

Effectiveness of Conflict Resolution Strategies among Rural Farmers and Herdsmen in Ogbomoso and Oyo Agricultural Zones of Oyo State.

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Abstract: *Incessant conflicts between farmers and herdsmen are threat to peace, food security and national stability. This study therefore assessed effectiveness conflict resolution strategies among farmers and herdsmen in Ogbomoso and Oyo Agricultural Zones of Oyo State. The study specifically described the personal characteristics of farmers and herdsmen as well as the effectiveness of the various conflict resolution strategies in the study area; examined the causes of conflicts between farmers and herdsmen and assessed various conflict resolution strategies.*

Population of this study involved both farmers and herdsmen in Ogbomoso and Oyo Agricultural Zones of Oyo State. The study employed multistage sampling technique in selecting 180 farmers and 40 herdsmen making 220 respondents for the study. Relevant data were collected with the aid of interview schedule. The data were analyzed using both descriptive statistical tools (frequency distribution, percentages, means and standard deviation) and inferential statistical tool (Chi-square).

*The mean age of the farmers was 49 years while that of the herdsmen was 41 years. Majority (86.1%) of the farmers and all the herdsmen were male. The average household size of both farmers and herdsmen were 9 and 10 members respectively. The farmers recorded loss of crop while herdsmen experienced reduction in numbers of cattle as the major socio-economic effects of the conflict. The main strategy adopted by farmers was intervention of community leaders/traditional leaders while tighten herd security was adopted by herdsmen. Most of the respondents utilized conflicts resolution strategies at moderate level. The result of PPMC analysis revealed that age of the respondents ($r = -0.291$; $p = 0.000$) was significantly related with effectiveness of various conflict resolution strategies. The result of Chi-square analysis revealed that sex ($X^2 = 42.943^{***}$), religion ($X^2 = 65.439^{***}$), marital status ($X^2 = 155.801^{***}$), educational level ($X^2 = 138.648^{***}$), primary occupation ($X^2 = 219.971^{***}$) and secondary occupation ($X^2 = 69.615^{***}$) all at $p = 0.000$ were significantly related to effectiveness of conflict resolution strategies.*

Based on the findings, it was concluded that conflict resolution strategies applied were effective in tackling diverse conflicts between farmers and herdsmen. Since asking for outrageous and unrealistic compensation is a prominent problem, there is need to mediate conflict by encouraging affected groups to always demand realistic compensation thereby reducing perceived exploitation of the herdsmen in the event of a reported conflict.

Keywords: *Conflict; conflict resolution strategies; farmers; herdsmen; effectiveness.*

I. Introduction

Natural resource conflicts are pervasive in Africa, and the West African sub-region is not an exception. Land is probably the most important resource needed by man for his day-to-day existence. All human livelihoods and activities are directly or indirectly dependent on land at varying thresholds. But land connotes different meanings to the various user groups. For instance, builders, manufacturers, fishermen, miners, hunters and farmers have different specifications in their requirement for land for their production/services (Adisa, 2012). Out of all user groups, agricultural production perhaps exhibits the highest form of sophistication in its use of land. Not only must agricultural land be capable of supplying crop-specific nutrients and water; soil temperature, structure, texture and pH levels are inevitable requisites in the choice of land for agricultural production activities (Adisa, 2012). Yet, land is a limited, somewhat scarce, resource with both artificial and natural access and usage barriers which often times engender conflicts among the major end users.

Farmers and pastoralists interdepend on each other for survival. Pastoralists move their herds to graze on farmlands belonging to crop farmers and also acquire the food stuffs produced by crop farmers. Farmers on the other hand require from pastoralists protein and dairy products (Shettima and Tar, 2008). Farmer-herdsmen conflict has remained the most preponderant resource-use conflict in Nigeria (Ajuwon, 2004; Fasona and Omojola, 2005). It is probably unarguable that resource ownership and utilization have directly and indirectly defined the dimensions of most conflicts involving man since time immemorial. Of all resources, however, land has remained an overwhelming source of conflicts among various user groups as well as individuals at varying thresholds. In particular, conflicts between farmers and herdsmen in the use of agricultural land are becoming fiercer and increasingly widespread in Nigeria, largely due to 'intensification and extensification' of production activities that are necessitated by increasing human population (Gefu and Kolawole, 2005; Fasona and Omojola, 2005).

Forage crop and water scarcity seems to be an under estimated and under discussed resource issue facing the world today. It is obvious that the world's forage crop and water demand grows every year in order to meet up with its increasing population. Exacerbated by climate change, forage and water scarcity is creating security concerns in some parts of sub-Saharan Africa, especially in the semi-arid region. Visible signs that show intensification of water scarcity include hitherto flowing rivers running dry, wells going deeper to reach water, lakes shrinking, diminishing rainfall, shrinking arable lands for farmers, and less pastures and the drying up of drinking water sources like rivers and streams for pastoralists. The availability of water, a major resource needed for agriculture in sub-Saharan Africa, is decreasing as a result of changes in global climatic conditions. Agriculture provides the means of livelihood and economic sustenance for a majority of the population of the region. Farmers and pastoralists, who are the main agricultural practitioners, make significant contributions in meeting the nutritional needs of the region and thus contributing to food security. They are almost wholly dependent on water resources to sustain their vocations. In recent times, access to water and grazing land has become more competitive and has led the farmers and pastoralists into violent conflicts on a regular basis.

The conflicts are a threat to peace and national stability. It also has implication for tribal co-existence, Nigeria being a multi-ethnic and a multi-tribal nation. This is a worrisome trend because both have coexisted inter-dependently for centuries, sharing the same fields for farming and grazing with a manageable level of tolerance and accommodation. This study therefore examined the effectiveness of conflict resolution strategies between farmers and herdsmen in Ogbomoso and Oyo Agricultural Zones in Oyo State. Specifically the study described the personal characteristics of farmers and herdsmen; examined the causes of conflicts between farmers and herdsmen; assessed various conflicts resolution strategies in the study area and determined the effectiveness of the various conflicts resolution strategies.

It was hypothesized that there is no significant relationship between selected personal characteristics of the respondents (farmers and herdsmen) and effectiveness of various conflicts resolution strategies.

II. Methodology

The study was carried out in Ogbomoso and Oyo agricultural zones of Oyo State of Nigeria. Farming is the major occupations of the people in the areas, the major crops cultivated in the zone area are; yam, maize, cassava, cowpea, vegetables, fruits, oil palm plantation, cashew and groundnut are also grown.

