IJAERD E-Journal
International Journal of Agricultural Economics and Rural Development - 12 (1): 2022

Utilisation of management strategies by arable crop farmers to mitigate conflicts with cattle herders in Oyo state, Nigeria

Adeleke, O. A. and Adefarati, M. E.
Department of Agricultural Extension and Rural Development, University of Ibadan, Nigeria

Abstract: Conflict is an inevitable feature of every human society which if not properly managed, threatens sustainability of communities. This study investigated the utilisation of management strategies by arable crop farmers to mitigate conflict with cattle herders in Oyo State, Nigeria. A multistage sampling procedure was used to select 180 respondents for the study. Data were collected with the use of interview schedule which were analysed using descriptive and inferential (Chi-square and PPMC) statistics. Result showed that most (79.4%) of the respondents were male, had formal education (70.6%) with a mean age of 50.9 years, 80.0% had farm size of 0.5-3 hectares. Grazing of on-farm crops ($\bar{x}$ =1.96) and indiscriminate grazing of cattle in the community ($\bar{x}$ =1.93) were identified as major causes of conflict. Effects of conflict on livelihood activities were farm destruction ($\bar{x}$ =2.00) and reduction in crop yield ($\bar{x}$ =2.00). The level of effect of conflict on livelihood activities was high (56.7%). Inadequate fund to secure farmland ($\bar{x}$ =1.83) was the most severe constraint in managing conflict. The study also showed that utilisation of management strategies was low among respondents. Based on the grand mean of the management strategies categories, the most employed by the respondents was competitive management strategy ($\bar{x}$ =1.08). Chi-square result revealed that significant relationship existed between level of education (χ^2 = 4.633), religion (χ^2 = 4.12) and utilisation of management strategies. Government at all levels should formulate policies based on strategies mostly employed by farmers to sustain food security and ensure agricultural sustainability in the nation.
Keywords: Cattle herders, competition, crop farmers, management strategy, nomadic

INTRODUCTION

Conflict is a natural phenomenon that is inevitable in human environments. Conflict is perceived as a serious disagreement about something important that could lead to war and instability in an environment. It is also a struggle or contest between people with opposing needs, ideas, values and goals (Sani, Michael, Tologbonse, Mahmoud, Muhammed, Raji and Abubakar, 2021). According to Soomiyol and Fadairo (2020), it has been affirmed that conflict is not bad but a necessity to evolution, change and development of human organisations. In other words, when conflicts degenerate to violent destructive clashes, they become not only unhealthy, but also counterproductive and disruptive. Conflict could exhibit its importance in some cases like stimulating new thoughts, promoting policy change, defining group relationships and helping the formation of personal identity (Turner, Ayantunde, Patterson and Patterson, 2021).

According to Omisore (2014), conflict is an inevitable feature of every human society, and it is unnatural to have it in societies where natural resources determine the means of livelihood and survival. Conflict between farmers and nomadic cattle herders is one out of many types of conflict and challenges facing Nigeria which include ethnic and religious conflicts, banditry, conflicts among settled farmers, armed robbery, kidnapping, poverty, corruption and environmental degradation (Kingsley, 2017). Factors that account for the increasing conflict include the south ward movement of herders into the humid and sub humid zones as a result of change in climatic conditions, population growth, urbanisation, government policies, insurgency and expansion of farm lands into areas that hitherto served as pasture land (Turner, Ayantunde, Patterson and Patterson, 2021).

Most Fulani's in Nigeria are herdsmen who have their settlement in the northern part of Nigeria. They are known to be territorial in nature and majority of them are nomads, herding cattle, sheep and goats across grass lands of their environment, making them the world's largest pastoral nomadic group (Soomiyol and Fadairo, 2020). The incessant conflict between herders and farmers has been on the increase over the past twenty-five years in all regions in Nigeria (Turner, Ayantunde, Patterson and Patterson, 2021), with more negative impacts such as loss of lives and properties, destruction of farmlands and markets, hatred between ethnic groups, reduction in crop yield and framers' income and death. All these have an impact on agriculture and food prices, resulting in inflation and instability of food prices.

