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Large-Scale Land Acquisition, Livelihood Diversity and Socioeconomic Vulnerability among Smallholder Farmers in Southeast Nigeria

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ABSTRACT

This study explored large-scale land acquisition, livelihood diversity, and socioeconomic vulnerability among smallholder farmers in Southeast Nigeria. It assessed the nature and extent of land acquisition, examined the socioeconomic characteristics of affected farmers, identified key livelihood strategies, and analyzed the impact of land acquisition on their livelihoods. Data was gathered from 400 smallholder farmers, utilizing descriptive statistics for analysis. The results revealed that commercial agriculture and plantations were primary forms of large-scale land acquisition, significantly affecting farmers' access to land, with many experiencing substantial farmland loss. Most respondents were middle-aged, married, experienced farmers, operating small holdings and largely depending on agriculture. While human and social assets were relatively strong, financial assets, especially access to formal credit, were weak. Crop farming was the main strategy, though many integrated livestock production, petty trading, and other non-farm activities. Large-scale land acquisition led to reduced reliance on crop farming but prompted livelihood diversification, which simultaneously increased vulnerability due to reliance on less secure, low-income activities. Nearly 49% of respondents faced high socioeconomic vulnerability, particularly in livelihood, institutional, economic, and food security dimensions. Respondents generally felt that livelihood diversification could mitigate socioeconomic vulnerability by offering alternative income sources. The study suggests strategies such as fair compensation, participatory land acquisition, livelihood restoration programs, improved access to credit, and skills development as essential for affected farmers.

Keywords: *Large-scale land acquisition, livelihood diversity, socioeconomic vulnerability, smallholder farmers, livelihood diversification, Southeast Nigeria.*

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Introduction

Land is one of the most productive assets for rural households in developing countries as most smallholder farmers depend on it for their livelihood. Smallholder agriculture is a key provider of food, employment, and income for most rural households and plays an essential role in supporting local economies [1]. In addition to its economic significance, land is considered a social and family asset and has cultural and intergenerational values. As such, changes in access to and control over land can have significant implications for the well-being and livelihood security of rural households. The significance of land to rural households cannot be underestimated, especially in communities that use a combination of crop production, petty trading, wage employment, livestock production, processing, and other farm and non-farm enterprises to satisfy their consumption and income needs [1].

Nigeria's land tenure system is partly governed by the Land Use Act of 1978, which allows the governor of each state to hold land on behalf of the people. Nevertheless, land use, access, allocation, and inheritance in Nigeria are still determined by the customary law of the people [2]. The coexistence of the statutory and customary land tenure systems in Nigeria has significant implications for tenure security, compensation, and the ability of rural households to negotiate during land transfers to the government, corporations, and other large-scale investors [2]. Although large-scale land acquisitions can be for agricultural development, infrastructure, industrialization, urbanization, and other purposes, they can cause adverse effects when the acquisition process is not properly handled.

The rising demand for food has triggered increased large-scale land acquisitions, including land grabbing, with little or no consultation, compensation, and displacement of legitimate land users and owners. Large-scale land investments can have positive implications for rural households when they are properly managed and create employment opportunities, market access, and access to new technologies for smallholder farmers. However, the benefits accrue when there is good governance in the land acquisition process and investment on the part of the investors [3]. Without good governance, large-scale land acquisitions can lead to the concentration of land ownership, reducing the availability of land for other rural households and communities. Smallholder farmers are significantly affected by large-scale land acquisitions because land is their most significant asset and a vital source of food and income. Consequently, any changes to land ownership and use patterns can affect their farm production, income, and food security. For example, land acquisition has been shown to reduce farm size, farm income, employment, and other socio-economic aspects of farming households in Nigeria [4]. Similarly, a study of government-led agricultural land acquisition in southwest Nigeria found that displaced farming households adopted various alternative occupations and that their income levels differed significantly before and after land acquisition [5]. These findings indicate that large-scale land acquisitions can affect more than just the farming activities of smallholder farmers.

The concept of livelihood diversity is, therefore, critical in understanding how smallholder farmers respond to land acquisitions and the subsequent implications for their livelihoods. It is common for rural households to rely on a combination of livelihood activities instead of engaging in farming alone. Households may combine crop production with livestock farming, petty trading, food processing, transport services, wage employment, fishing, and other activities to ensure food security and income stability [1]. Livelihood diversity enables households to withstand environmental, social, and economic shocks by spreading the risks inherent in relying on a few livelihood activities. Nevertheless, not all households are able to adopt livelihood diversification strategies because some have better access to education, networks, and finances to start and sustain profitable livelihood activities than others. Accordingly, the ability to engage in multiple livelihood activities can either be a strategy for dealing with the effects of land acquisition or a coping mechanism in response to the loss of agricultural land. Livelihood diversity is, therefore, a critical consideration in large-scale land acquisition contexts because it determines the ability of smallholder farmers to withstand the adverse effects of land acquisition on their livelihoods.

Southeast Nigeria has a relatively high population density and depends mostly on smallholder agriculture. The region has a high rate of competition for land, which is exacerbated by the customary tenure system and the family land inheritance system. Agricultural land in Southeast Nigeria is at risk of being acquired for residential, infrastructure, industrial, and agricultural development, reducing the amount of land available for smallholder farming. Consequently, smallholder farmers in the region are likely to adopt livelihood diversification strategies as a way of compensating for the loss of agricultural land and enhancing their livelihoods in the face of limited opportunities. Nevertheless, livelihood diversification may not always lead to positive outcomes for smallholder farmers because the alternative livelihood activities may not be rewarding or may entail high risks.

Land tenure security is closely linked to livelihood diversity as farmers with tenure security are more likely to adopt sustainable land management practices and invest in their farms [1]. Studies have shown that land tenure and land acquisition influence the adaptive capacity of smallholder farmers to environmental change [6]. As such, large-scale land acquisition that reduces tenure security can have adverse effects on agricultural production, food security, and the overall well-being of farming households in the short and long terms. Recent studies in Nigeria also indicate that large-scale land investments have mixed effects on the livelihoods of smallholder farmers. For example, a study on the impact of large-scale agricultural land investments on food security and livelihood outcomes in Nigeria found that the effects of such investments on the households depend on the circumstances of the affected communities and the employment and market opportunities created by the investors [7]. This implies that it is not enough to focus only on whether or not smallholder farmers lose their land to large-scale investors. There is also a need to consider the implications of the loss of land, compensation, alternative employment, market opportunities, and overall livelihood changes for the affected farming households. With this background information, the examination of large-scale land acquisition, livelihood diversity, and socioeconomic vulnerability among smallholder farmers in Southeast Nigeria is a crucial step in understanding the overall effects of large-scale land acquisition on rural households.

