

CAUSES, EFFECTS AND RESOLUTIONS OF LAND USE CONFLICTS AMONG HERDERS AND FARMERS IN SOUTHWESTERN NIGERIA

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ABSTRACT

The study assessed the frequency and levels of land use conflicts, analysed the causes of land use conflicts, measured the effect of land use conflict on food production, and identified land use conflicts resolution techniques in Osun, Oyo, and Ondo States with a view to examining the effects of land use conflict on food production in Southwestern Nigeria where agricultural land use conflicts have been reported in the past. A multi-stage sampling technique was used. In the first stage, three states were purposely selected based on the reported cases of land use conflicts among herders and farmers and prominence in food crop production. In the second stage, Local Government Areas with the reported cases of agricultural land use conflicts were identified and four LGAs were selected purposely based on their prominence in food crop production and reported cases of land use conflicts. a total of 720 respondents were interviewed using an interview guide with open-ended questions to obtain information about agricultural land use conflicts as well as the means of resolution, and management/mitigation techniques among the people. Data collected were analysed using descriptive statistics, the Multinomial Logit and the Tobit Models. Results showed that households experienced conflicts on 80.6% of the plots at one time or the other. The farmers had conflicts over their plots with family members (11.3% of plots), pastoralists (40.4%) or other farmers (48.3%). There were more conflicts on plots during the period of years 2000-2010 (72.9%) than 1990 – 1999 (27.1%) showing an increase in the frequency of conflicts in recent years. The higher incidence of conflicts during the year 2000 – 2010 was attributed to the emergence of democratic governance that encouraged farmers to openly express their grievances. The most common cause of conflict on plots among farmers was found to be related to the type of access that farmers had to plots (62.0% of the plots) as some access types were more secure than others. Most of the conflicts were resolved through informal means (such as village heads, farmers' meetings and family heads on 65.6% of the plots). There was lasting peace in only 58.7% of the cases reported though it was claimed that all the land use conflicts had been resolved. The land use conflicts led to disruption of income opportunities, reduced access to land resources, escalation and displacement of households, and lack of tenure security. All these had negative effects on food production abilities of the households in the study area. The study concluded that land use conflicts negatively affected

food crop production within the study area. Also, majority of the conflicts were resolved by family heads and village heads and at farmers' meeting.

KEYWORDS: Land use conflicts, causes, effects, resolutions, herders and farmers

INTRODUCTION

Land Resources are very important to man as they provide people with living space, raw materials for obtaining satisfaction for material needs and constitute man's physical environment (Andre and Platteau, 2018). Man depends on land for sustenance: foods, clothing, housing and manufactured goods, building sites, and recreation opportunities. Land is not only crucial for rural people who have their livelihoods based in agriculture, but also a basis of wealth and power. Thus there is potential conflict where people do not have adequate access to productive land resources (Idowu, 2015). Decisions about land use involve a mix of natural resources, land ownership, political, economic and cultural considerations. However, the use to which land is put depends on who owns or controls the land and on the pressures as well as incentives shaping the behaviour of the owner.

Land use conflict can occur when the same land can support different uses and those with interest in the land disagree as to which use is the best. Land use conflict can also result when a land use is incompatible with the views, expectations and values of the people living and working in an area, Land is increasingly becoming a major source of conflicts in Sub-Saharan Africa, where land access had traditionally been characterized as relatively egalitarian (Yamano and Deininger, 2016). It has been shown that local land conflicts can erupt into large-scale civil strife and political movements (Andre and Platteau, 2018; Idowu, 2015 and Daudelin, 2014). Due to increases in population, the scrambling for land resources to meet human needs creates conflicts among competing user groups, and often results in adverse impacts both to the land and to its living and non-living resources.

In Nigeria, desert encroachment in land mass may produce large scale migration, which could create ethnic conflicts as migratory group clashes with the indigenous (settled) population over land use. In Nigeria, the pastoralists in an attempt to find green pasture for their livestock pass through crop farms and their animals graze on the crops with attendant crisis (Fred-mensah, 2019).

