

Early Warning Signs to Farmer-Pastoralist Conflicts in Bauchi State, Nigeria

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ABSTRACT

The study examined the early warning signs to farmers-pastoralists conflict in western zone of Bauchi State, Nigeria. One hundred and fifty respondents were randomly selected, in addition to 50 extension agents. Data were collected using questionnaires and were analyzed using simple descriptive statistics and correlation matrix. The results show that, majority (58.78% & 65.22%) of both farmers and extension agents fell within the age brackets of 30-49 years. The results also reveal that most (82.43% & 86.96%) of farmers and extension agents were males, 74.32% of farmers-pastoralists had one form of education or the other while 30.64% of extension agents being Higher National Diploma holders. The result further shows that, the major early warning signs as noticed by farmers-pastoralists were drought prevalence (76.92%), raping/sexual harassment (71.80%), and discrimination among groups (70.49%), among others. According to extension agents' perception, discrimination among groups (93.55%), drought prevalence (87.10%), influx of migrant herders (83.87%) were the major signals among others. The study recommends that stakeholders of farmers-pastoralists conflict should be sensitized on the need to take into cognizance of early warning symptoms that may trigger conflicts in the study area. Such mechanism, if properly adopted would provide the opportunity to do something to prevent the emergence and/or escalation of conflict.

Keywords: Conflicts, early warning signs, Farmers and Pastoralists

INTRODUCTION

Conflicts among the farmers and pastoralist in Africa are not a new story. It have existed since the beginnings of agriculture. The conflict between nomad and the settled farmer goes back to the earliest written records and is mythically symbolised in many cultures (Chatwin 1989). However, in recent years the conflicts seem to surpass measures for mitigating them. Hence, the conflicts seem to cause fighting or to suggest possibility of fighting amongst the farmers and the pastoralist (Norman, 2013). But the prevalence of tsetse flies and low settlement densities kept the incidence of clashes at a low frequency until the twentieth century. In West Africa, the introduction of cheap trypanocides and other veterinary drugs increased herd sizes to levels that compelled herders to seek pastures outside their traditional ecological range. Similarly, improved human health has increased overall population and thus pressure on arable land. Nonetheless, the Persistence of slash and burn agriculture typical of much of semi-arid and sub humid West Africa allowed the two groups to co-exist, especially through the exchange of crop residues for manure. However, the marked expansion of riverine and valley-bottom (Fadama) cultivation since the 1980s meant that herders and farmers are now competing very directly for access to river banks with a consequent increase in conflict. Also, increasing political control of Local Governments

(LGs) by representatives of farming populations has meant pressure both to invade land reserved for grazing and to exclude pastoralists from high-productivity areas (Blench and Dendo, 2003). In Nigeria, in particular, this conflict has now been subsumed into a broader dichotomy of religion and disputes over access to resources are now framed in religious terms. Moreover, increasing availability of modern weapons has increased the intensity and violence of these disputes. It is often said that Pastoral Organizations, such as Miyetti Allah, can play a role in conflict mediation. However, their record in this area is very poor because they are in reality highly dispersed and their ability to lobby correspondingly limited the changing nature of farmer-pastoralist conflict in Nigeria.

Zartman (2005) asserts the factors that generate conflict can be grouped into five basics, which are control over resources, preferences and nuisances, beliefs, values, or the nature of the relationship. On the other hand, Signer (1996) identified territory, ideology, dynastic legitimacy, religion, language, ethnicity, self-determination, resources, markets, dominance, equality, and, of course, revenge as the major factors that cause conflict. The types of conflicts for survival between the Fulani pastoralists and farmers in Northern Nigeria vary in form and intensity from one community to another. Social and economic factors continue to provoke violent conflicts

among the Fulani pastoralists and farmers. The intensity and variations of the conflicts largely depend on the nature and type of the user groups where the pastoralists graze. These conflicts have constituted serious threats to the means of survival and livelihoods of both the farmers and pastoralists and what both groups are tenaciously protecting and projecting. The conflicts, through provocative claims over access rights to farmland and cattle routes (*labi*), have become ubiquitous and seem to have defied solutions (Abbass, 2012).

