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To cite this article: Tinashe P. Kanosvamhira & Martin Magidi (2026) Fostering sustainability: an analysis of urban agriculture dynamics in two sub-Saharan cities – motivations, land access, and legislative challenges, *International Journal of Agricultural Sustainability*, 24:1, 2616049, DOI: [10.1080/14735903.2026.2616049](https://doi.org/10.1080/14735903.2026.2616049)

To link to this article: <https://doi.org/10.1080/14735903.2026.2616049>



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Published online: 20 Jan 2026.



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RESEARCH ARTICLE



Fostering sustainability: an analysis of urban agriculture dynamics in two sub-Saharan cities – motivations, land access, and legislative challenges

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ABSTRACT

Urban agriculture (UA) is increasingly acknowledged as a critical component in enhancing food security, sustaining livelihoods, and fostering sustainable urban development across African cities. This paper adopts a qualitative case-study approach to examine the motivations, operational dynamics, land access challenges, and legislative contexts of UA in two contrasting urban settings: Cape Town (South Africa) and Norton (Zimbabwe). Guided by the social capital theory and interviews with key stakeholders and policy analysis, the study reveals divergent trajectories. In Cape Town, UA is semi-institutionalised, supported by governmental and civil society actors, and framed within broader agendas of food justice and community development. However, practitioners face significant constraints related to land access, urban policy fragmentation, and competition over space. In contrast, UA in Norton is largely informal, operating as a survivalist strategy in response to persistent socio-economic challenges, with minimal formal support but relatively flexible regulatory conditions. Here, land-tenure insecurity and the threat of eviction are pressing concerns. The study highlights the role of context-specific legislative frameworks, secure land rights, and inclusive urban planning in enabling UA. By situating UA within broader debates on land governance and urban informality, this paper contributes to understanding the institutional and spatial conditions necessary for advancing UA.

ARTICLE HISTORY

Received 10 January 2025

Accepted 7 January 2026

KEYWORDS

Norton; Cape Town; urban agriculture; legislative; qualitative approach

1. Introduction

Urban Agriculture (UA) has emerged as an increasingly valuable activity in the context of sub-Saharan African cities, where rapid urbanisation often places pressure on resources and limits access to basic services (Mukaila & Enete, 2025). As urban populations expand, so does the demand for food, creating challenges in conventional supply chains that rely on food imports from rural areas or overseas (Vidal Merino et al., 2021). In response, Urban agriculture (UA) offers a pathway to improve local food security by enabling communities to cultivate crops and rear livestock within city boundaries. The integration of agriculture within urban and peri-urban spaces provides a readily available food source, reduces dependence on external markets, and helps mitigate food insecurity, a pressing issue in many African cities where poverty and unemployment are pervasive. Additionally, UA supports livelihoods by creating income-generating opportunities through the sale of produce, thereby helping urban households meet their economic needs (Kukde et al., 2024). UA also fosters environmental benefits, as green spaces in cities have been associated with reduced urban heat, enhanced biodiversity, and the provision of ecosystem services, all of which contribute to more resilient and sustainable urban systems (Vargas-Hernández et al., 2023).

However, despite its advantages, UA remains constrained by complex socio-political and regulatory landscapes, as well as practical resource challenges (Gray et al., 2020). Many African cities lack formal policies that acknowledge or support UA, leaving it in a legally ambiguous status that complicates land

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access, limits investment in farming infrastructure, and subjects farmers to eviction threats (Gore, 2018). These barriers are often further compounded by conflicting land-use priorities within city planning, where urban development favours commercial and residential projects over agricultural initiatives, squeezing out available spaces for farming. Additionally, the motivations driving UA are diverse and can vary significantly across socio-economic groups; while some view UA as a subsistence strategy, others engage in it as a commercial venture. This diversity in objectives underscores the need for nuanced, inclusive policies that accommodate a range of UA practices.

Therefore, it is critical to examine how different urban contexts shape the practice of UA, as socio-political and economic conditions directly influence land access, policy frameworks, and the sustainability of urban farming. By understanding these contextual differences, this study contributes to identifying key enablers and constraints that shape UA's role in food security, livelihoods, and urban resilience.

Despite the growing recognition of UA's importance, there remains a gap in research exploring how contextual differences influence its development across cities in the Global South. Most existing studies either focus on a single urban setting or adopt a generalised perspective, overlooking the place-specific factors that influence urban farming practices and their long-term viability. Comparative analyses remain limited, with only a few studies, such as Paganini and Lemke (2020) work on Cape Town and Maputo, providing cross-city insights. This study addresses this gap by examining three interrelated dimensions shaping UA in Cape Town, South Africa, and Norton, Zimbabwe: (1) the motivations and livelihood functions underpinning engagement in urban agriculture; (2) the land access arrangements and tenure-related constraints that condition farmers' ability to cultivate; and (3) the legislative and institutional environments that enable or hinder UA practices. While UA is widely practised across African cities, formal support mechanisms often remain inconsistent or absent, resulting in an ambiguous legal status for practitioners. This study examines how different urban governance structures, land tenure systems, and policy environments impact the ability of urban farmers to sustain their livelihoods.

This paper employs a qualitative case-study approach, drawing on semi-structured interviews with UA practitioners, local authorities, and civil society representatives in both cities, as well as a review of policy documents and relevant literature on urban agriculture. By juxtaposing the experiences of Cape Town and Norton's urban farmers, this study reveals both the shared and divergent challenges these practitioners face. Specifically, it highlights the centrality of land access as a barrier to sustainable UA in both contexts, compounded by disparate levels of legislative recognition and support.

The findings of this study contribute to a nuanced understanding of UA's socio-political and legislative challenges within African cities, underscoring the importance of supportive policies and secure land access in realising UA's potential. In doing so, this paper provides insights for urban planners, policymakers, and researchers engaged in fostering sustainable, inclusive food systems across African cities. The remainder of the paper is organised as follows: Section 2 provides the theoretical framework for the study, while Section 3 outlines the materials and methods. The findings are presented in Section 4, followed by the discussion in Section 5 and the conclusion in Section 6.