Three-quarters of the world's poor and hungry are located in rural areas (USAID, 2019). These people depend directly and indirectly on agriculture and agriculture-related activities for their food and income. As population increases, access to land resources dwindles for these rural dwellers. However with rapid population increase and a finite land area, available land per individual shrinks continuously (Bamire, 2015). Resource based conflicts, especially over rights of access to land and land use, are therefore increasing in frequency and intensity (Yamano and Deininger, 2018). Land conflicts cause serious dislocations and Poor households bear the heaviest burdens of land-related conflicts for the simple reason that their daily needs and livelihoods are directly tied to their property rights (Kelsey and Abdalla, 2020).

The escalating resource needs in terms of land due to increases in population have become a threat to food availability as the scrambling for use of land resources generates conflicts. Although conflicts are inherent to relations within and between societies (Baranyi and Weitzner, 2018), there is increasing concern about the escalation of conflict over access, use, security, and control of land resources into violent disputes, especially armed violence

that may lead to open warfare. Baranyi and Weitzner (2018) explained further that multiple and extremely complex land-related conflicts affect indigenous peoples, particularly when their identity and survival is inextricably related to their relationship with their ancestral territories.

Land use conflicts can result in a variety of undesirable social, economic, environmental and cultural impacts ranging from minor to significant, short term to long term, and micro to macro in scale (Leif, 2017). These impacts can include negative effects on individuals as a consequence of stress and anxiety, breakdown in communities; additional demands on government services; increased and costly demands on rural industries, degradation of the local environment, which can have flow-on effects for communities and businesses, and loss of culture and identity within communities.

It has been opined by Yamano and Deininger (2018) that farm households experience conflicts at different levels on different plots of land, households are either concerned about future conflicts, have pending or currently undergoing land use conflicts, have experienced conflicts in the past but resolved, or have experienced no conflict at all. Yamano and Deininger (2018) submitted that the frequency and the level of conflict would determine the level of food production of a household and the community at large.

Objectives of the Research

The main objective of this study is to determine the causes, effects and resolutions of land use conflicts among herders and farmers in Southwestern, Nigeria.

The specific objectives are to: -

- i. determine the causes, frequency and levels of land use conflicts in the study area;
- ii. estimate the effects of land use conflict on food production study area; and
- iii. determine land use conflict resolution and management techniques effective in the study area

RESEARCH METHODOLOGY

The study was carried out in the southwest geo-political zone of Nigeria which comprises six states: Osun, Ogun, Ondo, Ekiti, Oyo, and Lagos States. Southwest falls under the rain forest region with high relative humidity and rainfall. The study area covered three states; Osun, Oyo and Ondo states where the majority of the inhabitants are predominantly small holder farmers and agricultural land use conflicts have been reported in these states. From the 2006 census, the population of Osun, Oyo and Ondo states are 3,423,535, 5,591,589 and 2,384,212 respectively (FGN, 2007). The prevailing vegetation, soil and weather condition determine the type of crop grown in different areas of southwest, Nigeria. The areas to be covered are noted for the production of food crops such as yam, maize, cowpea, cassava, pineapple, banana and plantain and cash crops such as cocoa, kolanut, oil palm and cashew. The major concern of this research is the production of food crops

Sources of Data

Both primary and secondary data were used for this study. Primary data were generated from a cross sectional data of seven hundred and twenty farm households from Osun, Oyo and Ondo states of Nigeria. The field survey was carried out with a pre-tested structured questionnaire of close and open-ended questions, and key informant interview were conducted using open-ended questions based on the objectives of the study. Information sought include farmers'/land owners' characteristics and plot characteristics, land conflict and food production information on the plot to be covered by the study. The

farmers' characteristics included age, gender, marital status, length of stay in their respective villages in years, nature of farming, food production experience in years, household size, level of education, number of plots of land owned, size of the plot(s) and the type of access gained to plot(s).