The study employed multistage sampling technique in selecting a total of 220 respondents comprising 180 arable crop farmers and a total of 40 herdsmen. The first stage involved selection of 50% out of the four Agricultural Zones (Ibadan/Ibarapa, Ogbomoso, Oyo and Saki) from Oyo State, hence Ogbomoso and Oyo Agricultural Zones were randomly selected for the study. The second stage involved purposive selection of 2 blocks from the selected zones which are known to be rural in nature and most linked with farmer-herdsmen conflict. Each local government council area represents an agricultural block of the ADP. Thereafter, there was random selection of three (3) villages from each of the blocks making a total of 12 villages. The list of the number of the farming households and herdsmen in each of the selected villages was secured from the ADP department of the respective local government areas of the selected villages. Fifteen arable crop farmers were randomly selected from each village, thus giving a total of 180 farmers. In each block, 10 cattle herdsmen were randomly selected for the study. This was done through random selection of two herdsmen from five transit camps in each block. This gives a total of 40 herdsmen. In all, 220 respondents constituted the sample size of the study.

Relevant data were collected with the aid of structured interview schedule. However, relevant information from journals, articles, books, internet and other publications were also used for the literature review and collaboration of findings. The dependent variable for this study is the effectiveness of the conflict resolution strategies, which was measured on five point Likert scale of outstanding (5), exceeds expectations (4),

meets expectations (3), below expectations (2), and needs improvement (1). The mean and standard deviation (std) were computed and this were utilized to recategorize the level of effectiveness of conflict resolution strategies into high, medium, and low using mean \pm 1 standard deviation. The statistic analytical tools that were used for this study included both descriptive and inferential statistical tools. The descriptive tools include frequency distribution and percentages, while for inferential statistic Pearson’s Products Moment Correlation (PPMC) and Chi-Square were used for the formulated hypothesis of the study.

III. Results and Discussion

This chapter deals with the data analysis and discussion of results in line with the objectives of the study.

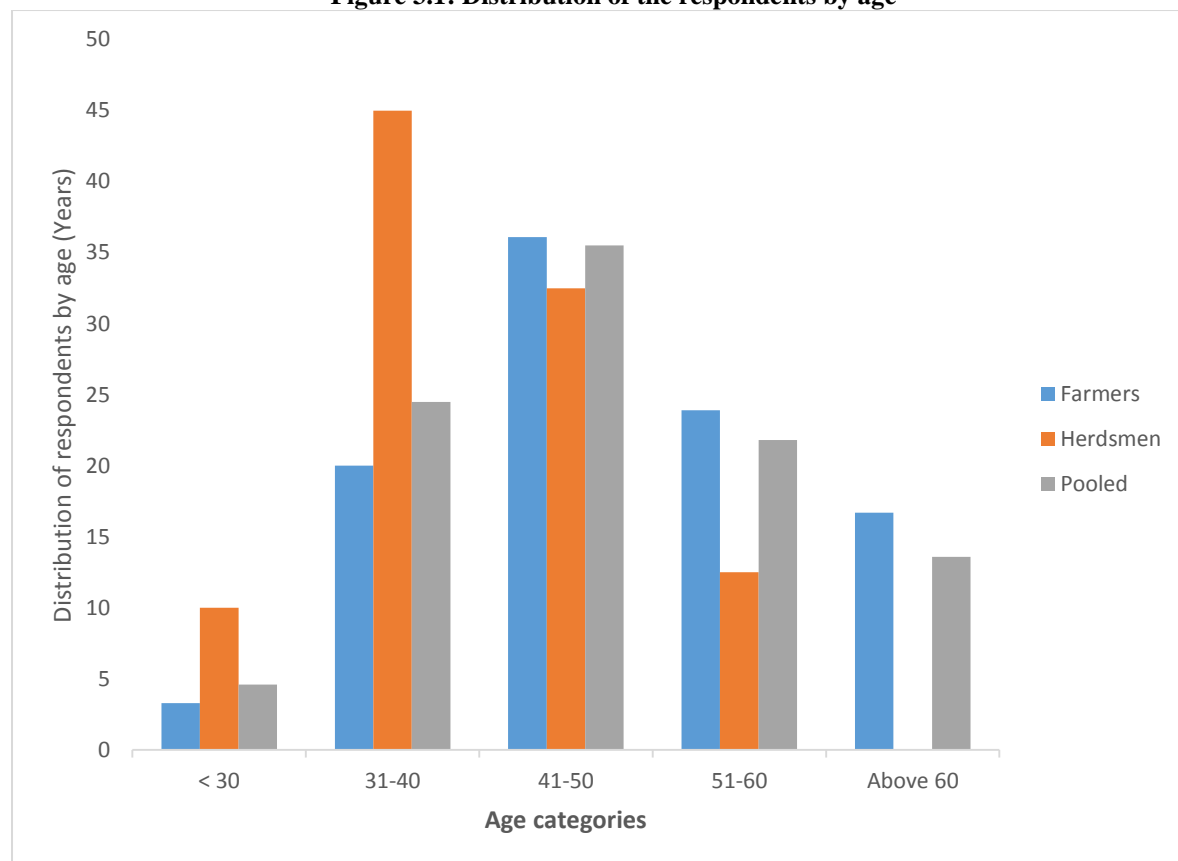
3.1 Personal Characteristics of the Respondents

3.1.1 Age of the Respondents

Figure 3.1 shows the distribution of respondents by age. More than one third (36.1%) of the farmers were between 41-50 years of age, 23.9% of respondents were between 51-60 years, 20.0% of the respondents were between 31-40 years, 16.7% were above 60 years while 3.3% were within 30 years of age. For the herdsmen, 45.0% of the respondents were between 31-40 years, 32.5% of the respondents were between 41-50 years, 12.5% of the respondents were 51-60 years while 10.0% of the respondents were within 30 years of age. For the pooled data, 35.5% of the respondents (farmers and herdsmen) were between 41-50 years, 24.5% of the respondents were between 51-60 years, 13.6% of the respondents were above 60 while 4.6% of the respondents were within 30 years of age.

