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RESEARCH ARTICLE

Home Gardening and Household Benefits in Akinyele Local Government Area, Ibadan, Nigeria

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Abstract

Food insecurity remains a major challenge, particularly in developing countries. Despite the global relevance of home gardening to the attainment of Sustainable Development Goals (SDGs) 2 and 3, which focus on ending hunger, ensuring food security, and promoting good health, empirical evidence on its utilization and optimization among peri-urban dwellers is limited. This study examines home gardening practices and associated benefits in the peri-urban area of Akinyele Local Government, Ibadan, Nigeria. Anchored on the Survival Strategy concept, a cross-sectional survey design was adopted. Primary and secondary data were collected, and 252 structured questionnaires were administered to heads of households using a snowball sampling technique from 725 houses within selected residential areas. Data were analysed using descriptive and inferential statistics at $p < 0.05$. Findings show that most home gardeners were male (57.9%), with 47.2% having a tertiary education. A majority (57.4%) utilized land sizes between 200–500 m², mainly located in backyard spaces. The key benefits derived from home gardening were food security (35.8%) and improved health (33.2%). Major challenges included limited space (30.2%), poor soil quality (17.0%), and pest infestation (15.5%). A significant positive correlation was observed between residential plot size and the extent of home gardening ($r = 0.353$). The study concludes that although home gardening is vital for achieving SDGs, its practice is constrained by inadequate planning. Supportive physical planning policies, community-based initiatives, and awareness creation are therefore recommended to enhance sustainable food security.

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1. INTRODUCTION

Food insecurity remains one of the most pressing global challenges of the twenty-first century. Nearly 3 billion people worldwide struggle to afford nutritious food, reflecting the scale and severity of the crisis (FAO, 2020). The situation worsened in 2020, when the number of undernourished individuals increased by an estimated 117.7 million compared with the previous year, bringing the global total to approximately 768 million (FAO, IFAD, UNICEF, WFP, & WHO, 2022). This alarming rise in food shortages demonstrates the vulnerability of food systems, particularly within developing regions. The World Health Organization (WHO, 2022) revealed that 928 million people worldwide suffer from severe food insecurity, with Asia accounting for 471 million and Africa 347 million (Ghosh *et al.,* 2023). These statistics underscore that food insecurity is disproportionately concentrated in developing countries, particularly Sub-Saharan Africa, where multiple interrelated factors undermine food availability and access. Price hikes, violent conflicts, kidnapping, boundary disputes, civil strife, epidemics, limited agricultural technologies, political instability, unsustainable

farming practices, and rapid population growth continue to intensify the inability of households and governments to meet rising food demands (Oyekale & Ijaiya, 2022; Bakshi *et al.,* 2021). In response to these challenges, home gardening has emerged as a sustainable, community-driven, and self-induced solution that enhances food production, nutrition, and resilience. Beyond providing food, it also contributes to biodiversity, environmental sustainability, and household income generation. Surplus produced from these gardens may be sold to supplement family income or shared with neighbours, thereby strengthening community food systems (Marsh, 1998; Adekunle, 2013).

More importantly, home gardening often includes growing vegetables, fruits, and herbs, while enhancing aesthetics and ecological diversity through flower beds that support bird and insect life (Galhena *et al.,* 2013). The importance of home gardening became particularly evident during the COVID-19 pandemic, when movement restrictions disrupted food supply chains globally. At this time, home gardening served as a coping mechanism and a resilience strategy, enabling households to maintain access to fresh produce despite market shortages (Pulighe & Lupia, 2020). Recognized as part of sustainable urban food systems, home gardening reduces dependency on long and often fragile supply chains, while promoting healthier diets and community well-being (Orsini *et al.,* 2013; FAO, 2021).

