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Strategies for Coping with the Effects of Land Conflict among Crop Farmers in Imo State, Nigeria

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Abstract: *The study examined strategies used by crop farmers in coping with the effects of land conflicts in Imo State, Nigeria. A sample of 288 crop farmers selected using multistage sampling technique participated in the study. Data were collected from the farmers using structured interview schedule and analyzed using percentage and mean. Result showed that maize (94.1%), leafy vegetables (86.8%), yam (77.0%), fruity vegetable (73.5%) and plantain (72.8%) were the major crops grown by the farmers. Perceived causes of land conflicts included undocumented agreement over land use between individuals (97.2%), lack of marked boundaries (89.5%), increasing value of land (89.5%), new laws, policies or programmes (72.8%), migration (72.8%) and land grabbing (72.8%). Perceived effects of land conflict on crop production were decline in income ($\bar{X}$ = 3.8), lack of financial resources ($\bar{X}$ = 3.8), shortage of inputs ($\bar{X}$ = 3.8), increase in the cost of inputs ($\bar{X}$ = 3.8), lack of market for produce ($\bar{X}$ = 3.8), land redundancy ($\bar{X}$ = 3.7), improperly timed farming activities ($\bar{X}$ = 3.7), loss lives ($\bar{X}$ = 3.7) and reduction in plot size ($\bar{X}$ = 3.5, S.D = 1.0). Coping strategies used were divesting from crop production ($\bar{X}$ = 4.0), diversification of farm enterprises ($\bar{X}$ = 3.9), appeasing other parties ($\bar{X}$ = 3.9), praying for peace ($\bar{X}$ = 3.9) and adopting less risky income generating activities ($\bar{X}$ = 3.8). It was recommended that existing land governance systems be reviewed in order to accommodate recent changes.*

Keywords: coping strategies, land conflicts, crop farmers, effects, rural areas

INTRODUCTION

Agriculture is undoubtedly the greatest user of land and the leading sector in the Nigerian economy besides the oil sector. It provides the main source of livelihood for the majority of Nigerians, employing about 70% of the active labour force. Agriculture contributes immensely to food production in Nigeria by accounting for over 90% of the total food consumption requirements (Oji-Okoro, 2011). According to Arokoyo (2012) the large natural resources in Nigeria which include 68 million hectares of arable land; fresh water resources covering about 12 million hectares, 960 kilometers of coastline and an ecological diversity which enables the country to produce a wide variety of crops and livestock, forestry and fishery products still boost the country's potential for agricultural production.

The role land and other natural resources play in conflict is attracting increasing international attention. The United Nation's Environmental Programme (UNEP) (2012) stated that a variety of global trends have also led to a heightened awareness of land issues at the international level. Population growth is placing demands on arable land, water and other natural resources. Similarly, environmental degradation, exacerbated by climate change intensifies land scarcity.

Nearly half of the world's population is directly or indirectly dependent on natural resources such as land for its livelihood (International Union for the Conservation of Nature, [IUCN], 2010). Some 2.5 billion people live on agriculture directly – from farming crops and livestock while 1.6 million people rely on forest resources for all or part of their livelihoods (Mayer and Vermulen, 2002). In addition, 150 million people regard wildlife as a valuable livelihood source and 560 million derive all or part of their livelihood from fishing and/or aquaculture (Food and Agriculture Organization [FAO], 2011). Of the 1.2 billion people estimated to survive on less than US$1 a day, 70% live in rural areas with high dependence on natural resources (DFID, 2002). However, these resources are depleting at an alarming rate. It has been reported that increasing population growth is exerting pressure on available land, making scarcity of farmland a serious issue (Headey & Jayne, 2014). The growing human and animal population has as well made the competition for land use more intense (Adisa, 2012).

Land conflict occurs when a land user is perceived to be trespassing and infringing on the rights, values or amenity of another (Blench, 2010). Land use is increasingly becoming a reason for conflict and contestation especially in developing countries where the majority depend on agriculture as a source of livelihood (Wehrmann, 2008). According to Adisa (2012) several factors such as migration, population pressure, agricultural commercialization and urbanization have added to the number of land conflicts. Evidence from case studies suggests that shortages of cropland may be more closely associated with civil disturbances in low-income countries compared to shortages of fresh water (Kerstin and Sipangule, 2017).