The plot characteristics sought include plot sizes in hectares, trekking distance to the plot from the homestead in km, physical attributes of the land, types of crops grown on the plots, areas planted to food crops on the plots, output of the food crops on the plots, type of ownership of the plot(s), land use practices on the plots and time of acquisition of plots in years. Data were also sought on land use conflicts. Such data included causes of land use conflicts, years of conflicts, levels of conflicts and person(s) involved. The plot characteristics with their conflict were analysed to assess the frequency of land use conflict, their causes and levels of land use conflicts: past resolved conflicts, current conflicts, concerned about future conflicts or no conflict at all. Past conflicts resolved were categorized further by identifying those that were resolved formally, informally or in both ways. This assisted us to assess the ability of the communities to resolve conflicts under the existing land tenure systems.

Also, the management techniques/mitigation measures employed by the households against current land use conflicts on the plot that were involved in conflicts were obtained. Further information were sought on food production (outputs of food crops) of different plots, plot sizes (hectares), with different levels of conflicts to determine the relationship between conflicts and food production of households and also, the effects of land use conflicts on food production ability of households which affect their food security status.

In addition to the seven hundred and twenty households were covered by the survey, information were sought from key informants such as town/village heads, farmers' groups heads and highly respected individuals about the causes of agricultural land use conflicts, how past conflicts were resolved to have lasting peace as well as mitigation measures for current conflicts on agricultural lands. In this study, records of resolution of land use conflicts at communities were sought from the village elders to identify areas where land use conflicts among herders and farmers had been experienced. This helped in assessing the measures for peaceful resolutions of land use conflicts in the past as well as the management of existing conflicts.

Sampling Procedure and Data Collection

A multi-stage sampling technique was used. In the first stage, three states were purposely selected based on the reported cases of land use conflicts among herders and farmers and prominence in food crop production. In the second stage, Local Government Areas with the reported cases of agricultural land use conflicts were identified and three LGAs were selected purposely based on their prominence in food crop production and reported cases of land use conflicts. A total of 720 respondents were interviewed using an interview guide with open-ended questions to obtain information about agricultural land use conflicts as well as the means of resolution, and management/mitigation techniques among the people. There were also Focus Group Discussions (FGDs) in the villages to obtain land use conflict information in the areas.

Analytical Techniques

Data were analysed using descriptive statistics, non-parametric correlation analysis, Multinomial Logit Model and Tobit Model. The descriptive statistics included grouped and

ungrouped frequency distribution tables, and percentages, the measures of central tendency; mean median and mode, to describe the distribution of variables.

The Model

Following the analysis of Yamano and Deininger (2005), the experience of conflicts by the households on their plots was categorized into four; concerned about future conflicts, current conflicts, and resolved past conflicts or no conflict at all.

The following was estimated using the Multinomial Logit (MNL) model at the plot level. The model is specified as:

$$\text{Prob}(c_i) = f(T_i, P_i),$$

Where $C_i = 0$ if there has been no conflict on the plot i

$C_i = 1$ if plot i had a conflict that has been resolved,

$C_i = 2$ if the household is worried about the future conflicts over plots i

$C_i = 3$ if the household i has current (on-going) conflicts over plot i , and

T_i is a set of land Owner's variables of plot i .

P_i is a set of plot characteristics

Farmers'/Landowners' characteristics include:

Status of farmer in the household

Age of farmer measured in years

Income of farmers from other source in ₦

Number of plots owned by farmer

Plot characteristics include:

Plot size in hectares

Distance of each plot to farmer's homestead in km

Food output on each plot (calculated in ₦); and

Year of acquisition of plots

The variables that were found to be significant in the analysis determined the levels of land use conflicts in the study area.

The Tobit Model

Effects of Land Used Conflicts on Food Production

The effect of land use conflicts on food production will be estimated at the plot level using the Tobit Model. The Tobit Model is an econometric, biometric model proposed by Long and Freeze (2006) to describe the relationship between a non-negative dependent variable y_i and an independent variable (or vector) x_i .

$$\ln(Y_i) = f(C_i, T_i, P_i),$$

Where Y_i is the amount of food crop output obtained on plot i and the other variables are defined as before. The focus was on the major food crops grown by households. The output was measured in terms of uniform current market prices because there were differences in prices in different communities. The Tobit model will be used to estimate the equation stated above because households did not cultivate food crops on all the plots owned. For household plots where food crops were cultivated, Y_i equals the value of food crops produced while Y_i equals zero on plots where food crops were not cultivated. This is a case of censoring from below.

