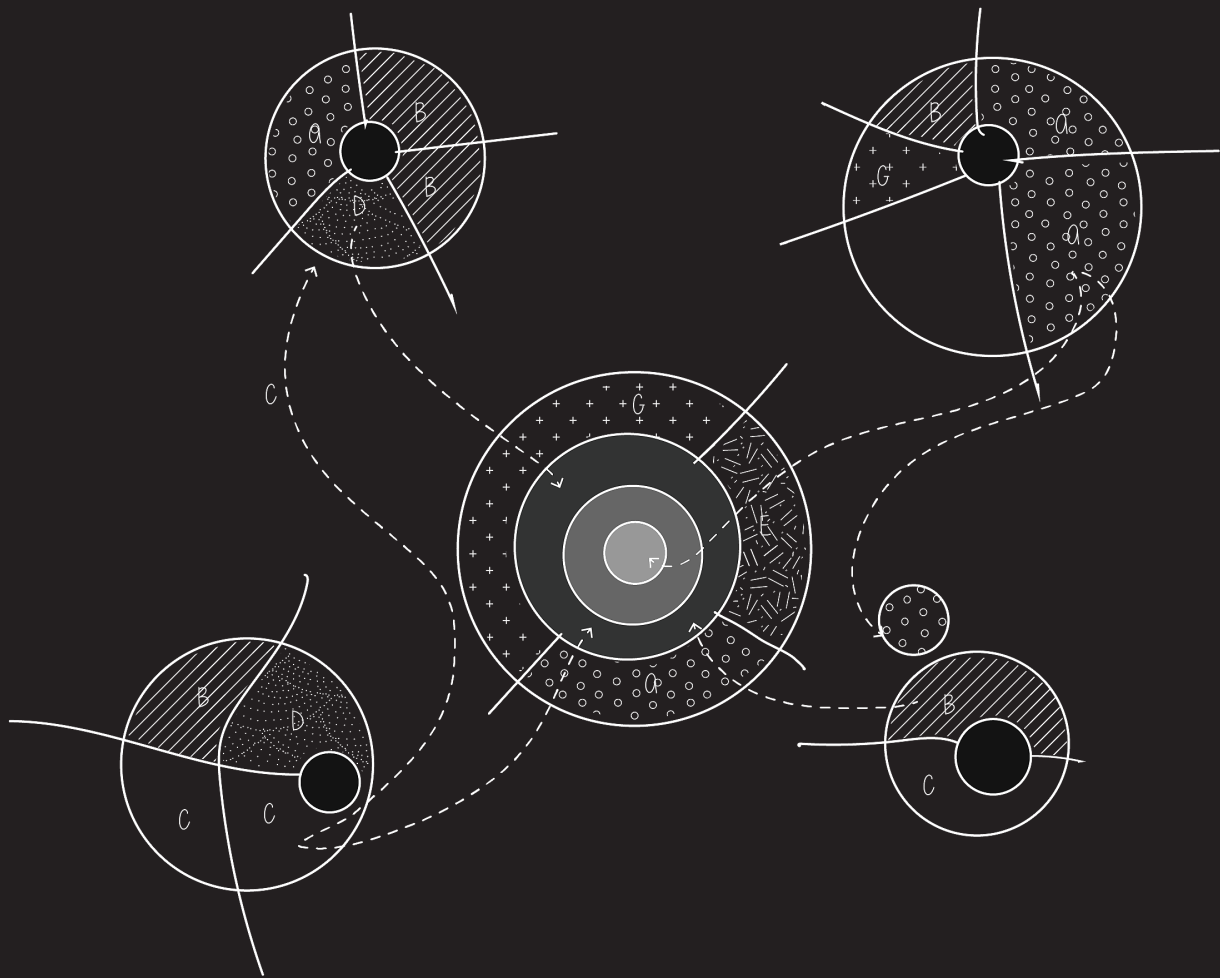# CITY-REGIONS for CULTURAL-ECONOMIC NOMADS

Leveraging transitory rural-urban networks in Nairobi's peripheries through regional agroecological systems;

A guide to city-region planning in Kenya

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Collage of cultural diversity distribution in Kenya

Abstract

Projected rapid urbanization in African cities is posed to put immense pressure on existing neoliberal urban planning strategies as practised in primary cities and metropolitan regions across Sub-Saharan Africa. This is despite the visible shortcomings of these neoliberal urban development models in delivering the required human development alongside economic growth, specifically for majority of the urban residents in African cities - the urban poor. The political, external agency of cities to global economies at the expense of the internal cultural-economic capacities of local communities continues to propagate inequality, with the urban poor being the most affected by these unjust systems. Continued rural-urban migration, and the growth of the peripheries in urban areas, has seen reduced productivity in traditional integrated agroecological lifestyles and this is unfortunately happening against weakened industrial and manufacturing industries within local urban contexts while propagating a producer-service industry that has fewer opportunities for the rapidly increasing vulnerable populations. The witnessed result of this for the urban peripherals is a growing impermanence of urban lifestyles and the persistence of rural-urban links, as not only escapes from the terror of rigid developmental states mindsets, but also as crucial links for producer-consumer relationships in the splintered regional food system. Unfortunately, the current governance impetus is the propagation of neoliberal models of modernization and gentrification of the urban poor, putting a strain on this crucial cross territorial relationships that sustain urban life. This rural-urban relationships therefore begin to expose the urgent need for reconciling production and consumption landscapes within sustainable city-region governance and planning practices in order to advocate for just urbanisation processes that caters to all populations.

This research, critically analyses the symbiotic relationship between the current informal urbanisation structures prevalent in primary cities through the case study of Nairobi, and specifically within the peripherals, and their cultural-economic identities associated with rural-urban transitory patterns. This investigation makes an attempt to reconnect the future of Kenyan urbanisation to social-cultural production capacities and processes as advocated by critical spatial production and governance literature. Through the main stay of Kenya's economy - agriculture- and the critical need for sustainable transitions in agricultural and urbanisation systems, we suggest a reconciliation between the emerging social movement of agroecological urbanism at a city-region scale and the adaptiveness of prevalent cultural-economic rural-urban relationships, to suggest a regional, inclusive and adaptive approach to planning practice and governance.

Keywords: **city-region, peripherals, rural-urban links, agroecology, adaptive governance**

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Introduction

Notes & Problem Statement

"For indigenous Kenyans, land has an important spiritual value, for it is not merely a factor of production; it is first and foremost the medium which defines and binds together social and spiritual relations within and across generations. Land belongs to a vast family of which many are dead, few are living and countless members are still unborn"
(Njonjo Commission Report 2002:19)
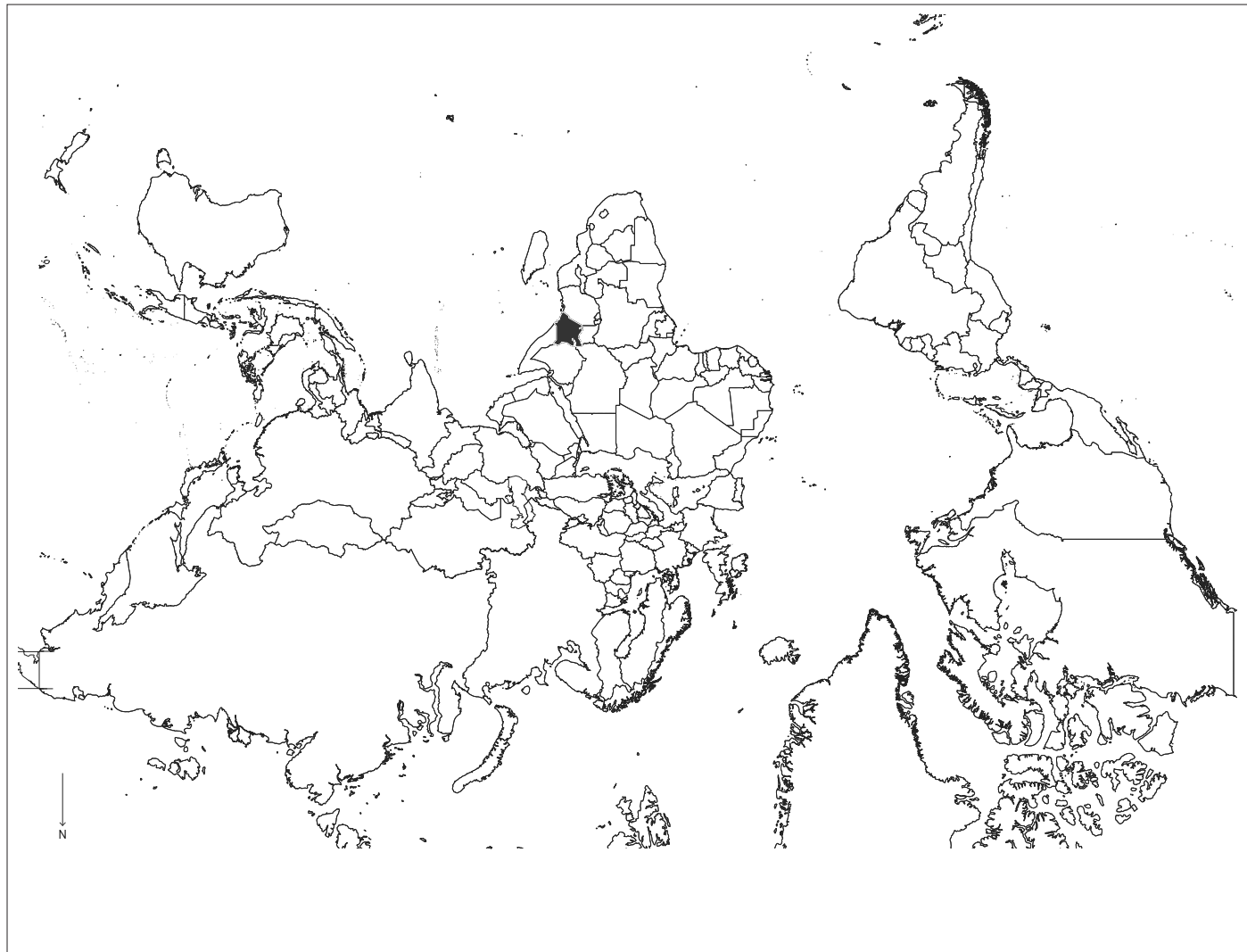
Fig.A - 1: *Worldmap - Global North-south (source: QGIS)*

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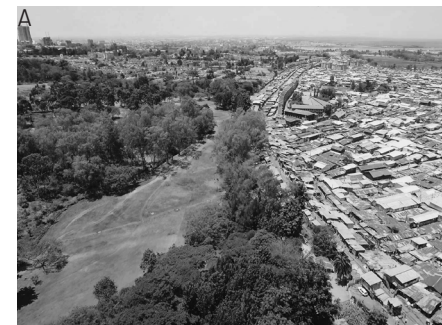
Fig.A - 2: *Nairobi's social-economic peripheries A. informal small-scale food retailers, B. image showing contrast between the rich and the poor in Nairobi, C. informal Jua-kali traders.*

Notes

This section introduces a few of the main concepts used in this proposal and their definitions as used in the research.

Peripheries

By using the term peripherals in this research, as used by Simone(2010), in place of the commonly used term 'informal', we strive to provide a structural setting both at a socio-economic and spatial level, while abandoning the 'formal-informal' discourse, as we believe that the informal, not only in the African context but globally, is a clearly negotiated context within the formal. The concept of distance from the centre, alluded by periphery, attempts to encompass the socio-economic, political and spatial structure of the 'formal-informal' setting. We do not however attempt to make light of the vulnerabilities experienced in the peripherals or relegate them to a different discourse. We approach the peripherals from a socio-economic empowerment perspective over the usual sympathetic approach which has viewed the setting as a space for continued top-down assistance-needy engagements. The existence of the peripheral in this case, not only serves the needs of the informal, but also provides the opportunities for the formal to operate within the informal. We take the view of the peripherals as a network of actors and systems that are integral in reshaping the urbanisation process in global south cities. As (Banks et al., 2020) elaborate, the informal should be observed as a site of critical analysis to be understood at multiple scales (Banks et al., 2019). The peripheral then, in contrast to formality, can be seen as a different set of rules negotiated and enforced by diverse actors who frequently include, but go beyond, city-based or national systems. Therefore, it is simply not only about the lack of rules and regulations, or the ungoverned.

Spatially the growth of the peripherals can be attributed to increasing rural-urban migration and internal population growth within cities which has put immense pressure on the weakened governance structures now prevalent in African cities. A lack of proper integration structures to the neoliberal planning products, cities, only exacerbates this issue. Additionally, we continue to observe reducing economic opportunities that result from the reduced productive systems in local industries, as highlighted earlier. This has led to the constant growth of peripheral economies and settlements to cater for the increasing needs of this population. The peripherals are left to serve the gaps in the main service industry and the marginalized groups through small-scale economies. This means that their inclusion serves in; growing the consumer economy with a reduced impact on the producer economy. They also provide a reserve of cheap labour for global financial systems which is a prerequisite for elite capital accumulation and economic growth. Owusu (2014) refers to this phenomenon as the functional dualism of African primary cities. Most individuals in the peripherals are engaged in low-value industries with little access to finance for growth. Despite the growing inequality we acknowledge that economic development does indeed require growth. Our concern on the spread of the peripherals is therefore focused on the nature of this growth and what lessons can be drawn from its

support of the gaps of normative planning systems. The relationship between economic growth and poverty is a major point of concern in understanding the rise of the peripherals. Despite the over-reliance on trickle-down economics, in the current neoliberal approach to urban development, the type of governance related to desired growth is also a major factor for consideration in how inequality spreads (United Nations, 2016)

Global North, Global South

Although we do not agree with the status quo, ambiguous geographical definition of territories by most urban geography literature into a 'north' and 'south', we continue to use the terms, Global south and Global north in this paper as commonly used in existing literature cited in this report, for consistency and clarity.

City-region

With the concept of city region, we attempt to build on the theory of social production of Space as advocated by Lefebvre, (1991)- English translation, which views urbanisation – the production of space- as an ensemble of social processes and their interaction with nature. The city-region then becomes a social space that represents ambiguous continuity in the interactions between social, economic and political processes. Boundaries and the dichotomy of rural and urban then become 'things' that construct illusions of separation, "a segmented representation of space" (Lefebvre, 1991). The city is then therefore viewed a a product, which empowers 'locational capitalism' (Soja, 2009) which is among the greatest sources of inequality that favours the rich over the poor. It is important to note that, this neoliberal concept of the city as a product continues to favour mindsets of consumption (human and physical energy) that ignore the productive labour of their regional hinterlands. The city-region concept therefore favours a reconfiguration of urbanisation towards the combined space of production and consumption. A reconciliation of productive labour and consumptive forces. As with the case of agriculture as will be addressed in this research, the conventional agro-systems that encourage the forgetfulness of productive labour - regional/rural production of food through the fetishism of consumptive urban markets, needs rethinking if we are to achieve a sustainable and resilient form of urbanisation.

Urbanisation

Urbanisation in this research will therefore build on the mentioned concept of the city-region. It is a "way to organize mutual interdependencies and social reproduction within a particular socio-economic and cultural context" (Tornaghi & Dehaene, 2019). This proposal seeks to reconfigure the mindsets of urbanisation from the existing segmented representation of the city-region landscape – rural to urban – to a more cohesive and continuous landscape of social and physical infrastructures. Urbanisation then is a process of shaping city-region environments through acknowledging the relationship of social lifestyles, their cultural dispositions and labour forces across the natural

landscape. It builds on critical literature of Lefebvre on the social production of space, and Foucault on the relationships of space and governance.

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1.2921° S, 36.8219° E

1.2921° S, 36.8219° E - NAIROBI, KENYA

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Problem Statement

For global south cities, the impact of urbanization in promoting human development alongside economic development cannot be underrated (UN-Habitat, 2016). Global urban trend projections indicate that approximately 70% of human population will live in urban areas by 2050. With many sub-Saharan African countries expected to contribute to this rapid urban growth (United Nations Department of Economic and Social Affairs, 2018), it is important that the relevant governance and planning structures develop strategies that will not only ensure sustainable economic growth but also socio-cultural human development. Governance and planning practices in global south states have continued to play catch up with economic based policies and strategies for their projected urban growth by attributing economic agency to metropolitan areas and cities. It is however important to acknowledge that, this agency of economic development attributed to urbanization through primate city development has had its shortcomings in the development of sustainable human development. In Kenya as with other regions of Sub-Saharan Africa this has led to a dereliction of social production processes of regional growth with emphasis placed more on primate city-regions as agents of external economic growth.

The rapid urbanisation and the growing hegemony of metropolitan city planning in Kenya has led to the dominance of Nairobi as a primate city and a spatial economic zone that caters towards global capital markets. Governance agendas geared towards selling a renewed city as a strategic hub for global capital continue to propagate the growth of inequality through the marginalization of low income rural-urban migrant groups that serve the city space through informal services. Although marketed as free and innovative economic markets, primary metropolitan regions such as Nairobi are political constructs made visible and produced through everyday contestations of resource consumption and social reproduction (Jonas & Ward, 2007). They are built on a historical and ongoing contestation of segregation and marginalization of the majority of the urban population who make up the urban poor. We however acknowledge that the development of large metropolitan areas under the city-region concept are not only economic products, but also systems of social-cultural and political production. Nevertheless, the influence of the economic benefits of agglomeration continues to create effective sites for neoliberal political and spatial planning hegemony, and consequently the definition of uncontrolled and unequal city-scapes as economic products that cater to the interests of global capital controlled by a few elites. This leads to the great contradiction of neoliberal planning; reducing the city to specifically an 'economic product' which - defines everything and everybody as either economic gain or loss, - (Baeten, 2012). Unfortunately for global south cities, individuals whose economic gain cannot be formally measured, are relegated to the 'peripheries' (Simone, 2010). As a consequence, these metropolitan regions have come with their fair share of counterspace which threatens the hegemony of spatial planning as dictated through borrowed global north literature and planning practice. An overreliance on traditional forms of clientelist, neo-colonial, and laissez faire governance approaches has led to the continuous growth of large informal socio-economic zones that operate within the overlooked socio-cultural and

economic regional framework of the city. The consecutive neoliberal planning and governance mindsets advocated by successive governments, and the spatial demands they impose on the city have led to a structure of splintered urbanism that promotes formal network infrastructures and technological mobilities, against reducing opportunities for the majority of urban residents. This has propagated the overreliance of these populations to rural-urban links as means of escape from the terror of modernizing mindsets that see the informal as a failing of normative planning systems - borrowed from the north.

We must however start by acknowledging that the socio-cultural and economic structures of African cities, especially Nairobi, remain substantially different from those of 'global north' cities, which developed on the backbone of industrialization and modernist infrastructure models. These differences can be clearly observed in the demographic and socio-economic patterns that define these cities. Observations of the structural patterns of Nairobi, generally indicate that it operates mainly as a functional node in a regional network of flows for goods, services and people. The city is highly regionally relevant, portraying strong socio-cultural, economic and political ties to its rural hinterlands. This phenomenon, similarly observed in other African cities, is tied into a complex system of ethnic, family or religious ties that bind the urban migrants to their rural homes (Bruner et al., 2010). Rural-urban links are therefore quite prominent and are a crucial part of everyday urban-life in the city peripherals.

Similarly, with growing awareness of resource scarcity and climate change awareness that hinders the neoliberal approach to planning, Nairobi needs to engage in sustainable and resource-resilient strategies of governance and planning that are contextual and geared towards internal regional capacities. With most global north, and recently Asian cities currently further ahead in the industrial and economic globalization agenda, African cities cannot afford to continue playing catch up with unsustainable modernist city development models. This model has already shown to exacerbate growing inequalities. There is great need therefore, to leap-frog some of these unsustainable development growth patterns and develop urban development structures based on the socio-cultural and political structures of their populations, their strengths and capacities. Similarly, there is need to redefine the governance of city-regions with reference to the ever-expanding capacities of primary cities and the socio-economic peripheries that characterize urbanisation in the global south.

The complex context of urbanization in Kenya requires alternative models of growth that build up on the nature of its everyday urban contexts and capacities. Addressing these social inequalities propagated by increasing spatial segregation will be key to achieving sustainable development (Gaigbe- Togbe, 2015). Governance and development agendas in Nairobi can begin by leveraging on the socio-cultural rural-urban links highly prevalent in the majority of the urban population as well as their socio-economic activities. According to the Kenyan economic survey of 2020, agriculture still accounts for a large portion of Kenya's GDP (approximately 30%) while creating employment for a large number of Kenyans within the Nairobi metropolitan area and its surroundings (KNBS, 2020). This proposal, by acknowledging the socio-cultural and socio-economic trends prevalent within the peripheral populations, takes the discussion further

by looking at the agricultural sector as an example of how this regional links can promote a more sustainable system of regional urbanism. This is achieved by linking currently practiced urban and peri-urban agricultural systems at a regional scale. By evaluating the shortcomings of current urbanisation socio-economic models and agricultural trends that define the regional food system in Nairobi, we propose the principles of a growing social movement – agroecology – as a possible response to the needs of a sustainable regional urban structure that caters to the capacities of the peripheries. This is alongside promoting a growing movement of an agroecological urbanism that is based on the principles of agroecology.

This research therefore proposed to reconcile the prevalent rural-urban socio-economic and cultural patterns prevalent in the peripheries with regional socio-spatial production forces within the agroecology movement to provide ecological leapfrog city-region redevelopment opportunities for sustainable human development. The proposal sought to identify a potential for transforming governance strategies and spatial systems that could be harnessed to promote sustainable transitions for regional urbanisation specifically addressing the socio-economic situation of underserved groups in the peripheries of the primary city of Nairobi. It aimed to reconfigure the socio-spatial networks that form the backbone of Nairobi's urban peripheries, through productive regional agroecological principles, into an adaptive city-region system that addresses the vulnerabilities of rural-urban migration into the Nairobi metropolitan area. This was then used to propose a regional urban development vision that contrasts the urban primacy development model that characterizes the city of Nairobi.

Chapter 1; Problem Definition & Context

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"...the State and the city are not to be embraced— they are to be survived. In Nairobi as in Brazzaville, we travel light and with an exit plan" (David Ndii, SaharaTribune, 2016)

Fig.1 - 3: . Arial view of Mexico city,(an example of the spatial products of neoliberal planning)

Neoliberal Planning and the global south context

The neoliberal revolution began in the 70's in the global north with the decline of Keynesian ideas and the rise of the Reagan-Thatcher economic revolution that advocated for the deregulation of the financial sector and the privatization of the public service (Hulleman, 2017). In the urban field this literary translated to reduced state influence on planning and a free rein to liberal markets to shape the structure of urban areas and their productive systems. The neoliberal economics approach is based on the assumption that growth is the main driver of any economic policy. A substantial amount of literature has subsequently focused on the impact of this neoliberal revolution on the production of urban space (Harvey,2005

(Peck et al., 2012)). Through this literature we see a trend where neoliberal planning has developed a set of actor-system conflicts where the state has relegated most of the urban spatial output to the markets which now shape the city on the whims of shareholder ideals and benefits. As (Carmody & Owusu, 2016) imply; conflict arises in this case, as corporations' "strategic impetus is profit, while states struggle with a complex range of motives, including, often, the preservation and deepening of the conditions for capital accumulation, the desire to achieve legitimacy or hegemony and to perpetuate regime maintenance." Therefore, we see a situation where the agendas between the state, markets and the citizens are in constant conflict and unfortunately in African cities, the free-markets continue to take the lead in the unabated production of

A

B

C
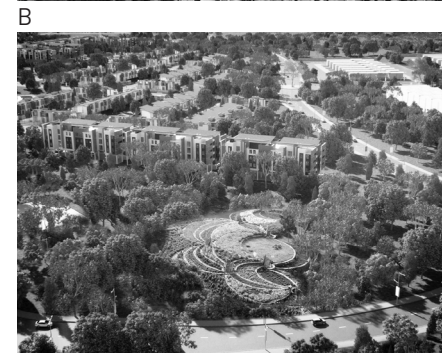
Fig.1 - 4: A- visualization of the proposed Konza city- Kenya B- visualization of the proposed Railway city in Nairobi CBD, C- visualization of the proposed Tilisi Development in Nairobi's outskirts

urban systems due to the allure of individualistic success associated with it. This free-market approach has led to the globalization of trade which enables the unhindered movement of capital across the globe where it's impact on local urban contexts plays out vividly in African cities through a repetition of monotonous, context inappropriate and uncreative urban settings, reflective of the producer and consumer service industries that support it.

Governance agendas in global south states have continued to play catch up with economic based policies and strategies for their projected urban growth by attributing economic agency to metropolitan areas and cities. It is however important to acknowledge that, this agency of economic development attributed to urbanization through city-region development has had its shortcomings in the development of sustainable human development. In Sub-Saharan Africa as with other regions of the global south this has led to a dereliction of social production processes of regional growth with emphasis placed more on primate city-regions as agents of external economic growth.

The neoliberal approach, globalization, and the utopia of global cities in Africa.