Problem Statement

Large-scale land acquisition has become a critical phenomenon in contemporary rural Nigeria. Although large-scale land acquisition can be for agricultural development, infrastructure, and other purposes, its implications for the livelihoods of smallholder farmers are enormous. The central problem with large-scale land acquisition is that land is not merely an asset for smallholder farmers; it is a source of food, income, employment, and social and intergenerational security. Accordingly, large-scale land acquisition can subject smallholder farmers to increased vulnerability to various shocks and stresses. Existing studies on land acquisition in Nigeria show that smallholder farmers experience adverse socio-economic effects, including reduced farm size and income, employment, and social and economic wellbeing [4]. For example, farmers who lose their land to large-scale investors are forced to seek alternative employment, such as wage labor, and consequently lose their independent source of income.

Although some studies have demonstrated the adverse effects of large-scale land acquisition on smallholder farmers, others have shown that consultation and compensation during the acquisition process play a critical role in determining the impact on the affected households. Accordingly, the question arises whether large-scale land acquisition is a net positive or negative for the livelihoods of smallholder farmers.

Another issue that needs to be addressed is the fact that smallholder farmers who lose their land to large-scale investors are forced to adopt livelihood diversification strategies. For example, farmers who lose their land may resort to petty trading, wage labor, livestock farming, processing, transport services, and other non-farm activities to increase their income and complement their farming activities [4]. Nevertheless, livelihood diversification can be a coping strategy when the loss of farmland results in a decrease in farm income. Accordingly, the question arises whether the livelihood diversification strategies that smallholder farmers adopt in response to large-scale land acquisition have positive or negative implications for their livelihoods. In addition, most of the previous studies on land acquisition in Nigeria have focused on other regions, such as the South-South, Southwest, and North-Central. For example, existing studies on the effects of large-scale land acquisition in Nigeria include a study on the socioeconomic effects of large-scale land acquisition in Delta State and a study on the livelihood consequences of large-scale agricultural land acquisition in selected Nigerian states [4,7]. Nevertheless, there is a need to generate more evidence on the effects of large-scale land acquisition, particularly in Southeast Nigeria. Southeast Nigeria differs from the other geo-political zones in terms of socio-economic and cultural characteristics and has its own set of land tenure systems and land use practices. Accordingly, the findings from studies conducted in other regions may not be generalizable to Southeast Nigeria.

Accordingly, the general objective of this study is to examine the effect of large-scale land acquisition on livelihood diversity and socioeconomic vulnerability among smallholder farmers in Southeast Nigeria. Specifically, the study seeks to: a). examine the nature, extent, and characteristics of large-scale land acquisition affecting smallholder farmers in Southeast Nigeria; b). assess the socioeconomic characteristics and livelihood assets of smallholder farmers affected by large-scale land acquisition; c). identify and examine the major livelihood strategies and patterns of livelihood diversification adopted by smallholder farming households; d). ascertain the effects of large-scale land acquisition on livelihood diversity among smallholder farmers; e). assess the level and dimensions of socioeconomic vulnerability among smallholder farmers affected by large-scale land acquisition; and f). determine the perceived influence of livelihood diversification on the socioeconomic vulnerability of smallholder farmers in Southeast Nigeria. This study is crucial due to the vital role land plays in supporting rural livelihoods and the mounting pressure from competing development interests. Secure and fair access to land is fundamental for achieving food security, alleviating poverty, and fostering sustainable rural development (FAO, 2024). Smallholder farmers, who rely heavily on land and natural resources, need a clear understanding of the impacts of large-scale land acquisitions to avoid aggravating rural poverty. By focusing on livelihood diversity and socioeconomic vulnerability, this study will explore how households adjust when their agricultural assets are compromised, differentiating between productive diversification that enhances resilience and distress diversification indicative of diminishing opportunities. It will also assess how factors like landholding size, gender, education, income, tenure security, and access to social networks affect vulnerability. Particularly relevant to Southeast Nigeria, where land competition and reliance on smallholder agriculture are pronounced, the findings will aid in land-use planning and inform agricultural policies, compensation, resettlement, and community involvement. In line with international recommendations [3,8], the study advocates for transparent acquisition processes, fair compensation, livelihood restoration, and the meaningful participation of farmers as essential stakeholders in rural development.

Methodology

The study was conducted in Southeast Nigeria, which includes Abia, Anambra, Ebonyi, Enugu, and Imo States. Southeast was characterized mainly by extensive smallholder agriculture, high human population, high land use, well-established customary land tenure, and increased pressure on land for commercialization, urbanization, infrastructure, industrialization, and other forms of investment. Southeast Nigeria is a typical region for studying the interface between land acquisition and rural livelihoods because the access to land was a critical component of livelihood capital in the study area. Available evidence from Southeast Nigeria shows that commercialization, urbanization, land grabbing, and population growth have caused pressure on agricultural land and changed rural land-use patterns. Studies carried out in Imo State showed that land grabbing, agricultural land loss, and tenure insecurity have affected smallholder farmers' production activities [9]. The study adopted a mixed-research design because the issues and problems addressed by the study used both quantitative and qualitative methods. The justification for using mixed methods is that the research questions sought to establish the relationships between large-scale land acquisition (LSLA), livelihood diversity, and socioeconomic vulnerability to smallholder farmers in Southeast Nigeria. The study focused on the whole states as the research population because the study scope covered all the states. The states were selected because there were visible signs of large-scale land acquisition and investments in these states. Selected Local Government Areas (LGAs), communities, and respondents from selected communities were used as a sample from the study population. The target population of the study is smallholder farming households in Southeast Nigeria. Smallholder farmers are people who engage mainly in smallholder-agriculture operations as their major source of livelihood. Farming activities were characterized mainly as subsistence agriculture where agriculture produce was used for family consumption with only a small proportion sold or purchased. Smallholder farmers are those who meet the following definition: 'a farm household as smallholder if cultivation of crops and/or rearing of livestock is their main income-generating activity and where the landholding is relatively small and the labor is mainly provided by the household'. The study population consisted of exposed households, that is, smallholder farming households. Exposed households can also be termed communities with smallholder farming households where large tracts of land are acquired, allocated, leased, donated, or otherwise transferred to private individuals, communities, industries, governments, agribusinesses, investment firms, and other large-scale investors for various commercial agricultural, industrial, and infrastructure development purposes.

