

ASSESSMENT OF STRATEGIES FOR CONFLICTS RESOLUTION BETWEEN FARMERS-HERDSMEN ALONG BAKALORI IRRIGATION VALLEY, ZAMFARA STATE, NIGERIA

BY

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Abstract

The study assessed strategies for conflict resolution between farmers and herdsman along Bakalori irrigation valley of Zamfara state, Nigeria. Three objectives were drawn to guide the research. A survey design was used as road map with a total population of 122,345 which comprise of 65,756 farmers and 56,589 herdsman from Maradun, Mafara and Bakura local Government Areas (LGAs) where the Bakalori irrigation valley located. Multi stage sampling technique was used to draw the sample size of 485 respondents. The instrument used for data collection was a structured questionnaire divided into three sections according to the specific objectives of the study. The questionnaire was validated using face and content validity which was pilot-tested at Bakalori Rima valley irrigation scheme in Zamfara State using 50 respondents (25 farmers and 25 herdsman). A reliability coefficient using Cronbach alpha method of 0.724 was obtained. The study found that strong relationship exists between the independent strategies adopted to resolve conflicts among farmers and herders. The mechanisms used for successful conflict resolution between crop farmers-herdsman were mainly institutional. It was recommended among others that a non-kinetic means such as encouraging inter marriages and social events between crop farmers-herdsman should be explored and encouraged to avert incessant conflicts in the area.

Keywords: Conflict, Farmers, Farmers–herdsman conflict, Conflict resolution, Strategies

Introduction

Agricultural production requires an enabling environment to maximum its potentials. Sustainable agricultural developments demand peaceful co-habitation to thrive in any given community. It is only through this mutual cooperation farming communities could harness the potentials of the pool of resources, conservation and their management. However, it was observed that competition for scarce resources by agricultural stakeholders result to conflicts within the agricultural areas (Abdul, Barkindo & Alupse, 2015; Okibe, 2022). For instance, farmers compete with herdsman in land for growing crops, while the herdsman need the same land for grazing. Conflict is a result of collision, disagreement or contradiction at variance, or in opposition, discord of action, feeling, or effect; antagonism or opposition of interest groups (Adeleke, 2018, Blanchard, 2023). Oyedotun (2017) and Okibe, (2022) opined that conflict is a denial to harmonious co-existence between people. It also represents struggle between individuals over value or claims to status, power and scarce resources in which the aims of the opponents are to neutralize, injure or eliminate their opponents. It was noted that conflicts over control of land and water resources among farmers and herdsman are common along areas where farming and pastoralist inter-sect in Zamfara State (Tori, 2018). The root causes of such conflicts vary greatly often with a combination of water use, farm encroachment and destruction of crops by pastoralists (Baca, 2015; Blanchard, 2023).

In an effort to diversify the economy and create significant welfare improvements, sustainable growth, peaceful coexistence, higher agricultural output as well as raising incomes for all in agricultural activities, the Federal Government of Nigeria in collaboration with the World Bank introduced strategies for resolving conflicts between

farmers and herdsmen through a project called Transforming Irrigation Management in Nigeria (TRIMING). Important steps to address these, consist of strengthening of Resource User Group (RUG) institution, introduction of activities and forms of agriculture that fit well in the modern farming systems which are attractive to farmers and herdsmen and in which the responsibilities of management and maintenance of agricultural resources as well as conflict resolution among user groups are to a very large extent by themselves without external assistance.

Zamfara State serves as a transit zone for herdsmen migrating from neighboring States and the Niger republic towards central and south western Nigeria in search of pasture. Also, the state being an agrarian area has a history of rampant clashes between farmers and herdsmen due to the struggle for resource control among them (Abubakar, 2016; ICG, 2020). The struggle resulted in the destruction of crops by herdsmen and land encroachment by farmers. These have impacted negatively on farm operations and livestock grazing activities which hamper crop and livestock productivity with the resultant negative effect on income and threat to food security status of the area. Further, it has led to the loss of lives, properties, food, livestock, youth migration and denied access to the areas. However, a number of conflicts resolution efforts such as arbitration, compensation, mediation, accommodating, avoidance, collaboration and compromising were initiated and implemented by Zamfara State government. It is on this basis the current study assessed the strategies for conflict resolution between herdsmen and farmers along irrigation valley in Zamfara State with a view to avert further occurrences.

