survey data, 2022.

# **Frequency of Conflict**

Table 3 shows that there was frequent conflict in Obiaruku and Umutu community (mean = 3.15), while in Abavo community (mean=3.06) which also indicates that the conflict is also frequent. In Emu-ebendo, it showed that there was no conflict (mean =2.43) less than the cutoff point of 2.5, while in Okurekpo community the mean = (2.50), Umeghe community the mean is (2.97) while in Obodo-eti Orogun community, (mean=2.51), Patani (mean=2.55). The implication of this is that there were frequent conflicts in the communities. This indicates that of all the community studied only Emu-ebendo had a mean (2.43), this imply that frequency of conflicts is not evenly distributed in the state. This findings, is in agreement with Mustapha, (2019) who undertook a similar study in Benue State and found that the frequency of conflict is not distributed evenly in Benue State.

Table 3: Frequency of Conflict.

Names Of Communities	Very Frequent	Frequent	Not So Frequent	No Conflict	Score	Mean	Rank
	4	3	2	1			
Obiaruku	120(480)	68(174)	36(72)	24(24)	750	3.15	1 <sup>st</sup>
Umutu	115(460)	60(180)	36(72)	27(27)	750	3.15	1 <sup>st</sup>
Abavo	100(400)	76(228)	39(78)	23(23)	728	3.06	3 <sup>rd</sup>
Emu-Ebendo	49(196)	44(132)	105(210)	40(40)	578	2.43	8 <sup>th</sup>
Okurekpo	48(192)	43(129)	121(242)	26(26)	589	2.50	7 <sup>th</sup>

Umeghe	65(260)	113(339)	49(98)	11(11)	708	2.97	4 <sup>th</sup>
Obodo-eti	38(152)	79(237)	88(176)	33(33)	598	2.51	6 <sup>th</sup>
Orogun							
patani	48(192)	53(159)	120(240)	17(17)	608	2.55	5 <sup>th</sup>

Source: field survey data, 2022.

**Cut Off ( >2.50 = Frequent Conflict < 2.50 = No Frequent conflict** 

### **Effects of Conflict on Agricultural Activities and Production**

Table 4 revealed that most of the respondents have not been able to go to farm due to conflict (Mean=3.15), farming activities have stopped due to conflict (Mean=2.43), I farm but not much due to conflict (Mean=2.94), due to conflict my production have reduced (Mean=3.09), People migrated due to conflict (Mean=3.94). The mean 2.43 indicates that although there is conflict, people still try to go to farm for sustenance. All means greater than 2.50 indicated that conflicts has affected agricultural production. This is in line with the work of Atuwi ,(2018) who found that the effects of farmer–herder conflict is mostly adverse and range from loss of lives, properties, reduced production displacement of people, school drop outs among others. Also Ofem & Bassey, (2014) in their study in cross river state identified the effects of conflict to include destruction of crops, contamination of streams, disregard for traditional authority, and sexual harassment of women by nomads.

Table 4: Effects of Conflict on Agricultural Activities and Production

Strongly	Agree	Strongly	Disagree	Score	Means
Agree		Disagree			
4	3	2	1		
143(572)	35(105)	12(24)	48(48)	749	3.15
58(232)	72(216)	24(48)	84(84)	580	2.43
82(328)	96(288)	24(48)	36(36)	700	2.94
106(424)	72(216)	36(72)	24(24)	736	3.09
60(240)	130(390	24(48)	24(24)	702	2.94
	)				
	Agree 4 143(572) 58(232) 82(328) 106(424)	Agree       3         143(572)       35(105)         58(232)       72(216)         82(328)       96(288)         106(424)       72(216)	Agree         Joisagree           4         3           143(572)         35(105)           12(24)           58(232)         72(216)           24(48)           82(328)         96(288)           24(48)           106(424)         72(216)           36(72)	Agree         3         2         1           143(572)         35(105)         12(24)         48(48)           58(232)         72(216)         24(48)         84(84)           82(328)         96(288)         24(48)         36(36)           106(424)         72(216)         36(72)         24(24)	Agree       3       2       1         143(572)       35(105)       12(24)       48(48)       749         58(232)       72(216)       24(48)       84(84)       580         82(328)       96(288)       24(48)       36(36)       700         106(424)       72(216)       36(72)       24(24)       736

Source: field survey data, 2022.

Cut off 2.50(> or =2.50) Effect (<2.50) No Effect

#### Mean Production Level in the Different Communities for the Past Five Years

Table 6 shows the mean production level for the past five years. The mean production level for Obiaruku 2017 was 1,974kg; in year 2018 was 2793.6kg, Year 2019 =2073kg, year 2020 =1437kg, and Year 2021=807.96kg. This shows that the production level for year 2018 had higher mean =2793.6kg while that of 2021 has lower mean. This may be due to frequent conflict in the said community. In Umutu community the mean production level for 2017 was higher than that of year 2018, 2019 & 2020 and became lower in 2021. These may be attributed to the rate of conflict. In Abavo community mean production level 2018 =1976kg was

higher and lowest in 2021=mean=1112.90kg. In Emuebendo community the production level for 2017 mean =2136kg is highest and lowest in 2021with mean =907.76kg,In Okurekpo community mean in 2017 & 2018 was 2884kg and 1974kg highest and while it was low in year 2019,2020 and 2021 having the lowest production level mean 2021= 1026. In Umeghe community in 2017 the mean production level was 966kg, while that of 2021 has lowest mean = 706.90kg. In Obodo Eti Orogun community the mean production level 2017 was1875kg, year 2018 had a mean production level of 1989kg, while that of year 2019 was 1346kg, year 2020 had 1206kg and year 2021 having the least mean production level of 904.20kg. In Patani community the mean production level was 2490kg, year 2018 had mean of 1876kg, year 2019 mean =1180kg, year 2020 mean =1336kg, while the year 2021 had the least production level with mean = 960kg. The implication was that crisis had affected the level of production over the years. Resulting in the downward dwindling of agricultural production level. This was in agreement with Adebayo, (2008) cite by Abdullahi (2014), in a similar view, revealed that farmers in Kwara State were displaced and shattered as a result of their clash with herders which affected agricultural output. Also according to Mohammed, (2015) reported that farmer's herders conflict has affected the level of food production.

