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Land use conflicts: An impediment to improved agrifood value chain management as perceived by crop farmers in southeast Nigeria

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ABSTRACT

This research work examined the effects of land use conflicts on agrifood value chain management in South-East, Nigeria. A total of 300 farmers were purposively selected from conflict-affected communities in South-east Nigeria. A questionnaire was used in collecting data, and analysis of the data was done using percentages, means, and standard deviation. Results showed that the agrifood value chain enterprises include the following: input supply (63%), producers (93.3%), distribution (52.32%), retailers (80%), service providers (58%), and consumers (86.6%). Land conflicts affect the various value chain stages by reducing food availability (M= 3.42), increasingthe cost of input (M=3.52), reducing input quality (M= 3.05), leading to lower yields (M=3.28), leading to soil degradation (M= 2.58), and increasing crop losses (M=3.46) in the production stage. In the harvesting /processing or packaging stage, conflict makes harvesting difficult (M= 3.03), leads to post- harvest losses (M=3.56), disrupts supply chain (M= 3.10), delay in supply to market (M=3.15), reduce market access (M= 3.19), increase price of goods (M=3.31), leads to food shortages (M=2.68), loss of income (M= 2.87) for marketing and distribution.On the consumption stage, conflicts affect food availability (M= 2.83), lower food demand (M= 2.64), leading to depletion of food stock (M= 2.58), disruption of the whole production circle (M=2.94).The challenges facing the farmers included climate change variability, market volatility, and poor infrastructure, among others. To reduce land conflicts in the area, the following were suggested: strengthen the land tenure system, careful land use planning, and conflict resolution, among others.

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INTRODUCTION

A well-functioning agrifood system is essential for enhancing food and nutrition security, alleviating poverty—particularly in low-income countries (LICs)—and fulfilling climate and environmental objectives for sustainable development. Agrifood systems consist of three key components: the participants in the agriculture sector, the activities they perform, and the broader enabling environment. These participants range from farmers and agribusiness firms to processors, distributors, and consumers. The enabling environment encompasses the policies, standards, and investments that influence sustainable production and access to markets. A sustainable food value chain should be profitable at every stage (economic sustainability), provide widespread societal benefits (social sustainability), and have a positive or neutral effect on the natural environment (environmental sustainability). According to the World Health Organization (2016), one-third of all food produced is lost or wasted. Meanwhile, over 815 million individuals globally lack sufficient access to food (FAO, 2017).

In Nigeria, the value chain is predominantly made up of about 80% smallholder farmers and a few commercial processors, all facing challenges such as inadequate resources, outdated technology, limited knowledge about high-value or growth products, insufficient exposure to high productivity practices, weak market connections, and inefficient supply chains that lead to significant food wastage (Ugochukwu, 2019). The core food value chain comprises the actors who either produce or source products from farmers, elevate the quality of these products, and ultimately sell them to the next tier. These actors fulfill four main roles: production (which includes farming, fishing, forest harvesting, or agroforestry), aggregation, processing, and distribution (wholesale and retail).

Utilizing technology and innovation throughout the complete agrifood supply chain could significantly enhance Nigeria's agrifood system, fostering better alignment between sustainable value chain advancement and agrifood system transformation. For instance, leveraging digital platforms could empower farmers to make more informed, real-time operational and market decisions. Additionally, food loss remains a significant issue in Nigeria for various reasons.

Therefore, the emphasis on production alone needs to transition towards enhancing value addition across all segments of the value chain. For example, Nigeria experiences an annual tomato loss of between 45-60% of total production, while onion losses stand at 50%, and chili losses range from 20-30% at different stages of the chain. Furthermore, analysis from the cocoa barometer indicates that for each bar of chocolate produced, a minor 6.6% of the value addition occurs in the production phase, with the majority happening in the processing, marketing, and retail aspects of the value chain. In Brazil, enhancements in the agricultural value chain led to the creation of 16 million new jobs in agribusiness in 2012 and represented 46.3% of exports in 2016 (Santana and Nascimento, 2012; PWC, 2013).

