

Research article

Dynamics Shaping Rural Transformation in Rapidly Urbanising Rural Areas in Central Kenya

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Abstract

It has been observed that Africa is one of the fastest-urbanising continents. Over the last two decades, many rural areas in Central Kenya have witnessed considerable shifts towards urbanisation, which has affected many rural areas. This study explores the impacts of rapid urbanisation in rural Chaka town and its environs in Central Kenya, thus triggering the transformation of the entire landscape. The aim is to highlight the drivers shaping the transition to urbanisation in the case study town area. Using a qualitative research approach that used rapid rural appraisal techniques like transect walks and key informant interviews to collect data, the study reveals a trend towards increased land sub-division and real estate development in the Chaka area, which poses a challenge to traditional agricultural practices and an increase in non-farm activities, which indicates diversification of livelihood strategies by the residents as agricultural practices continue to face challenges, thus causing frustrations with farm-based activities and a decline in productivity. These findings reveal that the changing socioeconomic and environmental landscape in Chaka aligns to some extent with regional and national trends in the complex interactions between urban and rural areas. These findings imply that there is a need for policy interventions focusing on sustainable and balanced agricultural and urban development, the need for integrated land use planning, and skill development for liveable urban living in emerging urban and transformed rural areas.

Keywords: rural transformation, urbanisation, agricultural practices, land sub-division, livelihoods, Kenya.

Introduction

Rural transformation and urbanisation are different but related concepts and processes concerned with the interaction of rural and urban areas and are thus important in determining the character and shape of a place. Urbanisation has emerged as a defining global trend that has shaped the dynamics of landscapes, economies, and societies (Davis, 2016). The relationship between rural transformation and urbanisation has gained considerable attention the world over because of its profound implications for

people's lives. Traditionally, urbanisation has been confined to major cities, but in recent decades, especially in Africa, the rapid urbanisation phenomenon has manifested itself in other smaller towns in the rural parts of the continent. The phenomenon presents both challenges and opportunities as it affects land use, migration patterns, and economic activities (Flora, 2018; Satterthwaite et al., 2010). Consequently, there is increasing interest in small towns due to the opportunities they offer for regional economic development (Agergaard et al., 2021; Agergaard et al., 2019) and the changes they induce in traditional rural areas. The shift in attention to rural areas reflects a broader trend where rapid urbanisation is becoming a shared experience across diverse geographical settings. Urbanisation has therefore been a major force in reshaping rural landscapes in many parts of the world (Tacoli & Agergaard, 2017), and as urbanisation accelerates, far-reaching changes are felt in rural areas (Morris et al., 2022).

In Africa, there has also been an unprecedented pace of urbanisation in rural setups, and the rural-urban linkages are reshaping economics, environments, and cultural practices. These urban-rural linkages have caused the emergence and growth of small-town areas across the continent. Recently, it has been estimated that in Africa, about a quarter of urban dwellers live in small towns (Agergaard et al., 2019). It has also been noted that the African urbanisation process revolves around the relationship between rural and urban areas, with studies showing that as urbanisation accelerates, the border between rural and urban spaces becomes blurred (Lazaro et al., 2017; Potts, 2012). According to Agergaard & Ortenbjerg (2017), urbanisation and rural-urban transformation have become critical qualities responsible for contemporary social change in Sub-Saharan Africa. These observations underscore the importance of recognising the rural-urban interlinkages as both areas mutually influence each other.

The rural-urban linkage situation in Kenya is not particularly different from that in the rest of Africa. Emerging urbanisation trends favour the development and growth of rural towns, which have been recognised as significant drivers of rural transformation, but with negative outcomes such as environmental degradation and inadequate service provision (Sakketa, 2023). The accelerated urbanisation processes have already been recognised by the government by setting a legal framework in which market centres, towns, and municipalities can upgrade to the next higher status after meeting a set of legally laid-down criteria (Kenya Law Reporting, 2019). This enabled Nakuru municipality, for example, to upgrade to city status in 2021. In most cases, this trend of rapid urbanisation favours rural areas, where rapidly urbanising areas benefit from upgraded urban status. This enables continuously drawing rural-urban linkages even more closely, with many small towns emerging across the country. However, most of these urban centres, especially small towns, have received limited scholarly attention in order to better understand the dynamics shaping their emergence and growth. This concern triggered the need for a study that sought to explore the ways in which rapidly urbanising towns are impacting rural areas through a case study of the rural transformation process taking place in Chaka town in Nyeri County. More specifically, this study aimed to achieve the following objectives: (i) To investigate the evolving dynamics influencing small-scale agricultural practices in the context of water scarcity and the pressures of urbanisation. (ii) To examine the implications of land sub-division on rising trends in real estate development in the Chaka areas. (iii) To explore the growing prominence of non-farm livelihood diversification opportunities and the way in which they are enhancing the drive for rapid urbanisation. Eventually, the study will contribute to a better understanding of the multifaceted dynamics that underpin rural transformation in rapidly urbanising small towns by illuminating the forces propelling this transformation and the impacts they exert on the fabric of rural communities.

Rural transformation and urbanisation

Rural transformation is a concept associated with societal changes that occur in rural areas, thus altering the economic fortunes of these areas and their people mainly for the better. It has been defined as a process through which rural incomes grow, rural economies diversify, and linkages with urban and peri-urban areas evolve (Kruseman et al., 2020). Li (2022) suggests it is a qualitative and transitional change in the function of rural regional entities. According to Engel et al. (2017, pp.1), rural transformation is a “long-term process of change of fundamental characteristics of the economy and livelihoods of people in rural areas, influenced by a broad range of factors including market and ecosystem dynamics, national politics, and local capacity for action”. These definitions agree that rural transformation is a transition from a reliance on agriculture and other farm-based livelihood possibilities to a reliance on other non-farm-based alternatives with specific links to urban areas. Hence, in much of the literature, rural transformation is characterised by diversified economic and livelihood opportunities and the globalisation of food systems, with residents relying less on subsistence farming and instead on food markets (Rauch et al., 2016; FAO, 2017).

Rural transformation is also seen as a sub-set of the broader concept of structural transformation that results in a shift from the largely rural-agricultural sectors to the urban-industrial sectors (Engel et al., 2017; FAO, 2017; IFAD, 2016; Rauch et al., 2016). In most cases, structural transformation is associated with a transition that promotes reliance on modern sectors such as manufacturing and services. Therefore, the emphasis on structural change favours rural-urban migration, where more people leave rural areas for non-farm and non-agriculturally dependent livelihood systems. This is the conventional approach to rural transformation, as has happened in Europe and countries like China and South Korea. For instance, studies by Niu et al. (2022) and Chen et al. (2010) have suggested that in China, some of the features that characterise rural transformation include enhanced off-farm employment, consolidation of agricultural land, and adoption of new farming methods, among other practices. Studies had anticipated a similar model would apply in Africa (Rauch et al., 2016). However, empirical studies have shown that rural transformation has defied this trend, where the transformation has been modest, hesitant, and partially characterised by increasing agricultural populations (Engel et al., 2017). These studies further suggest that while there is a slow transition into non-agricultural employment systems in Africa, there is also a tendency to adopt urban lifestyles and a presence of significant rural-urban exchanges. Consequently, as Rauch et al. (2016) suggests, rural transformation includes both agricultural and non-agricultural activities.