Abegunde *et al.* (2020) maintained that land issues are a leading cause of conflict in Nigeria. The conflicts between herders and farmers are borne out of land encroachments of the herders over farmlands. Eklund and Person (2015) argued that land conflict

has a high potential for aggravating food crisis, insecurity and impeding agricultural sustainability. According to Abegunde *et al*. (2020) they have often resulted in the destruction of farmlands, crops and livestock, pollution of drinking water, loss of lives, injuries and other human and physical impacts; damages to and loss of property, social displacement, disruption of communal lives, incidences of rape and other attendant crimes.

Cases of land-related conflicts have been reported in Imo State, Nigeria. Chikaire *et al.* (2018) acknowledged the incidence of land-related conflicts in Imo State, Nigeria. They further reported that land conflicts are seriously hindering agricultural productivity in Ohaji area of Imo State, Nigeria. The increasing and almost recurrent nature of land-related conflicts in the state necessitate the implementation of measures to curb it.

Wehrmann (2006) stressed the importance of reducing conflicts over land. Kwaja and Ademola-Adelehin (2018) noted that government at all levels, civil society groups and communities have responded to conflicts in different ways in Africa. They maintained that such measures as the creation of grazing reserves, establishment of centers for nomadic education, deployment of security, enactment of bills prohibiting open grazing and community-level conflict management and resolution have been tried. Similarly, Chikaire *et al*. (2018) reported the imposition of curfew, setting up of judicial committee of inquiry, mediation by elders, use of sanctions and effective communication to resolve conflicts in Nigeria.

While measures taken at the government level to address land-related conflicts have been explored, empirical literature are scarce on the strategies taken by local farmers to cope with the effects of land conflict on agriculture. Based on this observed gap, the study was designed to examine strategies used by crop farmers to cope with the effects of land conflict in Imo State, Nigeria.

OBJECTIVES OF THE STUDY

The broad objective of the study was to examine the strategies used by crop farmers to cope with the effects of land conflict on crop production in Imo State, Nigeria. The specific objectives included to:

1. identify the crops produced by the farmers;
2. ascertain perceived causes of land conflict in the area;
3. identify the perceived effects of land conflict on crop production; and
4. determine the strategies used by the farmers to cope with the effects of land conflict.

METHODOLOGY

The study was carried out in Imo State, which is situated in the Southeastern part of Nigeria and lies between latitudes 4^0 $45^{'}$ and 7^0 $15^{'}$ N and longitudes 6^0 $50^{'}$ and 7^0 $25^{'}$E. The state is divided into three agricultural zones namely; Owerri (12 LGAs), Orlu (9 LGAs) and Okigwe (6 LGAs). It is bordered by Abia State on the east, by the River Niger on the West, by Anambra State to the north and River State to the south. Imo State occupies a land mass of about 5,530 km^2 with a total projected population of 5,408,800 persons in 2016 (National Population Commission [NPC], 2016). Agriculture is the major sources of income of most of the 3.9 million inhabitants of the area though most inhabitants are government employees. The staple food crops grown in the area include; cassava, cocoyam, yam, maize, okra, garden egg, pepper, melon and vegetables etc. (National Bureau Statistics [NBS], 2008).

All crop farmers in Imo State constituted the population for the study. Multistage sampling technique was used in selecting the sample. In the first stage, the three agricultural zones in the state were selected using purposive sampling technique. This was done to ensure all farmers in the state were used in the study. In the second stage, 70% of the LGAs that make up each agricultural zone was selected using proportionate sampling technique to give 8 for Owerri zone, 6 for Orlu zone and 4 for Okigwe zone. Then, the LGAs were selected using simple random sampling technique. In the third stage, two autonomous communities were selected from each of the selected LGAs using simple random sampling technique to give a total of 36 communities. In the fourth stage, 8 farmers were selected from each community using snowball sampling technique to give a total of 288 crop farmers.

Data for the study were collected using structured interview schedule. The data were analyzed using percentages and weighted.