A food value chain (FVC) involves all the participants engaged in the organized production and value-enhancing processes necessary for creating food products. As noted by HLPE (2014), losses and waste frequently occur throughout all stages of the FVCs, including pre-harvest, harvesting and initial handling, storage, transport and logistics, processing and packaging, retailing, and finally, consumption activities. The development of agrifood value chains in Nigeria encounters several obstacles that hinder its potential, encompassing issues related to capacity, enabling environments, governance, infrastructure, and policies that support sustainability and growth. Enhancing value after production and reducing losses through innovations in post-harvest and processing stages can lead to considerable economic and environmental benefits, including savings in resources and reductions in carbon footprints.

Consequently, a key factor contributing to food security and nutrition is research and development aimed at minimizing losses throughout AFVCs while also enhancing the value of agrifood products via innovative practices in post-harvest, storage, logistics, processing, packaging, distribution, and food service activities. For Nigeria's agrifood value chains to remain inclusive, resilient, and sustainable, it is essential to implement long-term interventions, foster engagement and partnerships across the entire agrifood system, invest at every level of the value chains, and ensure collaboration among all stakeholders, alongside the building of mutual trust and the mitigation of land conflicts to support flourishing economic and agricultural endeavors.

Moreover, challenges such as climate change, natural disasters, conflicts between farmers and herders, kidnappings, and other security issues have adversely affected food production and distribution in Nigeria, making food crises an ongoing struggle for its citizens. Simultaneously, agricultural productivity has shown consistent growth, and technological and institutional advances have emerged within agrifood markets and value chains that could potentially alleviate poverty and food insecurity globally.

Given the rapid increase in population, the demand for land is rising in Nigeria. Concurrently, the climate crisis exacerbates agricultural challenges. Conflicts over land use further restrict opportunities for food production and other economic activities. Land is arguably the most crucial resource humans rely on for their daily survival. All human livelihoods and activities depend directly or indirectly on land, albeit to varying degrees. However, different user groups perceive land in various ways. For example, builders, manufacturers, fishermen, miners, hunters, and farmers have distinct requirements regarding land for their production or services. Among all user groups, agricultural production likely represents the most intricate use of land. Agricultural land must not only provide crop-specific nutrients and water but also meet specific conditions like soil temperature, structure, texture, and pH levels essential for selecting land for agricultural activities. Nevertheless, land remains a finite and relatively scarce resource, characterized by both natural and artificial barriers to access and usage.

These considerations regarding specifications, diverse land uses, and its limited nature necessitate competition for land utilization among various groups. As such, competition for land resources has historically troubled humanity, with non-agricultural user groups vying against agricultural ones, while intra-user group competition also exists. Indeed, the contest for land use is intensifying due to rising human and animal populations (Gefu and Kolawole, 2002). It has been demonstrated that the ever-increasing population growth rate has placed significant pressure on available land resources, leading to various environmental and socioeconomic consequences (Dietz *et al.*, 2001; Tarhule and Lamb, 2003; Fiki and Lee, 2004).

The conflict between farmers and herdsmen has been the most significant resource-use dispute in Nigeria (Ajuwon, 2004; Fasona and Omojola, 2005). The need to supply food from both crops and livestock, along with raw materials for industry and export to satisfy growing demands, has resulted in both "intensification and extensification" of land use (Nyong and Fiki, 2005).

However, the competition between these two agricultural groups has often escalated into serious and visible hostilities and social tensions in various regions of Nigeria. These conflicts have the potential to worsen insecurity and food shortages, particularly in rural areas where most disputes are concentrated, creating far-reaching effects across the country. According to Lambrou and Laub (2006), a large portion of the world's food — 75 percent — is derived from just 12 arable crops and five animal species, with three crops (rice, maize, and wheat) providing around 60 percent of plant-based calories and proteins. Globally, arable crops significantly dominate, playing

vital roles in the socioeconomic lives of both urban and rural populations. Arable crops encompass a diverse array of essential annual crops, including maize, rice, sorghum, millet, cassava, cowpea, wheat, soybeans, melon, groundnut, yam, vegetables, and more. In Nigeria, the cultivation of arable crops is a key aspect of agricultural activities, with nearly all farmers engaged in the production of one or more arable crops for sustenance and income.