2. Conceptual lens

This study employs the social capital theory, as articulated by Putnam, to investigate urban agriculture in selected cities. Social capital theory is particularly useful in understanding how social networks within communities influence access to resources, collaboration, and resilience. The role of social networks in facilitating the implementation and sustainability of urban agriculture initiatives has been well-documented in existing literature (Artmann & Sartison, 2018; Kanosvamhira, 2024). The nature of these networks is crucial, as it can either enable or hinder the mobilisation of targeted actions in urban farming contexts (Artmann & Sartison, 2018; Glover et al., 2005).

Social capital refers to the relationships within communities, encompassing networks, group affiliations, and levels of trust and reciprocity (Claridge, 2018). The extent of an individual's social capital is influenced by the breadth of their network, as well as the economic, cultural, and symbolic capital embedded within it. Putnam (2000) identifies three types of social capital: bonding, bridging, and linking, each of which plays a crucial role in shaping the opportunities and resources available to urban farmers, particularly in the context of urban agriculture.

Bonding social capital involves horizontal relationships within homogeneous groups, often characterised by close-knit ties among individuals who share common characteristics, such as family, ethnicity, or locality (Claridge, 2018). These strong, in-group bonds facilitate mutual support, enabling the sharing of resources, skills, and knowledge. In the context of urban agriculture, bonding capital is essential for establishing and maintaining community gardens or farming cooperatives, where trust and cooperation are enhanced through these close-knit ties, fostering resource sharing.

Bridging social capital, on the other hand, connects individuals or groups from diverse social, cultural, or economic backgrounds. This form of capital allows urban farmers to access resources, expertise, and opportunities beyond their immediate social networks. By linking diverse actors, including people from different neighbourhoods, professionals from various sectors, and even international organisations, bridging social capital expands the reach of urban farmers. It can facilitate connections to sustainable farming experts, researchers, and external markets, encouraging knowledge exchange and innovation. In this way, bridging capital promotes adaptability, collective problem-solving, and the mobilisation of external resources and partnerships (Caldas & Christopoulos, 2023).

Linking social capital pertains to vertical relationships between individuals or groups and formal power structures, such as connections between community members and government bodies, non-governmental organisations (NGOs), or financial institutions. Unlike bonding and bridging, which focus on peer-to-peer relationships, linking social capital provides access to resources controlled by higher authorities or institutions. For urban farmers, linking capital is crucial for securing formal support, such as land tenure, funding for agricultural initiatives, and policy advocacy. Putnam (2000) argues that linking social capital is particularly significant for marginalised communities, as it enables them to engage with power structures and leverage resources that would otherwise be inaccessible. In urban agriculture, strong linking social capital allows farmers to navigate regulatory frameworks, secure agricultural grants, and influence urban planning policies, all of which contribute to the development of sustainable food systems (Caldas & Christopoulos, 2023).

The application of social capital theory in this study provides valuable insights into how urban farmers in Cape Town and Norton overcome challenges related to land access and legislative constraints. By examining the bonding, bridging, and linking social capital within these communities, the study illustrates how relationships between farmers, local authorities, and civil society influence access to resources, policy advocacy, and collective action. This framework offers a comprehensive understanding of how social networks can either mitigate or exacerbate the impacts of land insecurity and legislative gaps in urban agriculture, highlighting the importance of social capital in fostering sustainable and equitable food systems.

3. Material and methods

3.1. Case study sites

3.1.1. Case study 1: Cape Town, South Africa

Cape Town, located in South Africa's Western Cape Province, is a city of stark contrasts, distinguished by its breathtaking natural beauty and significant socio-economic inequalities. As the country's legislative capital, it serves as an important economic centre, home to a population of roughly 4.6 million people (Stats SA, 2020). The city is globally recognised for its tourism, attracting visitors with iconic sites such as Table Mountain and Robben Island, as well as its rich cultural and historical heritage.

However, alongside its economic prominence, Cape Town faces considerable challenges, particularly high levels of poverty and inequality. The Gini coefficient in South Africa, which measures income inequality, remains elevated, translating into a substantial divide between the city's affluent and impoverished communities. Unemployment is another pressing concern, especially among the youth and those with limited education. According to the Quarterly Labour Force Survey (Stats SA, 2020), Cape Town's unemployment rate reached 27.8%, a figure exacerbated by the economic disruptions caused by the COVID-19 pandemic.

The Cape Flats, a large low-lying area to the southeast of the city centre, embodies the socio-economic difficulties affecting the wider metropolitan region. This area was historically designated for non-white residents under the apartheid regime's Group Areas Act of 1950, which led to forced removals and the

establishment of segregated townships. The legacy of this spatial and socio-economic division continues to shape the region's population and development patterns.

The Cape Flats is characterised by overcrowding, inadequate infrastructure, and widespread poverty. Informal settlements and townships dominate the landscape, housing a large proportion of Cape Town's low-income residents. A report by the City of Cape Town (2018) highlighted that many of these households live in cramped conditions with limited access to basic services such as clean water, sanitation, and electricity. High crime rates, often fuelled by poverty and gang violence, also plague the area.

Food insecurity is a significant concern, with many households struggling to access affordable and nutritious food. Urban agriculture, particularly through home and community gardening, has become an essential strategy to address these food security challenges and improve nutritional outcomes in the Cape Flats (Battersby, 2011). Support for urban gardening initiatives has come from both the government at municipal and provincial levels and civil society organisations. These stakeholders have provided crucial infrastructure, such as water supply, gardening tools, and seeds, to enable successful cultivation (Paganini et al., 2018).

3.1.2. Case study 2: Norton, Zimbabwe

Norton is a secondary town in Zimbabwe situated approximately 40 km from the capital city of Harare. It is one of the country's rapidly urbanising urban centres which witnessed its population increasing from approximately 24,000 in 2002, nearly doubling to 44,000 in 2012, and reaching almost 80,000 in 2022 (Zimstats, 2013, 2022). Established as a small farming compound in 1914, Norton capitalised on its high rainfall and fertile soils which support a diverse range of crops and gradually expanded into an organised farming community. Numerous farms were established in the area, and an increase in farming activity led to a higher demand for agricultural implements. This attracted industrial firms, marking the formative stages of industrialisation in the area (Magidi, 2024). A railway siding was established near the settlement in the 1950s, attracting a significant number of manufacturing firms with an interest in agriculture to meet the needs of the surrounding farming communities, transforming the compound into an organised industrial township (World Bank, 2014).