RESULTS AND DISCUSSION

Crops produced by the farmers

The prominent crops included maize (94.1%), leafy vegetables (86.8%), yam (77.0%), fruity vegetable (73.5%) and plantain (72.8%). The least cultivated crop was groundnut (7%). FAO (2018) stated that the major crops grown in the southern rainforest zone of Nigeria are maize, cassava and sorghum. This result suggests that the farmers practiced diversification in crop production. Inoni *et al*. (2021) reported that land scarcity was the major factor behind crop diversification by farmers in the rainforest zone of Nigeria. The result also indicates that the farmers grew both cash and food crops, perhaps to raise cash income and meet the

nutritional needs of their families. Also, the increasing competition for land has shrunken the amount of land available to farmers and in response they resorted to the cultivation of different kind of crops on their farmlands.

The result further showed that some crops were cultivated by many farmers than others. Some crops are known to survive harsh conditions that could be brought about by conflicts more than others. For example, cassava is known for its ability to survive marginal conditions. Conflict can keep farmers away from their farms for a long time. Only hardy crops can survive this condition. Similarly, some crops mature faster than others while requiring minimal inputs to give good yields. Since conflict contracts farmers' investments on their farms, they are more likely to cultivate hardy crops like cassava and early maturing crops so as to reduce risks. Mitchell (2019) noted that conflict can change an individual's risk preferences which can affect the agricultural decision-making process.

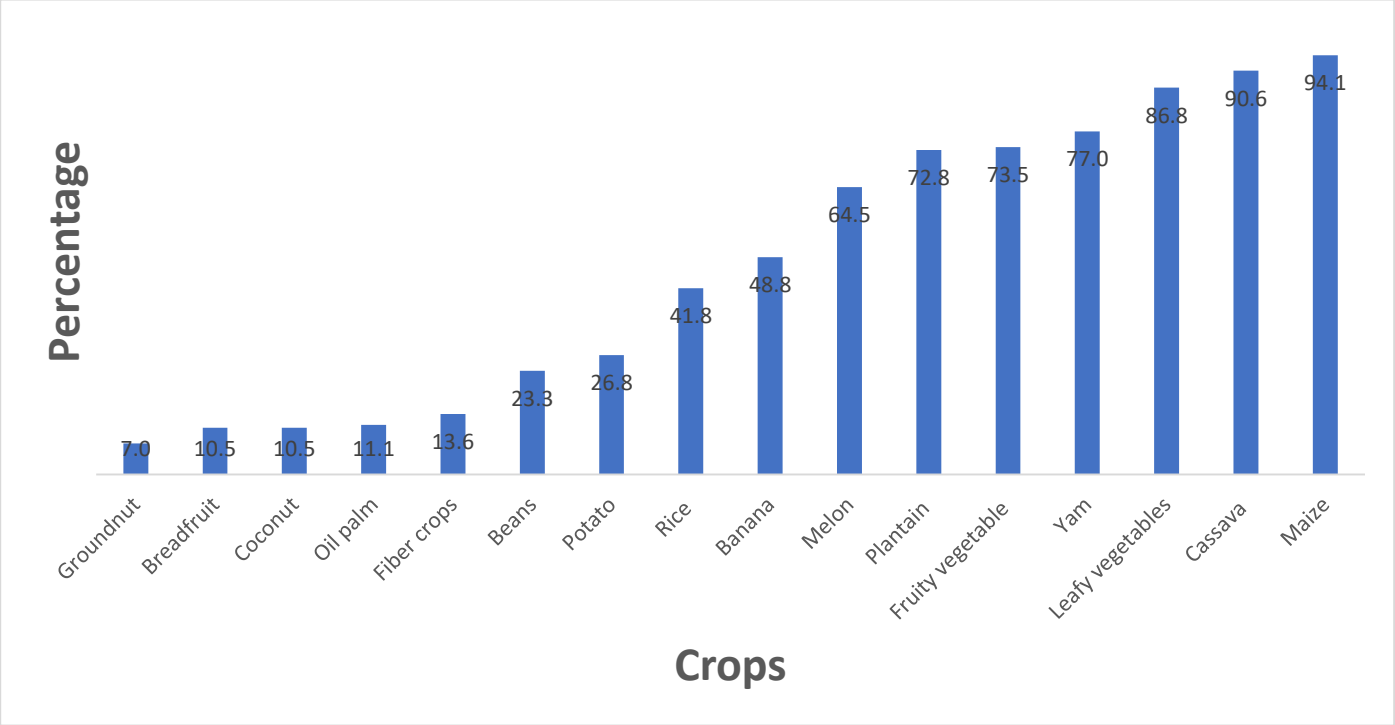

Figure 1: Crops by the farmers

Perceived causes of land conflict

The notable causes of land conflict included undocumented agreement over land use between individuals (97.2%), lack of marked boundaries (89.5%), increasing value of land (89.5%), new laws, policies or programmes (72.8%), migration (72.8%) and land grabbing (72.8%). This finding suggests that land conflicts in Nigeria are complicated. According to Conroy (2006) conflicts surrounding land issues in Nigeria are multi-faceted and complex, with dynamics that change over time and depending on the area of the country where they occur.

