



ANALYSIS OF FARMER-HERDER CONFLICTS IN ZAMFARA STATE OF NIGERIA

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ABSTRACT

This study was conducted to analyse the conflicts occurring between farmers and herders in Zamfara State, Nigeria. Respondents for the study were farmers and herders that are found in the study area. Cluster sampling was used in the selection of four local government areas (Birnin Magaji, Zurmi, Talata Mafara and Tsafe) where the study was conducted. Existence of possible sources of conflicts between herders and farmers served as the basis for the selection. A total of 235 respondents (160 farmers and 75 herders) were randomly selected and interviewed with the aid of structured questionnaires. Frequency distributions and Chi-square test were employed in data analysis. The results show that majority of the farmers (84.4%) combine crop production with animal husbandry while most (65.3%) of the herders were sedentary type. Similarly, herders (57.3%) and farmers (56.3%) have reported farmer-herder relations in the area to be oscillatory in nature. The occurrence of farmer-herder conflict was very high in the study area because majority of the farmers (90.7%) and herders (82.7%) have ever witnessed such disputes. Nomads and semi-settled herders were mostly involved in the conflicts. Devolution of control of natural resources to local communities has been recommended as possible solution to these crises.

Keywords: Farmers; Herders; Natural Resources; Conflicts

INTRODUCTION

Customary property rights, which are essential for livestock production in Africa, have been eroded by a long history of conflicts (van den Brink, *et. al.*, 1995 in Kirk, 1999). Customary property rights refer to the claims, entitlements and related obligations among people regarding the use and disposition of a scarce resource that are based on local traditions. A variety of conflicts on several levels precisely find their origins in attempts to effect rigid changes in tenure through state policy in pastoral areas: disputes between pastoralists and the state over land rights, between competing land users (farmers, herders, fishermen, woodcutters and so on) over access to common resources, or between pastoral organisations over differing approaches to halt the loss of lands (Cousins, 1996). Thus, all conflicts are surrounded by an increasing competition for land as a result of population

growth, land scarcity, and a new solvency due to income earned outside agriculture (Gefu and Gilles, 1990; Fraser, 1997; GTZ 1998 in Kirk, 1999).

Kirk (1999) observed that legal arrangements for reconciling the competition of mobile and sedentary production systems over natural resources are lacking in Africa. This leads to profound conflicts between farmers and herders, with farmers claiming anarchic use of rangelands and herders rushing their livestock onto cultivated fields. Indirectly, the state "farmer bias" in national development policy also has contributed to land conflicts (van den Brink, *et. al.*, 1995 in Kirk, 1999; Anon, 1995; Shazali and Ahmed, 1999; Pantiluano, 2002; Mkutu, 2002). The placing of taxes on livestock ownership by the state to obtain compensation for the use of grass by pastoralists has caused further deterioration of the situation. Thus political and economic power has steadily been shifting toward farmers in the West African Savannah while pastoralists have become more neglected or even suppressed (Kirk, 1999).

Land conflicts in Africa are proving more difficult to solve because local leading institutions have largely lost their authority, while few institutional innovations have been developed to replace them (Hasseling and Ba, 1994; Kirk and Adokpo-Migan, 1994, both cited in Kirk, 1999). However, in the view of Hendrickson (1997), the key difficulty in managing conflicts over natural resources in the Sahel stems from the absence of an over-arching authority to reconcile the different mechanisms (customary and modern) that already exist.

In the light of the foregoing, it is necessary to develop a workable framework that can address the overlaps and contradictions between the informal and formal, customary and modern arrangements for managing natural resources and conflicts with the aim of ensuring equitable and peaceful access to land and other natural resources to all users. Policies and programs aimed at preventing or resolving these conflicts are however doomed to fail if they are based on erroneous assumptions and incomplete understandings of the conflicts.

It is against this background that this study seeks to analyse the incessant conflicts occurring between farmers and herders, and the kinds of relationships (ties and tensions) that exist between pastoralists and farmers in Zamfara State in north Western Nigeria.

MATERIALS AND METHOD

Study Area

The study was conducted in Zamfara State, Nigeria. The choice of the state was informed by its high population of farmers and pastoralists (who constitute over 80% of the people) (Dangusau, 1998) and for its relatively large number of grazing reserves (e.g. Zamfara Grazing reserve). The state also serves as a transit zone for pastoralists migrating from neighbouring states and the Niger Republic towards central and Southern parts of Nigeria in search of pasture at the end of the wet season. Zamfara State, like many other states in northern Nigeria, has a history of rampant clashes between pastoralists and sedentary farmers. One of these clashes between the two groups in the State has been reported by Anon. (2000).