Over subsequent years, Norton developed into a planned industrial township and was designated under a decentralisation plan to accommodate overflow industries from Harare following the post-Second World War industrial boom. In 1974, it was upgraded to a town board before attaining town council status in 1994, and it is working towards achieving municipal status (Norton Town Council, 2014). Further growth led to the establishment of major manufacturing industries, such as the Grain Marketing Board, Hunyani Pulp & Paper, Willgrow Sawmills, Alliance Ginneries, Karina Textiles, David Whitehead Textiles, National Foods, and Dos Santos Shoes.

While the establishment of industrial employment opportunities was instrumental to the town's population growth, housing challenges and the increasing cost of living in Harare resulted in some residents relocating to Norton for more affordable accommodations (Magidi, 2024). Consequently, Norton partly functions as Harare's satellite town, serving as a residential area for some individuals employed in Harare (ZESN, 2016).

However, the industrial and economic growth momentum was not sustained. It was cut short in the 1990s when Zimbabwe, alongside many other developing countries, adopted economic structural adjustment programmes (ESAP) (Sachikonye, 2002). These were economic policies recommended by the World Bank and the International Monetary Fund (IMF), supposedly intended to stimulate economic growth. These policies advocated economic liberalisation, deregulation, and privatisation, which in effect transformed the economy from a mixed economy to a free market economy (Harvey, 2005). This resulted in the opening of local markets to international competition, exposing local manufacturers to competition for which they were inadequately prepared (Munangagwa, 2009). Ultimately, local industry experienced a decline and began to downsize and collapse. By the early 2000s, the industry had officially deindustrialised, resulting in a prolonged national economic recession that the country has been experiencing for over two decades.

Norton's industries have not survived, and all its major firms are currently non-operational or operate at minimal capacities, resulting in an economic crisis and high job losses. Amidst this crisis and high unemployment, the residents of Norton have initiated a range of initiatives to sustain their livelihoods. While some participate in a variety of informal entrepreneurial activities in sectors such as retail trade,

services, and manufacturing, others have turned to urban agricultural activities, either as their primary source of income or to diversify and supplement their other income sources and it is the latter that constitutes this study.

3.2. Methodology

This study adopts a qualitative case study approach, drawing on prior research and relevant policy documents to deepen understanding of the topic. A qualitative approach is particularly well-suited for this study because it allows for an in-depth exploration of urban agriculture (UA) as a socio-spatial and policy-driven phenomenon. The qualitative approach is justified by the need to capture the lived experiences, perceptions, and agency of urban farmers, civil society actors, and state representatives in shaping UA. The selection of the two cities was meant to understand and explain how the different context influences UA. Semi-structured interviews were conducted with various stakeholders, including urban farmers, civil society actors, and state representatives in both cities (see Table 1). Participants for the semi-structured interviews were selected purposively based on a preliminary desktop review of key stakeholders involved in the urban agriculture sector. This ensured that the study captured a diverse range of perspectives, including urban farmers, civil society actors, and state representatives in both cities (see Table 1). The purposive sampling method allowed for the inclusion of individuals with direct experience and expertise in urban agriculture, ensuring the relevance and depth of the collected data. The following questions guided the interviews conducted with residents: What types of urban agricultural practices do you carry out on your plot? What factors contribute to the success of your agricultural activities? What challenges or limitations hinder the agricultural activities you undertake? In what ways do local authorities support your urban agriculture efforts?

These interviews were conducted face-to-face and recorded with the participants' consent. In addition, informal conversations and observations were employed as data collection methods in Case Study 2, involving residents, urban farmers, and community leaders. This approach provided nuanced insights into their lived experiences, challenges, and perspectives on urban agriculture initiatives.

The data collected from interviews and observations were analysed using thematic analysis. This process entailed transcribing all interviews verbatim and undertaking an iterative coding procedure in which initial codes were derived inductively from the empirical material. These inductive codes were subsequently refined and organised into broader thematic categories aligned with the study's research objectives. In addition to inductive coding, the analysis incorporated elements of *deductive* structuring informed by the conceptual lens of social capital. Specifically, the three dimensions of social capital bonding, bridging, and linking were employed as sensitising concepts that guided the categorisation and interpretation of themes related to resource-sharing practices, inter-group collaborations, and relationships with institutions. This combined inductive–deductive approach ensured that the thematic patterns remained grounded in participants' accounts while enabling a theoretically informed interpretation of the socio-political and

Table 1. Showing the individuals interviewed.

City	Interviewee group	Who was interviewed	Rationale for selection
Cape Town	Provincial and municipal Officials	Representatives from the Provincial Department of Agriculture (1) and City of Cape town -resilience department (1)	To understand the city's policies, strategies, and institutional frameworks supporting urban agriculture (UA).
	NGOs and Civil Society Leaders	Leaders from organisations	To explore the role of non-state actors in facilitating UA initiatives and supporting small-scale farmers.
	Urban Farmers (n=34)	Urban farmers engaged in community gardens	To capture on-the-ground perspectives on UA practices, challenges, and benefits to livelihoods.
Norton	Urban Households (n=15)	Urban households engaged in different informal economic activities	To understand how they were earning a living in the absence of a functional economy
	Local Authority Officials	Officials from the Norton Town Council (3)	To capture the municipality's official position on the different informal economic activities executed across the town
	Civil Society Organisation/NGO	A programme manager in a local NGO that offers capacity development training for individuals in self-help businesses	To understand how NGOs were supporting people in different self-help economic activities.

economic dynamics shaping urban agriculture in both cities. Thematic analysis was therefore particularly suited to this study, as it provided the flexibility to capture emergent meanings whilst maintaining analytical coherence with the theoretical framework used to interpret the findings.

