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The Nigerian Journal of Cartography & GIS is the official publication of the Nigerian Cartographic Association (NCA). It is published twice a year, except for special editions. Recently, some necessary reform measures were initiated to enrich the quality of the journal and also to promote emerging topical scholarly work in Mapping Sciences, Geospatial intelligence, Geographic Information System/Science (GIS) and all other allied disciplines making and using maps in their areas of duties. This is with the hope of constantly building information (Geoinformation), infrastructure and platforms that will enable society to better operate knowledge-based economy. The Journal, thus, welcomes original, scholarly and well researched article in Cartography, GIS, Remote Sensing/Geospatial Intelligence, Image Mapping, and other Geoinformatics related issues of good governance, administration, security, education, etc, for possible publication in the NCA Journal of Cartography & GIS (ISSN1595 - 8868).

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Preface

In this eighteenth edition of the Nigerian Journal of Cartography and GIS (Numbers 1&2), there is a conscious effort to address contemporary themes, challenges and issues of national discourse. The titles of the fifteen papers presented in this volume hinges on the aforementioned traits and were drawn mainly from research papers presented during the 20204 Conference in Minna. This volume aims to build on the successes of previous volumes and it has been improved upon and demonstrates the thoughtful, insightful, academic and comprehensive research efforts of professionals at the Nigerian Cartographic Association (NCA) Conferences. As evidently demonstrated, the fifteen papers published in this volume attests to the devoted attention and importance of maps and mapping techniques in various areas of applications and national development.

The first paper in this volume is on multi criteria decision analysis (MCDA) approach for Suitability Assessment for Private Cemetery Site in Akinyele Local Government Area, Oyo State, Nigeria. It emphasized the importance of geo-spatial technologies in suitability analysis for cemetery site location using the established guidelines. This is required for sustainable cemetery development and management. Paper two and three dwelt on urban sprawl analysis, using geospatial technologies, while paper two analyzed urban sprawl in Kafanchan Town, Kaduna State, using satellite imagery and base maps from 2002 to 2022, the third paper three examined spatio-temporal patterns of urban sprawl in Abeokuta, Ogun State, from 1972 to 2022 using Landsat satellite imagery of 1972, 1982, 1992, 2002, 2012 and 2022. The fourth and fifth papers centered on agricultural practices. The fourth focused on evaluation of the spatial extent of urban farming and its potential for food security in Lagos Metropolis, while the fifth is on agricultural dynamics in Sekondi-Takoradi and Shama Districts of Accra, Ghana.

The sixth paper, titled 'Assessment of household solid waste management practices in Kaduna North LGA, Kaduna State, Nigeria', used cross-sectional survey of households to evaluate socio-demographic characteristics, types of waste generated, disposal methods, and perceived challenges. Paper seven examined land-use dynamics in the main campus of the University of Abuja, Nigeria. The study used Geoinformatics techniques to analyze the campus's satellite imagery of high resolution (1.5m). The eight paper adopted GIS methods to analyze road traffic crashes (RTCs), which are multifactorial events resulting in significant morbidity, mortality, and property damage. A J48 decision tree algorithm was employed to classify RTC severity into fatal, serious, and minor categories. The ninth paper studied the menace of flooding and its effects on socio-economic stability in Geidam LGA, Yobe State. Paper ten assessed the impact of semi-mechanized and artisanal mining on land cover in the Osun East Senatorial District in South-Western Nigeria. The study used Sentinel-2 satellite imagery from 2020 to 2025. Normalized Difference Vegetation Index (NDVI), Modified Normalized Difference Water Index (MNDWI), and Bare Soil Index (BSI) to evaluate changes in vegetation, bare land, agricultural land, water bodies and mined areas.

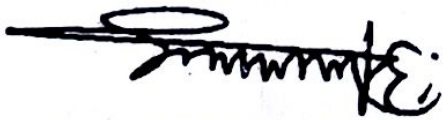
Paper eleven studied the protracted problem of banditry in Niger State, which has become a major security threat in most part of Nigeria. The authors used Armed Conflict Location and Event Data (ACLED) 2024 version and questionnaires to examine the cause, trend and spread of banditry in the study area. Paper twelve is on the assessment of urban form expansion in Oyo Metropolis over a period of thirty-nine years. Multi temporal Landsat satellite imageries of TM 1984, 1999 and ETM+2009, 2015, and OLI 2023 from the United States Geological Survey (USGS) website were used. The thirteenth paper is centered on flood hazard modelling for flood emergency management contingency planning. The study integrated spatial and non-spatial data, Landsat imagery of 2007 to 2021 and rainfall data for the same period in analyses. The DEM generated from SRTM data for the area was used to delineate drainage basins. Paper number fourteen used GIS in crime analysis in Ibadan North East LGA, Oyo State, while paper fifteenth focused on the dynamism of land use land

cover change and land surface temperature in Lokoja, Nigeria. The authors deployed geospatial technologies and sub-pixel approach to analyse the bi-temporal impact of urbanization on the LST of Lokoja Metropolis in Kogi State, Nigeria between 2014 and 2018.

