



Causes and effects of land conflicts on crop production in Lapai and Lavun local Government areas of Niger state, Nigeria

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Abstract

This study analyzed the causes and effects of land conflicts on crop production in Lapai and Lavun local Government areas of Niger state, Nigeria. A random sampling technique was adopted in sampling of 154 respondents used for the study. Data were collected with a structured questionnaire and were analyzed using descriptive statistics and regression models. Results showed that the modal age of the respondents was 51 to 60 years an indication that majority of the youths have migrated from rural areas to urban areas as a result of land conflicts in search of greener pastures leaving older people to do farming. Inheritance system of land tenure system is the major source of land for farming activities in the area (62.6%). The source of acquisition of land for farming activities do affect the types of crop cultivated and scale of farming enterprises. The average farm size of the respondents was 2.6 ha. This is an indication that majority of the farmers in the study area were peasant farmers practicing subsistence agriculture. The major causes of land conflict in the area were failure to respect farm boundaries ($\bar{x}=10.4$), contesting the inheritance of the land ($\bar{x}=12.9$), destruction of farm crops by grazing animal ($\bar{x}=11.9$) and abandonment of previously accepted rules of access to and use of land ($\bar{x}=8.7$). The regression coefficients of fertilizer is positive and statistically significant at 1%, which implies that an increase in fertilizer have direct influence on the output of farmers. Reduction in output and income of crop farmers as a result of the destruction of crops during crisis is the most prevalence of the effect. The study therefore, recommended that Individual and community farm boundaries should be respected to avoid litigations, which could lead to wastage of resources and loss of manpower.

Key words: land, conflict, crop, production.

Introduction

Land is very important factor in Agricultural production in Nigeria. About 40% of the total population or almost 83 million people live below the poverty line of 137,430 naira (\$381.75) per year and 53.18% of this poor

live in rural areas and drive their livelihood from land (NBS, 2020). Today, land conflicts, high rural poverty levels, increasing population densities and declining land fertility represent an enormous agricultural and environmental policy

challenge in Nigeria, particularly Niger State with poverty rate of 66.11% (NBS, 2019). It is clear that substantial rural poverty reduction can only be achieved if Agricultural productivity is improved through crop production and land resources conserved.

Land is central to agriculture and livestock production, as it is to all economic activities. Land resources include soil, water, vegetation and other aquatic resources. Land can be defined as vital natural resources that hosts and sustains all living things namely: plants, animal and man. It is a fixed socio economic asset that aids production of goods and services and virtually all activities that take place on earth (Deogratias, 2013). Conflict is not a new phenomenon but rather a problem that grows with time. Batubo (2010) considered conflict as a relationship between two or more parties who believe they have incompatible goals or interests. It could be as a result of misunderstanding that involves negotiable interests which could be religious, social, political or economic interest.

A land conflict therefore, can be understood as a mis-use, restriction or dispute over property rights to land (Wehrmann, 2015). These conflicts significantly vary in dimension, process and the groups involved. Some conflicts arise between similar resources users such as between one farming community and another while others occur between different resources users such as between pastoralist and farmers or between foresters and farmers (Abegunde, 2019). Similarly, some are volatile while some are

non-volatile resulting into armed clashes between groups and usually resulted into loss of life.

Land ownership is a sign of economic power and social standing. In the process of utilizing land resources for the diverse complex and competing social-economic activities of the people, conflicts over access and management of these resources often arise. Conflict is define by Omotara, (2016) as a social fact in which at least two parties are involved and whose origins differs either in interests or in the social position of the partners.

One of the major problems facing rural households is conflict over land with relatives or neighbours. As in other States in Nigeria, land is considered a very sensitive matter in Niger State. Land conflicts are handled either through the formal legal or the customary dispute resolution systems. However, due to inefficiencies in these land dispute resolution mechanisms, small-scale land conflicts persist. Land is increasingly becoming a source of conflicts in Nigeria and Africa at large where land access had traditionally been characterized as relatively unrestricted. During conflicts, activities of rural residents are usually affected but to which extent does it affects the farmers crop productivity, socially and economically in Niger state is what this study examined.

Materials and Methods

Study Area

Lapai and Lavun are local Government areas of Niger state, Nigeria created in 1976, by the then military head of state Late Gen Murtala Ramat Mohammad. The State is located in the North Central Zone of the country. The State has a projected population of 5,556,200 (population census 2016). The state is ranked 18th of the 36 in terms of population density. The state lies between latitudes 6^o.30'N and 11^o.20'N and longitude 2^o.30'E and 10^o.30'E occupying a land mass of about 76,363km² (Nipost, 2019), making it the largest state in the country in terms of land mass. Niger State share common boundaries with Kaduna state to the North-East, FCT to the South – East, Zamfara State boards the North, Kebbi State in the West, Kogi State to the South and kwara State to the South West respectively.