Zamfara State stretches from latitudes $10^{\circ} 40^1$ N to $13^{\circ} 40^1$ N and longitude $4^{\circ} 30^1$ to $7^{\circ} 06^1$ E, covering a landmass of 38, 418 square kilometres. It shares boundaries with Niger State and Kebbi State in the West, Katsina State in the east, Kaduna State in the south

and Sokoto State and Niger Republic in the north (Dangusau, 1998). The population of the state was estimated at 3,259,846 people in the 2006 National Census.

Agriculture has a unique position in the economy of the state. It is estimated that agriculture, in its various forms, provides the means of livelihood to over 80 per cent of the population of the area. In addition to crop production, the inhabitants of Zamfara State engage in rearing of livestock such as cattle, sheep, goats and poultry. It is estimated that the livestock population in the area is well over 9 million heads (Dangusau, 1998).

Sampling Procedure and Data Collection

The units of analysis for the study were farmers and Fulani herders who are using the pastoral resources in Zamfara state. It is assumed that these individuals are stakeholders in the conflicts over natural resources in the state. They are therefore assumed to possess information that is vital to the study. Cluster sampling was used in the selection of the farmers and pastoralists. The state was divided into four clusters on the basis of presence of potential sources of conflicts between farmers and herders. Birnin Magaji Local Government Area (LGA) was sampled in the first cluster because the popular Zamfara Grazing Reserve whose resources are utilised by both pastoralists and farmers stretches through the area. Zurmi LGA was sampled in the second cluster because it shares a common boundary with the Niger Republic where migratory pastoralists who are known to frequently run into conflicts with farmers usually come from. In the third cluster, Talata Mafara LGA was sampled due to the presence of the Bakolori Irrigation Project, which facilitates year-round cropping in the area thereby preventing herders' access to vital grazing resources. Lastly, in the fourth cluster, Tsafe LGA was sampled because a major cattle route that is being utilised by migratory herders passes through the area.

A total of 235 respondents (160 farmers and 75 pastoralists) were, thus, randomly selected and interviewed in the study area. The breakdown of farmers and herders selected per LGA is in Table 1.

Table 1: Sample size of farmers and herders per Local Government Area (LGA)

LGA	Number of farmers selected	Number of herders selected
Zurmi	50	20
Birnin Magaji	40	30
Tsafe	35	15
Talata Mafara	35	10
Total	160	75

In obtaining data for the study, two sets of questionnaires were administered to farmers and pastoralists respectively. In addition, focus group discussions with separate groups of herders and farmers as well as transect walks were used to complement the data obtained through questionnaire administration. Frequency distributions were employed in data analysis. X^2 -test was used to determine the similarities between farmers' analysis of the farmer-herder conflicts with that of the Fulani herders.

RESULTS AND DISCUSSION

Characteristics of the Farmers

All the farmers interviewed were males and most of them (84.4%) combined crop farming with animal rearing. This is depicted in Table 2 which shows the farmers' production systems. The rearing of animals by farmers heightens competition for pasture, crop residues, and water and related grazing facilities between them and Fulani herders, which usually results into conflicts between the two groups. The fact that the farmers who keep animals employ either a combination of the intensive and extensive production systems (54.4%) or only the extensive system of herding (18.8%) further compounds the situation (Table 2). Extensive grazing entails rearing animals, either attended or unattended to in grazing lands which are mainly depended upon by the Fulani herders for grazing their animals.

Table 2: Production systems of farmers (n = 160)

Attribute	Variables	Frequency*	Percentage*
Enterprise	Crops only	19	11.9
	Crops & livestock	135	84.4
	No response	6	3.5
Species of animals kept	Poultry	116	72.5
	Goats	108	68.1
	Sheep	98	61.3
	Cattle	83	51.9
	Donkeys	62	38.8
	Camels	3	1.9
	Horses	3	1.9
Animal production system	Extensive	30	18.8
	Intensive	23	14.4
	Both	87	54.4
	No response	20	12.4
Type of farmers' fields	Dryland	113	70.6
	Fadama	3	1.9
	Both	43	26.9
	No response	1	0.6

Source: Field survey (2002); *Frequencies and percentages not equal to 160 and 100 due to multiple responses

However, the good side of this development is that there may be some congruence of interests between farmers and herders in the desire to have adequate grazing facilities for their animals. This similarity of interests may serve as entry point for arranging workable strategies for managing the age-old disputes between the two groups.