Objectives of the Study

The main objective of the study was to assess the strategies for conflicts resolution between farmers-herdsmen along Bakalori irrigation valley in Zamfara State, Nigeria. The specific objectives are to:

- i. Identify the causes of conflicts between crop farmers and herdsmen along Bakalori irrigation valley in Zamfara State;
- ii. Examine the conflict resolution strategies use to resolve crop farmers and herdsmen conflicts along Bakalori irrigation valley in Zamfara State, and;
- iii. Examine the institutions involved in managing conflicts between crop farmers and herdsmen along Bakalori irrigation valley in Zamfara State

Literature Review

The study was hinged on frustration-aggression theory promoted by John Dollard (1939) and Miller (1941) to explain crop farmers and herdsmen conflicts along Bakalori irrigation valley in Zamfara State. The theory as cited by Aliyu, Ikedinme and Akinwande (2018) contends that the display of aggression by people is because they deserve more of available scarce resources than what they are getting. Faleti (2015) remarked that it is the difference between expected need and actual need that forced into some conflicts. Frustration-aggression theory sees conflict as the outcome of frustration of an individual or group for being unable to attain their legitimate desire. The theory's major propositions are hereby referenced in this study to explore and provide capable explaining on crop farmers and herdsmen conflicts and resolutions along Bakalori irrigation valley in Zamfara State. In explaining frustration-aggression theory, Dollard et.al. (1939) posits that the occurrence of aggressive behavior always assumes the existence of frustration which always leads to some form of aggression. Miller (1941) on the other hand, opined that frustration produces instigation resulting to several consequences, one of which is aggression. In this way, aggressive behaviours from farmers-herdsmen may trigger some form of frustration which in turn the consequence of the frustration will be conflicts.

Frustration-aggression theory in this study therefore explains the crop farmers and herdsmen conflicts in the sense that, the herdsmen feel they are legitimately entitled to the scarce resources in the area. They feel that the crop farmers encroach their pasture land and water areas designated to them, thereby making it difficult to access pasture grasses, legumes and water. The farmers feel that there should be no reduction on the limited available land for their activities. They feel that the herdsmen's encroachment on the land is considered a hindrance to attaining full farming potentials. As a result of these perceived and inflexible feelings of both crop farmers and herdsmen conflicts broke out which need to be resolved. Further scenario like the migration nature of the pastoralists is explained by the theory in that they arrived at a new settlement other than theirs to use the available scarce resources that will meet the resistance of the sedentary farmers as a result of which conflicts emerge.

To conceptualized the interaction that resulted to conflicts between crop farmers and herdsmen, this study proposed that: planting on farm routes, grazing reserves, planting on cattle routes and poisoning of animals by crop farmers are sources of conflicts initiated by crop farmers. On the other hand, the activities of herdsmen that cause conflict include: destruction of crops by animals, destruction of farm facilities and trampling on crops. This view relates in many ways to cases reported by scholars (Ogu, 2020; Ojewale, 2021; Eboh, 2023). However, the conceptual framework in this study provides that effective strategies such as mediation, committees, traditional rulers, arbitration, mediation-arbitration, early neutral evaluation, police and other law enforcement agencies, compensation, rehabilitation of infrastructure among others will lead to a peaceful ending of the conflict (conflict resolution) which will in turn lead to peaceful co-existence between herdsmen and crop farmers and improve crops and livestock production. In conceptualizing the study variables, it is noted in the context of this study that farmers are indigenous crop producers, while herdsmen are either indigenous sedentary or transhumant who rear livestock.