Niger State presently has twenty-five (25) Local government and Minna being the state capital. The twenty-five (25) local Government are: Agaie, Agwara, Bida, Borgu, Bosso, Chanchaga, Edati, Gbako, Gurara, Katcha, Kontagora, Lapai, Lavun, Magama, Mariga, Mashegu, Mokwa, Muya, Paikoro, Rafi, Rijau, Shiroro, Suleja, Tafa and Wushishi. The state is divided into three (3) Agricultural zones namely: zone 'I', Zone 'II' and zone 'III'. Niger State is the home of the four biggest hydro-power dams in Nigeria namely: Kainji, Shiroro, Jebba and Zungeru dams.

Multistage sampling techniques were used in the selection of respondents for this study.

The three Agricultural zones in Niger State namely, Zone I, II, III which reflect the geographical structure of the state were examined. In the first stage, zone I out of the three zones was purposively selected based on the preponderance of land conflict in the zone. This was followed by a random sampling of two Local Governments Area from Zone I (Lapai and Lavun). In the third stage, four (4) villages were randomly selected where the respondents were sampled. The villages selected are Gbami and Edda in Lapai Local Government and Boku and Doko in Lavun Local Government area respectively. In the fourth stage, 61% of the sample frame of respondents was taken because this percentage can represent the whole population. A total of 154 respondents were used for the study at the precision level $(e)^2$ of 0.05.

Fourthly, the sample size of the respondents will be determined from sample frame using (Yamane, 1967; adopted by Umar, 2015). The formula is given as:

$$n = \frac{N}{1 + N(e)^2} \quad (1)$$

Where, n = Sample size N
 = Total population of study
 = Constant e
 = limit of tolerable error, for this study (0.05)

$$\begin{aligned} \frac{253}{1 + 253(0.0025)} &= \frac{253}{1.6325} = n \\ &= 155 \frac{155}{253} \times 100 = 61\% \end{aligned}$$

Table 1: Summary of the selected study location and distribution of sample size

Political Zone	LGA	Wards	Sample frame	sample Size from each ward (61% of each SF)
I	Lavun	Doko	91	56
		Boku	78	48
	Lapai	Gbami	65	40
		Edda	18	11
TOTAL			252	155 (61% of SF)

Source of the sample size: field survey 2021.

Analytical Techniques for data Analysis

The data for this study was analyze using descriptive statistics and multiple regression analysis approaches.

Descriptive statistics

Descriptive statistic tools such as frequency, percentages, mean, standard deviation will be used to identify the socioeconomic characteristics of the crop farmers. Causes of conflicts over farmland will be measured with five-point scale of Strongly Agree (SA), Agree (A), Neutral (N), Disagree (D), strongly Disagree (SD) and will be scored as 5, 4, 3, 2, and 1 respectively. Ofuoku and Isife(2009) adopted by Omotara, (2016) used a 5-point and 3-point Likert type scale to identify the main causes of conflict. They measure the causes by calculating the mean of each variable and they identified a variable as a major cause if its cutoff score is ≥ 2.50 and minor cause if its mean is ≤ 2.50 . As a result, this study adapt the same model to identify the major causes of farmland conflict using a 5 point scale. Causes of conflict was categorized into two major cause ≥ 3 and minor cause ≤ 3 using the total score $5+4+3+2+1 = 15$ divided by total number of scale items which is 5 to obtain 3 which was used as the cut-off point.

Multiple linear regressions Model

Multiple regression analysis was used to analyse the effect of land use conflict on crop production, a multiple regression analysis that took into account a broader set of independent variables by specifying a function of the form:

$$\ln(Y_j) = + \alpha C_i + N_j + \alpha X_i + \alpha_{ij} \dots \dots (2)$$

Y_j is crop output per plot (kg/plot)

C_i indicates the conflict status of the plot

N_j denotes farmer's characteristics

X_i denotes plot characteristics

Key elements in N_j include:

N_{j1} = Age of farmer measured in years

N_{j2} = Nature of farming (part-time =1, otherwise =0)

N_{j3} = Number of plots owned by farmer

N_{j4} = Years of education of farmer

Key elements in X_i include:

X_{i1} = Distance of each plot to farmer's location of residence in km

X_{i2} = Soil Quality (fertile = 1, otherwise = 0)

C_i is a dummy variable, which is equal to 1 if conflict is ongoing on plot j owned by

household and 0 if the farmer has never experienced conflict on the plot or the conflict has been resolved as at the time of data collection.