Characteristics of the Herders

The herders interviewed are predominantly Fulani by tribe (94.7%) most of whom are either sedentary (65.3%) or semi-sedentary (30.7%) in nature. Only 4.0% are nomads

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belonging to the Bugaje tribe of Niger Republic (Table 3). They mostly come to the study area in the dry season for their camels and goats to browse trees and shrubs. Livestock mainly raised by the herders include cattle (90.7%), goats (93.3%), sheep (83.8%) and poultry (89.3%). The type of livestock kept by Fulani herders are similar to those that farmers keep only that the former, being more animal husbandry-biased by profession, tend to keep much more cattle than the latter (Table 3). Hof and Hoffman (2003) have similarly reported that Fulani herders in the Zamfara Reserve keep much more cattle than sedentary farmers. The later, however, keep more sheep and goats than the former.

Among grazing facilities found in the study area, the herders indicated having more difficulty in getting access to crop residues and cattle corridors. For example, only a few of the herders have free access to stock routes (14.7%) and crop residues (1.3%) while none could get such access to trees on farmers' fields (Table 3).

One interesting thing about the sedentary and semi-sedentary herders is that they all engage in both livestock keeping and crop farming. This commonality of occupation between this group of herders and the Hausa farmers may serve as an asset in trying to reconcile conflicts between the two groups.

Table 3: Socio-economic characteristics of herders (n=75)

Attribute	Variable	Frequency	Percentage
Tribe	Fulani	71	94.7
	Bugaje	3	4.0
	Hausa	1	1.3
Type	Sedentary	104	65.3
	Semi-sedentary	49	30.7
	Nomad	3	4.0
Animals kept*	Cattle	68	90.7
	Sheep	63	83.8
	Goats	70	93.3
	Camels	7	9.3
	Donkey	46	61.3
	Poultry	67	89.3
Accessible grazing facilities*	Horse	3	4.0
	Grazing land	68	90.7
	Rivers	55	73.3
	Wells	34	45.9
	Dams	24	32.0
	Cattle routes	11	14.7
	Crop residue	1	1.3
Trees on farmers' fields	Nil	Nil	

*Multiple responses by respondents

Farmer-Herder Relations

In this section of the paper, the relations (ties and tensions) existing between farmers and herders in the study area were explored. Results from the study have indicated that most of the herders (57.3%) and farmers (56.3%) have reported that the relations between them usually oscillates from cordial to hostile, depending on the season of the year (Table 3).

Majority of the farmers (90.0%) and herders (82.7%) has also reported that they have witnessed a dispute between farmers and herders in their locality. This shows that occurrence of farmer-herder disputes is high in the area. Crop damage by herders' livestock, cattle corridors and grazing lands encroachment, and blockage of water points by farmers are the predominant manifest causes of the conflicts. In their study of pastoralist-farmer conflict in Oyo state of Nigeria, Oladele and Oladele (2011) have reported that about 98% of the agropastoralists in the study area indicated the incidence of conflicts between crop farmers and nomadic pastoralists in their respective communities. Williams (1998) has similarly observed that farmland expansion involving encroachment of large areas of common property resources such as forests, wetlands and rangelands, with farmers overriding and ignoring the traditional use rights of other groups to these resources has heightened conflicts between farmers and pastoralists in semi-arid West Africa.

Apart from peaceful coexistence and cooperation, the relations between Fulani herders and farmers in Zamfara state are sometimes characterised by tensions and violent conflicts. The harvest season is usually the period when farmers run into more conflicts with all categories of herders, but the tension is more severe between the farmers and the nomadic group of herders in this period. Crop damage and competition over natural resources are the main causes of the conflicts.

A major source of conflicts between farmers and herders in the study area is farmers' reluctance in releasing croplands to herders for crop residue grazing at the onset of the dry season. This delay is caused in part by the planting of late crops such as cotton, sorghum and recently, potato by farmers. The fact that many farmers leave the late crops unfenced makes them more vulnerable and potential trouble spots for herders. For example, in an effort to move animals to graze crop residue on crop fields bought by herders, if the animals mistakenly touch late crops standing on nearby fields conflicts may ensue.

This issue also needs to be properly addressed if sustainable conflict management is to be attained in the study area. In addressing the issue, this study proposes that the new mechanisms for managing conflicts in Zamfara state need to design and enforce a calendar that will stipulate clearly defined periods of the year when, in the interest of peace, herders should keep their animals off the cropland and when farmers should vacate the cropland for herders to graze crop residues.

