We are IntechOpen, the world’s leading publisher of Open Access books
Built by scientists, for scientists

6,600 Open access books available
177,000 International authors and editors
195M Downloads

154 Countries delivered to
12.2% Contributors from top 500 universities

Our authors are among the TOP 1% most cited scientists

WEB OF SCIENCE™
Selection of our books indexed in the Book Citation Index in Web of Science™ Core Collection (BKCI)

Interested in publishing with us?
Contact book.department@intechopen.com

Numbers displayed above are based on latest data collected.
For more information visit www.intechopen.com
Chapter

Dialectics of Mainstreaming Agriculture in Urban Planning and Management of Cities of the Global South

Nkeiru Hope Ezeadichie, Vincent Aghaegbunam Onodugo and Chioma Agatha John-Nsa

Abstract

Most cities in the global south have evolved overtime with significant organic changes in their wake. One of the noticeable changes is the emergence of pockets of city-based agricultural activities, a previously rural-based activity. There are varying interpretations behind this new trend. With increased agglomeration arising from rural-urban migration, residents resort to farming as a panacea to urban challenges. Even employed urban residents resort to agriculture for supplementary income. This emerging scenario has generated debates, dialectics, and polemics among stakeholders as to the propriety or otherwise of this development. This chapter, therefore, takes a panoramic view to all the sides of the issue through review scoping of desktop research method. Specifically, it examines the scope of increase in urban agriculture (UA), the types and nature of UA; urban planners’ attitude towards UA, and then propose the management strategies such as promoting agriculture-friendly urban plans for access to agricultural land and practices. The findings revealed that UA takes place on residential land, undeveloped private/public lands, and riverbanks. The prominent UA activities are animal husbandry, aquaculture, cultivation of food and cash crops, etc. The urban-planning measures for integrating UA into the urban environment include inculcating UA-responsive policies in broad plans.

Keywords: urban agriculture, agglomeration, urban planning, urban management, global south

1. Introduction

The increased urbanization of the world cities has thrown up varying opportunities and challenges in its wake. A combination of factors such as population increase, a rapid climate change situation and higher incidences of extreme weather conditions, energy limitations, water scarcities and food security concerns, have bequeathed some air of uncertainty on the evolution of global cities ([1] c.f [2]). Due to the current unparalleled city growth, urban areas now offer living space for more than half of the world population that needs to be fed [3] and it is projected that by 2050, 70% of the world population will reside in cities ([4] c.f [2]).
Adedeji and Ademiluyi [5] suggest that population increase adversely impacts food security from both ends. It increases food demand on the front end and also indirectly decreases its supply through environmental deterioration, construction of buildings, and marginalization of food production at the back end. The implication is that of the marked increase of agricultural activities in areas hitherto that was not known for such. Available statistics show that the need to feed a rapidly growing urban population has driven above 800 million people on a global scale to practice urban agriculture (UA) [6]. UA is a pervasive phenomenon that is found in both advanced and developing countries ([7] and Mlozi [8] cf [5]). Further challenges associated with food security in an urban setting are the continuous increase in rural–urban migration, environmental implications of large-acre commercial agriculture and overall access to safe and nutritious food [2].

Urban and peri-UA is the ‘growing, processing and supply of food’ and related products through the cultivation of plants and occasionally raising of livestock in and about cities to feed the local populace ([9] cf [6]). UA comprises small to large areas in and about cities, like community gardens, vacant plots, balconies, farms or gardens on the rooftop, indoor farms and greenhouses [6]. In developing countries, UA is a progressively vital livelihood activity, which adds considerably to both family livelihood arrangements and the urban informal economy [10]. Studies of urban and sub-urban agricultural systems in West Africa are few [5]. However, Game and Primus [6] noted that more than 20 million people in West Africa engage in UA. A broad range of production ventures is found in the agricultural sphere spanning family subsistence to extensive commercial farming. Korir, Rotich and Mining, [10] suggest that the supply and distribution cost from rural foods or the cost to import food for the urban area has been on the increase and it was estimated that urban food insecurity would rise if nothing is done to reverse the trend. Thus, in some parts of Lagos city, unauthorized farms are mostly found along wetland areas used for the cultivation of perishable goods particularly vegetables (carrot, lettuce, spinach, cabbage, etc. while in parts of Ikoyi and Lekki, home-plots are used by the people to cultivate vegetables, do poultry farming for chickens, ducks and turkeys) [5]. Urban farming in most developing nations is embarked on by two groups, recent migrants and traditional farmers, who have been immersed in urban development [10]. The practice of UA in different countries revolves about four broadly distinct farming systems: animal husbandry, aquaculture, agro-forestry and horticulture [10]. Meanwhile, the various parts of the city where agriculture is practiced have been researched by scholars. UA commonly occurs around or in-home spaces, a large expanse of undeveloped private or public land [11], private residential land, roadside borders, river banks and other public lands [10].