The mean age of the farmers was found to be 49 years, the herdsmen had the mean age of 41 years while the pooled data had a mean age of 45 years. Based on the result, majority of the respondents (farmers and herdsmen) were still young, active and energetic to carry out their respective livelihood activities. However, farmers were older than herdsmen. This finding agreed with Oose *et al.* (2015) and Gbadegesin (2008) where the mean ages of their respondents (farmers) were 43 years and 45 years for farmers and herdsmen respectively. Similarly, Bamigboye and Kuponiyi (2013) opined that majority (65.0%) of their respondents were within the age group of 40 and 59 years.

Figure 3.1: Distribution of the respondents by age



Mean (\bar{x}) = Farmers = 49 years; Herdsmen = 41 years; pooled = 45 years

Source: Filed Survey, 2019.

3.1.2 Sex of the respondents

Table 3.1 presents the distribution of respondents based on their sex. It was revealed that majority (92.8%) of the farmers were male while only (7.2%) were female. Moreover, 97.5% of the herdsmen were male while 2.5% of them were female. For the pooled data, 93.6% of the respondents (farmers and herdsmen) were male while only 6.4% of them were female. The findings therefore indicates that majority of the respondents (farmers and herdsmen) were male which implies that male dominate both farming and herding activities in the study area. The finding is in concordance with previous studies (Ayoade *et al.*, 2013; Oose *et al.*, 2015). Gender issues in agricultural technology adoption have been investigated for a long time and most studies have reported mixed evidence regarding the different roles that men and women play in technology adoption (Bonabana-Wabbi, 2002).

3.1.4 Respondents' Marital Status

Table 3.1 shows the distribution of the respondents according to their marital status. Based on the distribution in the Table 4, 86.1% of the farmers were married, 6.7% of the farmers were widowed, 3.9% of the farmers were single while 3.3% of them were separated. For the herdsmen, all of them were married (100.0%). Moreover, for the pooled data, 88.6% of the respondents were married, 5.5% of them were widowed, 3.2% of the respondents were single while 2.7% of the respondents were separated. The finding therefore indicates that majority of both the farmers and herdsmen were married which could help boost their production level especially through unpaid labour supply from household members. This development will more likely reduce cost of production with attending increased savings. The finding conforms with that of Oose *et al.* (2015) study which claimed that majority (86.9%) of their respondents were married.

3.1.6 Years of experience in farming/herding

Table 3.1 also presents the distribution of respondents by years of experience in farming/herding activities. For farmers, about 42.2% of them had secured between 21-30 years of experience, 28.9% had between 31- 40years of experience, 22.2% of them had between 11-20 years of experience, 5.6% of them had less or equal to 10 years of farming experience while only 1.1% had above 40 years of farming experience. For herdsmen, 35.0% of them had secured between 11-20 years of experience in herding operations about 30.5% had spent between 21-30 years or 31-40 years of herding experience while 5.0% of their secured above 40 years of herding experience. Moreover, for the pooled data, more of the respondents had between 21-30 years of experience in their livelihood activities. An average of 25.9 years of experienced were secured by the farmers 26.9% by the herdsmen and 26.4% by pooled data. The average years of experience was high. This finding is in line with that of Ayoade *et al.* (2013) which asserted that their respondents recorded an average of 16 years of experience in cassava production.

Table 3.1: Distribution of respondents by Personal characteristics

Personal characteristics	Farmers	Herdsmen	Pooled
Sex			
Male	167 (92.8)	39 (97.5)	206 (93.6)
Female	13 (7.2)	1 (2.5)	14 (6.4)
Religious affiliation			
Christianity	92 (51.1)	0 (0.0)	92 (41.8)
Islam	76 (42.2)	40 (100.0)	116 (52.7)
Traditional worshippers	12 (6.7)	0 (0.0)	12 (5.5)
Marital Status			
Single	7 (3.9)	0 (0.0)	7 (3.2)
Married	155 (86.1)	40 (100.0)	195 (88.6)
Separated	6 (3.3)	0 (0.0)	6 (2.7)
Widowed	12 (6.7)	0 (0.0)	12 (5.5)
Years of experience (years)			
≤ 10	10 (5.6)	0 (0.0)	10 (4.6)
11-20	40 (22.2)	14 (35.0)	54 (24.5)
21-30	76 (42.2)	12 (30.0)	88 (40.0)
31-40	52 (28.9)	12 (30.0)	64 (29.1)
Above 40	2 (1.1)	2 (5.0)	4 (1.8)