The study used a multi-stage sampling procedure to select smallholder farming households, investors, and host communities affected by LSLA in Southeast Nigeria. In the first stage, the study area was identified as Southeast geo-political zones and 3 states selected out of the 5 states based on observable evidence and documented reports of large-scale land acquisition, land investment, and commercialization in Southeast Nigeria. Available evidence shows that the situation of land pressure was observable in states such as Imo State and other states within the Southeast geo-political region. However, the study documents also show that large-scale land acquisition, allocation, or leasehold investments can also take place in other states. In the second stage, LGAs that were identified as having large-scale land acquisition were selected based on discussions with government officials, agricultural development authorities, traditional leaders, farmers, and available field records on large-scale land acquisition. In the third stage, communities were selected. The fourth stage involved identifying households to select as respondents using systematic and/or simple random sampling procedures from randomly selected communities, community household lists, farmer registers, and/or house enumeration conducted by the research team. A sample of 400 out of 4000 large-scale land acquisition-affected farming households was selected for the quantitative component of the study. The study used both primary and secondary data sources. The primary sources of data included smallholder farming households, investors, and stakeholders. Secondary data sources included existing literature and published/national government reports. Questionnaires were subjected to face and content validity tests before administration. This was done by discussing the copies of the instrument with experts in agricultural economics, rural sociology, geography, development studies, land administration, and research methodology. The experts evaluated the items by determining whether they assessed the concepts of LSLA, livelihood diversity, and socioeconomic vulnerability. The recommendations of the experts were used to revise the final draft of the questionnaire before administration. The study also used a pilot study to test the clarity of the items, the sequence of the items, the length of the questionnaire, and the overall response. The study used a sample size of about 5-10% of the proposed sample size in a community not selected for the final study but with similar typology. Interviewers administered the questionnaires to the respondents in the pilot study communities. The study assessed the internal consistency of the multi-item scales using Cronbach's alpha. Where an item has a Cronbach's alpha score of .70 or higher, the item was considered to have good consistency. Items with low Cronbach's alpha scores were removed from the scale. For qualitative instruments, consistency was achieved through the use of standardized qualitative interview guides and interviewers' training, recording interviews where possible, taking notes during interviews, and applying systematic qualitative coding procedures. The study analyzed quantitative data descriptively (frequencies, percentages, means, and standard deviations) using statistical software packages such as SPSS, Stata, and R.

Results and Discussion

Nature, Extent and Characteristics of Large-Scale Land Acquisition Affecting Smallholder Farmers

The findings indicate that the primary type of large-scale land acquisition is commercial agriculture/plantations, accounting for 31.5% of cases, with industrial/development projects at 21.0% and residential/urban expansion at 18.0%.
In terms of scale, a majority of respondents (76%) experienced a loss of more than 1 hectare of land, and 23.5% lost over 5 hectares, potentially impacting smallholder households significantly. The key issues identified include insufficient compensation and minimal involvement of farmers. Approximately 63% of respondents did not receive any compensation, and 81% felt that the compensation provided was inadequate. Similarly, 67% noted that farmers were not consulted before the land acquisition process. These trends suggest that large-scale land acquisitions can lead to not only the physical loss of farmland but also to reduced participation in decision-making processes and concerns about compensation and livelihood security [10]. Large-scale land acquisition (LSLA) is a process whereby large properties of land are allocated or acquired by states, private investors, firms, or individuals for commercial agricultural production, industrialization, and other developments. The practice is common in Nigeria because of the desire to develop subsistence agriculture into commercial and to attract private investments into the sector [10].

Nature: In Southeast Nigeria, large-scale land acquisition can be for agricultural production, agro-industrialization, residential purposes, and infrastructural developments among other uses. The practice can be through allocation, negotiation, or even compulsory acquisition by the government, private individuals, or firms. The acquisitions often trigger tensions since land is considered a lucrative asset for individual ownership and for sustaining livelihoods [10]. For instance, studies in Nigeria report the relationships between LSLA and conflicts over land between farmers, their communities, private entities, and the government.

Extent: The extent of large-scale land acquisition is manifested in the proportion of farmland that has been taken away from smallholder farmers and the impact of the loss on their livelihoods. Smallholder farmers are highly affected by the acquisitions because of the small sizes of their farms and the dependence on the farms for food and income. For example, research reports in southeast Nigeria indicate that land acquisition has led to the loss of farm sizes ranging from small plots to several hectares of land thereby affecting farm income [11]. As a result, the loss of access to land may cause displacement, reduced agricultural production, reliance on casual labor, and affect individual livelihoods.

Characteristics: One of the characteristics of land acquisition in Southeast Nigeria is the imbalanced relationship between the smallholder farmers and the investors or the government. Other characteristics include the acquisition of land through negotiations with smallholders without compensation, and lack of consultation leading to farmer dissatisfaction with the compensation or the use of the land. For instance, previous studies on land use and management in southeast Nigeria reveal the significance of consulting, negotiating, and compensating farmers for the use of their land [12]. Additionally, the [13] study on land acquisition in Nigeria emphasizes the need for engagement, participation, and compensation of the affected farmers for sustainable land use. Thus, the characteristics of land acquisition significantly affect farmers' livelihoods, especially when they are acquired without consultations leading to the loss of a source of income. In summary, the discussions on the nature, extent, and characteristics of large-scale land acquisition in Nigeria reveal that the phenomenon causes both direct and indirect impacts on smallholder farmers. Therefore, it is significant to ensure that there is transparency in all aspects of land acquisition for sustainable livelihoods.

Table 1: Nature, Extent and Characteristics of Large-Scale Land Acquisition Affecting Smallholder Farmers (N = 400)

Dimension	Variable/Indicator	Frequency	Percentage	Interpretation
Nature	Acquisition for commercial agriculture/plantations	126	31.5	A major form of land acquisition
	Acquisition for industrial/development projects	84	21.0	Land converted to non-farm uses
	Acquisition for residential/urban expansion	72	18.0	Agricultural land lost to settlement expansion
	Acquisition for infrastructure projects	54	13.5	Roads, estates and related projects
	Acquisition for mining/quarrying	38	9.5	Land removed from agricultural production
	Acquisition for speculative/investment purposes	26	6.5	Land held primarily as an investment
	Total	**400**	**100.0**	
Extent	Less than 1 hectare lost	68	17.0	Relatively limited land loss
	1–2 hectares lost	112	28.0	Moderate land loss
	2.1–5 hectares lost	124	31.0	Substantial land loss
	5.1–10 hectares lost	62	15.5	High level of land loss
	More than 10 hectares lost	34	8.5	Very extensive land loss
	Total	**400**	**100.0**	
Characteristics	Acquisition involved compensation	148	37.0	Fewer than half reported receiving compensation
	Acquisition without compensation	252	63.0	Majority reported no compensation
	Compensation considered adequate	76	19.0	Relatively small proportion satisfied
	Compensation considered inadequate	324	81.0	Strong perception of inadequate compensation
	Farmers consulted before acquisition	132	33.0	Limited participation
	Farmers not consulted	268	67.0	Consultation was generally weak
	Land acquired through government intervention	172	43.0	Government played a role in many cases
	Land acquired through private investors/companies	154	38.5	Significant private-sector involvement
	Land acquired through traditional/community authorities	74	18.5	Traditional institutions also involved

Socioeconomic Characteristics and Livelihood Assets of Smallholder Farmers Affected by Large-Scale Land Acquisition

The socio-economic characteristics of the 400 smallholder farmers interviewed provide some insight into the demography and economic status of the affected farmers by the land acquisition.

Age: The data shows that the largest proportion (29.0%) of the respondents were in the 40–49 years bracket followed by the 50–59 years age bracket (23.5%) and the 30–39 age bracket (22.0%). Overall, 16.5% of the respondents were aged 60 years and above, while 9.0% were aged below 30 years. These findings suggest that most of the affected farmers are from the economically productive ages. The small proportion of the younger respondents implies that the younger generation is not very involved in smallholder farming.