Table 6: Mean Productivity level for the past five years (kg)

Year	2017	2018	2019	2020	2021
Obiaruku	1974	2793.6	2073	1437	807.96
Umutu	2078	1650.7	1967.5	1574	1057
Abavo	1976	1470	1260	11.89	1112.90
Emu-ebendo	2136	1569.30	968	1080	907.76
Okurekpo	2884	1979	1359	1236	1026
Umeghe	1966	2574	1546	1076	706.90
ObodoEti-Orogun	1875	1989	1346	1206	904.20
Patani	2490	1876	1180	1336	960

Source: Field survey data, 2022.

# Estimation of Effects of farmer's herders conflict on the difference in agricultural production level (PL) in five years.

Table 7 shows the effect of farmer's herder's conflict on agricultural production level in the different years in the study area. Pearson correlation matrix result showed that there was a significant difference in the level of agricultural production between the year 2021 p=0.042 < 0.05, 2017 p=0.019, 2018 p=0.014 < 0.05. This implies that, this was the period they have the highest level of farmer's herders conflict which has in turn affected farming activities and thus resulting to low productivity.

Table 7: Effects of farmer's herders conflict on agricultural production

Correlations							
		freq of conflict	PL2017	PL2018	PL2019	PL2020	PL2021
freq of conflict	Pearson Correlation	1	340	291	083	.093	593*
	Sig. (2-tailed)		.143	.213	.727	.698	.042
	N	238	238	238	238	238	226
PL2017	Pearson Correlation	340	1	.762**	.565**	.138	.663*
	Sig. (2-tailed)	.143		.000	.010	.562	.019

	N	238	238	238	238	238	226
PL2018	Pearson Correlation	291	.762**	1	.838**	.541*	.687*
	Sig. (2-tailed)	.213	.000		.000	.014	.014
	N	238	238	238	238	238	226
PL2019	Pearson Correlation	083	.565**	.838**	1	.799**	.468
	Sig. (2-tailed)	.727	.010	.000		.000	.125
	N	238	238	238	238	238	226
PL2020	Pearson Correlation	.093	.138	.541*	.799**	1	.086
	Sig. (2-tailed)	.698	.562	.014	.000		.791
	N	238	238	20	20	226	226
PL2021	Pearson Correlation	593*	.663*	.687*	.468	.086	1
	Sig. (2-tailed)	.042	.019	.014	.125	.791	
	N	226	226	226	226	226	226

Source: Field Survey Data, 2022.

Note: PL is production level.

# Estimation of the Difference in Productivity Level of farmers as a result of Conflict in the past five years

The ANOVA result showed that there was a significant difference in the level of production & food security status in the eight (8) communities in the three agricultural zones (P 0.033 < 0.05). This implies that conflicts has an effect in the level of production in every agricultural zones in the state.

Table 8: difference in productivity level of farmers as a result of conflict

Variables	Sum Of Squares	df	Mean Square	Frequency	Significant
Between Groups	244953.372	4	61238.343	1.822	0.033
Within Groups	2924190.367	234	33611.384		
Total		238			

Source: Field Survey Data, 2022.

#### Effects of Farmers Herders Conflicts on Food Security in the Study Area

Table 9 shows that there was a significant relationship between farmer herder conflict and food security in Delta state. This implies that despite the conflicts farmers still have backyard gardens to grow crop in other to fulfill the food requirements of their household. farmers' herders-conflict significantly affect food security in the study area. The more the conflict the lower the production, this was in agreement with earlier study of Atuwi,(2018) who reported that the effects of farmer-herder conflict is mostly adverse and range from loss of lives, properties, reduced agricultural production, displacement of people, school drop outs among others.

<sup>\*.</sup> Correlation is significant at the 0.05 level (2-tailed).

<sup>\*\*.</sup> Correlation is significant at the 0.01 level (2-tailed).

Table 9: effects o	Table 9: effects of farmers herders conflict on food security					
		Freq.	of			
Effects		conflict		food security status		
freq of conflict	Pearson Correlation	1		0.881		
	Sig. (2-tailed)			0.033		
	N	238		238		
food security	Pearson Correlation	0.881		1		
status	Sig. (2-tailed)	0.033				
	N	238		238		

Source: Field Survey Data, 2022.

#### Conclusion

The study shows that major occupation of the respondents were farming, implying that their sustenance is mainly from farming activities with a mean household size of 6 persons. The major cause of farmers' herders' conflict were destruction of crops and farm lands, raping of women, killing of farmers and dispute over land. There were frequent conflicts in Obiaruku, Umutu and Abavo community amongst other community studied. There was a significant difference in the level of agricultural production within the 5 years under study. This implies that the more frequent the conflicts the lower the production level. There was a significant difference in the level of agricultural production within the three agricultural zones of Delta State. The implication was that conflict affected agricultural productions in the state. The result also reveals that there was a significant relationship between farmers-herders conflict and food security in Delta State. If there is reduction in the rate of conflict, agricultural productivity level will increase but the more the conflict the less the production level. It is recommended that Government should put strategies in place to be able to curb these known causes of farmers herders conflict in other to be able to mitigate its effect on agricultural activities in the state.

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