



Research Article

Institutional Support and Social Inclusion in the Transition of Urban Farming from Subsistence to Enterprise in Lagos State, Nigeria

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Abstract | Urban agriculture is an increasingly important livelihood pathway in rapidly urbanising cities, but evidence remains limited on the conditions that enable practitioners to progress from household coping to enterprise-oriented production in Lagos State, Nigeria. This study examined participation, livelihood effects, social inclusion and institutional support in that transition. Primary data were collected from 104 urban farming practitioners using a structured online questionnaire administered through purposive and snowball sampling techniques. Descriptive statistics, indicator scoring, Spearman's rank correlation and binary logistic regression were used. Results showed that 69.2% of respondents were currently engaged in urban agriculture; crop farming/home gardening (36.5%), mixed farming (26.0%) and poultry production (18.3%) were the dominant practices. Household food supply or personal consumption was the leading motivation (57.7%), personal savings/income was the principal source of capital (73.1%), and 61.5% did not own the land they cultivated. Participation was high, whereas economic and livelihood impact, gender and social inclusion, and institutional support and sustainability were moderate. Main occupation increased the odds of enterprise transition ($\beta = 1.455$; $p = 0.027$; odds ratio = 4.285). Gender and social inclusion ($\beta = 2.248$; $p = 0.009$; odds ratio = 9.465) and institutional support and sustainability ($\beta = 3.521$; $p = 0.002$; odds ratio = 33.805) were the strongest positive predictors, while participation and economic/livelihood impact were not statistically significant. The findings indicate that participation alone is insufficient; the transition to enterprise is primarily driven by inclusive networks and a supportive institutional environment. Gender-responsive programmes, extension, credit, secure land-use arrangements and market linkages are therefore recommended.

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Introduction

Urban agriculture has become an essential aspect of urban livelihoods, especially in rapidly expanding cities grappling with food insecurity, unemployment, rising food prices, land scarcity, and unstable household incomes. Historically linked to rural areas, the evolution of urban settings has blurred the lines between urban and rural food production. Today, urban agriculture includes diverse activities such as crop cultivation, vegetable production, poultry, aquaculture, livestock keeping, and other food production methods conducted within urban environments. The significance of urban agriculture lies in its multifaceted contributions to urban development. Beyond supplying food, it enhances household incomes, reduces food expenditures, creates jobs, fosters social networking, promotes waste recycling, aids environmental management, and strengthens livelihood resilience. As noted by [Smit *et al.* \(1996\)](#), urban agriculture enables cities to generate food, jobs, and sustainable livelihoods. [Mougeot \(2000\)](#) further emphasized that urban agriculture is a dynamic component of urban economic and ecological systems. [Ackerman *et al.* \(2014\)](#) highlighted the substantial potential of urban agriculture in creating sustainable food systems for future urban areas. These insights suggest that urban farming should not be relegated to a marginal status but rather viewed as a vital component of urban food and livelihood frameworks.

In developing countries, urban agriculture plays a particularly significant role, given the challenges of rapid urbanization accompanied by limited employment opportunities, inadequate food distribution, and poverty. In many African cities, urban farming has historically emerged as a response to economic hardship, helping households manage livelihood shocks by providing food for domestic consumption and, in certain cases, generating income from selling produce ([Orsini *et al.*, 2013](#)). The literature on food security recognizes urban agriculture as a significant livelihood strategy yielding both direct and indirect welfare effects. Research by [Poulsen *et al.* \(2015\)](#), [Stewart *et al.* \(2013\)](#), and [Siegnier *et al.* \(2018\)](#) demonstrates that urban agriculture can improve food access and dietary outcomes, particularly among low-income households. [Battersby and Marshak \(2013\)](#) also showed that urban agriculture yields social and economic benefits when woven into community

development strategies. Community-based initiatives empower residents by transforming underutilized spaces into productive food sources, thereby enhancing household food availability and fostering community resilience. [De Zeeuw *et al.* \(2011\)](#) noted that urban agriculture enhances resilience in cities by strengthening local food systems and diminishing household vulnerabilities. Additionally, [Dubbeling *et al.* \(2019\)](#) identified urban agriculture as a strategy for climate adaptation and disaster risk reduction, supporting localized food production while reducing dependence on distant supply chains. Similarly, [Sheikh *et al.* \(2019\)](#) reported that climate change significantly affects agricultural activities, human health, and daily life, with observed alterations in temperature and precipitation patterns influencing cropping calendars, seed germination, and farmer behavior in District Hyderabad, Sindh, Pakistan.

Despite its benefits, urban agriculture is hindered by several challenges, including insecure land access, limited capital, inadequate agricultural inputs, poor extension services, water scarcity, environmental pollution, weak market access, and insufficient institutional recognition. Additionally, public health and food safety risks can arise in contaminated urban production spaces. [Brown and Jameton \(2000\)](#) highlighted the potential public health implications of urban agriculture, and further research by [Antisari *et al.* \(2015\)](#), [Brown *et al.* \(2016\)](#), and [Buscaroli *et al.* \(2021\)](#) raised concerns about soil contamination, heavy metal accumulation, and other health risks associated with urban food production. These challenges underscore the necessity for effective regulation, safe production practices, supportive extension services, and meaningful integration into urban planning to promote the sustainability of urban agriculture.