Other studies (Filmer et al., 2014; Losch, 2016) point out that the slow rural transformation tendency in Africa is because agriculture plays an important role in a significant portion of many Africans’ livelihoods, and it continues to be relied upon directly and indirectly as a source of farm-based employment opportunities for the youth. Rural transformation is then seen as an agenda to improve the wellbeing of people in Africa, but the transformation has largely been reliant on transforming agricultural practices to increase agricultural productivity. Therefore, agriculture in Africa, which is largely characterised by small-holder farmers, continues to face many challenges, such as increasing small farm sizes through land sub-division (Jayne et al., 2014), poor adoption of technologies (Ayamga et al., 2023), and the severe impacts of climatic change (Ngaira, 2007).

Rural transformation has therefore close linkages to the urbanisation process (Tacoli & Agergaard, 2017). As more people leave rural areas for more established cities or the emerging ones, they slowly become less reliant on farm-based subsistence activities. As they adopt more non-farm-based activities such as trade, industry, and employment in

urban settlements like towns and cities, the rural-urban connectivity becomes clear. Studies have shown that migrants to the city will be placed in more productive jobs and will pull their families out of poverty than those who prefer to adapt to rural living (Corbridge & Jones, 2005). However, discussions on rural-urban linkages over time suggest that policymakers and planners tend to favour urban areas, thus perpetuating rural negligence and decay (Jones & Corbridge, 2010). Indeed, as Tacoli (2017) has pointed out, issues around the transformation of rural areas are most often overlooked in debates about urbanisation, noting that many urban policies are often oblivious to rural perspectives. These observations are particularly true in most countries in sub-Saharan Africa.

Debates around rural transformation and rapid urbanisation

The relationship between urbanisation and rural transformation has been the subject of debates and discussions in both policy and scholarly circles (Sakketa, 2023; Agergaard & Ortenbjerg, 2017; Tacoli, 2017). These debates are crucial because they help highlight ways to mitigate the possible effects of interactions between rural and urban areas. Rural transformation is characterised by major socioeconomic, cultural, and environmental changes brought about in part by urbanisation trends that have a tremendous impact on rural communities. Some scholars argue that rural-urban interactions often cause population movements that impact and alter situations in rural areas in major ways (Ge et al., 2020; Mabogunje, 2005). This argument underlines the possible consequences for the development of both rural and urban areas, depending on how the impacts are managed. Arising from the changes that occur in rural settings, these debates point out the need for interventions that take into consideration a range of priorities, such as infrastructure development, the provision of basic services, the adoption of sustainable agricultural practices, and the sensitivity to more inclusive development in rural areas (Rauch et al., 2016; Osabuohien, 2020).

Many debates focus on the economic aspects of rural transformation, with some questioning whether rural transformation triggers and promotes economic growth, offers opportunities for rural people to get out of agriculture, or how to improve it (Sakketa, 2023; McMillan & Headey, 2014). Most of these debates are multifaceted, with some focusing on the need for economic diversification on non-farm options arising from declining agricultural productivity, rapid urbanisation of rural areas, and important talking points touching on the promotion of social inclusion and empowering marginalised groups (Tacoli et al., 2015) and knowledge and skill development (Bryden & Hart, 2004) in rural areas. An important message from these discussions is the need to see livelihood diversification as an entrepreneurship and innovation opportunity that triggers significant economic changes in urbanising rural areas. Additionally, Chinapah & Odero (2016) and Lang et al. (2016) have underlined the role of adoption of technology as being important to cater for an economic transformation that offers less disruptive rural living.

Other studies have shown that there has been a consistent rise in non-agricultural activities in Africa's urbanising rural areas, which is an indicator of the interdependence between rural and urban areas (Sakketa, 2023; Reardon et al., 2019; Lazaro et al., 2017; Owuor, 2006). Additionally, Lazaro et al. (2017) suggest that small towns play important roles as hubs for non-farm activities. An increasingly important component of the rural transformation process has been the growth of non-farm livelihood possibilities, particularly in Africa. This includes activities such as rural entrepreneurship, microenterprises, off-farm employment like tourism, and the development of rural industries. Debates in Africa around non-farm activities also capture strategies for promoting inclusive, sustainable economic growth, addressing rural poverty, enhancing value chains, and fostering entrepreneurship and innovations (Osabuohien, 2020; Tacoli

& Agergaard, 2017). These debates underline the need for diversification of economic activities to reduce dependence on agriculture and create a more resilient and varied rural economy. Some perspectives of the debates also address the question of the balance between promoting agricultural productivity and encouraging non-farm livelihoods (Headey & Fan, 2010), pointing out that agriculture remains a primary source of livelihood for a significant proportion of the population, yet new non-farm opportunities continue to emerge with urbanisation becoming a familiar feature in the world and in Africa.

Other economic perspectives of the debates focus on sub-division of land as a threat to agriculture-based livelihood activities (Seketa, 2023; Jayne et al., 2019; Deininger, 2011; Deininger & Byerlee, 2011). In Africa, land fragmentation and insecure tenure systems are some of the issues highlighted as having impacts on agricultural productivity and contributing to the rise in non-farm livelihood opportunities (van Vliet et al., 2017). Discussion around the issue of land sub-division has revolved around land tenure reforms, sustainable land management, access to land for marginalised groups, and the need to balance agricultural expansion with environmental conservation. With rapid urbanisation of rural areas becoming a key driver of rural transformation, it becomes important to strike a balance between land for urban expansion and for agricultural activities (van Vliet et al., 2017; Pandey & Seto, 2015). Other scholars have raised issues about the need to address the impact of land fragmentation on agricultural productivity arising from the growing urbanisation of rural areas, urging the need for better land use planning that ensures balanced urban development without compromising agricultural land but fosters sustainable growth (Bryden & Hegrenes, 2015).

Apart from the economic perspectives that have dominated discourses on rural-urban interactions, environmental perspectives also feature in the literature. Rigg & Salamanca (2017) and Beall & Fox (2009) have addressed environmental aspects, looking at how agricultural transition takes place in rural areas and asking how proposed shifts from traditional agriculture to modern agriculture practices factor in issues around the impacts of soil and water conservation and measures. These debates also allude to the more recent issues of climate change impacts on agricultural productivity.

