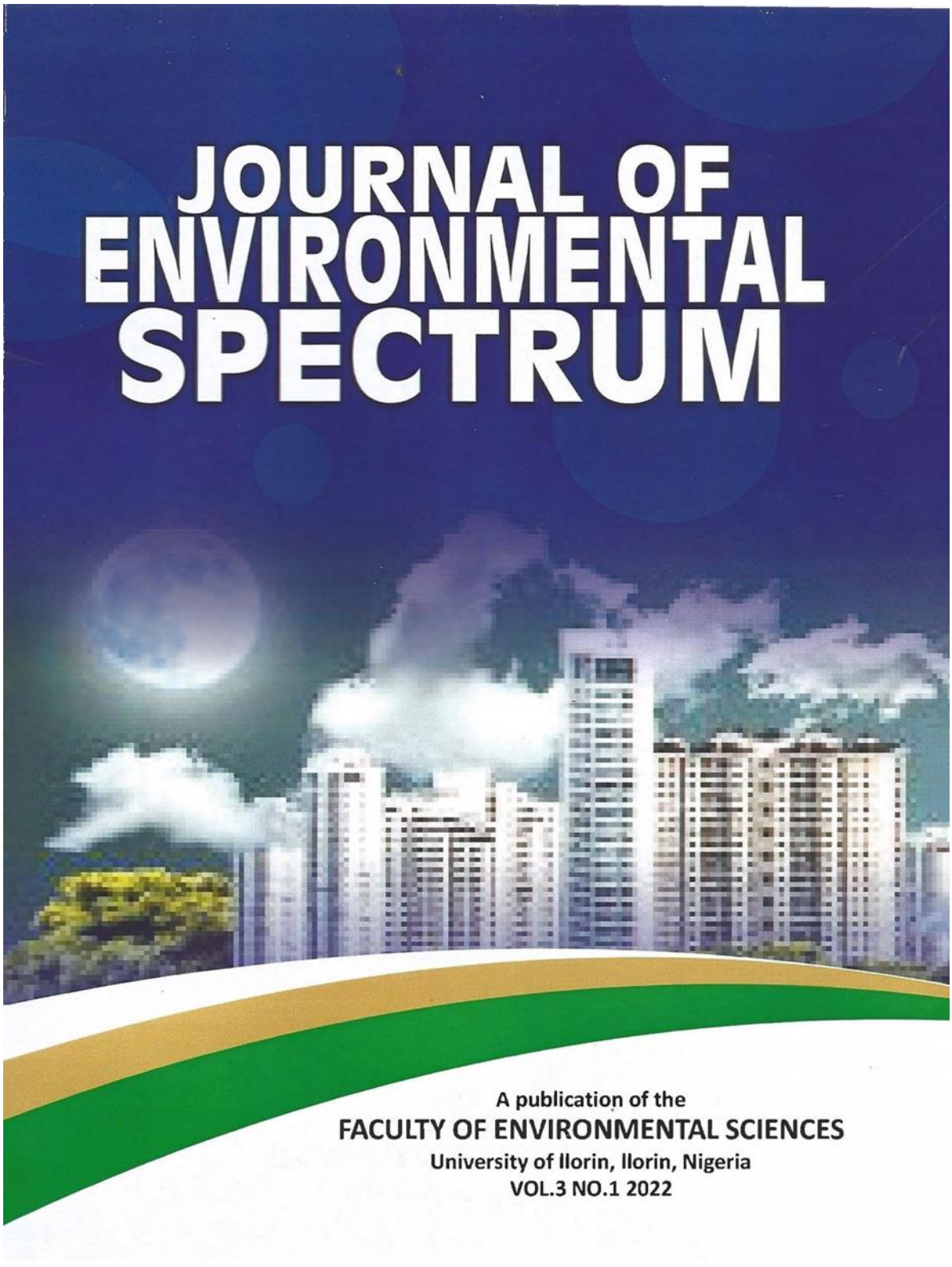


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URBAN AGRICULTURE AND SAFE CITY CONCEPTS – PALPABLE LINKS FOR THE URBAN POOR IN ILORIN, NIGERIA.

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Abstract

Divers urban populations, including the poor, adduced urban and peri-urban agriculture (UPA) as essential food sources. Urban agriculture (UA) as a safe city concept is increasingly considered a building block in ensuring safe living and economic prosperity and as a leeway of returning the cities to city dwellers. Arguments favouring safe cities revolve around claims that they are more efficient, inclusive and sustainable. Integration of UA into the safe city concept provides an intervention to quadruplicate issues tied to livelihood, access to resources, knowledge and rights of the urban poor. Based on the preceding premise, this study assesses urban agriculture vis-à-vis strategies and contributions of UA to the livelihoods of the urban poor in Ilorin, with a view to enhancing a safe city. The study employed data from primary and secondary data sources for the methodology. Also, questionnaire administration, interview guide, personal observation and GPS all sufficed for the data instrumentation. Therefore, this study identified 11 areas within the Ilorin metropolis where UA is profoundly and widely practised. All these amounted to (144) UA sites surveyed. Descriptive analysis was employed to show charts and tables. Key findings revealed that nearly 15Ha of land was committed to UA in the Ilorin metropolis and spatial analysis through Average Nearest Neighbour Analysis (ANNA) revealed that UA sites were clustered and not randomly distributed. Also, the UA industry efficiently employs close to 902 persons annually and has raised the real income of almost 50% of poor people in Ilorin. The study concludes that city managers embrace broader responsibility by developing new ways of incorporating new UA functions in the urban planning system that would guarantee a safe city.