Finally, relevant policy documents were examined to analyse the policy environment and assess whether it supported or hindered urban agriculture activities in each context. The policy analysis drew upon the following documents, City of Cape Town Urban Agriculture Policy (2007), City of Cape Town Food Gardens Policy (2013), City of Cape Town Food Gardens Policy Of 2013, Norton Town Council Environmental Management By-laws (2019), and the Urban Councils Act (Zimbabwe), Chapter 29:15. These documents were reviewed to identify the regulatory mechanisms, institutional responsibilities, and constraints shaping urban agriculture in both cities.

The case studies are analysed using a social capital framework, enabling an in-depth exploration of the social networks, trust, and collaborative structures that influence the dynamics under investigation. The findings for the two selected cities are presented according to the following themes: motivations and functions of urban agriculture, land access arrangements and tenure constraints, legislative and institutional environment and the role of social networks and support actors. These themes provide a comprehensive framework for understanding the dynamics of urban agriculture in the two identified cases. Ethical clearance was obtained prior to the commencement of data collection to ensure the protection of the study participants. To ensure ethical compliance, the study was approved by an institutional review board, and an ethical clearance certificate was issued by each university. The University of the Western Cape's humanities and social sciences research ethics committee issued a certificate's reference number HS19/9/2 while the University of KwaZulu Natal's ethics board issued an ethics certificate under code HSS/003/017D. All participants were required to provide informed consent for participation in the study. The consent for participation in the study was written.

4. Findings

4.1. Case study 1: Cape town

4.1.1. Motivations and functions of urban agriculture

The findings presented in this subsection draw primarily from semi-structured interviews with urban farmers, officials from the Western Cape Department of Agriculture and the City of Cape Town, and representatives of civil society organisations. These interview data are supplemented by field observations and informal conversations conducted during site visits across community gardens and urban farming plots.

Urban agriculture (UA) in Cape Town manifests as a multifaceted practice shaped by socio-economic and historical conditions. Interviewees consistently described UA as an activity that serves both livelihood and social functions, with farmers emphasising motivations that extend beyond subsistence. Several respondents noted that food insecurity was a primary driver, particularly in marginalised locations such as the Cape Flats, while others stressed the significance of community building and political agency. As one urban farmer explained, 'Our gardens are not just about food; they are about restoring dignity and reclaiming land in a city where opportunities are scarce.'

Approximately 6,000 farmers across Cape Town participate in urban agriculture, primarily through small-scale and community gardening initiatives. Historically, the city has been proactive in supporting urban farming, with initiatives that are deeply embedded in addressing economic and social disparities, particularly in marginalised areas. As one respondent noted in an interview, 'Urban agriculture has been critical in Cape Town's efforts to tackle food insecurity in the wake of apartheid's urban legacies,' underscoring the broader social mission of these activities. This research found that farmers engage in cultivation both in their backyards and, in some cases, through community gardens. Empirical observations across gardens of varying sizes from 150 m² backyard plots to 10,000 m² community gardens confirm the diversity of UA practices. Interview evidence also indicates that while economic benefits remain relevant, many farmers engage in UA for broader developmental objectives tied to empowerment, health, and environmental stewardship. UA therefore functions simultaneously as a livelihood strategy, a form of quiet community activism, and a vehicle for social cohesion.

4.1.2. Land access arrangements and tenure constraints

Evidence in this subsection is derived from interview data with farmers, municipal actors, and civil society organisations, supported by observational records documenting the spatial distribution of gardens and the types of land on which they operate.

Access to land emerged as a persistent concern among interviewees. Of the 34 gardens surveyed, 27 were situated on public land, while others operated on church grounds, NGO-owned land, or private residential properties. Farmers highlighted that most forms of access were ad hoc, insecure, and negotiated through informal understandings rather than formal tenure agreements. Interviewees frequently described bureaucratic obstacles and departmental fragmentation as key barriers to securing land.

Several farmers reported that tenure insecurity discouraged long-term planning and investment. Observations during field visits revealed multiple instances where gardens were located on parcels awaiting future development, further substantiating interviewees' concerns regarding displacement. A municipal official confirmed that 'the process is complex due to the number of departments that must coordinate such decisions,' illustrating the institutional difficulties experienced by farmers seeking secure land. Despite these challenges, civil society organisations remain optimistic and committed to assisting farmers in negotiating access to various types of land in the interim. This collaborative approach offers some hope for addressing immediate needs while longer-term solutions are sought.

4.1.3. Legislative and institutional environment

Findings in this subsection draw from interviews with municipal and provincial officials, supplemented by documentary analysis of the Urban Agriculture Policy (2007), Food Gardens Policy (2013), and related municipal frameworks.

The city has had a history of supporting UA. For instance, the Urban Agriculture Policy (UAP) of 2007 aimed to improve food security, create economic opportunities, redistribute land, and foster human resource development for the urban poor. However, it faced criticism for overemphasising economic benefits and lacking adequate human resources for effective implementation. The policy outlined land provision through land identification, allocation, leasing, and commonage, with the Urban Agriculture Unit responsible for execution. Despite being revised in 2013, the policy was never adopted, and the Urban Agriculture Unit was absorbed into the Department of Social Development in 2017, leading to the development of the Food Gardens Policy (Table 2), focused on alleviating poverty and food insecurity. Interviews with municipal officials indicate limited interdepartmental coordination, as responsibilities for UA are currently distributed between the Department of Social Development, City Parks, and other units.

4.1.4. Role of social networks and supporting actors

This subsection draws on interview material from farmers, NGO leaders, and government officials, together with observational field notes documenting interactions between actors at garden sites and training sessions. It explicitly highlights bonding, bridging, and linking relationships as they appeared empirically in the data.

Table 2. A comparison of UA in the two cities.