With all sense of humility, I present to you Volume 18 (Numbers 1&2) of the Nigerian Journal of Cartography and GIS. I urge you to be involved in the activities of the Association by attending our Annual International Conferences, Workshops, Map Competition and Annual General Meetings (AGMs) as it affords all mapping professionals and allied disciplines the opportunity to meet, brainstorm and present solutions to emerging issues in the contemporary world we find ourselves through the instrumentality of Mapping Sciences and Technology.

Do well to subscribe to the Nigerian Journal of Cartography and GIS. Also kindly visit our website (www.nca.ng) and our "Nigerian Cartographers" Facebook handle to continuously get information regarding our activities. Membership of NCA is widely opened to professionals (civilians, military and paramilitary), MDAs, students, academicians, private and public organizations and anybody in the mapping science and technology or allied disciplines. You can send your well researched article/paper to the Nigerian Cartographic Association via: ncacargisjournal@gmail.com. You can also reach us through our official email: nigeriancartographers@gmail.com and visit our websites: www.nca.ng for more information about the professional Organization. NCA is a National Member of the International Cartographic Association (ICA) (https://icaci.org/national-members).

Finally, apart from the authors whose paper are published in this edition, many people contributed to the success of this journal. The editor would like to thank professional colleagues whose encouragement and enthusiasm have assisted a great deal in the past four volumes (vol. 15 in 2022; vol. 16 in 2023, vol. 17 in 2024 and this current vol. 18 in 2025). Thanks to Prof. Matthew Ufuah, Prof. Chris Onosemuode, Prof. Nnabugwu Uluocha and Dr. Sylvanus Bernard for the diligent and timely review of manuscripts. Special thanks to Prof. Momoh L. Rilwani for the unwavering dedication, support and encouragement over the past few years as President of NCA and Editor-in-Chief of this journal.
Happy Reading!!!



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AN EVALUATION OF THE SPATIAL EXTENT OF URBAN FARMING AND ITS POTENTIAL FOR FOOD SECURITY IN LAGOS METROPOLIS, NIGERIA

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Abstract

This study investigates urban farming dynamics and their potential for food security in Alimosho, Ifako-Ijaiye, and Ikeja Local Government Areas of Lagos State, Nigeria. An analysis of the land cover map for 2023 reveals those built-up areas account for 188.31km² (71.59%), farmlands cover an area of 49.46 km² (18.8%), grasslands cover an area of 7.87 km² (2.99%), thick vegetation covers 17.2 km² (1.52%), while water bodies cover an area of 0.29km² (0.11%). Farmland is primarily concentrated in Alimosho, highlighting the tension between urban development and agricultural land use. The presence of grasslands and thick vegetation, especially in Ikeja, although minimal, plays a crucial role in biodiversity and ecosystem services. Survey results indicate a high level of awareness regarding urban farming activities, with 84.88% of respondents being somewhat or very aware. The overall food security situation appears predominantly secure, with 59.02% feeling somewhat secure, although 24.63% remain neutral about their status. Perceptions of food availability are positive, with 87.56% rating locally produced food as good to excellent. Despite this, many respondents experience frequent food shortages, with 63.42% sometimes reducing meal sizes. A significant 73.42% of respondents believe urban farming positively impacts food security, citing increased local food production (58.80%) and better availability of fresh produce (33.55%) as key benefits. These findings emphasize the potential of urban farming to enhance food security in densely populated urban areas, while also indicating the need for improved consistency in food availability. Thus, this research highlights the critical role of urban agriculture in addressing food security challenges amidst ongoing urbanization in Lagos State.

Keywords: Food Security, Spatial Extent & Urban Farming.