Keywords: Food security, Safe city, Urban agriculture, Urban Planning, Urban poor

Introduction

Urban Agriculture (UA), defined as food grown within a city or peri-urban area, is produced mainly by the urban poor. Many urban populations, including the poor, affirm that urban and peri-urban agriculture (UPA) are essential food sources. The year 2008 marked a redefining moment in the world when for the very first time, the world became more urban than rural in

the ratio of 55 to 45percent (Brown, 2015), with strong assurances of reaching 68 to 32percent by 2050 (Akinbamijo et al., 2019). It has gone beyond debate that 21st-century cities now have a high affinity for people more than ever before in history. This development is courtesy of the selective out-migration of able men and women searching for a better life in cities. Sanchez (2013) estimates that the earth's population will increase by 40%, exceeding 9 billion people by 2050.

Furthermore, these estimates assume that more than 1 billion people still living today are constantly or spasmodically food insecure, which means one in seven people go to bed hungry (Sanchez, 2013). In urban areas, particularly third-world countries, a general feeling ensued – urban poverty is an inescapable truth today in every country, whether developed or not. According to Baker (2008), there are revolting statistics that one-third of all urban residents are poor, representing one-quarter of the world's overall poor population. Correspondingly, the number of urban poor will continue to rise with the growing food insecurity and hunger (Sirakaya, 2016). However, as cities expand due to urbanization, so do the food needs of urban families (World Bank, 2013). Akinbamijo (2007) submits that without the contributions from UA to cities' nutrient cycle, the challenge of feeding cities will be unprecedented and realistically unsustainable. Findings of the Food and Agriculture Organisation (FAO) (2001) submit that close to two-thirds of urban and peri-urban households in developing countries are involved in the UA. This finding reinforces the assertion that the UA is an urban development technique that has come to stay.

With the increasing population living in urban areas, UA as a safe city concept is increasingly considered a building block in ensuring safe living and economic prosperity and leeway of returning the cities to city dwellers. However, crystallized incidences of climate change, hunger, unemployment, obesity, racism, inequality, exclusion, overconsumption, and extreme poverty render cities unsafe (Steenkamp et al., 2021). Similarly, these factors, which remain deep-seated and somewhat entwined, complicate safe living for the underprivileged or rural migrants. These problems are exacerbated by poor urbanism approaches that are too traditional. Many of which remain uninvestigated in the global south. However, previous scholarships before the 21st century adduced UA guarantees city's safety in three (3) broadways: (1) Ecologically – encourages a pollution-free environment and addresses the existential threats of climate change; (2) Social equity – by breaking the momentums of racism, social exclusion, inequality, crime and foster inclusiveness; (3) Economics – spurs equitable income distribution, provides accessible job entry to local youths and reduces the tentacles of informality and food price inflation (American Planning Association ((APA), 2007); (Brown, 2015).

Studies in the late 20th century demonstrated that 'quality of life' is better achieved from the interaction of these constructs (social equity, economics and ecology). Meanwhile, at the beginning of the 21st century, the dimensions of UA's importance expanded to cover 'ethics' (conservative planning). Scholars like (Mougeot 2000); (Dubbeling et al., 2009); (Gerster-Bentaya, 2015); (Zeunert, 2018) affirmed the need to include 'education' and 'esthetics' into UA's band of importance. Education provides an intellectual discourse on UA's relationship with other related fields and governance. In comparison, esthetics amplifies built form's visual relationship to equity, environmental, and economic concerns.

Meanwhile, reports by Aduloju et al. (2018) submit that people living in a vicious cycle of poverty without access to food, clean water, electricity, or transportation are vulnerable to natural disasters, which often lead to fighting over scarce resources. The report maintains that cities play their role as drivers of economic and social development under a safe city construct and offer leeway to address these extant challenges through effective planning. Such planning programmes include the practice of UA on leftover lands, such as the ones that have experienced the long-term hangover effects of land fumble and solid waste disposal and hitherto served as a cover for social misfits. However, new threats ranging from demographic trap, demographic fatigue, and sprawling processes to COVID-19 spread across many third-world cities, putting these now-become vulnerable cities on a collision course with food insecurity and malnutrition and undernutrition, food inflation and hidden hunger. Therefore, achieving a safe city under these unusual circumstances remains a work in progress. Previous scholarships have achieved minimal progress in adumbrating UA's roles in filling the theoretical gaps and strengthening the link between urban food security, urban planning and urban agriculture while maintaining a healthy city. Hence there exist a gap worth filling with this study.

Conceptually, a safe city or healthy city – as sometimes called – can reinforce personal safety and reduce fear by improving safety services and accountability to the community through effective urban planning (Brown, 2015). The idea of a safe city is fundamental to crime, job famine, exclusion and inequality, climate change and its adversaries and insecurity and how they affect city dwellers' activities, particularly the urban poor. Creating safe cities or neighbourhoods starts by reclaiming public open spaces through UPA infrastructure. The preceding involves cultivating idle spaces trapped within and around city cores, extended moratoriums, river banks and streetscapes, dens of social misfits. A safe city in the context of UA emphasizes inclusive and participatory urban planning through social cohesion farming and creating a city where improved safety for its citizens and neighbourhoods is guaranteed and where fearless interaction is spurred amongst people and groups to discuss UA.

From observations and consultations, the challenges of UA in the Ilorin metropolis in achieving a safe city remain deep-seated and unyielding due to the lack of effective formulation, integration and implementation of policies. Reports of Aduloju (2021) further maintain that lack of statutory designation of urban spaces for UA, lack of formalization by law, and lack of policies and plans disrupts efficient planning of urban spaces. Correspondingly, the dearth of a formal register of whom the rural migrants are, coupled with surging inequality, has further emblazoned the unsavoury and unproductive state of the Ilorin metropolis. However, most of these problems confronting the practice of UA in Ilorin are firmly rooted and connected to a lack of awareness and inaccessibility of land in Ilorin. To this end, this study assesses urban agriculture vis-à-vis strategies and contributions of UA to the livelihoods of urban poor in Ilorin to enhance a safe city.