Aspect	Cape Town	Norton
Policy Framework	Food Gardens Policy 2013	No formal urban agriculture policy
Main Objective	Address food insecurity and poverty through food gardens in low-income areas	Primarily a survival strategy amid economic challenges
Land Access	Informal land access arrangements, insecure tenure	Informal land access arrangements, insecure tenure
Support for Urban Farmers	Provision of inputs (e.g. compost), farm infrastructure	Limited institutional support; grassroots-driven
Institutional Structure	Urban Agriculture Unit (later integrated into Department of Social Development)	Lack of formal institutional support for urban agriculture
Implementation Focus	Focus on food gardens, poverty reduction, and food security	Informal, community-led initiatives; minimal government involvement
Challenges	Weak implementation, limited focus on land access issues, poor coordination between departments	Insecure land tenure, lack of formal support, and resources
Legislative Support	Food Gardens Policy provides legislative framework	No formal policy framework for urban agriculture

Urban agriculture in Cape Town is driven by the collaborative efforts of a wide array of stakeholders, ranging from government departments to civil society actors. This research identified at least 30 different types of civil society actors at the time of data collection. Conversations with representatives from some of these organisations were indicative of the crucial role they play in providing essential resources, technical support, and capacity-building opportunities. As one farmer remarked, 'Without the help of NGOs like Abalimi Bezekhaya, many of us would not have the tools or knowledge to succeed.' Abalimi Bezekhaya stands out as one of the largest civil society actors, working to empower communities in the Cape Flats by providing platforms for small-scale farmers to market their produce. These relationships constitute both bonding social capital (shared farmer identities and reciprocal assistance) and bridging social capital (connections across neighbourhoods and sectors).

Moreover, state support is vital to the operational success of urban agriculture. Officials from the Western Cape Department of Agriculture described collaborative arrangements with NGOs and urban farmers, illustrating linking social capital and showing how institutional actors can facilitate resource flows, capacity development, and improved livelihood outcomes. One interviewee from the department observed, 'We work hand-in-hand with NGOs to ensure that there is both knowledge transfer and practical support for farmers on the ground.' Observational records captured examples of knowledge exchange, cooperative work parties, and joint market initiatives, reinforcing interview accounts that UA in Cape Town is embedded in a robust associational landscape. Such networks significantly shape farmers' capacity to access support, information, and opportunities.

Nonetheless, Scaling urban agriculture into a sustainable, city-wide solution remains a significant challenge. As one interviewee noted, 'We are trying to find ways to grow our markets and make them stable, but it's not easy. The demand is there, but scaling up is tricky without consistent infrastructure and support.' Projects like Harvest of Hope, while well-intentioned, have struggled to effectively foster food security, alleviate poverty, and promote organic produce with minimal food miles due to over-reliance on third-party intermediaries. Farmers emphasised the need for markets that are farmer-controlled, empowering them and reducing dependency on external actors.

These challenges include seasonal fluctuations in market prices, limited access to resources, and inconsistent market access. One respondent, a farmer involved with the Harvest of Hope project, stated, 'The harvests are great, but the market prices are volatile. Some seasons, we make a profit; others, we struggle to cover our costs.' While Harvest of Hope has been instrumental in providing small-scale farmers with access to more lucrative markets, market volatility remains a significant concern.

4.2. Case Study 2: Norton

4.2.1. Motivations and functions of urban agriculture in Norton

Evidence in this subsection derives from interviews with local households ($n = 15$), Norton Town Council officials, and small-scale farmers, as well as informal conversations and observational data collected across residential areas and informal agricultural sites. Norton developed as an agricultural centre before transitioning into an industrial town after attracting several of Zimbabwe's major manufacturing firms. Much of the town's industrial activity was associated with agriculture, as it primarily manufactured and distributed agricultural implements, and was also involved in processing agricultural outputs from surrounding farmers. Following the decline of the industrial sector, the town appears to be reverting to its farming origins. However, the distinction lies in the fact that, while historical farming was largely large-scale commercial and regulated, most of the current farming in the town is informal, and unregulated, mostly occurring on a small subsistence scale and is largely regarded as illegal. After widespread job losses and unemployment, some households resorted to urban farming to sustain their continued survival in the town. Most urban farmers grow maize and vegetables, whereas others engage in poultry for chicken and egg production.

Observational data confirm that most farming occurs on small township plots, roadside verges, wetlands, and vacant land parcels. Norton residents engage in urban agriculture for different reasons. The first notable category comprises residents involved in subsistence farming in which crops are cultivated to feed their families and sustain themselves. For this group, urban farming is either their primary livelihood or for supplementing or diversifying other sources of income and is prevalent in township residential areas. The

second group includes households whose urban farming transcends subsistence, as some seek to generate additional income by selling surplus produce in the informal retail market. This includes some unemployed housewives from households with stable incomes from other sources who confirmed that they farm for leisure because ‘farming is something that we were so used to when we were growing up in rural areas’ and that ‘we were never used to just sitting at home all day long doing nothing’, to quote one female respondent. For this group, urban farming serves both to ensure household food security and as a supplementary economic activity from which they can earn additional income to save or cover other expenses. This practice is common among both low-income and affluent households.

The third category comprises small-scale informal farmers who have made significant investments in agricultural activities and operated them as entrepreneurial ventures, albeit on an informal basis. For these individuals, farming serves as an income-generating enterprise, in which they have invested in equipment such as boreholes, water pumps, and/or irrigation pipes, with some employing one or two workers to assist them. These farmers are often property owners in high-income, low-density residential areas such as Knowe, where residential plots are relatively large, typically 3,000–5,000 sqm. Although urban farming in Norton appears to be flourishing, it is important to note that it is conducted informally by individuals. It is predominantly a grassroots initiative by residents trying to survive in an economically constrained urban space, and both local and central governments play no significant active role.

4.2.2. Legislative and institutional environment

Data in this subsection draw on interviews with Town Council officials and documentary analysis of the Environmental Management By-laws (2019) and the Urban Councils Act (Chapter 29:15). In Norton, as in most major urban centres in Zimbabwe, urban agriculture is generally prohibited unless authorisation is granted by the local authority. Norton Town Council, guided by its Environmental Management By-laws Chapter (7.1 & 2) (2019) and the Urban Councils Act (Chapter 29:15), has the jurisdiction to preside over all urban agricultural activities (Government of Zimbabwe, 2001). This includes determining permissible cultivation areas, acceptable tools and methods, authorised fertilisers and chemicals, and approved crop varieties. The council is responsible for land allocation for agricultural purposes and issuing leases and licences that permit farming following established guidelines. Farming activities on unauthorised lands, such as council-owned plots, wetlands, roadsides, or in proximity to sewer and water lines, are thus deemed illegal (see Figure 1). Any violations of these by-laws may attract monetary penalties, confiscation of crops and agricultural equipment, or legal proceedings.