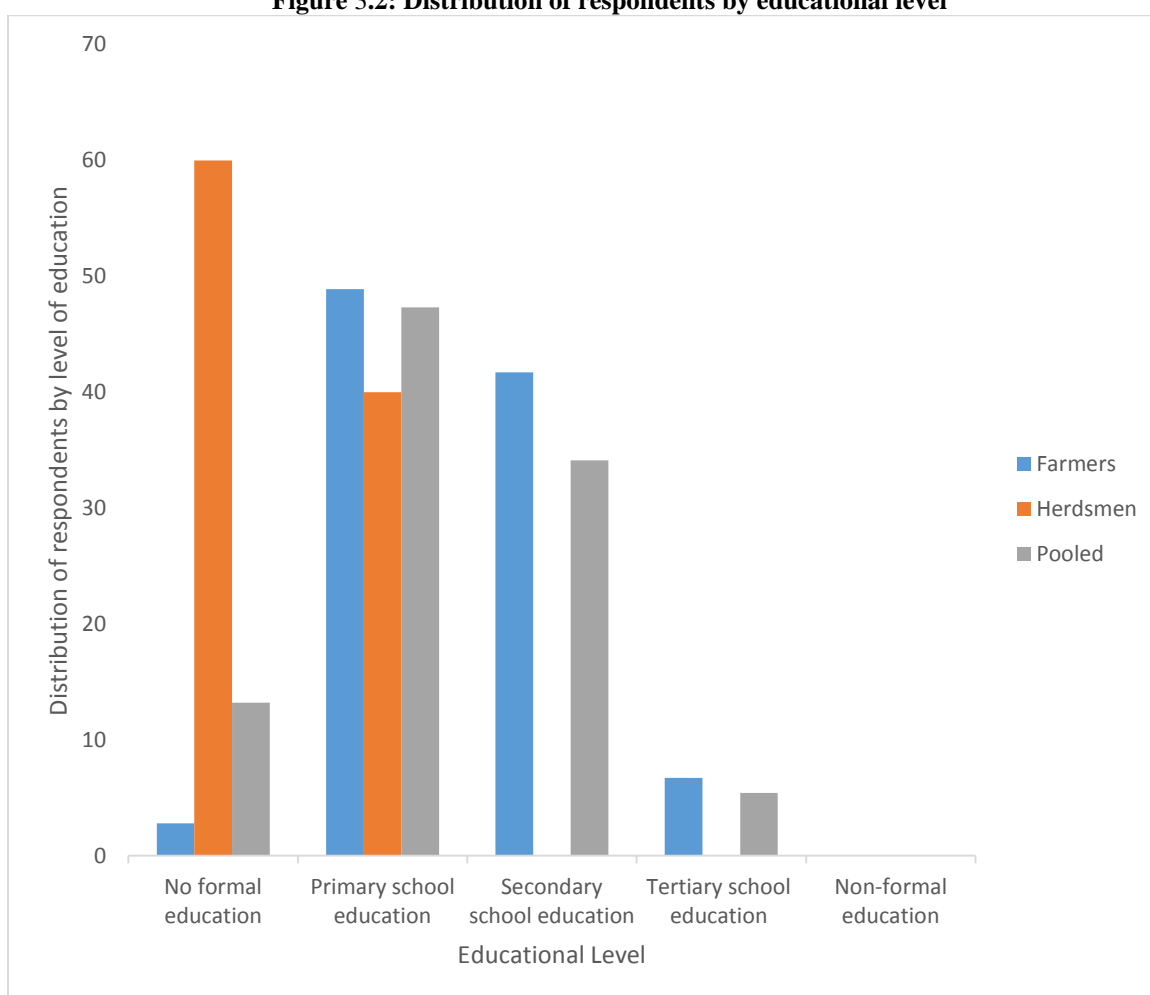
Households' size: Mean (\bar{x}) = Farmers = 9 members; Herdsmen = 10 members; pooled = 10members
 Years of experience: Mean (\bar{x}) = Farmers = 25.9 years; Herdsmen = 26.9 years, pooled = 26.4 years

Source: Field Survey, 2019

3.1.7 Respondents' educational level

Figure 3.2 presents the distribution of respondents by educational level. For farmers, about 48.9% of them had primary school education, 41.7% had secondary school education while 6.7% had tertiary school education. However, 2.8% of the farmers had no formal education. For herdsmen, 40.0% of them had primary school education while 60.0% had no formal education. Moreover, for the pooled data, 47.3% of the respondents had primary school education, 34.1% had secondary school education while 5.4% of the respondents had tertiary school education. However, 13.2% of the respondents had no formal education. The finding indicates farmers are more educated than the herdsmen which implies that farmers are likely to be more exposed which could invariably influence their level of understanding especially in the area of conflict resolution and in decision making. This finding is in agreement with that of Ayoade *et al.* (2013) which claimed that majority of their respondents had formal education. Similarly, the findings of Mugisha and Alobo (2012) claimed that education improves one's ability to understand and assimilate information.

Figure 3.2: Distribution of respondents by educational level



Source: Field Survey, 2019

3.2 Causes of conflicts between farmers and herdsmen in the study area

3.2.1 Farmers' Responses towards causes of conflicts between farmers and herdsmen in the study area

Table 3.2 presents the distribution of respondents by causes of conflicts between farmers and herdsmen. The causes of conflicts between farmers and herdsmen as identified by farmers include water scarcity (100.0%), diminishing land resources (100.0%), no consensus among both groups as to the causes of their mutual conflict (98.9%), decline in internal discipline and social cohesion (98.9%), antagonistic perceptions and beliefs among farmers and herdsmen, policy contradictions, and non-recognition of rights of indigenes (98.9%), destruction of crops by cattle and other property (98.3%), inequitable access to land (94.4%), burning of

rangelands and Fadama settlement (71.1%) and sexual harassment (42.2%). The findings therefore indicate that majority of the farmers identified several causes of conflicts but water scarcity (100.0%) and diminishing land resources (100.0%) were the major causes of conflicts between farmers and herdsmen. Water had always been the major resource for day to day activities especially for the survival of human and livestock. Similarly, other researchers (Okoli *et al.*, 2014; Odoh and Chigozie, 2012; Abbass, 2012) relate the causes of conflict to the global climate change and the contending desertification and aridity that has reduced arable and grazing lands, forcing pastoralist to move southwards in search of pasture for their livestock.

3.2.2 Farmers’ Responses towards causes of conflicts between farmers and herdsmen in the study area

Table 3.3 presents the distribution of respondents by causes of conflicts between farmers and herdsmen. The causes of conflicts between farmers and herdsmen include fierce competition for resources such as water (100.0%), increasing rate of cattle theft (100.0%), diminishing land resources (100.0%), inadequacy of grazing resources (100.0%), antagonistic perceptions and beliefs among farmers and herdsmen, policy contradictions, and non-recognition of rights of indigenous (100.0%), setting of trap/digging of pit for cattle (95.0%), blockage of or farming across the stock routes (92.5%), cultural differences (85.0%), language barrier (80.0%), killing of cattle (72.5%), changing resource access rights (57.5%) and loss of life during or in retrieval attack (12.5%). The findings therefore indicate that majority of the farmers identified water scarcity (100.0%), increasing rate of cattle theft (100.0%), diminishing land resources (100.0%) and inadequacy of grazing resources (100.0%) among other issues as the causes of conflicts between farmers and herdsmen. All the aforementioned causes of conflicts could trigger a long lasting conflicts resulting into loss of human life, animal, houses, stalls and other valuable items of high premium if adequate resolution strategies are not implemented. Similarly, some researchers have linked this crisis to the theory of eco-violence (Okoli and Atelhe, 2014), where environmental factors and exploitation of scarce resources leads to conflict and violence. This may explain the dwindling grazing resources (land, pasture etc.) and poor management of existing grazing reserves (Adisa, 2012) as culpable.