In Nigeria, home gardening practices can be categorised into three broad systems: traditional, improved, and developed. Traditional home gardening is widespread in rural and peri-urban communities, relying on indigenous knowledge and local resources to cultivate vegetables, fruits, and herbs (Odebode, 2006). While these gardens often contribute to household nutrition, they face challenges such as land scarcity and low yields, limiting their productivity (Adekunle, 2013). Improved home gardening, on the other hand, incorporates modern agricultural techniques such as the use of improved seeds, fertilizers, and pest control methods. Although requiring more input and technical support, these gardens achieve higher yields and provide greater dietary diversity and benefits (Galhena *et al.,* 2013; FAO, 2021). Developed systems, though less common, represent advanced approaches to home gardening, often integrating irrigation, innovative technologies, and year-round cultivation practices. The benefits of home gardening are multifaceted. For low-income households, it provides a reliable source of nutrient-rich foods, such as vegetables and legumes, helping to combat malnutrition and diet-related diseases (Galhena *et al.,* 2013). By reducing reliance on volatile global food markets, households practicing home gardening gain resilience against food price fluctuations and economic shocks (FAO, 2021). Furthermore, these gardens support maternal and child health by supplying essential nutrients to pregnant and breastfeeding women (WHO, 2022). Despite its potential, home gardening in Nigeria still faces numerous challenges, including limited access to land, poor access to improved seeds and inputs, inadequate extension services, and a general lack of awareness about its potential benefits (Bakshi *et al.,* 2021; Oyekale & Ijaiya, 2022). Addressing these barriers is crucial for unlocking the full potential of home gardening as a strategy to improve food security, reduce poverty, and enhance livelihoods and the full realization of SDG goals 2 and 3 in cities where rapid population growth and urbanization are increasing food demand.

2. STATEMENT OF THE PROBLEM

Food insecurity remains one of the most pressing global development challenges, with urban and peri-urban households particularly vulnerable due to limited access to agricultural land, rapid urbanization, and socioeconomic inequalities. Although home gardening has become an emerging strategy with its promising potential to enhance food security, improve dietary diversity, and provide households with additional sources of income, its full potential is yet to be realized in many low- and middle-income settings (Galhena, Freed, & Maredia, 2013; FAO, 2021). Its nutritional benefits have not been effectively realised in Nigeria, where food insecurity is exacerbated by population growth, climate change, and economic instability, but home gardening represents a potentially effective but underutilized intervention for achieving sustainable urban food systems (Oyekale & Ijaiya, 2022). Despite its advantages, the practice of home gardening faces several challenges. Many urban and peri-urban households encounter difficulties such as lack of access to land, insufficient water resources, scarcity of agricultural inputs, and limited knowledge of sustainable farming practices (Odebode, 2006; Adekunle, 2013). These constraints are compounded by poor infrastructural support, financial limitations, and the absence of enabling government policies that could promote home gardening as part of urban planning strategies (Orsini, Kahane, Nono-Womdim, & Gianquinto, 2013). The problem is further aggravated by climate change, which disrupts rainfall patterns and reduces crop yields, thereby intensifying the vulnerability of urban populations who depend heavily on external food supplies (Pulighe & Lupia, 2020). As agricultural land in peri-urban areas continues to shrink due to urban expansion, the urgency of integrating home gardening into sustainable food system planning

becomes more apparent. Without such integration, the nutritional and economic contributions of home gardening remain largely untapped, limiting its potential to address urban hunger and poverty (Bakshi, Kumar, & Srinivasan, 2021).

In view of the importance of home gardens as a cushion against food shortages, awareness of this agricultural method remains low. Also, home gardens have no statutory status in residential land-use allocation and analysis. Community support for the sustainability of home garden practice is very low; therefore, residents have little regard for home gardening despite its environmental, economic and nutritional benefits. Some residents engage in activities that inhibit the practice of home gardening to further exacerbate the food shortage.

3. CONCEPTUAL REVIEW

The concept of survival strategy provides an anchor for this study. The concept was originally developed by Michael Lipton, a prominent economist, in his 1977 book, Why Poor People Stay Poor: A Study of Urban Bias in World Development. Lipton's work explored how rural households in developing countries navigate economic hardships by developing adaptive strategies such as income diversification, migration, and small-scale agriculture to cope with poverty, food insecurity, and unstable income (Lipton, 1977). This concept has expanded significantly with frameworks like the Sustainable Livelihoods Framework (SLF) by the UK Department for International Development (DFID). The SLF incorporates five forms of capital—human, natural, physical, social, and financial—to analyse how households cope and maintain livelihoods (DFID, 1999; Scoones, 1998). This framework shows that households rely on various resources to adapt to changing conditions, diversify livelihoods, and reduce dependence on volatile external markets, especially in peri-urban areas (Chambers & Conway, 1992; Scoones, 2009). More recent studies emphasize home gardening as a critical survival strategy in peri-urban areas, serving not only food production but also managing economic challenges like high food prices and inflation.