A town council official noted that, in a strict interpretation of these laws, urban agriculture in the town is generally prohibited, and most urban farmers would not be allowed to engage in their current farming if the rules were to be rigorously enforced. He however noted that the council appeared to have adopted a more lenient approach in implementing some of these prohibitive clauses. Interviewees reported no formal channels for land allocation or licensing, and no farmers interviewed possessed official permission to cultivate where they did. This institutional vacuum heavily constrains the potential for scaling or formalising UA. Field observations, informal conversations and interviews confirmed that residents were cultivating in wetlands, along waterways, and in other vacant spaces designated for future developments such as schools and shopping centres - areas that are typically restricted for such activities. Farmers confirmed that there was typically minimal interference from the council, and most were engaged in farming activities without facing any consequences. None of the farmers interviewed possessed a licence or lease permitting them to cultivate in their current locations as required by the laws, further illustrating the local council's lenient stance toward urban agriculture.

4.2.3. Land access arrangements and tenure constraints

Findings here are informed by interviews with farmers and municipal officials, complemented by observations documenting unauthorised cultivation in prohibited areas. According to the interviewees the primary challenge they face is the limited access to land. This constraint is particularly pronounced in townships where plot sizes range from 200 to 300 sqm. Notably, individuals from economically disadvantaged urban backgrounds, who would ordinarily be expected to seek to supplement their livelihoods through agricultural activities, predominantly reside in these areas. Consequently, demand for limited farming land is exceedingly high. The available backyard space for horticultural and agricultural activities is typically



Figure 1. Cultivated vacant space in Norton (Source authors).

minimal. This is further exacerbated for those without property ownership, and they can only access land through established social networks. Long-term residents often claim all unutilised public spaces in advance, leaving newcomers to rely on networks to secure land. This has led to encroachment in areas where farming is prohibited. In townships such as Johannesburg, Maridale, Ngoni, and Katanga, it is not uncommon to observe crops cultivated near major roads, waterways, and wetlands which are naturally prohibited. Some individuals have even resorted to the cultivation of abandoned industrial sites. This phenomenon illustrates the effect of land scarcity on urban farming in the town. Several respondents acknowledged that they farmed in contravention of bylaws, but noted that municipal enforcement had become lenient due to widespread hardship.

Observational evidence supports these claims, showing crops planted along waterways, wetlands, and roadsides. This landscape of informal access and limited enforcement highlights the precariousness of UA in Norton.

4.2.4. Role of social networks and supporting actors

This subsection draws on interview data with farmers, NGO representatives, and municipal officials, supported by observational accounts of informal cooperation among residents.

Social networks play a critical role in enabling UA in Norton, particularly given the absence of state support. Bonding social capital is visible in the sharing of tools, labour, and seeds among neighbours and extended families. However, bridging and linking social capital are limited. Only a small number of respondents had participated in NGO-led training programmes or received support from international donors. This grassroots initiative unites individuals to cultivate food in a densely populated urban environment, with limited resources and minimal support. Community members take the lead in shaping their agricultural practices, recognising the need to improve their livelihoods. They collaborate to share knowledge, experiences, resources, and ideas, and engage in mutual learning processes.

Given the predominantly informal and subsistence nature of these farming activities, most urban farmers rely on family labour. However, exceptions exist among farmers from more affluent, low-density suburbs who possess larger pieces of land and sufficient financial resources to employ labour, enabling them to operate on a somewhat different scale. Access to vacant land for farming in Norton is predominantly facilitated through established social networks, with long-term residents typically enjoying greater access

to unutilised public land compared to newer residents. This disparity in land access underscores the significance of community ties and historical connections in facilitating access to farming land.

Non-farming households within the community offer indirect support to local farmers by providing a ready market and purchasing vegetables, chicken and eggs, fostering a local economic ecosystem that benefits both parties. Some vendors source supplies from local entrepreneurial farmers in areas such as Knowe, where agricultural plots are larger, and yields are relatively high. Informal traders across the town also offered farming inputs in the form of custom-packed seeds and fertilisers to suit the needs of different farmers.

In addition to community support, a few non-governmental organisations (NGOs) have played a role in urban farming. One local NGO provides tailored training programmes to individuals in small and informal businesses, equipping them with the essential knowledge and skills required to run a small business. Among their beneficiaries were poultry farmers, who acquired poultry-rearing knowledge and skills through this initiative. Another supporting entity, as mentioned by the local authority, was a German NGO which offered start-up funds and the necessary inputs/equipment to poultry farmers with sound business proposals. They also conducted training sessions on how to craft effective funding proposals as well as project planning and management techniques for small-scale entrepreneurs involved in various businesses, including farming.

Amid these dynamics, the Town Council's represents an institutional concession rather than an active form of linking capital. Consequently, UA in Norton remains highly localised and constrained by its informal nature. Its indirect support manifests itself by allowing residents to cultivate land in areas that are typically restricted by local bylaws. It appeared to have adopted a welfarist governance approach by quietly relaxing restrictions and not enforcing certain bylaws, seemingly guided by the rationale that maintaining an orderly town is pointless when residents grapple with hunger and economic hardship. A town council official noted, 'It does not make sense to have an organised town when its people are starving', highlighting the local government's acknowledgement of the critical importance of food security in the town.