Conceptual Clarifications

Safe City concept

Cities worldwide have diverse impacts on the environment and its inhabitants, both the present and future generations. According to Shamsuddin & Hussin (2013), urbanization created a range of new threats to public health, safety, and well-being. Especially in developing countries where the cities are witnessing a continued increase in the urban poor population. This class of people has been identified as a threat to the safety and security of the metropolitan area. Thus, public safety has emerged as an essential function for governments worldwide. The safe city concept (SCC) is an initiative optimizing performance for all public services making a city safe.

Arguments favouring safe cities revolve around claims that they are more efficient, inclusive and sustainable. In the same vein, UN-Habitat (2009) reports that the costs of providing a safe city infrastructure in cities are low. There is better access to services and facilities since it has high thresholds, the livelihoods of the urban poor are promoted, and social segregation is reduced. At this point, UA comes in as a panacea to the woes of the urban poor and reduces their tension. Integration of UA into the safe city concept provides an intervention to quadruplicate issues tied to livelihood, access to resources, knowledge and rights of the urban poor.

On the other hand, the intended aim of SCC is to help enhance safety through planning and design and increase community awareness of the environment. Empirically, Dar es Salaam in Tanzania has adopted the safe city concept to respond to complex interplays of crime and violence sustainably. For instance, Manzese is a densely populated middle- and low-income area in Dar es Salaam, Tanzania containing informal settlements. It accounts for about one-quarter of recorded crime within Dar es Salaam, and levels of violence against women – who are more efficiently better farmers than men – are high (UN-Habitat, 2009). In Tanzania, the idea of a safe city concept advocates for refurbishing abandoned buildings that have become criminal hideouts through improved street lighting. This innovation is often achieved using the spaces between houses for allotments, urban agriculture, playgrounds, and other community activities that lack well-designed, secure public open space.

We cannot discount the fact that the objective of SCC is to create a city that is free from violence and crime, exclusion and inequality and existential threats of climate change that have bared their fangs on the continued existence of cities. What's in the offing remains the concern of city planners. However, recent studies have expanded the frontiers of a safe city. As planning is creating an environment free of violence, crime, and adversaries, it must also respond to the needs of the vulnerable groups – through intra- and peri-urban agriculture – who were previously the perpetrators of crime and violence. Conclusively, activities and development proposed in the cities at the early stage of planning play an essential role in shaping the city's liveability, prosperity, and security.

Nigeria Poverty Equation

2020 marks the 12th anniversary when more than 50% of people now live in cities. This unprecedented feat is accompanied by a phenomenon known as the urbanization of poverty – a cause-effect relationship of the more people we have in cities, the more the poverty movement of people from rural to urban areas. UN-Habitat (2009) expresses concerns over the urbanization of poverty, particularly severe in sub-Saharan Africa (SSA). The bulk of urbanization occurs under different economic conditions than those in Latin America and parts of Asia. Paradoxically, the urbanization of poverty seems to grow despite economic development. Many scholars have tacitly tied the forgoing to the influence of oil on the cost of food which has worsened the food situation of the urban poor in developing economies. World Bank (2013) reports that the high rate of urbanization of poverty in many developing countries, particularly in low-income ones, occurs when non-farm jobs are limited. Non-farm productivity in the least developed countries declined 9percent from 1980-83 to 2000-03 (UNCTAD, 2002). A noticeable feature is that urban poverty increases faster than national poverty (Table 1). Indeed, the share of urban poverty concerning national poverty increased from 19percent in 1993 to 25percent in 2002 (UN-Habitat, 2009). Table 1 shows a trend analysis of the growth of urban poor across regions from 1993 to 2002. A straightforward interpretation of table 1 shows that Latin America and The Caribbean are the most impoverished region globally and with the highest percentage of urban poor. Table 1 further illustrates the trendline of the tide of poverty across the world's major regions for better understanding.

In the SSA, Nigeria is the citadel of the urban poor. A careful study of Table 1 shows that 82.9 million of Nigeria live below the poverty line compared to national standards, translating to 14.9 million urban poor. National Bureau of Statistics (NBS) (2019) reports that approximately a 40percent of the Nigerian population now live below the poverty line. The report further maintains that not less than 16 states in Nigeria have at least a 60percent of their population in poverty. The National Bureau of Statistics NBS (2016) reports that a significant 61.8% and 62.0% of Ilorin residents live in absolute poverty and are more petite than 1US$ (₦ 480) in a day, respectively. The chronic poverty, high unemployment levels, and low living standards that characterize Ilorin result in many families being unable to meet their food requirements. However, NBS (2019) reports a sharp decline in the poverty level in Kwara State. Subsequent interpretation reveals that the poverty headcount rate per the state's population lies between 20 to 40percent.

Table 1: Trend of Urban Poverty Across Regions

Regions	Population of poor in millions		% of poor	
	Urban	Total	Urban	Total Population
1993				
Sub-Saharan Africa	66.42	273.15	24.32	29.78
South Asia	107.48	490.78	21.90	25.70
Eastern Europe and Central Asia	6.12	12.49	48.94	63.06
Latin America and Caribbean	26.07	54.62	47.73	72.33
Middle East and & North Africa	0.77	5.07	15.29	52.83
India	94.28	418.83	22.51	26.17
China	28.71	435.88	6.59	31.09
East Asia Pacific	28.71	435.88	6.59	31.09
2002				

Sub-Saharan Africa	98.84	327.61	30.17	35.24
South Asia	125.4	519.74	24.13	27.83
Eastern Europe and Central Asia	2.48	7.42	33.40	63.45
Latin America and the Caribbean	38.33	64.93	59.03	76.25
The Middle East and & North Africa	1.21	6.09	19.87	55.75
India	106.64	423.06	25.21	28.09
China	4.00	179.01	2.24	37.68
East Asia Pacific	16.27	239.50	6.79	38.79
2019				
Nigeria	14.90	82.90	18.04	40.09

Source: (UN, 2009; Wiskerke, 2015)

At this juncture, the mind-agitating query that comes to mind is how do we feed the urban poor? How do we reduce the stress that comes with the urbanization of poverty? Empirically, Veolia Institute (2019) submits that in 2050, cities will consume 80% of the world's food. Hence the need for UA to be instituted into urban processes and operations. UA benefits the economy, environment, and well-being of those active in the industry and residents who enjoy its products.