UA is harnessing the gap left by rural agriculture (RA) which is the primary producer of urban food as it failed to attain urban food security [6]. UA complements RA in relation to self-provision, marketing and supply flow of food [6]. Furthermore, there is a rising fear that rural agriculture will constrain access to land for accommodation purposes in the rural areas (through land grabbing) and provoke migration to cities thus decreasing rural populations ([12] cf [6]). Nevertheless, UA is doubtful to make any urban area or most of its households entirely self-sufficient in their food requirement ([13] cf [6]).

Presently, the absolute and relative increase in food insecurity and urban poverty is becoming a challenge due to the rising urbanization facing many parts of the world. However, UA is gaining prominence as a mitigating approach to challenges of many cities of the world [10]. Urban farms are mostly on former vacant or underused spaces in the city and are then converted into attractive, safe and useable areas [14]. According to United Nations Development Programme (UNDP) ([15] cf [16]), the international policy area of UA, which addresses poverty, was emphasized at the HABITAT agenda
1996 in Istanbul. In the same vein, the UNDP published an influential volume on UA, which highlights the activity’s importance for the creation of a job, ending urban dwellers and creation of an environmentally sustainable urbanization. United Nations Habitat affirmed that UA in many cities plays a significant role in sustaining environmental integrity and adding meaningfully to the achievement of self-reliance in relation to food. This is achieved through the enhancement of livelihoods of the urban poor, and by growing of varied range of crops and breeding of livestock with considerable yields [10]. The physical environment where people play, work and live, has significant impacts on their health. Areas with clean and safe outdoor spaces for recreation, meetings and exercises, impact positively on the health of the dwellers [14].

Hagey, Rice and Flournoy [14] show that the gains accruable to communities due to the presence of urban farms include: offering beautiful, safe, and welcoming areas for neighbors to come together and play; increasing a sense of communal living and making safer environs.

Korir, Rotich and Mining, [10] revealed that urban households can enhance both food consumption (better access to a low-cost source of protein) and food quality (as poor households in cities who participate in farming consume more fresh vegetables than other households in similar class). Households who take part in community gardening are capable of offsetting usually 30%-40% of their yield needs by consuming food cultivated in their own gardens (Seattle Department of Neighborhoods in Hagey, Rice and Flournoy, [17]). The import of UA to nutrition and food security is likely its most vital advantage [10]. UA is promoted as it is widely seen as contributing to food security, the dispensation of providing creative income opportunities and as an approach mainly geared towards supporting the poorest of the poor in the urban population [16]. Korir, Rotich and Mining, [10] revealed that many claims have shown that the principal motive people engage in UA in cities is in reaction to unreliable, insufficient and irregular access to food supplies and the absence of purchasing capacity. Urban farming offers many gains to struggling societies: neighborhood revitalization, better access to healthy food, workers’ training and occupational development [14].

The foregoing has riveted the attention of scholars towards assessing the broad implications of UA. This chapter joins the growing number of works to consider the many sides of the debates on this subject. The authors adopted a more explorative than prescriptive approach to the discourse. The desktop research method through scoping review proposed by Arksey and O’Malle [18] as cited in De Beer et al. [19], was employed in the exploration; and online resources were extensively utilized in the discourse.

2. Methodology

The study employed the desktop research method. For a comprehensive study, a scoping review of the literature was applied to explore the nature and dynamics of UA and the planning panaceas for mainstreaming the same into the urban environment. The methodological structure employed was modified by Levac, Colquhoun and O’Brien [20] as cited in De Beer, Gaskin, Robbertse and Bardien, [19], from its initial exposure by Arksey and O’Malle [18] as cited in De Beer et al. [19]. The scoping appraisal for this chapter trailed the first five phases of this methodological structure.

2.1 First step: defining the objectives of the review

The review objectives include to:

1. Examine through available literature the scope of increase in UA in the world
2. Examine the nature and types of UA as published in journals

3. Examine urban planners’ attitude towards UA

4. Identify the means of mainstreaming UA in the city

2.2 Second step: identifying appropriate search strategy for the study

Studies relevant to the study were identified by examining electronic catalogs through the use of various search engines, especially google.com. This opened up electronic databases such as MEDLINE, Schimago, EBSCOhost Web of Science, Scopus, Google Scholar, etc. related to the study objectives. The search word or terms include: UA or farming in cities, urban planning and UA, types of UA, etc.