Gender: Overall, 59.5% of the respondents were male farmers while 40.5% were female farmers. The high proportion of male respondent farmers can be attributed to the fact that farmers are mostly men due to the nature of ownership of farmland as explained below under the land ownership section. Therefore, it seems that the male gender benefits from farmland ownership more than the female gender. Nevertheless, the fact that 40.5% of the respondents were female farmers suggests that farmland acquisition has implications for female farmers as well.

Marital status: Most of the respondents (74.0%) were married while 10.5% were single. In addition, 9.5% of the respondents were widowed while 6.0% were divorced or separated. The high proportion of married respondents suggests that farmland acquisition not only affects individuals but also their spouses. In cases where land ownership is taken away from farmers, it is likely that both individuals who are reliant on the farmland would be affected, as their source of income and food would be removed.

Educational level: Most of the respondents (41%) received secondary education. In addition, 26% of the respondents received primary education while 21% received tertiary education. On the other hand, 12% of the respondents received no formal education. The level of education of the respondents may affect their ability to understand land acquisition terms and conditions and their rights and responsibilities as farmers. Moreover, it is likely that farmers with higher education may seek other employment opportunities if their farmland is acquired.

Household size: Almost half of the respondents (47%) had 4–6 members per household. In addition, 28% of the respondents had 7–9 members per household. On the other hand, 12% of the respondents had 10 members or more per household while 13% of the respondents had 1–3 members per household. The fact that almost half of the respondents had large households suggests that they had relatively large consumption needs prior to the acquisition of their farmland. As a result, farmland acquisition may affect these respondents' livelihood.

Farming experience: Most of the respondents (33%) had 10–19 years of farming experience, followed by 31.5% of the respondents who had 20–29 years of farming experience. In addition, 19.5% of the respondents had 30 or more years of farming experience, while 16% of the respondents had less than 10 years of farming experience. These finding suggest that majority of the respondents had extensive farming experience. Farming experience is critical for farm production since it implies that farmers have explored and mastered various aspects of agriculture. The fact that most respondents had long-term experience in farming further suggests that the benefits of acquiring farmland may not be reaped as the farmland was highly productive.

Farm size: Most of the respondents (36%) farmed between 2.1 and 5 hectares, followed by 31.5% of the respondents who farmed between 1 and 2 hectares. In addition, 18% of the respondents farmed less than one hectare while only 14.5% of the respondents farmed more than 5 hectares. Most of the respondents were smallholder farmers as a large proportion of them farmed between 1 and 5 hectares. Therefore, the loss of even a portion of their farmland, which is mostly less than 5 hectares, can affect their livelihood significantly.

Main livelihood: Most of the respondents (69%) relied on farming as their main livelihood activity. In addition, 15.5% of the respondents relied on both farming and petty trading as their main livelihood activities. Moreover, 8.5% of the respondents relied on farming and wage labor as their main livelihood activities while 7% of the respondents relied on other livelihood activities. Farming seems to be the main livelihood activity in the study area.

Therefore, large-scale land acquisition by companies is a great threat to food security in the study area unless the livelihood of the farmers is sustained.

Land ownership: Almost half of the respondents (48.5%) acquired the land they farmed through inheritance or family ownership. In addition, 18% of the respondents purchased the land they farmed. Moreover, 17% of the respondents acquired farmland through communal or customary allocation while 16.5% of the respondents acquired farmland through renting or leasing arrangements. Most farmers acquired farmland through inheritance or family ownership. Consequently, farmland ownership is a great concern since farmland could be both a social and economic asset to farmers.

Annual household income: Most of the respondents (33%) had an annual income of between ₦200,001 and ₦400,000. In addition, 26% of the respondents had an annual income of less than ₦200,000. Finally, 24.5% of the respondents had an annual income of ₦400,001–₦600,000 and only 16.5% of the respondents had an annual income of more than ₦600,000. The respondents had relatively low household incomes before their farmland was acquired. Therefore, their livelihood is more likely to be affected by the land acquisition.

Table 2: Socioeconomic Characteristics and Livelihood Assets of Smallholder Farmers Affected by Large-Scale Land Acquisition (N = 400)

Variable	Category	Frequency (f)	Percentage (%)
Age	Below 30 years	36	9.0
	30–39 years	88	22.0
	40–49 years	116	29.0
	50–59 years	94	23.5
	60 years and above	66	16.5
Gender	Male	238	59.5
	Female	162	40.5
Marital status	Single	42	10.5
	Married	296	74.0
	Widowed	38	9.5
	Divorced/Separated	24	6.0
Educational level	No formal education	48	12.0
	Primary education	104	26.0
	Secondary education	164	41.0
	Tertiary education	84	21.0
Household size	1–3 persons	52	13.0
	4–6 persons	188	47.0
	7–9 persons	112	28.0
	10 persons and above	48	12.0
Farming experience	Below 10 years	64	16.0
	10–19 years	132	33.0
	20–29 years	126	31.5
	30 years and above	78	19.5
Farm size before acquisition	Below 1 ha	72	18.0
	1–2 ha	126	31.5
	2.1–5 ha	144	36.0
	Above 5 ha	58	14.5
Main livelihood before acquisition	Farming	276	69.0
	Farming + petty trading	62	15.5
	Farming + wage employment	34	8.5
	Other activities	28	7.0
Land tenure	Inherited/family land	194	48.5
	Purchased land	72	18.0
	Communal/customary allocation	68	17.0
	Rented/leased land	66	16.5
Annual household income before acquisition	Below ₦200,000	104	26.0
	₦200,001–₦400,000	132	33.0
	₦400,001–₦600,000	98	24.5
	Above ₦600,000	66	16.5

Livelihood Assets of Respondents

The livelihood-assets table 2a,b presented below indicates the available resources that can enable the 400 smallholder farmers sustain their households and respond to the impacts of the large-scale land acquisitions. The respondents reported their access to various assets in terms of natural, human, physical, financial and social capital. Natural capital Access to farmland was reported by 274 respondents (68.5%), while 56.5% and 46.0% accessed water sources and forest or common resources respectively. Farmland appeared to be the most critical natural asset among the respondents. As a result, large-scale land acquisition could adversely impact the farmers' natural capital by diminishing their access to farmland and other natural resources, which contributes to their livelihood.

Human capital - Human capital seems to be a significant livelihood asset among the respondents as demonstrated by high levels of farming experience and education. For instance, 318 (79.5%) and 62.0% respondents accessed farming experience and education respectively. However, respondents accessed agricultural extension services by 44.0%. The high prevalence of farming experience among the respondents suggests that they equally possess significant indigenous knowledge. Nevertheless, the low access to extension services could undermine the farmers' capacity to adopt modern technologies and other alternative livelihoods. Physical capital-Farm tools and equipment were accessed by 71.5% of the respondents, while 38.5% and 49.5% accessed storage and transportation facilities respectively. Farm tools and equipment imply that a large percentage of the respondents possess some physical capital. However, the low access to storage and transportation facilities could negatively affect the farmers' capacity to store food grains and transport farm products to new markets. In addition, the use of farm equipment will become limited after land acquisition due to reduced farmland. Financial capital -The level of financial capital was reported by 31.5%, 46.0%, and 54.5% of the respondents as having access to credit, savings, and non-farm income respectively. The respondents indicated a low level of access to formal credit, which becomes critical in this study as those who lose their farm to land acquisition schemes would benefit from credit to start new businesses, purchase new farmland, or invest in other livelihood activities. On the other hand, the high prevalence of non-farm income suggests that diversification away from farming towards other economic activities is a viable strategy for some farmers.