Table 3.2: Distribution of respondents according to causes of conflicts by farmers in the study area

Causes of conflicts	*Frequency	Percentage
Water scarcity	180	100.0
Inequitable access to land	170	94.4
Diminishing land resources	180	100.0
Burning of rangelands and Fadama settlement	128	71.1
Sexual harassment	76	42.2
Destruction of crops and other properties by cattle	177	98.3
No consensus among both groups as to the causes of their mutual conflict	178	98.9
Decline in internal discipline and social cohesion	178	98.9
Antagonistic perceptions and beliefs among farmers and herdsmen, policy contradictions, and non-recognition of rights of indigenes	178	98.9

***Multiple Responses**

Source: Field Survey, 2019

Table 3.3: Distribution of respondents according to causes of conflicts by herdsmen

Causes of conflicts	*Frequency	Percentage
Fierce competition for resources such as water	40	100.0
Increasing rate of cattle theft	40	100.0
Diminishing land resources	40	100.0
Inadequacy of grazing resources	40	100.0
Language barrier	32	80.0
Cultural differences	34	85.0
Changing resource access rights	23	57.5
Killing of cattle	29	72.5
Blockage of or farming across the stock routes	37	92.5
Antagonistic perceptions and beliefs among farmers and herdsmen, policy contradictions, and non-recognition of rights of indigenous	40	100.0
Setting of trap/digging of pit for cattle	38	95.0
Loss of life during or in retrieval attack	5	12.5

***Multiple response**

Source: Field Survey, 2019

3.3 Conflicts resolution strategies employed in the study area

3.3.1 Conflicts resolution strategies employed by farmers in the study area

Table 3.4 presents the distribution of respondents according to conflicts resolution strategies by farmers in the study area. It was revealed that the intervention of community leaders and traditional leaders was ranked first as the major conflicts resolution strategies by farmers with the Weighted Mean Score (WMS) of 1.96. Other conflicts resolution strategies by farmers in their rank order include a combined effort of the village/district head (WMS = 1.93), police/court (WMS = 1.75), warning not to allow a repeat performance (WMS = 1.75), personal intervention (WMS = 1.57), compensation (WMS = 1.12), physical combat (WMS = 1.12), use of charms (WMS = 1.03) and tighten farm/herd security (WMS = 0.63). The findings therefore indicate that the intervention of community leaders and traditional leaders is the major conflicts resolution strategies adopted by farmers. Intervention of community leaders and traditional leaders major conflicts resolution strategies by farmers may be due to the fact that they are respected group of people in the community with verse knowledge of community terrain and settlement patterns in the area. They can impose sanction on deviants probably as a means of stabilizing and maintaining peaceful co-existence of every member of their community. This finding agreed with that of Olabode and Ajibade (2010) which observed that community leaders/security agents most times asked the herdsmen to pay compensation or in case of excessive damages, the state or local government comes in aid of the crop farmers who are mostly affected in order to resolve the conflict.

3.3.2 Conflicts resolution strategies by herdsmen

Table 3.5 presents the distribution of respondents according to conflicts resolution strategies by farmers in the study area. It was revealed that the tighten herd security was the most common conflicts resolution strategies employed by herdsmen with Weighted Mean Score (WMS) of 2.85. Other conflicts resolution strategies by herdsmen in their rank order include adherence to community rules and regulations (WMS = 2.10), participating in the community development (WMS = 2.03), changing the routes of herding (WMS = 1.98), police/court (WMS = 1.95), changing the period of grazing (WMS = 1.90), compensation (WMS = 1.75), use of charms (WMS = 1.20), going about with registered weapons (WMS = 0.75) and practicing zero grazing system (WMS = 0.63). The finding therefore indicates that tighten herd security is the major conflicts resolution strategies adopted by herdsmen.

Table 3.4: Distribution of respondents according to conflicts resolution strategies by herdsmen

Conflicts resolution strategies	VO	O	R	NA	WMS	Rank
Use of charms	1(2.5)	10(25.0)	25(62.5)	4(10.0)	1.20	8 th
Tighten herd security	34(85.0)	6(15.0)	0(0.0)	0(0.0)	2.85	1 st
Compensation	1(2.5)	28(70.0)	11(27.5)	0(0.0)	1.75	7 th
Changing the routes of herding	1(2.5)	37(92.5)	2(5.0)	0(0.0)	1.98	4 th
Changing the period of grazing	0(0.0)	36(90.0)	4(10.0)	0(0.0)	1.90	6 th
Practicing zero grazing system	0(0.0)	4(10.0)	17(42.5)	19(47.5)	0.63	10 th
Participating in the community development	2(5.0)	37(92.5)	1(2.5)	0(0.0)	2.03	3 rd
Going about with registered weapons	0(0.0)	1(2.5)	28(70.0)	11(27.5)	0.75	9 th
Police/court	1(2.5)	36(90.0)	3(7.5)	0(0.0)	1.95	5 th
Adherence to community rules and regulations	5(12.5)	34(85.0)	1(2.5)	0(0.0)	2.10	2 nd

VO = Very Often; O = Often; R = Rarely; NA = Not at all

WMS = Weighted Mean Score

Source: Field Survey, 2019

Table 3.5: Distribution of respondents by conflicts resolution strategies employed by farmers in the study area

Conflicts resolution strategies	VO	O	R	NA	WMS	Rank
Use of charms	2(1.1)	48(26.7)	83(46.1)	47(26.1)	1.03	8 th
Tighten farm/herd security	0(0.0)	47(26.1)	19(10.6)	114(63.3)	0.63	9 th
Compensation	0(0.0)	63(35.0)	75(41.7)	42(23.3)	1.12	6 th
Physical combat	0(0.0)	72(40.0)	76(42.2)	32(17.8)	1.12	6 th
Warning not to allow a repeat performance	0(0.0)	139(77.2)	37(20.6)	4(2.2)	1.75	3 rd

Personal intervention (negotiation)	1(0.6)	107(59.4)	66(36.7)	6(3.3)	1.57	5 th
A combined effort of the village/district head	1(0.6)	170(94.4)	5(2.8)	4(2.2)	1.93	2 nd
Police/court	0(0.0)	137(76.1)	41(22.8)	2(1.1)	1.75	3 rd
Community/traditional leaders with the local government	3(1.7)	170(94.4)	3(1.7)	4(2.2)	1.96	1 st

VO = Very Often; O = Often; R = Rarely; NA = Not at all

WMS = Weighted Mean Score

Source: Field Survey, 2019

3.3.3 Categorization of extent of use of conflicts resolution strategies by farmers in the study area

Based on the results in the Table 3.6, about 3.9 percent of the respondents utilized conflicts resolution strategies at high level, 71.1 percent of the respondents utilized conflicts resolution strategies at moderate level while 25.0 percent of the respondents utilized conflicts resolution strategies at low level. The findings revealed that most of the respondents utilized conflicts resolution strategies at moderate level which is expected to reduce rate of conflicts thereby reducing socio-economic effects associated with conflicts among the farmers and herdsmen.