As noted by Fayinka (2004), agricultural output in Nigeria is primarily characterized by small-scale arable crop producers based in rural areas, who constitute approximately 80% of the country's food needs. A study conducted by Okuneye *et al.* (2001) found that the average farm size dedicated to arable crop production was 4.58 hectares. The Central Bank of Nigeria (CBN) (2005) reported that in 2004 and 2005, 36.25 and 82.41 million hectares of arable crops were cultivated, respectively. Additionally, the CBN report highlighted that arable crop production rose from 88.3 million tons in 2001 to 111.8 million tons in 2005. Maize is the most widely cultivated arable crop in Nigeria, occupying 6.6 and 7.5 million hectares in 2004 and 2005, respectively, and is grown virtually throughout the nation. Most arable crop farmers depend on rainfall for their crops, with farming typically commencing at the onset of the rainy season.

Besides serving as crucial sources of income for farmers, arable crops are processed into various useful products at both industrial and household levels, and animal rearing or herding is not left out.

Cattle herding in Nigeria are predominantly managed by the Fulani tribe. Iro (1994) provided a detailed account of the Fulani herding system in Nigeria, and much of the information presented here is drawn from his work. According to him, herding is a challenging endeavor, and contrary to common perceptions, it is not something the Fulani do willingly but out of necessity. Iro (1994) found that around 75% of the surveyed nomadic pastoralists indicated that cattle herding is not only labor-intensive but is also becoming increasingly difficult. The ideal herd size for Fulani cattle ranges between 80 and 100, with females outnumbering males at a ratio of 4:1, allowing the Fulani to maintain a well-balanced species mix comprised of 'beefers, milkers, breeders, carriers, and stock beautifiers'. Iro (1994) also noted that the slow-maturing Sokoto Red breed and the lyre-horned White Fulani cattle form the backbone of the pastoral Fulani herds. White and Wickens (1976, as cited by Iro, 1994) revealed that while the White Fulani is less hardy, it produces better yields of milk and beef compared to the Sokoto Red.

In describing the yearly herding pattern of the Fulani, Iro (1994) noted that the herding season initiates with the movement of the herd southward along rivers and stream valleys from October to December, indicating the conclusion of the rainy season and the onset of the dry season. The harmattan season from January to February is marked by extended grazing periods, the splitting of herds, and increased trips to stable water sources, leading to further southward herd movement. March and April typically present the most challenging times for herders and their cattle, as this period experiences the highest temperatures in the grazing calendar. Indeed, herders tend to manage their cattle primarily during the evening and night hours (Riesman, 1977, as referenced in Iro, 1994). The months of May and June signify the conclusion of the dry season, with emerging vegetation marking the start of the herds' northward migration. This period, lasting until September—when the rainy season peaks—also involves cattle breeding, increased milk production, and shorter grazing periods, leading to frequent conflicts between farmers and herders.

Nigeria has historically served as the agricultural hub, contributing over 70% of farming activities; however, it has recently witnessed significant displacement of its agricultural communities due to internal conflicts, interrupting farming in affected regions. Approximately 2.13 million individuals have been

internally displaced from the Northeast, and 8.7 million people now face food insecurity (HLPE, 2014). The entire food system in the area is struggling, which has implications for the wider food system across Nigeria. Conflicts in key maize-producing regions have hampered the transportation of maize to markets and caused considerable post-harvest losses and waste, leading to a shortage in maize supplies. The combination of decreasing food production in conflict zones and migration caused by conflict to primarily consumer-driven urban areas in Southern Nigeria has significantly transformed food systems.