With limited support from state and non-state actors farmers face key challenges such as water shortages. Norton does not possess its own water treatment facility and relies entirely on Harare for all its water supply. In recent years, Harare has experienced severe water shortages which have, in turn, adversely affected towns such as Norton that depend on it. Consequently, many newly developed residential areas do not receive water, resulting in residents relying on rainwater, wells and communal boreholes, which significantly limits their agricultural potential. While farmers in wealthier suburbs can afford to drill boreholes or excavate deeper wells, residents of townships often lack this option. This challenge is even worse for tenants, as landlords normally do not permit tenants to access water for farming at their properties unless a special relationship exists so many farmers rely on rainwater. Although Norton is situated in a wet region, it is still affected by some droughts that the country has experienced in recent years and thus urban farmers record poor yields during such years.

5. Discussion

Urban agriculture in Cape Town and Norton represents distinct socio-economic and political landscapes, which significantly influence the mobilisation and effectiveness of social capital and urban agriculture landscape in the two cities. Using Putnam (2000) framework encompassing bonding, bridging, and linking social capital, this section evaluates how social networks, institutional relationships, and community cohesion shape urban agricultural practices in these two contexts.

Bonding social capital is a crucial concept in the study of urban agriculture, as it reflects the ties and networks of mutual support that facilitate resource pooling and community resilience (Caldas & Christopoulos, 2023). The manifestation of bonding social capital in urban farming differs significantly between cities like Cape Town and Norton, owing to the contrasting socio-economic and historical contexts in which these communities operate. In Cape Town, particularly within marginalised areas such as the Cape Flats, bonding social capital is deeply embedded within the community structure. Urban farmers in these areas often form strong in-group ties, characterised by reciprocal relationships that facilitate the exchange of resources, knowledge, and skills. These ties are not merely informal but have evolved into more organised networks that allow farmers to access critical resources such as tools, seeds, and knowledge.

Though these groups are not formalised in the sense of registered cooperatives or legal entities, they demonstrate a level of organisation that enables the pooling of resources and the creation of informal support structures. Scholars have argued that such solidarity within communities, especially in disadvantaged urban areas, is a form of resistance to systemic inequalities and environmental challenges (Temper et al., 2018).

These findings resonate with global research which shows that community gardens often function as sites of renewed social bonding, identity building, and interpersonal trust. Rogge and Theesfeld (2018), for instance, found that community gardens in Germany were central to cultivating new social bonds among heterogeneous urban populations, whereas Soga et al. (2017) demonstrated that allotment gardens in Japan enhanced both psychological well-being and community integration. By placing the Cape Town findings in dialogue with this literature, it becomes clear that bonding capital constitutes a foundational social mechanism of urban agriculture across diverse contexts, even if shaped by distinct political and spatial histories in African cities.

The situation in Norton presents a different dynamic. While bonding capital is equally important, its emergence is driven by necessity in the context of subsistence farming. In Norton, a town in Zimbabwe, economic challenges and a lack of formal institutional support have fostered a reliance on largely informal networks. Families and neighbours collaborate within these networks to maintain subsistence farming, ensuring survival through the sharing of scarce resources such as labour, tools, and knowledge. These networks are primarily informal, often based on personal relationships rather than organisational structures.

This echoes observations in other resource-constrained urban environments, where bonding ties emerge as compensatory mechanisms in the absence of institutional support. However, unlike the more structured and politically expressive bonding networks seen in Cape Town and in movements discussed by Cumbers et al. (2017) in the UK, Norton's bonding capital remains localised and survivalist, revealing how socio-economic precarity conditions distinct forms of social cohesion in urban agriculture.

The role of bridging social capital in urban agriculture is a critical factor in shaping the resilience and sustainability of farming practices. In Cape Town, bridging social capital is more pronounced and structured, connecting urban farmers with a wide range of external actors such as NGOs, researchers, and to some extent market platforms. Organisations like Abalimi Bezekhaya exemplify this dynamic by offering technical expertise, access to seeds, and marketing opportunities, thus helping farmers build networks that extend beyond local communities (Paganini & Lemke, 2020). These bridging relationships facilitate the transfer of knowledge and resources that enable urban farmers to adopt innovative and climate-resilient agricultural practices.

Such dynamics align with international findings that demonstrate how urban agriculture flourishes where diverse actors intersect. Research from Europe and the United States (Kirby et al., 2021) shows that bridging relationships particularly those linking farmers with planners, researchers, and market intermediaries shape motivations, influence organisational forms, and ultimately determine the social impacts of urban agriculture. Cape Town's networks mirror these findings, suggesting that bridging capital constitutes a crucial analytical mechanism through which urban agriculture can scale and become more resilient, regardless of geographical context.

The case of Norton reveals a more limited form of bridging social capital, primarily due to the informal and fragmented nature of urban farming in the area. While some entrepreneurial farmers in wealthier areas may establish links with informal markets, the absence of formal institutional support such as those seen in Cape Town constrains the development of broader, cross-community networks. The lack of established partnerships with external actors like NGOs or governmental bodies limits the capacity of urban farmers in Norton to access expertise, resources, or market opportunities. As a result, the potential for innovation and the adoption of sustainable farming practices remains constrained, highlighting the critical role of institutional frameworks in facilitating bridging social capital (Putnam, 2000).

This reflects patterns observed in other African cities where urban agriculture remains informal and poorly connected to external actors. Thus, the comparison between Norton and Cape Town illustrates how bridging capital is highly sensitive to political conditions and institutional landscapes, shaping the extent to which urban agriculture can become a vehicle for broader resilience or transformation.

The difference in linking social capital between Cape Town and Norton underscores the significant role that institutional support and formal relationships play in shaping the sustainability of urban agriculture. In Cape

Town, urban farmers benefit from structured partnerships with governmental and non-governmental organisations. The Western Cape Provincial Department of Agriculture actively supports urban farming through the provision of resources, capacity-building and initiatives (Engel et al., 2019). These linking relationships can enable farmers to gain secure land tenure, access funding, and participate in policy discussions that influence urban agriculture. These findings strongly echo Kirby et al. (2020) analysis of urban agriculture in Michigan, which emphasise the centrality of support actors including state bodies and food system intermediaries in strengthening farmers' linking capacity. In this way linking capital is often the determinant of whether urban agriculture remains marginal or becomes integrated into formal food system planning.