Environmental factors such as climate change trigger land conflicts in Nigeria. These have resulted in resource scarcity. For example, drought and desertification have led to southward migration. This has caused serious struggles for the diminishing land resources, leading to fierce conflicts (Benjaminsen *et al*., 2012). Mworia and Ndiku (2012) indicated land-use disputes and non-acceptance of boundaries as the major drivers of land conflict in Akwa Ibom State, Nigeria. Ikurekong *et al*. (2012) reported a similar finding in Nigeria where land conflicts were believed to be caused by unpaid land compensation or non-payment of complete land compensation by either investor(s) or government and unilateral issuance of land permission/decision on a particular land's function.

Animal grazing is also a major cause of land conflict in Nigeria (Auma, 2016). According to him, farmers with large sizes of animal find difficulties in confining them at a place for grazing because of limited land size. They move with their animals everyday searching for better pasture and water. And as they move, sometimes the animals enter people's farms and destroy their crops. This situation is worse during dry seasons because of limited grasses. The movement of herdsmen down south has caused

constant clashes with farmers which have resulted in great damages in human, material and natural resources in many states in Nigeria (Egbuta, 2018). These conflicts are triggered by climate change, depleting space for farming and lack of political will of the government.

Perceived effects of land conflict on crop production

The notable effects of land conflict on crop production included decline in income ($\bar{X}$ = 3.8), lack of financial resources ($\bar{X}$ = 3.8), shortage of inputs ($\bar{X}$ = 3.8), increase in the cost of inputs ($\bar{X}$ = 3.8), lack of market for produce ($\bar{X}$ = 3.8), land redundancy ($\bar{X}$ = 3.7), improperly timed farming activities ($\bar{X}$ = 3.7), loss lives ($\bar{X}$ = 3.7) and reduction in plot size ($\bar{X}$ = 3.5, S.D = 1.0). The result implies that land conflict has varied but mostly adverse effects on crop production.

Abegunde *et al.* (2020) found a significant difference in the output from a plot affected by conflict as against a plot not affected by conflict. The fear of loss of investments on crops may discourage farmers from cultivating a large expanse of land. This is because farmers are risk-aversive or at worst case scenario minimize losses. Muyanga (2011) observed that land conflicts limit investments farmers make on their lands. Similarly, Muyanga and Gitau (2013) argued that land conflict even if small-scale in nature have impacts on incentives to invest on land and consequently on agricultural productivity.

Table 2: Distribution of respondents according to perceived effects of land conflict on crop production

Perceived effects of land conflicts	$\bar{X}$	S. D
Reduction in the quantity of fertilizer applied	2.5	1.0
Reduction in the quantity of agrochemicals applied	3.7	1.0
Decline in plot size	3.5*	1.0
Decline in crop intensity	2.5	1.0
Rejection/minimal adoption of improved crop production technologies	2.5	1.0
Shortage of labour	2.5	1.0
Reduction in crop yield	3.4*	1.0
Increase in the cost of labor	3.4*	1.0
Reduction in soil fertility	3.5*	1.0
Reduction in daily agricultural wage	2.7	1.0
Lack of market for produce	3.8*	1.0
High cost of transportation	3.6*	1.0
Loss of lives	3.7*	1.0
Affects the type of crop cultivated	3.6*	1.0
Changes in land use	2.5	1.0
Decline in the availability of agricultural infrastructure such as irrigation	3.8*	1.0
Increase in the cost of inputs	3.8*	1.0
Migration of agricultural workers	3.7*	1.0
Changes in the timing of crop planting	3.6*	1.0
Land redundancy	3.7*	1.0
Loss of capital investment	3.6*	1.0
Loss of stored produce	3.7*	1.1
Loss of crops on farmland	3.8*	1.0
Abandonment of crop production	3.6*	1.0
Migration to urban centers	3.7*	1.1
Shortage of inputs such as seeds	3.8*	1.0
Lack of financial resources	3.8*	1.0
Decline in income	3.8*	1.0
Improperly timed farming activities like weeding	3.7*	1.0