Urban Development continues to be supported by the positive review of its impact on promoting human development alongside economic development especially in the global north. However, this is not the case for development in the global south where we see that increased urbanization has unfortunately not been commensurate to the increase in economic prosperity visible in previous patterns in 'developed countries' (United Nations, 2018). In the African context, neoliberal planning backed by the highly sought-after global mobile capital has in recent years resulted in utopic developmental ideas such as attempts to convert existing cities to modern global or technological cities and in extreme cases the tabula rasa urbanism of new towns (e.g., Konza city in Kenya, Eco-Atlantic in Nigeria, Kilamba in Angola etc.). This builds on a perceived need to establish 'world class cities' (Roy and Ong, 2011) which cater for global enterprises, high quality services and financial sectors, elite and expat residents, and tourists (van Noorloos & Kloosterboer, 2018). This form of neoliberal planning has only served to create an inclusion-exclusion system that is now prevalent in major primary African cities, where instead of focusing on the structural inequalities and vulnerabilities prevalent in the peripherals, we see attempts by markets to create enclaves and escapist structures that only exacerbate social inequalities through spatial segregation. This has created conflicting interests within state planning actors as they are relegated to serving the interest of the markets while unsuccessfully attempting to engage growing inequality. As Sager (2011) points out, this emphasis on production and economic efficiency rather than the redistribution and fairness in growth only increases the challenges that planners and planning faces, and this will subsequently have a profound impact in the development of liveable cities for all.

More importantly, African cities have a historical layer of colonialism that has served to shape the current structures of inequality. As Simone (2010) describes it; 'the failure to integrate the city through the distribution of goods that would support economic activity and increase incomes, stems from the colonial history of many of these cities.' Attempts to ignore these underlying historical backgrounds will only extend the accumulation of internal pressure on the hoodwinking layers of development that current governance systems attempt to enforce. The inclusion and exclusion of different population groups in the city through the demands of financial systems is therefore a system seamlessly propagated from colonialism to current global neoliberal systems. The only visible change being the addition of extra population groups such as migrants and refugees into the already marginalized local groups (Campbell, 2013)

Why Nairobi? The Planning Context;

According to the Kenya Census report of 2019, Nairobi remains to be the primary city in the country, being three to four times larger in population than the second city, Mombasa. With a population of 4.2 million people in the 'city proper' boundaries, as of 2018 it accounted for approximately 31% of all urban population in the country and a combined percentage with Mombasa of 40%. (United Nations, 2018) This is a clear indication of the urban primacy dominating the urbanization scene in the country, a pattern similarly shared in the East African region and among other African countries. With a projected 3% population growth rate towards 2030, (United Nations, 2018) the city of Nairobi is expected to continue its dominance as the main urban centre in Kenya, if the current trend persists. Despite the myriad of challenges that the city continues

to face, in the delivery of services to its residents, it still seems to maintain its allure as an opportune destination for desired urban prosperity. However, given it's 20% contribution to the country's GDP (KNBS, 2020) and the few opportunities available for a growing young population and increased rural-urban migration, economic experts have warned about the need to check this economic concentration as it will only exacerbate growing inequality.

Largely morphologically influenced by its historical context, Nairobi continues to be dominated by growing inequality and poverty among its city dwellers and this remains a main point of concern for the different authorities dealing with urbanization issues in the country. Informal settlements are increasingly overpopulated compared to the formal settlements in middle class estates. Slums are increasingly overpopulated with some slum settlements in Nairobi having densities as high as 60,000 to 100,000 people per square kilometre e.g. Mathare. Kiambiu, Huruma etc against predominantly affluent neighbourhoods with between approximately 500 to 3000 people per square kilometre for instance in Muthaiga, Kitisuru, Westlands, Parklands, Karen etc (KNBS, 2019)- refer to figure 1-7B. Developed on the backbone of colonial segregation policies that separated the native Africans from the Indians and the colonial white settlers, (Hope, 2012) the segregation and inequality patterns continue to sorely stick out in the urban structure of the city. This inherited structure based on the HYOT model of urban planning (see figure 1-7.A) is still clearly visible today and continues to be propagated through clientelist governance policies steered by the political elite. Addressing inequalities is key to achieving sustainable development (Gaigbe-Togbe, 2015).

A

B

C
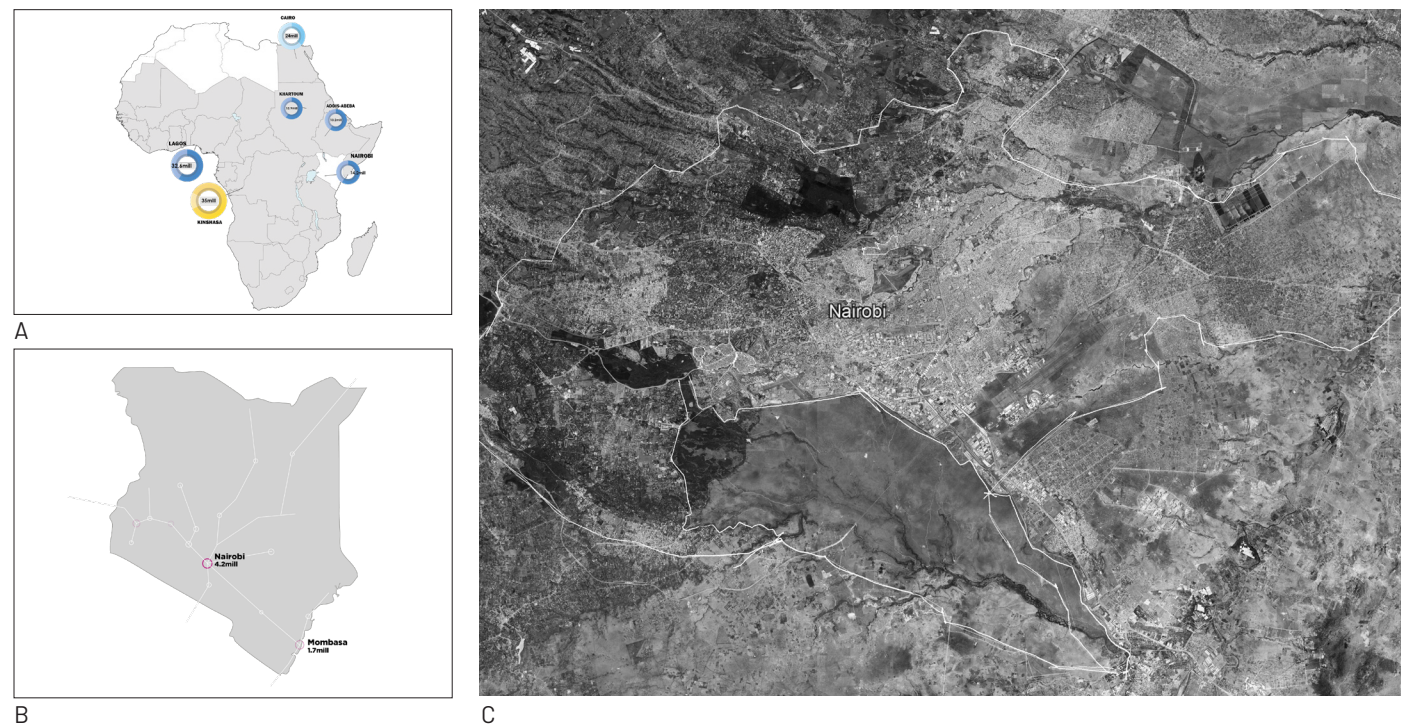
Fig.1 - 5: *A - Map of Africa showing major priamary city and populations, B- Map of Kenya showing the main cities of Nairobi and Mombasa, C- Satellite image of Nairobi City county and urban area.*

A

B
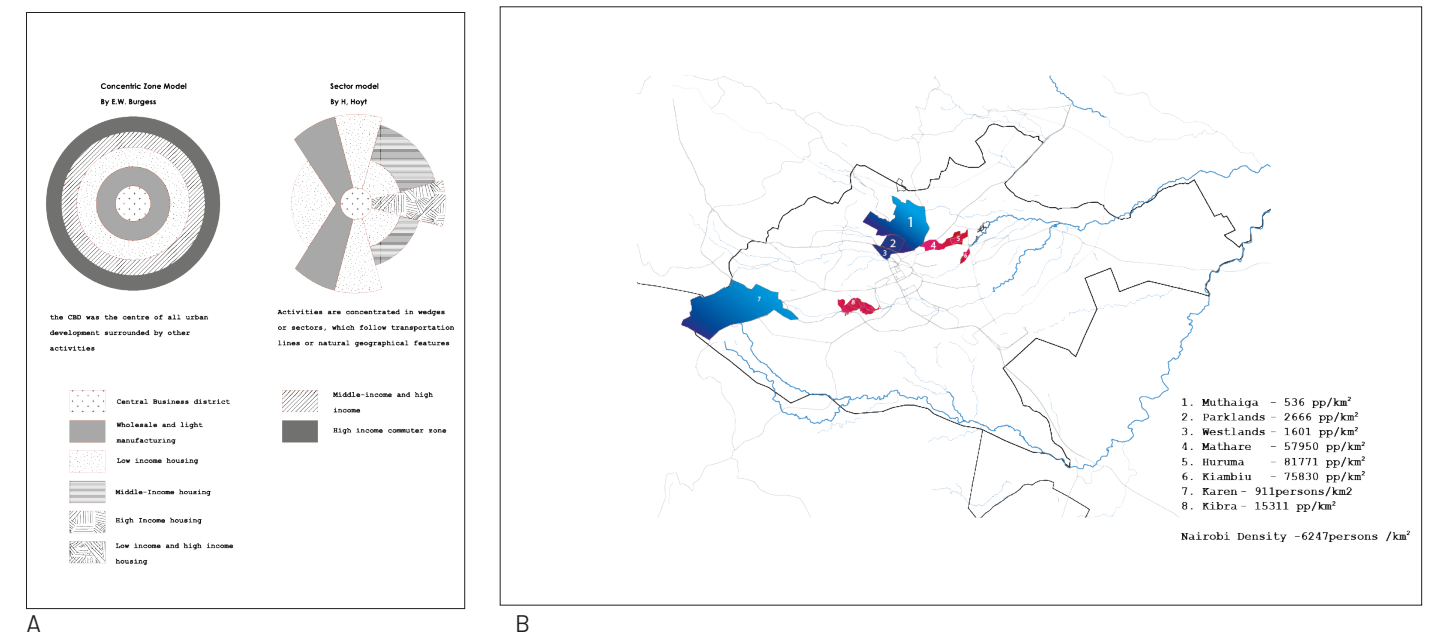
Fig.1 - 6: *A- Hoyt sector model of spatial distribution and the concentric zone model that were implemented in Nairobi, B- Nairobi's population distribution across different settlement zones as defined in KNBS population census data-2020. Red showing high density settlements and Blue- low density settlements*

CITY OF NAIROBI

N

Legend

CBD
Low Income, High Density Res
Medium Density Residential
Public Open Spaces
Public Buildings —Institutions
Airports: Transportation
Undeveloped; and Farms
Low Density Residential
Industrial
Squatter Settlements
Forests
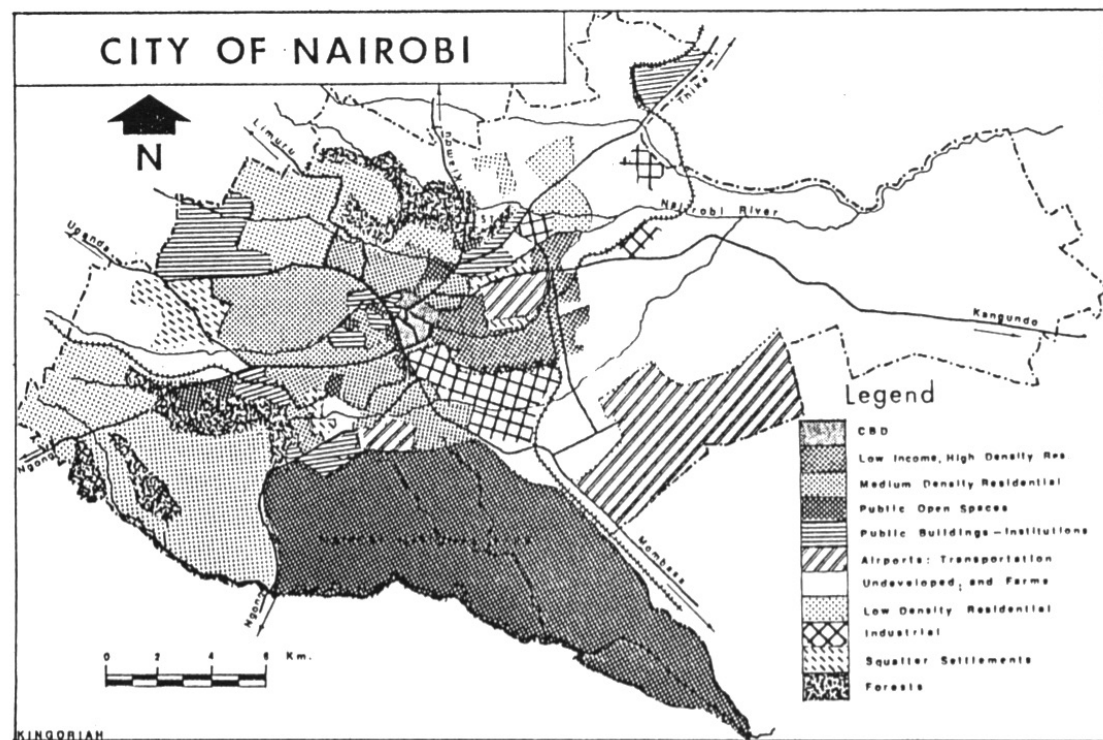
KINGORIAH

Fig.1 - 7: *Kingoriah's representation of Segregation planning in Nairobi (1979)*

The current government continues to invest in further expansion and development of the city – under the banner of the Nairobi Metropolitan Services Improvement Project – with current policies and strategies geared towards urban agglomeration. The Kenyan government in 2014 launched the Nairobi Integrated Urban Development Masterplan (NUIPLAN) which aligned its goals with a previous national policy document - Kenya's Vision 2030. The vision of this masterplan was to make "Nairobi 2030: An Iconic and Globally-attractive City Aimed at Regional Integration and Sustainability" (Development & Plan, 2014) This is a clear indication of the current governance agenda which seemingly follows the developmental State model (Swilling, 2012) whose focus in on appealing to a collective urban imaginary of modernist utopian metropolitan cities. The question that emerges therefore is how this perceived development impacts the ordinary citizen.

Although the development of urban areas has shown promise in delivering economic growth, reducing poverty and enhancing human development across the globe - the African scene has seen increased urbanization that

is unfortunately not commensurate to the increase in economic prosperity visible in previous patterns in 'developed countries' (United Nations, 2018). We must therefore start by acknowledging that the socio-cultural and economic structures of African cities, especially in sub-Saharan Africa, remain substantially different from those of 'global north' cities, which developed on the backbone of industrialization and modernist infrastructure models. There is a great need therefore, to leap-frog some of these 'unsustainable' development growth patterns and develop urban development structures based on the socio-cultural and economic structures of their populations, their strengths and capacities. To better understand how this defers from the current system, we then need to understand who these populations are.

Nairobi's peripherals

As highlighted earlier in the introduction, the peripherals in this proposal represents both a socio-economic and spatial group of individuals who make up the majority of the urban networks informal systems. They are individuals who, due to the nature of urban politics in Kenya's governance have been continuously relegated to informal systems socio-economically, politically and infrastructure-wise. Due to the nature and location of urban informal settlements in Nairobi, we see how spatial periphery becomes a dualistic phenomenon, as most of these spaces are relegated to the centre of the city, where they continue to grow internally due to historical and ongoing, economic and political factors.

The spatial peripheries are quite ambiguous and span across the Nairobi Metropolitan region and beyond. Nairobi has a large catchment area with a lot of satellite towns considered bedroom towns due to the spatial limitations within the actual administrative boundaries of the city. The larger metro region has a population of roughly 9.3 million inhabitants compared to the main city county with 4.7mill. This shows the impact of agglomeration of peripheral areas into the metro area.

The socio-economic peripheries, include the high density settlements and the informal settlements within the city boundaries where individuals are usually regularly distanced from formal government services and the formal economy, leaving them to survive in the informal sector or as cheap labour for industries and formal services.

The factors influencing the growth and development of these peripheries are discussed in the following section.

Historical

Historically, we can begin to visualize how population distribution in Kenya's urban areas has been affected by infrastructure development along the main east-west transport corridor that links Kenya's port city of Mombasa to Uganda's capital. (See figure 1 -9A -D) The location of Nairobi as an urban hub, was a colonial administrative decision influenced by it's proximity to regional agricultural lands that were a source of the former British Colonies major exports from Kenya. Infrastructure development continues to follow the historical growth of railway towns despite the successive changes in regimes over half a century ago. Nairobi then developed as a segregated town with many natives finding work and limited accomodation having to relate to their families through constant rural urban movement. Colonial policies initially restricted locals from moving into these urban centres and later when they were allowed in, as a labour source, they were confined to segregated settlements that could only accommodate few working populations (Hope, 2012). This can be attributed as a crucial step in today's observed transitory rural-urban social

systems within Kenya's urban centres, where the workers had to resign to leaving most of their family members in the countryside as accommodation space was limited in the city. Post-colonial Kenya saw the removal of these restrictions and the huge influx of rural populations to these confined spaces triggered the proliferation of

informal settlements (Kitur, 2019). This inherited structure of spatial marginalization (Kingoriah, 1983) is still clearly visible today and continues to be propagated through clientelist governance policies steered by the political elite. The patterns are still clearly visible today as spatial accomodation constraints in Nairobi persist.

Fig.1 - 8: *Urbanisation process of the Kenyan Region,* **A**- *the development of the Kenya Uganda Railway,* **B**, *establishment of Nairobi as a centre for rural extraction.* **C**- *infrastructure and population growth around the main SE-W corridor* **D**- *subsequent population growth around the southern zones.* **E** - *the distribution of population along the agroecological productive zones,* **F**- *the contrast of population distribution between the southern agroecological productive zones and the Northern ASALs*

Fig.1 - 9: *Spatial distribution of various communities across the regional landscape of Kenya.*

Social-cultural Identities

Internal migration in SubSaharan Africa was quite prevalent, dating back centuries. Where central economic nodes developed into primate centres, they mainly acted as functional trading centres. Since the administrative demarcation and displacement of individuals during the colonial era, distribution of people across the Kenyan region can be viewed across ethnic divides and this has subsequently developed over time into strong cultural identities of place - seeFig.1 - 9 . The colonial period brought about both displacement and confinement of people to certain geographical regions which persists to date. This identity that forms with ancestral location then provides a case of constant contest between urbanisation and heritage with most individuals still indicating their preference for constant transitory patterns between their ancestral regions and the urban areas. This can be seen also in the responses from the online questionnaire developed for this proposal where majority of the respondents, expressed cultural reasons as their main link to the rural areas. Fig.1 - 10 indicates different points of origin of respondents currently living in the Nairobi metropolitan area, with most citing the availability of economic opportunities as the main reason for moving into Nairobi. They similarly maintain rural ties to their homelands for cultural and family reasons with most still providing different forms of economic support to relatives back in the rural hinterlands. Similarly, during hard economic times in the city, most residents of urban areas rely on socio-economic sustenance (mostly food) from the rural areas. As seen in figure 1-11, a large percentage of the population moving into Nairobi is moving from agriculturally viable rural hinterlands, based on the country's population distribution patterns. Similarly, Figure 1-12 shows the movement of individuals across the Kenyan region as documented by internal migration data showing that internal migration patterns within the region are historically common place based on socio-economic and cultural patterns. (Data in figure 1-11 has been condensed to show migration patterns between the Nairobi Region and the other regions in the country. Contact author for online-respondents data.) Links between Urban areas and original homelands are therefore highly prevalent and we can begin to establish that primate urbanism develops against intense contradictions of diverse regional identities.

Therefore the dominance of an urban settlement in a region predominantly occupied by a few ethnic communities ensures that other communities due to cultural attachments to their ancestral lands keep constant links with their rural homes. Similarly, distribution of people is along agro-ecological zones, meaning that most people historically and socio-culturally practice one form of agriculture or the other. (see fig 1-13)
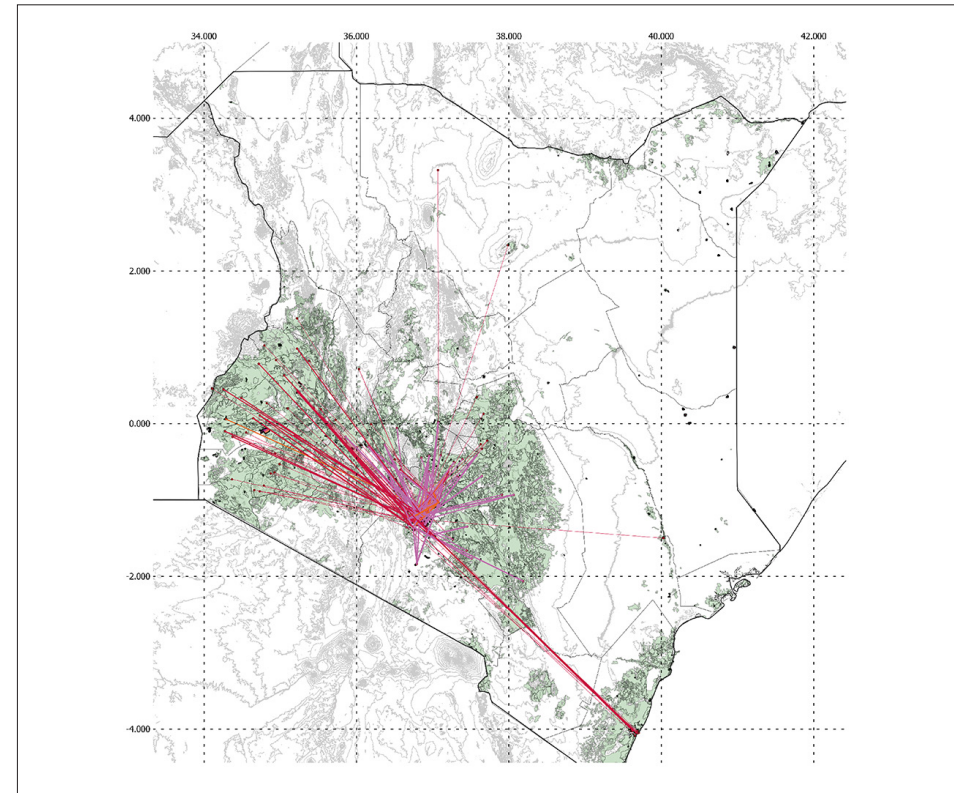
11
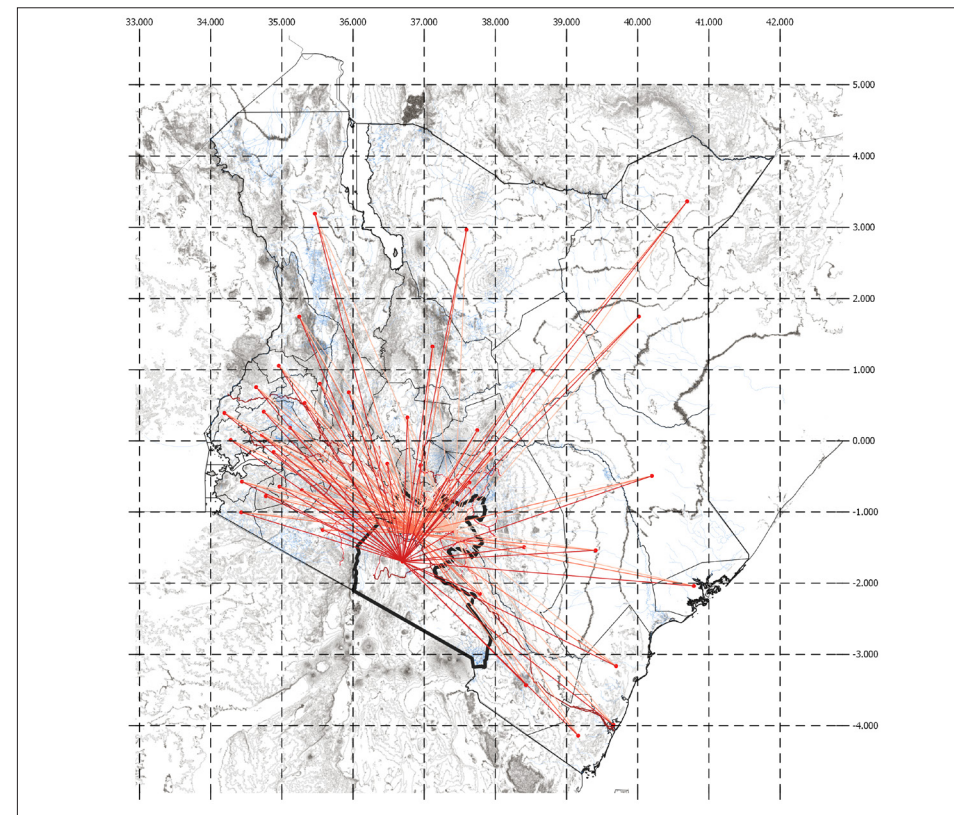
12

Fig.1 - 10: *Map of Kenya showing the socio-economic movements related to the Nairobi metropitan area. Data from online respondents.*
Fig.1 - 11: *Map of Kenya showing historical patterns of internal movements within the region with an emphasis on movements into and out of Nairobi. (Source: https://migrationdataportal.org/)*
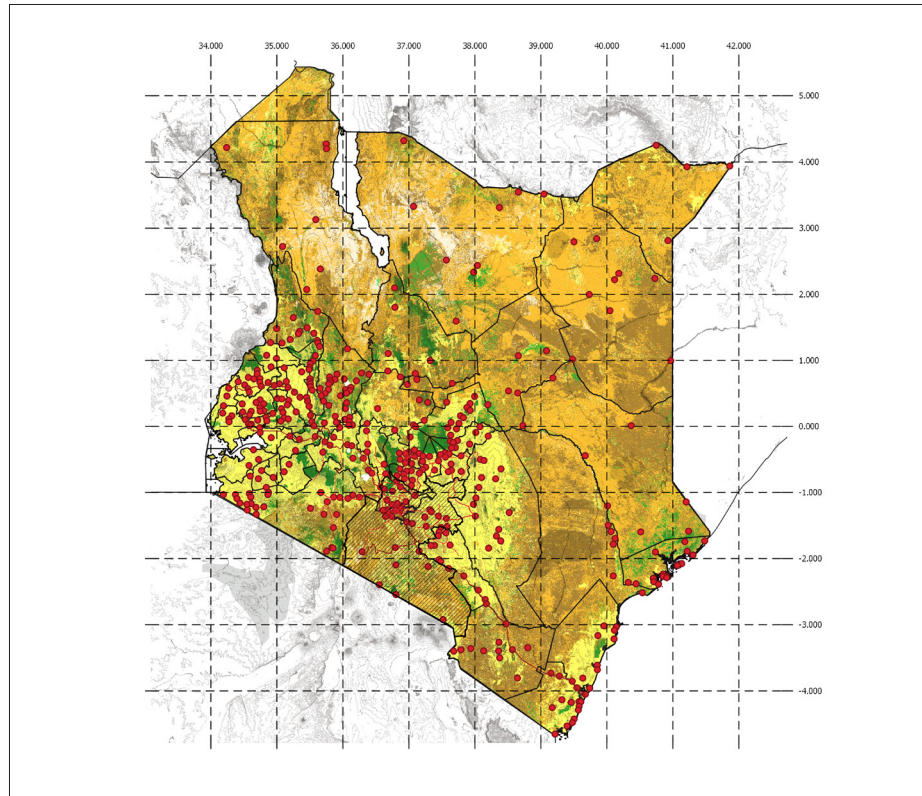
Fig.1 - 12: *Map of Kenya showing population distribution across different agroecological zones. majority of the population is located across the southern agricultural zones hence the heavy reliance of agricultural lifestyles. (QGIS)*

Governance

With the prominence given to the Nairobi metro area, either through policies, financial support, or legal frameworks that specify stringent measures on how cities are delianated and subsequently receive funding, other urban settlements in the country remain highly populated but with little capacity for structural growth. Similarly the new devolved structure of governance to 47 new administrative units has ensured that the collaboration of urban and rural areas through socio-technical systems is slowed down by bureaucratic processes of government administration processes. Specifically, utopian visions around the growth of the Nairobi metropolitan area continue to receive funding with little focus on the informal economy which most individuals rely on. The Nairobi metro-region vision crosses 5 administrative regions (see figure 1-15) and encompassing many of its surrounding satellite towns, some already big enough in population to be established as independent cities. Governmentality then becomes a case of splintering urbanism through neoliberal mega-infrastructures that promise metropolitan size planning while responding to the growth of slums through reactionary slum upgrading projects.