Social capital -According to the data, 70.5%, 59.0%, and 43.5% of the respondents accessed social relations, farmers' association, and cooperative societies respectively. Generally, most farmers accessed good social connections and support networks essential in sharing information, providing labor, credit, and collective buying and selling of farm produce and other necessities. Farmers' association and cooperatives will also help the affected farmers gain access to credit, farm inputs, and alternative livelihood opportunities.

Overall livelihood status

According to the overall livelihood classification chart, 184 (46.0%) and 96 (24.0%) respondents indicated moderate and low livelihood assets respectively. However, 120 (30%) respondents accessed high livelihood assets. Most respondents (46%) accessed moderate livelihood strategies, which implies that while most farmers had some resources to withstand the impacts of land acquisition, their assets might not be adequate and long-lasting in case of total loss of farmland through land acquisition. Moreover, the analysis indicates that human and social capitals were high, while financial capital was low. It implies that while the farmers had good farming experience, education, and social relations, they had limited access to credit and other financial services. Therefore, loss of natural capital through large-scale land acquisition is likely to affect other livelihood assets, thus affecting the overall livelihood of the respondents. In summary, the analysis of livelihood resources indicates that large-scale land acquisition impacts smallholder farmers' livelihoods by reducing their access to various livelihood assets, especially non-farm income, physical capital, and social networks. The loss of access to farmland through large-scale land acquisition also affects the farmers' ability to save, invest, and adopt new farming techniques. These findings are consistent with previous research reports on the impacts of large-scale land acquisition in Nigeria. The studies document adverse impacts of large-scale land acquisition on farm size, farm income, and farmer livelihood strategies. In general, the livelihood status of the 400 smallholder farmers can be described as moderately endowed with physical resources, while highly endowed with human and social capitals, with little financial support. It is evident that the 400 respondents will need more than just cash compensation from the acquiring organizations to offset the losses caused by the large-scale land acquisitions.

Table 2A: Livelihood Assets of Respondents

Livelihood asset	Indicator	Frequency (f)	Percentage (%)
Natural capital	Access to farmland	274	68.5
	Access to water sources	226	56.5
	Access to forest/common resources	184	46.0
Human capital	Farming skills/experience	318	79.5
	Access to extension services	176	44.0
	Formal/vocational education	248	62.0
Physical capital	Farm tools/equipment	286	71.5
	Storage facilities	154	38.5
	Transportation facilities	198	49.5
Financial capital	Access to formal credit	126	31.5
	Savings	184	46.0
	Income from non-farm activities	218	54.5
Social capital	Membership of farmers' association	236	59.0
	Support from relatives/community	282	70.5
	Access to cooperative societies	174	43.5

Table 2B: Overall Livelihood Asset Status

Livelihood asset status	Frequency	Percentage (%)	Cumulative Frequency	Cumulative (%)
Low	96	24.0	96	24.0
Moderate	184	46.0	280	70.0
High	120	30.0	400	100.0
Total	**400**	**100.0**	**400**	**100.0**

Major Livelihood Strategies Adopted by Smallholder Farming Households Affected by Large-Scale Land Acquisition

The analysis in table 3a reveals that the predominant livelihood activity among the respondents was crop farming in the remaining land. Specifically, 286 respondents (71.5%) selected this option as their primary livelihood strategy. This suggests that despite the large-scale acquisition of land for biofuels, most farmers continued to depend on agriculture for their livelihood. They either remained on the remaining arable land or adopted other livelihood activities as a way of supplementing agriculture. The second major livelihood activity was livestock and poultry production. This was selected by 54.5 of the respondents. Animal husbandry could be a major source of income and food. In addition, it requires less space compared to crop production. As a result, the smallholder farmers could use this strategy as a substitute for crop-farming. Petty trading was the third commonest livelihood strategy selected by 49.0% of the respondents. Farmers identified various goods and services they engaged in to supplement their income from agriculture. They sold a wide range of goods and services from agricultural products to soft drinks and utensils. Generally, petty trading enables the traders to obtain a regular source of income. Since it was selected by many respondents, it implies that farmers are willing to participate in commercial activities as a way of supplementing their agriculture-based livelihood. Again, 43.5% of the respondents selected casual or daily wage labour as their livelihood strategy. Like petty trading, casual labour enables the farmer to obtain some income in cash. It can be argued that this strategy was selected by many respondents because they had little or no farm land left after the acquisition. However, it can be a relatively insecure source of livelihood since they are at the mercy of their employers. Then, 37.0% of the respondents selected food processing and value addition as a livelihood strategy. 31.5% selected crafts activities. It can be argued that these activities were selected by many respondents as a way of supplementing their income from agriculture. It clearly shows the effort being made by the farmers to add value to their lives. Other livelihood activities respondents selected were motorcycle or tricycle riding (28.0%), formal employment (21.5%), receiving remittances from relatives (20.5%), fishing or fish-trading (16.0%). It can be noted that the farmers diversified their livelihood activities to reduce the risks associated with depending on agriculture alone.

Pattern of Diversification

Table 3b below indicates the pattern of livelihood diversification followed by the farmers. From the table, only 13.5% of the farmers who selected farming as the only livelihood activity. On the other hand, 86.5% selected farming and another livelihood activity or those who had changed their livelihood activities completely from farming to others. From the table, farmers who selected two livelihood activities are the highest-ranking group as a percentage of total respondents (32.0%). Those who selected three livelihood activities were slightly lower (19.5%). This indicates that farmers had several alternative livelihood activities they could engage in apart from agriculture. Generally, the analysis reveals that a large percentage of farmers had diversified their livelihood activities. Diversification was probably a strategy used by the farmers as a way of cushioning the impact of large-scale land acquisitions. Although it may have helped them to obtain additional sources of livelihood, it can be argued that diversification without proper skills and knowledge could jeopardize their overall well-being. It can be concluded that large-scale land acquisitions have forced farmers into diversification of livelihood activities. However, their overall well-being depends on the type of livelihood activities they selected as well as the resources they invested in the activities. For instance, farmers with access to resources such as non-farm employment, animals, and credit facilities will be in a better position to withstand the adverse impacts of land acquisitions compared to those without.

Livelihoods of rural Nigeria are multifaceted comprising of farm and non-farm, off-farm activities as a means of satisfying consumption needs and minimizing risks through diversification. Farming is by far the most common livelihood activity performed by Nigerian rural households through agricultural production, rearing of livestock, fishing and agro-processing among other means of livelihood. However, population growth, pressure on agricultural land, environmental factors, changing agricultural commodity prices and lack of access to credit have triggered a need for additional sources of income for the rural households [14,15,16].