Mulugeta et al. (2020) found that urban and peri-urban households engaging in home gardening reported improved food security and green infrastructure, contributing directly to their resilience against market fluctuations and food scarcity. Home gardening also enhances food sovereignty by enabling households to produce nutritious foods that are difficult to afford or access conventionally (Galhena, Freed, & Maredia, 2013; FAO, 2021). This diversification mitigates risks from over-reliance on a single income or food sources, a common challenge in low-income, peri-urban communities (Oyekale & Ijaiya, 2022). The integration of survival strategies into home gardening research is also enriched by studies on environmental sustainability, linking it to adaptive strategies against climate change, with households modifying techniques using climate-resilient crops and sustainable agricultural practices (Pulighe & Lupia, 2020; Orsini *et al.,* 2013). This adaptive response contributes to the long-term sustainability of food production, making it a crucial component of both household food security and community resilience. Households cultivate gardens to produce food, reduce expenditures on market-purchased food, and act as a buffer against shocks like rising food prices or income losses (Adekunle, 2013; Odebode, 2006). This concept frames home gardening as a deliberate and adaptive response to the challenges of urbanization and food insecurity.

4. STUDY AREA

The study area is the Akinyele Local Government Area (LGA) in Oyo State, Nigeria. Geographical location: The area lies at a latitude of 7.53090 North of the equator and a longitude of 3.91100 East of the Greenwich meridian. It is one of the eleven local government areas that make up the Ibadan metropolis, with its headquarters at Moniya. Established in 1976, it covers 464.892 square kilometers and shares borders with Afijio Local Government to the north, Lagelu Local Government Area to the east, Ido Local Government Area to the west, and Ibadan North Local Government Area to the south. The LGA has a population density of 516 persons per square kilometer. It was named after the late Olubadan, Isaac Babalola Akinyele. The local government is governed by an elected chairman and 12 councilors, one elected from each ward. The population of the Akinyele local government was projected to be 239,745 in 2010. The sex structure revealed slightly more females than males, with a narrow difference of 435 in their figures. The area is characterised by a predominance of the Yoruba ethnic group, which constitutes over 95% of the total population. Other notable ethnic groups include Hausa (mostly residing in Sasa), Igbo, Edo, Fulani, Nupe, Tivs, and Efiks, among others. Agriculture is the major occupation due to the favorable climate and soil conditions. However, trading and civil service work are now competing with agriculture. Most markets in the area are periodic, as farmers also market their surplus agricultural products. Akinyele Local Government is

highly heterogeneous and metropolitan, particularly in areas like Ojoo, Orogun, Sasa, Moniya, and Akinyele, where residents from different tribes and foreign nationals reside.

The LGA also hosts several notable institutions, including the Nigerian Institute of Social and Economic Research (NISER), International Institute of Tropical Agriculture (IITA), Federal School of Statistics, the proposed Dominican University, Second Mechanized Division (Odogbo Cantonment), and a significant percentage of the University of Ibadan Land area around Apete falls within the local government. Akinyele local government area has a tropical wet and dry climate (Köppen climate classification Aw), with a lengthy wet season and relatively constant temperatures throughout the year. Ibadan's wet season runs from March through October, with a lull in precipitation in August, effectively dividing it into two wet seasons. November to February forms the city's dry season, during which Ibadan experiences the typical West African harmattan. The mean total rainfall for Ibadan is 1420.06 mm, falling in approximately 109 days. There are two peaks for rainfall, in June and September. The mean maximum temperature is 26.46 °C, the minimum 21.42 °C, and the relative humidity is 74.55%.