There has been a substantial rise in the importation of food staples, with Nigeria, the leading maize producer in Africa in 2021, experiencing a staggering 637% increase in maize import value in 2020. This increase coincides with an unfulfilled demand from livestock feed manufacturers for maize and a sharp rise in the costs of inputs for livestock farming, particularly for poultry, which has negatively impacted livestock availability (PWC Report, 2013)

Land-use disputes are social conflicts that can escalate quickly into violence. They arise when different individuals or groups aim to utilize the same area for varying purposes, such as agriculture, housing, industry, commerce, recreation, or transportation. Tensions are more likely to escalate when individuals believe their rights are being infringed upon. In Nigeria, the nature of land-use conflicts differs from region to region, although there are common underlying issues.

In northern Nigeria, clashes commonly occur between Fulani herding communities and farmers.

Sometimes, this violence extends into urban areas as well. In the southeastern part of the country, there is a longstanding history of conflicts between oil companies and local communities. The rapid growth of Nigeria's population exacerbates these issues. According to United Nations statistics, Nigeria's population is currently over 200 million and is expected to double by 2050.

This population surge places additional stress on the limited land available in both rural and urban settings. Land-use disputes not only worsen food insecurity but also contribute to general insecurity. In parts of northwestern Nigeria, farmers often have to pay fees to armed groups before they can access their fields. While some use their crops to pay, many farmers are unable to afford the levies. Consequently, food production suffers, and this issue is transferred to consumers in the form of rising food prices. Thus, poverty deepens in already disadvantaged regions. When violence intensifies, some farmers abandon their lands. In severe cases, entire communities may be compelled to relocate. Internal displacement presents significant challenges in Nigeria, leading to adverse effects such as economic hardships, the erosion of cultural identity and community ties, affecting the overall food production system. This study therefore examines the effects of land conflict on the agrifood value chain system and management among farmers in conflict occurrence areas of Southeast, Nigeria. The specific objectives include; a) to identify different agrifood value chain enterprises available in the stsudy zone; b) ascertain perceived effects of land conflicts on the various stages of the agrifood value chain; c) examine perceived strategies for land conflicts reduction for improved agrifood system; and d) identify challenges facing the agrifood value chain of respondents

MATERIALS AND METHODS

The research was conducted in Southeast Nigeria. This region is one of the six geopolitical zones in Nigeria and encompasses the inland southeastern area of the country. It consists of five states: Imo, Abia, Anambra, Ebonyi, and Enugu. To the west, it is bordered by the Niger River, to the south by the Niger Delta, to the north by the North Central region, and the east by the Cross River (Fig. 1). With over 36 million inhabitants, the region accounts for about 18% of Nigeria's total population. The most populous

cities in the South East are Onitsha and Aba. Other significant urban centers in the area include Abakaliki, Owerri, Nnewi, Awka, and Umuahia (NPC, 2014). Besides agriculture, which is the principal economic activity, the area is recognized for its numerous small and medium-sized indigenous businesses that produce goods and services, along with its trading and commercial activities. Key agricultural products in the region are yams, cassava, rice, and cocoyams. The region is also endowed with natural resources and solid minerals, including crude oil. A purposive random sampling approach was employed to select 300 farmers across the five Southeast States out of 3000 farmers affected by resource use conflicts. In Imo State, 126 farmers were chosen from four communities; and in Abia State, 105 farmers were chosen; 69 were chosen in Enugu State, making a total sample size of 300 respondents (Table 1). Data collection was done using questionnaires administered to the farmers. The results were analyzed using percentages, means, and standard deviations.

Fig. 1. Map of Southeast, Nigeria

Table 1. State/LGAs and communities sampled in the study zone

State/LGA	Selected communities	Number of farmers Selected
Abia	Isuochi	42
Umunneochi	Lokpanta	37
Ugwunagbo	Uturu	26
Enugu Uzo-uwani	Nimbo	23
Nkanu West	Ishi-ozalla	28
Udi	Ogui-Agueke	18
Imo	Awara	34
Ohaji/Egbema	Umuapu	31
Owerri West	Irete	32
Okigwe	Ihube	29
Total		300

Source: Field survey data, 2024

Objectives 1 and 4 were accomplished using percentages presented in frequency tables. Objective 2 and 3 (perceived effects on land conflicts on agrifood production, and strategies for conflicts reduction) were evaluated using a 4-point Likert scale consisting of strongly agree, agree, disagree, and strongly disagree, assigned weights of 4, 3, 2, and 1, respectively. The resulting values were summed and divided by 4 to establish a discriminating mean value of 2.50. Any mean value that equaled or exceeded 2.50 was deemed acceptable as effects and conflicts reduction strategies among crop farmers.