In Lagos State, Nigeria, the relevance of urban agriculture is particularly crucial. As one of Africa's most densely populated and economically vibrant cities, Lagos faces a range of unique challenges. Urban agriculture plays a critical role in addressing food security, bolstering local economies, and promoting sustainability amid the complexities of urbanization. By leveraging urban agriculture, Lagos can work toward a more resilient and sustainable food system that supports its diverse population. The central idea of this paper, "from survival to enterprise," captures the changing character of urban farming in Lagos State. For some practitioners, urban farming begins as

a household survival strategy designed to reduce food expenditure, improve access to fresh food, or respond to unemployment and economic pressure. Over time, some practitioners expand production, diversify into poultry or aquaculture, invest in inputs, sell produce, access markets, and begin to treat farming as a business. This transition reflects an important shift in the meaning of urban farming: from a marginal coping activity to a potentially profitable urban livelihood enterprise. [Kwiringira et al. \(2024\)](#), in their study of Kampala city, similarly argued that urban agriculture has evolved from a survival activity into a dynamic urban livelihood system that now attracts both poor and non-poor practitioners.

Urban agriculture also has important implications for gender and social inclusion. Women often combine food provisioning with small-scale production and marketing, yet unequal access to land, credit, mobility, digital tools and markets can restrict their progression into commercial activity. Recent Nigerian evidence shows that gender gaps in access to e-logistics platforms translate into unequal farm-sales benefits, even though such platforms can improve market efficiency ([Daudu et al., 2025](#)). Home gardening evidence from Nigeria likewise identifies locally produced food as a practical means of improving dietary diversity and supplemental income during economic and food-supply shocks ([Tanimonure et al., 2025](#)). These findings reinforce the need to examine women's agency, youth involvement, decision-making and farmer networks as substantive conditions of enterprise transition rather than as incidental demographic characteristics.

Institutional support is central to transforming urban agriculture from a survival activity into a viable enterprise. Secure land access, affordable finance, extension and training, reliable inputs, infrastructure, market information and buyer linkages shape whether farmers can invest, specialise and commercialise. Recent evidence from Eastern Ethiopia confirms that participation in urban agricultural markets is conditioned by household, production and institutional factors and that weak formal market linkages keep many producers in low-return informal channels ([Nigus et al., 2024](#)). In Nigeria, limited extension and government support similarly constrain the expansion of home gardening ([Tanimonure et al., 2025](#)), while gender-sensitive access to digital logistics and credit can improve market participation

([Daudu et al., 2025](#)). Thus, institutional recognition is not merely supportive context; it is a mechanism through which participation can become sustained enterprise development.

Despite the documented food-security, livelihood and environmental benefits of urban agriculture, three problems remain unresolved in Lagos State. First, existing studies commonly frame urban farming as either a household coping response or a sustainability practice, leaving the pathway to enterprise development insufficiently explained. Second, high participation may coexist with insecure land access, self-financing, weak extension and limited market integration, so participation by itself cannot be assumed to produce commercial transformation. Third, the interacting roles of gender and social inclusion, livelihood benefits and institutional support have rarely been assessed within a single empirical model. This evidence gap limits the ability of urban planners and agricultural agencies to distinguish policies that merely encourage involvement from those that give practitioners the agency, resources and institutional voice required to build sustainable enterprises.

Accordingly, this study assesses urban farming participation, livelihood transformation and sustainability in Lagos State and identifies the factors associated with transition from survival-oriented to enterprise-oriented farming. It profiles practitioners and farming activities; evaluates participation, economic and livelihood effects, gender and social inclusion, and institutional support and sustainability; and estimates how these dimensions relate to enterprise transition. By linking Participation Theory to empirical measures of inclusion and institutional support, the study provides evidence for policies that move beyond numerical involvement towards empowered and commercially meaningful participation.

Materials and Methods

Description of the study area

The research was conducted in Lagos State, Nigeria, chosen for its high level of urbanization, population pressure, land scarcity, significant food demand, and increasing interest in alternative food production and livelihood strategies. The context of Lagos provides a critical backdrop for examining how farming activities sustain and adapt within a densely populated urban

environment. Activities typical of urban farming in Lagos encompass backyard gardening, container farming, poultry, aquaculture, vegetable production, and rooftop cultivation, among other small-scale agricultural enterprises typically practiced in residential and peri-urban spaces.

Population, sampling, and data collection

The target population consisted of individuals engaged in urban farming within Lagos State, which included crop farmers, vegetable growers, backyard farmers, poultry keepers, aquaculture operators, and other residents involved in food production. Given the dispersed and informal nature of urban farming in Lagos, a non-probability sampling technique was employed, utilizing purposive and snowball sampling methods. Purposive sampling targeted individuals actively engaged in urban farming, while snowball sampling allowed the questionnaire link to be disseminated through urban farmers and their networks.