In Nigeria, arable crop farmers account for about 80% of total food requirement and also provide the bulk of the crops consumed locally within the country. They play an important role in the national economy despite the country's reliance on crude oil by ensuring survival of many rural dwellers and farm families in towns and villages (Sabo, 2017). Moreover, it has been observed that Nigerian agricultural production consists of rural-based small-scale arable crop farmers who account for 80% of total food requirement. Also, out of the 71 million hectares of cultivable land in Nigeria only half of it has been utilised for farming by arable crop farmers, this might be linked to herders invading farmlands and inadequate modern facilities and technology. It is therefore observed that these activities of herders in almost all areas in the nation have considerably affected the rate of food

production and prices. This has incapacitated the high efficiency of the nation to produce at optimal level (Oladele, 2017).

Studies in different States in Nigeria provided reports that there have been massive herdsmen invasions on local farmlands which have triggered violent and land use conflicts (Aliyu, 2015). Furthermore, Idowu (2017) submits that violence has displaced more than 100,000 people in Benue and Enugu States and left them under care of relatives or in Internally Displaced Persons (IDPs) camps.

Conflict management seeks to indicate the fact that conflict is inevitable and that not all conflicts are resolvable. Conflict management seen in the right perspective, correctly assumes that conflicts are long term process that often cannot be quickly resolved but can be managed. Employing several conflict management strategies has been found to be a veritable tool in solving conflicts in different part of the world (Soomiyol and Fadairo (2020), contributing to peace and sustainable agricultural practices.

Oyo State is also not left out in the incessant attacks and conflicts between herders and farmers in recent times. Despite efforts to put an end to all these conflicts from different institutions like security personnel, community effort and government at large, it is obvious that their effort is not strong enough to curb these unpleasant situations. Hence, the need to manage conflict becomes pertinent by all stakeholders involved so as to ensure safety and security of lives and properties.

The general objective of this study is to assess the utilisation of management strategies by arable crop farmers to mitigate conflicts with cattle herders in Oyo State, Nigeria. The specific objectives are to:

1. describe the socio-economic characteristics of the respondents,
2. determine the causes of conflicts between arable crop farmers and nomadic cattle herders,
3. ascertain the effects of conflicts on the livelihood activities of the respondents
4. identify the constraints respondents face in managing the conflict
5. examine the utilisation of management strategies employed by arable crop farmers

Hypotheses of the study

$H_0$1: There is no significant relationship between the socioeconomic characteristics and utilisation of management strategies.

$H_0$2: There is no significant relationship between effects of conflict on livelihood activities and utilisation of management strategies.

METHODOLOGY

The study was carried out in Oyo state, Nigeria. It covers an area of approximately 28,454 km^2 and lies between latitude 8.1574^{o}N and longitude 3.614^{o}E with a population of 7,840,864 million people. The land scape consists of old hard rocks and shaped hills, which rise gently from about 500 meters in southern part to about 1,219 meters above sea level in the northern part. The State has the first University in Africa situated in it. Several ethnic groups and tribes reside in the State like Yorubas, Fulanis, Igbos etc. Agriculture is the main occupation of the people of Oyo State. Oyo State has 33 Local Government Areas with over 400 major towns and villages. Polygamous marriage as well as accumulation of wives and children is one of their ways of measuring a man's wealth and prestige especially in rural communities.

A multistage sampling procedure was used to select respondents for this study. In the first stage, a random selection of two agricultural zones out of the four existing agricultural zones classified by Oyo State Agricultural Development Programme (OYSADEP) which are Ibadan/Ibarapa and Saki agricultural zones. Ibadan/Ibarapa agricultural zone consists of nine blocks and Saki agricultural zone consists of eight blocks. The second stage involved a simple random sampling of 20% of 9 blocks in Ibadan/Ibarapa; Ibarapa north, Ido and 20% of the 8 blocks in Saki; Saki East, Irepo, respectively. In stage three, a random selection of three cells each from the Ibadan/Ibarapa block and three cells from Saki, making a total of twelve cells. In the last stage, 45% of arable crop farmers from each cell was selected proportionately to make 180 arable crop farmers in the study area. Quantitative data was collected with the aid of a structured interview schedule which was analysed using descriptive and inferential (Chi square and PPMC) statistics employing the use of Statistical Package for Social Sciences (SPSS).