RESULTS AND DISCUSSION

Agrifood value chain enterprises available in the study area

Table 2 shows the agrifood value chain enterprises that encompass all the businesses involved in transforming raw materials of agricultural origininto meat. These include farm input supplies (63%), which provide the farmers with resources like seeds, fertilizers, and equipment. The farm producers (93.3%) who produce crops and animals for use by all. Processors/packaging (65.6%) of food products; these categories transform raw agricultural products into processed foods.

Farm produce distribution/transportation (52.3%) is into distribution to final consumers or other outlets where food is needed. Others include the food retailers (80%), service providers (58%), and consumers of food products (86.6%). The retailers buy directly and sell to the final consumers, while the service providers offer support services.

Table 2. Agrifood value chain enterprises of respondents

Agrifood value chain enterprises	*Frequency	Percentages
Farm input supplies	189	63.0
Food production of crop/livestock	280	93.3
Food processing/packaging	197	65.6
Food produce distribution/transportation	157	52.3
Food retails/hawking	240	80.0
Services provision	174	58.0
Consumption of food produce	260	86.6

*Multiple responses

Effects of land conflicts on the various agrifood value chain stages

Table 3 shows the various ways land conflicts affect the various stages of the agrifood value chain management. With a mean index (M) of 2.50, we identified the various effects on each stage, namely the input stage, the production stage, the harvesting /processing or packaging stage, the delivery/marketing or distribution stage, and the consumption stage. Land conflicts affect the agrifood value input stage in the following ways: reduce food availability (M= 3.42), increase the cost of farm inputs (M=3.52), reduction in input quality (M= 3.65). Disrupts access to farm inputs (M=2.76), damage to migration facilities (M=2.95), reduced investment inputs (M=3.28), displacement of labour (M=3.35), and limits the users to essential farm inputs such as seeds, fertilizers, pesticides, either through damage in the store or limiting farmer access to markets for inputs. The disruption can drive up the cost of inputs due to limited availability, transportation, among others.

The quality of inputs could be lowered by land conflicts, and people depend on inferior ones.

In the production stage, land conflicts can lower yields (M=3.28), leads to land /soil degradation (M=2.58), disrupts labour availability (M=3.01), increase crop losses (M=3.46), reduces farm income/savings (M=3.38), results in unsustainable land practices (M=3.03), abandoned their farms, expenses damage to their crops loading to low yield. Both farmers and laborers are displaced, leading to low yields and low investment in the farm. Because there are conflicts, farmers do not use sustainable land practices. Land Conflicts affects the Harvesting/Processing/Packaging in the following ways; Makes crop harvesting difficult (M=3.03), leads to post-harvest losses (M=3.56), damage to processing facilities (M=3.43), disrupt the supply chain mechanism (M=3.10), and increase cost anddelay in supply to market (M=3.15). Crop harvesting is difficult during conflict periods; even harvested crops are abandoned and allowed to spoil due to fear of attacks. Processing and processing facilities are stopped, and facilities are destroyed. Distribution of supply chain mechanism (M=3.10), increase in cost due to delayed supply to market (M=3.15).