To be able to mitigate the occurrence of conflict, it is essential for stakeholders to identify indicators or precursors of conflict situation. These indices are technically called *early warning signs of conflict*. However, detecting and describing these indicators will absolutely assist in curtailing future conflict eruption, and it will be a yardstick for a precise prediction of the magnitude, nature, timing, and location of anticipated violence. The goal of early warning is born from a hope to head off conflict before it becomes costly. In a way, it has become a holy grail to come up with ways to identify potential conflict before it actually erupts. Based on similar efforts to predict natural disasters and crop yields, for example, many have attempted to construct models for conflict early warning. One could distinguish between early warning as contingency planning, e.g. for refugee flows, and as conflict prevention. Early warning is a tantalizing prospect since, should we become more cognizant of such mechanisms and it provide the opportunity to do something to prevent the emergence and/or escalation of conflict. Lives can be saved more economically and conflict perhaps better contained. Yet, many obstacles, both theoretical and practical, remain the factors for realizing this vision (Brahm, 2012).

Evidence was presented of conflict between farmers and herders in the pre-colonial period. There is also a considerable body of evidence for an increase of conflict within living memory and especially during the post-independence period. This evidence includes farmer and herder testimonies. A significant number of researchers do not sense a dramatic increase in the incidence or gravity of farmer-herder conflicts. There is, however, a dearth of empirical data and it is difficult either to confirm or deny the hypothesis of increasing violent conflict. Those who argue that conflicts are not increasing, nevertheless feel that the causes of conflicts are changing and acknowledge that the visibility and perhaps intensity of such conflict is

increasing (Seddon and Sumberg, 2010). the conflicts cause displacement of farmers and herdsmen. Such displaced farmers have become a source of liability to other farmers whom they have to beg for food for themselves and their families. This has created a vicious cycle of poverty in such communities. A lot of killing by the nomads and reprisal killing of nomads by the host communities takes place during the conflicts. Herds of cattle belonging to the nomads are also killed. Also, some of the victims (young and old) are badly injured or maimed.

Statement of the Problem

Farmer-pastoralist conflicts have resulted in reduction in output and income of crop farmers as a result of the destruction of crops by cattle and indiscriminate bush burning. Many farmers lost part or the whole of their crops. This suggest reduced yield which translated into low income on the part of the farmers who take farming as a major occupation. This tends to negatively affect their savings, credit repayment ability, as well as the food security and economic welfare of urban dwellers that depend on these farmers for food supply. This discourages the farmers and rural/agricultural development. It has reduced some women farmers to the status of widows. All these have drastically reduced agricultural labour force in the area. In the process there are reported cases of proliferation of small arms and ammunitions since the host farming communities and the headsmen saw each other as archenemies. This is inimical to the spirit of integration of Nigerian tribes or ethnic groups and peaceful co-existence (Ofuoku and Isife, 2009). Government is unable, or unwilling, to act decisively, in part because of its self-absorption in local matters and self-interest and majority of the populations in Nigeria are settled farmers with access to considerable resources and willingness to protect their communities which could make the conflicts bloodier and more sustained.

Objectives of the Study

The purpose of this study includes the following;

- i. To describe the socio-economic characteristics of respondents in the study area.
- ii. To identify the types of early warning signs to farmer-pastoralist conflicts in the study area.
- iii. To determine the relationship between conflict occurrence and socio-economic factors of the respondents in the study area.

MATERIALS AND METHODS

The Study Area

Bauchi State is located in the north eastern region of Nigeria and occupies a total land area of 49,119 km² and it lies between the coordinates of Latitude 10°30'N 10°00'E and 10.5°N and Longitude 10°E10.5; 10 10.5; 10 (Wikipedia, 2010). According

to census (2006), it has population of 4,676 465 people. The Western zone of Bauchi State Agricultural Development Programme was the study area, which is made up of seven local government areas including Alkaleri, Bauchi, Bogoro, Dass, Kirfi, Tafawa Balewa and Toro. The Zone has a total population of 2,497,782 people representing 53.41 percent of the total population in the state. The State is

characterized by two distinct vegetative zones which include Northern Guinea Savannah and Sudan Savannah. The study area is bounded by Gombe State to the east, Plateau State to the south and Kaduna State to the West (BASG, 2010). Bauchi state experienced both wet and dry season with temperatures ranging between 15⁰C -29.7 ⁰C in January to 23⁰C -32.4 ⁰C in June with an average relative humidity of 40.1 percent. It is also characterized with an average annual rainfall of 85.6mm (CPP, 2011).

Sampling Procedure

Sampling for this study was drawn from farmers and pastoralists, in three (3) randomly selected Local Government Areas (Kirfi, Tafawa Balewa and Toro)

RESULTS AND DISCUSSIONS

Socio-economic characteristics of the respondents

The results in Table 1 revealed that most (30.40%) farmers-pastoralists fell within the age bracket of 40-49 years. This implies that, majority of the respondents were in their active age and are expected to be energetic. The result is closely similar with that of Pur *et al* (2006) who asserted that, majority of the

of the study area. Purposive sampling was used in the selection of pastoralists, while arable farmers were selected using simple random sampling technique. Purposive sampling was employed to be able to capture pastoralist who were sparsely distributed.