The overall implication of these discourses and debates underscores the complexities of rural-urban interactions. They also impact a broad spectrum of issues, which are the focus of this study, including agriculture practices, land use changes, and livelihood aspects. The discourses offer valuable insights into the evolving dynamics of socioeconomic and environmental aspects of rural transformation.

Materials and methods

The study area

This case study research was undertaken in Chaka Township and its adjacent areas that spans a radius of about five kilometres. The township was selected because it is one of the emerging small towns that have existed for over a decade and is a considerable distance of 160km away from Nairobi, Kenya's capital. Chaka Township lies in the southern tip of Kieni Constituency, or sub-county, one of the six sub-counties found in Nyeri County, central Kenya. According to the 2019 population census, the town has a population of 6,000 people (Kenya National Bureau of Statistics, 2019). That was the first time the town's population was registered following a national census. The government has also earmarked Chaka town as one of the towns in Nyeri County for re-planning and expansion through a review of its boundaries (Muchiri, 2020). This will also enable the town to be formally classified as a town as per the requirements of the Urban

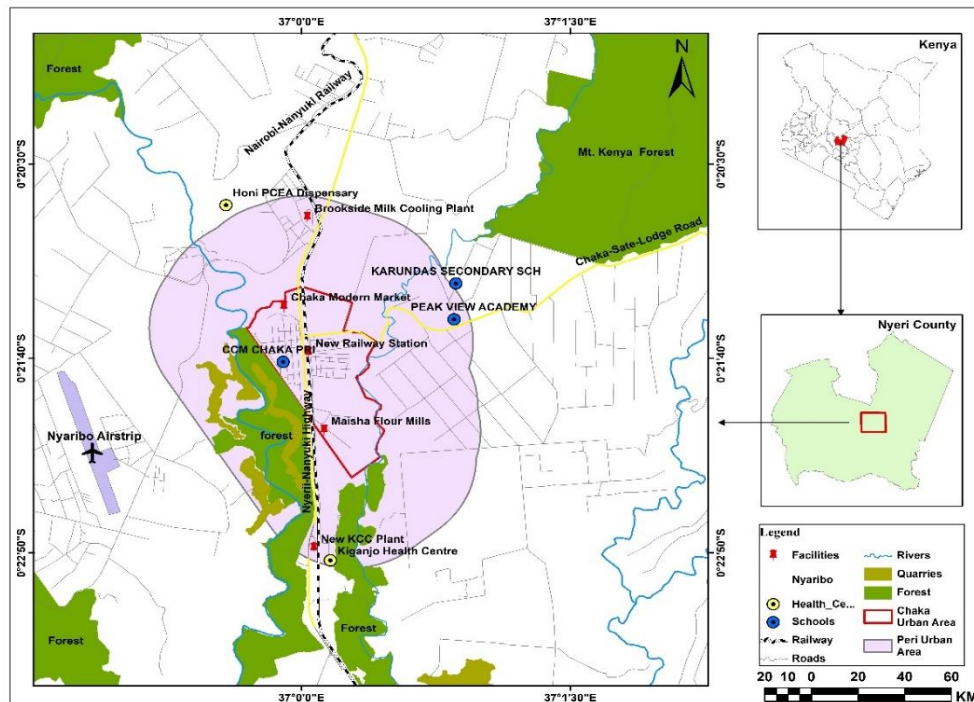
Areas and Cities (Amendment) Act 2019, where one of the requirements is for an area to have at least 10,000 people and several amenities and institutions for it to qualify to be classified as a town (Kenya Law Reporting, 2019). The other sub-counties of Nyeri County are Mathira to the east of the county, Mukurweini and Othaya to the south, and Tetu and Nyeri Town to the south-western side of the county. Kieni sub-county, where the Chaka area is located, is almost twice the size of the rest of the five sub-counties combined. As such, Kieni sub-county is further divided into Kieni East and Kieni West administrative areas, with Chaka located in Kieni East, where it borders the Mt. Kenya Forest area. Kieni sub-county is therefore on the north-most side of Nyeri County, which borders Laikipia County in the Rift Valley region of Kenya.

From an agro-ecological perspective, the Chaka area is characterised by low agro-ecological potential and a climate that is warm and temperate. It is a marginal mixed-farm livelihood zone. Rainfall is considered significant with precipitation even during the driest month. The average annual rainfall is 1030mm. The entire Kieni sub-county is regarded as an arid and semi-arid area, its soils generally being the black cotton soil type, which quite contrasts with the fertile red loam soils found in the other five sub-counties of Nyeri County, described above. As such, the soils in Kieni sub-county are generally not quite conducive to the growth of conventional cash crops like coffee and tea, which are found in other sub-counties of Nyeri. Instead, Kieni's soils are better adapted to the farming of mainly horticultural crops like cabbages, kales, onions, and so on. More importantly, Kieni is better known for dairy farming.

Despite the generally poor agro-ecological conditions, the Chaka town area has in recent years attracted great interest because of the town's rapid growth, which has increased economic opportunities and created new livelihood opportunities in the area resulting from both farm and non-farm activities. Therefore, the once isolated and neglected area, derisively regarded as *kieni*, the local word for a dry and barren land, has started to assume greater importance from both ordinary people and policymakers because of its rapid urban growth, its role as a trading centre, and its role as a distribution outlet for commodities and horticultural produce from the surrounding farming areas. The trading centre has therefore become an important trading node with the recent completion of a modern market and a railway station. There are several agro-processing industries, as indicated in the map (Figure 1) below.

In summary, the Chaka town area has been witnessing a renewed economic dynamism in the last decade and a half. The natural increase in population and immigration into the area by people mainly from other sub-counties of Nyeri has driven this economic dynamism and can be attributed to the increasing rate of land sub-division in the area, which is a key result of the study and a key point of analysis in this paper.

Figure 1: Location map of the case study area



Methods

This study employed a qualitative approach utilising three Rapid Rural Appraisal (RRA) methods: transect walks, key informant interviews, and in-depth interviews with residents, including farmers, in the manner suggested by Mwongera et al. (2017). The overall purpose of the use of these methods was to exploit their complementarity using the triangulation principle (Pelto, 2016) in exploring the multifaceted impacts of rapid urbanisation in Chaka town and its environs and the resultant transformation. For sampling purposes, two approaches were used: the transect walks and the key informant interview methods. Specifically, for transect walks, the line transects sampling approach (Fewster et al., 2005) was used to sample transects and make observations, where the existing main tarmac roads were used as starting points for the walks. After that, the main access roads, which lead into the more rural parts of the Chaka area, were used to conduct the walks. The transect walks were much easier to conduct along the Chaka-Sagana Road (see map, Figure 1) because farms and settlements on either side after exiting from the main tarmac road are organised like streets of about 1.2 km each. Therefore, in this case, the marram roads served as the tracks that afforded the researcher the opportunity to make observations on both the right and left sides of the roads as per the objectives of the study.