3.3.4 Categorization of the conflicts resolution strategies by herdsmen in the study area

Based on the results in the Table 3.7, about 85.0 percent of the respondents utilized the conflicts resolution strategies at moderate level, 7.7 percent utilized them at high level while another 7.7 percent of the respondents utilized them at low level. The finding revealed that most of the respondents had adopted the conflicts resolution strategies at moderate level which will definitely boost their production level and better returns for their investment. Herdsmen who perceive the strategies being consistent with their needs and compatible to their environment are likely to adopt since they find it as a positive investment.

Table 3.6: Categorization of respondents by socio-economic effects of the conflicts on the farmers in the study area

Categories	Score	Frequency	Percentage
High	>X ± 1SD = 15.952	7	3.9
Moderate	X ± 1SD = 10.788 to 15.952	128	71.1
Low	<X ± 1SD = 10.788	45	25.0
Total		180	100.0

$\bar{x} = 13.37$; Std. = 2.582

Source: Field Survey, 2019

Table 4.7: Categorization of respondents by conflicts resolution strategies by herdsmen in the study area

Categories	Score	Frequency	Percentage
High	>X ± 1SD = 19.22	3	7.5
Moderate	X ± 1SD = 15.24 to 19.22	34	85.0
Low	<X ± 1SD = 19.22	3	7.5
Total		40	100.0

$\bar{x} = 17.23$; Std. = 1.99

Source: Field Survey, 2019

3.4 Effectiveness of conflicts resolution strategies in the study area

3.4.1 Effectiveness of conflicts resolution strategies by farmers in the study area

Table 3.8 presents the distribution of respondents according to effectiveness of conflicts resolution strategies by farmers in the study area. It was revealed that the efforts of the community leaders and traditional leaders with the local government was the most effective conflicts resolution strategy employed by farmers with Weighted Mean Score (WMS) of 2.78. Other conflicts resolution strategies by farmers in their rank order of effectiveness include a combined effort of the village/district head (WMS = 2.76), police/court (WMS = 2.73), use of charms (WMS = 2.31), warning not to allow a repeat performance (WMS = 2.17), personal intervention (WMS = 2.00), tighten farm security (WMS = 1.83), compensation (WMS = 1.38). The findings therefore indicate that the community leaders and traditional leaders with the local government was the most effective conflicts resolution strategies employed by farmers. The effectiveness of the community leaders and traditional leaders with the local government may be associated with the fact that they are respected group of people in the

community with verse knowledge of community terrain and settlement patterns in the area. They can impose sanction on deviants probably as a means of stabilizing and maintaining peaceful co-existence of every member of their community. However, most of these resolution strategies are not usually effective because recurrent conflicts often emanate after the supposedly resolved conflicts. In line with the Blench (2010) study which observed that judicial commissions set up to handle conflict issues do not yield any effective action probably both farmers and pastoralists are in dire need to settle these conflicts preferably by the customary institutions rather than the Courts.

3.4.2 Effectiveness of conflicts resolution strategies by herdsmen in the study area

Table 3.9 presents the distribution of respondents according to effectiveness of conflicts resolution strategies by herdsmen in the study area. It was revealed that the tighten herd security was the most effective conflicts resolution strategies employed by herdsmen with Weighted Mean Score (WMS) of 4.78. Other conflicts resolution strategies by herdsmen in their rank order of effectiveness include participating in the community development (WMS = 3.08), changing the routes of herding (WMS = 2.98), adherence to community rules and regulations (WMS = 2.98), changing the period of grazing (WMS = 2.93), use of charms (WMS = 2.63), compensation (WMS = 2.58), Police/court (WMS = 2.50), going about with registered weapons (WMS = 2.15) and practicing zero grazing system (WMS = 2.15). The effectiveness of the tighten herd security was the most effective conflicts resolution strategies employed by herdsmen. This development could reduce socio-economic losses and thereby boost their income level.

Table 3.8: Distribution of respondents by effectiveness of conflicts resolution strategies by farmers in the study area

Strategies	O	EE	ME	BE	NI	WMS	Rank
Use of charms	0(0.0)	31(17.2)	40(22.2)	62(34.4)	47(26.1)	2.31	4 th
Tighten farm security	2(1.1)	3(1.7)	2(1.1)	128(71.1)	45(25.0)	1.83	7 th
Compensation	0(0.0)	1(0.6)	4(2.2)	57(31.7)	118(65.6)	1.38	8 th
Warning not to allow a repeat performance	0(0.0)	8(4.4)	65(36.1)	56(31.1)	51(28.3)	2.17	5 th
Personal intervention through physical combat	0(0.0)	6(3.3)	24(13.3)	114(63.3)	36(20.0)	2.00	6 th
A combined effort of the village/district head in settling disputes	0(0.0)	14(7.8)	132(73.3)	11(6.1)	23(12.8)	2.76	2 nd
Police/court	0(0.0)	5(2.8)	144(80.0)	8(4.4)	23(12.8)	2.73	3 rd
Community leaders and traditional leaders with the local government organizing seminar/trainings	1(0.6)	13(7.2)	137(76.1)	4(2.2)	25(13.9)	2.78	1 st

O = Outstanding; EE = Exceeds expectations; ME = Meet expectations; BE = Below expectations; NI = Needs improvement

\bar{x} = 18.14; Std. = 4.376

WMS = Weighted Mean Score

Table 3.9: Distribution of respondents according to effectiveness of conflict resolution strategies by herdsmen

Strategies	O	EE	ME	BE	NI	WMS	Rank
Use of charms	1(2.5)	29(72.5)	5(12.5)	4(10.0)	1(2.5)	2.63	6 th
Tighten herd security	31(77.5)	9(22.5)	0(0.0)	0(0.0)	0(0.0)	4.78	1 st
Compensation	0(0.0)	1(2.5)	21(52.5)	18(45.0)	0(0.0)	2.58	7 th
Changing the routes of herding	0(0.0)	2(5.0)	35(87.5)	2(5.0)	0(0.0)	2.98	3 rd
Changing the period of grazing	0(0.0)	2(5.0)	33(82.5)	5(12.5)	0(0.0)	2.93	5 th
Practicing zero grazing system	0(0.0)	0(0.0)	0(0.0)	11(27.5)	29(72.5)	1.28	10 th
Participating in the community development	1(2.5)	1(2.5)	38(95.0)	0(0.0)	0(0.0)	3.08	2 nd