However, respondents who view farmer-herder relations as cordial (36.3% of the farmers and 36.0% of the herders) were more than those who perceive them as hostile (6.9% of the farmers and only 1.3% of the herders). These findings imply that respondents having cordial relationships could be used as brokers for enlisting the support and cooperation of other herders and farmers in resolving the crises affecting them.

Causes of Farmer-Herder Conflicts

Majority (70.6%) of the farmers have dryland fields (Table 1). Type of farmland affects farmer-herder conflicts in Zamfara State because the conflicts (88.1%) are more concentrated on utilisation and access to dryland farms than fadama fields (Table 2). This may be explained by the fact that only few stretches of fadama lands are found in Zamfara State. There is also the view that herders generally tend to avoid areas with large fadama lands that are put to dry season cropping because the compensations they have to pay when their animals damage crops on such fields are usually high due to the capital intensive nature of dry season farming (Upper Area Court Judge, Zurmi, personal communication).

Hitherto, herders in Zamfara state like elsewhere in West Africa, grazed crop residues on farmers' fields for free. However, the situation changed when farmers started to keep similar animals as herders'. In most places in the state, herders now have to pay some fees to farmers in order to get access to crop residue. Thus, it may be concluded that the age-old mutually beneficial relationships between farmers and herders that are based on crop residue, grains, water and manure exchange are collapsing in the state. Williams *et al.* (1995) cited in Williams (1998) were of the view that these relationships have linked crop and livestock production for many years in the Sahel and have served to increase land productivity. Restoring the relationships as a way of achieving better agricultural productivity is a challenge in sustainable natural resource management in the study area.

Period of Conflict Occurrence

Conflicts between farmers and herders in Zamfara state have mostly become annual events that predominantly occur in the harvest season (71.3%). Ingawa *et al.* (1999) cited in Oladele and Oladele (2011) have similarly observed that competition-driven conflicts between arable crop farmers and cattle herdsman have become common occurrences in many parts of Nigeria. The competition between these two agricultural land user groups has further been reported to often times turned into serious overt and covert hostilities and social friction in many parts of Nigeria (Oladele and Oladele, 2011).

However, some (18.8%) of the conflicts in the study area do occur in the dry season particularly in areas where dry season farming is practiced (Table 4). Conflicts that occur in the harvest season are usually over crop residue grazing and damage caused by herders' livestock to late crops and harvests stored on-farm.

Types of Land where Conflicts Occur

Farmer-herder conflicts in the study area were reported by 88.1% of the farmers to occur on dryland farms while most (69.3%) of the herders recorded that the conflicts occur on dry season (fadama) fields (Table 4). The conflicts were reported by most of the herders and farmers to mainly involve farmers who either store harvests and crop residue on-farm or are farming close to grazing facilities or grow long maturing and/or late crops of cotton, sorghum, sweet potato. In areas where irrigation is practised such as Talata Mafara LGA, dry season farmers do also run into conflicts with herders but to a lesser degree.

These findings imply that to properly address conflicts between farmers and herders in Zamfara state all categories of farmers involved in the conflicts should be considered as stakeholders with the aim of accommodating their interests in measures to be adopted.

Table 4: Analysis of farmer-herder conflicts by respondents

Attribute	Variable	Farmers' responses (n=160) Frequency	Herders' responses (n=75) Frequency	X ² -value	DF
Farmer-herder relations	Oscillatory	90(56.3)##	43(57.3)	6.43**	3
	Cordial	58(36.3)	27(36.0)		
	Hostile	11(6.9)	1(1.3)		
Cause of conflicts	No response	2(1.5)	4(5.3)		
	Crop damage	130(81.3)	36 (48.0)	68.87***	3
	Use of water hole	9(5.6)	32(42.7)		
Period of occurrence of conflicts#	Other	4(2.5)	19(25.3)		
	No response	19(11.9)	23(30.7)		
	Harvest season	114(71.3)	5(6.7)	99.58***	4
	Beginning of cropping season	43(26.9)	12(16.0)		
	Dry season	30(18.8)	7(9.3)		
	Peak of cropping season	24(15.0)	42(56.0)		
	Throughout rainy season	14(8.8)	24(32.0)		
Type of land where conflicts occur#	Dryland farms	141(88.1)	9(12.0)	114.35***	5
	Dry season fields	29(18.1)	52(69.3)		
	Cattle corridor	12(7.5)	14(18.7)		
	Grazing area	4(2.5)	12(16.0)		
	Fulani camps	1(0.6)	8(10.7)		
	Other	4(2.5)	3(4.0)		
Category of farmers involved#	Those who store produce on-farm	89(55.6)	49(65.3)	6.22 ^{ns}	3
	Those farming near grazing facility	83(51.9)	42(56.0)		
	Those who grow late crops	82(51.3)	23(30.7)		
	Dry-season farmers	36(22.5)	13(17.3)		
Type of herders involved#	Fulani nomads	103(64.4)	5(6.7)	40.59***	2
	Semi-settled herders	69(43.1)	48(64.0)		
Arbitrator of conflicts	Sedentary herders	60(37.5)	23(30.7)		
	Village head	64(40.0)	20(26.7)	69.25***	6
	Neighbours	29(18.0)	7(9.3)		
	Herders fled	19(11.9)	43(57.3)		
	Court	7(4.4)	27(36.0)		
	Police	4(2.5)	1(1.3)		
	Others	16(10.0)	4(5.3)		
	No response	21(13.2)	36(48.0)		