Measurement of variables

Causes of conflicts: This was measured using a response option of to a great extent (2), very little extent (1) and not at all (0). The mean value was also used to rank the scores of respondents.

Effects of conflicts on the livelihood activities: This was measured by providing answers to set of questions that were classified into physical, economic and social effect. This was measured by using a response option of agree (2), uncertain (1) and disagree (0). The grand mean was used to select the category of conflict mostly affecting respondents in the study area. The mean score of 24.5 was generated which was used to rank respondents into those having high and low effects of conflicts on livelihood activities.

Constraints faced in managing conflicts: This was measured using a response option of severe constraint (2), mild constraint (1) and not a constraint (0). The mean value generated for each constraint was used to rank them in order of severity.

Utilisation of management strategies which is the dependent variable was measured using

three broad components of conflict management strategy namely: compromising, collaborating and competing management strategies with 17 items which was measured using the response options of always utilised (2), often utilised (1) and not utilised at all (0). The minimum score was 0 while the maximum score was 34.0. The mean score of 17.4 was generated which was used to categorise into respondents having low (7.0-17.4) and high (17.5-28.0) utilisation of management strategies. Also, the grand mean for each management strategy was generated to know the best strategy employed by arable crop farmers.

RESULTS AND DISCUSSION

Table 1 revealed that the mean age of respondents was 50.9 ± 9.5years with 2.8% as young adults. The implication of this is that youths are not actively involved in farming, and this is not good for agricultural sustainability, this may also have a negative effect on the management strategies employed by farmers to defend their community against the unlawful entrance on their agricultural land. This corroborates with the findings of Yekinni, Adeniyi and Adebisi (2017) that crop farmers are getting old and may not have the required physical strength to defend their community. The distribution of respondent's sex revealed that most arable crop farmers (78.9%) were male. This suggests that arable crop farming is a male dominated enterprise in the study area. This is in tandem with the findings of Kolawole (2020) that majority of arable farmers were male. From table 1, majority (93.3%) of the respondents were married. This implies that most of the farmers in the study area have families of their own, who can supply them labour force on their farm, thereby reducing the cost of production. The distribution of respondents' educational attainment revealed that majority (70.6%) of the respondents had formal education which could help them to get adequate information from various channels that will help to manage conflict with strategies it entails. The mean annual income of respondents was ₦509,166.7±415.783.4, this suggests that the profit from agricultural activities may not be sufficient to meet the demands of farmers especially at the home front not to talk of getting extra income to ensure security of their farmlands, therefore, adequate resources and technology are needed to help make the sector grow better. Results from table 1 also revealed that majority (80.0%) of the respondents had between 0.5 – 3 hectares of land which agrees with the findings of Obaniyi (2020) in a similar study where 86.6% of arable crop farmers had a farm size of between 1- 5 hectares. The implication of this result is that the arable crop farmers have a reasonable hectare of farmland under cultivation. It further means that they would have to provide extra security to keep their farm safe from cattle herders. Also, the mean value for farming experience is 13.36±7.86 years which suggests that most of the respondents had been into farming for over a decade and could understand the trend of conflict and its management over the years. It was also indicated from the findings of the study that farmers cultivated crops like maize, cassava, potatoes and vegetables. The result from Table 1 also indicates that 55.6% of the respondents were engaged in secondary occupation which implies that most of the respondents do not depend on farming as their only means of livelihood which might be as a result of uncertainty involved in agricultural activities which may be caused by climate change and conflict in the study area. This is in tandem with the findings of Adeniyi and Yekinni (2015) who reported that crop farmers diversify into other livelihood activities to cope with their financial obligations especially during off season and time of conflict.