Result and Discussion

Social-Economic characteristics of the respondents

The socio-economic characteristics of the respondents do greatly affect the behavior of crop farmers in the study area. Some of these characteristics are age, sex, marital status, household size, educational level, farm size, farming experience and sources of land ownership. As shown in Table 2, about (48.4%) of the respondents age was below 50 years while about 51.6% of the respondents were above 50 years. The mean age of the farmers in the study area was 50.02 while 11.02 is the deviation from the mean. The coefficient of variation (CV) is 22% indicating consistency in the percentage deviation from the mean. The modal age of the respondents was 51 to 60 years. This shows that majority of the youths have migrated from rural areas to urban areas as a result of land conflicts in search of greener pastures leaving older people to do farming. This result is similar to the findings of Omotara (2016) on conflicts over farmland and its socioeconomic effects on rural residents of Southwestern Nigeria. Adeogun, Fapojuwo, Oyeyinka, Adamu and Abiona (2013) also discovered that the average age of farmers in cocoa producing areas of Nigeria was 54.4 years. The larger proportions (82.58%) of the respondents were male while 17.42 % were female.

Majority (76%) of the respondents had one form of education or the other and only 23.9% had no formal education. The findings indicate a high level of literacy among the respondents which is expected to translate to better understanding of management and solving land conflicts issues.

Inheritance system of land tenure system is the major source of land for farming activities in the area (62.6%) followed by leasehold (19.4%) and individual ownership (13.6%). The source of acquisition of land for farming activities do affect the types of crops cultivated, scale of farming enterprises and mechanization of farming activities. Larger proportion (54.19%) of the respondents' farm size was between three to four hectares and only 10.97% of the respondents had above four hectares. The average farm size of the respondents was 2.62 ha. This is an indication that majority of the farmers in the study area were peasant farmers practicing subsistence agriculture. The larger proportion (72.9%) of crop farmers has between 5-15 members of households. In the traditional African society where farming are major occupation, a great deal depend on the size of the household of farmers since the use of traditional methods of farming which is tedious as it requires great human labour is most prevalent. The mean years of farming experience of the respondents was 19.7 years. About 30.3% had between 11-20 years of farming experience, which means that they were very experienced in farming business and would have been familiar with the socio-economic effects of conflicts over farmland.

Table 2: Socio economic characteristics of the respondents (n= 155)

Variables	Frequency	Percentage	Parameters
Age (years)			
31-40	32	20.65	Mean = 50.02 SD = 11.20 CV = 22.4%
41-50	43	27.74	
51-60	58	37.42	
>61	22	14.19	
Sex			
Male	128	82.58	
Female	27	17.42	
Marital status			
Single	52	33.55	
Married	61	39.35	
Divorced	11	7.10	
Widow	31	20.0	
Household size			
1-5	42	27.10	
6-10	37	23.90	
11-15	34	21.90	
16-20	25	16.13	
>20	17	10.97	
Educational level			
No formal education	37	23.87	
Primary education	43	27.74	
Secondary education	27	17.42	
Post-Secondary education	16	10.32	
Qur,anic Education	32	20.65	
Farm size (hectares)			
0.1-1	6	3.87	Mean = 2.62 SD = 0.51 CV = 19.5%
1.01-2	21	13.55	
2.01-3	27	17.42	
3.01-4	84	54.19	
>4.01	17	10.97	
Farming Experience (years)			
0.1-10	43	27.74	Mean = 19.7 SD = 7.6 CV = 38%
11-20	47	30.32	
21-30	32	20.65	
31-40	21	13.55	
>41	12	7.74	
Sources of land ownership			
Inheritance	97	62.58	
Leasehold	30	19.35	
Individual	21	13.55	

Gift

7

4.52

Source: Field survey, 2021**Causes of land conflict in the study area**

Table 2 reveals that the major causes of land conflict in the area were failure to respect farm boundaries ($\bar{x}=10.4$), contesting the inheritance of the land ($\bar{x}=12.9$), and destruction of farm crops by grazing animal ($\bar{x}=11.9$). Other major causes with less effects are abandonment of previously accepted rules of access to and use of land ($\bar{x}=8.7$), improper sharing of joint resources ($\bar{x}=7.8$) and Illegal sale of land by family lineage or community ($\bar{x}=8.6$). The findings on failure to respect farm boundary is in agreement with (Omotara, 2016, Yamano and Deininger 2005 and Dunmoye 2003) who reported that boundary dispute is a major factor of communal crisis in Nigeria and in Kenya about half of land conflicts are over boundaries issues between neighbours or relatives. The second one is contesting the inheritance of land due to its increase in value. This shows that land is becoming a very scarce factor of production, either due to population pressure, urbanization, land alienation or concentration of land in a few

hands. Illegal sale of land by family lineage or community deprived the family members their rights to own lands and this provokes action to defend their interest (Bogale, Taeb and Endo, 2006).