1. Introduction

Urbanization is the process where an increasing percentage of a population transitions to living in cities and urban areas. This shift is often driven by migration from rural regions in search of better economic opportunities, improved access to services, and enhanced living conditions. Urbanization has become an unstoppable global phenomenon that is reshaping the world at an astonishing pace. According to the United Nations, more than half of the world's population currently resides in urban areas, and this number is projected to rise to 68% by 2050. Projections also show that urbanization combined with the overall growth of the world's population could add another 2.5 billion people to urban areas by 2050, with close to 90% of this increase taking place in Asia and Africa (United Nations, 2018). As the world continues to urbanize, there is an urgent need to address the challenges and implications of the growth, especially in low-income and lower-middle-income countries where the pace of urbanization is projected to be the fastest. Because of increasing urbanization, food insecurity is continuously rising and approximately 9.2% of the world's population faced hunger in 2022, compared with 7.9% in 2019 (World Bank, 2023). This trend is concerning as it highlights the growing disparity between the availability of nutritious food and the increasing population in urban areas. The lack of access to fresh and affordable produce not only impacts the physical health of individuals but also contributes to various social and economic challenges within these communities. Ultimately, food security beckons us to strive for a more compassionate, equitable world where the basic sustenance required for a life of dignity is not a privilege but a universal entitlement.

To address the challenges of urbanization and climate change, urban farming appears to be a promising solution. By bringing agriculture into the heart of cities, urban farming not only reduces the carbon footprint associated with transporting food from rural areas but also promotes community engagement and education about healthy eating habits. According to FAO, it has the potential to supply up to 15–25% of the world's food,

reducing dependence on distant rural areas and enhancing local food security (FAO, 2017). The integration of farming into cities' socio-economic and environmental planning is imperative as the urban components of food crises and climate change become more evident (Prain and Lee-Smith, 2010). Urban farming has the potential to improve the food basket of urban dwellers, reduce food spoilage, and provide income for households (Kareem and Raheem, 2012). Similarly, Yusuf *et al.*, (2015) supports the argument that urban farming can contribute to a reliable food supply and support family income. Awoniran *et al.*, (2020) examined the practice of urban agriculture and changes in agricultural land use in Lagos Metropolis over the last three decades using a combination of quantitative and spatial analysis. This indicates a threat to food security in Lagos Metropolis due to the shrinking land available for urban farmers.

Lagos, being a densely populated metropolis in West Africa, faces significant challenges in ensuring food security due to limited agricultural land and rapid urbanization. The increasing demand for food in Lagos metropolis has led to a heavy reliance on imported produce, making the cities vulnerable to fluctuations in global food prices and supply chains (Osayomi & Lawanson, 2022). The impacts of climate change, such as extreme weather events and rising sea levels, further exacerbate the vulnerability of Lagos' food system. Efforts are being made to address these challenges and the Lagos State Government has initiated programs such as the Lagos State Agricultural Development Authority (LSADA) to promote urban farming and increase local food production. This is regarded as part of the efforts aimed at boosting food security and increasing access to affordable fresh food in the state. There are also ongoing initiatives to support small-scale farmers, enhance agricultural infrastructure, and improve access to markets for locally produced food (LSADA, 2020). The Lagos State Government aims to also enhance food security and minimise dependence on imported food by implementing urban farming practices (Osayomi and Lawanson, 2022). Therefore, it is imperative to assess the viability and extent of urban farming to enhance food security in the Lagos metropolis of Nigeria.

2. Materials and Methods

2.1 Study Area

In general, Lagos is one of Africa's most populous metropolises situated on the short coastal flood plain of the Bight of Benin between longitudes 2° 42′ E and 3° 22′ E and latitudes 6° 22′ N and 6° 42′ N. The region is bounded on the east and north by Nigeria's Ogun State, on the south by the Atlantic Ocean, and on the west, by the Republic of Benin Lagos has a 180-kilometer-long coastline and a land area of approximately 1,171 squares kilometres (452 square miles). In particular, the geographical description of the Local Government Areas of the study is as follows:

Ifako-Ijaiye is at latitude 6° 52' 0" N and longitude 2° 53' 60" E. It covers 43 square kilometres within Lagos State's 3,577 square kilometres of land. It has a tropical savanna climate with high temperatures ranging from 25 to 32 degrees Celsius. The hottest months are between December and March, while cooler months occur between June and August. Ifako-Ijaiye has distinct wet and dry seasons, with the rainy season starting in March or April and ending in October. Heavy rainfall is common, with an average annual rainfall of 1,500 to 2,000 millimetres. Humidity levels are high, especially during the rainy season. Alimosho is at 6° 36' 39" North, 3° 17' 46" East. Lagos State, Nigeria. It is one of the largest LGAs in the state covering approximately 1,288 square kilometres. Alimosho's climate is a tropical savanna, with high temperatures ranging from 25 to 32 degrees Celsius. The hottest months are between December and March, while cooler months occur between June and August. The region has distinct wet and dry seasons, with the rainy season starting in March or April and lasting until October. Heavy rainfall is common, with an average annual rainfall of 1,500 to 2,000 millimetres. Humidity levels can exceed 80% during the rainy season. Ikeja is located at6° 36' 21.1464" N and 3° 20' 56.9364" E. It has a tropical monsoon climate. The majority of the year's months get heavy rainfall. The brief dry season has very little impact on the climate as a whole. The Köppen-Geiger scale rates this area's climate as Am. Ikeja's typical temperature is 26.4 °C (79.5 °F). About 1645 mm (64.8 inches) of precipitation falls here each year. With an average daily high temperature above 90°F, the hot season lasts for 4.4 months, from December 12 to April 25.