Moreover, the urban poor spend up to 80percent of their hard-earned income on food(World Bank, 2013; 2015). The current trend of UA is to bring food production closer to people. Although UA cannot feed whole cities – potential yields are a bit low and restricted to certain types of food. But it does make it possible to rekindle bonds between the urban and natural worlds, between cities and their foodstuffs, and help meet local demand and a bailout strategy during emergency crises. Furthermore, UA can also support the urban poor to enhance adaptation through diversification of income opportunities, creating "green jobs," and realistically acting as a safety net during economic crises.

Study Area

Ilorin, the state capital of Kwara State, Nigeria, is located between latitudes $8^0$24 N and $8^0$36 N and longitude $4^0$10 E and $4^0$36 E of the equator. Ilorin city occupies about 468sqkm, and it situates in the transitional zone within the forest and the guinea savannah regions of Nigeria. The population census figures as of 2006 showed that the city has a population of 777,667. The present projected population of Ilorin Kwara State is 1,171,196 people. The Ilorin metropolis comprises three (3) distinct Local Government Areas (LGA), of which Ilorin East is the biggest of all the three LGAs with 44,040.43 Ha. This LGA amounts to 60.47percent of the total land area in the Ilorin metropolis, followed by Ilorin South with 16,854.55 ha (23.14percent) and Ilorin west with 11,941.07Ha (16.39percent), respectively (Auloju, 2021). The weather is a tropical wet and dry climate of average maximum temperature, average minimum temperature and average relative humidity in a year standing at 32.50C (90.50F) of 21.20C (70.20F) and 51.1% respectively (National Ocean and Atmospheric Administration, 2016). The relief of the study area is gently undulating, and the height of the land ranges between 266m to 344m above sea level. The Ilorin central area is drained by the Asa River and some seasonal rivers such as Agba, Oyun, Osere, Aweke, Ogan, Aluko, Odota, Bude and Are (Bako et al., 2018). The influenced growth of Ilorin is by its status as the state capital, physical development, and people's socio-economic activities.

The occupation characteristics of the people in the study area comprised farm practices in the form of food crops production local crafts such as; cloth weaving, leather works, pottery, mat making, trading, industrial and administrative activities. Hence, the study area has a significant impact on the socio-economic lives of the surrounding communities and, more specifically to the study area, the residential housing conditions and densities of various types of houses present all over the city (Akogun & Ojo, 2013). The communities covered by the study have significantly some levels of the slum, pigeon-holed with tenements and contiguous buildings. The residential conditions of the study areas bread violence, social exclusion, and vis some vis shows clear evidence of risks. As labelled above, the central area of study, best described as socially disadvantaged neighbourhoods, is dominated by the locals (Abdullahi, Seedat-Khan, & Abdulrahman, 2016).

Methodology

This research examines UA and safe city concepts vis-à-vis palpable links to the urban poor in Ilorin and with a view of enhancing a safe city. This research employed a survey design. A reconnaissance survey ascertained the extent and purpose of UA in the identified open spaces across residential densities. For the complete survey, the study obtained from the producing households of urban and peri-urban agriculture in the Ilorin metropolis, the primary data on socio-economic characteristics of respondents, locational characteristics of UA sites, UA's contributions to the safe city, and food security. The secondary data, which included background information on locations of UA sites in unorganized open spaces, and other relevant data, were sourced from Lower Niger River Basin (LNRB) and verified by the Ministry of Agriculture (MOA). Additional information obtained by the researcher(s) includes the background and trends of UA from other published and unpublished documents/reports. However, this study identified 11 residential areas across residential densities within the Ilorin metropolis, where urban agriculture was profoundly and widely practised. All these amounted to One Hundred and Forty-Four (144) UA sites. To this end, this research assumed a total enumeration since this research accounted for all elements. Data collected were analyzed descriptively using Statistical Package for Social Sciences (SPSS), version 26 and Microsoft Excel 2019 to show charts, tables and plates. The acquired spatial data analyzed in a GIS environment determined UA sites' hectarages and spatial distribution in the Ilorin metropolis.

Presentation of Results and Discussion of Findings

Socio-Demography in Ilorin Metropolis

Table 2 gives a detailed structure of the socio-demography of urban farmers in the Ilorin metropolis. The gender distribution of urban producing households shows there were more males than females. Recent studies around gender approach to urban food supply aver that gender identities shape foods desirable and considered culturally appropriate for people. Studies by Riley & Havorka (2015) argue clearly that urban farmers now associate some foods with maternity in women and fertility in men. Traces of these were seen in Ilorin as male producers prefer to plant cassava rich in fertility, and women prefer to grow vegetables.