Line transect sampling enabled the researcher to record observations relating to agricultural practices, land use changes, and non-farm activities in an easier way because of the more systematic and predictable spatial demarcation of the land in the Chaka areas. Furthermore, road transects also offered an opportunity to interview residents (including seven farmers, six business people, six ordinary workers, and five artisans) as we pursued the transect walk so as to simultaneously and conveniently seek explanations through unstructured interviews on many issues that were not apparently clear from the observations made along the transect walks. As argued by McKenna &

Main (2013), the choice of key informants' interviews was chosen to complement direct observations made through the transect walks because of the informants' expertise in local knowledge and history of the area. Sampling of key informants (the chief and sub-chief, both of whom are the administrative authorities in the area, a community water project official, and two former agricultural extension officers) was therefore done through purposive sampling by asking around people we met during the transect walks on different dates from those of the transect walks. As for data analysis, the data collected during the transect walks and the key informant interviews were analysed using the thematic matrix below organised around the objectives of the study. Emergent issues were categorised according to their similarity and incorporated into the respective matrix for each objective. Some additional information was also obtained from online media reports, newspapers, and government publications.

Table 1: Thematic analysis matrix of the study results

Research objectives	Expected results
(i) To investigate the evolving dynamics influencing small-scale agricultural practices in the context of water scarcity and the pressures of urbanisation in the case study area.	<ul style="list-style-type: none"> • Result 1: Examination of shifting agricultural practices. • Result 2: Analysis of how farmers organise and manage their farms in the context of changing dynamics. • Result 3: Analysis of the impact of water scarcity on the dynamics of small agricultural practices. • Result 4: Exploration of farmers' efforts to cope with water scarcity challenges affecting agricultural practices. • Result 5: Examination of the connection between water scarcity and the rapid urbanisation of the case study area.
(ii) To examine the implications of land sub-division on rising trends in real estate development in the case study area.	<ul style="list-style-type: none"> • Result 1: Exploration of the motivation of land subdivision among the residents. • Result 2: Examination of shifting land use changes from subsistence agricultural practices to real estate development.
(iii) To explore the growing prominence of non-farm livelihood diversification opportunities and the way in which they are enhancing the drive towards urbanisation.	<ul style="list-style-type: none"> • Result 1: Exploration of the emerging alternative livelihood options amidst declining agricultural practices. • Results 2: Identification and analysis of important sectors providing non-farm livelihoods in the case study area.

Results

Dynamics and challenges revolving around small-scale agricultural practices

The study findings indicate that significant farm-based livelihoods continue to dominate the case study area, though there is an observable shift in focus from the largely subsistence farming of staple crops like maize and beans to a focus on horticulture crops, which are regarded as cash crops in the area. Our interviews with traders revealed

that about 15 years ago, the Chaka urban area could best be described as a typical rural market centre handling trade in largely locally produced food crops. Rain-fed agriculture was the main mode of subsistence for smallholder farmers living on the fringes of the town. Most of the inhabitants in the area were engaged in subsistence food production on their farms. Therefore, food production for the market was a rare occurrence. Currently, many changes have occurred, marking a significant shift towards farmers adopting improved agriculture practices like horticulture crops for the market. Additionally, there is a difference in the way many smallholder farmers have organised and managed their farms from the practices of the past, so that sections of the farms are for subsistence food while others are for the market.

The study findings show that water access and use are major challenges facing agricultural practices in the Chaka area. More specifically, the findings reveal that water governance is currently a major factor affecting agricultural practices. Water shortages due to prolonged droughts are a key hindrance to continued investments in on-farm agricultural practices. The way farmers have organised themselves to address the water shortage challenge for both domestic and agricultural use indicates a significant drawback to farming practices. There are collective and individual efforts to get additional water supplies for irrigation through alternative water projects, but the governance arrangements for water supply are quite challenging.

The region is supplied with water by two community-based water supply projects as well as a public water services provider, the Nyeri Water and Sewerage Company, according to the chairperson of one community water project. The overriding objectives of these two community water projects, as captured in their unpublished bylaws, are “to supply water to members for domestic and irrigation agriculture purposes”. However, measures to control water usage are what differentiate the two projects and capture farmers’ frustrations with irrigation agriculture. While members of the first water project have installed metres to control usage, the second water project has not installed water metres to control water use. Instead, it uses a flat, non-restrictive monthly maintenance fee of Ksh 200 to supply water. Because of the misuse of this scarce resource, water project members under the second project cannot rely much on this water to support their irrigated agriculture, which is a major cause of frustration with reliance on farming as a livelihood option. By contrast, most farmers in the area are the ones under the metered water project. In the words of the chairman of the second water project:

With 300 active members, our water project serves the biggest number of residents in this area. This area being a dryland, the water we supply is hardly enough to be used for irrigation. Members who are along the pipeline of the first community water, which is metered, are the ones who are actively involved in irrigation farming, and they are only about 60 in number.

The study further found that for the better part of the year, water supply in the bigger community project is rationed to ease the management of water supply to different corners of the area. This makes it extremely difficult to rely on the water to do irrigation agriculture. Additionally, this is one of the reasons why many residents are discouraged from taking part in farming and therefore look for other livelihood opportunities outside of the farm. Since public water company supplied water is chlorinated, it is mostly used for household purposes rather than irrigation. This supply line targets water consumers in Chaka town centre and those whose homes lie along the main roads serving the town. In any case, most of the farmers cannot use the water beyond a certain cost as they cannot pay for the metered water. The finding further indicates how competition for scarce water resources is manifested in different livelihood generation options like irrigation and domestic uses.

The findings also suggest that water use challenges, especially for farming purposes, continue to persist because of declining river water volumes and the rising population in the area. We noted that there are many other small water projects that abstract water upstream from the three small rivers (Honi, Nairobi, and Thegu) that surround Chaka town. This really strains agricultural production due to the competition for the scarce water resource.

The interviews also revealed that with the persisting water supply challenges in an area that experiences extremely dry weather, the community involved mainly in farm-based livelihoods continues to devise ways of improving agricultural practices using the limited water resources available to them, especially through irrigation methods. This includes continually harvesting and storing water, especially during rainy periods, at the household level through the construction of water pans and water reservoirs such as lined ponds at the farm level. By adopting such simple water conservation methods, they can irrigate their farms a month more after the rain stops falling, to enable their crop to reach near maturity and harvest time. A transect walk across the Chaka area space reveals different levels of sophistication of water pans or reservoirs constructed by residents, which include simple soil-dug-out water pans, water pans with an underneath polythene seal to prevent water seepage, and even more permanent micro dams, as shown in the pictures below (Figure 2).