Succesive governments have maintained the status quo on planning practise and governance and these has ensured the continued growth of the socio-economic

A

B

C

Fig.1 - 13: *A - visualisation of the proposed Konza city which is under construction on the outskirts of Nairobi, B- Tilisi developments which is a private developer urbanisation project on the peripheries of Nairobi, C- the ongoing demolitions of Kibera slum to pave way for highway construction through the settlement. D- infographic showing the population distribution across different urban centres in Kenya. Most of this urban centres despite their high populations are still considered satellite towns of the three main cities.*

Fig.1 - 14: **A-** *Delianation of the current Nairobi Metropolitan area showing hie different extent to neighbouring counties.* **B** *-Some of the satellite towns included into the demarcation of the Nairobi Metropolitan region. Comprising a population of approximately 9million people.*

D
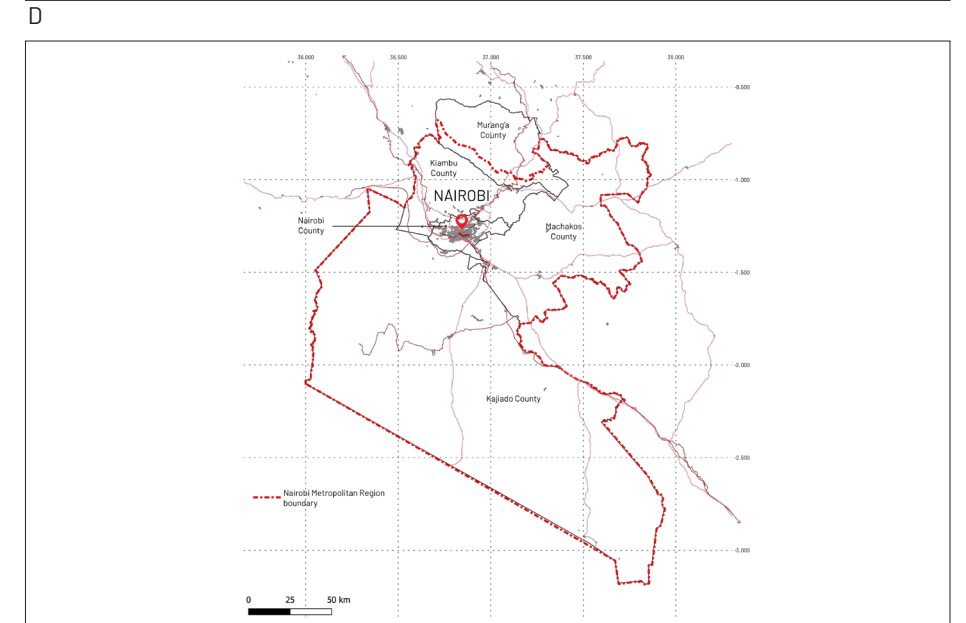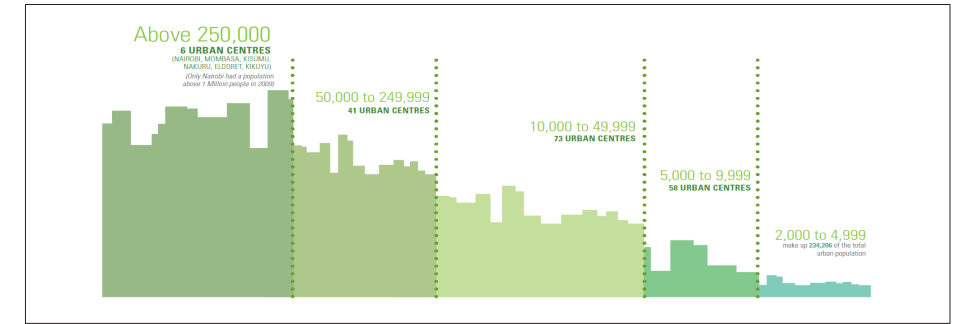
1-15A
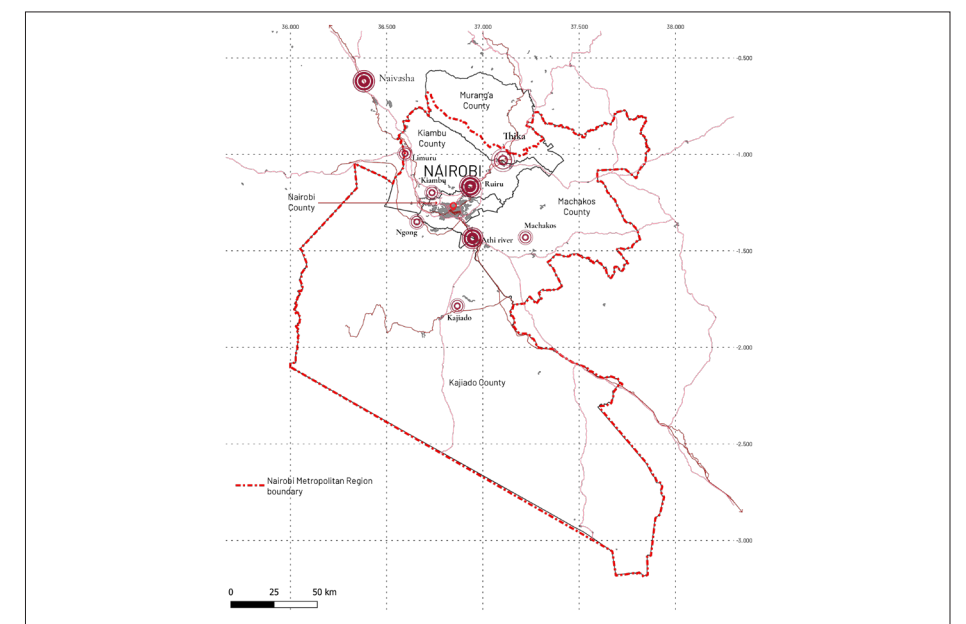
1-15B

peripheries. An over-reliance on neoliberal planning systems that focus on the economic agency of new (eg. Konza and Tatu) and established cities as in the case of Kenya, has left the peripheral populations to fend for themselves within informal governance and economic systems.

Spatial Limitations

Nairobi city county covers an area of 692sq kilometres with a large portion of it to the SE being a national park. Therefore, the built up area is confined to a reduced spatial area. The moran cluster maps showing population distribution in Nairobi between the years 2000 and 2020 (Figure 1-16A) indicate that dispite the increasing population growth in the city, the growing populations are still heavily confined within informal settlements. This informal settlements remain within a radius of 8km, implying that they are within the spatial radius of the city centre.

Most informal settlements are located within the confines of riparian zones and infrastructure wayleaves indicating the continuous spatial constraints of a constantly growing city. (see figures. 1-17 A-C) For instance, Kibera slum formally a Nubian settlement during the colonial administration, has extended it's spatial coverage within the confines of the Ngong river on the south and the railway line on the northern boundary (see figure 1-18). Space is a scarce resource in Nairobi, especially for the peripheries, and this appropriation of public land extends even into social economic activities as observed during the field work. Informal socio-economic activities even in the agro-industrial sector, which most of the individuals within the peripheries rely on, are unaccounted for in formal spatial planning systems. Therefore, external relief through the security of rural enclaves are a necessary part of city-life, as well as a needed resource point for socio-economic existense.

17-A

17-B

17-C

A

B

C
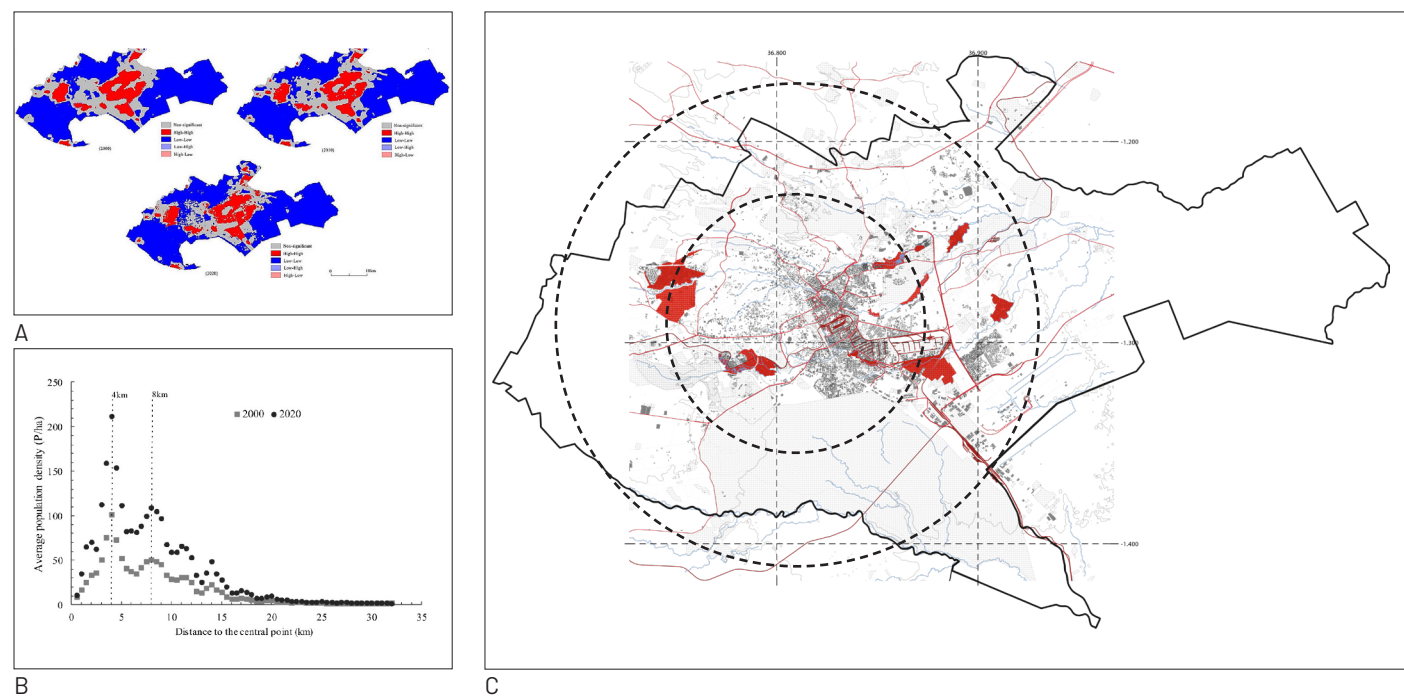
Fig.1 - 15: *A- moran cluster maps showing the distribution of population densities across Nairobi across three different periods. Despite the rapid population growth, the increased densities remain confined within the central area where majority of informal settlements are located. B- the distribution of population based on proximity/distance to the CBD of Nairobi. (source; Ren et al., 2020) C- indicates the extent of three of Kenya's largest informal settlements all within a radius of 8km from the city center.*

18
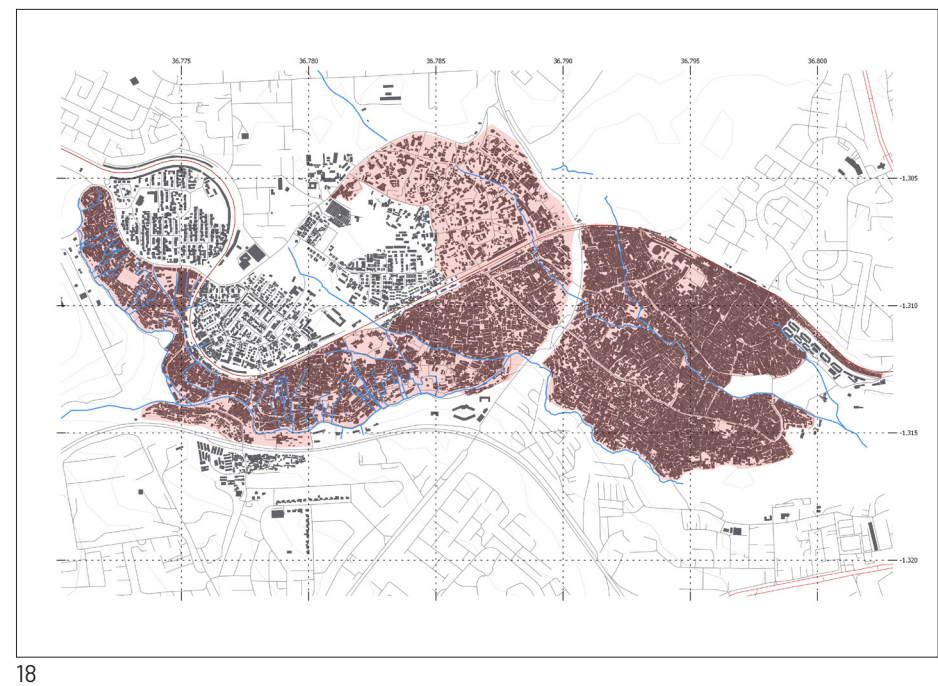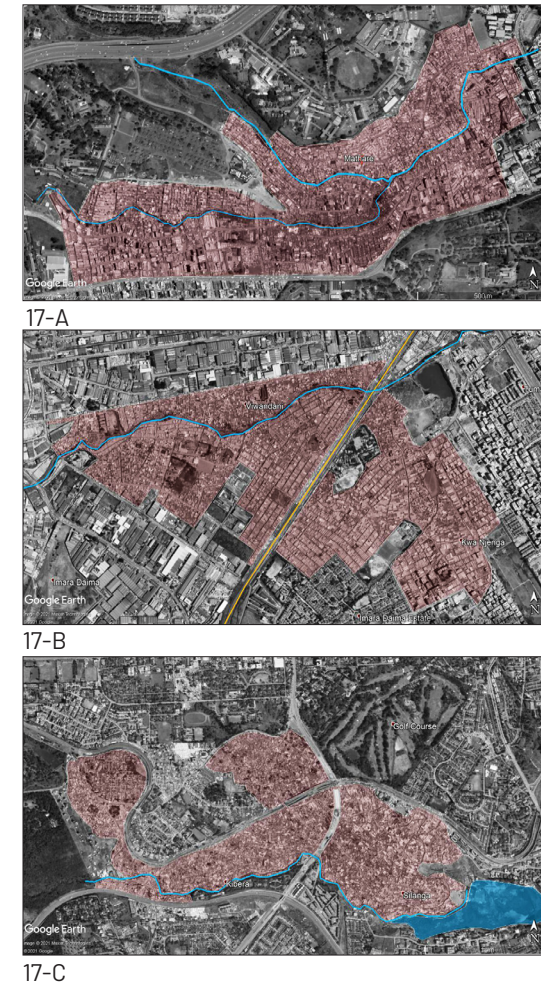
Fig.1 - 16: *arial map of some of Nairobi's informal settlements, A- Mathare informal settlement B- Viwandani C - Kibera all located along the riparian zones and major infrastructure such as the Railway line*
Fig.1 - 17: *Spatial extents of Kibera informal settlements which is confined between the railway line on the North and the Ngong river to the south surrounded by other formal housing estates in the area.*

Conclusion

Why Agriculture?

Acting on the margins of formal urban development systems, populations in the peripherals have become adaptive and resilient to these vagaries of oppressive, seemingly uncoordinated systems. For instance, an observation of the structural patterns of Nairobi-Kenya, generally indicates that it operates mainly as a functional node in a regional network of flows for goods, services and ideas. African urban centres remain highly regionally relevant, portraying strong socio-cultural, economic and political ties to their rural hinterlands. This is tied into a complex system of ethnic, family or religious ties that bind the urban migrants to their rural homes(Bruner et al., 2010) These socio-economic ties remain highly fluid and ambiguous operating within the urban, peri-urban and rural sites, specifically within the networks of the peripheries.

The mobile and regional impact therefore becomes noticeable in specific systems and networks operating within the peripheries, for instance in the energy provision systems, agriculture, tourism, micro-finance, accommodation etc. An in-depth observation of these everyday systems in the peripheries is needed to identify potential urban governance systems that would promote sustainable urbanization.

To fill these gaps in literature, a critical analysis of some of these specific systems can establish how the peripheries through urban-rural links provide services to both the primary systems of urban life and the rural networks. The strategies, socio-economic, or political structures that have developed over time within these peripheries, in an attempt to adapt to the terror of a system of governance that only sees the potential for modernity over a reality of adaptiveness, can be used to establish regional links to sustainable urbanization. The African city therefore goes beyond the structural setup of infrastructure that is normative in literature from the global north. In the African urban scene it continues to operate as an extraterritorial system with the link between the rural and the urban lying somewhere in the gray areas of the peripheries and this supports constant claims that, it is these relationships that have prevented the collapse of poorly managed rapidly growing African urban centres into chaos (Hussein & Suttie, 2016; Rakodi, 2006).

From the previous analysis of the Kenyan rural-urban peripheries, we see the relieance of individuals in these settings on agricultural systems. In the total economy 52% of the population is involved in farming giving a rough population of about 9million farmers. See fig. 1-19. A huge percentage of this farmers are in the informal sector. Similarly, a large percentage of the informal sector within urban areas are also in the agro-food sector with most of them being small-scale food retailers. Therefore, a huge percentage of the population is engaged in agricultural practices making it a viable system to help address the current rural-urban socio-inequalities witnessed in the peripheries.

The spatial manifestation of these agricultural rural-urban links can help explain the benefits and inefficiencies of the peripheral socio-economic lifestyles as witnessed today. To begin to evaluate the relationship between the peripheries and the agricultural socio-technical system, we first look at the socio-spatial manifestation of these rural urban links.
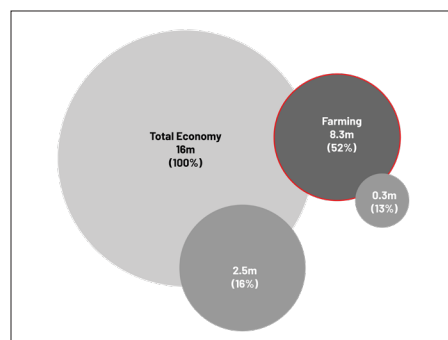
Fig.1 - 18: Percentage of individuals involved in farming in Kenya's economy (source; AGTS, 2016)

A
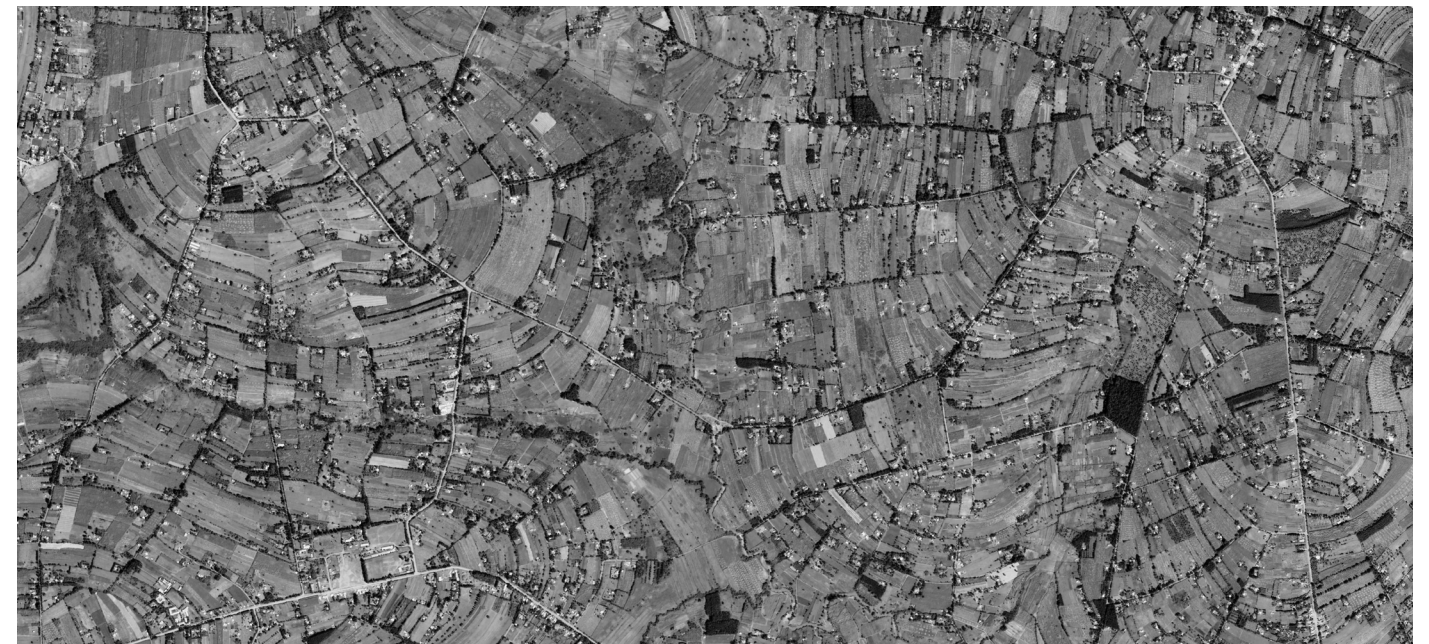
B

Fig.1 - 19: Rural spatial land uses in Kenya. A - large scale agriculture farms in Kitale B- small-scale agricutlural land divisions - Chavakali (source; google.com/maps)

Spatial Manifestation of Rural Urban links

This rural urban-links are mainly manifested through uncontrolled rural urban land uses. In rural areas, the cultural-importance given to land has led to the unregulated subdivision of land into smaller units for inheritance and socio-economic sustenance, mainly subsistence farming. In such small sizes, economically viable agricultural practices become almost unviable. (See figure 1-20A & B.)

In other rural areas, where geographical features such as ridges and valleys are prevalent, we see a different spatial formation of land-use (see figure 1-21) where ancestral land is allocated along infrastructure that is mainly built along the ridges. This form of land-allocation has is benefits and shortcomings both with regard to agricultural practices and infrastructure provision. The ability to reuse this land allocations for viable agroecological practices is high. However a considerate amount of infrastructure planning has to go into making such planning practices viable.

We therefore see that rural areas are typically highly unplanned with the current governance structure relegation the land-use control of rural areas to the ministry of agriculture. Spatial planning in the peripherals and rural areas is highly reactionary with a historical bias of providing infrastucture to the most economically viable landscapes. This has seen the continued development of infrastructure along agroecological systems, building on colonial frameworks with a huge disregard of the ASAL regions, commonly referred to in the region as the northern frontiers.

Where large tracts of land were historically and currently allocated to conventional monocrop agriculture, communities are displaced into small unproductive landscapes or left to relocate to the urban centres as conventional agricultural practices are heavily regulated by the Ministry of agriculture. Agroecological social movements have therefore began to spring up in rural areas to reconfigure land uses to economically viable systems that empower rural land owners. However, they continue to face huge competition from private donor groups that continue to advocate for large scale industrial planning techniques with support from government to increase productivity for food security. This issue is discussed further in Chapter 4.