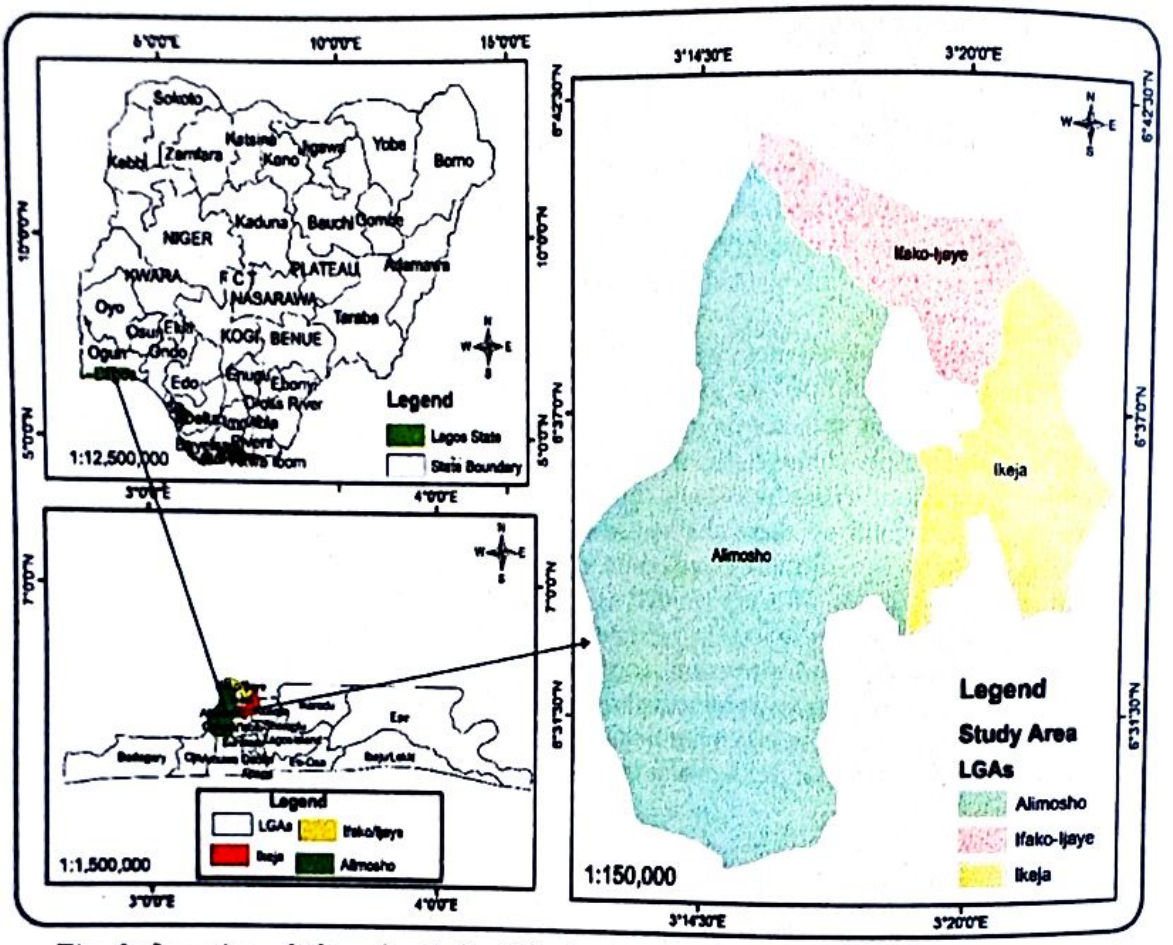

Fig. 1: Location of Alimosho, Ikeja, Ifako-Ijaiye, Lagos Mainland in Lagos State, Nigeria
Source: Author (2023)

2.2 Data

The study made use of both primary and secondary data types. The primary data was collected through surveys, interviews, and focused group discussions with relevant stakeholders, including policymakers, urban farmers, and residents. To evaluate the spatial extent of urban farming activities in the Local Government Areas, remote sensing image acquisition and analysis were performed on Google Earth Engine (GEE).