From another angle, the preceding shows that UA practice in the Ilorin metropolis requires the agile strength of the men – often regarded as the breadwinner in many traditional settings in Nigeria. On the other hand, it shows that UA is now everyone's business and opens to all and sundry, and the caveat on gender bias is gradually being broken. Furthermore, the age distribution of urban producing households in Ilorin shows that 87.5% of them were the actual agile workforce. This finding indicates that anything in agriculture, right from production to marketing, requires robust strength. This strength further represents the effort necessary to satisfy human needs during the processes of UA. In the same vein, the education level of urban producers shows that 39.5% of urban producing households could be regarded as urban illiterates as these specific individuals could not read or write at a designated level of proficiency. We cannot discount that illiteracy is an inborn human characteristic and the inability to learn, most often in schools (Graffy, 2008). Education is one of the distinctive features in classifying the urban poor in Nigeria and many African countries.

On the other hand, 60.5percent were clearly educated and could write or read appropriately. Many individuals in this category were animal husbandry (e.g. poultry and fish farming) or secondary producing households. In assessing the monthly income of urban growing households, Table 2 shows that 55.0percent out of these producing households earned below the minimum wage of ₦30,000.00. This statistic consolidates the literature that UA is transforming itself in response to political, economic, environmental, and technological changes worldwide (Sanchez, 2013). Its emerging role in today's urbanizing world is just beginning to be understood and quantified (Smith, Nasr & Ratta, 2010). Furthermore, in the context of current and prospective increased urbanization, food security, and income generation are some of the positive outcomes related to the widespread practice of UA by the urban poor as a poverty alleviation strategy.

Table 2: Socio-Demography Characteristics of urban Farmers in Ilorin

Gender	**Male**	**Female**		
	(56.9%)	(43.1%)		
Age (years)	**Less than 18**	**18-65**	**Above 65**	
	(0.7%)	(87.5%)	(11.8%)	
Education	**None**	**Primary**	**SSCE**	**Tertiary**
	(16.0%)	(23.5%)	(18.8%)	(41.7%)
Monthly Income (₦)	**Less than 30,000**	**30,001- 80,000**	**80,001-100,000**	**Above 100,000**
	(55.0%)	(25.0%)	(7.6%)	(12.5%)

Source: Authors' Field Survey, 2020

1.1 Location of UA Sites

The issue of location is central to the practice of urban agriculture. In other words, location is a crucial element in understanding the diversity of urban agriculture styles and types. However, the same scenario is not so different in Ilorin. This study identifies the location of UA sites in terms of city evolution and residential areas and the number of UA sites in the Ilorin metropolis.

Table 3 shows that 15.3percent (22) of UA sites in the Tanke residential area (peri-urban) in Ilorin, in the same vein, 9.0% (13), 2.8% (4), 2.8% (4), of UA sites in Ilorin were located in Oyun (peri-urban), Kuntu/Isale Aluko (Core) and Amilegbe (core) (Plate 1&2). Furthermore, 4.9% (7), 20.1% (29), 2.1% (3), and 13.9% (20) of UA sites in Ilorin were undoubtedly located in Basin-Tahoed (peri-urban), Unity-Thaiwo (core), Apalara-Okefomo (peri-urban) and Okelele (core) respectively. While the remaining 16.7% (24), 8.3% (12) and 4.2% (6) UA sites in Odota-Lubcon (peri-urban), Aduralere (core) and sawmill (peri-urban), respectively (Table 3).

The distribution of UA sites in the Ilorin metropolis returns a skewness (degree of asymmetry of a distribution around its mean) value of (0.43). The distributions were almost perfect as it is closer to zero (0) value than one (1). Nonetheless, the distribution of UA sites across different locations in Ilorin showed some cluster evidence. This reason could be attributed to the various rivers traversing Ilorin. UA practice is usually rain-fed in Ilorin and dictates the locations of UA sites. Furthermore, from observations and consultations, these locations take advantage of the significant rivers like River Aweke, River Ogan, River Asa and River Oyun, all traversing *the* Ilorin metropolis. We cannot discount that the sediments deposited in floodplains in areas like Amilegbe and Aduralere provide fertile soil to grow vegetables.

Table 3: Location of UA Sites in Ilorin Metropolis

s/n	Areas under Study	LGA.	Type of Gardens	Number of Producing Households	City Evolution
1.	Amilegbe	Ilorin East	Community	10	Core
2.	Unity	Ilorin West	Community	8	Core
3.	Basin/Taoheed Road	Ilorin South	Community	21	Peri-urban
4.	Apalara/Okefomo	Ilorin West	Large Scale	13	Peri-urban
5.	Okelele	Ilorin East	Community	8	Core
6.	Odota/Lubcon Avenue	Ilorin West	Large Scale	25	Peri-urban
7.	Aduralere	Ilorin East	Large Scale	7	Core
8.	Sawmill	Ilorin West	Community/Large Scale	17	Peri-urban
9.	Oyun	Ilorin East	Large Scale	24	Peri-urban
10.	Kuntu/Isale Aluko	Ilorin West	Large Scale	11	Core
11.	Tanke	Ilorin South	Home	15	Peri-urban
	Total			**144**	

Source: Author's Field Work, 2021

Spatial Distribution of UA Sites in Ilorin Metropolis

Figure 1 reveals that UA sites clustered more around the core than the peri-urban. Also, it shows that many UA sites take advantage of River Asa traversing the core. Additionally, the Ilorin metropolis comprises a mixture of crop farming and livestock farming, and in some cases, the UA sites practised the two (crop and livestock farming) (Figure 2).