Methodology

The research design adopted for this study was descriptive survey to help depict the relationship between the respondents in an accurate way. This design provides the roadmap to collect relevant information directly from the respondents who expressed their views on the relationship between the study variables. The population of the study consist of 122,345 which comprised of 65,756 farmers and 56,589 herdsmen from Maradun, Mafara and Bakura LGAs that surround the Bakalori irrigation valley. Multi-stage sampling technique was used in the study. In the first stage, the three LGAs that surround the Bakalori irrigation valley were purposively selected. Second stage involves the selection of three villages from each of the three selected LGAs. A simple random sampling was used to select a sample size of 485 respondents in the last stage as recommended by Research Advisor Table of Sample Determination (2006) who recommended that sample size of 384 is adequate for a population of 75,000. The instrument for data collection was a structured questionnaire divided into three sections according to the specific objectives. The questionnaire items were designed in nominal, ordinal and continuous scales. The instrument was face and content validated and pilot-tested at Bakalori Rima valley irrigation scheme in Zamfara State with a standardized reliability coefficient of 0.724. Data was collected with the help of two research assistants within a period of six weeks. Data collected was analyzed using both descriptive and inferential statistics in the form of mean, frequencies, percentages and chi square to answer the research questions and test the hypotheses.

Result

Objective one: Identify the causes of conflicts between crop farmers and herdsmen along Bakalori irrigation valley in Zamfara State

Table 1: Causes of conflicts between crop farmers and herdsmen along Bakalori irrigation valley in Zamfara State; Nigeria (N=485)

Items	SA	A	UD	D	SD	Mean
Crops damage by cattle	335	105	29	6	10	3.565
Land encroachment	340	100	19	9	17	3.555
Inadequate grazing reserves	313	103	36	24	9	3.435
Lack of access to water points	303	102	34	24	22	3.365
Killing of stray cattle	189	140	90	20	46	2.932
Pollution of water points	190	120	70	60	45	2.814
Indiscriminate bush burning	294	138	33	11	9	3.456
Land tenure system	195	130	36	66	58	2.816
Disregard to rules and regulations	186	103	69	70	57	2.718
Change in Climate condition	140	160	105	55	25	2.742
Land use policy on LGA	231	131	20	60	43	3.010
Family issues	140	201	63	45	36	2.825
Financial related issues	180	165	61	32	47	2.920
Perceived hatred	182	138	70	51	44	2.839
Cumulative Mean						3.070

Table 1 presented finding on the causes of conflicts between crop farmers and herdsmen along Bakalori irrigation valley in Zamfara State showing a cumulative mean response of 3.070 which is higher than the set a priori benchmark of 3.0. Specifically, the main cause of conflicts among crop farmers and herdsmen were crops damage by cattle (3.565), land encroachment (3.555), inadequate grazing reserves (3.435), lack of access to water points (3.365), indiscriminate bush burning (3.456) and land use policy (3.010).

Table 2: Chi-square analysis to establish if significant relationship exists between crop farmers/herdsmen conflicts and resource control along Bakalori irrigation valley in Zamfara State

	Table value			Sign (2-sided)
	Value	Df		
Pearson Chi-Square	848.041	52		0.000
Likelihood Ratio	98.21	1		0.000
Linear-by-Linear Association	848.041	1	67.505	0.000
N of Valid Cases	485			

$\alpha \leq 0.05$

Results of Chi square (X^2) statistics in Table 2 revealed that conflicts between crop farmers and herdsmen along Bakalori irrigation valley in Zamfara State significantly relate to resource control. The computed X^2 value of 848.041 is greater than the X^2 critical value of 67.505 at df 52, and the p value (0.000) is lower than the 0.05 level of significant. This signifies that the two factors (crop farmers and herdsmen conflicts and resource control) are not

independent. This can be interpreted that farmers and herdsmen compete over the scarce resources in the area that resulted to conflicts.