2.2.1 Geospatial Analysis

Collection 1 Tier 1 image was collected from Landsat 8 Operational Land Imager (OLI) for 2023. The image was pre-processed by developing masks for unwanted pixels (fill, cloud, cloud shadow). Scaling factors were further applied to the appropriate bands, then, original bands were replaced with scaled bands and masks were applied and updated. Supervised algorithm was carried out on the GEE platform by training the classification algorithm using a set of sample points that are representative of different land cover types. The algorithm then classifies the entire image based on these training samples, allowing for accurate identification and mapping of different land cover classes such as urban farmlands, built-ups, grasslands, thick vegetation, and water bodies. The classified image was exported from GEE to ArcMap where appropriate colours were assigned to the land cover classes.

2.2.2 Quantitative Analysis

The potential of urban farming in addressing food security was explored from the perspective of urban farmers, residents and policymakers. The food security measures adopted for this study are "Accessibility and Availability." A total of 410 respondents were interviewed using the Kobo collect Application. The results were cleaned and analyzed on the JASP Application for quantitative analysis. This provides a numerical understanding of stakeholders' perceptions towards urban farming as a measure of achieving food security in Lagos Metropolis.

3. Results and Discussions

3.1 Spatial Extent of Urban Farming Activities

Figure 2 represents the classified land use and land cover map (2023) of Alimosho, Ifako-Ijaiye, and Ikeja Local Government Areas (LGAs) in the Lagos State of Nigeria. It employs a color-coded legend to distinguish various land cover types, including Built-up, Farmland, Grassland, Thick Vegetation, and Waterbody. As presented in Figure 4.1 and Table 2, the predominant feature is the extensive area marked in red with an area coverage of 188.31km² (71.59%), which represents built-up regions, including residential, commercial, and industrial developments. This indicates a significant level of urbanization within the Local Government Areas. In contrast, farmland as highlighted in yellow, covers an area of 49.46 km² (18.8%), and appears to occupy a modest portion of the landscape. The light green areas indicate grassland which covers an area of 7.87 km² (2.99%), while dark green areas with an area coverage of 17.2 km² (1.52%), signify thick vegetation, encompassing forests, tall trees, and dense shrublands. The blue regions denote water bodies which are minimal in extent, with an area coverage of 0.29km² (0.11%).

The three Local Government Areas are characterized by significant urbanization. Farmland areas are primarily concentrated in Alimosho, where patches of agricultural land are visible, especially in the outer regions. This LGA supports local food production, with areas like Ikotun and Egbeda known for their agricultural practices. In contrast, Ikeja and Ifako-Ijaiye show lesser farmland areas due to increasing urban expansion, although some agricultural practices persist on the peripheries, especially towards the extreme of the Northeastern and Southeastern regions of Ifako-Ijaiye and Ikeja LGA respectively. This juxtaposition highlights the ongoing tension between urban development and agricultural land use in the state. Vegetated areas are crucial for maintaining biodiversity and providing essential ecosystem services. The three Local Government Areas retain some pockets of thick vegetation and grassland, which act as important green corridors amidst the urban landscape. These areas are critical for supporting local flora and fauna, enhancing the region's ecological health.