Table 1: Distribution of respondents according to socioeconomic characteristics

Variable	Frequency	Percent	Mean	SD
Age (years)				
Less than or equal to 25	2	1.1		
26 – 35	3	1.7		
36 – 45	48	26.7	50.9	9.5
46 – 55	79	43.9		
56 – 65	32	17.8		
Older than or equal to 66	16	8.9		
Sex				
Male	143	79.4		
Female	37	20.6		
Marital status				
Single	8	4.4		
Married	168	93.3		
Divorced	4	2.2		
Level of education				
Non-formal	53	29.4		
Formal	127	70.6		
Annual income (₦)				

Variable	Frequency	Percent	Mean	SD
Less than or equal to 100000	2	1.1		
100001-300000	39	21.7		
300001-600000	95	52.8	509,166.7	415.783.4
600001-900000	37	20.6		
Greater than or equal to 900001	7	3.9		
Farm size(hectares)				
Less than or equal to 1	52	28.9		
1.5 – 2	52	28.9	2.40	1.36
2.5 – 3	40	22.2		
3.5 – 4	19	10.6		
4.5 and above	17	9.4		
Farming experience (years)				
Less than or equal 10	101	56.1		
11 – 20	64	35.6	13.36	7.86
21 – 30	13	7.2		
31 and above	2	1.1		
Type of crops cultivated				
Maize	175	97.2		
Cassava	156	86.7		
Vegetables	129	71.7		
Potatoes	58	32.2		
Secondary occupation				
None	78	43.3		
Trading	100	55.6		
Artisan	2	1.1		

Source: Field survey, 2021

Causes of conflicts between arable crop farmers and cattle herders

The results according to the mean scores on Table 2 showed that grazing of on-farm crops was ranked first ($\bar{x}$ =1.96) among all other causes of conflict. This is followed by indiscriminate grazing of cattle in the community ($\bar{x}$ =1.93), lackadaisical attitude by herders for traditional authority ($\bar{x}$ =1.91), while other causes were population growth ($\bar{x}$ =0.51) and changing climatic conditions ($\bar{x}$ =0.56). This implies that grazing of on-farm crops, indiscriminate grazing of cattle in the community, lackadaisical attitude of herders for traditional authority were the main causes of conflict among arable crop farmers and herders in the study area. The result is in tandem with the findings of Yekinni, Adeniyi and Adebisi (2017) that conflict occurs when cattle herders tamper with crop farmers' livelihood.

Effects of conflicts on livelihood activities of respondents

Based on the information provided by the respondents on Table 3a, effects of conflicts on respondents' livelihood activities were classified into physical, economic and social effect. Based on physical effect, farm destruction ($\bar{x}$ =2.00), sustaining wound and injury ($\bar{x}$ =1.99) and death (1.97) were some of the physical effects of conflicts. This implies that effects of conflict on people's lives is quite devastating especially on farmer's livelihood. This corroborates the findings of Ibekwe and Nwankwo (2018) that loss of lives and properties were major effects of conflict between farmers and herders. Also, the economic effect that mostly affects farmers' livelihood activities were reduction in crop yield ($\bar{x}$ =2.00), reduced output and income ($\bar{x}$ =1.98). This implies that the economy and livelihood of respondents will be greatly affected thereby having a ripple effect on the food production and prices in the nation.

Table 3 also shows the social effects of conflict on livelihood activities which are fear of personal safety ($\bar{x}$ =1.99), restriction of movement in the community ($\bar{x}$ =1.99) and deterioration of personal/family health ($\bar{x}$ =1.38). This finding is corroborated by Kugbega and Aboagye (2021) that fear and insecurity of people's lives in the community among others were the effect of conflict on the arable crop farmers. Furthermore, the result on table 3a showed that economic effect had the highest grand mean ($\bar{x}$ =1.92). This implies that the economy of respondents is more affected by conflicts.