Going about with registered weapons	1(2.5)	1(2.5)	11(27.5)	17(42.5)	10(25.0)	2.15	9 th
Police/court	0(0.0)	1(2.5)	19(47.5)	19(47.5)	1(2.5)	2.50	8 th
Adherence to community rules and regulations	0(0.0)	1(2.5)	38(95.0)	0(0.0)	1(2.5)	2.98	3 rd

O = Outstanding; EE = Exceeds expectations; ME = Meet expectations; BE = Below expectations; NI = Needs improvement
WMS = Weighted Mean Score
Source: Field Survey, 2019

3.4.3 Categorization of effectiveness of conflicts resolution strategies by farmers in the study area

Based on the results in the Table 3.10, about 6.1 percent of the respondents rated the effectiveness of conflicts resolution strategies as high, 81.1 percent of the respondents rated them moderate while 12.8 percent of the respondents rated effectiveness of conflicts resolution strategies. The findings revealed that most of the respondents claimed that effectiveness of conflicts resolution strategies were moderate. This finding implies that despite the availability of several conflicts resolution strategies, conflict is still not totally eradicated from the study area, more effort is therefore necessary to boost various conflicts resolution strategies in order to engender peaceful co-existence of herdsmen and farmers in the area. This development will invariably reduce rate of conflicts between the farmers and herdsmen thereby boosting their production level.

3.4.4 Categorization of the effectiveness of conflict resolution strategies by herdsmen in the study area

Based on the results in the Table 3.11, about 67.5 percent of the respondents claimed that most of the conflict resolution strategies by herdsmen were moderately effective in the study area, 20.0 percent of the respondents claimed that the conflict resolution strategies by herdsmen were still witnessing low effectiveness while 12.5 percent of the respondents claimed high level of effectiveness of the conflict resolution strategies utilized by herdsmen. The findings revealed that most of the conflict resolution strategies by herdsmen were still at moderate effectiveness.

Table 3.10: Categorization of respondents by effectiveness of conflicts resolution strategies in the study area

Categories	Score	Frequency	Percentage
High	>X ± 1SD = 22.516	11	6.1
Moderate	X ± 1SD = 13.764 to 22.516	146	81.1
Low	<X ± 1SD = 13.764	23	12.8
Total		180	100.0

$\bar{x} = 18.14$; Std. = 4.376
Source: Field Survey, 2019

Table 3.11: Categorization of respondents by effectiveness of conflict resolution strategies employed by herdsmen in the study area

Categories	Score	Frequency	Percentage
High	>X ± 1SD = 31.237	5	12.5
Moderate	X ± 1SD = 26.68 to 31.237	27	67.5
Low	<X ± 1SD = 26.68	8	20.0
Total		40	100.0

$\bar{x} = 28.95$; Std. = 2.287
Source: Field Survey, 2019

3.5 Hypotheses for the study

Ho₁: There is no significant relationship between selected personal characteristics of the respondents (farmers and herdsmen) and effectiveness of various conflicts resolution strategies

Table 3.12 shows the summary of Pearson Product Moment correlation analysis of the relationship between respondent' personal characteristics and effectiveness of various conflicts resolution strategies. It was revealed that age of the respondents (farmers and herdsmen) (r = -0.291***) was significantly related with

effectiveness of various conflicts resolution strategies. The relationship was negative which implies that decrease in the age of the respondents will bring about an equivalent increase in the various conflicts resolution strategies. For instance, young farmers and herdsmen are more likely to acquire adequate level of education which will bring about more exposure which will invariably influence the level of use of various conflicts resolution strategies.

Table 3.12: Summary of correlation analysis of the relationship between personal characteristics and effectiveness of various conflicts resolution strategies

Personal characteristics	Correlation coefficient (r - p-value value)	Remarks
Age of the respondents	-0.291***	S
Household size	-0.051	NS
Years of experience in primary occupation	-0.060	NS

S = Significant; NS = Not Significant

*****= significant at 1% level of significance**

Source: Field Survey, 2019

Ho₁: There is no significant relationship between the selected personal characteristics of the respondents (farmers and herdsmen) and effectiveness of various conflicts resolution strategies

Table 3.13 shows the summary of Chi-square analysis of the significance relationship between selected personal characteristics of the respondents (farmers and herdsmen) and effectiveness of various conflicts resolution strategies. It was revealed that sex ($X^2 = 42.943***$), religion ($X^2 = 65.439***$), marital status ($X^2 = 155.801***$), educational level ($X^2 = 138.648***$), primary occupation ($X^2 = 219.971***$) and secondary occupation ($X^2 = 69.615***$) were significantly related to effectiveness of conflict resolution strategies. The relationships were positive which implies that any increase in the selected socio-economic characteristics will lead to an equivalent increase in the effectiveness of conflict resolution strategies among farmers and herdsmen. For instance, the more educated the respondents are, the more their level of exposure which will help boost their level of understanding thereby reducing the rate of conflict occurrence in the rural area. Since the relationship is significant, the null hypothesis is rejected while the alternative hypothesis is accepted.

Table 3.13: Summary of Chi-square analysis of the relationship between selected personal characteristics and effectiveness of various conflicts resolution strategies

Variables	Chi-square	Diff.	p-value
Sex	42.943***	13	0.000
Religion	65.439***	26	0.000
Marital status	155.801***	52	0.000
Educational level	138.648***	39	0.000
Primary occupation	219.971***	52	0.000
Secondary occupation	69.615***	39	0.002
Social group	13.418	26	0.980

*****= significant at 1% level of significance**

Source: Field Survey, 2019

IV. Conclusion

Majority of the respondents (farmers and herdsmen) experienced moderate socio-economic effects due to conflicts between farmers and herdsmen which will definitely reduce their production level and poor returns on their investment. Most of the respondents utilized conflicts resolution strategies at moderate level which is expected to reduce rate of conflicts thereby reducing socio-economic effects associated with conflicts among the farmers and herdsmen. Most of the respondents claimed that effectiveness of conflicts resolution strategies were moderate. Most of the respondents utilized conflicts resolution strategies at moderate level which is expected to reduce rate of conflicts thereby reducing socio-economic effects associated with conflicts among the farmers and herdsmen. The age of the respondents (farmers and herdsmen) was significantly related with effectiveness of various conflicts resolution strategies. It was therefore concluded that effectiveness of conflict resolution strategies were still in moderate level in tackling conflict between farmers and herdsmen.