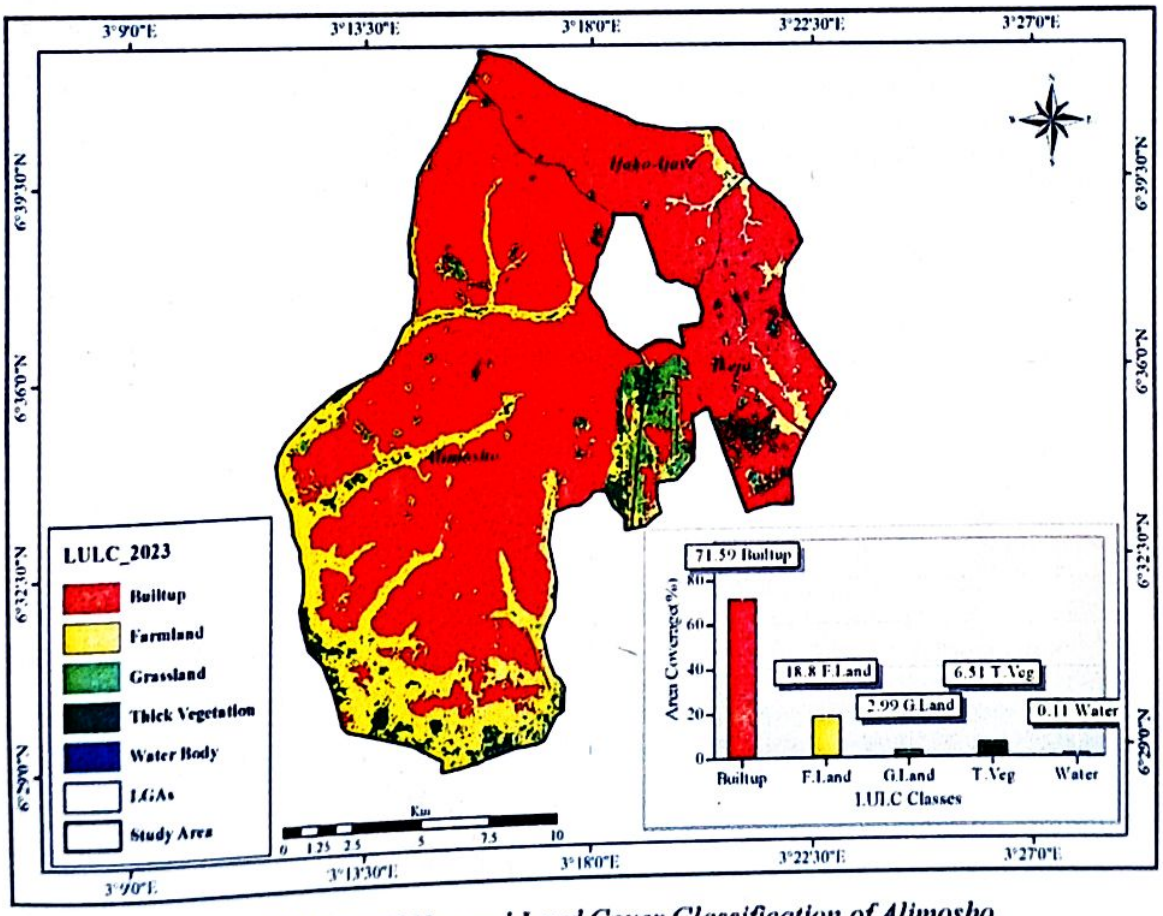

Fig. 2: 2023 Land Use and Land Cover Classification of Alimosho, Ifako-Ijaiye, and Ikeja Local Government Areas of Lagos
Source: Author's Analysis (2024)

Table 1: Area Coverage and Percentage of Land Cover Distribution of Lagos Metropolis (2023)

Landcover Types	Area (km^2)	Percentage
Builtup	188.31	71.59
Farmland	49.46	18.80
Grassland	7.87	2.99
Thick Vegetation	17.12	6.51
Water Body	0.29	0.11
Total	263.05	100.00

Source: Author's Analysis (2024)

3.2 Perceived Potential of Urban Farming Activities on Food Security

Table 2 presents a comprehensive overview of urban farming activities and food security measures, highlighting the awareness, perceptions, and experiences of respondents. Regarding the level of awareness of urban farming activities, most individuals fall into the "somewhat aware" (47.32%) and "very aware" (37.56%) categories. 14.15% of respondents are fully "aware" of urban farming activities, while a small portion of 0.98% are "not aware" at all. This indicates that a majority of the respondents have some level of awareness of urban farming activities within the study area.

When examining the overall food security situation in the study area, the responses reveal a predominantly secure environment, with 59.02% of respondents feeling "somewhat secure" and 11.95% feeling "very secure." However, a significant portion of the respondents (24.63%) remain neutral, indicating uncertainty about their food security status. Only 4.15% feel "somewhat insecure," and a minimal 0.24% report being "very insecure." The perceived availability and accessibility of locally produced food are rated positively by respondents. 32.44% consider it "excellent," and 55.12% rated it as "good." Only 10.73% view it as "fair," and 1.71% rate it as "poor." From this analysis, it can be deduced that the availability and accessibility of food are generally good.

When exploring experiences with food availability, 63.42% of respondents indicated they "sometimes" had to reduce the size of their meals, with 22.93% doing so "often." Only 13.66% of the respondents "never" reduced the size of their meals. This indicates that a significant portion of the population struggles with food access despite their perceptions of security. Regarding food shortages in a month, 50.24% reported experiencing shortages between 6-10 times, while 24.63% experienced shortages between 1-5 times, 13.17% experienced them between 11-15 times, and 10.98% encountered shortages 10-15 times. Only 0.98% reported facing shortages 16-20 times. This frequency of food shortages suggests that while urban farming initiatives are perceived positively, there are still significant gaps that need to be addressed to ensure consistent food availability.