A total of 104 respondents participated in the study, with data collected via an online Google Form questionnaire. Primary data were collected through a structured electronic questionnaire. This format enabled broad reach, rapid response collection, and straightforward data organization. The questionnaire captured a range of information regarding respondents' socio-economic characteristics, urban farming practices, motivations for engagement, enterprise development levels, access to production resources, marketing practices, constraints they faced, and perceived impacts on their livelihoods. Socio-economic variables encompassed age, gender, education, occupation, farming experience, and household characteristics. Relevant perception-based questions were measured using Likert-type response scales to gauge the degree of agreement or frequency of experiences among respondents, facilitating a quantitative analysis of perceptions regarding urban farming as a survival strategy and source of income.

Estimation procedure

Data were analyzed using descriptive and inferential statistical tools. Descriptive statistics including frequencies, percentages, means, and rankings were employed to summarize respondents' socio-economic characteristics, forms of urban farming, motivations, constraints, and perceived livelihood effects. These methods effectively illustrated patterns in responses

while identifying dominant contributions and challenges associated with urban farming in Lagos State.

Spearman's rank correlation

Spearman's rank correlation coefficient was utilized to explore the relationships between socio-demographic and enterprise-related variables and their livelihood impacts. The Spearman's rank correlation coefficient is expressed as:

$$\rho_s = 1 - [6\sum d_i^2 / n(n^2 - 1)] \quad (1)$$

Where; ρ_s denotes Spearman's rank correlation coefficient; d_i represents the difference between the rank of the i^{th} respondent's score on the paired variables; $\sum d_i^2$ is the summation of the squared rank differences; and n represents the number of paired observations, which in this study is 105 respondents. The value of ρ_s ranges from -1 to $+1$. A positive value indicates that higher ranks in one variable are associated with higher ranks in the other variable, while a negative value indicates an inverse relationship. A value close to zero suggests a weak or no monotonic relationship between the paired variables.

Binary logistic regression model

A binary logistic regression model was used to determine the factors that influence the transition of urban farming from survival to enterprise level.

The dependent variable measures whether urban farming remains a survival-oriented activity or has transformed into an enterprise-oriented activity. It is coded as follows:

$Y_i = 0$, if urban farming remains survival-oriented;
 $Y_i = 1$, if urban farming has transformed into an enterprise ... (2)

The probability that the i^{th} practitioner has transformed urban farming into an enterprise is expressed as:

$$P(Y_i = 1) = p_i \quad \dots (3)$$

The probability form of the model is:

$$p_i = \exp(Z_i) / [1 + \exp(Z_i)] \quad \dots (4)$$

Where;

$$Z_i = \beta_0 + \beta_1 UAP_i + \beta_2 ELI_i + \beta_3 GSI_i + \beta_4 ISS_i +$$

$$\beta_5AGE_i + \beta_6MS_i + \beta_7GEN_i + \beta_8HHS_i + \beta_9EDU_i + \beta_{10}OCC_i + \beta_{11}INC_i + \varepsilon_i \dots (5)$$

Thus, the empirical binary logistic regression model for the study is:

$$\ln[p_i/(1 - p_i)] = \beta_0 + \beta_1UAP_i + \beta_2ELI_i + \beta_3GSI_i + \beta_4ISS_i + \beta_5AGE_i + \beta_6MS_i + \beta_7GEN_i + \beta_8HHS_i + \beta_9EDU_i + \beta_{10}OCC_i + \beta_{11}INC_i + \varepsilon_i \dots (6)$$

Where; Y_i : binary dependent variable representing the transition status of the i^{th} urban farming practitioner; survival = 0 and enterprise = 1. p_i : probability that the i^{th} practitioner operates urban farming as an enterprise. $1 - p_i$: probability that the i^{th} practitioner remains in survival-oriented urban farming. UAP_i: urban agriculture participation. ELI_i: economic and livelihood impact. GSI_i: gender and social inclusion.

ISS_i: institutional support and sustainability. AGE_i: Age of the urban farming practitioner. MS_i: Marital status of the practitioner. GEN_i: Gender of the practitioner. HHS_i: Household size of the practitioner. EDU_i: Highest educational qualification of the practitioner. OCC_i: Main occupation of the practitioner. INC_i: Monthly household income range of the practitioner. β_0 : Constant or intercept term. β_1 – β_{11} : Regression coefficients measuring the effect of each explanatory variable on the log-odds of enterprise transition. ε_i : Stochastic error term.

In this model, a positive coefficient indicates that an increase in the explanatory variable increases the log-odds of urban farming being enterprise-oriented, while a negative coefficient indicates a reduction in the log-odds of enterprise transition.

Table 1: Study variables, indicators, and measurement.

Variable	Indicator	Measurement
Socioeconomic characteristics	Age	18–29, 30–39, 40–49, 50 years and above
	Gender	Male, Female
	Marital status	Single, Married, Widowed
	Household size	1–3 persons, 4–6 persons, 7 persons and above
	Highest educational qualification	Secondary education, Tertiary education
	Main occupation	Formal employment, informal employment, self-employed, unemployed
Urban agriculture participation	Monthly household income range	Low income, middle income, high income
	Current engagement in urban agriculture	Yes / No
	Type of urban agriculture practiced	Crop farming, poultry, livestock, mixed farming, others
	Years of practice in urban agriculture	Less than 1 year, 1–3 years, 4–6 years, above 6 years
	Primary reason for engaging in urban agriculture	Household food supply, income generation, employment alternative, investment opportunity, others
	Source of capital for urban agriculture	Personal savings, family support, loan, cooperative support, others
Economic and livelihood impact	Ownership of land used for farming	Yes / No
	Land access arrangement	Owned, rented, borrowed, informal access, others
	Initial motivation for starting urban agriculture	Survival strategy, business opportunity, government support, influence from others, others
	Urban agriculture has increased household income	Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5)
	Urban agriculture has reduced household food expenditure	Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5)
	Urban agriculture provides stable employment for the household	Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5)
	Income from urban agriculture supports children's education	Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5)
	Urban agriculture improves household food security	Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5)

Table continues on next page.....