Table 2: Distribution of respondents on the causes of conflicts between arable crop farmers and cattle herders

Causes of conflict	To a great extent	Very little extent	Not at all	SD	Mean	Rank
Grazing of on-farm crops	96.1	3.3	0.6	0.23	1.96	1st
Indiscriminate grazing of cattle in the community	93.9	5.0	1.1	0.29	1.92	2nd
Lackadaisical attitude by herders for traditional authority	93.9	3.3	2.8	0.37	1.91	3rd
Damage of harvested crops by cattle	78.3	20.6	1.1	0.45	1.77	4th
Forced ejection of farmers from their farms	78.9	11.1	10.0	0.65	1.69	5th
Sexual harassment of women	64.4	32.2	3.3	0.55	1.61	6th
Distrust between herders and farmers	60.0	40.0	0	0.49	1.60	7th
Contamination of stream by cattle	60.0	39.4	0.6	0.50	1.59	8th
Denial of access to water resources	55.0	40.0	5.0	0.59	1.50	9th
Reactions to anti-grazing law	38.9	60.6	0.6	0.49	1.38	10th
Indiscriminate bush burning	51.7	10.6	37.8	0.94	1.13	11th
Population growth	10.6	30.0	59.4	0.68	0.51	12th
Changing climatic conditions	9.4	36.7	53.9	0.66	0.56	13th
Urbanisation	7.8	30.6	61.7	0.64	0.46	14th
Harassment of nomads by youths of the host community	2.8	37.2	60.0	0.43	0.43	15th

Source: Field survey, 2021

However, from Table 3b, there was high (56.7%) effects of conflict on arable crop farmers livelihood activities. This implies that the effect of conflict on livelihood activities is more on agricultural production causing farmers to adjust by shifting to other jobs to ensure a means of livelihood and survival. This finding corroborates with the findings of Sunday (2013) that effect of conflict is a threat to peace, livelihood, human security, food security and national stability.

Table 3a: Distribution of respondents according to effects of conflicts on the livelihood activities

Effects	Agree	Uncertain	Disagree	SD	Mean	Grand mean	Rank
Physical effect						1.73	
Farm destruction	100	0	0	0.00	2.00		1st
Sustain wound and injury	98.9	1.1	0	0.11	1.99		2nd
Death	96.7	3.3	0	0.18	1.97		3rd
Assault	91.7	8.3	0	0.28	1.92		4th
Rape	71.7	28.3	0	0.45	1.72		5th
Destruction of market	21.7	37.8	40.6	0.77	0.81		6th
Economic effect						1.92	
Reduction in crop yield	97.8	2.2	0	0.15	2.00		3rd
Reduced output	100	0	0	0.00	1.98		1st
Reduced income from crops	98.3	1.7	0	0.13	1.98		2nd
Debt	81.1	18.9	0	0.39	1.81		5th
Internal displacement and poverty	83.9	13.9	2.2	0.44	1.82		4th
Social effect						1.74	
Distrust in relating with outsiders	47.2	44.4	8.3	0.64	1.39		5th
Restriction of movement in the community	97.8	2.2	0	0.15	1.98		2nd
Fear of personal safety	99.4	0.6	0	0.15	1.99		1st
Deterioration of personal/family health	41.1	56.1	2.8	0.54	1.38		6th
Worry/anxiety	88.3	11.7	0	0.32	1.83		3rd
Reduction in social capital/connection	79.4	20.6	0	0.41	1.79		4th

Source: Field survey, 2021

Table 3b: Categorisation on the level of effect of conflict on livelihood activities

Level of effect on livelihood activities	Frequency	Percentage	Minimum	Maximum	Mean	SD
Low (18.0-24.5)	102	43.3	18.0	34.0	24.5	3.9
High (24.6-34.0)	78	56.7				
Total	180	100.0				

Source: Field survey, 2021

Constraints faced by respondents in managing conflicts

Results on Table 4 revealed the constraints respondents face in managing conflicts. According to the mean values, inadequate fund to secure farmland ($\bar{x}$ =1.83) was ranked first. This implies that fund is a major challenge facing the arable crop farmers in the management of conflict in the study area. Incommensurate compensation for farmers ($\bar{x}$ =1.74), poor access to secure land and property rights ($\bar{x}$ =1.72) and inadequate support from security personnel ($\bar{x}$ =1.67) were also part of the constraints faced in managing conflicts. This implies that fund is crucial in combating conflict as many resources will be needed to ensure security in communities, inability to achieve this will lead to high cost of food produce and food insecurity. Also, security personnel must be conscious of their role in ensuring that conflict is reduced to a minimal level in communities across the nation. This finding is in tandem with Adewunmi (2019) stating that fund, inadequate support from security personnel were part of the constraints faced in managing conflicts.