*** Perceived effects of land conflict**

Coping strategies for the effects of land conflict on crop production

The result shows that the farmers used several strategies for coping with the effects of land conflict on crop production in the area. The prominent strategies they used were divesting from crop production ($\bar{X}$ = 4.0), diversification of farm enterprises ($\bar{X}$ = 3.9), appeasing other parties ($\bar{X}$ = 3.9), praying for peace ($\bar{X}$ = 3.9) and shifting to less risky income generating activities ($\bar{X}$ = 3.8). This result agrees with the findings of a study by Adisa (2016) who stated that farmers used a combination of problem-oriented, emotion-oriented and social support coping strategies for the effects of conflicts.

Divesting from the agricultural sector is often resorted to in extreme conditions. This could occur when the safety of the farmer's investment is uncertain. If the risks associated with investing in crop production in a conflict-prone region is high, farmers might choose to invest in other aspects of agriculture. For example, crops take a gestation period and this might make farmers go for options that give quicker returns to investments. Even in the crop sector, farmers might reduce risks by cultivating fast-maturing, resilient and low-energy demanding crops. The dominance of arable crops can be observed in conflict-prone areas.

Diversification of farm enterprises is another reliable way of coping with conflict. A farmer may choose to go into several operations in order to reduce loss. This is done in case one enterprise fails. Raj (2010) stated that diversification is among the strategies aimed at stabilizing income and securing against risks, mainly climatic and natural. Diversification influences differentiation and often increases income, which is made independent of one source. Makate *et al.* (2016) found that crop diversification stabilizes farming income, improves economic stability and promotes sustainable production.

Table 3: Distribution of respondents according coping strategies for land conflicts on crop production

Coping strategies	$\bar{X}$	S. D
Diversification of farm enterprise	3.9*	1.0
Divesting from crop production	4.0*	1.0
Shift to less risky income generating activities	3.8*	1.0
Cultivated less plot size to minimize loss	3.7*	1.0
Bought food	2.1	1.0
Prepared for the worst	2.6	1.0
Sold farm	2.6	1.0
Borrowed money	2.6	1.0
Appeased other party	3.9*	1.0
Prayed for peace	3.9*	1.0
Invested more in crop production	3.7*	1.0
Migrated	2.1	1.0
Avoided farming in faraway farms	3.7*	1.0
Tightening farm security	3.9*	1.0
Working harder	3.9*	1.0
Using experience	3.9*	1.0
Using charms	2.1	1.0
Sought litigation	3.7*	1.0
Early harvesting	3.9*	1.0
Multiple farm plots	2.1	1.0
Increased farm size	2.6	1.0
Supplementary occupation	3.9*	1.0
Help relatives' friends	4.0*	1.0
Insurance policy	3.9*	1.0
NGO support	3.8*	1.0
Help from government	3.8*	1.0
Planting early maturing crops	3.9*	1.0
Help from union association	4.0*	1.0

Source: Field Survey Data, 2021

CONCLUSION

The result shows that land conflict has adverse effects on crop production and agriculture in general. This is more crucial now that efforts are geared towards improving food availability. This is expected to exacerbate the food insecurity situation in the country. However, addressing this will require introducing some measures that will reverse the effects. The farmers were observed to be taking some measures to cushion the effects yet more needs to be done. Achieving a lasting success will require ensuring that the perceived barriers are resolved.

RECOMMENDATIONS

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

1. Transparent use of natural resources should be encouraged. This should take into considerations the rights of local people.

2. Existing land governance systems should be reviewed. This implies overhauling the existing land use acts with the view of addressing lapses.

3. Farmers should be encouraged by rural development agencies such as the agricultural extension organization to embrace the process of diversification. This can be achieved through the provision of necessary inputs, credits and loan facilities. Fast maturing crop varieties should as well be provided to the farmers by the government and other relevant agencies.

4. Climate change policies should be enacted by the government. This will take care of conflicts induced by climate change and other natural disasters.

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