The perception of urban farming activities addressing food security issues is strong, with 73.42% of respondents affirming its positive impact. Conversely, 26.59% believe it does not contribute to food security. To probe further, respondents who affirmed its positive impacts were asked how urban farming has helped in addressing food security and the most common responses included "increased local food production" (58.80%) and "increased availability of fresh and nutritious food" (33.55%). Other benefits mentioned were "environmental sustainability" (3.32%), "reduced dependence on external food sources" (2.66%), "mitigated price fluctuations" (1.00%), and "enhanced food security" (0.66%). This indicates that urban farming initiatives are largely perceived as beneficial for enhancing local food supply (Adekunle *et al.*, 2024). However, the small percentage rating it poorly suggests that there are still areas where improvement is needed to ensure consistency.

Table 2: Perception of Urban Farming on Food Security

Level of awareness of urban farming activities	Percentage
Aware	14.15
Not Aware	0.98
Somewhat aware	47.32
Very aware	37.56
Overall food security situation	
Neutral	24.63
Somewhat insecure	4.15
Somewhat secure	59.02
Very insecure	0.24
Very secure	11.95
Availability and Accessibility of Locally Produced Food	
Excellent	32.44
Good	55.12
Fair	10.73
Poor	1.71
Have you ever had to reduce the size of your meals because there was not enough food?	
No, never	13.66
Yes, often	22.93
Yes, sometimes	63.42
Experienced food shortages due to lack of availability or accessibility?	
1-5 times	10.98
10-5 times	24.63
11-15times	13.17
16-20 times	0.98
6-10 times	50.24
Perception on whether or not urban farming is addressing food security	
No	26.59
Yes	73.42
If yes, in what possible ways?	
Increased local food production	58.80
Increased availability of fresh and nutritious food	33.55
Environmental sustainability	3.32
Reduced dependence on external food sources	2.66
Mitigated price fluctuations	1.00
Enhanced food security	0.66
Total	**100.00**

Source: Author's Analysis (2024)

3.3 Discussion

3.3.1 Spatial Extent of Urban Farming

The analysis of land use and land cover in Alimosho, Ifako-Ijaiye, and Ikeja Local Government Areas (LGAs) reveals a profound trend of urbanization that is reshaping the landscape of Lagos State. According to Bassett *et al.* (2020), Lagos is recognized as one of the fastest-growing cities in the world, with an alarming annual population increase of approximately 500,000 residents. This rapid influx contributes to urban areas expanding at an average rate of 10% (Adekunle *et al.*, 2024), underscoring the urgency of addressing the implications of such growth.

The data indicates that built-up areas dominate the landscape, covering approximately 71.59% of the total area in the studied LGAs. This significant urban footprint highlights the pressing need for effective urban planning and infrastructure development to accommodate the growing population. The predominance of built environments not only reflects the expansion of housing and commercial facilities but also raises concerns about the sustainability of urban growth, particularly in relation to resource management and environmental degradation.

In stark contrast, farmland occupies a modest 49.46 km² (18.8%), emphasizing the critical, albeit limited, role of urban farming within this urbanized context. The strategic location of these farmlands near residential neighborhoods facilitates access for urban farmers, promoting local food production and contributing to the overall food supply. Urban farming practices in the region (characterized by small-scale agriculture, community gardens, and backyard farming) demonstrate an innovative response to food security challenges in heavily populated urban areas. As noted by Steinhübel (2019), urbanization profoundly influences agricultural systems and environmental services, complicating the practice of urban farming in densely

populated settings. This relationship underscores the necessity for policies that support urban agriculture, as it offers a viable solution to enhance food security amidst urban expansion.

Further analysis reveals minimal representation of natural landscapes, with grassland covering only 7.87 km² (2.99%) and thick vegetation accounting for 17.2 km² (1.52%). The sparse presence of these natural areas raises concerns regarding biodiversity and ecological health in the urban environment. The interaction with policymakers from the Lagos State Parks and Gardens Agency (LASPARK) highlights the importance of preserving green spaces amidst urban development. LASPARK's initiatives to conserve and expand green areas, particularly in Ikeja, where dense stands of trees and shrubs are supported, play a vital role in maintaining ecological balance and providing recreational spaces for residents. However, the limited allocation of land to water bodies (only 0.29 km² or 0.11%) suggests a need for careful planning to integrate aquatic ecosystems into urban landscapes, as they are crucial for biodiversity and urban resilience.