In the primary urban centres such as Nairobi, the spatial limitations with regard to low-cost housing have relegated the rural-urban migrants and displaced communities into the informal settlements. (see fig 1-22) These are spread out around the City centre while accomodating the majority of the urban areas populations.
The current planning practice and governance that has relegated planning to the neoliberal market forces has also seen the growth of new towns and gated communities around the spatial peripheries of the city, through the conversion of viable agricultural lands into commercial uses for real estate investment and speculation. (See figures. 1-23 and 1-24)

This can easily be traced back to the neoliberal planning mindset where the economic agency of cities to external markets is given higher priority than the socio-economic development of local populations. Private investors through economic capacity mindsets have turned to the unsustainable conversion of agricultural land into real estate property for surprisingly non-existent social classes.

Fig.1 - 20: *rural land subdivisions along geographically hilly countrysides*
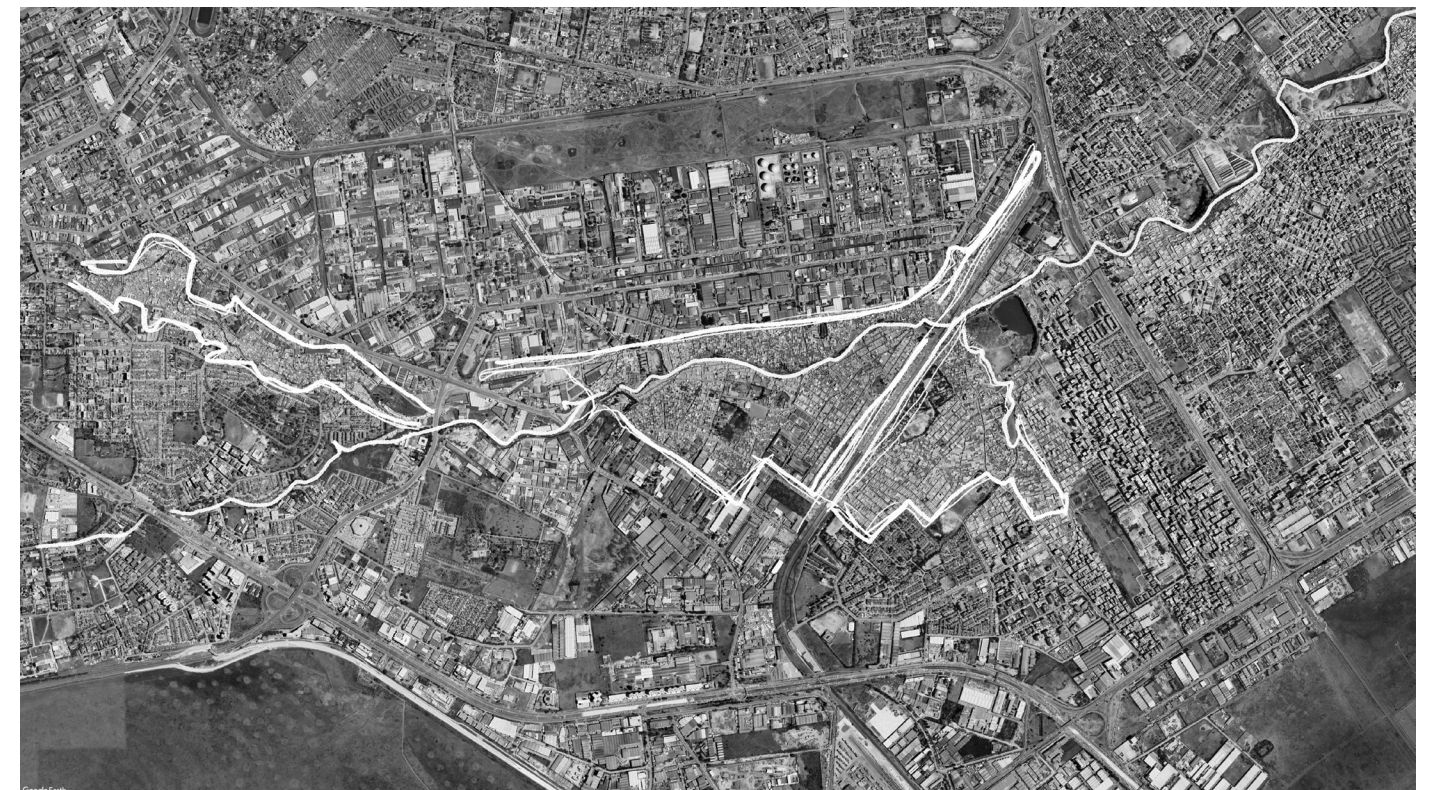
Fig.1 - 21: *Spatial confines of Viwandani informal settlements in Nairobi*

A

B

Fig.1 - 22: *Development of new towns and special planning zones for private cities in the outskirts of Nairobi. A&B show the land use changes in the development of Tatu city over a 10year period 2010-2020. (source: maps.google.com)*

A

B

Fig.1 - 23: *Development of large scale housing settlements for middle classes on formally agricultural land in Nairobi's outskirts. B show the development of housing estates along Kiambu road (formally agricultural land - A), 8km from the city centre.*

The need for Sustainable Transitions through socio-technical systems

'whereas the European discussion is largely about low-carbon transition as an alternative to preserving the status quo, in many other parts of the world the alternative to transition may well be collapse' (Swilling and Annecke, 2012).

Looking at the ecological impact of cities and the impact of industrial and unsustainable subsistence farming systems on rural areas, we observe a situation where, with increased income prosperity in urban areas, urban dwellers tend to consume more per capita than rural dwellers. Today's cities account for between 71 and 76 percent of CO_2 emissions and between 67 and 76 percent of global energy use (Seto and others, 2014; UN-Habitat, 2011). Large cities will account for 81 percent of total consumption and 91 percent of consumption growth between 2015 and 2030 (Dobbs et al., 2016).

Hence, the urban prosperity that Kenya and other fast urbanizing regions in Sub-Saharan Africa envision is definitely posed to attract its fair share of increased resource consumption combined with its negative ecological effects. Undoubtedly, current trends indicate that the resource consumption rate in the Sub-Saharan region is quite lower than would be expected compared to the urbanization rate. Therefore, the need for governments to continue investing in traditional modernizing large infrastructure projects can be considerably understood. On the contrary, current literature on resource decoupling suggests a focus on de-growth of over consumers globally and conventional growth for current under-consumers- a category where most Sub-Saharan Africa countries fall. This can explain their reluctance to adopt such restrictive models based on tonne per capita limits proposed in over-consuming nations. As Swilling (2012) best describes it;

"Surely sustainability-oriented innovations which create new markets, jobs and value chains as the new drivers of the next long-term development cycle are a far more imaginative alternative to this rather stale growth-decoupling dualism?"

The low resource consumption rate in the Sub-Saharan Africa region coupled with a dismissive attitude to restrictive resource decoupling techniques can therefore provide a scapegoat for governments to advocate for traditional developmental states urbanization models. However, we must acknowledge that current consumption development models that undermine environmental resources continue to exacerbate inequalities. Therefore, although we can fairly agree with resource decoupling as the starting point in addressing sustainable urban development, we suggest that the complex context of urbanisation in Sub-Saharan Africa requires alternative models of growth that build up on the nature of their everyday urban contexts and their capacities. They should focus specifically on the development of their citizens over competitive globalization complexes. This, combined with a critical view of modern ecological urban development models will enable the region to leapfrog traditional urban development strategies prevalent in the 'over-consuming' nations.
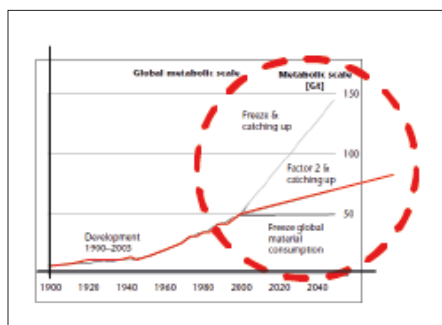
Fig.1 - 24: *Diagram illustrating the global metabolism rate and the suggestions for Resource decoupling for 'developing nations' (Source: Swilling 2012)*

Why Agroecolgy?

Therefore to begin to introduce the topic of sustainable transitions, we must understand the peripheries' identities and socio-economic lifestyles.

From Historical colonial practice to current agro-industrial systems

"We are all farmers. Even if we do not work the land, our parents did – and this is what has paid for all our education and development"
(– H.E. President Uhuru Kenyatta, Africa Green Revolution Forum, 2016)

Kenyans identify themselves as being mainly farmers. Agriculture forms the mainstay of Kenya's economy (KNBS, 2020) accounting for about a third of GDP earnings for the economy. This research focuses mainly on the peripherals, who also account for a large percentage of the workers within the agro-industrial system. Unfortunately, due to their work as small-scale farmers and traders in the agro-industrial system, they remain poorly accounted for in their contribution to the countries economy.

It is however important to note that, the current agricultural system in the country has a historical background in the colonial era, which the current rural-urban planning practice and governance still heavily rely on. The uncoordinated spatial land-uses observed in the previous section and the consolidation of rural landscapes to large and small holder agricultural lands was as a result of colonial systems of land administration, geared towards displacement of individuals and redistribution of agricultural lands to a few individuals. (Anderson, 1988) Further analysis needs to be undertaken to understand the impact of these systems on cultural-economic restructuring of agricultural mindsets today which has resulted in a fragmented regional landscape. This proposal does not delve deeper into these cultural systems due to limits of time and scope.

To better analyse this regional system of the city within the peripheries, this research analysed how agrroecology, can be used as a link to enhance a sustainable approach of urbanism in African city-regions. By agoecology, we refer to a wide range of values within the agriculture ecosystem, the involved actors and their relation to the environment. This serves as a link for primary cities to their surrounding regions. Hooton et al., (2007) have shown that urban agriculture and livestock keeping have been important livelihood strategies for women, the urban poor and vulnerable households in African cities. However, this should be applied with caution, as we have seen that spatial limitations on urban land are quite prevalent. As we acknowledged earlier, these systems have to establish a sustainable pattern of growth for them to be sustainable in economic empowerment. The production and trade in agricultural products provide a suitable link to analyse the rural-urban link as most rural-urban migrants in global south cities are still engaged in one form of agriculture or the

other. The populations in the periphery are largely involved in the production of food in the peri-urban and urban, for their consumption and distribution as well as providing market links for agricultural products from the rural areas. Similarly, markets link rural activities to cities and larger regions via trade, enabling rural agricultural production in one location to benefit other distant places(Boudet et al., 2020). (Robineau & Dugué, 2018) clearly capture the complicated system of actors, scales and strategies within the African rural-urban agro-system when referring to urban agriculture;

"...it is a complicated system involving multiple spatial scales (rural, peri-urban and urban) and actors (with multiple socio-economic profiles). The drivers of this diversity reflect the contrasting socio-economic and political contexts that surround its development."

These spatial dynamics through various studies on Urban agriculture in Sub-Saharan Africa (Drechsel and Dongus (2010), Brinkmann et al. (2011)) indicate the spatial-temporality and diversity of locations within the urban setup and primarily within the spatial peripheries. There is therefore great potential for agroecology to engage with the issues facing urbanization in African cities. Some of the positive factors that could promote these agro-ecological systems include; increasing urbanisation and demand on specialized food systems, the need for improved productivity in African agriculture, the potential for domestic and international markets, employment and empowerment opportunities for the youth, gender equality and women empowerment, etc. (Hussein & Suttie, 2016)

While an increasing amount of literature is concerned with food security, and specifically the rural food production systems and how productivity can be improved, we suggest that there is a need to go a step further into analysing the socio-spatial, economic and governance systems through a multi-scale approach (urban, peri-urban and rural) of the agroecological system. Additionally, there is a need to investigate how they could enhance territorial links that are not only place specific but network forming, as an attribute adapted from the peripheries. Similarly, with the projected population boom in African cities, the arising issues will not only be about spatial accommodation concerns in urban areas but also about the competing spatial claims from declining arable lands and a need to increase yields to feed this growing population (Swilling & Annecke, 2012) - a concern that crosses regional boundaries. Abandoning these systems to the neoliberal approach of food production witnessed across the globe will only serve to create monopolies and further marginalize the urban poor in African urban centres who heavily rely on the agro-ecological system as a source of livelihood.

As agro systems are already considered to be fluid and networked (Boudet et al., 2020) it is important to understand the symbiotic structure of rural-urban systems and how they have managed to use some informal and adaptive strategies as observed in the peripheries to negotiate the socio-economic and political systems that control these systems both locally and globally. We

specifically focus on regional systems as opposed to only urban agriculture, as it currently represents less than 20% of citizens' agro-ecosystem in African urban areas as compared to the regional approach (Battersby, 2013). The potential for urban agriculture remains high, but the reality is that food systems remain largely regional. It will also be important to focus on ways to integrate these systems through technological leapfrogging strategies so as to avoid falling into the trap of small-scale systems that have limited potential for sustaining the economic growth necessary for empowering vulnerable groups. We find that policies that focus mainly on small-scale systems fail to acknowledge the factors of economics related to growth of systems and hence can easily overlook benefits associated with sustainable growth.

Research Question

To further explore how to solve the identified issues, these research proposal developed the following research question;

How can agroecological systems leverage the rural-urban cultural-economic links prevalent in Nairobi's peripherals to promote sustainable and just regional urbanisation?

Research Aims

The aims of these research were critically linked to addressing the main problem identified in urbanisation and metropolization of the main primary city of Kenya – Nairobi. Through the aims listed below, it tried to formulate alternative spatial redevelopment approaches to urbanization in the country with an emphasis on the need for adopting sustainable urban transition strategies to avoid falling into the trap of catch-up urbanism currently prevalent with governance systems in the 'global south'. These aims are;

1. A critical analysis of normative neoliberal planning and governance in Nairobi and how this gives rise to the peripheries.

2. Advocating for new Narratives around the formal-informal urbanization discourse in the African cities through the lens of the peripheries.

3. Investigate alternatives for urban primacy and the related rural-urban migration to primate cities in Kenya. This will be done through advocating for a regional approach to urbanisation in Nairobi, that is cognisant of the regional-socio cultural links between the urban metropolis, the countryside and the in-betweens. This proposal acknowledges the suggested benefits of metropolitan anonymity professed in literature concerned with the benefits of metropolization, especially in creating harmonious opportunities in multi-cultural settings such as African cities, however, this should not come at the expense of socio-cultural traditions and practices that offer alternatives to human development.

4. Contribute to the sustainable transitions' theory literature specifically with regards to

urbanisation in Africa.

This research proposal will attempt to outline some elements of the sustainable transition systems, their effectiveness in addressing sustainability issues raised in this proposal and how they can contribute to sustainable urban redevelopment in African cities.

Limitations of the Research

Time- due to time limitations, some emerging aspects that came up during the production of this research proposal couldn't be covered in depth. Where such cases happened, it is highlighted in the text.

Scope- the scope of socio-cultural issues and governance structures in the peripheries could not be fully addressed in this short research proposal due to their complexity and sensitivity However, the introduction to this issues provides an opportunity for further research in this aspects as they relate to this proposal

Bias- the researcher made all possible attempts to remove inherent bias from this proposal as it looked into a socio-culturally familiar context.

This chapter presented the background and framework for this qualitative case study, with the aim of clearly elaborating the context and issues facing urban growth for the peripheries in Kenya. It also aimed to introduce the socio-cultural underpinnings that support the violence of urban life as experienced in the peripheries and therefore seeks to identify how this can be leveraged for a more sustainable and just regional urbanization that promotes both the economic and social production of urban space.

Chapter 2; Literature Review

African cities are continuously fighting to be included into the list of modern cities. They should however fight for the freedom to be whatever they are and whatever their capacity allows them to be.

Introduction

In this chapter, we introduce the concepts chosen to address the problem identified in planning practice and governance in the Kenyan context as illustrated in the previous chapter and how they were used to answer the research question established.

The purpose of this chapter was to analyze and synthesize urban theory literature that relates to the defined problem in order to develop a better understanding of how urbanisation is observed, understood and implemented, specifically to the Global South Context. The theories used are a combination of literature from the global north and global south due to in part, their generalization into the socio-cultural contexts of urban life and also to serve as a critic of how urban theory is developed with regard to context. The theories chosen to address the research problem include the literature of peripheries as brought forward by Abdoumaliq Simone, the theory of Social production of space by Lefebvre and the literature on Just transitions and sustainable transitions from a range of different authors both from the global north and south.

Rural-Urban links - The peripheries

Rural-urban linkages are at the heart of urbanisation. Currently, the rural systems are characterized by traditional rural economic sectors such as agriculture, cultural socio-economic structure and relationships, and rural production regimes, while the urban is associated with service systems, processing and manufacturing, non-agricultural employment, production supplies, markets for rural products and information technology. This has continued to propagate planning practice and governance that is geared towards the rural-urban dichotomy. Most crucially, "debates around urban agriculture largely consider the city as a container, a place to be retrofitted with food, rather than a context that- for the very reason of its 'urbanity' - determines specific modes of consumption and lifestyles (that is: specific dynamics of social reproduction) at the mercy of capitalism, posing particular challenges to the food system" (Tornaghi & Dehaene, 2019). This research proposal however, approaches urbanisation through the socio-spatial city-region approach. Rural and urban areas are defined through the flows of resources, energy, information, waste, capital etc through production processes tied to the forces of nature and people. The view of the urban as a product while viewing the rural as a production regime, is at the heart of inequality as it is expressed in urban systems. The separation of the labour from the products of work – the city - is an exploitative system that propagates rural urban inequalities in the current framework of the city-region. The product 'city' as defined today should be used to distinguish the product of urbanisation today, rather than to isolate it from the means of production; the rural, peri-urban landscape (Lefebvre, 1991). Urbanisation can then be defined as the sum of the means of production at the city-region scale and the social character of production forces/

processes. The dichotomy of centre and periphery, rural and urban then seizes to exist as urbanisation becomes a multi-scale process.

To reconfigure the rural-urban landscape towards a continuous landscape of the city-region, certain steps need to be taken to ensure sustainable alignment. This includes addressing issues such as; linked governance and territorial integration. This involves the proper delineation of the city-region boundaries while addressing the issues of territorial scope of administrative boundaries.
Planning the peri-urban interface; Peri-urban areas in between different administrative units usually suffer from the effects of institutional fragmentation. Integrated and adaptive governance to address competing demands of land uses in the peri-urban landscape.
Fostering small and medium towns. Secondary cities. The secondary cities and towns have largely remained ignored in the primary city focus of neoliberal agendas. However, they provide effective opportunities as buffer zones for rural-urban migration while providing trade linkages for value added products from rural areas. They also provide sites for onward production of goods between the rural and urban areas.
Enhancing rural-diversification /rural urbanisation - From a rural development perspective, providing alternatives to out-migration of labour, is important so that the decision to migrate (for the young and vulnerable) becomes a choice, rather than the only available option (Suttie and Vargas-Lundius, 2016)
Bio-diversity in cities, infrastructure and Urban agriculture; the relationship of over-reliance and exploitation of rural production by urban areas needs to change. City-region planning and governance must acknowledge that social justice can only be achieved when we accept the role of access to food, both at the urban and rural scales, in the creation of the current inequality crises. The unequal scenes witnessed between urban and peri-urban settlements and rural and urban settlements is as a result of the neglect of the issues of food sovereignty. As witnessed in the previous chapter, the socio-economic landscape of the peripheries in Nairobi is mainly comprised in small-scale agricultural systems. There is a need therefore for reconfigure rural-urban linkages and landscapes through regional systems. Planning practice and governance should focus on territorial planning strategies that are not linked to political administrative boundaries but rather on socio-technical processes of spatial production.

Social Space- The City-region Concept

By analysing governance through the socio-economic processes of city-regions, this proposal aims to give prominence to the relational aspect of spatial production as highlighted in Lefebvre's dialectic on the production of space. This however does not imply that the absolute space that is the city-region is less relevant. This proposal aims to empower the relational aspect of spatial reproduction to the same level of prominence that formal governance gives to absolute space. Social spaces according to Lefebvre, have ambiguous continuity. This is most evident in informal socio-economic processes as they transverse the city-region through familiar social networks that serve as modes of survival.
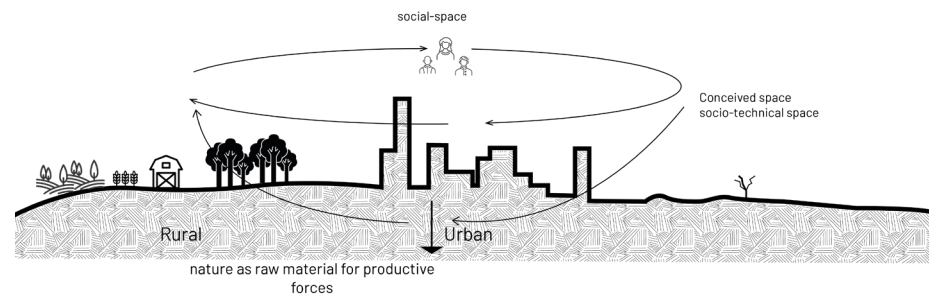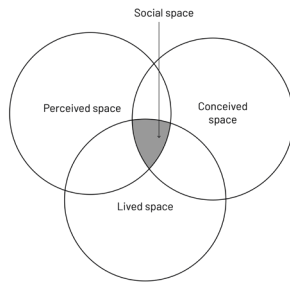
Fig.2 - 1: A *Lefebvres trialectics of perceived conceived and lived space in the definition of the social production of space (source; Soja, 2009)* B *Graphical representation of the interaction of social processes and nature in the production of space as described by Lefebvre. The concept of the city as a relationship between the productive forces between the rural and the urban (source; author)*

2

The dichotomy of rural-urban boundaries and the concept of administrative boundaries cease to exist in relational reproduction. Unfortunately, planning systems as with the Kenyan case, operate mainly within administrative boundaries, and the lack of adaptive systems that empower other forms of planning, breeds conflict in spatial uses. However, according to Lefebvre's (1991) triad of representational spaces, spaces of representation and spatial realities, these spaces are one, and should operate as one.

We compare socio-technical processes against the political recommendations of how cities are defined and governed, identifying how current national policies and development strategies in the case of Nairobi ensure the dominance of primary city growth through economic city-region processes. The dereliction of social processes ensures that the informal is seen only as a failing of modern spatial production, that needs to be formalized. In this research therefore, the regional socio-cultural processes tied to socio-technical systems are suggested in an attempt to provide alternative forms of urban definition contrary to the economic-agency development approach and subsequently advocate for a more adaptive and engaged form of planning and governance.

Through the use of socio-technical systems and the processes and networks that evolve within these systems, we begin to provide a justification for the reconfiguration of space not only as a product or thing but as a combination of the social production processes and forces that make up the tangible aspects of space and the physical environment that they take place in.

Governance; Foucault

Power & Governance

For us to redefine urban governance, we begin by reviewing the concepts of power and its relationship to governance. This research adopts the definition of 'power as strategy' as defined by Foucault's (1982) concept of power and governance is used to establish a basis for the acceptance of new forms of governance or the redefinition of the concepts of governance as exercised in the context of the global south today. As Foucault (1982) points out, power is rooted within society and is not constituted "above" it. Generally, we observe a situation where urban governance still portrays a hierarchical order of policy and strategy development where dominant borrowed ideals and visions are dictated from the top and distributed for implementation at the sub-regional and local levels. In global south cities, priority and prominence is still afforded to the primate cities, which commonly also serve as capital cities. The result is a case of detachment of policy from reality. "*There is a tendency, inherited from colonialism, to control urban dynamics, uses and practices artificially through strict regulations and plans that in practice cannot be enforced*" (Andres et al., 2019). Similarly, the target of this visionary policies and speculative urbanism (Goldman, 2011) remains to be foreign investors and the middle- and upper-income classes, while disregarding the majority of the population.

In contexts where economic growth takes shape much faster than planning, as in the global south, this conflicts in policy and reality results in insurgent, and reactionary place-making techniques both from state agencies and bottom-up community processes, to try and mitigate the unacceptable living conditions that emerge in the peripheries of these primary urban centres. The result is adaptive insurgent initiatives, where the individual and communities become the main spatial change agents. Recognition of these insurgent planning techniques within the peripherals is crucial for delivering needed change in planning processes. We believe that the inclusion of such reactionary techniques will enable planning to adapt to the socio-economic constructs of urban life in this context.

"*Governance starts from the notion that within complex and uncertain environments sudden changes can occur, and that continual learning is required to adequately respond to emerging needs and sudden, unpredictable changes (Blay-palmer et al., 2021)*

However, this is not to disregard the efforts of modern governance as it exercised today or to ignore the historical relevance of how this form of governance has shaped the current context. It is through the shortcomings of top-down governance that we see the emergence of alternative, bottom-up, citizen-led, informal actions and processes that are unfortunately, poorly accounted for in formal planning decision-making processes (Andres et al., 2019). For cities in the Global South, the presence of alternative and informal structures and networks created in the absence of institutional interventions

calls for exploring new approaches to planning regional futures (Simone, 2016).

It is therefore crucial to embrace contesting ideas and knowledge into how urban areas are governed and the eventual acceptance of socio-cultural urban lifestyles of the global south as forms of urbanism, with their own merit, that do not need to play catch up with developmentalism, or saving from their failings at modernity. Without the option of contest, there can be no power, both in urban governance and in knowledge creation. There is therefore, a need for a shift from the institutionalization of power as is practiced today, where governments, through shadow state apparatuses develop solutions for the people with little or no regard for the people as initiators of knowledge and structures of urban life or governance.