These water harvesting methods used to collect water during the rainy season demonstrate a determination by a few farmers to significantly depend less on rain-fed farming in favour of irrigated farming. This is important given that the case study area, which falls immediately on the leeward side of Mount Kenya, experiences rather unreliable rains. The simple water collection reservoirs have enabled farmers to diversify into different types of crops they grow, from subsistence foods like maize and beans to more cash-oriented horticultural crops such as cabbages, garden peas, carrots, kale, spinach, capsicum, and bulb onions.

Figure 2: Water pans for harvesting rain water for mainly horticulture farming



Photos credit: Author

Another finding from the data is that there is a notable change in the purpose for which maize is grown. Among the farmers in the area, maize farming has stopped being grown for human food subsistence purposes but as fodder for cattle. This follows the realisation that the returns on maize as a subsistence food crop are much lower than the returns of maize as a fodder crop for dairy animals. The rising number of traditional cow breeds being discarded and the development of superior dairy breeds with higher milk yield both corroborate this fact. As such, our research revealed that there is an increasing adoption of the zero-grazing method of animal husbandry, where milk has become a farm-based livelihood diversification strategy among the farmers. With the popularity of the zero-grazing type of dairy production, many farmers are committing larger proportions of their land to maize growing for silage production. Many farmers prefer to grow maize as a fodder crop for animal feeds, focusing on the increased milk yield and a better income return from the milk that fetches between Ksh. 30 and 50 per litre at the farm gate. This assures a monthly income from their farms, though the price of milk keeps fluctuating depending on the rainy or dry season that determines the availability of feeds. During the dry periods, the price of milk goes up and reduces when it rains due to the supply of animal feeds. Indeed, in the case study area, dairy farming is a key economic activity served by Kenya's leading dairy firms, the Kenya New Cooperative Creameries and Brookside Dairies.

The other farming technologies observed during the transect walks are improvised greenhouses. With the changing climate, rainfall is increasingly becoming unpredictable, leading to low yields and occasional famine. The use of improvised greenhouses is seen as a more efficient use of the water collected using the water pans and small dams during the rainy season. The majority of those who harvest rainwater rely on overhead irrigation, where a lot of water goes to waste. Many farmers with less than an acre of land were using the greenhouses to grow horticultural crops such as bulb onions,

capsicum, tomatoes, spinach, cabbages, and tomatoes, which are a quicker way of earning additional income since they mature quickly within two or three months.

Figure 3: Adoption of improvised greenhouses is on the increase in the case study area



Photo credit: Author

The use of these improvised technologies has enabled farmers to utilise their lands both during the wet and dry seasons with good returns. Rainwater harvesting that supplements the often-inadequate community project water has enabled the farmers to diversify crop production from subsistence crops to horticultural crops mainly grown for the market. This has helped improve household incomes, further boosting their well-being. This, however, has also meant that most households must rely on the market for food purchases.

Eventually, it was clear from the findings that both individual and collective efforts by farmers have contributed to the positive profiling of the case study area, which has led the area to be earmarked as an important area for the development of agro-based industries by the county government. The first devolved Nyeri County Development Plan identified the case study area for major investments in agricultural crop value addition initiatives by proposing the setting up of a fish and agro-processing zone to serve the industrial needs of the immediate areas and other adjoining areas of Chaka town. These proposals are contained in the 2013–2017 Nyeri County development plan, although the subsequent county government has moved slowly on the proposals.

In summary, the findings in this section underscore the centrality of issues of water access, use, and governance as being influential in impacting small-scale agricultural practices. It also emerges from the findings that these challenges have acted as a precursor and trigger to the urbanisation process. For example, water scarcity has contributed to changes in land use, where declining agricultural productivity due to unreliable water supplies has exacerbated the propensity for repurposing land for real estate development. With persistent water scarcity, agricultural land is no longer viable for farming, and despite farmers' efforts to seek new farming methods such as the use of improvised greenhouses, the poor productivity from agricultural activities has increased farmers' tendency to abandon farming for other non-agricultural activities, or they have sold land parcels to the people immigrating into the area for settlement. This shift in land use has contributed to the conversion of rural spaces into areas more conducive to urban development. On the other hand, pressure on the available water resources in the more rural areas of Chaka has intensified the demand for land in the peri-urban areas of Chaka. Since the county government supplies water to peri-urban and urban regions through the Nyeri Water and Sewerage Company, this drives the

growing tendencies in real estate development as inhabitants desire proximity to urban amenities and municipal water access.

Land Sub-division and rising trends in real estate developments

The findings showed that a key drawback to the transformation of agricultural practices in the case study area is the land sub-division, where already small pieces of land are sub-divided into very small, unproductive portions of land measuring 50 x 100 feet. Our observation indicates that the desire to sell small land parcels for real estate development is the main motivation for land subdivision. Both immigrants and local people are the cause of the heightened demand for small plots of land for the construction of residential buildings, especially in the peri-urban and rural parts of Chaka. This is particularly the case with young people who have not received land inheritance from their parents. Migrants into the area are the main cause of the unprecedentedly high demand for land. This has consequently caused a high rise in land prices. The tremendous subdivision of already small land pieces, which are no more than two acres, is an attempt to meet the high demand for land located in peri-urban and rural areas specifically for residential purposes. It was also noted that most of the migrants come into the Chaka area from other sub-counties in Nyeri, with a few others coming beyond Nyeri. There are two key drivers responsible for these trends. First, in Central Kenya, there is a cultural requirement, especially for adult males, to own a piece of land, however small it is, if it has security of tenure. In addition, over the last decade or so, there has also been a proliferation of land-buying companies that buy big parcels of land, like two acres, in areas that are rapidly developing and then subdivide them into smaller plots, which are mostly 50 by 100 feet, for resale. But this is not the cause of the land sub-division in the case study area. The real driver is the aggressive marketing of land sales in the vernacular electronic media that attracts buyers from other parts of central Kenya.

Our interviews further revealed that there are linkages between local people's perceptions of the use of land for farming purposes on the one hand and the use or sale of land for non-farm activities on the other. Interviews with residents suggested that a decade ago, there was low interest in land because it was considered unproductive for agriculture purposes because of the black cotton soil type, which does not support good crop growth. Also, the relatively low rainfall experienced in the area does not support much rain-fed agriculture. Land sales were therefore mainly by progressive local people who also had land in the surrounding sub-counties in Nyeri County. These people considered their land from other sub-counties where they came to be more fertile than the land in the case study area. Therefore, they considered selling the land in the case study area, which they considered unproductive since it was in an arid and semi-arid location. However, as indicated above, these were few and isolated instances since the majority of those who settled at Chaka had moved from land scarcity challenges in the area they had come from. Compared to the more productive areas in other sub counties of Nyeri, the Chaka area could not generate as much income from coffee or tea, which were considered lucrative cash crops. Therefore, land was cheap at Chaka. According to our interviews, around the year 2000 a two-acre piece of land with a title deed in Chaka used to cost Kenya shillings (Ksh) 150,000.¹ The interview data also shows that more affluent people (political and business leaders) have bought land in the Chaka area to construct their holiday homes as opposed to other sub-counties of Nyeri County. Most of them bought bigger pieces of land ranging from five to 20 acres in the more rural parts of Chaka about ten years ago. They trigger land holders with two-acre pieces of land to sell or subdivide their land since they raised the land profile in the area, consequently causing the prices of land to rise significantly. Today, the price of an acre of land in the

area is in excess of Ksh three million. The high cost of land has further accelerated sub-division of land.