These findings underscore significant implications for urban planning and environmental management in Lagos State. As urbanization continues to escalate, with projections indicating an annual population increase of 500,000 (Bassett *et al.*, 2020), there is an urgent need to strike a balance between development and the preservation of agricultural land and natural habitats. Policymakers must prioritize sustainable urban planning that integrates green spaces and agricultural areas into the urban fabric. Strategies could include promoting urban farming initiatives, enhancing the connectivity of green corridors, and ensuring that environmental considerations are at the forefront of urban development decisions.

3.3.2 Urban Farming Activities and Food Security

The perceptions of respondents regarding the benefits of urban farming for food security reveal a compelling narrative about the role of urban agriculture in contemporary food systems. A significant majority of participants recognized the increase in local food production and the availability of fresh, nutritious food as key advantages of urban farming. This recognition underscores the critical food security benefits associated with urban agriculture, particularly as urban populations continue to grow and demand for food escalates. The awareness of urban farming's potential aligns with a broader global emphasis on sustainability in food systems. As cities grapple with the challenges of food insecurity, urban farming emerges as a viable solution that not only enhances local food production but also contributes to the overall resilience of urban areas. By fostering local agricultural practices, cities can reduce their dependency on external food sources, which are often vulnerable to disruptions in supply chains. This localized approach not only ensures a steady supply of fresh produce but also supports the nutritional needs of urban populations.

Evidence from several studies (Adekunle *et al.*, 2024; Jason et al., 2024; Yiwen et al., 2023) highlights the multifaceted benefits of urban farming. One of the most significant advantages is the reduction in food transportation distances. By growing food within urban areas, the need for long-distance transportation is minimized, which in turn helps to lower carbon emissions associated with food distribution. This reduction is crucial in the context of climate change, as it directly contributes to sustainability efforts and the environmental health of urban communities. Moreover, urban farming plays a vital role in job creation. Respondents acknowledged that urban agriculture generates employment opportunities, particularly for marginalized groups who may struggle to find work in traditional sectors. By engaging in urban farming, individuals can develop skills, foster entrepreneurship, and contribute to local economies. This economic development is particularly important in urban areas where unemployment rates may be high, allowing residents to gain financial independence while contributing to community well-being.

The increased availability of locally grown fresh produce not only enhances food accessibility but also promotes healthier eating habits among urban dwellers. Fresh produce is often more nutrient-rich than food that has traveled long distances, making it a valuable component of a balanced diet. This accessibility is especially crucial in food deserts (areas where access to fresh food is limited), where urban farming can provide a direct solution to nutritional deficiencies. Furthermore, urban farming fosters community engagement and social cohesion. Community gardens and urban farming initiatives often bring residents together, creating spaces for collaboration and shared purpose. These interactions can strengthen community ties, promote social equity, and empower residents by involving them in decision-making processes related to food production and sustainability initiatives.

4. Conclusion and Recommendations

The analysis of urban farming activities in Alimosho, Ifako-Ijaiye, and Ikeja Local Government Areas of Lagos State highlights the complex interplay between urbanization and agricultural practices. With urban areas expanding rapidly (covering approximately 71.59%) of the land, while urban farming occupies a modest yet significant 18.8% of the landscape. This small-scale agriculture, characterized by community gardens and backyard farming, plays an important role in enhancing local food production and accessibility. However, the limited representation of natural landscapes and water bodies underscores the challenges faced

in balancing urban development with the need for green spaces and agricultural land. The findings indicate a strong awareness among respondents regarding the benefits of urban farming for food security, emphasizing its potential to increase local food production, reduce transportation distances, and create employment opportunities. This aligns with broader sustainability goals, suggesting that urban farming can contribute positively to local economies and mitigate food insecurity. The following recommendations are made based on the findings in this study.

a. Policy Development: There is a pressing need for comprehensive urban planning policies that prioritize the integration of urban farming into the city fabric. Policymakers should promote mixed-use developments that accommodate agricultural activities alongside residential and commercial spaces.
b. Support for Urban Farmers: Initiatives that provide financial incentives, training, and resources for urban farmers can enhance productivity and sustainability. Encouraging community engagement through workshops and educational programs could raise awareness about urban farming practices.
c. Research and Data Collection: Continuous research on urban farming practices and their impacts on food security should be prioritized. Regular assessments can inform adaptive strategies to improve urban agricultural systems amidst ongoing urbanization.
d. Public Awareness Campaigns: Implementing campaigns to educate the public about the benefits of urban farming can foster community support and participation, ultimately leading to a more robust urban food system.

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