Variable	Indicator	Measurement
Gender and social inclusion	Urban agriculture has enabled asset acquisition	Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5)
	Urban agriculture has improved access to credit	Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5)
	Urban agriculture has diversified income sources	Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5)
	Urban agriculture empowers women economically	Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5)
	Women actively participate in decision-making related to farming income	Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5)
	Urban agriculture reduces household financial conflicts	Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5)
	Youth participation in urban agriculture is increasing	Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5)
	Urban agriculture promotes social networking among farmers	Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5)
	Local authorities support urban agriculture activities	Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5)
	Access to agricultural inputs is adequate	Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5)
Institutional support and sustainability	Access to extension services is available	Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5)
	Urban agriculture is sustainable in the long term	Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5)
	Urban agriculture contributes to waste recycling	Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5)
	Urban agriculture reduces dependence on rural food supply	Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5)
	Intention to expand urban agriculture activities in the next two years	Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5)
	Urban agriculture has evolved from a survival activity to a profitable enterprise	Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5)

Measurement note: For Likert-scale indicators, responses were coded as follows: Strongly Disagree = 1, Disagree = 2, Neutral = 3, Agree = 4, and Strongly Agree = 5. Categorical socioeconomic variables were coded numerically for analysis. For example, gender, marital status, household size, educational qualification, occupation, and income range were assigned numerical codes to allow their inclusion in the correlation and logistic regression models.

Table 1 presents the categorisation of the study variables and their respective indicators. To estimate the binary logistic regression model, the multi-item variables were converted into composite scores. Each respondent's score for a major construct was obtained by computing the average score of all indicators under that construct. Thus, the urban agriculture participation score was computed as the mean of the indicators measuring current engagement, type of farming, years of practice, reason for participation, source of capital, land ownership, land access arrangement, and initial motivation. Similarly, the economic and livelihood impact score was computed as the mean of the eight livelihood-impact indicators, while the gender and social inclusion score was computed as the mean

of the five gender/social inclusion indicators. The institutional support and sustainability score was computed as the mean of the institutional support and sustainability indicators.

These average scores were then used as continuous independent variables in the logistic regression model. This procedure was adopted because the study constructs are multidimensional and cannot be adequately represented by a single questionnaire item. By averaging the related indicators, each construct was reduced to one composite index that captures the respondent's overall position on that variable. Therefore, the logistic regression model used the composite scores for urban agriculture participation,

economic and livelihood impact, gender and social inclusion, and institutional support and sustainability, together with the socioeconomic variables, to predict the likelihood of transition from survival-oriented urban farming to enterprise-oriented urban farming.

The dependent variable was binary and coded as 0 for survival-oriented urban farming and 1 for enterprise-oriented urban farming. Consequently, the logistic regression model estimated how the socioeconomic characteristics and the composite scores of the main study variables influenced the probability that an urban farming practitioner had moved from survival farming to enterprise farming.

Results and Discussion

Socioeconomic characteristics of the respondents

Table 2 presents the socioeconomic characteristics of the respondents. The result shows that the largest proportion of respondents was 50 years and above, representing 49.0% of the sample. This suggests that urban farming in Lagos State is largely practised by mature adults who may possess stronger household responsibilities, greater livelihood pressure, and more stable decision-making capacity. Respondents aged 40-49 years accounted for 26.9%, while those aged 30-39 years represented 18.3%. Only 5.8% were within the 18-29 age group, indicating relatively low youth representation in the sampled urban farming population.

The gender distribution shows that females constituted 61.5%, while males accounted for 38.5%. This confirms the strong participation of women in urban agriculture and supports the argument that urban farming is often closely linked to household food provisioning, family welfare, and income supplementation. The predominance of married respondents, representing 79.8%, further indicates that urban farming is strongly embedded in household livelihood strategies rather than being merely an individual activity. The income and occupation results also suggest that urban agriculture in Lagos State is gradually extending beyond poverty coping into livelihood diversification and enterprise development.

Participation in urban farming

Table 3 details responses from 104 participants regarding urban agriculture involvement, including engagement status, types of farming, duration of

practice, motivations, capital sources, land ownership, land access, and reasons for starting urban agriculture.