Operationalization of Variables

As already described, land conflicts is defined in four stages: concerned about future conflicts, current conflicts, resolved conflicts, and no land use conflicts at all. For estimations, dummy variables were created for each conflict stage. These variables represent C_i in the specified equations.

On the land owners' information, T_i , dummy variables and interval data will be used for different variables. The variables that will be used for estimation included:

- i. Status of farmer in the household
- ii. Age of farmers in years
- iii. Sex of farmers – dummy variables
- iv. Marital status – dummy variables
- v. Education of the farmer – dummy variables
- vi. Household size of farmers
- vii. Number of plots owned by farmers

Plot characteristics, P_i , included plot sizes in hectare and the distance to the plot from the homestead in km. A large plot is expected to be a source of land conflict since it has a longer boundary and tends to invite demands for a fraction of it from relatives. A plot that is farther away from the homestead could be at a higher risk of being involved in a conflict because of the difficulty in monitoring. The values of the coefficients, the sign of the coefficients and t-statistics will be used to determine the magnitude of the effects of conflict on food production by households in the area of study.

RESULTS AND DISCUSSION

Causes of Land Use conflict

From Table 1, the different causes of conflict on plots among farmers are presented. The causes of conflict included land transactions, type of access gained to farmland and incompatible land uses. It was shown in the analysis that the most common cause of conflict on plots among farmers was the type of access that farmers had to plots; inheritance, lease, rent or purchase, which accounted for 62.0% of the total plots. Access through inheritance caused conflicts among siblings and other family members while access through lease, rent and purchase caused farmer-farmer conflict.

Following conflict due to access type was conflict due to incompatible land uses. This was recorded on 24.0% of the plots covered by the study. In situations where the tenant farmers were not permitted by landowners to plant certain crops such as planting of tree crops on leased or rented land. Also, incompatible land uses also led to farmer-pastoralist conflict. The pastoralists, in the process of going from place to place to find fresh pasture for their herds, enter into other farms where the animals destroy cultivated crops. According to the information received from the farmers, destruction of crops of the farm plots through the pastoralists occurred every year and could happen on any farm plot at any time.

In Osun State, the farmers said they were always at alert and watched out for the cattle fulanis at any time of the year, especially during dry season, when green grasses for the animals are scarce except on plots that are close to water sources. The same was obtainable in other states where the farmers said the cattle fulanis' settlements are very close to the farms and in the course of feeding activities of the animals, they destroy crops on the farm plots; yams, cassava, maize, and so on.

Conflict due to land transaction was found on 14.0% of the plots. The transactions found on plots in the study area were lease, rent and purchase. Conflict on such plots was farmer – farmer in nature and resulted from refusal of tenant farmers to pay rent as at when due, improperly demarcated boundaries and the interest of other family members in purchased plots.

Table 1: Causes of Land Use Conflict in the Study Area

Causes of conflict	Osun		Oyo		Ondo		Overall	
	No	%	No	%	No	%	No	%
Land transaction	12	7.6	10	5.4	60	24.9	82	14.0
Type of access to plot	70	44.6	111	59.7	181	75.1	362	62.0
Incompatible land uses	75	47.8	65	34.9	0	0.0	140	24.0
Total	157	100.0	186	100.0	241	100.0	584	100.0

Source: Field Survey, 2023

Results of Correlation Analysis between Conflict Status of plots and Land Owners' Characteristics

The result of correlation analysis between conflict status of plots and land owners' characteristics is presented in Table 2. The conflict status of the plots referred to whether there was any conflict on the plot with 'yes' or 'no' response from the respondents.