Space and governance

Through the rise of architecture and the urban we then clearly see how power is derived from this contesting urban context. We can therefore begin to evaluate how the production of space can be used as an avenue for new power-contestations. Historically, power and space have become mutually supportive. Since the end of the 18th Century, it has been used for 'economico-politico ends' (Foucault, 1980). We observe a situation where the need for modernization and development is relatable to the quest by those in government to control the system of power by 'making clean' everything that is 'unclean' - informal. Slum upgrading and formalizing informal systems then become the main tools for government agencies to overcome the perceived failures of urban systems in global south cities. However, we must acknowledge that the current spatial context of urbanisation is a dynamic and complex system that evolves from historical and continuous processes. This research acknowledges the complexity of the relationships of the African city dweller to their urban space, and the structure of the African city as a region of flows. A transitory node, where due to the continuously growing spatial limitations, people and resources interact with very little investment into long-term relations. Regional systems of social and economic reproduction then provide welcome alternatives to the impermanence of city life in the peripherals. These regional systems therefore become the most effective way for these urban dwellers to stake their claim to the city. Therefore, to better understand the observed patterns of city-region engagement within the informal sector, we employ the theory of social space as put forward by Lefebvre to evaluate how these regional systems influence city-region reproduction.

Sustainable Transitions

As part of the research aims, to promote sustainable urban redevelopment in city-regions, this proposal broadly employs the Multilevel Perspective (MLP) of the sustainable transitions theory as a guide and tool to analysing the social-cultural transitory patterns and the socio-technical systems of agro-industrial systems identified in the problem definition.

The need for Urbanisation in the global south and in this proposal's case, Kenya, to align itself to sustainable frameworks cannot be understated. Climate change action and Resource scarcity awareness should ensure that the responses to urbanisation should align to the goals of sustainable and just futures not only for the urban users but for all the populations across the city-region context.

The research questions developed in this proposal were analysed through the approach of Landscape, Regime, and Niche, in order to enable categorise and analyse the data collected. The agroecological system is identified as a specific innovation system in the Niche category within the broader agro-industrial system. This system is dominated by conventional agro-food systems that are categorized as the landscape in which most food systems in the world currently operate. The unique context of Nairobi's urban peripherals where majority are still involved in small-scale agricultural systems (KNBS, 2018) provides an opportunity for analysing innovative, just and sustainable systems (agroecology) that have a political approach to empowerment.

Governance is categorised within the regime and this is the layer whose aim should be to protect niche spaces and promote participatory innovation and development in order to transform niches into landscapes. This research through the governance related sub-questions attempted to address the questions on how; to govern multiple adaptive systems without destabilizing the landscape system, i.e. how to govern multiple disruptive and innovative variables, and how to scale niches sustainably?

All these systems were analysed against current conventional approaches of sustainability defined in the literature as; environmental sustainability- resource scarcity awareness, climate change awareness, resource decoupling, and transformation of low value systems to high value systems.

The socio-cultural context identified within the Nairobi's peripheries is categorised as a multi-scale system within the sustainable transitions approach. The highly complex socio-cultural landscape that promotes transitory rural-urban patterns is considered as a strong-point of this context that should be empowered rather than discouraged through globalised metropolitan urban developmental systems. The agro-ecological system as well as other urban developmental systems should leverage on this capacity rather than avoid it.

Implementation of the MLP in this research, although at a very general scale, should provide an opportunity for further analysis on it's benefits and shortcomings as an approach for sustainable transitions in the 'global south'.
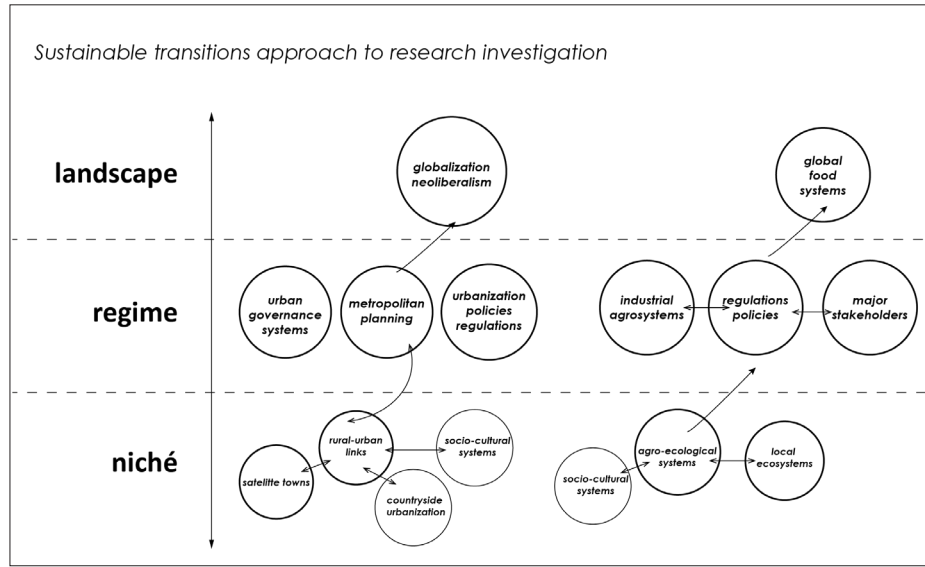
Fig.2 - 2: *Representation of the sustainable transitions theory as used in the proposal. An approach to evaluate the conventional agricultural systems and the need for empowering niche, innovative systems for sustainable growth*
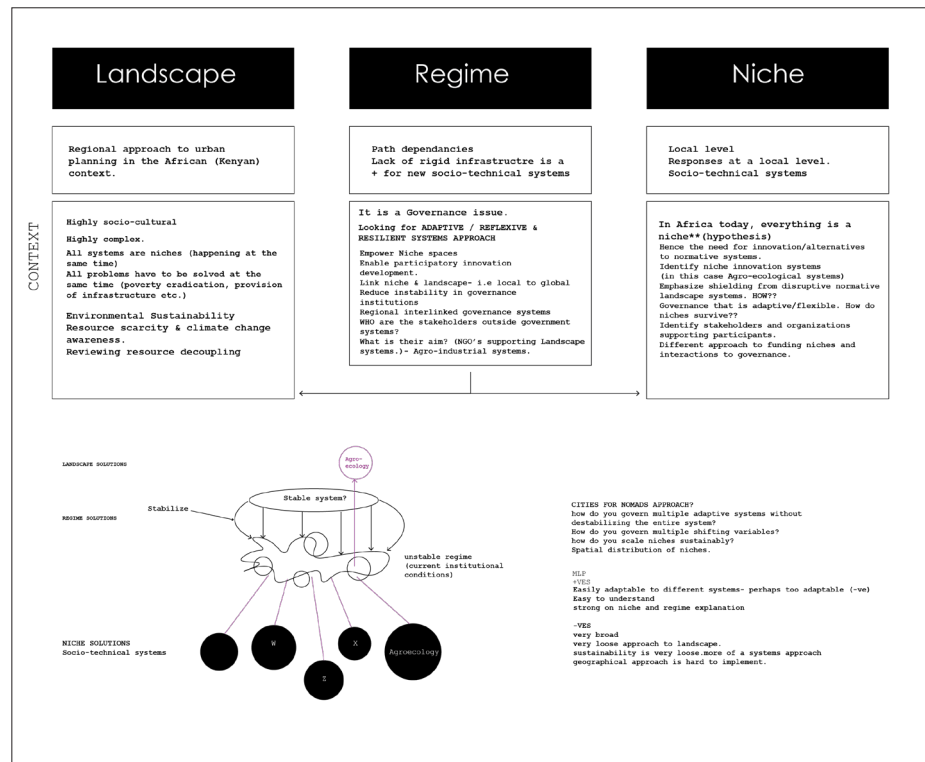
Fig.2 - 3: *Explorative graphs identifying the benefits and shortcomings of current governance and planning practice within the agricultural systems and their categorization in the MLP of the sustainable transitions theory.*

Theoretical Framework

This theoretical framework consists of three main elements. The socio-cultural rural-urban networks that arise from the critical review of neoliberal planning as practised in Nairobi, Kenya. It aligns with the theory of production of space by Lefebvre, through it's definition of social space within the city-region framework. This then allows for the analysis of innovative socio-technical rural-urban systems (in this case - agroecology) as proposed sustainable systems for urban change, with a specific emphasis on the peripheral setting. Then this proposal focuses on governance as a lifestyle in the production and experience of space. The theory on governance is used to highlight the importance of adaptive governance in the interactions of urban space, and how a review of this relationships can foster a more just and sustainable definition of space for all forces involved. The final theory includes the agro-ecological systems, as a socio-technical system, as practised within the socio-economic peripheries, the core urban centre and the rural countryside. This was then tied together with the synthesis of the three issues through the review of sustainable transitions strategies that put emphasis on the need for resource scarcity awareness and climate change awareness in the shift to the just and sustainable urbanisation in Kenya. (See figure 2-4)

SOCIO-ECONOMIC RURAL-URBAN LINKS

Neoliberal planning
Nairobi's Urban Primacy

Developmental State mindset(Swilling, 2012)
Splintering Urbanism (Graham & Marvin 2001)
Environmental Impact of cities (Perez, 2002; Swilling, 2012)
Peripherization of poverty

SOCIAL PRODUCTION OF SPACE

Lefebvre's City-region social-spatial production processes
Lefebvre, 1991 - Production of Space

GOVERNANCE

Foucault- Space and Power
Governmentality
Adaptive governance
Contestations of power

Socio-technical urban systems

rural-urban socio-economic systems
Conventional agro-systems

Rural   *Urban*

Large scale   Medium-scale   Medium scale   Small scale

rural-urban PERIPHERALS
informality/ Peripherals & networks(Simone, 2011)

Adaptive(transitory) rural-urban links
rural-urban Socio-cultural links (Bruner et al., 2010)
socio-economic Informal systems (Rakodi, 2006)
Ordinary cities (Robinson)

Political Agroecology
Agroecology as a social movement   *Agroecology*

Spaces of Production
rural areas
inner/outer urban areas
Peri-urban zonez

Rural- urban systems
(peripherals + networks- Simone, 2011) &
Secondary cities systems
(Roberts, 2019)

Adaptive City-Region
agro-ecological systems
(FAO, 2018, RUAF)

Reconciling socio-cultural & production systems

Alternative urban systems
Just transitions (Swilling & Annecke, 2012)
Critique of everyday life (Lefebvre, 1957)
adaptive governance (foucault)

Sustainable Urban Transition

Spatial   *Strategic*

AGROECOLOGICAL URBANISM
adaptive planning
adaptive production systems
city-region infrastructure
reconciliation of agro-production spaces

+

ADAPTIVE GOVERNANCE
integration and empowerment
integrative regional policies
participatory redevelopment

Fig.2 - 4: *Theoretical Framework*

Conceptual Framework

The conceptual framework outlines the relationship between the variables under investigation in this research. This research aimed to reconcile the prevalent rural-urban socio-economic and cultural patterns prevalent in the peripheries with the regional spatial and economic patterns in the agroecology sector to investigate potential ecological urban redevelopment opportunities that support sustainable human development. Figures 2-5 and 2-6 illustrate the conceptual framework that was developed to elaborate this principles under investigation.

A

B

C
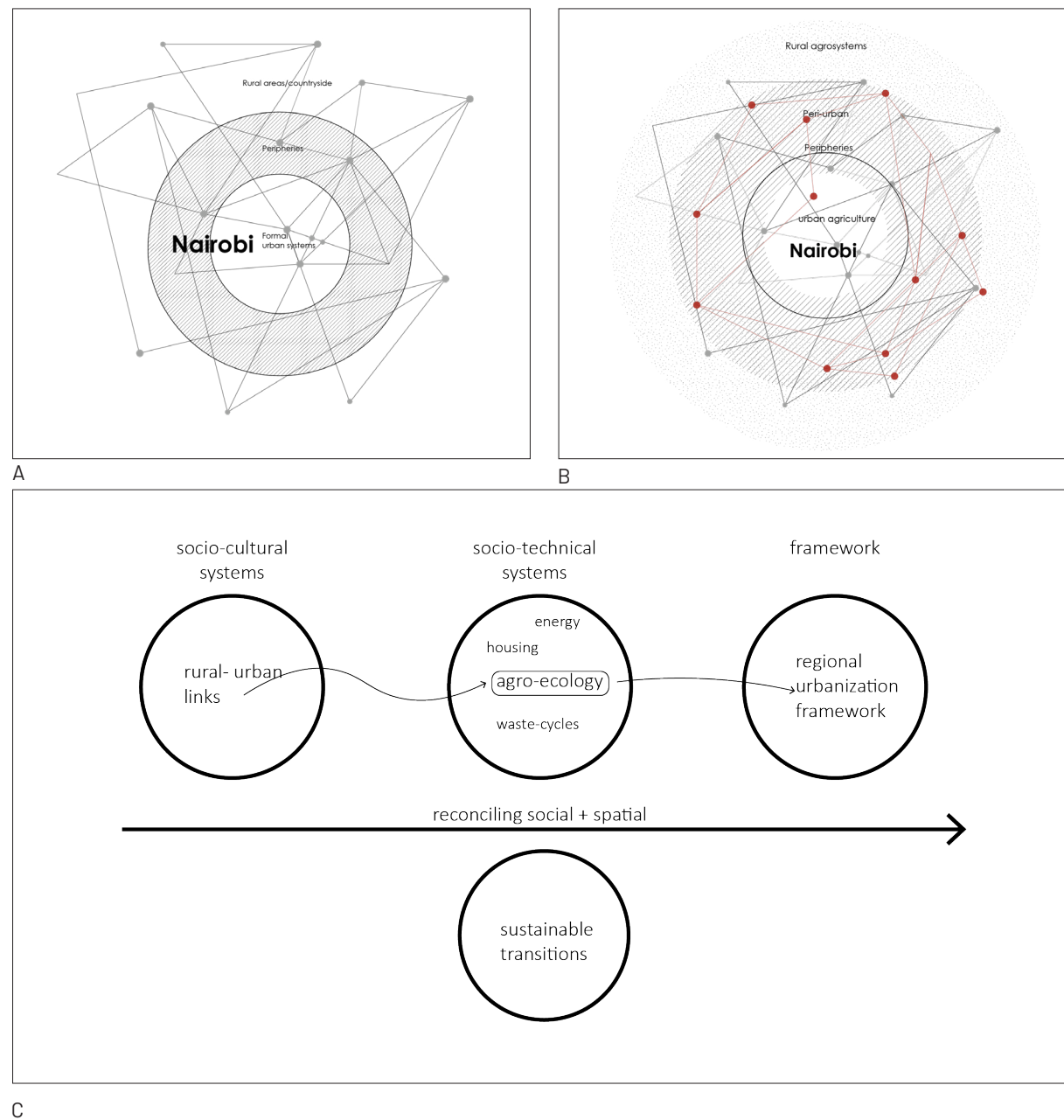
Fig.2 - 5: *Analytical break down of the conceptual Framework A - indicates the observed socio-cultural rural urban links in the socio-economic peripherals of nairobi while B indicates how the reliance of fluid regional socio-technical systems strengthens this socio-cultural ties. C is an illustration of how socio-technical systems can reconcile urbanisation with socio-spatial production forces with a critical emphasis on the need for sustainable transitions.*
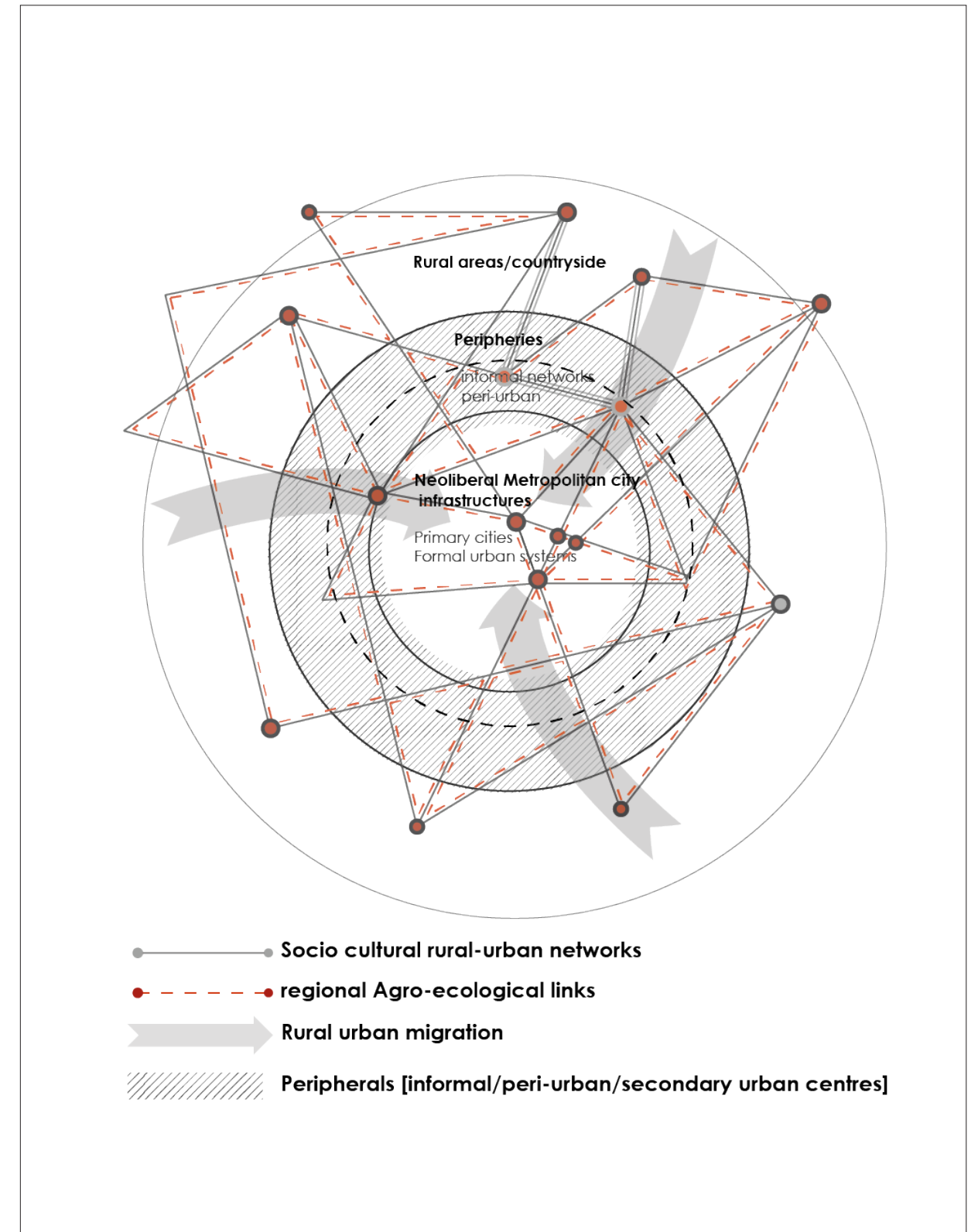
Fig.2 - 6: *Conceptual Framework*

This qualitative research study sought to develop further insight into the issues of city-region urbanisation as experienced by the peripheries.

Purpose of the chapter

The purpose of this chapter is to illustrate the research design approach used to address the main research questions put forward. It starts with an introduction to the main theme of this thesis, the purpose of the research and a brief overview of the roadmap of the research approach.

Subsequently, it introduces the main problem being addressed by the thesis, the research questions put forward to address the problem and the aims of the questions. This is concluded by the selected mixed methods that were used for empirical analysis of the questions raised.

Roadmap of the chapter

This section outlines the research approach as it was formulated in three sections. The first section outlines the problem definition, which includes the problem statement, research questions and aims. (see figure 3-1)

The second section outlines the main approach of addressing the identified problem, which includes the conceptual and theoretical frameworks (formulated from literature review), and the research methods that provide empirical data for the main research questions and finally the last section introduces the proposed outputs and a summary of the highlights of the chapter.

Research questions

To respond to the problem highlighted in the first chapter and after analysing literature based on these issues, the following research questions were formulated for further investigation through emperical data.

Main RQ

How can agroecological systems leverage the rural-urban socio-cultural and economic links prevalent in Nairobi's peripherals to promote sustainable and just regoional urbanisation?

SUB RQs

SRQ 1. What are the rural-urban social-cultural links prevalent in the everyday lifestyles of Nairobi's peripheries?

SRQ 1 was developed to further elaborate the case of rural-urban links observed within the peripheral populations of Nairobi, Kenya's main capital city. This question not only shed light on the definition of peripherals, but also sought to explain the nature of transitory patterns observed within these populations. It analysed the socio-economic as well as the spatial manifestation of these links and this is documented in Chapter 1 to provide further empirical data to the context of the chosen case study.

- Who are Nairobi's peripherals?
- How prevalent are rural-urban links in Nairobi's peripherals?
- What are the main factors promoting rural-urban links within urban lifestyles in Nairobi's peripherals?
- What are the spatial elements of rural-urban links within the Nairobi's peripherals?
- What is the relationship between rural-urban links and agro-ecological systems?

SRQ 2. What are the main rural-urban socio-spatial agroecological systems prevalent within Nairobi peripherals?

SRQ 2 was developed to provide more information on the socio-technical system of agriculture and the regional food system around primate city growth in Nairobi. It further provides empirical data on the chosen socio-technical system of Agroecology and how it responds to the required shift in social systems. Similarly, it provides a brief look into the governance aspect of planning in the Kenyan system in order to understand how conventional systems operate.

- What is sustainable regional agroecology?
- What are the links between agroecological systems in rural, peri-urban and urban areas?

MOTIVATION

Just socio-spatial & economic urban redevelopment that reconciles socio-cultural and economic development with the everyday peripheral realities of urban life in Nairobi

RESEARCH APPROACH

Mixed method [qualitative/quantitative] case study of Nairobi as a centralised node in regional cultural-economic flows

PROBLEM FIELD

Regional

Mismatch between urbanization and economic development for the urban poor.
Unequal resource distribution in regional urban development
High rates of rural-urban migration
Neglect of regional urban settlements through misplaced prioritization & metropolization of primary cities

Metropolitan

unsustainable neoliberal service-led urban development models focused on catch-up urbanims rather than leap-frog urbanism.
investor attraction models over ordinary citizen everyday socio-economic concerns

Local

Deepening inequality, poverty,
Infrastructure led displacement/exclusion
from governance and urban devleopment decision-making

RESEARCH QUESTION

How can agro-ecological systems leverage the rural-urban socio-cultural and economic links prevalent in Nairobi's peripherals to promote sustainable and just regoional urbanisation?

THEORETICAL FRAMEWORK

Reconciling;

socio-cultural Rural-urban links/Regional urban geographies

through

social-space production principles & sustainable regional agro-ecological principles.

while adapting

Sustainable transitions frameworks.

METHODS

1.   Literature review and Theory review

2.   Policy document analysis

3.   Mapping

4.   Stakeholder analysis

5.   Fieldwork (interviews, questionnaires, photography)

SUB-QUESTIONS

SRQ 1. What are the rural-urban social-cultural links prevalent in the everyday lifestyles of Nairobi's peripheries?

   Who are Nairobi's peripherals?
   How prevalent are rural-urban links in Nairobi's peripherals?
   What are the main factors promoting rural-urban links within urban lifestyles in Nairobi's peripherals?
   What are the spatial elements of rural-urban links within the Nairobi's peripherals?
   What is the relationship between rural-urban links and agro-ecological systems?
   How prevalent is agroecology within the peripherals?

SRQ 2. What are the main rural-urban socio-spatial agro-ecological systems prevalent within Nairobi peripherals?

   What is sustainable regional agro-ecology?
   What are the links between acro-ecological systems in rural, peri-urban and urban areas?
   What are the prevalent planning policies and strategies governing agrosystems in Nairobi?
   Who are the main stakeholders in agro-ecological systems in Kenya and what are their roles?

SRQ 3. What are the conflicts and opportunities of the spatial reconciliation of sustainable rural and urban agro-ecological systems?

SRQ 4. What is sustainable and just urban transitions for the African urbanisation context?

SRQ 5. What technical infrastructure & planning systems best enhance the rural-urban links at the metropolitan and regional level?

RESEARCH AIMS

A critical analysis of normative neoliberal planning and governance in Nairobi and how this gives rise to the peripheries.

2.   Advocating for new Narratives around the formal-informal urbanization discourse in the African cities through the lens of the peripheries.

3.   Investigate alternatives for urban primacy and the related rural-urban migration to primate cities in Kenya. This will be done through advocating for a regional approach to urbanisation in Nairobi, that is cognisant of the regional-socio cultural links between the urban metropolis, the countryside and the in-betweens. This proposal acknowledges the suggested benefits of metropolitan anonymity professed in literature concerned with the benefits of metropolization, especially in creating harmonious opportunities in multi-cultural settings such as African cities, however, this should not come at the expense of socio-cultural traditions and practices that offer alternatives to human development.

4.   Contribute to the sustainable transitions' theory literature specifically with regards to urbanisation in Africa?
This research proposal will attempt to outline some elements of the sustainable transition systems, their effectiveness in addressing sustainability issues raised in this proposal and how they can contribute to sustainable urban redevelopment in African cities.

Regional

Metropolitan

EXPECTED OUTCOMES

1.   Explorative city-region urbanisation framework.
The aim of the proposal is to develop a balanced and sustainable framework for city-region urbanisation that advocates for investments in secondary cities, peri-urban areas and rural areas over the normative primary city approach as observed in the case of Nairobi.

2.   Regional agro-ecological strategic framework
Investigate the reconfiguration of governance structures to support the city-region urbanisation framework as a case example of how regional systems thinking can promote sustainable urbanisation transitions in Kenya.

Fig.3 - 1: *Visual representation of the methodology process of this proposal showing the relationship between different principles of the proposal and how the different elements of the problem were analysed.*

- What are the prevalent planning policies and strategies governing agrosystems in Nairobi?
- Who are the main stakeholders in agroecological systems in Kenya and what are their roles?