Data Collection and Data Analysis

The data were collected using structured questionnaires administered with the assistance of Village Extension Agents (VEAs) to respondents. The collected data were analyzed using both descriptive and inferential statistics. Frequency tables and charts were used in analyzing objective I & II, while correlation analysis was employed to analyze objective III.

respondents interviewed were between the age of 35 and below. The result also shows that most (82.43%) of the respondents were males. This might be linked to the religious inclination of the study area where women observed purdah and hence cannot be easily reached. Conversely, Ofuoku and Isife (2009) argued that 58.8% of the farmers studied in Delta state were females while male farmers constituted 41.3%.

Table 1: Distribution of farmer-pastoralists based on based on socio-economic characteristics

Index	Frequency	Percentage
Age group(years)		
Below 30	26	17.57
30-39	42	28.38
40-49	45	30.40
50 and above	35	23.65
Total	148	100
Gender group		
Male	122	82.43
Female	26	17.57
Total	148	100
Educational status		
No Education	38	25.68
Non-formal education	36	24.32
Formal education	74	50.00
Total	148	100
Marital status		
Married	125	84.46
Single	09	6.08
Divorced	08	5.41
Widowed	06	4.05
Total	148	100
Household size		
1-5 members	64	43.24
6-10 members	41	27.70
11-15 members	23	15.54
16 and above members	20	13.51
Total	148	100

Source: Field Survey, 2012

Table 2: Distribution of extension agents based on their socio-economic characteristics

Index	Frequency	Percentage
Age group(years)		
Below 30	03	6.52
30-39	13	28.26
40-49	17	36.96
50 and above	13	28.26
Total	46	100
Gender group		
Male	40	86.96
Female	06	13.04
Total	46	100
Educational status		
Secondary education	02	4.35
Certificate holders	04	8.70
Diploma holders	10	21.73
HND holders	14	30.43
PGD holders	12	26.09
B. Sc. holders	04	8.70
Total	46	100

Source: Field Survey, 2012

The result also shows that, most (49.64%) of the farmers had formal education, 24.32% had non-formal education with 25.68% who cannot read and write. This implies that, the level of literacy is moderate in the study area. According to a priori expectation majority of the people in the study act rationally, hence can accommodate people of different cultural background. This result is consistent with Pur *et al* (2006) where 97% of the respondents were literate. The results further revealed that, majority (84.46%) of farmers and herders were married in the study area. This shows that conflict incidence in the study area is expected to be low due to the fact that married people are calm and therefore can withstand and resist violent situation. Sulaiman (2008) revealed that household leaders and married are calmer in response to provocation which can often resist violent conflicts. The results Table 1 showed that, majority (63.51%) of the respondents had family members between 1 and 10. This indicates that the respondents

have sufficient family labour for both their crops and livestock enterprises. This result is closely similar with Sulaiman (2008) who related that, household size of 6-10 dominated for both arable and pastoralist farmers in Bauchi state.

The result also in Table 2 described the demographic factors of extension agents. As shown in the result, majority (86.96%) of extension agents interviewed were males. This findings show that males dominate extension services in the study area. The result is similar with that of Banmeke *et al* (2010) who related that 72.50% of extension agents in Edo State were males. The result also reveals that, most (30.43% & 26.09) of extension agents hold Higher National Diploma (HND) and Post Graduate Diploma respectively. However, according to this study most of the extension agents in the study area were educated. This is slightly lower than that discovered by Banmeke *et al* (2010) where 84.3% of extension agents in Edo state were Diploma/HND holders.

Table 3: Respondents distribution based on the existence of warning signs

Variables	Farmers(n=101)		Extension agents(n=34)	
	Freq.	%	Freq.	%
Existence of warning signals				
Yes	39	38.61	31	91.18
No	62	61.39	03	8.82
Total	101	100	34	100

Source: Field Survey, 2012

Table 4: Distribution of respondents based on types of early warning signs in the study area

Index	Farmers(n=39)		Extension agents(n=31)	
	Freq.	%*	Freq.	%*
Herders forcefully graze on crop residues	18	46.15	26	83.87
Raping/Sexual harassment	28	71.80	21	67.74
Arable Farmers prevent herders from grazing	21	53.85	16	51.61
Bad utterances from both parties	11	28.21	18	58.07
Encroachment of farms by herders	25	64.10	12	38.71
Blockage of cattle route by farmers	27	69.23	24	77.42
Cultivation along watering points	21	32.85	22	70.97
Discrimination among groups	31	70.49	29	93.55
Influx of migrant herders(transhumance)	08	20.51	26	83.87
Drought prevalence	30	76.92	27	87.10