5. METHODOLOGY

The study utilized a combination of observational and cross-sectional survey research designs to investigate home gardening practices and benefits in peri-urban areas of Akinyele LGA. This design allowed for the collection of both qualitative and quantitative data through observation, questionnaires, and interviews. The observational approach allowed for the measurement of the proportion of land size apportioned for gardening by residents. Both primary and secondary data were utilized. Primary information was sourced through a structured questionnaire. A total of 252 questionnaires were administered using the snowball sampling technique. The method was adopted because home gardeners in peri-urban areas are neither formalized nor registered, nor easily accessible. Respondents were identified through community residents who are gardeners, who referred us to other home gardeners. This process continued until the required sample size in each community was realized. The 252 questionnaires were proportionally distributed across six communities based on the number of buildings in each area to ensure community representation. To reduce bias, referrals were drawn from diverse social groups, and respondents were screened to confirm their involvement in home gardening. Issues that were raised include socio-economic characteristics of the respondents, characteristics of respondents' housing, home gardening size, and benefits of home gardening. Data was analyzed using both qualitative and quantitative methods using the Statistical Package for Social Sciences (SPSS). Secondary data was sourced from both published and unpublished journals and seminar papers related to home gardening. Information on the population and map of the study area was obtained from the National Population Office in Ibadan and the Ministry of Lands and Survey, Ibadan, Oyo State.

6. FINDINGS AND DISCUSSION

6.1 Characteristics of home gardeners

The study showed that both male and female genders are involved in the practice of home gardening. 57.9% of the respondents were male, while only 42.1% were female. This revealed that domestic gardening is not gender restricted. The majority (66.2%) of gardeners are adults aged between 31 and 59 years, in the working years. It is noteworthy that the largest proportion of the respondents had a tertiary education.

Table 1. Socio-economic Characteristics of Respondents

Variable	Response	Frequency	Percentage
Gender gender	Male	145	57.9
	Female	107	42.1
	Total	**252**	**100.0**
Age	60 years and above	31	12.6
	46-59 years	98	39.8
	31–45-years	65	26.4
	18-30 years	40	16.3
	less than 18 years	12	4.9
	Total	**252**	**100**
Level of Education	No formal education	23	9.1
	Primary	19	7.5

Variable	Response	Frequency	Percentage
	Secondary	83	32.9
	Tertiary	119	47..2
	Total	**252**	**100**

Source: Field survey, 2025

6.2: Characteristics of Respondents' Housing

Approximately 66.7% of the respondents reside in bungalows or flat houses, and 64.7% of their buildings were not occupied by tenants, suggesting sole occupancy or ownership. Structurally, 61.1% of buildings were fenced, with 71.4% of these buildings characterized by gated fences, indicating a strong emphasis on security, possibly against pilfering or theft of crops. Open drainage was prevalent in 67.1% of the sampled buildings, while 14.7% had no drainage system. Floor surfaces were characterized by bare surfaces (49.6%) and partly paved surfaces (48.8%). This revelation showed that almost all buildings in the peri-urban area have suitable surfaces for gardening if the owner desires to practice home gardening.

Table 2. Characteristics of Respondents' Housing

Variable	Responses	Frequency	Percentage
Type of house occupied	Bungalow (Flat)	168	66.7
	Duplex	26	10.3
	Tenement house	58	23.0
	Total	**252**	**100.0**
Building occupant	Tenant and owner	89	35.3
	Owner only	163	64.7
	Total	**252**	**100.0**
Fenced building	Yes	154	61.1
	No	95	37.7
	Total	**252**	**100.0**
Gated building	Yes	110	43.7
	No	87	34.5
	Total	**252**	**100.0**
Drainage system	Open drainage	169	67.1
	Closed drainage	45	17.9
	No drainage	37	14.7
	Total	**252**	**100.0**
Compound Floor surface	Bare soil	125	49.6
	Paved with concrete	62	24.6
	Partially paved	61	24.2
	Total	**252**	**100.0**

Source: Field survey, 2025

6.3 Characteristics of home gardening practice

The majority (57.4%) of home farmers' residential plot sizes ranged from 200 to 500m². This showed that the residential plots are of varying sizes, yet the owners still apportioned space for gardening. Approximately 42.6% of respondents allocated 10 to 30% of their total land size for gardening. These farming operators (54.62%) predominantly located the home garden in the backyard. Other common locations include frontage and undeveloped space beside the buildings, which shared a proportion of 20.17% and 18.91%, respectively. The dominance of backyard gardening aligns with its perceived convenience, accessibility, and security of the farm product.