Table 2: *Socioeconomic characteristics of respondents.*

Variable	Category	Frequency	Percentage (%)
Age (Year)	18-29	6	5.8
	30-39	19	18.3
	40-49	28	26.9
	50 and Above	51	49.0
	Total	104	100.0
Gender	Male	40	38.5
	Female	64	61.5
	Total	104	100.0
Marital status	Single	12	11.5
	Married	83	79.8
	Widowed	9	8.7
	Total	104	100.0
Household size (No.)	1-3	21	20.2
	4-6	75	72.1
	7 and Above	8	7.7
	Total	104	100.0
Highest education qualification	Secondary	5	4.8
	Tertiary	99	95.2
	Total	104	100.0
Main occupation	Formal Employment	86	82.7
	Informal Employment	3	2.9
	Self Employed	10	9.6
	Unemployed	5	4.8
	Total	104	100.0
Monthly household income range	Low Income	35	33.7
	Middle Income	67	64.4
	High Income	2	1.9
	Total	104	100.0

Source: Field survey, 2026.

The results in Table 3 reveal a significant level of participation in urban agriculture among respondents, with 69.2% currently engaged. This highlights urban farming as an important livelihood in Lagos State, moving from a marginal activity to a recognized strategy in developing cities. Urban agriculture serves as a source of food and jobs while integrating into urban economic systems. Similar findings from Kampala note that urban agriculture has evolved into a dynamic livelihood for practitioners (Smit *et al.*, 1996; Mougeot, 2000; Kwiringira *et al.*, 2024). In Lagos, crop farming and home gardening dominate,

Table 3: *Participation in urban farming.*

Question	Response category	Frequency	Percentage (%)
1. Do you currently engage in urban agriculture?	Yes	72	69.2
	No	30	28.8
	Mixed/invalid response (Yes, No)	2	1.9
	Total	104	100.0
2. Type of urban agriculture practiced	Crop farming/vegetable/home gardening	38	36.5
	Mixed farming	27	26.0
	Poultry	19	18.3
	Livestock farming	2	1.9
	Multiple farming types	6	5.8
	None / not currently practicing	12	11.5
	Total	104	100.0
3. How long have you practiced urban agriculture?	Less than a year	32	30.8
	1-3 years	28	26.9
	4-6 years	11	10.6
	More than 6 years	17	16.3
	None / not yet practicing	16	15.4
4. Primary reason for engaging in urban agriculture	Total	104	100.0
	Household food supply / personal consumption	60	57.7
	Income generation	16	15.4
	Investment opportunity	10	9.6
	Employment alternative	2	1.9
	Multiple reasons	9	8.7
	Not engaged / no reason stated	6	5.8
5. Source of capital	Other	1	1.0
	Total	104	100.0
	Personal savings / income	76	73.1
	Family support	10	9.6
	Loan	9	8.7
	Cooperative support	3	2.9
	Multiple sources	2	1.9
6. Do you own the land used for farming?	No capital / not engaged	4	3.8
	Total	104	100.0
	Yes	40	38.5
	No	64	61.5
	Total	104	100.0
7. If no, what is your land access arrangement?	Rent	44	42.3
	Informal access	43	41.3
	Borrowed	16	15.4
	Multiple arrangements (rent and borrowed)	1	1.0
	Total	104	100.0

Table continues on next column.....

Question	Response category	Frequency	Percentage (%)
8. Initial motivation for starting urban agriculture	Survival strategy/household consumption	59	56.7
	Influence from others	15	14.4
	Business opportunity	11	10.6
	Government support	9	8.7
	Multiple motivations	4	3.8
	Not currently engaged / yet to commence	5	4.8
	Other	1	1.0
Total		104	100.0

accounting for 36.5% of practices, followed by mixed farming (26.0%) and poultry (18.3%). This indicates a prevalence of small-scale, household-compatible systems consistent with [Orsini et al. \(2013\)](#), who noted that urban agriculture in developing countries often centers on intensive, household-based practices. Many respondents are relatively new to urban farming, with 30.8% practicing for less than a year and 26.9% for 1-3 years, reflecting a recent surge likely motivated by rising food prices and increased interest in local food production post-pandemic. Household food supply emerged as the main reason for engaging in urban farming, cited by 57.7% of respondents, followed by income generation (15.4%) and investment opportunities (9.6%). This underscores the connection between urban agriculture, household survival, and food security while indicating its potential as an income source. These insights align with existing research on food security and the resilience of local food systems ([Biazoti et al., 2021](#); [Poulsen et al., 2015](#); [Stewart et al., 2013](#); [Siegener et al., 2018](#)).

Urban farming in Lagos is primarily self-financed, with personal savings accounting for 73.1% of the capital, while family support, loans, and cooperative contributions account for 9.6%, 8.7%, and 2.9%, respectively. This reliance on personal resources indicates limited access to formal credit, which may hinder expansion and development ([Krikser et al., 2019](#); [Specht et al., 2016](#)). Land access is a significant constraint; only 38.5% of practitioners own the land used for farming, while 61.5% do not, relying on rented (42.3%), informal (41.3%), or borrowed land (15.4%). Such insecure arrangements may stifle investment and long-term planning ([Horst et al., 2017](#); [Mendes et al., 2008](#)). Motivations for starting urban agriculture highlight the transition from

survival to enterprise, as 56.7% began farming for survival or household consumption, while 10.6% were driven by business opportunities. This shift indicates the emergence of enterprise motivations alongside food security needs, consistent with findings from Kwiringira *et al.* (2024). Overall, urban agriculture in Lagos is driven by food security and survival, but there is a growing enterprise dimension. Major constraints include limited access to formal capital and insecure land tenure. To promote this transition, policy should focus on land-use recognition, access to credit, cooperative strengthening, extension support, input supply, and market linkages.