An important finding in our study was that the key indicator of land use change is the continuous reduction in farm sizes through sub-division to pave the way for the construction of residential houses in the peri-urban and rural parts and commercial buildings in the urban area. In the 1970s and 1980s, when departing European farmers sold large farms to African cooperatives, land in the area was allocated to the new African owners based on a single share being equal to two acres. Therefore, this was the initial or first generation of land sub-division in the case study area. The land sub-division taking place currently can be regarded as the second phase sub-division, which has reduced agricultural production pieces of land to unsustainable levels. This reduction in farm or plot sizes has set the pace for the development of dense dwelling places as one move from the Chaka urban area through to the peri-urban areas and finally to the more rural areas. This means that this trend reduces the chances of the area being highly dependent on agricultural activities significantly. This reality is captured in the words of an informant, thus:

Land is being subdivided into small portions of one acre, half of an acre, a quarter of an acre, or even the more popular portion of an eighth of an acre. This poses a real danger to people who live here and rely on the farm to make a living.

Figure 4: Increased sub-division of land into small plots in the case study area



Photo credit: Author

Recent migrations and settlements into the area explain the rapid growth of Chaka town. Most of the immigrants have bought land on the outskirts of the town, where they have put up residential houses while doing business in the town. Equally, a good number of local people have set up businesses in the town. It is the clearest indicator of rural-urban linkages and convergence as urban settlements expand and rural areas also start to urbanise. The numerous recreational and leisure facilities that have been established by some wealthy land buyers who have invested in these hospitality amenities are another factor drawing a lot of people to the area. As mentioned earlier, as a result of these new settlers, the demand for land has motivated other residents to subdivide their lands further into smaller plots. Consequently, the establishment of recreation and leisure facilities has further raised the profile of land around the area, further creating demand for land in the area. Because of land subdivision, residential development, and the establishment of recreation and leisure facilities, there has been an escalation in the

price of land. We observed that recreation and leisure activities spread across the three zones—urban, peri-urban, and rural—that have come to characterise the Chaka area more recently. Key informant interviews indicated that in 2013, the cost of an acre of land in the case study area was Ksh 400,000. For the same amount of money today, one can barely manage to buy an eighth of an acre.

The building of residential houses has accompanied the unprecedented land sub-division in the more rural areas of Chaka. As some key informants have noted, the high rate of land subdivision and increasing real estate development has led the county administration to classify the area as part of the Nyeri Municipality area. This has led to a further escalation of land rate charges related to the sale of land. Land rates to the government during the sale of land (plots) have also been adjusted to reflect the new status of the Chaka area. In the past, land rates were calculated at two per cent of the value of land as opposed to the current four per cent since Chaka town is now considered part and parcel of the Nyeri municipality area. An urban renewal project, which was a joint Nyeri County-World Bank initiative for Nyeri town, has suggested that part of the project activities in Nyeri town, especially those related to agriculture, will be relocated to Chaka town for the development of agro-industries (Rinaldi, 2016). However, plot owners are against this policy proposal of reclassifying the area because it means that even the land tenure will change from freehold land tenure to a leasehold tenure. A community leader supported this finding with the following words:

The move by the county government is ill-informed because it will raise the cost of living in this place quite a bit. The residents are against the reclassification of the title deeds because the devolved government will charge us exorbitant land charges.

Figure 5: Rise in construction of modern homes in rural environs of the case study area



Photo credit: Author

There are socio-economic and ecological consequences also associated with land sub-division and residential development in this largely rural set-up. This includes the challenge of setting standards for developing an area since most commercial and residential development in the area appears to be largely spontaneous. Ignoring the proper planning requirements or the lack of enforcement of controlled building standards affects sustainable development in the area. The residential developments are already slowly creating a rural-urban sprawl along the major roads and streets in the town. Although a development plan for the Chaka town area has been completed, it has

not been approved to start steering the rapid development of the town and its surroundings.

Non-farm livelihoods diversification opportunities

The findings indicated that Chaka town has been slowly evolving from an area where farming activities are the dominant mode of earning livelihoods for its residents. However, there is an evolving shift towards vibrant trading with a diversified range of non-farm sectors. The area can now be characterised as a mixed farming and trade zone where mixed farming activities contribute up to more than half of household incomes. In the words of a key informant:

Farm-based activities occupy a higher place in terms of engaging residents with livelihood opportunities and incomes, which are close to half of all incomes and livelihood opportunities.

The findings also noted that a small number of incomes are generated through government employment, largely as teachers, administrators, security officers, and health workers in the area. In the recent past, with the opening of more economic activities in transport, building construction, timber yards, hardware stores, private primary and secondary schools, banking and other financial services, etc., there have been more diversified livelihood opportunities for many. It has also been noted that more non-farm activities and other forms of employment have been generated with the completion and opening of a new market that has been developed in Chaka town.

Generally, the interviews identified four broad sectors that constitute the main non-farm activities presently taking place. These include trade, services, craft and artisanship and the manufacturing sector. The sectors are playing a key role in changing Chaka town from a marginal mixed farming livelihood zone where farming contributes the greatest proportion of income activities to alternative non-farm incomes for many households. Table 2 below summarises the distribution of non-farm activities identified around Chaka town.

Table 2: Distribution of non-farm activities around Chaka Township

S/N	Sector	Activities
1	Trade	General shops; retail supermarkets, sale of farm produce in the market; sale of construction materials like stones, sand and ballast; hardware stores, agro-vet shops, pharmacies, timber sale; sale of second-hand clothes
2	Services	House rentals, transport: passenger and goods <i>bodaboda</i> ; barbershops; hospitality, recreational and leisure, banking and other financial services (saving and credit societies)
3	Crafts and Artisanship	Carpentry; stone masonry; welding
4	Manufacturing	Maize milling and dairy feeds production; milk processing

The recreation and leisure sub-sectors currently create significant non-farm opportunities. This means that the Chaka area is benefiting not only in providing hospitality services but also in creating a market for locally produced farm-based commodities such as eggs, vegetables, and milk needed in the proliferating recreation and entertainment centres. Several recreational facilities within a radius of five kilometres of Chaka Town have come up. Most recreational and leisure activities attract

clients outside of the Chaka area, with weekends attracting visitors from as far as Nairobi, the capital city, some 160 km away. Chaka Ranch, for instance, is the biggest and most popular of the recreation and leisure facilities that are most frequented, as it runs media advertisements on national and regional television channels, therefore drawing clients from across the country, especially on weekends and during holidays.