Norton's urban farmers are largely excluded from these formal institutional frameworks, resulting in a lack of linking social capital. Due to the informal and often illegal nature of urban farming in the region, farmers operate outside of established governance structures. Without significant involvement from government bodies or NGOs, Norton's farmers lack the institutional support necessary for securing resources like land tenure and funding. As a result, urban agriculture in Norton remains largely informal, relying heavily on grassroots initiatives and local networks for survival. This absence of linking social capital places significant constraints on the ability of farmers to access institutional resources or advocate for policy changes that could improve their livelihoods. A study by Matamanda et al. (2022) highlighted how the lack of government involvement in urban farming initiatives in Zimbabwe limits access to formal markets and reduces farmers' ability to scale their operations. This absence of linking capital differentiates Norton sharply not only from Cape Town but also from cities in Europe, North America, and parts of Asia where linking relationships have been shown to underpin community empowerment and institutional legitimacy (Cumbers et al., 2017). As such, Norton provides a powerful example of how weak or absent linking capital can entrench the vulnerability of urban agriculture, limiting both its sustainability and transformative potential.

The role of social capital in resource access is a critical factor that differentiates urban agricultural practices in Cape Town and Norton, particularly in relation to the mobilisation of resources such as land, technical expertise, and market access.

This comparative insight aligns with international findings demonstrating that resource flows in urban agriculture depend less on the physical environment and more on the relational infrastructures through which farmers mobilise support. The synergy between bonding, bridging, and linking capital in Cape Town thus contributes to analytical generalisations about how social capital mediates institutional barriers, a dynamic observed widely across global case studies. In Norton, reliance on bonding capital alone limits the capacity of urban agriculture to evolve beyond subsistence. This asymmetry reinforces global arguments that without linking capital, urban agriculture remains structurally constrained, irrespective of local motivation, cultural attachment, or community commitment.

Taken together, these findings demonstrate that the mechanisms of social capital shaping urban agriculture in African cities are not unique, but rather constitute locally inflected expressions of broader social processes identified globally. The comparative analysis therefore produces analytical generalisations that contribute to a global theorisation of how social capital structures resource access, institutional engagement, and livelihood strategies in urban agriculture.

6. Conclusion

The findings of this study highlight the role of social capital in shaping urban agriculture across different socio-political contexts, specifically in Cape Town and Norton. The contrasting landscapes of these cities underscore how urban agriculture, despite sharing common goals of food security and socio-economic resilience, is influenced by distinct socio-economic, political, and institutional factors. Through the lens of social capital theory, this research provides valuable insights into how different types of social networks bonding, bridging, and linking affect the sustainability and effectiveness of urban farming initiatives. By focusing on the dynamics of social capital, this study illuminates the mechanisms through which urban agriculture can either thrive or face significant constraints.

While the empirical focus of this paper rests on two African cities, the qualitative insights presented here extend beyond their immediate contexts. The study offers analytical generalisations that are transferrable to a broader range of urban agriculture settings globally. The mechanisms identified particularly the ways in which socio-historical conditions, governance structures, and informal practices shape bonding, bridging,

and linking capital resonate with findings from urban agriculture research in the Global North and Global South alike. In doing so, the study contributes to a deeper theoretical understanding of how social capital operates across diverse urban contexts.

This research underscores the importance of integrating urban agriculture into policy frameworks to enhance the legitimacy and sustainability of farming practices. Cape Town's approach, provides institutional support, highlights the positive outcomes that can be achieved when urban farming is backed by stakeholder support. In contrast, Norton's experience illustrates the risks associated with unregulated and informal urban agriculture, where farmers are excluded from institutional resources and struggle to formalise their practices. This disparity underscores the need for policymakers to recognise and support urban agriculture as a vital component of sustainable urban development.

The comparative analysis further demonstrates that African urban agriculture, situated within complex landscapes of informality, spatial inequality, and fragmented governance, offers conceptual insights that can refine global debates on social capital and urban agriculture. Specifically, these findings suggest that social capital in contexts marked by pronounced socio-economic precarity may take distinct forms, with bonding networks compensating for weak institutional linkages, and bridging relationships emerging through civil society actors rather than state institutions. These dynamics broaden theoretical understandings of how social capital functions in cities where formal governance structures are unevenly developed.

The implications of this study are far-reaching, particularly in terms of policy and community resilience. When supported by robust social capital and integrated into urban planning, it can play a transformative role in enhancing food security, social cohesion, and economic resilience. In cities like Cape Town, the synergy between bonding, bridging, and linking social capital fosters innovation, sustainability, and adaptive capacity in urban farming. However, for cities like Norton, the lack of formal support structures and external partnerships limits the scope of urban agriculture, reinforcing the need for more inclusive and policy-driven frameworks.

Finally, by juxtaposing two contrasting African cases, this paper contributes to a growing body of scholarship that demonstrates how qualitative, context-rich studies can advance theoretical debates on urban agriculture globally. The analytical insights produced here underscore the value of qualitative work in revealing the social processes and relational infrastructures that underpin urban agriculture, and in doing so, extend conceptual debates on social capital in ways that are relevant far beyond the African continent.

Author contributions

CRedit: Kanosvamaha, T & Magidi, M contributed to the manuscript as follows: Conceptualisation and design: K.T & M.M. Data collection and analysis: K.T & M.M. Manuscript writing and editing: K.T & M.M. Review and approval of the final manuscript: All authors. All authors affirm accountability for the accuracy and integrity of the research presented.

Disclosure statement

The authors declare no competing financial or non-financial interests related to the content of this article.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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Data availability statement

The data that support the findings of this study are available from the corresponding author upon reasonable request. Due to ethical considerations and the need to protect participant confidentiality, certain raw data cannot be made publicly available. Anonymised data may be shared in line with the conditions outlined in the study's ethical approval.

Ethics statement

Ethical clearance was obtained from the University of the Western Cape's humanities and social sciences research ethics committee issued a certificate's reference number HS19/9/2 while the University of KwaZulu Natal's ethics board issued an ethics certificate under code HSS/003/017D. Participants provided informed consent for participation in the study, including permission for the recording of interviews.

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