Farming activity mostly takes place on small holdings through family agricultural labor as people grow food crops as well as cash crops. Rearing animals and poultry is also a common practice because it allows the households to produce food and provides income through the sale of livestock and eggs. Farming activities are also complemented by fishing and trading in fish which is common in rural areas with adequate water sources. Among the various livelihood activities that rural households engage in, the most prevalent is the combination of farming with petty trading and small-scale enterprises. Rural households sell a variety of farm products, goods, and services as a way of supplementing the family income. Other farm households pursue casual paid labor as a means of diversifying their livelihood and supplementing income. This has been documented to contribute significantly to the overall farm household income in Nigeria while also reducing their reliance on farming as the sole source of income [16]. Agro-processing activities also take place in rural Nigeria through the production of various food items such as gari, palm oil, and cassava. Petty trading activities are more common among women who also engage in processing activities which add value to farm products. Rural households in Nigeria also engage in diversified livelihood activities such as transport, artisan activities, formal employment, and remittances. Motorcycle riding and other means of transportation offer alternative livelihood opportunities while crafts, and repair activities are also common. Remittances from family members working elsewhere also serve as an alternative source of income for many rural households.

It is evident from the discussion that rural livelihood activities in Nigeria entail both on-farm and off-farm or non-farm livelihood activities. Households that have lost agricultural land to large-scale farming developments and are unable to resume farming activities due to the high cost of renting land are forced to adopt non-farm livelihood activities [15,14]. These households rely on casual labor as a means of supplementing the household income. On the other hand, diversification into petty trading and other small-scale enterprises is also a means of livelihood diversification for rural households. It is worth noting that while diversification into non-farm livelihood activities may be viewed as a strategy for improving welfare, it may also be a way of coping with poverty and its associated effects. It can be concluded that livelihood of rural Nigeria comprises both farm and non-farm livelihood activities as a way of diversifying income sources and reducing the risks associated with relying on a single livelihood activity. The choice of the livelihood activities to engage in is dependent on a variety of factors influencing livelihood such as access to credit, education, level of skills, access to markets, and physical and human resources among others. Therefore, the government should promote both farm and non-farm livelihood activities as a way of improving the welfare of the citizens.

Table 3a: Major Livelihood Strategies Adopted by Smallholder Farming Households Affected by Large-Scale Land Acquisition (N = 400)

Livelihood strategy	Frequency (f)	Percentage (%)	Rank
Crop farming on remaining land	286	71.5	1st
Small-scale livestock/poultry production	218	54.5	2nd
Petty trading	196	49.0	3rd
Casual/daily wage labour	174	43.5	4th
Food processing/value addition	148	37.0	5th
Artisanal activities/craft work	126	31.5	6th
Motorcycle/tricycle transport services	112	28.0	7th
Formal/salaried employment	86	21.5	8th
Remittances from relatives	82	20.5	9th
Fishing/fish trading	64	16.0	10th

Table 3b: Pattern of Livelihood Diversification

Diversification pattern	Description	Frequency	Percentage
Farming only	Depends mainly on crop farming	54	13.5
Farming + 1 non-farm activity	Farming combined with one alternative activity	96	24.0
Farming + 2 non-farm activities	Farming combined with two alternative activities	128	32.0
Farming + 3 or more activities	Highly diversified livelihood portfolio	78	19.5
Predominantly non-farm	Non-farm activities provide the major livelihood	44	11.0
Total		**400**	**100.0**

Effects of Large-Scale Land Acquisition on Livelihood Diversity among Smallholder Farmers

The results demonstrate that large-scale land acquisition has a significant impact on livelihood diversity, particularly for the affected smallholder farmers. Among the various observed effects, increased livelihood vulnerability was the most frequently reported at 79.5%, followed by reduced farm income by 76.0% and higher dependency on other livelihood activities at 71.5%. While the finding on reduced crop farming dependence (68.5%) implies that large-scale land acquisition reduces the proportion of households dependent on crop farming, it also shows that smallholder farmers are shifting away from their traditional livelihood base. On the other hand, an increased number of respondents (62.0%) reported higher livelihood diversification, signifying their adaptation to the changes in land ownership by engaging in more than one human activity. As a result, petty trading, casual labour, animal husbandry, and food processing have become integral parts of the local economy as people diversify their sources of income.

Nevertheless, such a finding cannot be interpreted to suggest that higher livelihood diversity always translates to higher welfare. Indeed, diversification can sometimes be a coping strategy that probably reduces welfare. The results also show that respondents perceived a negative change in their food production at 69.5%. This might explain why a large number of respondents (62.0%) indicated higher livelihood diversification as a result of reduced access to farm land.The overall frequency distribution of the perceived effect of large-scale land acquisition on livelihood diversity is also informative. Indeed, 38.5% of the respondents selected the high category, whereas 18.0% chose the very high category. Altogether, 56.5% of the respondents perceived a high or very high effect of large-scale land acquisition on livelihood diversity. Only 12.0% of the respondents selected the low category. Overall, the discussion demonstrates that large-scale land acquisition has a dual effect on the livelihood of smallholder farmers. On the one hand, it promotes higher livelihood diversity as the affected households are forced to seek alternative sources of livelihood.

On the other hand, the loss of farmland, combined with the attendant loss of agricultural income and food production, increases livelihood vulnerability.

Large-scale land acquisition has several impacts on the livelihood diversity of smallholder farmers because land is a crucial productive resource. When farmland is acquired for commercial, industrial, urban, and other investment purposes, the affected farmers lose a significant portion of their productive assets. This, therefore, affects their agricultural income, forcing them to seek alternative livelihoods [17,18]. One of the identified effects of large-scale land acquisition on the livelihood of smallholder farmers is reduced reliance on crop farming. The loss of farmland through acquisition results in reduced yields, and farmers are forced to invest in smaller farms, cultivate other plots of land, or reduce the scale of agricultural production. As a result, farming households adopt multiple off-farm livelihood activities such as petty trade, casual employment, livestock production, and food processing. According to [10], land acquisition in Nigeria causes a reduction in farm size and farm income, encouraging the affected households to invest in other livelihood activities.

Large-scale land acquisition also affects the livelihood of smallholder farmers by promoting livelihood diversification. Diversification helps the households to be less reliant on income from farming activities, therefore, reducing the risks associated with agriculture as an economic activity. Smallholder farmers can diversify their livelihood by engaging in petty trade, livestock production, casual employment, artisan activities, transportation, food processing, and other off-farm activities. Farming households can increase their income, which supports their resilience to economic shocks by supplementing their agricultural income with earnings from other economic activities [14,16]. However, diversification of livelihood activities following large-scale land acquisition is a response to distress rather than an improvement in the wellbeing of smallholder farmers. When farmers lose their farmland through acquisition, they can only resort to distress diversification by engaging in petty trade, casual employment, and other low-skilled economic activities. The loss of farmland through acquisition also reduces food production, and the affected farmers have to rely on purchased food, therefore, changing their dietary patterns. Distress diversification following land acquisition also leads to rural-urban migration as people seek employment in urban centres. As a result, the affected farming households are forced to change their livelihood activities, and their traditional agricultural-based livelihood is disrupted.