Source: Field Survey, 2012. *Multiple responses

Existence of early warning signals

The result in Table 3 reveals that, majority (62.29%) of farmers-pastoralists perceived that there were no warning signs before conflict eruption, while only 38.61% reported the presence of early warning signals of conflicts. Conversely, 91.18% of extension agents reported the existence of early warning signals before conflict occurs in the study area. The higher proportion of farmer-pastoralist might be due to their inability to take into cognizance the importance of identifying early warning symptoms to conflicts. On the part of extension agents whose indicate the presence of warning signals may be related to their level of awareness as they can see things and analyzed it accordingly

Types of early warning signals in the study area

As shown in Table 4 the major early warning signs as noticed by farmers-pastoralists were drought prevalence (76.92%), raping/sexual harassment (71.80%), discrimination among

groups (70.49%), blockage of cattle route by farmers (69.23%), and encroachment of farms by herders (64.10%) among others. On the other hand, extension agents' perceived that, discrimination among groups (93.55%) was the major sign followed by drought prevalence (87.10%), influx of migrant herders & forcefully grazing on crop residues (83.87%), blockage of cattle route by farmers (77.42%), and cultivation along watering points (70.97%) among others. However, Brahm (2012) attempted to categorize early warning signs to include Sudden demographic changes and population displacement; rising unemployment rates; economic shocks or financial crises; destruction or desecration of religious sites; discrimination or legislation favouring one group over another; Government "clamp-downs"; Destabilizing referenda or elections; A rise in "societal" intolerance and prejudice; An increase in numbers of demonstrations or rallies; Foreign intervention; Contagion (harmful influence with a tendency to spread); and An influx of refugees.

Table 5: Correlation matrix of the relationship between socio-economic variables of respondents and occurrence of conflicts.

Parameters	C	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	X ₇	X ₈	X ₉
C	1.00									
X ₁	0.114	1.00								
X ₂	-0.319***	-0.066	1.00							
X ₃	0.003	-0.061	0.079	1.00						
X ₄	-0.139	0.026	0.750***	0.011	1.00					
X ₅	0.152	0.056	-0.354***	0.074	-0.326***	1.00				
X ₆	0.020	0.020	-0.134	0.011	0.002	0.284***	1.00			
X ₇	-0.198**	-0.063	0.718***	-0.016	0.704***	-0.461***	-0.195*	1.00		
X ₈	0.109	0.063	0.626***	0.018	0.681***	-0.524***	-0.157	0.740***	1.00	
X ₉	0.108	0.041	0.137	0.228**	0.105	0.082	0.025	0.076	-0.061	1.00

Source: Field Survey, 2012

Key: C= Conflict Occurrence, X₁= Gender, X₂= Age, X₃= Marital Status, X₄= Household Size, X₅= Educational Status, X₆= Occupation, X₇= Experience in Farming, X₈= Experience in Pastoralism, and X₉= Farm Size.

Relationship between Socio-economic variables and conflict occurrence

The result of correlation matrix showed that, socio-economic variables such as gender (0.114), marital

status (0.003), educational status (0.152), and occupation (0.020) were positively correlated with conflict occurrence in the study area. On the other hand, age (-0.319), household size (-0.139), experience both in farming (-0.198) and Pastoralism (-0.109), and farm size (-0.108) have negative correlation with conflict occurrence. This result is slightly different with the findings of Sulaiman *et al* (2011) who found that all the selected socio-economic

variables were negatively correlated with conflict occurrence except marital status and experience. The result also revealed that, only age and farming experience were significantly related with conflict at $p < 0.001$ and $p < 0.01$ with marginal contribution of -0.319 and -0.198 respectively. This means that, as age

increases, conflict occurrence reduces, this must be due to the fact that as people grow older they are responsible and can control their emotions better than those with lower age. Similarly, experienced farmers can observe the ethics of farming, and this can significantly reduce the incidence of conflicts.

CONCLUSION

The result of this study revealed that early warning signs to farmer-pastoralist conflicts do manifest in the study area. The findings discovered that drought prevalence, discrimination among groups, blockage of cattle routes by farmers and cultivation along watering points were the major early warning signs to conflict eruption in the study area. The findings further revealed that, only age and farming experience were

significantly related with conflict in the study area. It is therefore recommended that stakeholders of farmer-pastoralist conflict should be sensitized on the need to take into cognizance of early warning signs that may generate conflicts in the study area. Such mechanisms, if properly adopted would provide the opportunity to do something to prevent the emergence and/or escalation of conflict.

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