Table 3. Characteristics of Home Garden

Variable	Responses	Frequency	Percentage
Household plot size	Less than 200 m²	47	18.7
	200–500 m²	144	57.4
	500–1000 m²	54	21.5
	More than 1000 m²	6	2.4
	Total	**252**	**100.0**
The proportion of land allocated for home gardening	Less than 10%	83	33.1
	10–30%	107	42.6
	30–50%	34	13.5
	More than 50%	28	10.8
	Total	**252**	**100.0**
Garden Location	Balcony	15	6.3
	Frontage	48	20.17
	Backyard	130	54.62
	An undeveloped plot beside the house	45	18.91
	Total	**238**	**100**

Source: Field survey, 2025

6.4 Benefits of home gardening

The major benefits derived from home gardening are food security (35.8%) and health gain (33.2%). A proportion of 19.0% derive financial benefits as a secondary benefit from home gardening. Specific impacts highlighted include improved nutrition (39.3%) as the most cited benefit, followed by reduced household food expenses (30.3%) and additional income (21.8%) from the household. Personal interest (50.0%) was the primary motivating factor for engaging in home gardening, followed by economic reasons (23.6%) and health benefits (16.3%). The primary motive for home gardening was overwhelmingly for household consumption (66.7%), directly contributing to access to fresh food, which increases food security. Beyond economic and nutritional benefits, home gardening also offers health and well-being advantages through physical activity, stress relief, and a sense of accomplishment. The act of growing one's own food also instils a strong sense of pride and self-reliance.

Table 4. Benefits derived from home gardening

Variable	Responses	Frequency	Percentage
Level of Benefits	Very beneficial	167	66.3
	Moderately beneficial	78	31
	Not beneficial	6	2.4
	Total	**252**	**100.0**
Types of benefits derived from home gardening	Food security	128	35.8
	Health reasons	119	33.2
	Income Generation	68	19
	Environmental Improvement	43	12
	Total	**252**	**100.0**

Source: Field survey, 2025.

6.5 Test of association between socio-economic attributes and home gardening practice

The Pearson Correlation Coefficient result (r = 0.353) and a p-value of 0.000 revealed that a significant positive correlation exists between residential plot size and the extent of home gardening (Table 5). This

revelation indicates that larger plots tend to have a greater proportion of land dedicated to gardening, suggesting that socioeconomic attributes related to land ownership or access to land can significantly influence involvement in home gardening.

Similarly, the Chi-Square test value (40.793) with 9 degrees of freedom, and the p-value (0.000) is extremely low, which is well below the typical significance level of 0.05 (Table 6). This means that the observed relationship is due to random chance. Socio-economic attributes, particularly household size, were found to be significantly associated with involvement in home gardening, suggesting that larger households are more likely to engage in this farming practice to meet their needs.

Table 5. Spearman's rho Test of association between plot size and allocation to home gardening

		Size of your house plot	**The percentage of the plot is allocated to home gardening**
size of your house plot	Pearson Correlation	1	.353**
	Sig. (2-tailed)		.000
	N	**252**	**252**
The percentage of the plot is allocated to home gardening	Pearson Correlation	.353**	1
	Sig. (2-tailed)	.000	
	N	**252**	**252**

Table 6. Chi-Square Tests

	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	40.793[a]	9	.000
Likelihood Ratio	43.245	9	.000
N of Valid Cases	252		