2.2.1 Eligibility criteria

Articles published from 1995 to 2020, were sought. This was to cover the duration of time perceived to be when UA began to gain scholarly attention. Another reason for choosing from 1995 to 2020, was to avoid selecting materials that are obsolete and do not reflect the present technological and societal changes already in place and further evolving. All pertinent peer-reviewed educational materials and those written in the English language were selected.

2.3 Third step: selection of material for the study

The screening of the title was done by the three researchers using the eligibility criteria. Where it seemed that articles were suitable for the theme, one of the researchers screened the abstracts in relation to the inclusion criteria. The articles were retained if they met the inclusion or exclusion criteria, that is, they answered the research question(s) or tendered towards meeting the objective of the study.

2.4 Fourth step: extracting and charting the data

This study followed Arksey and O’Malley’s [18] suggestions concerning a standard data extraction procedure. The procedure employed for this review comprised details of author, study location, methodology, publication year, language and communication requirements and other relevant discoveries.

2.5 Fifth step: collating, summarizing and reporting results

The relevant articles were collated and relevant information on the study objectives was retrieved and reported. A total of 12 articles were considered relevant and retrieved, from which 16 other scholarly information was retrieved. This makes a total of 28 referenced materials for this review study. Those utilized in this study, were articles related to African countries like Nigeria, Kenya, Zimbabwe and a little of other articles centred in developed countries like America.

3. Results and further discussions

With the growing interest in sustainability as an essential concept in urban planning, localized systems of food production ought to be encouraged and
Regardless of the divergent opinions about the import of UA, it continues to rise worldwide ([22] cf [2]) and is positively impacting the course of survival and poverty alleviation ([23] cf [2]) of over 800 million persons with 200 million out of them being urban farmers [2]. The World Commission on Environment and Development (WCED [24]: 254 cf [16]) report advised all governments in the developing world to “consider supporting urban agriculture”.

In contrast to the valued importance of UA, its negative impacts are also projected such as its situation in close proximity to populated regions and livestock farming contributing 30% of greenhouse gas emissions [6]. Moreover, Korir, Rotich and Mining, [10] opine that UA must, thus, be viewed as a permanent and dynamic aspect of the urban ecological and socioeconomic system, utilizing normal city resources, contending for water and land with other urban activities, affected by urban plans and policies, and supporting urban economic and social advancement. Furthermore, Rogerson, [16] shows that UA is not a safety net for ‘the poorest of the urban poor’ since the proportion of families in the ultra-poor partaking in agriculture was significantly lesser than higher-income groups.

There is presently a universal recognition of the significance of UA in most nations of the world and particular in the African continent. Existing literature reveals that over the past ten (10) years, fast growth in concern and activity in UA has risen greatly ([25] cf [10]). The renewed interest in UA in the late 1980s and early 1990s demonstrates its importance for creating more sustainable rapid urbanization globally [2]. A study in Kenya indicates that about 64% of households in the city engage in some form of UA ([26] cf [10]). An appraisal done in Cape Town of an urban food gardens initiative showed that UA provides gardeners prospect to get involved in a development scheme that holds great potential and can grow into a commercial venture if enough attention is paid to agricultural development, policy issues, land restructuring and livelihood creation [16]. It is expected that 200 million city dwellers provide 15%-20% of the world’s food [10]. Broadly speaking, there is a propensity towards more system of intensive production that better meets the rising urban food demand [5].

UA still gets the least importance in several countries, especially in the aspect of development planning. A critical step in the development of UA is the integration of the same into the urban land use structure and the formation of an enabling policy environment [10]. Decision-makers and urban planners are confronted with the problems of acknowledging the significance of UA production to city sustainability and adjoining areas and several planners believe that urban planning and agriculture are relatively unrelated [5]. For this reason, UA is frequently informal and tends to be segregated to the cities’ peripheral, far away from infrastructure and markets without evaluating the environmental, economic and links with other facets of the city [5]. In Kenya, policies on UA have not been considered in the past by the government as a worthwhile livelihood alternative. In Nairobi, regardless of the high level of practice, UA is not an accepted urban land use and it is not classified in land use zoning [27].