The results showed positive relationship between conflict status and number of plots owned by the household at 0.05 level of significance. Also, the conflict status of the plot showed positive relationship with the following at 0.01 level of significance:

- Status of the landowner (whether head of household, sibling or spouse);
- Age of the farmer in years;
- Marital status of the farmer;
- Number of years the farmer has been in the village;
- The size of household of the farmer (members of the family);
- Off-farm occupation of the farmer;
- Number of locations of the plots; and
- Size of plot being managed by the farmer.

On the other hand, conflict status of the plots had negative relationship with the following at 0.01 level of significance:

- Education of the farmer (no schooling, primary, secondary, or post-secondary); and the
- nature of farming of the farmer (full time or part time).

Table 2: Correlation Analysis between Conflict Status on Plots and Land Owners' Characteristics

Variable	Conflict status of plot, Correlation coefficient
No of plots owned	0.095 ^x
Status of farmers	0.127 ^{xx}
Age of the farmer	0.131 ^{xx}
Marital status	0.306 ^{xx}
Number of years in the village	0.238 ^{xx}
Household size	0.145 ^{xx}
Off-farm occupation	0.112 ^{xx}
Number of locations of plots	0.169 ^{xx}
Size of plot	0.351 ^{xx}
Education level	0.144 ^{xx}
Nature of farming	-0.214 ^{xx}

Source: Data Analysis, 2023

^{xx} Significant at 1% level

^x Significant at 5% level

Results of Correlation Analysis between Levels of Conflict of Plots and Plot Characteristics

The results of the correlation analysis between levels of conflict of plots and plot characteristics presented in Table 3 showed that there was negative significant relationship between levels of conflict of plots and the following variables at 0.01 level of significance:

Size of the plots in ha;

Distance of the plots to nearest road in km;

Distance of plots to farmers' homesteads in km;

Output of food crops obtainable from the plots measured in naira'

Type of crop cultivated on the plots (food crop or cash crop);

Type of access gained to the plots (inheritance, lease, rent or purchase);

Land use practices on the plots (continuous cropping or fallow);

Areas of plots planted to food crops (ha); and

Number of years the plot is left to fallow.

On the other hand, the levels of conflict of plots showed positive correlation with land attribute (presence of valley, nearby stream, grassland, sloppy or lowland) and ownership of plots (whether the farmer had permanent interest in the plot or not) at 0.01 level of significance.

Table 3: Correlation Analysis between Levels of Conflict on Plots and Plot Characteristics

Variable	Level of Conflict, Correlation coefficient
Plot size	-0.417 ^{xx}
Distance of plot to road	-0.089 ^{xx}
Distance of plot to home	-0.205 ^{xx}
Food output	-0.209 ^{xx}
Crop type	-0.134 ^{xx}
Access to land	-0.187 ^{xx}
Land use practices	-0.292 ^{xx}
Crop area	-0.137 ^{xx}
Fallow year	-0.392 ^{xx}
Land attribute	0.173 ^{xx}
Ownership of plot	0.391 ^{xx}

Source: Data Analysis, 2023

^{xx} significant at 1% level

The Multinomial Logit Model (MNL) to estimate the factors that determine levels of land use conflict

The analysis here was carried out at plot level. The model was specified as:

$$\text{Prob}(c_i) = f(T_i, P_i)$$

Where $C_i = 0$ if there has been no conflict on the plot i

$C_i = 1$ if plot i had a conflict that has been resolved,

$C_i = 2$ if the household is worried about the future conflicts over plot i , and

T_i is a set of land owner's variables of plot i

P_i is a set of plot characteristics

The MNL was used to estimate the factors that determine land use conflict. The estimation was carried out at plot level with landowner's characteristics and plot characteristics. From the results, the chi square value of degree of freedom 24 which equalled 849.93 and a p-value of less than 0.005 showed that the model fits significantly better than empty model, that is, a model with no predictors. Estimation terminated at iteration 7 because parameter estimates changed by less than 0.001. Estimates were obtained for different levels of conflict in the study (level 1 – past resolved conflict and level 2 – worried about future conflict).

The result in Table 4 showed the estimated coefficients of the variables for different levels of conflict. When level of conflict = 0, this was the base outcome where the farmer never had any conflict experience on plots and was not expecting any conflict on the plot.