SRQ 3. What are the conflicts and opportunities of the spatial reconciliation of sustainable rural and urban agro-ecological systems?

This research question begins to introduce the concept of Agroecological urbanism and the cit-region as a sustainable system of regional urbanisation through empirical data collected in SRQ 1 and 2. This reconciliation of sustainable socio-technical systems is further elaborated in Chapter 4

SRQ 4. What is sustainable and just urban transitions for the African urbanisation context?

Data Collection Process

This section will outline the methods that were used in answering the Research questions posed.

1. Literature and Theory Review;
Socio-cultural production of space/ rural urban links/agroecological principles/regional agro-ecology

This method was used to provide fundamental knowledge and theories about the main concepts outlined in the thesis. Through the review of Peer reviewed articles, books, video documentaries, recorded interviews etc, the theoretical information about rural-urban phenomena in Kenya was developed as well as the agro-ecological aspects of agro-food systems.
Statistical data analysed from the Kenya National Bureau of Statistics was also quite helpful in analysing the current socio-economic situation of Nairobi and forming hypothetical conclusions for further analysis.

2. Document and Policy Analysis –
Governance and policy documents

Through the sustainable theories approach, Governance was classified as a different category of analysis i.e., the 'Regime' and hence the analysis of policy documents, administrative documents such as constitutional acts and amendments, government research proposals, and civil society proposals is conducted, as it also provides critical information for the development of conceptual knowledge also used in the theoretical review. The independent analysis is therefore done to answer specific research question.

3. Trans-scalar Mapping -
Mapping of trends/ spatial information/ networks etc.

Mapping existing situations through satellite data and existing opensource GIS datasets was essential for understanding and analysing the current spatial distribution of socio-economic phenomena in Nairobi. Further mapping through layering of datasets was done in response to the research questions to understand how the issues highlighted could could be addressed and how they could change in future.

4. Stakeholder Analysis -
Identification, analysis and engagement.

In the case of socio-cultural issues and the rural-urban phenomena, the definition of the peripherals provided the overall stakeholder population being addressed by the thesis. However, further analysis of state actors and civil society groups was done to identify individuals and groups involved in the

agro-food sector. A further analysis of this groups wass done to establish stakeholder groups specifically focused on agroecological aspects of the agriculture industry and their contribution to the sector. The list of stakeholders was identified in the relevant sub-questions. They were then contacted and engagement through semi-structured interviews and questionnaires took place.

5. Fieldwork

This was conducted through a site visit (between the urban and rural areas) of sites chosen from initial responses from the online questionnaire. Nairobi was chosen as the main urban site as it is the case study of this proposal, with a comparison chosen of Nakuru, following a large respondent group in the online questionnaires identifying it to be a suitable Urban alternative for Nairobi.

The main elements of the field work involved;
a. Semi-structured Interviews with local actors and stakeholder groups
b. Site visits, Photography, sketching, mapping
A list of the categories of actors/stakeholders that were engaged in structured/semi-structured interviews is outlined in the table below.

6. Online Forms and Questionnaires

Prior to the field semi-structured interviews, an online form highlighting the main areas to be addressed in the field questions was developed to gauge the conceptual understanding already developed through the literature review. From these questionnaire, we received 372 responses which were used in the development of the visual data for migration patterns and rural-urban links in Kenya, as well

Study Interview Participants

Participant	Gender	Position	Location
P100	M	Real Estate Finance	Nairobi
P101	M	Researcher	Nairobi
P102	M	Planner (National)	Nairobi
P103	M	Researcher/Activist(NGO)	Nairobi
P104	M	Peri-urban Farmer	Limuru- Nairobi Metro
P105	M	Real Estate Investor	Kitengela- Nairobi Metro
P106	M	Farm Produce middleman	Nakuru - Main market
P200	F	Banana retailer	Nakuru- Main market
P201	F	Ginger & Onion retailer	Nakuru- Main Market
P202	M	WaterMelon & Pineapple retailer	Nakuru- Main market
P300	F	Food Vendor (Informal settlement 1)	Nairobi
P301	F	Youth Group Cordinator (Informal settlement 1)	Nairobi
P400	M	Urban Farmer/YG coordinator	Nairobi
P401	M	Food Retailer (Main Market)	Nairobi
P500	M	Investor/Rural Farmer/Retailer	Nairobi/Meru
P600	M	Rural Farmer/Urban Retailer	Machakos
P701	M	Food produce middleman/Retailer	Thika

Fig.3 - 2: *Coded reference of respondents in the fieldwork semi-structured interviews*

Fig.3 - 3: *Research questions and research methods used to respond to the questions.*

as developing further questions covered in the fieldwork.

A questionnaire covering the questions asked to respondents in the field was then developed in order to exhaustively cover the research questions that are posed in this research. These questions were covered through a semi-structured interview approach to ensure clarity of questions and responses. The questionnaire is highlighted in the Appendix.

Expected research output

1. Explorative agroecological city-region framework.
Through the intentional use of agroecology as a niche counter-narrative to conventional agro-industrial systems that can empower change, the aim of the proposal was to develop a balanced and sustainable agroecological framework for urbanisation that advocates for a productive planning and governance practice that caters to urban, peri-urban and rural areas over the normative dichotomy of rural-urban systems that give rise to the primary city approach as observed in the case of Nairobi.

2. City-regional agroecological governance framework
By embracing the importance of adaptive governance in the creation of urban space, this proposal aimed to integrate socio-technical based design

and planning practice into governance, to supports the regional urbanisation framework as an example of how regional systems thinking can promote sustainable urbanisation transitions in Kenya and similar contexts.

Ethical considerations

1. Authors and contributors of other work used in this report, were acknowledged, cited and referenced according to good research ethics and the referencing systems set out in the university guidelines.
2. Objectivity was exercised as much as possible and biases avoided or acknowledged in the discussions and analyses represented within this report.
3. Privacy and anonymity of all respondents is maintained at all times. Responses provided by the interviewees in this report have not been directly linked to the identities of the respondents.
4. All respondents participated in data collection and provision of information, voluntarily and on the basis of informed consent prior to engagement.
5. Respect of all respondents was adhered to, avoiding any discriminatory practices and references both in the literature analysis and collection of information.
6. Sampling of respondents was unbiased and based on the validity of the research methods used. This adhered strictly to the research groups identified in the literature and theme of the whole thesis.
7. Extreme care was taken in the selection of research methods to ensure the validity of the results attained and the credibility of the proposal.

Data Analysis

Data analysis was conducted as an iterative process between document review and empirical data collected during the fieldwork. The analysis of data conducted in this proposal is documented in the first chapter to further elaborate the context of the problem and in the following chapter.

al Urbanism

Towards an Agroecological Urbanism

Most crucially, converstations on agriculture largely consider the city as a container, a place to be retrofitted with food, rather than a context that- for the very reason of its 'urbanity' - determines specific modes of consumption and lifestyles (that is: specific dynamics of social reproduction) at the mercy of capitalism, posing particular challenges to the food system.

(Tornaghi & Dehaene, 2019)

Introduction

In this chapter, we outline the findings of this study based on an iterative cross analysis of empirical data collected in the field interviews and through document review. Evaluating the case of Nairobi's regional food system as practiced within the peripheries provided a good opportunity to analyse the complexity of rural-urban transitory patterns observed. An analysis of the conventional food systems was done to understand the roles and responsibilities of different stakeholders and how they respond to current governance systems. This provides a critical understanding of how the agro-industrial system contributes to the current landscape of rural-urban planning practice and governance in the region.

This chapter outlines the data collected during this research, and begins by describing the conventional food system and its relation to spatial productions. It then introduces the concepts of agroecological landscapes that are relevant to the production of sustainable political and urban landscapes. We then evaluate the conditions of peri-urban and satellite town planning and their potential in enhancing an agroecological urbanism framework. This is followed by a look at the governance of agro-systems and their related rural-urban landscapes and the potential for political agroecology in developing adaptive governance systems for the future of just city-regions. This introduces the next chapter where we look at the potential for reconciling these principles of a political and urban agroecology to the case of city-region urbanisation in Kenya.

Spatial and Socio-cultural Rural-Urban links in Kenya

Types of city-region producer-consumer landscapes

From the field interviews and desk research, different categories of rural-urban landscapes and farmers were identified. This ranged from large and small-scale rural farmers who provide food for urban markets to small-scale urban vertical farmers who produced food for their own consumption. From the interviews with farmers P600, P104 and P400, the respondents established that there was a huge disconnect between farmers and consumers in the current food-system in the region. Farmers were highly reliant on middlemen such as respondent P106 and P700 who invest in the collation of farm produce and transport to urban markets. This disconnect also provides for the growth of current private sector groups, NGO's and other agencies with different agro-industrial motives within the food system as will be discussed later in this chapter.

From the analysis of the different respondents in this proposal we established different categories of producers who will be used as a point of reference for the discussions in this proposal. These different producers are shown in figures 4 -1, These creates different urbanisation landscapes based on the type of agriculture practised within a specific landscape of the city-region.

rural large-scale industrial producers

rural small-scale commercial & subsistence producers

peri-urban large-scale industrial producers

peri-urban small-scale commercial & subsistence producers

urban small-scale informal commercial producers

urban small-scale subsistence producers
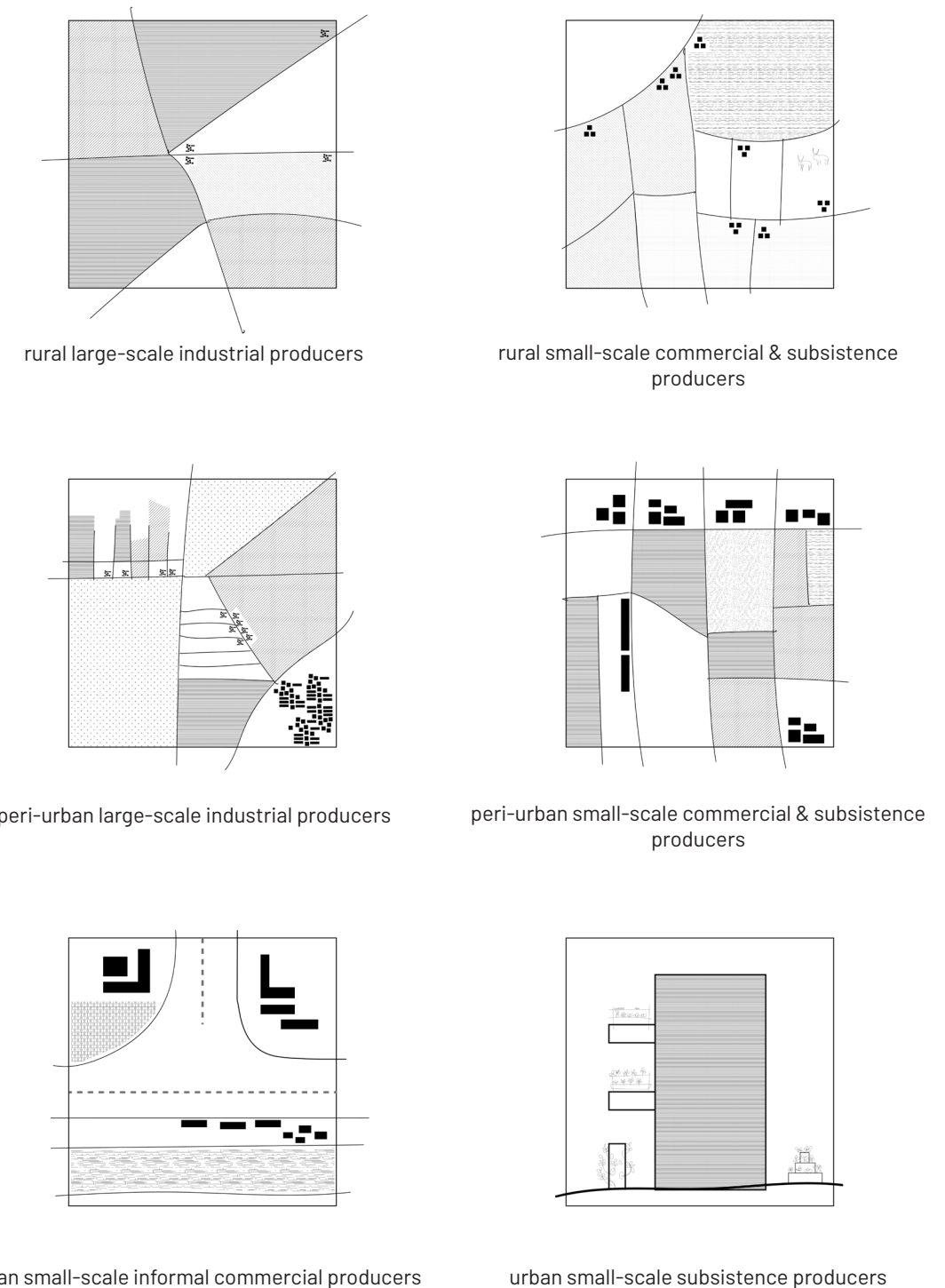
Fig.4 - 1: *Analysis of agricultural production landscapes identified within the rural-urban socio-spatial patterns of the peripheries.*

Nairobi's splintered agricultural producer-consumer landscapes.

As a metro-region, Nairobi is highly reliant on its surrounding peri-urban and rural landscapes for food production as well as rural areas as far off as the western region of the country. In fig. 4-2 we can see the distribution of agroecological zones in the country (relative to Nairobi) and the different distribution of populations across these agroecological zones. Most of Kenya's agriculture is practised within the main agroecological zone with most of the consumption produce grown by small-scale rural producers. These networks of subsistence farmers collaborate to negotiate for markets and better prices which are generally controlled by demand and supply factors in the main urban centres of Nairobi, Kisumu and Mombasa.

However industrial farming practices are becoming more pronounce in rural areas, in part due to attempts by current government policies and initiatives to increase productivity for small scale farmers. Increased donor and private organizations' funded programmes control the rural landscape production system which is a common practice of power concentration in current industrial agricultural practices. The overemphasis on increased yields through intensive industrial agricultural practices today continues despite evidence of *"numerous historical examples of vulnerability linked to genetic uniformity in mono-cultures or industrial scale livestock rearing, resulting in significant economic losses and large-scale suffering"* (IPES-Food, 2016).

In figure 4-2 we see the impact of these agro-industrial systems in the country on soils, through the underlying layer of the land degradation index map. With an exception of the neglected ASAL regions we see that the degradation of soils matches agricultural land exploitation and population distribution. Sustainable ways of reconfiguring these human production processes need to be sought to safeguard future generations from the projected effects of climate change. Land degradation ties heavily to agricultural production systems which are affected heavily by crop type and diversity. A look into the distribution of conventional agro-industrial systems in Kenya (Figure 4-3) shows the extent of monocrop landscapes within the agroecological landscapes. The prominence of low value staple crops in the production landscape is a point of concern that should be addressed through diversification as proposed by agroecological principles. These mono-crop conventional systems coupled with extensive land-degradation, create a real challenge for future food production and the impact of climate change on conventional food-production systems. This is posed to affect huge populations across both the rural-urban landscapes of African regions, majority of them being the vulnerable peripheral populations. Urbanism geared towards environmental diversity and resilience therefore provides the best opportunity for human and economic growth in Kenyan urbanisation.

IPES in their 2018 report of Uniformity to Diversity attributed the persistence of industrial agriculture over more beneficial systems such as agroecology to 8 key lock-ins of conventional agricultural systems. (See fig 4-4.) The
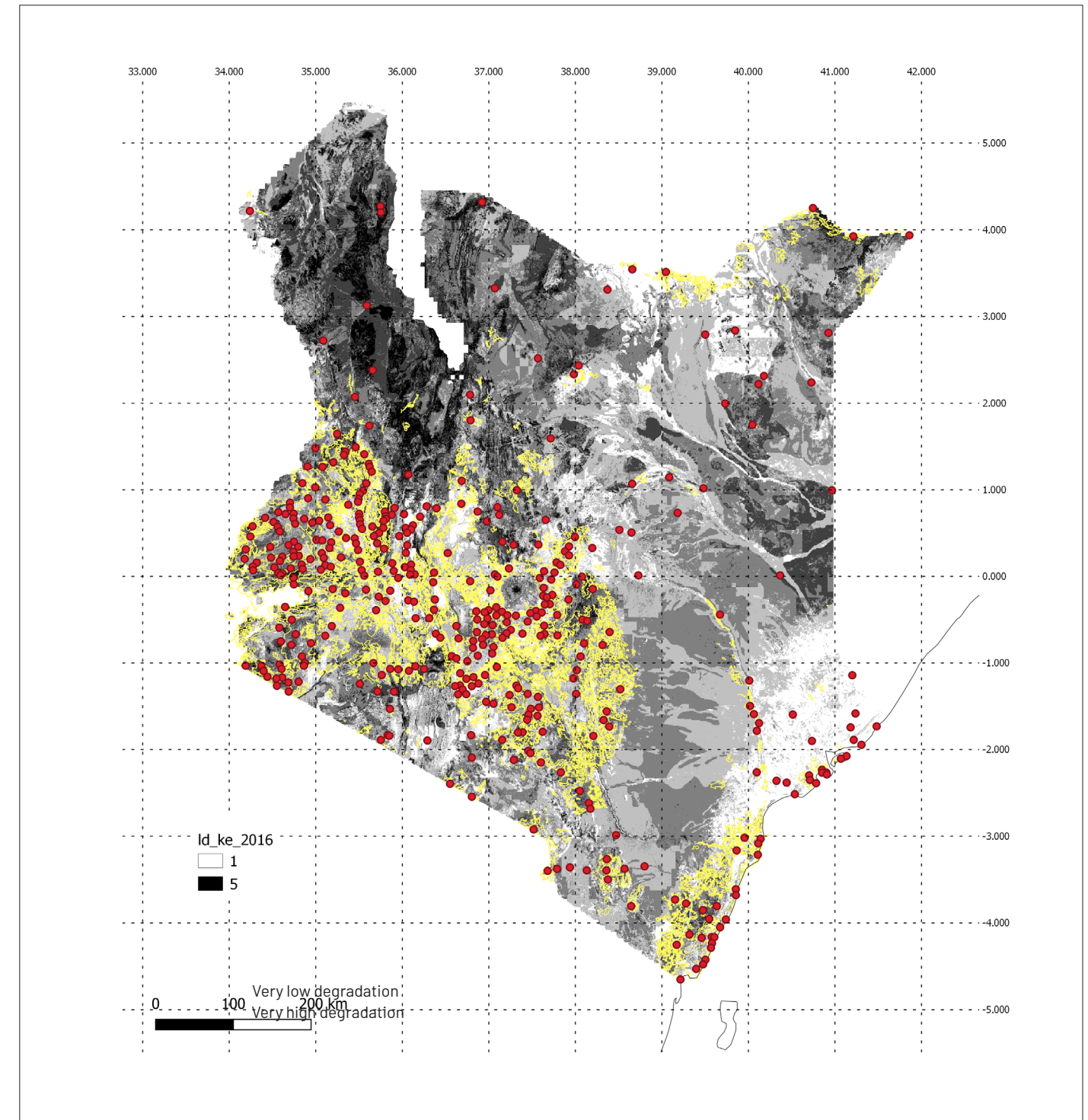
Fig.4 - 2: *Distribution of population across the productive agroecological landscapes overlaid on the soil degradation index map showing extent of soil degradation across the region (source: rcmrd.org)*
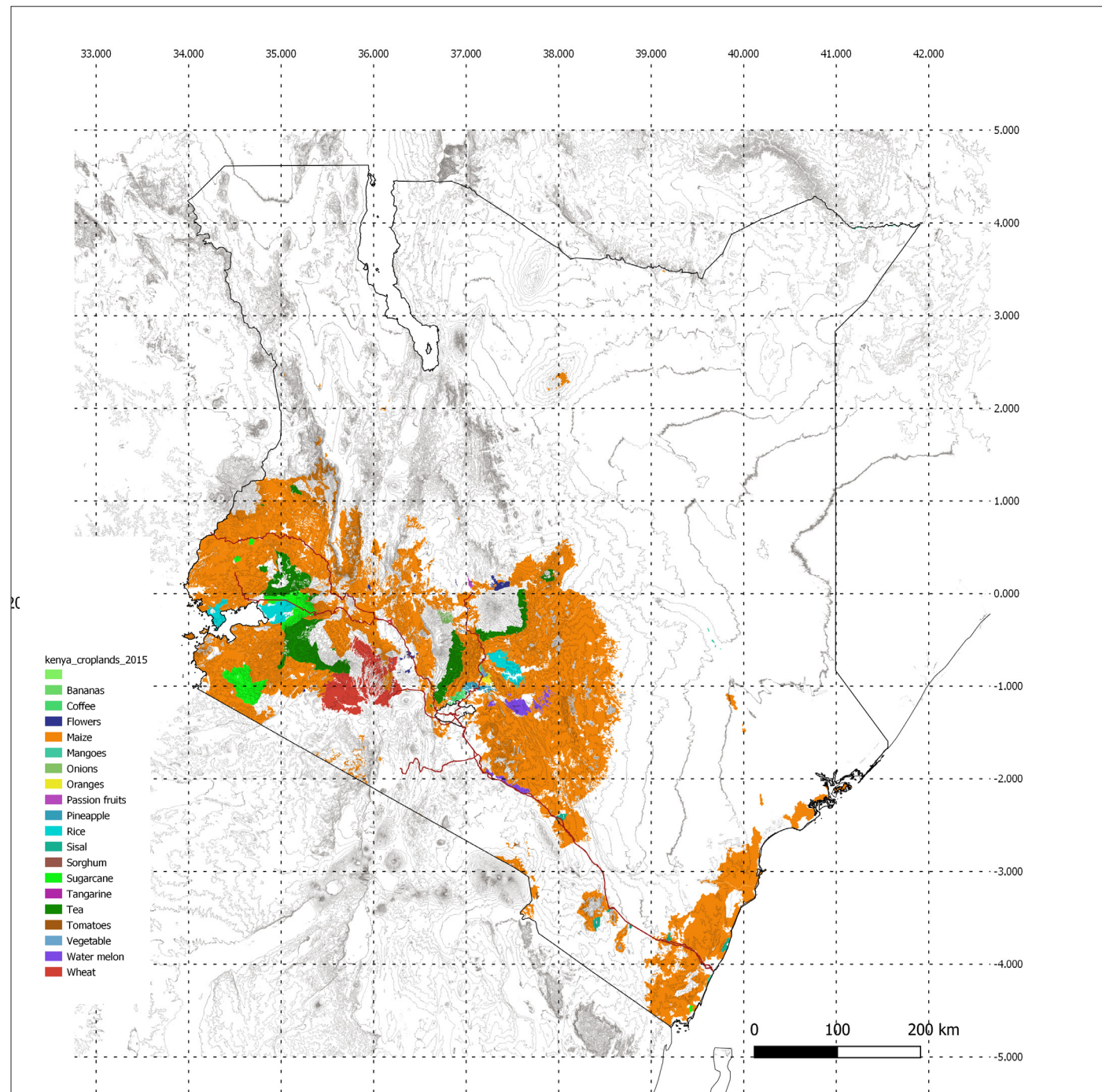
Fig.4 - 3: *Distribution of cropland in the agroecological production zones of Kenya showing the extent of monocrop cultivation currently undertaken in the region. Maize is the main crop in the region with cash crops and horticulture also taking up a huge percentage of arable land. Agroecology advocates for the diversification of crop production to city regions and the reliance on indigenous resilient crops to counter the ongoing process of land degradation to ensure future food security.*

empowerment of Agroecological farming practices seeks to divert from this lock-ins by empowering a bottom-up approach to farming practices. Agroecological practices are geared towards securing and stabilizing agro-ecosystems for long-term productivity over maximizing short-term yields for specific mono-crops. In the Kenyan case, as well as the African case in general, the observed low path-dependency of the agricultural system provides an effective background for developing alternative systems. The impermanence of City-life as experienced by the peripheries (while acknowledging the observed violence of such lifestyles), provides a potential for vulnerable groups to adapt to new patterns of city-region urbanisation that might as well promote a just agricultural landscape and urbanism.
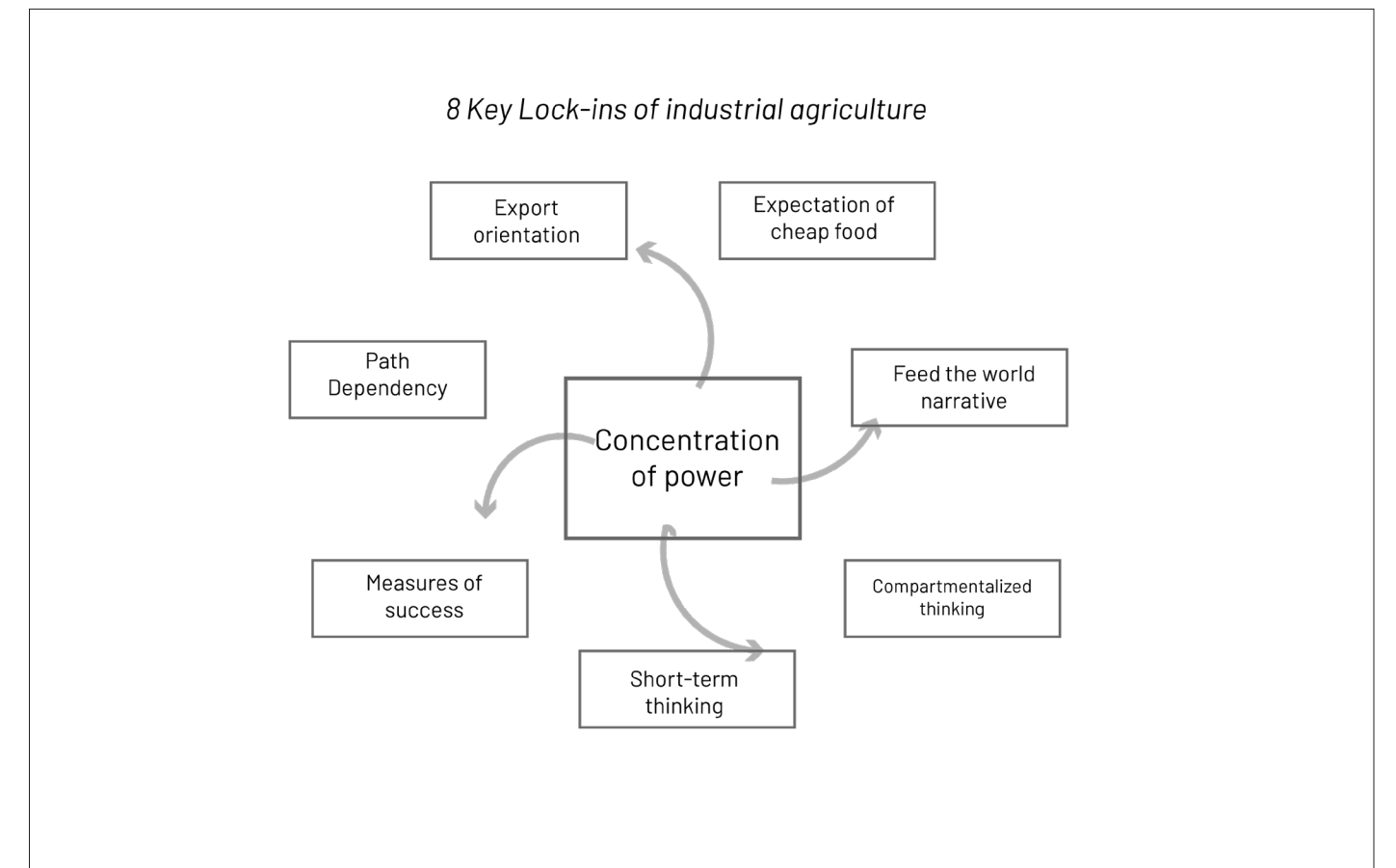
Fig.4 - 4: *Lock-ins of industrial agriculture with the main being the concentration of power to states and multinationals that control conventional industrial agricultural systems. (source; IPES, 2018)*

Regional Agricultural stakeholder distribution

In this section we look at the regionality of food systems through the lens of different stakeholders to better understand how their interactions at the city-region level influence urbanisation under the framework of the producer-consumer landscape. We look at how three different producers (interviewed in the fieldwork) at the urban, rural and peri-urban level operate and interact with consumers under the influence of the primary consumer markets of Nairobi - an effect of its primate city influence on the region. We also have a look at how the intermediate stakeholders between the producers and consumers operate within the food system to complete the supply chain.