In the present situation, introducing UA would be a feasible means of attaining sustainability that tackles structural variations engendered by globalization to groups, their food systems and the value of life for urban dwellers. That is the reason for the attempt to reimage ‘the city as a farm’ by some urban designers. The American Planning Association also recognizes the significance of integrating UA into the planning of various land-uses in cities ([28] cf [2]). The neglect of UA, in city planning, has created several problems in most cities of developing countries. Some of these problems include physical chaos and its associated challenges of unsustainable city growth and environmental insufficiencies which are a clear demonstration of inadequate and inappropriate land use planning that acknowledges and integrates certain facets of the city into the process of land-use allocation,
and mark-out specific tools of administering them. It consequently necessitates that contemporary urban planning approaches should recognize the current urban realities and needs and accept urban livelihood approaches such as urban farming as part of the basis for urban planning and management [5].

Interest in urban and sub-urban agricultural production is largely low amid policy, hence, a consistent approach to UA is hardly available ([29] c.f [5]). Thus, the management strategies to UA demand the following points as observed from literature:

- Increase financial allocation for programs that educate urban farmers and provide technical support [14].
- Authorize resolutions, schemes, and laws promoting UA [14].
- Offer safe and accessible land that has access to solar energy and irrigation source [21].
- Improve urban networks and transportation systems to efficiently convey produce to consumers [21].
- Make provisions for the collection and transportation of organic wastes from landfills to urban farms [21].
- Change some open spaces and vacant lands within residential areas to community farms, gardens and other features that permit socializing [21].
- Build networks to connect farmers, with labourers, and markets to help maintain and advance new ventures [21].
- Inculcate UA-responsive policies in broad plans and implement UA-friendly zoning programs [14] to combat heat islands and other unfavorable climatic conditions [21].

There is a pressing need to appraise zoning decisions and land-use planning and embracing more flexible guidelines to assist the urban poor advance UA instead of eliminating it [5]. Furthermore, urban planners should make effort to uphold multifunctional land use, and bigger public participation in the administration of urban open spaces as a means, incorporating UA as a vital model in programs of urban development. And likewise enable negotiation between diverse stakeholders for consensus building on UA [5]. Thus, UA must be incorporated into the urban master plan and a comprehensive modification of the urban regulation needs to be undertaken to add UA as a formal part of urban land use. The “New Urbanism” paradigm aims at correcting the trend of “Urban Sprawl” by utilizing insight gained from traditional urban development methods and thus preserving green areas for active recreation, natural habitat and useful agriculture [5].

4. Conclusion

This chapter discusses the growing phenomenon of UA, which emergence is more out of necessity than careful systematic planning. The growing urbanizing of global cities generally and especially global south cities in particular, largely due to migration and population increase has exacerbated food insufficiency and security. Consequently, UA evolved to fill the gap created by the food demand and
supply conundrum from the rural setting. The findings revealed that UA takes place around or in-home spaces, a large expanse of undeveloped private or public land, residential land, roadside borders, river banks and other public lands. The prominent UA activities are animal husbandry, aquaculture, agro-forestry, horticulture, cultivation of perishable crops carrot, lettuce, spinach, cabbage, etc. Traditional urban planning as usual is foot-dragging to acknowledge the organic emergence of UA and integrate it into its planning. Instead, it prefers to view it as an abuse of urban space and dwells more on the nuisance it poses to the environment and constraints it gives to land availability for residential and other formal purposes [30]. This chapter posits that there should be a holistic examination of the pro and cons of UA. It submits that, since, UA has come to stay, it offers employment and food lifeline to a teeming population of urban residents, and it may be mainstreamed in urban planning to maximize the benefit while minimizing the negative side effects. Some of the suggested measures that can enhance the achievement include promoting agriculture-friendly urban plans for access to agricultural land, irrigations, manure and transportation network for distribution of produce, offering safe and accessible land, changing some open spaces and vacant lands to agricultural use, inculcate UA-responsive policies in broad plans.

Author details

Nkeiru Hope Ezeadichie*, Vincent Aghaegbunam Onodugo and Chioma Agatha John-Nsa
University of Nigeria, Enugu, Nigeria

*Address all correspondence to: nkeiru.ezeadichie@unn.edu.ng

© 2022 The Author(s). Licensee IntechOpen. This chapter is distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/3.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.
References


Dialectics of Mainstreaming Agriculture in Urban Planning and Management of Cities...
DOI: http://dx.doi.org/10.5772/intechopen.104269

2005;8(1):19-32. DOI: 10.1080/1364557032000119616