Furthermore, the findings on abandonment of previously accepted rules of access to and use of land is similar with Asiyanbola (2010) who reported that the first major economic crisis between Ife and Modakeke was land tribute (Isakole) which Ife collected from Modakeke until late 1970's. The promulgation of land use decree of 1978 abolished land tributes while Ife saw it as infringement of their own right, the other groups saw the decree as an opportunity for free tenancy and refused to pay land tributes to their landlord culminating into conflicts, which degenerated into killing, arson and mayhem of unprecedented proportions. Zwain (2011) found out that many

African countries are experiencing violent conflict because of the competition for access, control and use of land resources.

Table 3: Distribution of respondents by causes of land conflicts in the area n =155

Causes of land Conflict	SA	A	N	DA	SDA	Mean	Remarks
Failure to respect boundary	81	29	16	14	15	10.4	Major
Challenging inheritance of Land	90	40	4	14	7	12.9	Major
Abandonment of previously accepted rules of access to and use of land	38	67	15	17	18	8.7	Major/less effect
Improper sharing of joint resources	31	53	43	13	15	7.8	Major/less effect
Illegal sale of land by the family lineage or community	28	31	67	16	13	8.6	Major/less effect
Destruction of farm crops by grazing animal	14	90	15	22	14	11.9	Major

Source: Field survey, 2021

Strongly Agree (SA), Agree (A), Neutral (N), Disagree (D), Strongly Disagree (SD)

Effects of conflicts on crop output

Regression estimates of the effects of conflicts on crop output are presented in table 3. The lead equation (Linear) was chosen based on the R^2 value, t-value as well as the significant of the estimated parameter. The model had R^2 value of 0.6354. This implies that about 64% of the variation in crop output (Y) of the respondents was explained by the independent variables included in the regression model. The F-statistic was also significant at the 1% level which implies that the independent variables included in the model adequately explain the variation in the dependent variable.

The regression coefficients of fertilizer is positive and statistically significant at 1%, which implies that an increase in fertilizer have direct influence on the increase in the output of farmers. Labour was positive and statistically significant at 5% which means that there is positive relationship between output and labour. The implication of this is that the higher the number of labours and time spent on working on the farm determines the quantum of work in the farm and invariably the output of the farmers. Number of plots own by the farmers is negative and statistical significant at 1% which implies that the more number of plots own by farmers the likelihood of more output and income from the plots. This scrambling

and partition to own many plots of lands probably is the cause of land conflicts in the study area this finding agreed with that of (Omotara, 2016 and Victor *et al* 2020) who discovered that farmers engaged in land crisis to own many plots of lands in Southwest Nigeria and that conflicts over farmland had negative effects on the socioeconomic activities of the rural residents.

Age is negative and statistically significant at 5%, this implies that adult's practices

farming and more involve in land conflicts which invariably affects their output. Conflicts is negative and statistically significant at 5% implies that land conflict have negative effects on the output of farmers. An increase in the conflicts can affects crop output by 48%. This finding is in line with that of Victor *et al* (2020) who discovered that there was evidence of significant negative impact of land conflicts on crop production and farmers income.

Table 4: Regression estimate on effects of conflicts on crop output

Variables	Coefficients	P-Values	Standard Error
Constant	-4820.845	0.012**	1898.023
Location	73.34684	0.789Ns	273.7865
Fertilizer	35.21143	0.000***	6.244569
Labour	11.72894	0.048**	5.883161
Number of plot	-770.7735	0.007***	279.4158
Age	-48.47563	0.016**	19.96414
Nature of farming	612.2725	0.284Ns	569.5744
Education	-35.95312	0.256Ns	31.49837
Soil Quality	-118.9099	0.791Ns	447.4864
Conflicts	-48.47563	0.016**	19.96414
Number of obs	155		
F (9, 145)	28.07		
Prob > F	0.0000 ***		
R-Squared	0.6354		
Adj R-Squared	0.6127		

Note: ***, ** and * imply significant at 0.01 (1%), 0.05 (5%) and 0.1 (10%) levels, Ns implies not significant. Values in parentheses are the respective p – ratios

Source: field survey, 2021.