Table 4: Distribution of respondents' according to constraints faced in managing conflicts

Constraints	Severe constraint	Mild constraint	Not a constraint	Mean	SD	Rank
Inadequate support from security personnel	71.7	28.3	0	1.67	0.45	4th
Poor access to secure land or property rights	68.3	30.0	0	1.72	0.51	3rd
Inadequate knowledge about appropriate conflict management strategies	42.2	37.2	20.6	1.22	0.76	7th
Inadequate support from community/traditional leaders	51.7	46.7	1.7	1.50	0.53	6th
Restricted access to sale of produce	25.6	52.8	21.7	1.04	0.69	8th
Low farming experience	7.2	51.1	41.7	0.66	0.61	9th
Lack of assistance from other support group	76.7	21.1	2.2	1.65	0.51	5th
Inadequate fund to secure farmland	83.3	16.1	0.6	1.83	0.39	1st
Incommensurate compensation for farmers	76.7	51.1	41.7	1.74	0.49	2nd

Source: Field survey, 2021

Utilisation of management strategies by arable crop farmers to mitigate conflict

The result from Table 5a showed the management strategies used in this study was classified to three broad categories: compromising, collaborating and competing management strategies. According to the mean value, use of experience ($\bar{x}$ =1.48) ranked first under compromising management strategies, followed by appeasing the other party ($\bar{x}$ =1.47). This implies that most farmers will rather try to reach an agreement or settlement with herders to reduce conflicts. This is in tandem with the result of Soomiyol and Fadairo (2020) that farmers appease to each other to cope with existence of conflicts. Also, from table 5a, formation of farmer's association ($\bar{x}$ =1.19) was the most employed collaborating management strategy by the respondents followed by seek help from union and association ($\bar{x}$ =0.97). This implies that farmers work in groups to reduce attacks by herders which may also reduce conflict in the study area. Based on the findings on table 5a, it was revealed that report to litigation ($\bar{x}$ =1.63), creating boundaries around farms such as fence for security ($\bar{x}$ =1.58) and use of traditional means for protection ($\bar{x}$ =0.94) were strategies employed under competing management strategies. Others are retaliation, punishment of offenders and indigenous way of planting. This implies that farmers will always want to defeat their enemies in a conflict situation as they try to dominate other party by suppression and issuing of threat. Furthermore, the result on table 5a showed that competing management strategy had the highest grand mean (($\bar{x}$ =1.08) implying that competing management strategy was the mostly employed by

respondents which means that farmers will want to fight back and defeat the herders with the aim of eradicating them from the community.

Based on the findings on Table 5b, the respondents' level of utilisation of management strategies was low (53.9%). This implies that some of the management strategies used by respondents were probably just being used and overtime it is expected that it will yield better result of peace and stability in the study area.

Table 5a: Distribution of respondents on utilisation of management strategies employed by arable cop farmers to mitigate conflict

Management strategies	Always utilised	Often utilised	Not utilised at all	SD	Mean	Grand mean	Rank
Compromising management strategy						1.05	
Relocate farm from cattle route	31.1	41.1	27.8	0.77	1.03		3rd
Shifting to another job	23.3	56.7	20.0	0.66	1.03		3rd
Appeasing the other party	56.1	35.0	8.9	0.65	1.47		2nd
Use of experience	54.4	34.4	6.1	0.61	1.48		1st
Early harvest	20.6	56.7	22.8	0.65	0.98		5th
Sowed less to minimise losses	7.8	22.8	69.4	0.63	0.38		6th
Collaborating management strategy						0.92	
Seek help from local leaders	31.7	31.1	37.2	0.83	0.94		3rd
Help from union and association	12.2	72.2	15.6	0.53	0.97		2nd
Formation of farmers association	35.0	48.9	16.1	0.69	1.19		1st
Practice group farming	14.4	51.7	33.9	0.66	0.81		4th
Religious help	23.9	19.4	56.7	0.84	0.67		5th
Competing management strategy						1.08	
Retaliation	25.6	35.6	38.9	0.79	0.87		5th
Punishment of offenders	8.3	34.4	57.2	0.65	0.51		6th
Report to litigation	64.4	33.9	1.7	0.52	1.63		1st
Creating boundaries around farms such as fence for security	61.1	36.1	2.8	0.55	1.58		2nd
Use of traditional means for protection	22.2	50.0	27.8	0.71	0.94		3rd
Indigenous method of planting	20.0	53.9	26.1	0.68	0.93		4th