Table 3. Effects of land use conflicts on agrifood value chain stages

Perceived effects on value chain stages.	Mean	SD
Input supply stage	-	-
Reduces food availability	3.42	0.672
Increases the cost of inputs	3.57	0.509
Reduction of input quality	3.65	0.517
Disrupt access to inputs	2.76	1.021
Damage to mitigation facilities	2.95	1.533
Reduced investments in inputs	3.28	0.600
Displacement of labour who uses the input	3.35	0.481
Production Stage	-	-
Leads to lower yields	3.28	0.608
Leads to soil/land degradation	2.58	0.384
Disrupts labour availability	3.01	0.714
Increase crop losses	3.46	0.695
Reduces farm income/savings	3.38	0.950
Results in unsustainable land practice.	3.03	1.054
Harvesting, Processing/Packaging Stage	-	-
Makes harvesting difficult	3.03	0.706
Leads to post-harvest losses of produce	3.56	0.709
Damage to processing facilities	3.43	0.712
Disrupt the supply chain mechanism	3.10	0.942
Increase cost and delay in supply to the market	3.15	0.681
Delivery, Marketing & Distribution Stage	-	-
Reduces market access	3.19	1.028
Increases prices of goods /commodities	3.31	0.811
Loss of income /savings of farmers	2.87	0.545
Leads to food shortages	2.68	0.664
Erosion of credit market power	2.81	0.774
Consumption stage.	-	-
Affect of food availability to consumers	2.83	0.044
Demands may lower	2.64	1.011
Distributing the whole product circle	294	0.891
Leads to depletion of food stocks	2.58	0.916
Erosion of social structures	2.66	0.543
Reliance on food assistance programs	2.77	0.744

Accepted mean = 2.50

Land conflicts reduced market access (M=3.19), increase prices of goods/commodities (M=3.31), loss of income/savings of farmers (M=2.87), and lead to food shortages (M=2.68), erosion of the credit market (M=2.81). During conflicts, markets are closed as buyers and sellers run for cover. These forces the price to skyrocket and demand is low as hunger increases. Foods become service, and lands for

collateral become unreliable andunsafe, and not acceptable to only one. Conflicts affect food availability to consumers (M=2.83), demand may reduce (M=2.64), distribution of the whole production circle (M=2.94), leads to depletion of food stocks (M=2.55), erosion of social structure (M=2.66), and reliance on food assistance programs.

Adisa (2011a, 2011, 2012), in a study on Land Use Conflict Between Farmers and Herdsmen–Implications for Agricultural and Rural Development in Nigeria, found that respondents experienced a variety of impacts due to their mutual conflicts. The consequences for both groups included physical, economic, and socio-psychological effects. The outcome of the conflict was identified as the loss or gain of any of the identified resources. Although conflicts are typically viewed negatively, the results indicate that both farmers and herdsmen reported some non-material benefits. For example, 35% of farmers and 29% of herdsmen stated they gained knowledge, while 30.0% of farmers and 17.9% of herdsmen acknowledged gaining social support because of the conflict. The only other aspect considered a 'gain' for both groups was the quality of relationships, although the percentages were very low: 4.1% for farmers and 5.1% for herdsmen. These minimal figures suggest that mutual conflict has a detrimental effect on social relationships. Additionally, 24.6% of farmers and 12.5% of herdsmen reported a decline in the quality of relationships due to conflict. Other non-material resources that were lost included job status (55.6% of farmers and 30.3% of herdsmen), self-esteem (52.9% of farmers and 16.9% of herdsmen); and personal or family health (13.9% of farmers and 16.1% of herdsmen).

However, the loss of material resources was more prevalent among farmers. The loss of income was reported by 91% of farmers, making it the most common, followed by loss of yield (85%), household resources (23.5%), and stored products (23%). In contrast, herdsmen experienced minimal losses, whether material or otherwise. Specifically, 14.3%, 8.9%, 7.1%, and 3.8% of herdsmen reported losses in income, yield, stored products, and household resources, respectively. Regarding non-material resources, 30%, 20%, and 13% of herdsmen reported losses in job status, self-esteem, and quality of relationships, respectively. These statistics for herdsmen were generally lower than those for farmers, indicating that farmers faced greater losses than herdsmen. The findings support the assertions made by researchers such as Ortega, Johnson, Beeson, and Craft (1994), Coelcho (2000), and Bosch (2003) that work-related stress can adversely affect the socio-psychological well-being of farmers' families. Indeed, Ajayi and Allagenyi (2001), Johnson and Johnson (2002), and Daniels (2006) concluded in their respective studies that job-related conflicts often lead to family instability and significant frustration.