The transport sector is another important non-farm livelihood opportunity in Chaka. With increased population in Chaka and growth in various other activities, including in the construction sector and other facilities, a huge opportunity for ferrying people and goods has opened up. These transport options can be summarised as passenger and goods transport. For passenger transport, there are taxi vans in the form of motorcycles, popularly known as *boda boda motorcycles*, which are a characteristic feature of most urban centres in the country and the eastern Africa region as a popular means of public transport. For goods transport, this is mainly the transport of construction materials like stones, ballast, sand, and other construction hardware materials. Construction stones and ballast are sourced from the many quarrying activities surrounding Chaka. This means quarrying activities provide other major non-farm income opportunities for people. Non-farm job opportunities in the transport sector are also directly linked with the changes that have occurred in the area, like increased farming of horticulture crops and rising demands on residential and commercial premises.

While Chaka Market still relies to some extent on food produced from the surrounding areas, a good proportion of the goods, like fruits and grains, come from outside the area, with imports from outside the county accounting for fruits such as apples and oranges. Trade is therefore an important ingredient in the rural transformation occurring in the case study area, which has become an import node and distribution point for both farm and non-farm commodities.

The findings also indicate that the other non-farm employment diversification opportunities are in the education sector, which arose with the emergence of private schools and tertiary institutions. Among the tertiary institutions in the area are a polytechnic and a technical training institute. Such institutions not only offer job opportunities to local people but also provide the pool of skills required locally in the various artisan and craft opportunities associated with an emerging and growing economy in the town. The increasing size and relative affluence of the rural population, especially the “new” migrant residents in the area, has created opportunities for the establishment of private schools in the area. Over the last five years, six new private primary schools have been set up, serving the education needs of the new residents with resources to sustain their children in private schools.² The new schools have been established within a five-kilometre radius of Chaka town, indicating they were set up to respond to the rising demand occasioned by relatively well-off residents who can afford private education.

Furthermore, a look at the wage structure provides further leads regarding the future of farm-based and non-farm-based activities. A comparative look at the prevailing wage rates for day-paid labour in Chaka suggests more people, especially the youths, are preferring non-farm-based income activities as opposed to farm-based activities. Non-farm activities are viewed, especially by the youth, as being relatively better-paying than farm-based activities. For instance, a labourer who spends the day on the farm tending to crops is paid Ksh 400. On the other hand, a labourer at a construction site is paid Ksh 500. The differential daily pay of Ksh 100 with the same hours worked has created the impression that farm work is low-key and undignified. It is causing the youthful labour force to go to towns for better-paying non-farm roles.

The findings also indicated that there is an acute shortage of farm labour, especially during the preparation of the farm for crop planting. Many farm owners are forced to wait until school closes for school-going children to prepare the farms because only the elderly parents who cannot cope with farm activities like tilling the land are left at home for the farm-based activities. This suggests that farm-based activities are at risk of being neglected altogether, considering the perception by the youth that they are low-paying and thus unable to meet their needs, let alone the urban lifestyles they are growing up mimicking.

Discussion

The purpose of this study was to explore the dynamics that underpin the rural transformation of a rapidly urbanising small town, Chaka, by highlighting the drivers propelling this transformation and the impacts they exert on the town, its environs, and its residents. The study findings on the identified dynamics shaping agricultural practices in the Chaka area resonate with discussions on the impact of urbanisation on agriculture as captured in the literature.

The findings show that local farm-based practices continue to be an important factor in contributing to people's livelihoods. This finding resonates with what Engel et al. (2017) observed as the trend in the rest of Africa. However, the literature also suggests that there is a general decline in agricultural productivity (Osabuohien, 2020) in most areas of rural Africa. There are also observed difficulties faced by farmers in adapting to the changing socio-environmental landscape. For example, the area's expanding population as a result of the migration has put strain on the irrigation water supply, thus compromising agricultural development. The more people are settling into the Chaka area, especially in the rural sections, the more they are putting a strain on water accessibility for all residents for domestic use and irrigation purposes. This also points to the vulnerability of traditional rural farming practices to urbanisation pressures, where changing land use and water scarcity problems affect farming practices.

There is vulnerability in rural areas, where most of the food is grown, to changing climatic conditions and urbanisation pressures. As suggested by Rigg & Salamanca (2017) and Beall & Fox (2009), this necessitates the use of climate-resilient agricultural techniques and water management strategies in order to reduce the negative effects on rural livelihoods. It also calls for the need to adopt new farming methods where technology plays a key role, as pointed out by Niu et al. (2022) and Chen et al. (2010), as experiences from the Chinese agricultural transformation show. Soil and water conservation measures are also important so as not to compromise already vulnerable agricultural productivity in rural areas, as the case study area data implies. Ultimately, rapid urbanisation has led to a decline in traditional agricultural practices due to limited land availability, water scarcity, and changes in land use patterns driven by urban expansion.

The finding about the emerging promotion of and demand for locally produced foods, especially vegetables, linked to the local urban market, the local agro-processing industries, and the growing tourism and hospitality sectors suggests new entrepreneurial opportunities for the local people. This is also linked to the debates in the literature that point to the need to diversify non-farming activities to foster entrepreneurship and innovation (Tacoli & Agergaard, 2017). Taking the discussion a little further, this is a strategy for promoting inclusive and sustainable economic growth given that some of these farm-based activities have been left to women and some of the elderly, who are among the historically marginalised social categories.

The findings on the efforts by farmers to devise water harvesting methods and the use of improvised greenhouses point to the bigger idea of the adoption of technologies. The efforts by the farmers to improvise irrigation technologies resonate with what is captured in the literature on the value of the adoption of technologies for enhanced agricultural technologies and to mitigate against the impacts of climate change (Chinapah & Odero, 2016; Lang et al., 2016). However, in the Chaka area, the issue is about how to access the most effective and relevant technology given the declining land for agricultural purposes. In the case study area, the use of certified seeds is an important practice, with many agro-veterinary shops located in Chaka town. This is as far as the use of new technologies is concerned. Otherwise, the use of improvised water harvesting methods often leads to inefficiencies, with a lot of water going to waste and evaporating. Instead, the use of drip irrigation even for horticulture crops would be a more efficient method, though costly and unavoidable for many small-scale farmers in the Chaka area. This is the reason why locally improvised greenhouses are the more prevalent technologies used.

From a governance perspective, effective water management policies and infrastructure development become crucial for sustainable rural transformation. There should be investments in water conservation measures. Water storage and better water distribution systems could mitigate the impacts of water scarcity. However, on the positive side of urbanisation, it can bring about the adoption of technology in agriculture, including efficient irrigation methods and the use of data analytics to enhance agriculture productivity even in limited spaces. This, however, requires massive investments, which may be a challenge for the county government, under which issues of agriculture and environmental planning fall under Kenyan devolved governance. Water storage and distribution systems could mitigate the impacts of water scarcity.