Source: Field survey, 2021

Table 5b: Distribution of respondents based on their level of utilisation of management strategies

Management strategies level of utilisation	Frequency	Percentage	Minimum	Maximum	Mean	SD
Low (7.0 - 17.4)	97.0	53.9	7.0	28.0	17.4	4.4
High (17.5 - 28.0)	83.0	46.1				
Total	180	100.0				

Source: Field survey, 2021

Table 6a indicates that a significant relationship existed between level of education (x^2=4.633; p=0.034) and utilisation of management strategies. This agrees with the findings of Obaniyi, Kolawole, Ajala, Oguntade (2020) that farmers who are educated have a high sense of exposure to different methods of responding to sudden disasters. Also, that there was a significant relationship between religion (x^2=4.115; p=0.049) and utilisation of management strategies. This implies that religion has a way of influencing people towards peaceful co-existence, since they can be identified through faith-based organisations. This finding is in tandem with Yekinni, Adeniyi, and Adebisi (2017) that farmers could be identified through faith-based organisation in case of conflict intervention programmes. There was also a significant relationship between sex (x^2=10.939; p=0.001) and utilisation of management strategies. This implies that males were more conscious of security issues in most communities than female.

Table 6: Chi square analysis between selected socioeconomic characteristics of arable crop farmers and utilisation management strategies

Socioeconomic characteristics	χ^2	Df	p-value	Decision
Sex	10.939	1	0.001	Significant
Level of Education	4.633	1	0.034	Significant
Marital status	0.463	2	0.793	Not significant
Religion	4.115	1	0.049	Significant

Source: Field survey, 2021

Data on Table 7 indicates there was a significant relationship (r=0.619, p=0.000) between effects of conflict on livelihood activities and utilisation of management strategies. This implies that the strategy that will be employed depends on the extent of the impact of the effects of conflict on their livelihood activities. This corroborates the findings of Umar (2013) that farmers use many techniques to seek solutions to the problems arising from the setback they encountered on their livelihood activities.

Table 7: Correlation analysis between effects of conflict on livelihood activities and utilisation of management strategies

Variable	r-value	p-value	Decision
Effects	0.619	0.000	Significant

Source: Field survey, 2021

CONCLUSION AND RECOMMENDATION

The study concluded that arable crop farmers in the study are gradually getting old which is not good for agricultural sustainability. Also, most of the respondents were educated with a reasonable years of farming experience. It was also concluded that conflicts occurred between arable crop farmers and cattle herders as a result of grazing of on-farm crops, indiscriminate grazing of cattle which interferes with the normal activities of farmers in their community. Effect of conflict on farmers' livelihood activities was high which can lead to difficulty in achieving agricultural sustainability and food security. The study also concluded that farmers employed the use of competing, than compromising and collaborating management strategies. It was also concluded that utilisation of management strategies was low by the respondents.

It is therefore recommended that there should be more awareness among arable farmers on the need to employ more management strategies in tackling conflict as it has been confirmed to be effective in ensuring peace and stability in the study area. Also, government at all levels should ensure that farmers that lost their crops and other properties should be compensated and the need to secure farmlands should be reiterated which will help to achieve security and agricultural sustainability in the nation.