We explore how the regional production of food has led to the stagnation of rural areas as productive forces are generally concerned with production for one main market - Nairobi- due to the large extent of the rural hinterlands across the country. Similarly, competition from food produce arriving from neighbouring countries, forces rural producers to compete through lower prices and this eventually makes small-scale farming (the main rural activity in the region) economically unviable, resulting in producers either networking for common markets, or completely discontinuing farming practices and resulting to rural-urban migration. This is prevalent mainly among the young rural populations, as agricultural jobs are the main form of employment currently available in their setting.

In this first section we look at how their production locations progressively become dissasociated with their immediate surroundings and the subsequent influence that this pattern has on food production in urban areas. Figure 4-5 shows the production locations of respondents P400(urban), P104(Peri-urban) and P600(rural) within the metropolitan landscape of Nairobi and figure 4-6 provides further details on the nature of their production capacities. These respondents were chosen to represent production within a city-region as they are all located within the current Nairobi Metropolitan region.

As highlighted in chapter 1 when we identified the manifestation of rural-urban links on the landscape, we see how the neglect of the rural and intermediate landscapes in the urbanisation agenda of cities continues to influence rural-urban migration, as urban facilities and infrastructures are unequally distributed to different urban areas based on perceived potentials for growth. Similarly the direct movement of produce from rural to primary urban centres, to secure affordable food for urban dwellers, has continued to propagate the neglect of intermediate satellite towns and urban areas leading to an unbalanced pattern of urbanisation in the region.
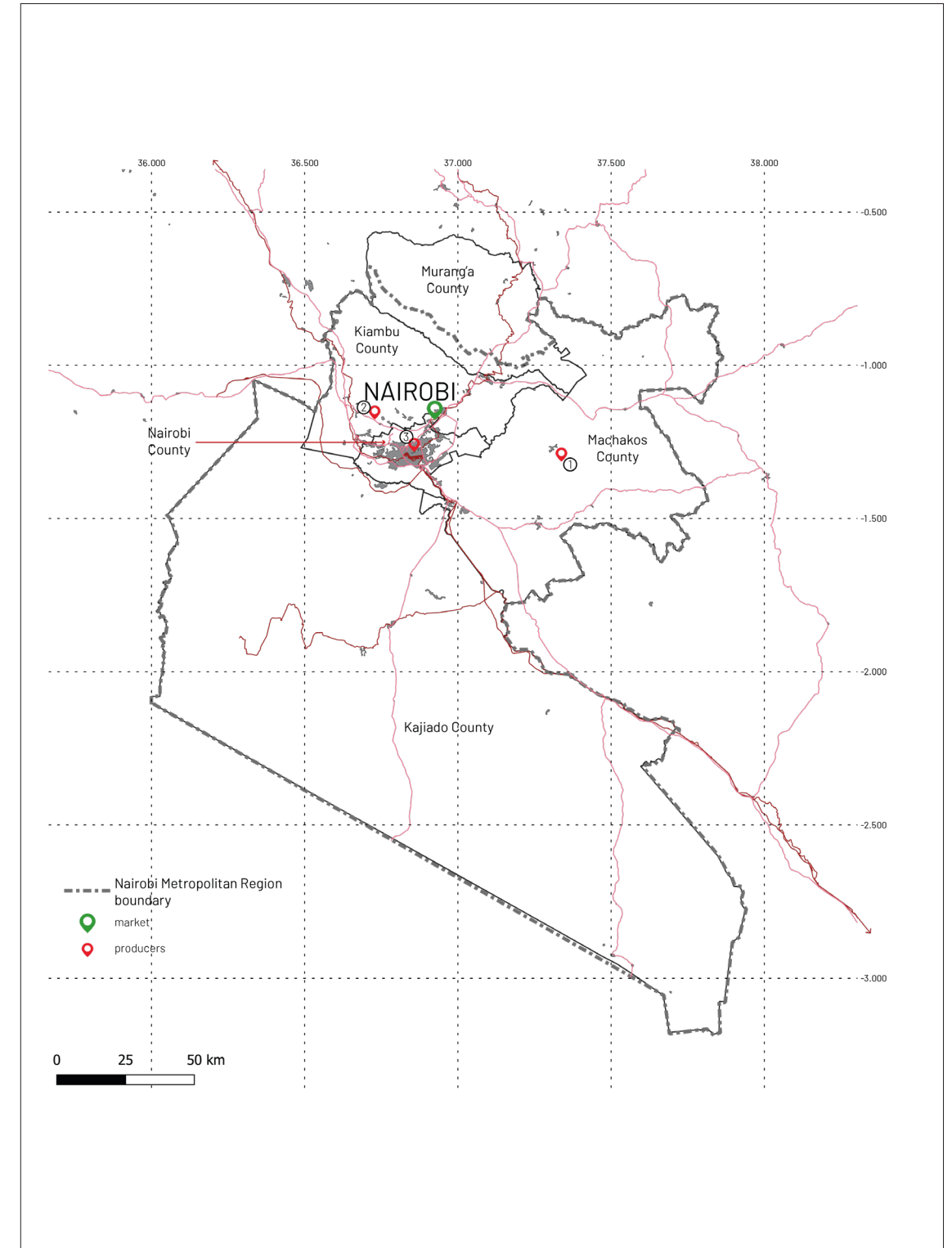
Fig.4 - 5: *Map of Nairobi metropollitan area indicating the locations of producer P104, P400 and P600 .*
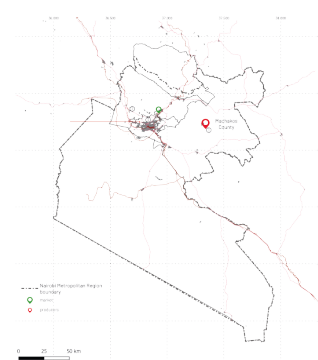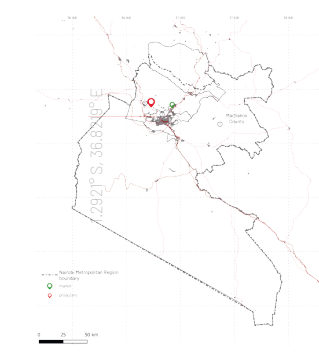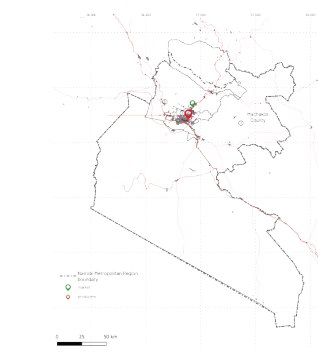
	RURAL PRODUCTION	PERI-URBAN PRODUCTION	URBAN PRODUCTION
	P600	P104	P400
Production scale	Mid-scale 5 acres	Mid-scale 5 acres	Small scale- 50-100 sqm
Consumer MARKET	Rural Surroundings & Nairobi	Neighbourhood, Nairobi & International markets	Neighbourhood
Produce	Fruits, Crops, Livestock	Horticulture, Dairy products	Vegetables, livestock (poultry & goats)
Distance to Nairobi city centre	86km	27km	8km
Proximate urban areas	3	2	-
Intermediary stakeholders	-	-	-
Identified value chain issues	Lack of government support in production Poor infrastructure Uncoordinated access to public markets Weak rural markets	Lack of government support in production Poor infrastructure Uncoordinated access to public markets Weak markets for horticulture and value added products Bureaucratic processes	Weak recognition from government agencies Lack of space Poor urban infrastructure Weak markets in low-income settlements Bureaucratic processes in urban farming

Fig.4 - 6: *Information chart for producer P104, P400 and P600 .*

Rural Producer
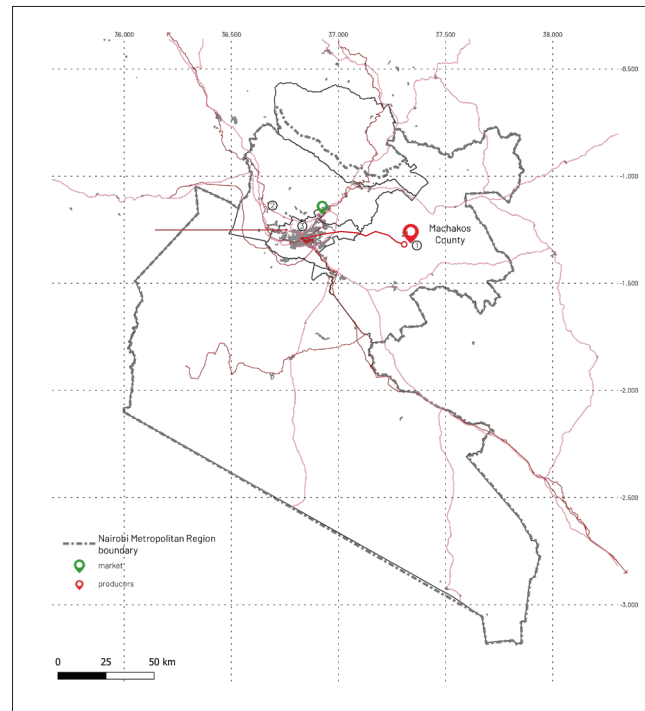
Fig.4 - 7: *Location of respondent P600 and trajectory to Nairobi markets*

Producer P600 is a rural producer with his main market being the urban consumers in Nairobi city. He moves his produce once or twice a week into Nairobi and cites the lack of proper markets within his immediate surrounding, as the main reason he relies on the urban consumers in Nairobi. The farm is however located in a different administrative jurisdiction (Machakos County) within the Nairobi metropolitan region.

Despite the challenges of communication and transport infrastructure associated with his rural setting, he still manages to supply produce to his consumers a distance of 86km away on a regular basis.

However, we note that, between his farm and the city, there are numerous satellite towns and approximately 3 major urban centres (Machakos, Ruai, Athi River) where he could also sell his produce. However, the uncoordinated access to public markets and the consumer capacities in those markets, makes him rely simply, on supplying consumers within his networks. Similarly, the structure of rural settlements, indicates that they are small and poorly planned and provide few opportunities for sustainable economic activities for their immediate communities.

As seen on figure 4-8B within the proximity of his farm are two small town settlements that act as the rural commercial centres. However as seen on figure 4-8C, the size, capacity and structure of these urban centres cannot support diversified economic activities other than offering basic services and commodities. This represents the structure of most rural settlements across the Kenyan region, as spatial planning and governance for rural urbanisation is highly neglected.

Fig.4 - 8: **A**- *Respondent P600's rural farm in Machakos county* **B**- *immediate retail centres in proximity of the farm.* **C**- *the structure and size of retail centre A*

Peri-Urban Producer
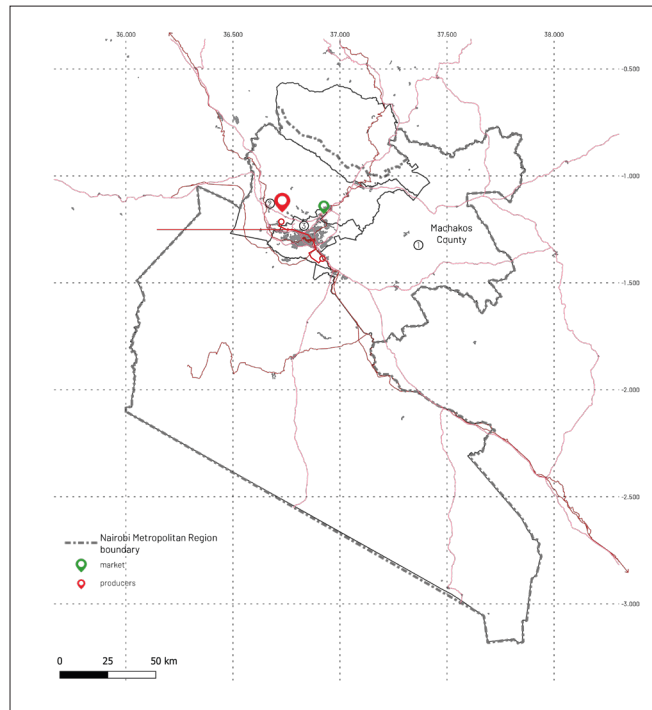
Fig.4 - 9: *Location of respondent P104 and trajectory to Nairobi markets*

Producer P104 is a peri-urban producer in Tigoni (26km from the city centre) with his main market being the urban consumers in Nairobi city. He has also specialized in horticulture and fruits for export and therefore has a larger market outside the city. He is also able to rely on the socio-economic capacity of his immediate neighbours and can therefore also sells produce locally. However, being in a different administrative jurisdiction outside Nairobi, he has to deal with different local authorities for his infrastructure needs and this can be a huge hinderance. There are also huge bureaucracies to deal with food production and sales, due to the change in administrative jurisdiction.

We similarly notice that, similar to rural producer P600, between his farm and the city centre of Nairobi, there are a few upcoming but underdeveloped satellite towns and 3 main urban centres (Limuru, Kiambu and Ruaka) where he could also sell his produce. However, the uncoordinated access to public markets, within this towns and in Nairobi, has made him resort to supplying consumers within private markets and within his networks.

The larger peri-urban landscape of Nairobi similarly relies on Nairobi as the main financial centre and therefore the local and neighbouring settlements serve very few functions other than accomodation. As seen on figure 4-10A the peri-urban landscape offers more space for production and accomodation and it's proximity to the city centre makes it ideal for shorter food supply chains. However, proper regulations that control the explotiaion of land for non-food crops should be considered as this has largely affected the capacity for Nairobi's immediate hinterland to produce staple food.

A

B
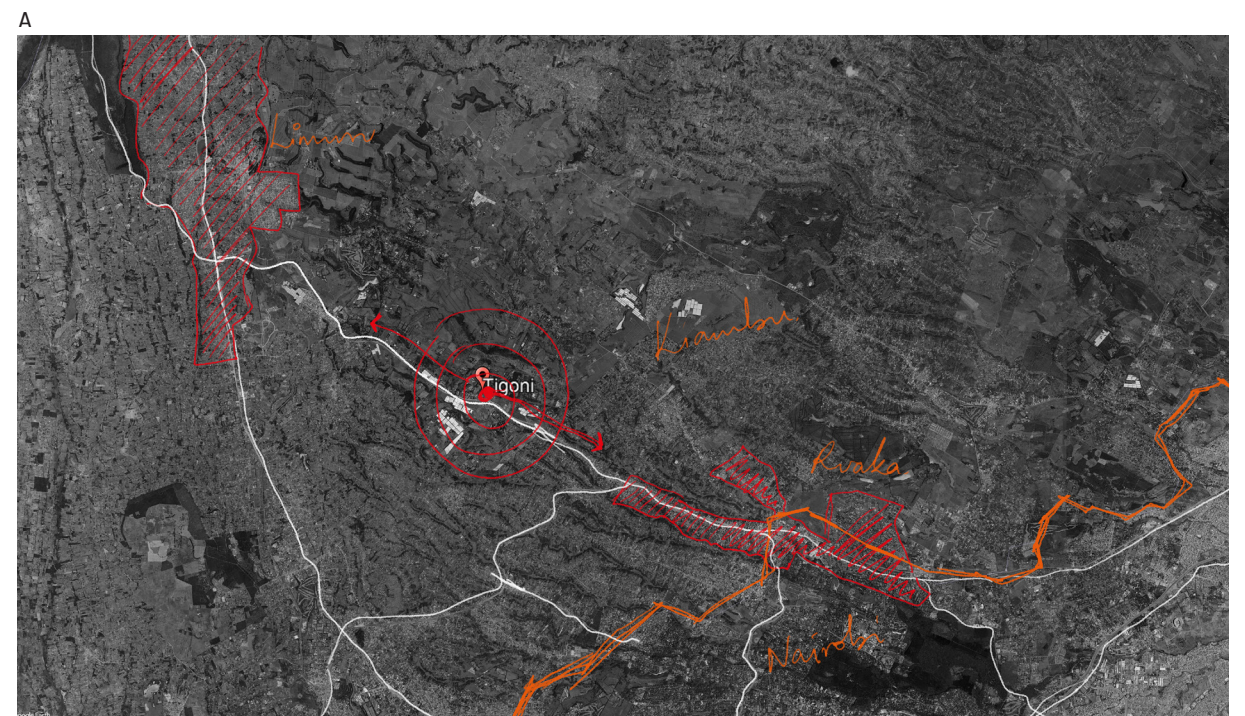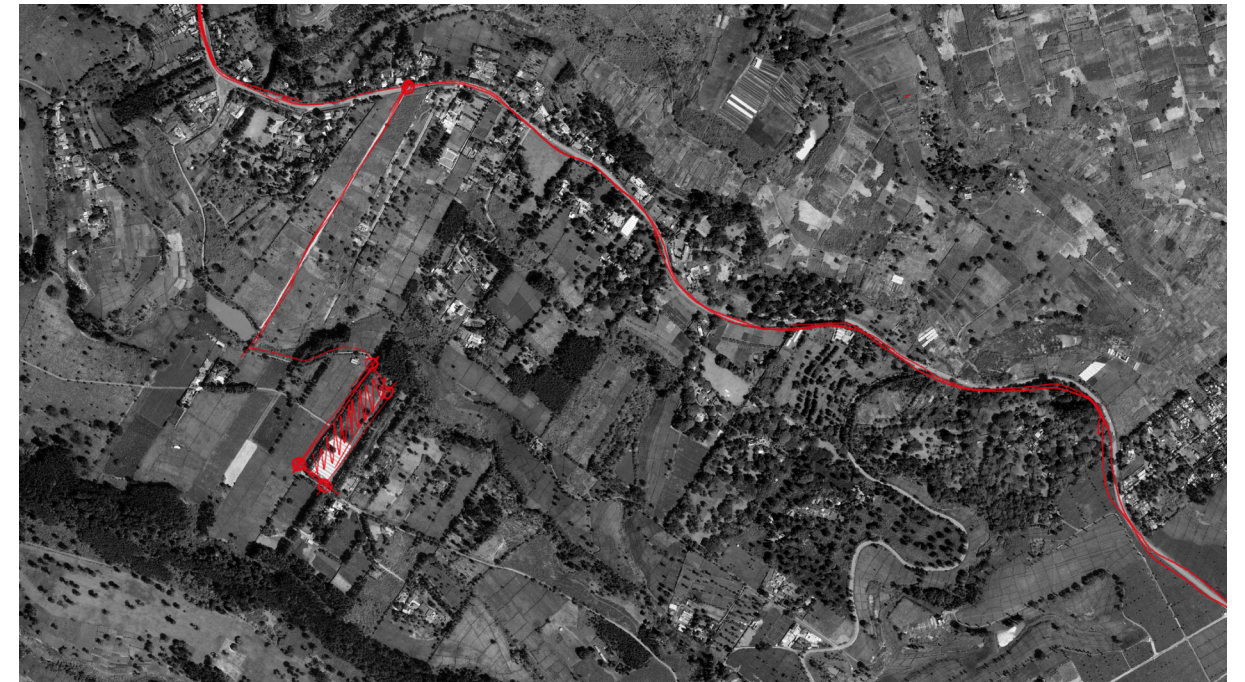
Fig.4 - 10: **A-** *Respondent P104's peri-urban farm and the surrounding peri-urban farms* **B-** *Location of Respondent P104's farm in relation to immediate proximate urban centres.*

Urban Producer
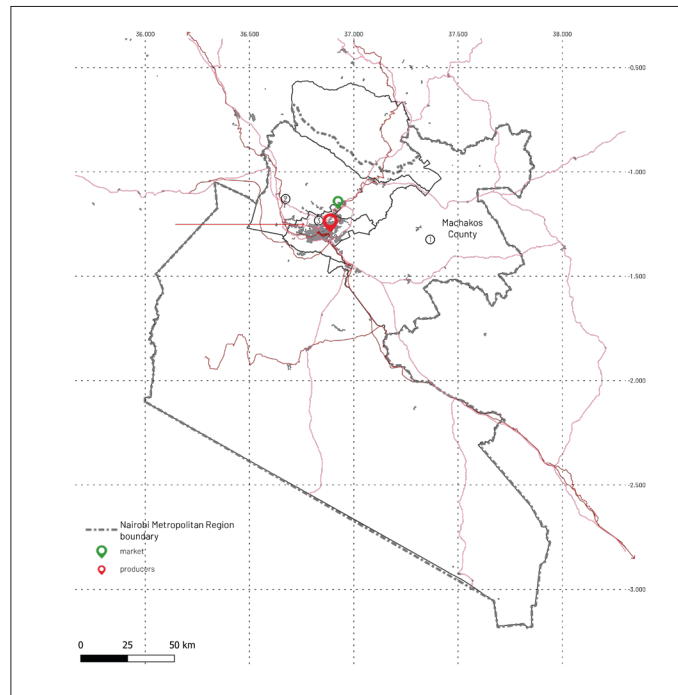
Fig.4 - 11: *Location of respondent P400 within Nairobi's urban core*

Producer P400 is an urban producer located next to one of Nairobi's main informal settlements (Huruma). He is part of a larger coorparative of young individuals from the informal settlement who is engaged in urban farming. His main market is networks within his corporative group and those enabled through the NGOs he has interacted with. Unlike the rural and peri-urban producers, his main challenges are space and capacity. His urban farming practice is located on a public plot and therefore has no security of tenure. Similar to the rural and peri-urban farmers, he also faces a challenge where the cost of his produce is slighlty beyond the reach of his immediate neighbourhood consumers, (the urban informals) despite their different economic capacities.

This is an indicator of the unique set of challenges that urban farming faces, especially in vulnerable neighbourhoods within the city. He is also unable to produce enough to be economically sustainable and therefore requires more assistance in capacity building and space allocation. He has received training in sustainable urban farming and value addition of his produce, however, the socio-economic capacities of the neighbourhood are similarly challenging as he is unable to overcome the issues of scaling that would reduce costs.

He views moving from the city centre to the peri-urban, as an opportunity that would provide the needed space for scaling up food production, but would then require new capacities to overcome the challenges of transport and communication as well as a loss of connection to his existing networks of consumers.