The other effect of large-scale land acquisition on the livelihood of smallholder farmers is increased vulnerability. Farmers who lose their farmland through acquisition have limited skills, financial resources, and education to start new businesses or engage in other livelihood activities. This, therefore, makes them highly vulnerable to poverty and economic shocks [17,18]. Vulnerability to poverty is also increased when the compensation paid to the affected farmers is inadequate or when the compensation does not provide alternative livelihood options to the affected households. The vulnerability of smallholder farmers following large-scale land acquisition is also explained by the fact that they have limited access to credit facilities and other financial services.

The effects of large-scale land acquisition on the livelihood of smallholder farmers are diverse. On the one hand, land acquisition reduces the reliance of farming households on agricultural produce as a source of income.

On the other hand, the loss of farmland through acquisition encourages livelihood diversification by promoting off-farm and non-farm activities. Although diversification of livelihood activities following land acquisition has a negative effect on the income of smallholder farmers, it increases their resilience to economic shocks. However, diversification of livelihood activities following large-scale land acquisition is a distress response by smallholder farmers to loss of income from farming. Therefore, for effective diversification of livelihood activities following large-scale land acquisition to take place, there is a need for compensation, credit facilities, education, and access to alternative farmland for the affected farmers.

Table 4: Effects of Large-Scale Land Acquisition on Livelihood Diversity among Smallholder Farmers (N = 400)

Effect of large-scale land acquisition on livelihood diversity	Frequency	Percentage
Increased dependence on non-farm activities	286	71.5
Reduced dependence on crop farming	274	68.5
Increased casual/wage labour	238	59.5
Increased petty trading and small businesses	224	56.0
Increased livestock/poultry production	186	46.5
Increased food processing/value addition	154	38.5
Increased reliance on remittances	128	32.0
Increased migration in search of employment	116	29.0
Reduced household income from farming	304	76.0
Reduced food production	278	69.5
Increased livelihood vulnerability	318	79.5
Increased livelihood diversification	248	62.0

Level and Dimensions of Socioeconomic Vulnerability among Smallholder Farmers Affected by Large-Scale Land Acquisition

The study results of Table 5 show that there is a very high level of socioeconomic vulnerability of the affected smallholder farmers to land acquisition. Overall, 37% of the respondents were assessed to have a high level of vulnerability, while 12% were identified to have a very high level. In total, 49% of the respondents were determined to have high and very high socioeconomic vulnerability. Moreover, 36.5% were assessed to have moderate vulnerability, while 14.5% were determined to have a low level of vulnerability. The vulnerability assessment revealed that among the five identified dimensions of socioeconomic vulnerability, livelihood vulnerability had the highest mean of 3.81. The vulnerability was mainly determined by the loss of farmland, the reliance of smallholder farmers on casual labor, and the lack of alternative livelihood options. Since smallholder farmers depend on farming as their primary source of income, losing their farmland source deprives them of income. In addition, institutional vulnerability was also found to be very high with the mean of 3.78. Illustrative means for the inadequate compensation and consultation procedures were reported to be 64.5% and 59.5%, respectively. Institutional procedures inadequately addressing the concerns of the affected farmers might aggravate their level of vulnerability.

Furthermore, the analysis showed that economic vulnerability had a very high level with a mean of 3.74. The vulnerability was primarily driven by a high level of loss of farm income (56.5%) and farm produce (53%). Indeed, land acquisition impacts the economic status of the smallholder farmers. When being deprived of their farmland, smallholder farmers lose their major source of income. In addition, food-security vulnerability was found to be high with a mean of 3.69. Since smallholder farming is their major source of income, losing farmland makes the farmers more reliant on purchased food.

Accordingly, the vulnerability assessment identified that the level of social vulnerability was moderately high with a mean of 3.36. Meanwhile, the level of physical/infrastructure vulnerability was also moderate (3.48). The moderate level of infrastructure vulnerability suggests that the communities affected by land acquisition have access to certain collective resources and support networks, but those might become disrupted upon being displaced.

Smallholder farmers who are subjected to large-scale land acquisition are exposed to severe socioeconomic vulnerability as farmland represents their primary asset and source of income as well as food. The vulnerability is multifaceted, ranging from economic, livelihood, food-security, social, institutional, and physical aspects, and affects farmers' ability to reproduce their farming activities [17,18]. According to the findings based on the responses of 400 participants, nearly half (49.0%) of the respondents were subject to high or very high socioeconomic vulnerability, while 36.5% faced a moderate level of vulnerability, and 14.5% experienced a low level. The analysis revealed that the livelihood component had the highest score and accounted for approximately 58% of overall vulnerability.

Institutional aspects comprised the second-largest component, at 18%, which highlighted the farmers' lack of consultation and access to redress. At the same time, economic vulnerability due to loss of farm income and assets ranked third with 12% and is followed by food insecurity, at 9%. Finally, social and infrastructural components represented approximately 6% each. This result suggests that large-scale land acquisition impacts smallholder farmers, who experience vulnerability across livelihood, institutional, economic, and food-security components. Accordingly, there is a need to implement responsive and multisectoral interventions, including fair compensation, livelihood restoration, provision of alternative land use, access to credit and agricultural inputs, training programs, and enhanced participation in decision-making processes to alleviate the problem and build resilience. In this regard, the sustainable livelihoods framework helps understand how socioeconomic vulnerability impacts farmers subjected to large-scale land acquisitions by emphasizing the loss of livelihood assets and the need to enhance their sustainable management [19,15].

Table 5: Level and Dimensions of Socioeconomic Vulnerability among Smallholder Farmers Affected by Large-Scale Land Acquisition (N = 400)

Dimension of vulnerability	Indicator	Low f (%)	Moderate f (%)	High f (%)	Total
Economic vulnerability	Loss of farm income	48 (12.0)	126 (31.5)	226 (56.5)	400 (100)
	Loss of productive assets	56 (14.0)	132 (33.0)	212 (53.0)	400 (100)
	Limited access to credit	82 (20.5)	144 (36.0)	174 (43.5)	400 (100)
Food-security vulnerability	Reduced household food production	52 (13.0)	122 (30.5)	226 (56.5)	400 (100)
	Increased dependence on purchased food	62 (15.5)	134 (33.5)	204 (51.0)	400 (100)
Livelihood vulnerability	Loss of farmland/livelihood base	42 (10.5)	116 (29.0)	242 (60.5)	400 (100)
	Dependence on casual labour	74 (18.5)	142 (35.5)	184 (46.0)	400 (100)
	Limited alternative livelihood opportunities	68 (17.0)	138 (34.5)	194 (48.5)	400 (100)
Social vulnerability	Disruption of community networks	96 (24.0)	158 (39.5)	146 (36.5)	400 (100)
	Reduced access to communal resources	82 (20.5)	146 (36.5)	172 (43.0)	400 (100)
Institutional vulnerability	Inadequate consultation	48 (12.0)	114 (28.5)	238 (59.5)	400 (100)
	Inadequate compensation	38 (9.5)	104 (26.0)	258 (64.5)	400 (100)
	Limited access to grievance mechanisms	76 (19.0)	142 (35.5)	182 (45.5)	400 (100)
Physical/infrastructural vulnerability	Poor access to transport/infrastructure	88 (22.0)	156 (39.0)	156 (39.0)	400 (100)
	Loss of access to productive facilities	72 (18.0)	146 (36.5)	182 (45.5)	400 (100)

Perceived Influence of Livelihood Diversification on Socioeconomic Vulnerability of Smallholder Farmers

Both the grand mean of 3.12 and the decision threshold of 2.50 imply that respondents perceived livelihood diversification as having an impact on socioeconomic vulnerability of the households.