REFERENCES

Adeniyi, R. T. and Yekinni, O. T. (2015). Arable crop farmers' characteristics affecting the utilization of Information and Communication Technologies for Agricultural Market Information in Oyo State, Nigeria. *Nigerian Journal of Rural Sociology*. Vol. 16, No. 1, pp. 23-29

Adewunmi, A., (2019). Effects of conflict on food security and poverty status of Irish potato farmers in Plateau State, Nigeria. *Ageconsearch.umn.edu*

Aliyu, A. S. (2015). Causes and Resolution of Conflict between Cattle Herders and Crop Farmers in Kastina State, an MSc. Dissertation by the School of Post Graduate Studies, Ahmadu Bello University Zaria. pp. 1-74

Ibekwe, C. C., and Nwankwo U. I (2018). Prevalence of Herdsmen and Farmers Conflict in Nigeria. *International Journal of innovative studies in sociology and humanities*. Sociology and Criminology.

Idowu, A. O. (2017). Urban violence dimension in Nigeria: Farmers and herders onslaught. *AGATHOS International Review*, 187-206.

Kingsley, C.F. (2017). Demographic implications of nomadic herdsmen and farmer clashes in Nigeria,

Kolawole, A.E. (2019). Environmental change impacts on agribusiness and food security in Sub-Sahara Africa: A practical way forward, Medwell Journal of Engineering Applied Sciences; Vol. 14, No.24: pp. 39–44

Kugbega, S.K and Aboagye, P.Y. (2021). Farmer-herder conflicts, tenure insecurity and farmer's investment decisions in Agogo, Ghana, Agric Econ, 9, 19 (2021), Accessed on 18th October, 2021 from https://doi.org/10.1186/s40100-021-00186-4

Obaniyi K. S., (2020). Environmental change impacts on agribusiness and food security in Sub-Sahara Africa: *a practical way forward,* Medwell. Journal of Engineering Applied Sciences Vol. 14, No. 24, pp. 9639–9644

Obaniyi, K.S., Kolawole, A.E., Ajala, A.O., Owolabi, A.O and Akangbe, J. A. (2019). Environmental change impacts on agribusiness and food security in Sub-Sahara Africa: *a practical way forward, Medwell. J Eng Appl* Sci. ;14 (24):9639–44.

Oladele, O.T., (2017). Effect of pastoralist-farmers conflict on access to resources in savanna area of Oyo state, Nigeria*. Life Science Journal*. 8(2):616-621. DOI: 10.75371mars/sy080211.86

Omisore, B., (2014). Organizational Conflicts: Causes, Effects and Remedies. International Journal of Academic Research in Economics and Management Scaiences 3(6). DOI: 10.6007/IJAREMS/v3-i6/1351

Sabo, B.B., (2017). Role of Smallholder Farmers in Nigeria's Food Security. Journal of Agricultural Science. Vol. 7(1), 1-5

Sani, M.Y., Michael, W. M., Tolgbonse, E. B., Mahmoud, B.A., Muhammed, T.B., Raji, T.M and Abubakar, M. (2021). Effects of Farmer- Herder conflicts on Rural Household Food Security in Gombe State, Nigeria, Journal of Agricultural Extension, Vol. 25, No 1, pp. 11-20.

Soomiyol, M.V. and Fadairo, O. (2020). Climate-induced conflicts and livelihoods of farming households in Nigeria: lessons from farmers-herdsmen conflict–ridden communities in Benue State, Agricultura Tropica et Subtropica, Vol. 53, No 2, pp. 93-103

Turner, M.D., Ayantunde, A.A., Patterson, E.D and Patterson, K. P. (2021). Farmer- herder relations and conflict management in agro-pastoral zones of Niger, Accessed on 29th October, 2021 at www. Core. ac.uk/downloadpdf/132645986.pdf.

Umar B.F., (2013). Coping strategies among farmers and herders during post conflict situation in Kebbi. *Journal of Educational and social research*. DOI: 10.5901/jes.2013.v3n9p59

Yekinni O.T., Adeniyi, R.T and Adebisi, S.A. (2017). Crop farmer's adaptation strategies to mitigate conflict with nomads in Oyo State, Nigerian Journal of Rural Sociology, Vol.17, No. 1, pp. 19-26.