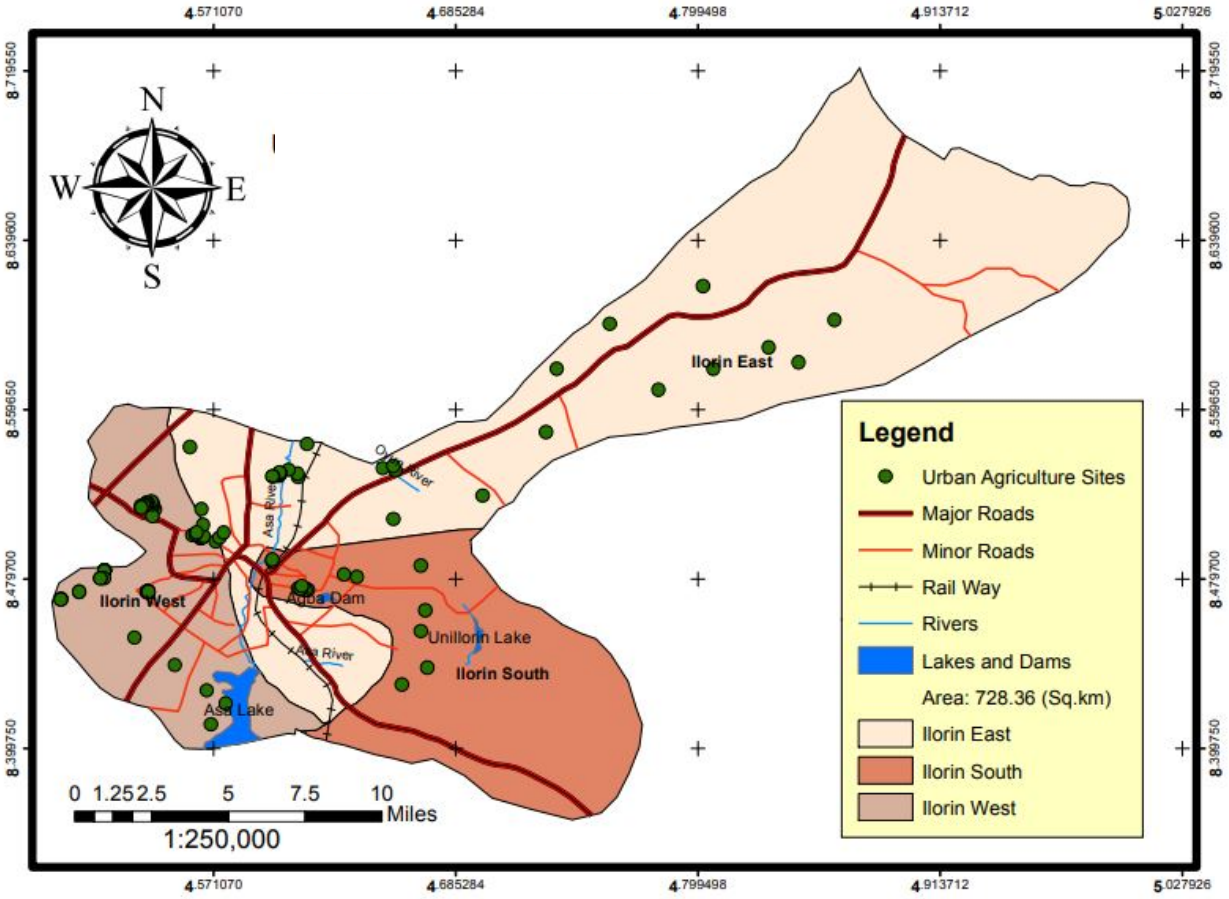


Figure 2: Spatial Distribution of UA Sites in Ilorin Metropolis
Source: Author's Analysis, 2021

Table 4 shows that livestock farming is more in the Ilorin East than that of other LGAs. This assertion was further verified with figure 3, visibly showing that in Ilorin East, 38.24percent of producer households practised crop farming, 11.76percent practised livestock farming, and 2.94percent practised both on their UA site, amounting to 52.94percent of producer households coming from Ilorin East LGA. Furthermore, table 4 reveals that 12.75percent of producing families in Ilorin South engaged in crop farming, 4.90% engaged in livestock farming, and no producer household engaged in both. The practice of UA in Ilorin South LGA amounted to 17.65% of UA being practised in the Ilorin metropolis emanated from Ilorin South.

Nonetheless, 27.45% of producer households engaged in crop farming in Ilorin West LGA, 1.96% engaged in livestock farming, while none of the producer households engaged in livestock and crop farming. This analysis demonstrates that UA focuses on crop farming and livestock farming. Urban livestock keeping is an exciting part of UA. Compared to crops, livestock produces foods that bring more profits and higher nutrient content, which are more expensive to produce and buy. Livestock products are highly perishable, a strong driver for creating them within and around cities.