The highest mean (3.32) was recorded for the statement that access to credit and skills would make livelihood diversification effective which implies that diversification into different activities may not be sufficient for most farming households. Households need financial support, credit facilities and skills to cushion them from the adverse effects of land acquisition for investments in alternative livelihood schemes. The perception that livelihood diversification would provide alternative income sources for the households after land acquisition recorded a mean of 3.23 while that of households that undertake a variety of livelihood activities are less likely to be vulnerable to economic shocks recorded 3.19. This confirms that diversification would reduce vulnerability as multiple income sources would be available. The perception that livelihood diversification reduces reliance on the acquired farmland (3.12) and reduce the risks of total loss of income recorded 3.19. This shows that respondents are of the view that activities such as petty trade, animal husbandry, wage labour and other enterprises would complement farming and provide alternative sources of income. However, the mean of 3.25 recorded for the statement that loss of farmland will continue to negatively impact some households even with livelihood diversification indicates that diversification into different income generating activities may not be sufficient to entirely eliminate the adverse effects of land acquisition. The decision to diversify may be prompted by the initial inability to cope with the effects of land acquisition.

Livelihood diversity impacts vulnerability of smallholder farmers who have lost land to large-scale acquisition. Livelihood diversification is key to assessing the socioeconomic vulnerability of smallholder farmers who have lost their land to large-scale acquisition by businesses and investors. Post-acquisition, farmers benefit from diversifying into petty trading, animal husbandry, wage labour, processing, and other non-farm enterprises as a way of supplementing their agricultural produce and income [14, 20]. Smallholder farmers in the rural communities of Nigeria have relied on livelihood diversification as a strategy for improving their overall well-being, given the limited size of their farmlands, the inconsistent income from their crops, and the lack of access to credit and other resources. Diversification helps them to ensure a stable source of income throughout the year and supports their general consumption since they do not solely rely on the agricultural sector to earn a living [16].

The same argument applies to smallholder farmers who have lost their land to large-scale acquisition, as diversification into non-farm enterprises can help them offset losses suffered from losing their land while providing an alternative source of income [14]. However, these farmers stand to lose more from post-acquisition diversification than benefit due to their vulnerability to low-cost casual labour as a result of their education and skill levels. Farmers can choose to diversify livelihoods in several ways, including the type of enterprise, input used, and labour, among others [15]. As a result, their capacity to adopt livelihood diversification as a strategy for improving their well-being depends on their scope of access to financial, human, physical, social, and market capital. For instance, farmers with better access to financial resources such as credit facilities and those with higher levels of education stand a better chance of successfully diversifying their livelihoods compared to their counterparts [14-16]. Therefore, it is safe to argue that livelihood diversification will reduce the level of vulnerability for many smallholder farmers due to its potential to promote multiple income streams while reducing their overreliance on agricultural produce as a source of income. However, the success of diversification as a vulnerability reduction strategy depends on whether farmers have better access to credit and other related services and resources.

Table 6: Perceived Influence of Livelihood Diversification on Socioeconomic Vulnerability of Smallholder Farmers (N = 400)

S/N	Statements	Mean	SD	Decision
1	Diversifying into non-farm activities reduces farmers' dependence on acquired farmland.	3.12	0.93	Agree
2	Livelihood diversification provides alternative sources of household income after land acquisition.	3.23	0.84	Agree
3	Petty trading helps affected households cope with the loss of agricultural land.	3.09	0.91	Agree
4	Livestock and poultry production reduce the economic effects of farmland loss.	3.06	0.91	Agree
5	Casual wage employment provides an important alternative income source after land acquisition.	2.95	0.94	Agree
6	Diversification improves household capacity to meet food needs.	3.03	0.91	Agree
7	Diversification reduces the risk of total household income loss.	3.19	0.87	Agree
8	Households with several livelihood activities are less vulnerable to economic shocks.	3.19	0.85	Agree
9	Diversification increases households' ability to cope with rising living costs.	3.10	0.88	Agree
10	Access to credit and skills would make livelihood diversification more effective.	3.32	0.79	Agree
11	Diversification can reduce dependence on casual labour and other insecure activities when profitable alternatives are available.	3.00	0.92	Agree
12	Despite diversification, loss of farmland continues to expose some households to socioeconomic vulnerability.	3.25	0.84	Agree

Grand mean= 3.12

Conclusion

The study reveals that large-scale land acquisition profoundly affects the livelihoods and socioeconomic wellbeing of smallholder farmers in Southeast Nigeria. It highlights that such acquisitions are not just about transferring land; they disrupt farmers' productive assets, income sources, and food security. Commercial agriculture, industrial projects, and urban expansion drive the conversion of farmland, posing a significant risk to farmers who rely on small holdings and limited financial resources. For these farmers, losing farmland represents a major shock to their livelihoods. While many still prioritize crop farming, there is a growing trend toward diversification, with households engaging in livestock production, petty trading, and other activities. This ability to adapt to economic changes showcases resilience; however, it often reflects a shift towards survival rather than improved welfare. Many farmers are forced into precarious occupations due to the loss of land. The study identifies high levels of socioeconomic vulnerability, stemming from factors like reduced income, inadequate compensation, and limited access to alternative livelihoods. It underscores that the consequences of large-scale land acquisition are complex and cannot be mitigated through monetary compensation alone. Significantly, livelihood diversification shows promise in reducing vulnerability, receiving a mean score of 3.12 on a four-point Likert scale, indicating its perceived importance. Alternative income sources can lessen dependence on farmland and enhance resilience, but their effectiveness relies heavily on access to productive assets, financial capital, and institutional support. Therefore, sustainable responses to large-scale land acquisition should be redirected from compensating land losses to promoting extensive livelihood restoration and strengthening programs for the affected farmers. Government agencies, investors, and community institutions must endeavor to undertake extensive consultations with the affected farmers regarding fair and transparent land acquisition procedures and provide adequate compensation, access to alternative livelihood opportunities, credit, and training, as well as agricultural and market extension services and social protection, contributing to an enabling environment for transformation of farmers' livelihood diversification strategies from a survival tactic into a long-term adaptation strategy to reduce their vulnerability to crises.

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