#Frequencies and percentages greater or less than sample sizes due to multiple or low responses by respondents; ##Figures in parentheses are percentages

Category of Herders involved in Conflicts

While majority (64.4%) of the farmers is of the view that the nomadic herders are more frequently involved in the conflicts, the herders mostly (64.0%) believed the semi-settled herders are more involved. The sedentary herders are also reported by 37.5% of the farmers and 30.7% of the herders to also be involved in the conflicts. However, the conflicts involving nomads have usually been violent involving the use of arms including guns, which result mostly in loss of human lives and property. Nomads usually move back and forth Nigeria and the Niger Republic in search of pasture and water for their animals. Farmers blame the semi-settled and sedentary herders of inviting nomads to pool up together their herds so as to collectively damage farmers' crops and farm produce in the harvest season.

Cousins (1996) is of the view that resource conflicts are caused by the multiple resource systems common to dry land areas that are characterized by the utilization of natural resources for multiple purposes or by more than one user. Because these users have different objectives and interests in the resources, the existence of competition and often violent conflicts among the resource users is inevitable (Sean, 2003 cited in Oladele and Oladele, 2011).

Conflict Arbitration

Village heads have been reported by both farmers (40.0%) and herders (26.7%) to be major arbitrators of disputes involving farmers and herders in the study area (Table 4). Farmers having farmland neighbouring crop fields where disputes over damage to crops occur also play some role in arbitration by attempting to reconcile between the farmers whose crops are damaged and the herders whose livestock are involved. However, involvement of dispute resolution institutions of police and courts of law was reported to be very low by farmers although the herders (36.0%) have reported considerable involvement of courts in the settlement of farmer-herder disputes. This shows that informal traditional mechanisms for conflict resolution are still functional to some degree in Zamfara state particularly in settling minor conflicts occurring between farmers and herders.

Relationship between Farmers' and Herders' Analyses of the Conflicts

The hypothesis that there was no significant difference between the analyses of farmer-herder conflicts done by the farmers with that of the Fulani herders was tested in this study with the aid of the Chi-square test. The results of the analysis as shown in Table 4 indicate that there are significant differences between the assessments made by the two categories of respondents as regards to farmer-herder relations ($P < 0.05$), causes of conflicts ($P < 0.01$), period of occurrence of the conflicts ($P < 0.01$), type of land where conflicts occur ($P < 0.01$), type of herders involved ($P < 0.01$) and arbitrators of the conflicts ($P < 0.01$). These results therefore indicate strong disagreements in the responses of the herders and farmers to the issues related to the variables mentioned above. However, the difference between farmers' responses on the category of farmers involved in the conflicts with that of the herders was not significant statistically.

CONCLUSION

The expansion of cultivation along water points and livestock corridors have limited herders' access to water, dry season pasture and transhumance routes resulting in intense competition and conflicts between livestock rearing and agricultural production in Zamfara State. As findings of this study indicate, the incidence of disputes between farmers and herders in the state is high and has become an annual event.

This study reveals several strands of similarities and differences: the Fulani are a minority in the state and the Hausa farmers as well as the Fulani herders are agro-pastoralists to varying degrees, combining animal husbandry with subsistence farming. Commonalities that exist between farmers and herders in cattle ownership and crop agriculture could therefore be a good entry point in bringing the two groups together to discuss how to address their crisis.

Finally, the study concludes that one of the best ways to manage the pastoral-agricultural crisis in the study area and to ensure sustainable utilisation of its natural resources is shared control of the resources between the state and local communities. There should therefore be a real commitment by government to transfer management and authority relating to natural resources (and the full bundle of rights) to the lowest level possible.

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