6.6. Discussion of Findings

Home gardening has been widely adopted by households in Nigeria and in some other countries of Sub-Saharan Africa to cushion the effects of food shortage. Both males and females are involved in the home farming practices. The study revealed that more than half (57.9%) of the home gardeners are male, which is at variance with the common belief that women are more involved in compound farming (FAO, 2021). The majority (47.2%) of home gardeners had a tertiary education, which is like the finding of Odebode (2023), where 53% of the respondents had a tertiary education. Education enhances knowledge of gardening techniques and awareness of nutrition, which drives participation and sustains their involvement. The work of Adeosun et al. (2025) is synonymous with the above, where they emphasized that some socio-economic attributes, such as marital status, income, and size of the household, influenced the practice of home gardening. It was revealed that married families with many households often practice home gardening. The size of the household may necessitate additional income or a source of resources to support the regular income.

Residential building characteristics such as fence, gate, open space, and location are often determinants of the practice of home gardening. Most home garden practitioners (66.7%) live in bungalow buildings, while 64.7% are owner-occupiers, suggesting freedom to utilize space for home garden. This revelation is synonymous with the findings of Onwubuya and Eze (2020) where it was stated that households living in their own building had a significantly higher probability of practicing home gardening and a greater contribution of the home garden to household food consumption. Owner-occupiers face limited restrictions on land use, and they are more willing to invest in permanent garden structures. A significant number (61.1%) of the buildings are fenced, while only 43.7% are gated. These attributes of residential buildings provide support for home garden practice because it safeguards the crops from roaming animals and human theft. Similarly, the study also revealed a close association between plot size and the practice of home gardening. This revelation indicates that owners of larger residential plots will devote a proportion to gardening.

The study also revealed some compelling factors that encourage residents to practice home gardening. The common factor among the factors is personal interest, which has sustained the involvement of many

residents in home gardens. The work of Chalmin-Pui et al. (2021) discovered that health and nutrition benefits are not the main reason why people garden, but rather the direct pleasure they derive from gardening. However, health and food security benefits became prominent among the gains derived by residents from home gardening. The highest proportion of residents who practice home gardening situated the farming in the backyard, while a few gardeners utilize the sides or frontage of the building. The study has demonstrated the significance of home gardens in food security, especially in peri-urban areas.

7. CONCLUSION AND RECOMMENDATIONS

The study has observed that home gardening is widely adopted and highly practiced in the peri-urban areas of Akinyele Local Government of Oyo State. It serves as a significant strategy for enhancing household food security, improving nutrition, and providing vital economic relief through the reduction of food expenses and supplementary income generation. While primarily focused on household consumption, a substantial portion of gardeners strategically leverage their surplus for commercial purposes, underscoring the dual utility of these efforts. The study highlights that home gardening is predominantly undertaken by working-age adults across various occupations and educational backgrounds. Despite these hurdles, the perceived benefits consistently outweigh the difficulties, with strong endorsement from respondents. The study confirms a statistically significant positive relationship between residential plot size and the extent of land allocated to gardening, indicating that larger plots generally enable more extensive gardening. Importantly, household size was found to be significantly associated with involvement in home gardening, suggesting that larger households might be more inclined to engage in this practice to meet their needs. However, the specific types of crops cultivated are not dictated by the proportion of land available for gardening, implying that other household-specific factors drive crop selection.

Owing to the limited space identified as a major challenge, the study suggests that the government and NGOs should promote and support space-efficient, innovative gardening techniques suitable for small areas, such as vertical gardening, container gardening, and sack farming. Workshops and demonstration plots can be initiated to effectively disseminate this knowledge for the popularization of home gardening practice despite limited space.

Furthermore, improving access to quality seedlings and planting materials and addressing seedling-related issues is crucial. Initiatives could include establishing community nurseries to provide subsidized or free quality seeds and promoting local seed saving and exchange programs. Integration of home gardening into urban planning regulation is recommended in residential plot distribution. Community-based agricultural extension services should be used to propagate techniques and enhance skills and knowledge among home farmers. Furthermore, improving access to quality seedlings and planting materials is suggested for sustainable home farming practice. Anti-roaming animal laws should be enforced in all urban settlements to enable houses without fence structures to engage in home farming practice. Therefore, those who wish to rear animals must domesticate them to forestall infringing on other residents' compounds.

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