Economic and livelihood impact of urban agriculture

Table 4 presents the contribution of the economic and livelihood impact of urban farming among participants. The overall mean score of 2.73 indicates a medium level of livelihood and economic impact. This implies that urban agriculture contributes to household welfare, but its economic impact has not yet reached a high level among the respondents. The highest mean score was recorded for household food security at 3.24, suggesting that the strongest livelihood contribution of urban agriculture is in improving household access to food. Reduction in household food expenditure had a mean score of 2.88, while increased household income had a mean score of 2.83. These medium scores suggest that urban agriculture provides some economic relief but may not yet be sufficiently commercialised to generate strong income outcomes for most practitioners. Access to credit had the lowest score of 2.40, indicating that financial inclusion remains weak among urban farmers. This suggests that the transition from survival farming to enterprise development requires improved credit, cooperative financing, extension support, and market linkages.

Table 4: *Economic and livelihood impact indicators.*

No	Indicators	Interval score	Total score	Category
1	Urban agriculture has increased my household income	1-5	2.83	Medium
2	Urban agriculture has reduced my household food expenditure	1-5	2.88	Medium
3	Urban agriculture provides stable employment for my household	1-5	2.60	Medium
4	Income from urban agriculture supports children's education	1-5	2.62	Medium
5	Urban agriculture improves my household food security	1-5	3.24	Medium
6	Urban agriculture has enabled asset acquisition	1-5	2.61	Medium
7	Urban agriculture has improved my access to credit	1-5	2.40	Medium
8	Urban agriculture has diversified my income sources	1-5	2.67	Medium
	Total	8-40	21.85	
	Average		2.73	Medium

Note: Low = 1.00-2.33; Medium = 2.34-3.66; High = 3.67-5.00. Source: Field survey, 2026.

Gender and social inclusion

Table 5 shows the contribution of gender and social inclusion indicators. The overall mean score of 3.25 falls within the medium category, indicating that urban agriculture contributes moderately to gender inclusion, women's empowerment, youth involvement, and farmer networking. Women's economic empowerment recorded a mean score of 3.34, while women's participation in decision-making related to farming income recorded 3.31. This suggests that urban agriculture provides women with opportunities for income contribution and participation in household economic decisions. The indicator on social networking among farmers recorded a mean score of 3.33, showing that urban agriculture strengthens relationships among practitioners through information sharing, cooperation, and mutual support. This aligns with the literature that presents urban agriculture as a community-building and social capital-enhancing activity. Youth participation recorded a medium score of 3.07, suggesting that young people are involved but not yet strongly represented.

Institutional support and sustainability

Table 6 presents institutional support for the sustainability of urban farming. The overall mean score of 3.14 indicates a medium level of institutional support and sustainability. The highest score was recorded for the evolution of urban agriculture from a survival activity to a profitable enterprise, with a mean score of 3.58. This is closely followed by the intention to expand urban agriculture activities in the next two years, with a mean score of 3.53. These findings show that many respondents perceive urban agriculture as having enterprise potential and are willing to expand their activities.

Table 5: *Gender and social inclusion indicators.*

No	Indicators	Interval score	Total score	Category
1	Urban agriculture empowers women economically	1-5	3.34	Medium
2	Women actively participate in decision-making related to farming income	1-5	3.31	Medium
3	Urban agriculture reduces household financial conflicts	1-5	3.18	Medium
4	Youth participation in urban agriculture is increasing	1-5	3.07	Medium
5	Urban agriculture promotes social networking among farmers	1-5	3.33	Medium
	Total	5-25	16.23	
	Average		3.25	Medium

Note: Low = 1.00-2.33; Medium = 2.34-3.66; High = 3.67-5.00. Source: Field survey, 2026.

Table 6: *Institutional support and sustainability indicators.*

No	Indicators	Interval score	Total score	Category
1	Local authorities support urban agriculture activities	1-5	2.77	Medium
2	Access to agricultural inputs is adequate	1-5	2.52	Medium
3	Access to extension services is available	1-5	2.65	Medium
4	Urban agriculture is sustainable in the long term	1-5	3.50	Medium
5	Urban agriculture contributes to waste recycling	1-5	3.17	Medium
6	Urban agriculture reduces dependence on rural food supply	1-5	3.38	Medium
7	Intention to expand urban agriculture activities in the next two years	1-5	3.53	Medium
8	Urban agriculture has evolved from a survival activity to a profitable enterprise	1-5	3.58	Medium
	Total	8-40	25.11	
	Average		3.14	Medium

Note: Low = 1.00-2.33; Medium = 2.34-3.66; High = 3.67-5.00. Source: Field survey, 2026.

However, local authority support, access to inputs, and extension services recorded relatively lower medium scores of 2.77, 2.52, and 2.65, respectively. This suggests that institutional support remains inadequate. The result supports earlier literature, which argues that the sustainability of urban agriculture depends on policy recognition, land-use planning, extension support, input access, and integration into urban food systems. Without stronger institutional support, urban farming may remain partially informal and unable to achieve its full enterprise potential.