The study uncovered a notable trend of increased land subdivision in rural parts of the Chaka area, which has led to very small land parcels where sustainable farming can be a challenge. This fragmentation can be attributed to increasing urbanisation pressures within the Chaka area, which have further impacted aspects that have been discussed here, like traditional agricultural practices and land productivity. Notably, this phenomenon of increased land subdivision corresponds with observations in the literature (Jayne et al., 2014) that urbanisation exerts pressure on land resources, thus altering land use patterns. These patterns lead to challenging living in both rural and urban settings. Engel et al. (2017) suggest that agriculture-led rural change in Africa runs counter to patterns elsewhere, where land consolidation should lead to high agricultural productivity. In Africa, a contrary situation is happening through intense land subdivision, which leads to the shrinking of land for agricultural purposes.

Rising real estate developments are a direct result of the increasing land sub-division in the case study area. These developments are shaping the land use patterns in the Chaka area, which impact agricultural practices. This resonates well with the literature (Sakketa, 2023; Jayne et al., 2019; Deininger & Byerlee, 2011) that points out that land subdivision is a threat to agricultural production. Although this trend is reflective of the situation in Africa, other studies (Niu et al., 2022) show that rural transformation in China has been realised through land consolidation. This indicates that rural transformation in Africa is taking a different path altogether from what has happened in other contexts. The literature suggests the need to handle the prevailing land use change for urbanising areas through the adoption of sustainable land management practices that allow a good balancing act between urban expansion and enhancing agricultural productivity (Bryden & Hegrenes., 2015; van Vliet et al., (2017)). The increasing conversion of agricultural land for urban purposes in Africa calls for the implementation of relevant land use policies that ensure sustainable urban growth without compromising agricultural productivity.

The challenges of agricultural productivity in the Chaka area have led many original residents to seek non-farm employment. Land subdivision pressures and expanding real estate development have worsened the challenges associated to agricultural practices in the area. It is notable that the real estate development provides some non-farm livelihood options. There is strong evidence that the emergence of diversified non-farm livelihood opportunities across the Chaka area is a good indicator of the transformation taking place in the area. The emergence of non-farm livelihood options supports discussions in the literature on the need for diversification of rural economies in the face of urbanisation through entrepreneurship and innovation (Tacoli & Agergaard, 2017). It also aligns well with the observations made in the African context, where studies show there are slow shifts in livelihood from rural agricultural sectors to urban-industrial sectors (Engel et al., 2017). In the Chaka area, this is captured through the emerging opportunities offered through agro-processing and rapid growth in tourism, recreation, and leisure, as well as in the construction sector. As Tacoli & Agergaard (2017) note, non-farm incomes are important for increased socioeconomic mobility and therefore contribute towards rural transformation. However, as noted by Tacoli et al. (2015), on the other hand, they can also lead to social exclusion. Diversification may not benefit all individuals and social groups, with some lacking access to resources to venture into new entrepreneurship, while there also exist skills disparities among different people (Bryden and Hart, 2004). For instance, individuals dependent on traditional agriculture, most of whom are the elderly and women, in a sector most impacted by the many challenges facing farming may not find it easy to adjust to the emerging non-farm activities.

Implications of the study

The study has several implications for practice and policy emerging from the findings. To begin with, given the challenges facing farmers, the study highlights the urgent need to invest in climate-resilient agricultural practices and good water governance systems. This can enhance agricultural productivity and mitigate the impacts of urbanisation on rural livelihoods since a significant number of people still rely on subsistence agriculture. The livelihood threats occasioned by increased land subdivision emphasise the need for integrated land-use regulations that balance urban expansion with agricultural land preservation to enhance sustainable rural development. In this respect, authorities should enforce zoning regulations that safeguard arable land while accommodating urban growth, as both processes are beneficial to people. This could be the reason why the government has suggested the conversion of the Chaka area to be part of the Nyeri town municipality, but with a lot of resistance from landholders. Furthermore, the steady rise of non-farm livelihood options calls for policies that promote economic and skill development to fill the technical gaps that can foster inclusive economic growth. By supporting small-scale enterprises and vocational training, it is possible to enhance economic resilience and reduce dependency on agriculture, which continues to face many challenges.

Limitations of the study

This was an exploratory case study that relied mainly on qualitative methods. Consequently, the findings are specific to Chaka and may not be generalised to other rapidly urbanising rural towns with different socioeconomic, geographical, and environmental contexts. Generalising the findings should be done cautiously. Combining qualitative and quantitative methods in the future could enhance a comprehensive understanding of the dynamics and trends shaping rural transformation and rapid urbanisation in Chaka town. This can present possibilities of generalising the findings to other similar contexts. Additionally, the study acknowledges that reliance on qualitative methods can lead to subjectivity pitfalls at all stages of the research process. For

instance, informants' perceptions are often subjective, and there are biases in self-reported data. However, the use of triangulated qualitative methods (key informant interviews and participatory transect walks) mitigated, to some extent, the researchers' potential subjectivity while interpreting the data.

Conclusion

This study explored the dynamics shaping rural transformation as shaped by the rapid urbanisation of Chaka town and its surrounding areas. The findings from the study have illuminated certain features that are consistent with previous research capturing local, regional, and national contexts, while some aspects defy patterns in other contexts. The study has thus offered insights into the complex issues of urban-rural interactions and transformations in the context of a small, rapidly urbanising town like Chaka. The changes observed in the Chaka area relate to agricultural practices, heightened land sub-division and escalating real estate development, and the growing importance of non-farm livelihood options in response to the emerging realities induced by the rapid urbanisation of Chaka town. The findings contribute to the ongoing discussions on urban-rural dynamics, which emphasise the need for context-specific policy interventions and sustainable development strategies.

The implications of the study suggest the need for policy recommendations that balance urban development with agricultural sustainability initiatives to address specific challenges and priorities. The study also serves as a stepping stone for a further understanding of the role of rapid urbanisation in small towns in changing the character and shape of their surrounding areas through undertaking more such studies. The study findings also allude to the need for working collaboratively among stakeholders, including policymakers, urban planners, and local people, due to the multifaceted nature of challenges and opportunities, to be able to shape sustainable and inclusive development pathways for the case study area and other similar areas. In all, the study advocates for a development approach that emphasises sustainability and inclusivity strategies that integrate urban and rural planning while also prioritising local people's needs for fostering equitable and sustainable development.

Notes

1 At the time of fieldwork, one dollar was being exchanged for Ksh 120. This, when compared with the current price of an acre of land, which costs about Ksh two million, was cheap.

2 Some of the schools appear on the Chaka location map presented in the methodology section.

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