When Level of conflict = 1 (past resolved conflict) and Level of conflict = 2 (worried about future conflict), the variables that were found to be significant included:

- i. Age of farmer in years: for every unit increase in age, the log odds of conflict being resolved in the past increased by 0.72 while the log odds of being worried about future conflict increases by 0.49
- ii. Income of farmer from other sources in ₦: for every unit increase in the income of farmer from other sources, the log odds of conflict being resolved in the past decreases by 0.00 (no real difference) while the log odds of being worried about future conflict decreases by 0.00 (no real difference)

- iii. Number of plots owned by farmers: for every unit increase in the number of plots owned by farmers, the log odds of being worried about future conflict increases by 3.35
- iv. Size of plot of farmer in ha: for every unit increase in the size of plot of the farmer, the log odds of conflict being resolved increases by 0.57 while the log odds of being worried about future conflict decreases by 0.58
- v. Distance of each plot to homestead in km: the distance of each plot to homestead was found not to be significant on conflict being resolved while the log odds of being worried about future conflict increases by 1.08
- vi. Food output on each plot: for every unit increase in the food output of each plot, the log odds of conflict being resolved decreases by 0.00 (no real effect) and the log odds of being worried about future conflict decreases by 0.00 (no real difference)
- vii. Year of acquisition of plot: for every unit increase in the year of acquisition of plot, the log odds of conflict being resolved increases by 0.16 while it was not significant on being worried about future conflict.

Table 4: Results on Multinomial logistic regression to estimate the factors that determine land use conflict

Land use conflict	Coef.	Std. Err.	z
Number of obs = 725 LR chi2 (24) = 849.93 Prob > chi2 = 0.0000 Pseudo R2 = 0.6304 Log likelihood = -249.16352			
0 (base outcome)			
1			
Age	.7173643	.0895871	8.01
Income from other sources	-.0000159	3.89e-06	-4.08
No of plots owned	-3.060482	.7134862	-4.29
Size of plot	.5689811	.1209556	4.70
Distance to home	.2840783	.156562	1.81
Food output	-6.95e-06	1.11e-06	-6.28
Plot acquisition year	.1620979	.0428926	3.78
cons	-20.59184	2.814649	-7.32
2			
Age	.4919363	.0916634	5.37
Income from other sources	.0000465	7.83e-06	5.94
No of plots owned	3.348831	.6336276	5.29
Size of plot	-.5777607	0.892353	-6.47
Distance to home	1.082302	.3054014	3.54
Food output	-.0000166	2.61e-06	-6.38
Plot acquisition year	-.0616433	.0542056	-1.14
Cons	-33.07188	5.3213	-6.22

Source: Data Analysis, 2023-05-01

Var36 = 0 no conflict experience and not worried about future conflict on plot

Var36 = 1 past resolved conflict on plot

Var36 = 2 owner worried about future conflict on plot

Resolution of land use conflict

Analysis showed that there was no more conflict on plots between 2000 and 2010 (72.9% of plots) than between 1999 (27.1% of the plots).

Analysis on resolution of land use conflict in Table 4 showed that all the plots on which the owners experienced conflicts were resolved. The Table showed that all the plots on which farmers experienced conflict in each of Osun, Oyo and Ondo States were resolved.

Means of Resolution

In Table 5, the various means by which conflict on plots were resolved are presented. There were two main means of conflict resolution; informal and formal means. The informal means was either through village heads, farmers' meetings, and family heads, while the formal means was either through the court or police. The people that were involved in conflict determined the means by which such conflict was resolved.

Under normal circumstances, conflict on plots through the types of access that farmers had to the plots was resolved through informal means. If the type of access was through inheritance leading to conflict between the farmer and other siblings, it was usually resolved through family heads. If it were through transactions (lease, purchase and rent), it was usually through the village head or at farmers' meetings if it involved tenant farmers and landowners. Also, conflict due to incompatible land uses, especially among the crop farmers and cattle fulanis, might be resolved through the village head or at farmers' meetings. Even at times, once the culprit was identified, he paid the fine of N3,000 per acre of crop destroyed by his animals.