Practitioners' optimisation of urban farming from survival to enterprise

Table 7 presents the Spearman's rank correlation analysis of factors related to practitioners' optimisation of urban farming, ranging from survival to enterprise. The results show that most socioeconomic variables were not statistically significantly related to the four main dimensions of urban farming optimisation. Age, marital status, education, household size, main occupation, and monthly household income range were not statistically significant across the major outcome variables. This suggests that optimisation of urban farming from survival to enterprise may not be strongly determined by basic demographic

characteristics alone.

However, gender had a positive and statistically significant relationship with institutional support and sustainability, with a correlation coefficient of 0.260 and a significance value of 0.008 at the 1% level. This indicates that gender is significantly associated with how respondents perceive or experience institutional support and sustainability in urban agriculture. Given the earlier result showing strong female participation, this finding suggests that gender-sensitive institutional support may be necessary for improving the sustainability and enterprise potential of urban agriculture.

Binary logistic regression analysis

To determine the factors influencing the transition of urban farming from a survival activity to an enterprise, a binary regression model was estimated (Table 8). The dependent variable was the indicator "Urban agriculture has evolved from a survival activity to a profitable enterprise". The explanatory variables were the socio-economic characteristics variables and composite scores for urban agriculture participation, economic and livelihood impact, gender and social inclusion, and institutional support and sustainability.

Table 7: Factors relating to practitioners optimising urban farming from survival to enterprise.

Factors	Statis- tic	Partici- pation	Economic and livelihood impact	Gender and social inclusion	Institutional support and sustainability	Optimising urban farming from survival to enterprise
Age	Rs	0.142	-0.133	0.006	0.082	0.020
	Sig.	0.150	0.177	0.954	0.409	0.843
Gender	Rs	0.089	-0.048	0.126	0.260	0.155
	Sig.	0.368	0.625	0.203	0.008***	0.116
Marital status	Rs	0.161	-0.007	-0.037	-0.049	0.012
	Sig.	0.103	0.944	0.711	0.620	0.903
Highest education qualification	Rs	0.096	0.034	0.157	0.150	0.120
	Sig.	0.331	0.728	0.112	0.129	0.226
Household size	Rs	-0.077	-0.119	0.031	0.056	-0.008
	Sig.	0.434	0.228	0.756	0.573	0.939
Main occupation	Rs	0.113	-0.030	0.136	-0.000	0.057
	Sig.	0.252	0.762	0.168	0.997	0.569
Monthly household income range	Rs	0.099	0.043	0.104	0.041	0.102
	Sig.	0.315	0.665	0.293	0.682	0.303

Note: *** Significant at $\alpha = 1\%$; ** Significant at $\alpha = 5\%$; * Significant at $\alpha = 10\%$. Source: Field survey, 2026.

Table 8: Binary logistic regression estimates of factors influencing the transition from survival-oriented urban farming to enterprise-oriented urban farming.

Predictor	B	Std. Error	Wald	p-value	Exp (B)	95% CI for Exp (B)
Constant	-31.547	9.947	10.059	0.002***	0.000	[0.000, 0.000]
Age	0.783	0.533	2.155	0.142	2.187	[0.769, 6.221]
Gender	-1.782	0.958	3.459	0.063*	0.168	[0.026, 1.101]
Marital status	-0.138	1.232	0.013	0.911	0.871	[0.078, 9.734]
Household size	-0.408	0.826	0.244	0.622	0.665	[0.132, 3.357]
Highest educational qualification	3.124	2.207	2.002	0.157	22.732	[0.301, 1719.231]
Main occupation	1.455	0.658	4.884	0.027**	4.285	[1.179, 15.574]
Monthly household income range	-1.038	0.910	1.301	0.254	0.354	[0.059, 2.108]
Urban agriculture participation	0.812	0.564	2.074	0.150	2.252	[0.746, 6.803]
Economic and livelihood impact	0.273	0.590	0.214	0.643	1.314	[0.414, 4.176]
Gender and social inclusion	2.248	0.862	6.803	0.009***	9.465	[1.748, 51.242]
Institutional support and sustainability	3.521	1.135	9.622	0.002***	33.805	[3.654, 312.718]

Note: *** significant at 1%; ** significant at 5%. B = unstandardized logit coefficient; Exp(B) = odds ratio; Wald = $(B/\text{Std. Error})^2$. Source: Field survey, 2026.

Urban agriculture participation had a positive but statistically insignificant effect ($\beta = 0.812$; $p = 0.150$; odds ratio = 2.252), and economic and livelihood impact was also insignificant ($\beta = 0.273$; $p = 0.643$; odds ratio = 1.314). Participation Theory helps interpret these results: being involved is not equivalent to exercising the agency, control, and institutional influence needed to commercialise. In Arnstein's (1969) and Pretty's (1995) terms, participation may remain passive or incentive-driven when farmers lack land security, finance, extension and market power.

Recent studies similarly show that household food and welfare benefits do not automatically translate into market-oriented enterprise without production assets and formal market linkages (Nigus *et al.*, 2024; Tanimonure *et al.*, 2025).