Challenges facing respondents in the agrifood value chain

Table 4 shows the challenges faced by respondents in the agrifood value chain management. These include climate change (80%), which poses a significant challenge by impacting production and supply chains. Market volatility (92.6%) leads to fluctuations in the process of goods, which affects the profitability and stability of value. Access to finance (98%) hinders production, as a lack of access to it makes production useless. Digitalization (74.6%) offers opportunities to improve efficiency, transparency, and market access across the value chain.

Where the farmer fails to keep pace with their changing technological world, he is over taken by the reality of the global market. Other challenges include resilience to the situation (72%), sustainability issues in business (78.3%), and infrastructure (94.6%). Building a resilient value chain system is key to withstanding shocks such as natural disasters, diseases/past outbreaks, among others. Agrifood business needs to withstand environmental impacts and social responsibility; the availability of infrastructure plays a role.

Table 4. Challenges faced by farmers in the agrifood value chain

Challenges faced	*Frequency	Percentage
Climate change	241	80.0
Market vitality	278	92.6
Access to finance	294	98.0
Digitalization	224	74.6
Resilience to the situation	218	72.0
Sustainability issues in business	235	78.3
Infrastructures	284	94.6

*Multiple responses.

Land conflict reduction strategies to promote agrifood value chain management

Table 5 shows effective strategies for land conflict reduction. With a discrimination mean (M) index of 2.50, the following strategies were identified: strengthening land tenure security (M=2.95), good land governance practices (M=2.64), inclusive decision-making on land (M=2.57), and conflict resolution mechanisms (M=2.94). The above means that ensuring secure and equitable transparent land administration systems, recognizing customary land ownership, that protects all genuine land uses from unfair displacement or dispassion.

Table 5. Land conflict reduction strategies for agrifood improvement

Strategies to reduce land conflict	Mean	SD
Strengthening land tenure security	2.95	0.67
Inclusive decision-making on land	2.52	0.48
Conflict resolution	2.94	0.44
Promote sustainable management	2.60	0.51
Careful land use planning	2.52	0.76
Handling land Degradation	2.81	0.55
Stakeholder collaborations & partnerships	2.57	0.48
Building trust	2.65	0.30
Capacity building	2.70	0.55
Understanding conflict dynamics	2.81	0.67
Use of alternative disputes resolution	2.51	1.01
Good land governance practices	2.64	0.95

Land use planning and policy development should involve all relevant stakeholders, made up of local communities, farmers, women, and marginalized groups. Then, land needs are fairly taken care of. An accessible and effective mechanism for resolving conflict is social. This can include mediation by traditional leaders, community-based dispute resolution, and legal processes that are fair to all and efficient. Other mechanisms included promoting sustainable land management (M=2.60), careful land use planning (M=2.57), handling degradation (M=2.81), stakeholder collaboration (M=2.57), building trust (M=2.65), capacity building (M=2.70), understanding conflict dynamics (M=2.81), and use of alternative dispute resolution (M=2.51). Promoting sustainable agricultural practices means we are safeguarding everyone.

CONCLUSION

Land conflicts in Nigeria, especially those between farmers and pastoralists, frequently fueled by competition for resources, greatly hinder the agricultural supply chain by interrupting farming activities, displacing communities, and heightening food insecurity. These conflicts, worsened by elements like climate change and a growing population, result in loss of life, damage to property, and diminished agricultural productivity. The consequent instability in food production and distribution ultimately leads to higher food prices and exacerbates poverty levels. Tackling land conflicts necessitates a comprehensive strategy, which includes reinforcing traditional conflict resolution methods, clearly delineating land boundaries, offering alternative sources of income, and encouraging sustainable land management techniques. Nigeria must reconsider its land use strategies for agriculture, shifting from extensive practices to more sustainable and inclusive land management policies.

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