V. Recommendations

The study recommends that:

1. Since asking for outrageous and unrealistic compensation is a prominent problem, there is therefore need to mediate conflict by encouraging affected group to always demand realistic compensation thereby reducing perceived exhortation and exploitation of the herdsman in the event of a reported conflict.
2. Lack of familiarity with the traditions and customs of the new area is a major issue, there is therefore need to bring farmers and herdsmen together especially through association thereby making it easy for them to relate effectively in order to reduce losses.
3. The identified conflict resolution strategies can be formalized by policy makers and it can be referred to when advice is needed.

References

- [1]. Abbass, I. M. (2012). No Retreat No Surrender: Conflict for Survival between Fulani Pastoralists and Farmers in Northern Nigeria. *European Scientific Journal*, Vol. 8, No.1, pp. 331-346.
- [2]. Adisa, R.S. (2012). Land Use Conflict between Farmers and Herdsmen – Implications for Agricultural and Rural Development in Nigeria, *Rural Development - Contemporary Issues and Practices*.<http://www.intechopen.com/books/rural-development-contemporary-issues-and-practices/land-use-conflictbetween-famers-and-herdsmen-implications-for-agricultural-and-rural-development-in>.
- [3]. Ajuwon, S. S. (2004). Case Study: Conflict in Fadama Communities. In *Managing Conflict in Community Development*. Session 5, Community Driven Development. Pp. 23-27.
- [4]. Ayoade A.R., Akintonde J.O. and Oyelere, G.O. (2012). Factors Affecting Adoption of Appropriate Technologies on Cassava Production in Oriire Local Government Area of Oyo State, Nigeria. *International Research Journal of Agricultural Science and Soil Science* (ISSN: 2251-0044) Vol. 2(3) pp. 089-093.
- [5]. Bamigboye, E. O. and Kuponiyi, F. A. (2013). Adoption of land management technologies amongst small-holder farmers in Ekiti State, Nigeria: Implications for food security. *African Journal of Agricultural Research*. Vol. 8(16), pp. 1405-1410.
- [6]. Blench, R. (2010). Conflict between Pastoralists and Cultivators in Nigeria: Review Paper Prepared for DFID Nigeria. <http://www.rogerblench.info/Development/Nigeria/Pastoralism/Fadama%20II%20paper.pdf>.
- [7]. Bonabana-Wabbi, J. (2002). Assessing Factors Affecting Adoption of Agricultural Technologies: The Case of Integrated Pest Management (IPM) in Kumi District, Eastern Uganda. Master's Thesis, Virginia Polytechnic Institute and State University, Blacksburg, VA, USA.
- [8]. Fasona, M. J. and Omojola, A. S. (2005). "Climate Change, Human Security and Communal Clashes in Nigeria." Paper at International Workshop in Human Security and Climate change, Holmen Fjord Hotel, Oslo Oct. 21-23, 2005. pp. 12-16.
- [9]. Gbadegesin, A. (2008). The use of Environmentally Sustainable Agricultural Practices by Farmers in Ogbomoso Agricultural Zone of Oyo State. Unpublished M. Tech. Thesis, Department of Agricultural Economics and Extension, Ladoké Akintola University of Technology, Ogbomoso, Nigeria Pp 40-43.
- [10]. Gefu, J.O. and Kolawole, A. (2002). "Conflict in Common Property Resource Use: Experiences from an Irrigation Project". Paper Prepared for 9th Conference of the International Association for the Study of Common Property. Indiana. [Retrieved in Oct, 2005 from <http://d.c.dlib.indiana.edu/archive/00000823/00/gefuj080502.pdf>].
- [11]. Mignouna, B., Manyong, M., Rusike, J., Mutabazi, S. and Senkondo, M. (2011). Determinants of Adopting Imazapyr-Resistant Maize Technology and its Impact on Household Income in Western Kenya: *AgBioforum*, 14(3), 158-163. Hall, B. and Khan, B. (2002) Adoption of new technology. *New Economy Handbook*.
- [12]. Mugisha, J.I and Alogo, S.I (2012). Determinants of Land Management Practices in the Agricultural Highland of Uganda. *Journal of Agric. Economics*. Vol. 1. Issue No. ISSN 0856-9681. Page 109.
- [13]. Odoh, S.I. and Chigozie, C. F. (2012). Climate change and conflict in Nigeria: A theoretical and empirical examination of the worsening incidence of conflict between Herdsmen and farmers in Northern Nigeria. *Arabian Journal of Business Management Review*, 2(1): 110-124.
- [14]. Okoli, A.C. and Atelhe, G.A. (2014). Herdsmen against natives: A political ecology of Herder/Farmer conflicts in Nassarawa State, Nigeria. *American International Journal of Contemporary Research*, 4(2): 76-88.
- [15]. Okoli, I.C., Enyinnia, A.C., Elijah, A.G., and Okoli, C.G. (2014). Cattle management of pastoralist and conflict resolution strategies in the tropical humid rain forest zone of southern Nigeria. *Journal of International Scientific Publications: Agriculture and Food*, 2: 16-19.

- [16]. Olabode A.D. and Ajibade, L.T (2010) Environment induced conflict and sustainable development. A case of Fulani-Farmers conflicts in Oke-Ero LEDs, Kwara State. *Journal of sustainable Development in Africa* Vol 12(5) 289-266.
- [17]. Oose, M.O., Banmeke, T. O. A., Olaoye, O. J., Otufale, G. A. and Opele, A. I. (2015). Fisheries Information Needs of Artisanal Fishers in Coastal Communities of South-West Nigeria: Lessons for Effective Fisheries Information Dissemination. *International Journal of Agricultural Economics & Rural Development* - 7 (1): 2015.
- [18]. Shettima, A. G., and Tar, U. A. (2008). Farmer-Pastoralist Conflict in West Africa: Exploring the Causes and Consequences. *Information, Society and Justice*, 1.2, 163–184. doi:10.3734/isj.2008.1205.