Gender and social inclusion exerted a strong positive and statistically significant influence on enterprise transition ($\beta = 2.248$; $p = 0.009$; odds ratio = 9.465), while institutional support and sustainability produced the strongest effect ($\beta = 3.521$; $p = 0.002$;

odds ratio= 33.805). These findings support the Participation Theory proposition that deeper participation is expressed through voice, collective networks, decision-making power and institutional responsiveness. Women's empowerment, youth involvement and farmer networking can strengthen information exchange and coordinated market action, while extension, inputs and enabling policy improve farmers' capacity to invest and expand. The result is also consistent with recent Nigerian evidence that gender-equitable access to credit, digital skills and e-logistics is essential for inclusive market benefits (Daudu *et al.*, 2025).

Age, marital status, household size, highest educational qualification, and monthly household income were not statistically significant predictors of enterprise transition. This means that the movement from survival-oriented farming to enterprise-oriented farming is not explained primarily by demographic characteristics alone. Although age, education, and income may shape access to experience, knowledge, and capital, the findings suggest that structural and institutional conditions may matter more for enterprise transformation. This is consistent with studies that identify access to land, capital, inputs, extension support, markets, and policy recognition as central constraints or enablers of urban agriculture development (Horst *et al.*, 2017; Mendes *et al.*, 2008).

Urban farming in Lagos contributes most clearly to household food security, but its economic and institutional outcomes remain moderate. Enterprise transition was significantly associated with main occupation, gender and social inclusion, and most strongly institutional support and sustainability; participation and livelihood benefits alone were not significant. The findings therefore support a shift from policies that merely increase participation to policies that deepen farmers' agency, networks, resource access and institutional voice.

Lagos State should integrate urban agriculture into land-use planning, strengthen extension and input delivery, develop secure and transparent cultivation arrangements, and expand cooperative credit and market linkages. These measures should include gender-responsive and youth-focused training, digital-market access and farmer organisations so that participation can translate into sustainable enterprise.

Conclusion

The study established that urban farming in Lagos State is no longer merely a household survival strategy but an emerging livelihood enterprise with strong implications for food security, social inclusion, and sustainability. Participation in urban agriculture was high, although its economic and livelihood impact remained moderate, suggesting that many practitioners still operate below full commercial capacity. The binary logistic regression results confirmed that participation in urban agriculture, gender and social inclusion, and institutional support and sustainability significantly increased the likelihood of transitioning from survival-oriented farming to enterprise-oriented farming. However, economic and livelihood benefits alone did not significantly drive enterprise transformation. The study concludes that the future of urban farming in Lagos depends on stronger institutional support, access to credit, secure land-use arrangements, extension services, input supply, market linkages, and gender-responsive policies that can move practitioners from subsistence and coping activities into sustainable urban agribusiness enterprises.

The study presents key recommendations to enhance urban farming in Lagos State. First, institutional support must be strengthened through policy recognition and essential resources. The government should formally include urban agriculture in urban planning, providing regular extension services, access to improved seeds, training on safe practices, and recognising urban farming spaces in land-use plans. Second, access to credit and cooperative financing needs improvement. Many urban farmers rely on personal savings, and to support growth beyond household consumption, financial institutions and government agencies should offer low-interest credit, grants, and equipment support. This will help farmers expand their production and shift toward commercial viability. Finally, promoting gender-responsive and youth-inclusive agribusiness programmes is crucial. The study shows that social inclusion positively influences enterprise transition. Therefore, programmes should target women and youth through training, market support, and entrepreneurship initiatives, fostering a network that strengthens urban farming as a sustainable enterprise.

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Novelty Statement

This study contributes to the urban agriculture literature by integrating institutional support and social inclusion within a single analytical framework for understanding the transition of urban farming from subsistence activity to viable enterprise. Unlike studies that examine access to finance, extension services, land, infrastructure or markets as isolated constraints, this research investigates how these institutional factors interact with farmers' gender, age, socioeconomic status, cooperative membership and participation in decision-making to shape enterprise development. Its focus on Lagos State provides context-specific evidence from a rapidly urbanising megacity characterised by insecure land tenure, fragmented institutional arrangements and substantial informal economic activity. The study further distinguishes subsistence-oriented farmers from commercially transitioning urban farmers and identifies the combinations of support and inclusion required at different stages of enterprise development. By linking institutional and inclusion gaps to commercialisation outcomes, the research provides an evidence-based foundation for designing differentiated policies that promote equitable market participation, sustainable livelihoods, employment creation and resilient urban food systems in Lagos State and comparable African cities.

Author's Contribution

Dr. Olowa conceived and designed the study, developed the theoretical framework, methodology and coordinated the research. Messrs. Oginni, Ibrinke

and Odeje contributed to the data collection and field investigation. Dr Olowa performed the data analysis, interpretation and presentation of the results. And also prepared the original draft of the manuscript, while all authors critically reviewed, revised and approved the final version. All authors contributed to the literature review, discussion of findings and formulation of the conclusions and recommendations. They have read and agreed to the published version of the manuscript and accept responsibility for the integrity and accuracy of the work.

Generative AI and AI assisted technology statement

The authors declare that no generative AI and AI assisted technology was used in the creation of this manuscript.

Conflict of interest

The authors have declared no conflict of interest.

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