Objective two: Examine the conflict resolution strategies use to resolve crop farmers and herdsmen conflicts along Bakalori irrigation valley in Zamfara State

Table 3: Distribution of different conflict resolution strategies used to resolve farmers and herdsmen conflicts along Bakalori irrigation valley in Zamfara State Nigeria (N=485)

Items	SA	A	UD	D	SD	Mean
Arbitration	313	103	44	16	9	3.452
Mediation-arbitration	190	120	80	60	35	2.835
Traditional rulers	335	105	29	6	10	3.565
Police and other security agents	340	100	22	10	13	3.561
Courts	189	130	100	28	38	2.911
Crop Farmer's associations	303	100	30	30	22	3.348
Miyetti Allah association	294	150	22	10	9	3.482
Cumulative Mean						3.307

Table 3 revealed that the cumulative mean level of 3.307 is greater than the a priori benchmark mean of 3.0. Specifically, the different conflict resolution strategies mostly adopted in the area involved the use of; traditional rulers (3.565), police and other security agents (3.561), miyetti Allah (3.482), arbitration (3.452) and crop farmer's association (3.348).

Table 4: Chi-square analysis confirming if relationship exists between the different conflict resolution strategies used and the types of conflicts in the study area

	Value	Df	Table value	Sign (2-sided)
Pearson Chi-Square	371.909	24		0.000
Likelihood Ratio	79.26	1		0.000
Linear-by-Linear Association	371.909	1	36.415	0.000
N of Valid Cases	485			

$\alpha \leq 0.05$

Results of Chi square (X^2) statistics in Table 4 revealed that the different conflict resolution strategies used to resolve conflicts between crop farmers and herdsmen along Bakalori irrigation valley in Zamfara State are significantly related to the types of conflicts in the area. The result shows that the computed X^2 value of 371.909 is greater than the X^2 critical value of 36.415 at df 24, and the p value (0.000) is lower than the 0.05 level of significant. This signifies that the two factors (the different conflict resolution strategies used and the type of conflicts in the area) are not independent. This implies that the different conflict resolution strategies used were applied and aligned to specific types of conflicts.

Objective three: Examine the institutions involved in managing conflicts between crop farmers and herdsmen along Bakalori irrigation valley in Zamfara State.

Table 5: Institutions involved in management and resolutions of conflicts between Farmers and herdsmen along Bakalori irrigation valley in Zamfara State; Nigeria (N=485)

Variables	Frequency	Percentage
Traditional rulers	350	72.2
Police	200	41.2
Courts	198	40.8
State/Local Government Committee	280	57.7
Water users Association	228	47.0
Miyetti Allah Association	290	59.8

Table 5 showed the institutions involved in the management and resolutions of conflicts between Farmers and herdsmen along Bakalori irrigation valley in Zamfara State. The finding indicated that traditional rulers (72.2%), Miyetti Allah cattle breeders' association (59.8%), and the state/local government committees (57.7%) were more involved in the management and resolution of conflicts. However, other stakeholders like water users' association (47%), police (41.2%) and courts (40.8%) were in one way or the other involved in the managing conflicts. This suggests that conflict resolutions in the area were mainly institutional.

Table 6: Conflicts resolution mechanisms (N=485)

	Frequency	Percent	Percent	Cumulative Percent
Payment of compensation	120	24.7	24.7	24.7
Verbal warnings	96	19.8	19.8	44.5
Amicable resolutions	180	37.1	37.1	81.6
Re-allocation of new plots	57	11.8	11.8	93.4
Rehabilitation of infrastructure	32	6.6	6.6	100.0
Total	485	100.0	100.0	

Table 6 above shows how conflicts were resolved among crop farmers and herdsmen, a total of 180 respondents representing 37.1% reported that amicable resolution was the most and popular mechanism of conflict resolution in the study area. Yet, payment of compensation (24.7%) was additional way of resolving conflicts. Other mechanism of resolving conflicts in the area were; 96 of the respondents representing 19.8% reported through verbal warnings, 57 of them representing 11.8% through re-allocation of new plots and only 32 of the respondents representing 6.6% stated the rehabilitation of infrastructure. This finding supports the one reported in Table 5 that mechanisms used to resolve conflicts were institutionally facilitated.