Socio-economic effects of conflict in the study area

Reduction in output and income of crop farmers as a result of the destruction of crops

during crisis is the most prevalence of the effect. Many farmers lost part or the whole of their crops. This meant reduced yield which translated into low income on the part of the

farmers who take farming as a major occupation. This tends to negatively affect their savings, credit repayment ability, as well the food security and economic welfare of urban dwellers that depend on these farmers for food supply.

Displacement of farmers: Farmers relocate as a result of conflict. Host farmers, especially women, who remain behind stop going to the distant farms for fear of attack, such displaced farmers have become a source of liability to other farmers whom they have to beg for food for themselves and their families. This has created a vicious cycle of poverty in such communities. Loss of lives. A lot of killing and reprisal killing by the communities takes place during the conflicts.

Also some of the victims (young and old) are badly injured or maimed. This has reduced some women farmers to the status of widows. All these have drastically reduced agricultural labour force in the area. In the process there are reported cases of proliferation of small arms and ammunitions since the farming communities saw each other as archenemies. This is inimical to the spirit of integration of Nigerian tribes or ethnic groups and peaceful co-existence. This finding agrees with the earlier report of the study conducted by (Nweze 2005 and Ofuokuet *al* 2009) when they reported that twenty seven 27 people lost their lives due to conflicts between nomadic herdsmen and farmers in Kogi State of Nigeria within the period of 1996 and 2002.

Table 5: Distribution of Socio-economic effects of conflict in the study area

Effects	Frequency	Percentage	Ranking
Reduction in output/income of farmers	59	38.1	1 st
Displacement of farmers	31	20.0	2 nd
Loss of house and Properties	22	14.2	3 rd
Loss of Produce in storage	17	11.0	4 th
Arms Running	14	9.0	5 th
Loss of lives	12	7.7	6 th

SUMMARY, CONCLUSION AND RECOMMENDATION

Summary

This study looked at the causes and effects of land conflicts on crop production, in Lapai and Lavun Local Government areas of Niger state, Nigeria. Random samplings of one hundred and fifty five (155) farmers were selected from four wards of Lapai and LavunLocal Government Areas respectively. The villages selected are Doko and Boku

wards in Lavun LGA and Gbami and Edda in Lapai LGAs of Niger state.

. Data collected were analyzed using both descriptive statistics, Likert scale as well as multiple regression analysis. The study revealed (48.4%) of the respondents age was below 50 years while about 51.6% of the respondents were above 50 years. The mean age of the farmers in the study area was 50.02 while 11.02 is the deviation from the mean. The coefficient of variation (CV) is 22% indicating consistency in the percentage

deviation from the mean. The modal age of the respondents was 51 to 60 years. This shows that majority of the youths have migrated from rural areas to urban areas as a result of land conflicts in search of greener pastures leaving older people to do farming.

The result also revealed reveals that the major causes of landconflict in the area were failure to respect farmboundaries (\bar{x} =10.4), contesting theinheritance of the land (\bar{x} =12.9), and destruction of farm crops by grazing animal (\bar{x} =11.9). Other major causes with less effects are abandonment of previously accepted rules of access to and use of land (\bar{x} =8.7), improper sharing of joint resources (\bar{x} =7.8) and Illegal sale of landby family lineage or community (\bar{x} =8.6).

The result of the regression coefficients of Conflicts is negative and statistical significant at 5% implies that land conflict have negative effects on the output of farmers. An increase in the conflicts can affects crop output by 48%.

Conclusion

The following conclusion was drawn based on the findings of the study. Inheritance system of land ownership is the major source of land for farming in the area and majority of the farmers are peasant in nature cultivating between one to three hectares of land. Major causes of conflicts over farmland in the area were failure to respect boundary, contesting the inheritance of land and abandonment of previously accepted rules of access to and use of land. Conflict over farmlands had a negative effect on the socio-economic activities of rural residents as it

lead to termination of social interaction, among people mistrust among members, destruction of life and property as well as low agricultural productivity and income.

Recommendations

Based on the findings of this study, the following recommendations were made:

- i. Individual and community farm boundaries should be respected to avoid court cases and litigations, which could lead to wastage of resources and loss of manpower days.
- ii. There must be an effective system of land administration of management to reduce frequent challenges of land ownership. Accepted rules to access and use of land in each area must be strictly adhered to and inheritors should be loyal to the agreement made with their progenitors on the use of land.
- iii. Public education/enlightenment programmes must be strengthening to reduce the adverse effect of land conflicts .Land conflicts issue should be settled amicably using indigenous conflict resolution methods before degenerating into full-blown war and loss of life.

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