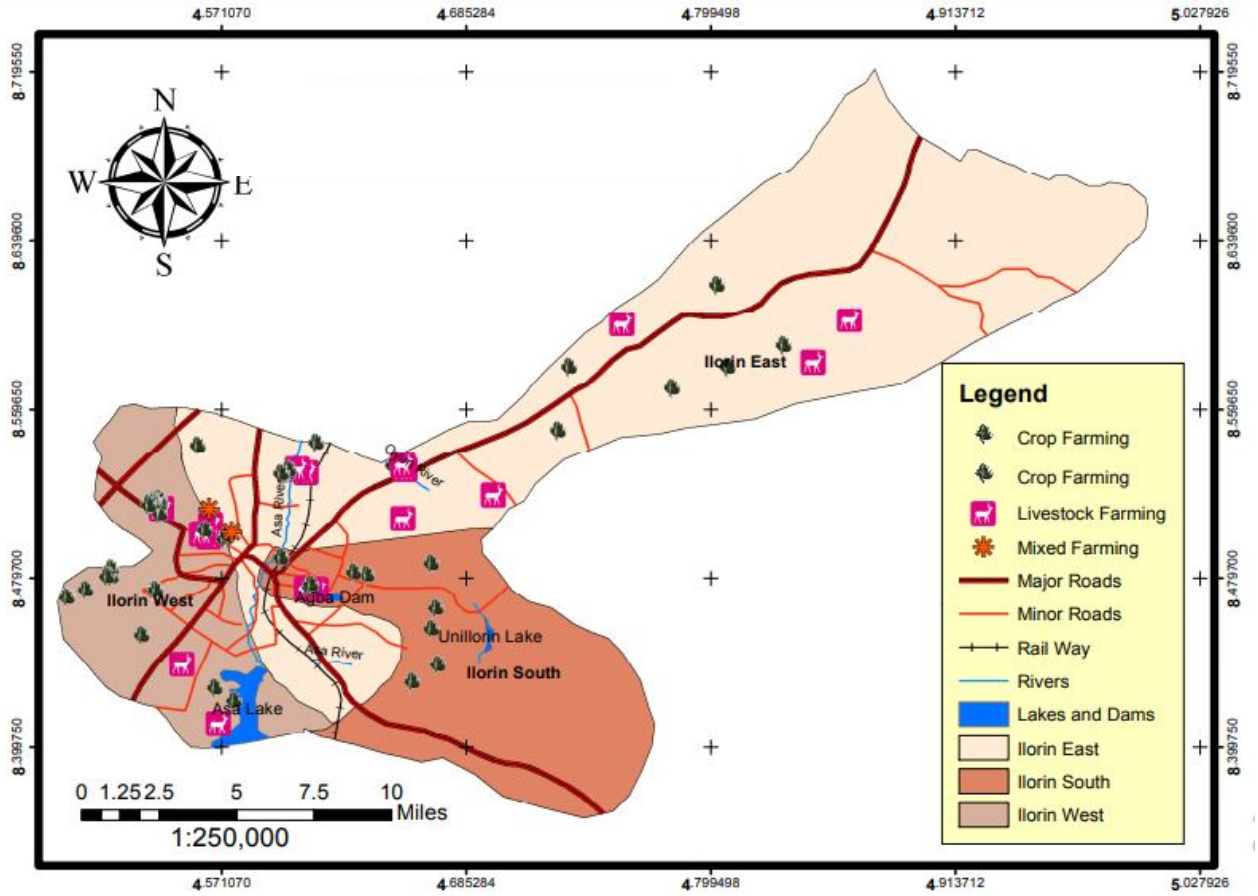


Figure 3: Spatial Distribution of UA Sites showing Different Categories of Farming in Ilorin
Source: Author's Digitisation and Analysis, 2021

This study presented a total of One Hundred and Two UA sites in the Ilorin metropolis (Table 4). This is not farfetched as many of these large UA farms especially crop farms have no distinct boundary. In many cases, more than four (4) farmers can be farming on a large expanse of land adumbratively demarcated by stunted roots and trees. To this end, they were all mapped together (Figures 3 & 4)



Figure 3: Large UA Sites in Ilorin Metropolis.
Source: Author's Field Work, 2019



Figure 4: Large UA Sites in Ilorin Metropolis.

Table 4: Spatial Distribution Analysis of Urban Agriculture Sites in the Study Area

LGA.	Category of Farming	Frequency	Percentage (%)
Ilorin East (IE.)	Crop Farming	39	38.24
	Livestock Farming	12	11.76
	Mixed Farming	3	2.94
	Total UA in IE.	**54**	**52.94**
Ilorin South (IS.)	Crop Farming	13	12.75
	Livestock Farming	5	4.90
	Mixed Farming	0	0.00
	Total UA in IS.	**18**	**17.65**
Ilorin West (IW.)	Crop Farming	28	27.45
	Livestock Farming	2	1.96
	Mixed Farming	0	0.00
	Total UA in IW.	**30**	**29.41**
Total		**102**	**100**

Source: Author's Analysis, 2020

1.2 Average Nearest Neighbourhood Analysis of UA Sites in Ilorin

As ascertained by the Average Nearest Neighbour Analysis (ANNA), UA sites' spatial distribution in Ilorin shows the clustered UA sites. The null hypothesis (UA sites are randomly distributed in the study area) gets rejected. In contrast, the alternative (UA sites are not randomly distributed) is accepted. Accepting alternative hypotheses makes it crystal clear that UA sites follow some patterns in which proximity to river Asa is a significant factor for UA distribution. It is noteworthy that when ANN < 1, the features are clustered and when ANN > 1, it is dispersed (Table 5). The result shows UA sites are clustered and not randomly distributed. Then the Z score is used to determine whether the features (that is, UA sites) are distributed randomly or follow patterns. Therefore, if the Z score falls between -1.96 to +1.96, then the distribution of the UA sites is random. Hence, it follows some patterns.

Table 5: Average Nearest Neighbourhood Analysis of UA Sites in Ilorin

Observed Mean Distance (m)	Expected Mean Distance (m)	Nearest Neighbour Ratio (m)	Z-Score	P-Value	Confidence Level
805.87	1335.78	0.60	-7.67	0.00	95%

Source: Author's Analysis, 2020

Employment Generation from Urban Agriculture

Urban agriculture represents an opportunity to increase income and employment, meet food demands, and maximize the efficiency of urban waste and natural resources management.

However, putting the Ilorin metropolis into perspective, we observed that 66.7% of the number of people UA employed were usually below five (5) persons, 11.1% between 5 – 10 persons, while the remaining 13.9%, 6.9% and 1.4% of people employed were between 11 – 15 persons, 16 – 20 persons and 21 – 25 persons respectively (Table 6). Hobbs (2002) observes that as small as 750 square metres of land looks for UA, it can generate employment for eight (8) people. Extrapolations from these statistics show that approximately Nine Hundred and Two (902) persons were employed in urban agriculture annually in the Ilorin metropolis. One urban producing household confirmed that '*we employ Agatu people (people from Benue state) to help us cultivate our land and always pay them between ₦5,000 – ₦7,000*'. Sanchez (2013) believes urban agriculture can create and dominate employment. World Bank (2017) argues that findings from a recent review in low-income countries of six Eastern and Southern African countries show that the food system accounts for more than an 80percent of all jobs. That consolidates the fact that if properly developed and accepted, UA has the proclivity of raising the real income of individuals, particularly the urban poor.