Table 7: Chi-square analysis of relationship between institutions involved in the management of conflicts and the kind of conflicts between crop farmer and herdsmen along Bakalori irrigation valley in Zamfara State

	Value	Df	Table value	Sign (2-sided)
Pearson Chi-Square	147.673	5		0.000
Likelihood Ratio	79.26	1		0.010
Linear-by-Linear Association	147.673	1	11.07	0.010
N of Valid Cases	485			

$\alpha \leq 0.05$

Results of Chi square (X^2) statistics in Table 7 revealed that the conflict resolutions mechanisms adopted by institutions involved in the management of conflicts and the conflicts between crop farmers and herdsmen along Bakalori irrigation valley in Zamfara State are significantly related. Reasons being that the computed X^2 value of 147.673 is greater than the X^2 critical value of 11.07 at df 5, and the p value (0.010) is lower than the 0.05 level of significant. This signifies that the two factors (conflict resolutions mechanisms adopted by institutions and crop farmers and herdsmen conflicts) are not independent. This suggests significant effect of the conflict resolution mechanisms used to resolve conflicts in the area.

Discussion

The study found that crop farmers and herdsmen strived to control the available scarce resources which resulted to create conflicts, but the strategies adopted to resolve the conflicts among were related to the reported conflicts in the study area. the main cause of conflicts among crop farmers and herdsmen were crops damage by cattle, land encroachment, inadequate grazing reserves, lack of access to water points, indiscriminate bush burning and land use policy. Adeleke, (2018) and ICG, (2020) supported that these causes of conflicts significantly affect both physical and financial livelihood assets of farmers. and corroborates by Idowu, (2017) and Ijoko et al., (2023) who opined that crop farmers and herdsmen conflict creates an atmosphere of uncertainty, insecurity, breakdown of economic activities and migration of people to safer places. The different conflict resolution strategies adopted to resolve conflicts had yielded some positive results through traditional rulers, arbitration and farmer associations. Scholars reported the use of informal institution in managing conflicts between farmers and herders (Makinwotu, 2016 and Ogu, 2020). This according the authors the tool is used to analyze the potential distribution and resources designed for development and to minimize trade-offs. The study further found that traditional rulers, local government committees and farmer associations resolved most of the conflicts using amicable resolution and compensations strategies. Jgwuanyi, (2016) Odunsi (2017), Ojewale, (2021) and Okibe, (2022) stated common methods used in conflict resolution viz; mediation, arbitration, reconciliation and early neutral evaluation. But on the contrary the disadvantaged groups involved in a conflict may also withdraw out of a feeling of helplessness (ICG, 2020; Ijoko et al., 2023).

Conclusion

It can be concluded that farmers and herdsmen in the study area compete over the available scarce resources that resulted to conflicts. These conflicts can lead to forced relocation of both farmers and herders to borderline or disputed areas unsafe for farming and rearing and subsequent fall in productivity. In that regard since the scarce

resources are the main source of livelihood to the crop farmers and herdsmen, making access to such resources can go a long way to improve on their means of livelihoods. The different conflict resolution strategies used in the area were applied with the intention to solve problems and specifically aligned to specific types of conflicts that were implemented formally and informally, implying that the resolved conflicts were institutionally facilitated. It can be said that there was evidence of significant effect of the conflict resolution mechanisms used to resolve conflicts to achieve a peaceful coexistence in the area. Therefore, interpersonal relationship and engagement among all stakeholders are better options for group solidarity and cohesion toward sustainable agricultural development.

Recommendations

To avert further crisis between farmers and herdsmen, the federal government of Nigeria in collaboration with ministry of agriculture and ministry of livestock development should revise policies on agriculture to make adequate provision of grazing reserves, open up grazing routes, provision of water points, planting more grasses/legumes, veterinary facilities, clinics and more schools for herdsmen. While the crop farmers should be supported with inputs at subsidized rate and open the uncultivated lands for arable farming to reduce the competition of the scarce resources. Confidence building should be encouraged between the various security personnel such as the police and local community so that conflicts can be reported early before it escalates into major clashes. The traditional rulers and local committee both at local and state level must be strengthened being the main institutions the two parties had faith of being more capable to resolve conflicts in the area. A non-kinetic approach should be deployed and encouraged through social events and inter marriages among farmers and herdsmen.

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