In some cases where the crop farmers caught the herdsmen on their farms and he refused to pay his fine, the case was taken to the police where such cases were settled off-record and the fine paid by the herdsmen. In other cases where one of the parties or both parties involved in the conflict were not satisfied with the intervention of the village head, family head or other farmers at their meetings, the case was taken to the court.

From the analysis in Table 6, conflict was resolved by village heads on 24.0% of the total plots while conflict on 10.3% of the plots was resolved by family heads. Farmers' meetings were responsible for the resolution of conflict on 31.3% of the plots covered by the study.

The plots on which conflict was resolved through formal means; police or court made up 34.4% of the total plots. This percentage was a bit high due to the farmers-pastoralist conflict where farmers reported cases to the police before fines were paid and a few cases where parties involved in conflict were not satisfied with the intervention through informal means.

Resolution of conflict through formal means was highest in Osun State (43.4%) while resolution through village heads was highest in Oyo State (44.6%). Also, resolution of conflict in farmers' meetings was more popular in Ondo State (49.4%).

In Osun State, farmers said their crop farmers were destroyed by the cattle herds to the extent that they had to report at the police station because they were no longer satisfied with the intervention at the meetings between the Fulanis and the crop farmers. In other cases

in Osun State, conflict between crop farmers and Fulani herdsmen was resolved through informal means; farmers’ meetings and village heads.

In Ondo state, conflict was mostly resolved at farmers’ meetings because the area was flooded by migrant farmers who were tenants and obtained plots through long term leases from the landowners. Because the migrant farmers live among the landowners, the informal means of resolution was more popular among them. Farmer-farmer conflict type was between the migrant farmers and landowners in Ondo State. Conflict in the area was based on land transactions where migrant farmers adjusted their boundaries without agreement between the two parties concerned.

In Oyo State, conflict due to loss of crops to cattle herds was also common. Such conflicts were settled in farmers’ meetings and through village heads. The herdsmen paid fines on such plots. During the process of collection of data, the cattle herds were seen feeding about on crop farms.

In all the states, the cattle Fulanis lived in settlements in the areas close to the crop farmers which made it impossible for the farmers to avoid such conflict in any particular year.

Table 5: Resolution of land use conflict

Resolution of conflict	Osun		Oyo		Ondo		Overall	
	No	%	No	%	No	%	No	%
Not Resolved	0	0.0	0	0.0	0	0.0	0	0.0
Resolved	157	100.0	186	100.0	241	100.0	584	100.0
Total	157	100.0	186	100.0	241	100.0	584	100.0

Source: Field Survey, 2023

Table 6: Means of Resolution of land use conflict

Means of Resolution	Osun		Oyo		Ondo		Overall	
	No	%	No	%	No	%	No	%
Village heads	28	17.8	83	44.6	29	12.0	140	24.0
Farmers’ meeting	39	24.8	25	13.4	119	49.4	183	31.3
Family heads	22	14.0	22	11.8	16	6.6	60	10.3
Court/police	68	43.4	56	30.2	77	32.0	201	34.4
Total	157	100.0	186	100.0	241	100.0	584	100.0

Source: Field Survey, 2023

CONCLUSION AND RECOMMENDATIONS

Research findings concludes that land use conflicts exists among crop and livestock farmers in Nigeria as some Nigerian farmers experienced land use conflict at one time or the other. Three patterns of conflicts were identified namely farmer – farmer, farmer – pastoralist and family land conflicts. This study has established that land use conflicts had negative impact on both crop and livestock production in Nigeria. Both formal and informal means had been adopted in the management/resolution of conflicts. The informal means was through village heads, family heads and farmers’ meetings while the formal means was through the court or police. To mitigate land use conflicts among farmer, government should support the community heads by enhancing their abilities to resolve land use conflict as this measured would strength the bond of peace among the community members, Livestock

farmers should be assisted by establishing pastures in large areas of land which will put a stop to their movement into crop farms and land use conflict prevention techniques should be adopted by the government and the key effective prevention technique is better education of farmers of the economic losses of land use conflicts.

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