Table 6: Employment Generation from Urban Agriculture in Ilorin Metropolis

Range of Persons Employed	**Frequency**	**Percent**	**Average Persons Employed per Group**	**No. of Persons Employed**
0 – 5 Persons	96	66.7	3	288
5 -10 Persons	16	11.1	8	128
11 - 15 Persons	20	13.9	13	260
16 - 20 Persons	10	6.9	18	180
21 – 25 Persons	2	1.4	23	46
Total	**144**	**100.0**		**902**

Source: Author's Field Work and Computation, 2019

The core of urban food security, including nutrition, hinges on access to food (economically or physically). Economic access refers to the capacity to purchase food, and income is more than decisive to achieve that purpose. On the other hand, physical access to food manifests when low-income areas lack grocery shops, retail shops, markets, shopping centres to obtain day-to-day food. Correspondingly, Table 7 shows the role UA is playing in increasing access to food. Table 7 indicates the mean and rank order of the UA in making Ilorin safe. Table 7 shows that item 10, 'increase social protection ranked 1st with a mean score (4.13). Item 2 ranked 2nd, which is accessibility indices 'increase income' has a mean of (3.95). Item 6,' increase food affordability,' ranked 3rd with a mean score (3.83). However, ranked least are item 1, which is (increase employment) with a mean score (of 3.63), item 8 (increase GDP) with a mean score (of 3.57) and item 12 (reduces marginalization of women) with a mean score (3.28).

From this analysis, one can deduce that the practice of UA increases social protection, income, food affordability, nutritional status, supply of food reduces the cost of transportation, which are the supports that UA promotes in Ilorin. While improved access to land, reduced farm-table distance, and poverty reduction are tingly supported and promoted by UA as the mean rank values are close to the mid-rank value of 3.73. At the same time, UA had shown signs in Table 7 that it has little or no support for employment opportunities, increase in Gross Domestic

Product (GDP) and reduction in the marginalization of women as they ranked above the mid-mean score of (3.73). The findings lend credence to the studies of Smith et al. (1996), which aver that women have unequal access to markets, inputs, land, and credit compared to male farmers, and they are not eligible for land ownership in many cultures. Ilorin is observed as a culturally and religiously inclined city in this research context. Their women exhibit the northern culture of the *purdah system* (a religious and social practice of female seclusion – keeping women away from public view). This practice is interfering and blocking the interest women have in the practice of UA.

Table 71: Contributions of UA in Making Ilorin Safe

Item No.	Indices	Mean	Rank
10	Increase social protection	4.13	1st
2	Increase income	3.95	2nd
6	Increase food affordability	3.83	3rd
5	Increase nutritional status	3.79	4th
11	Increase the supply of food	3.78	5th
9	Reduces cost of transportation	3.74	6th
3	Improved access to land	3.72	7th
4	Reduce farm table distance	3.70	8th
7	Reduce poverty	3.67	9th
1	Increased employment	3.63	10th
8	Increase GDP	3.57	11th
12	Reduces marginalization of women	3.28	12th
Mid-mean Score		**3.73**	

Source: Author's Computation, 2021

Conclusion

The constant migration of people from rural to urban centres, engendered by increased access to a better standard of living, financial prosperity, infrastructural facilities, is rising. However, this high affinity by cities more than ever before has come with a price felt more on urban food insecurity and subsequently renders cities unsafe for living. Many cities like never before, have recognized the urgent need to elevate the need-for-food agenda by developing adequate policies and programmes to secure urban food security, particularly for the urban poor. Further, creating favourable conditions and developing an enduring urban food policy provides safe, nutritious, and affordable food to all categories of the urban population. Hence, the need to institutionalize UA formally into the urban planning agenda.

UA in Ilorin has been a response to the survival of the urban poor. The contribution of UA to food security and healthy nutrition has probably been its most important asset. The study reveals that 48.8% of urban producing households are labelled urban poor as they earned below the approved minimum wage by the Federal Republic of Nigeria. The practice of UA in Ilorin is mainly for income, and further findings revealed that income generation is of greater importance than access to other food in Ilorin. Hence, an incontrovertible reason for farming in cities differs for individual households or locations.

Nonetheless, achieving a safe city through UA in Ilorin is a product of chance and choice. Spatial analysis of UA sites revealed that the practice is a function of certain factors like proximity to River Asa, consensual access to vacant land, streetscapes or extended moratoriums. Therefore, this study lends credence to an agelong assertion that city planners have not given much attention to the need to safeguard the food production and ecosystem services of productive open spaces within and around cities. Such efforts are shorter routes to achieving a safe city. Therefore, city managers have come to embrace broader responsibility by developing new ways of incorporating such functions in the urban planning system that act to preserve the green and productive spaces against illegal use.

Furthermore, the advent of UA as a supposed cure-all must be re-emphasized, particularly amongst nations facing food insecurity and adverse weather events. This study has evinced that Ilorin city is on the right path to a safer environment, as shreds of evidence evinced broken momentums centred on informalities, social protection, equitable income. Nevertheless, planners and decision-makers must fortify concerted efforts toward integrating UA into land-use planning. However, the study could not ascertain the roles of the new UA's paradigm, such as esthetics, ethics or education, in achieving a safe city. This oversight, borne out of a paucity of data and particularly scarce UA literature on Ilorin, has been labelled as a significant limitation of this study. We hope the attendant studies will address it by statistically and qualitatively measuring the roles of these new paradigms in safeguarding cities.

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