A
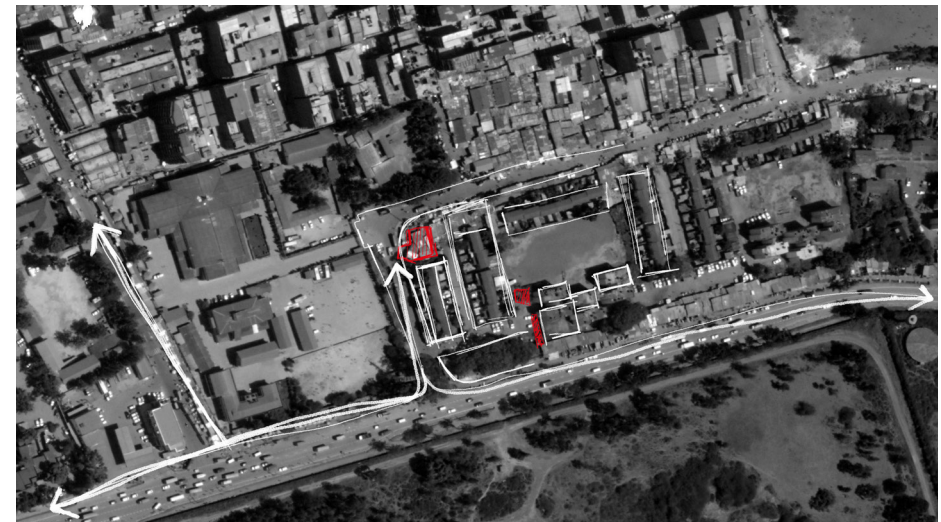
B

C

Fig.4 - 12: **A-** *Locational context of Respondent's P400's urban farm close to one of Nairobi's informal settlements- Huruma.* **B-** *location of the farm in the immediate neigbourhood* **C-** *farming practices of Respondent P400, that include vegetable, poultry and goat farming.*

Middlemen
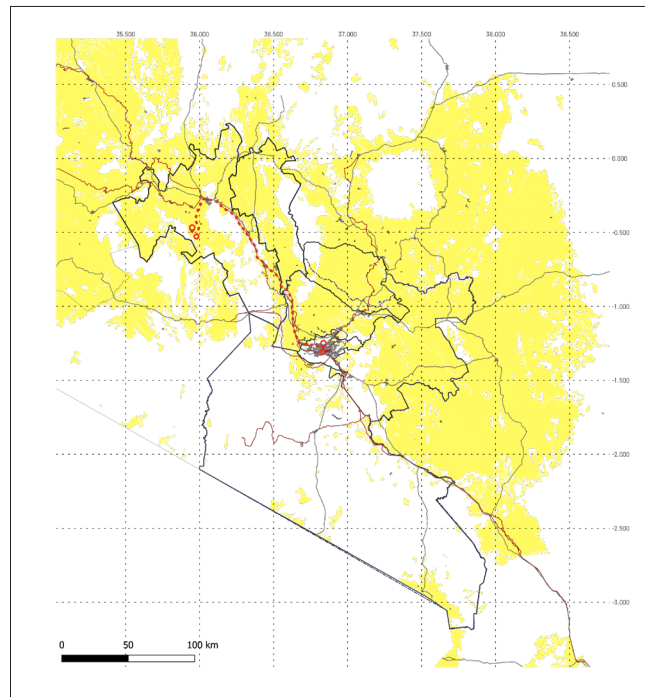
Fig.4 - 13: *Location of respondent P106 and his operation trajectories*

The mdidlemen are important stakeholders within the long supply chains of Nairobi's splintered food system. They operate from rural regions, by purchasing food produce from small scale rural producers. As seen in figure 4-14A, the main rural production landscapes of rural Kenya are split into small production sites that make it hard for large scale production and therefore lower bargaining capacities.

However by networking among producers, the middlemen can then provide logistics capacities for this small-scale producers and deliver food in bulk and cheaper prices in the public city markets of Nairobi.

However, middlemen such as respondent P106 source food from the rural town of Mauche (figure 4-14A) within Nakuru County and delivers some to Nakuru county. However, most produce,through other middlemen, will then make it's way to public markets in Nairobi such as Githurai (see figure4-14B) where the demand is higher due to higher populations and socio-economic capacities.

This regional extraction of food produce at the expense of proximate and intermediate towns has led to the continous neglect of secondary cities and urban centres between the primary city of Nairobi and the rural production sites. Nakuru is 150km from Nairobi and is considered a secondary region on its own.

Figure 4-14C shows middlemen activities in the main public markets and how they provide bulk produce for the small-scale retailers.

A

B

C

Fig.4 - 14: *Ariel view of Mauche, Nakuru county showing small-scale rural producer landscapes, where Respondent P106 and other middlmen, source their market produce. B- Githurai Market in Nairobi, one of Nairobi's main food markets located along a busy Highway, by appropriating public land. C- Middlemen trucks and produce at the main public markets.*

Fig.4 - 15: *Small scale retail practices in Nairobi's urban core and Peri-urban areas*

Role of small scale Urban retailers

Small scale urban retailers are the final link to consumers in the food supply chains of Nairobi. The majority of urban dwellers in the city rely on small scale retailers for their day to day food provisions as commercial food outlets are generally located in the city-centre or in peri-urban settlements, for middle income earners.

Small scale retailers obtain their produce either from the main public markets or directly from small-scale rural, urban and peri-urban producers. Majority of individuals in the peripheries rely on this form of trade for their daily sustenance. Small-scale retailers pick up food produce from the main markets based on consumer demands at their final point of sale. They then set up retail points in close proximity to their customers, close to their accomodation or along their daily trajectories (such as streets, outside shopping centres and busstops). For low income earners in the city peripheries, food is a daily purchase commodity based on daily earnings.

The main challenge however for the small scale retailers is the recognition of their trade in the urban planning division and governance divisions of municipalities. Urban retail space as demanded by these stakeholders, is in short supply, as is urban farming space. The retailers then heavily rely on appropriating public space for their trading practices. This includes setting up shop along pedestrian walkways, wayleaves, parking lots and even car-streets when short of space. Due to the lack of proper recognition from government institutions and legal framework, their services are in constant conflict with other urban services making such services unsustainable.

In vulnerable situations such as the ongoing pandemic, small-scale producers then resort to being end retailers and this has been witnessed with the proliferation of carboot sales along major highways in peri-urban and urban areas. Similarly, as reported by respondent P300, the consumers might also avoid the urban retailers and directly source their food from the markets or from their rural homes. This makes this service of the food supply chain (which peripheral traders rely on) very susceptible to the unprecedented shocks of urban life.

RURAL

PERI-URBAN
producers/consumers

Rural Large-scale production

Rural small-scale production

Peri-urban small scale production

peri-urban fresh food market

peri-urban/Urban Food markets

Processing/Manufacturing and packaging

Farmgate sales

Retail buyers/consumers

Wholesale distribution of fresh produce

Peri-urban LARGE scale production

Local small-scale production on public land

Informal settlements

URBAN CONSUMERS

Formal housing
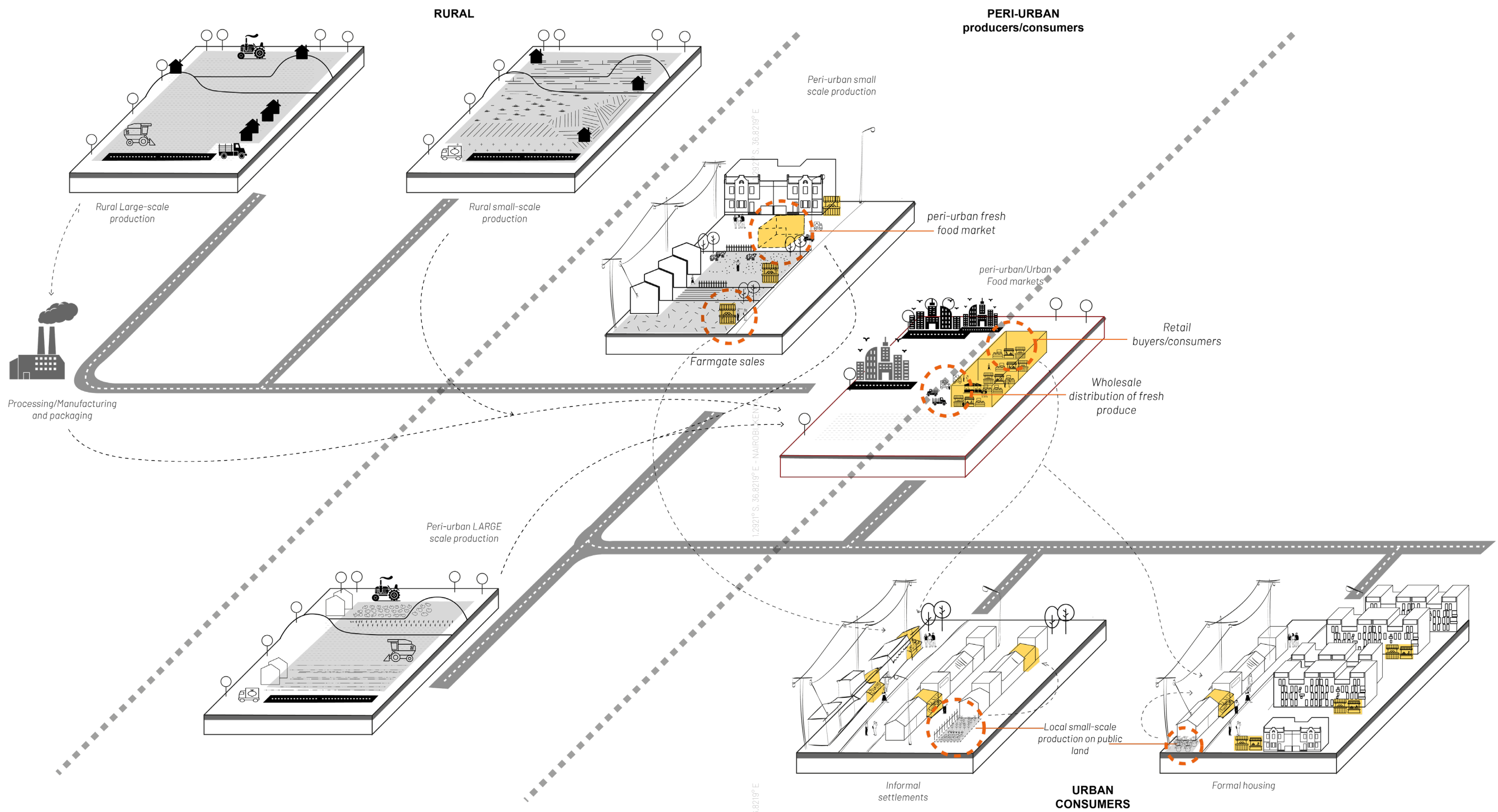
Fig.4 - 16: *Current producer consumer landscape in Nairobi's food system showing the heavy reliance of urban consumers on regionally produced food. Most of the fresh food is distributed through state run markets as well as informal networks of small-scale traders in the peripheries. Urban production although recently showing increased activity, accounts for a very small percentage of the food consumed in the metropolitan area.*

In figure 4-16 we see how the producer consumer landscape in Nairobi's food system operates. The primary urban area is highly dependent on regional food sources, where food is sourced from, both the country's rural landscape as well as neighbouring countries. Respondents in the interviews generally agreed that the city relied heavily on the rural production of food with the peri-urban and urban farmers contributing a small fraction into the consumption needs of the city. An important disconnect identified in the food chain was the production of export produce (food and horticulture) within the peri-urban zones of Nairobi, which benefited the private farmers who own those farms.

This creates concerns of land availability for food security towards the main urban centre. A large portion of arable peri-urban land around Nairobi, has been allocated to horticulture farming and cash crop production. Large tea, coffee and flower farms surround the city while other large farm owners concentrate on growing export crops rather than staple food for the locals.
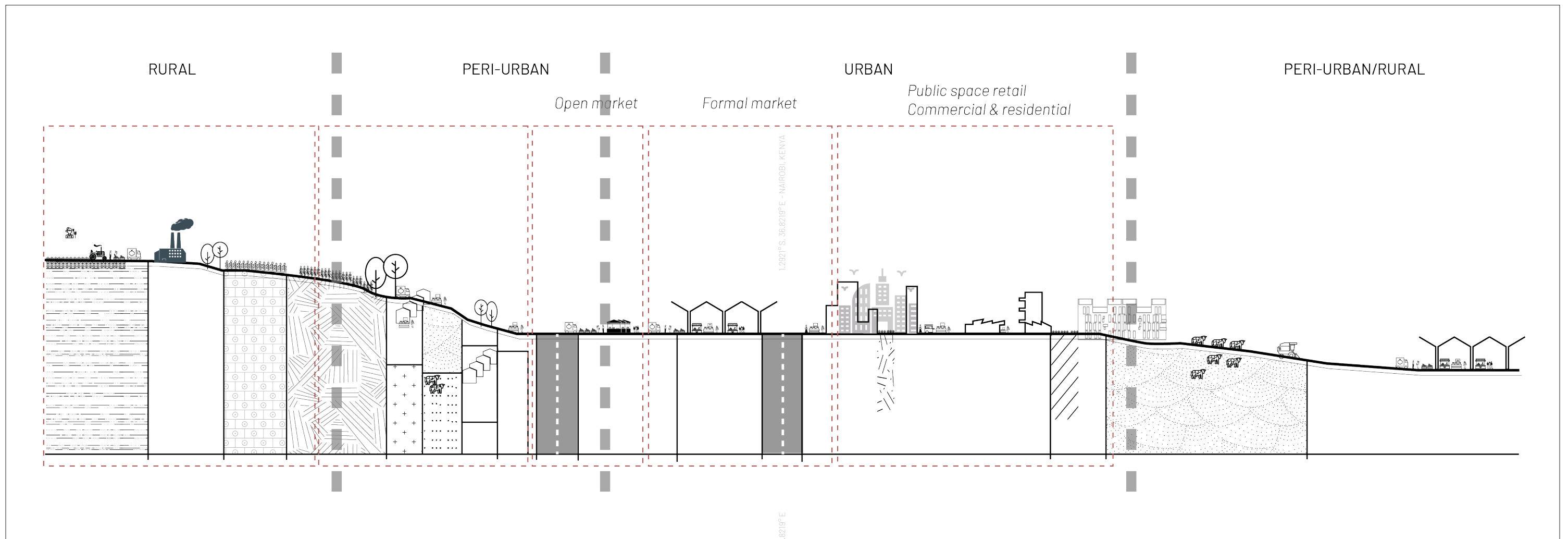
Fig.4 - 17: *Summary illustration of the city region food landscape in Nairobi, which matches conventional agricultural systems globally although with less productivity. The importance of subsistence rural and peripheral producers in the current landscape provides a good opportunity for reconfiguring the current production landscapes into agroecolgically viable systems.*

The Peri-Urban/Secondary city Question

Spatial limitations of Urban and Peri-Urban farming

Due to the extent of uncoordinated planning in historic and successive administrative regimes, Nairobi continues to suffer from spatial limitations for sustainable urban growth. More and more rural-urban migrants are relegated to the informal settlements and the peri-urban sites are constantly experiencing speculative land-use conversions (agricultural to commercial use), that affect the ability for the peri-urban areas to be integrated into the city-region framework in order to contribute to shorter, high value food chains.

Space for Urban farming is also in scarce supply as competing demands for accommodation, commercial, industrial and public use continue to increase. This has increased the role of second-tier cities and secondary towns/cities in linking the urban to the rural. Their smaller scale and stronger land-use integration with rural areas provides a potential link for the creation of more sustainable food systems. In the Kenyan context, the proximity of food production to these second-tier cities, such as Eldoret, Nakuru, Nyeri and their historical development around rural production areas provides great opportunities for a reconfiguration of food-system value chains around agroecological principles. Figures 4-18 and 4-19 show the towns of Nakuru and Nyeri and their relationships to their agricultural hinterlands.

This indicates the potential for the development of alternative city-regions and urban centres for Kenya's rural populations besides the common narrative of Nairobi as the main primary city for urban life. During the field study, we identified Nakuru as a potential model for agroecological city regions due to its strong relationship to its agricultural productive rural hinterlands. This has 'made food produce relatively cheap for its inhabitants'- (respondent P106) due to proximity to production and the diversity of crop and livestock produced. It however continues to serve as a sub-region for the larger Nairobi metro-region, due to its relative proximity (3hrs drive) and the historical influence of the administrative neglect of secondary cities in the country through the favouritism policies and strategies attached to Nairobi.

Land Access in food-system reconfigurations

As we have established, the spatial limitations of metropolitan/primate cities gives impetus for the growth of secondary cities and second-tier cities in the reconfiguration of sustainable food systems. From the empirical data collected from Nairobi city, we see the planned growth and encroachment of Nairobi Metro Region into the neighbouring "bedroom towns", where majority of the city residents reside. The current governance vision for Nairobi, as a "world-class metropolitan city" through encroachment into secondary towns, and surrounding arable hinterlands, threatens the city's potential to sustain itself as

A

B
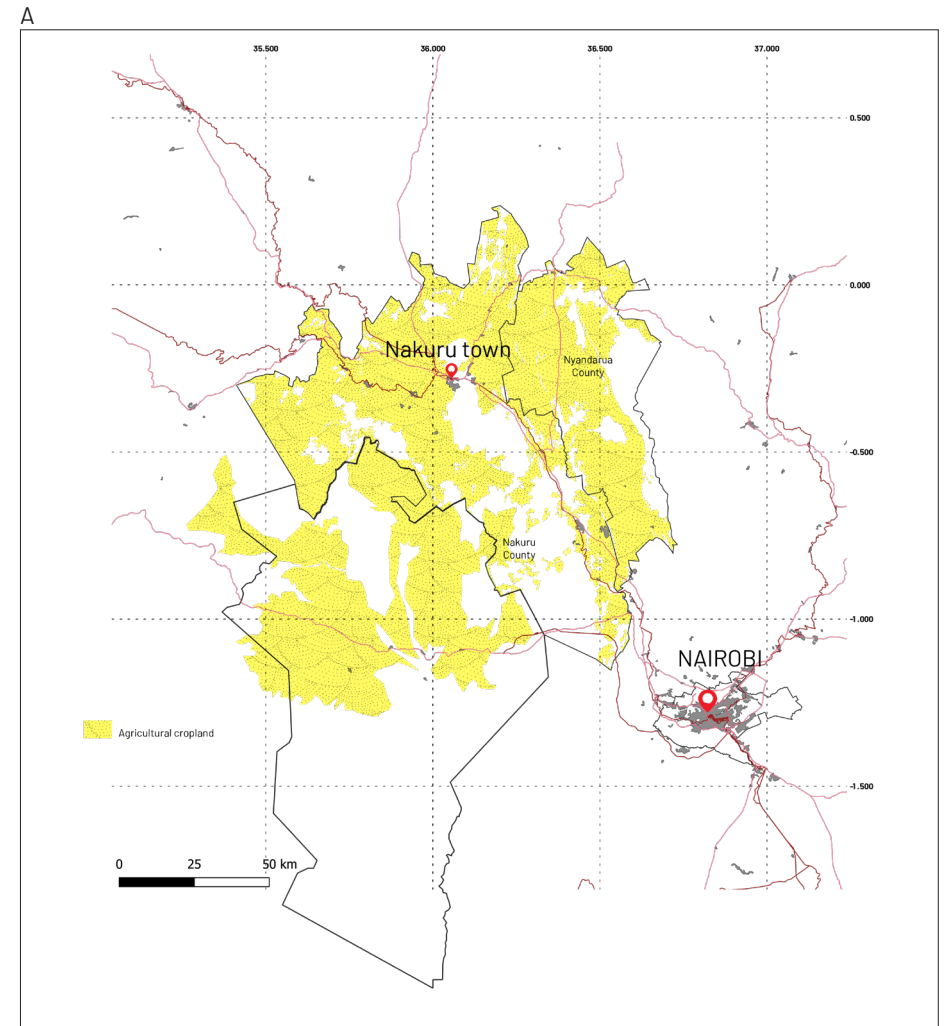
Fig.4 - 18: *Aerial view of Nakuru town and its agricultural hinterlands. Its regional hinterlands are considered one of the major food baskets of the country, making food produce easily available and affordable for the town. It also presents as one of the major alternatives to urban life for most respondents on the online questionnaire. B- shows the extents of Nakuru's influence into the neighbouring county of Nyandarua and it's proximity to Nairobi (3hrs drive)*

A

B
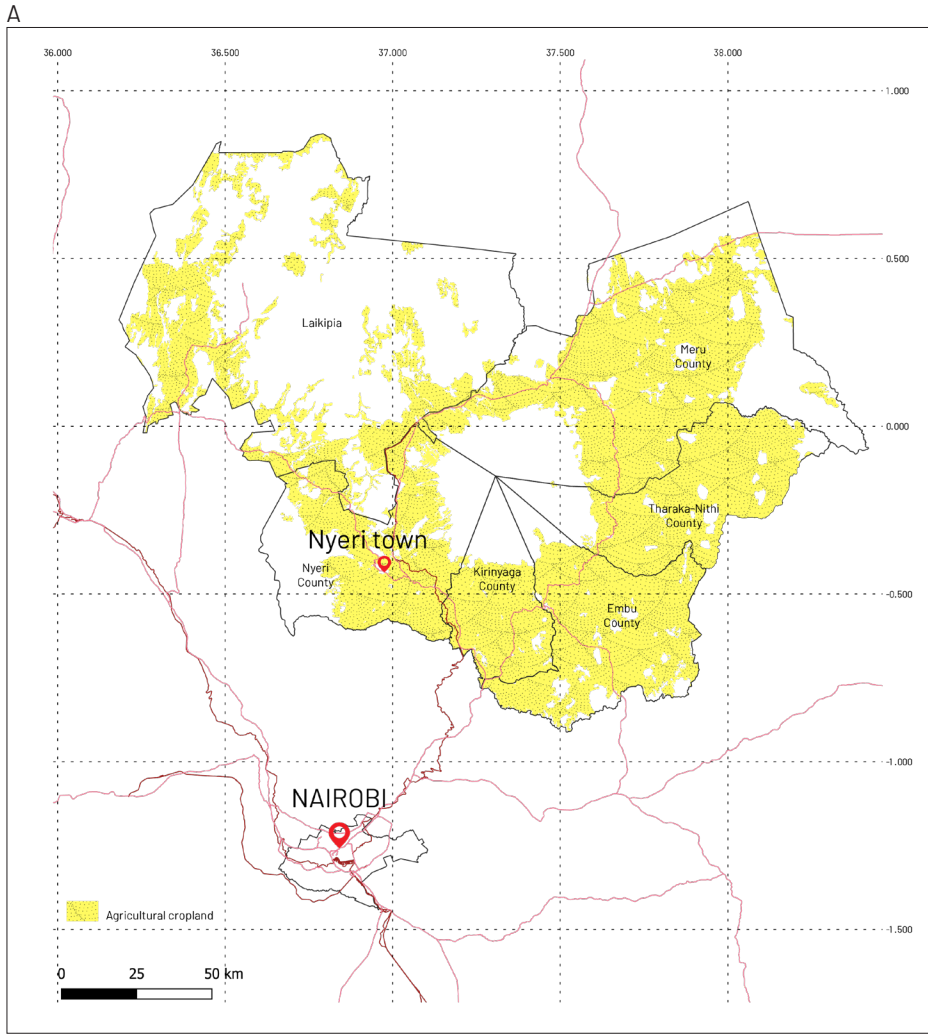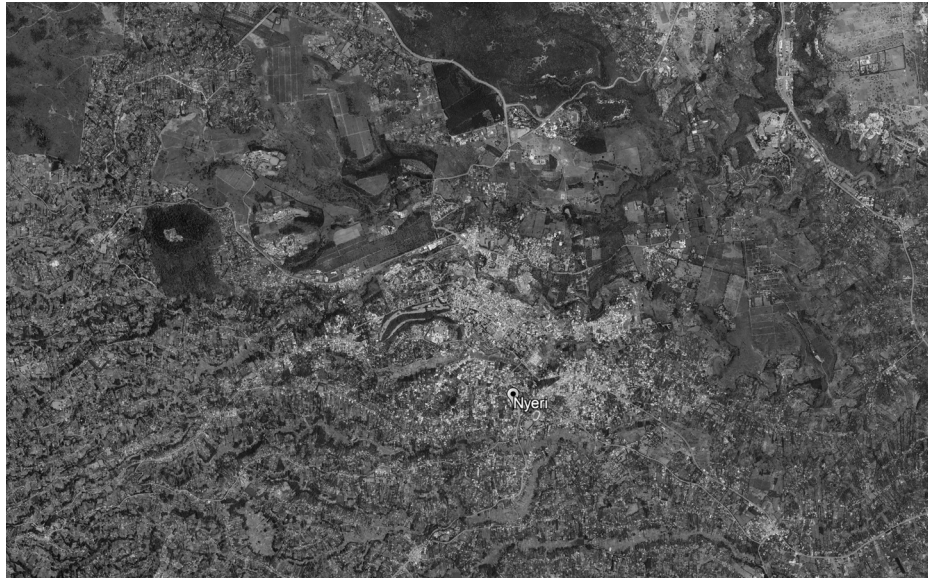
Fig.4 - 19: *À- Aerial view of Nyeri town and it's rural hinterlands. Its historical growth as an administrative outpost for the colonial government and then as a regional headquarters for previous administrative regions makes it a suitable alternative for regional growth north of the capital of Nairobi. B- shows proximity to Nairobi and its surrounding counties and the agroecologically productive landscapes.*

an agroecological city-region. The growth of new cities, such as Konza City and Tatu city within its spatial peripheries (see figures 4-20 and 4-21) propagates the same high density, regionally-extractive and financial focused global city development, whose target market is an almost non-existent middle class. These new cities and renewed growth of the primary city, takes little to no consideration of the social reproduction processes of the peripheries and the agro-ecosystem that supports city-region development.

Market-driven, land tenure systems have had a huge influence on land-conversion around the peripheries with a lot of agricultural land being slowly converted into commercial use. The commodification of food that is commensurate with conventional agricultural systems, makes it hard for farmland owners to compete with real estate speculative prices especially within the peri-urban zones of primate cities. This puts a huge strain, not only on low-income housing within the peripheries but also the capacity for the city to establish just and sustainable food systems. An over-reliance on rural food production from distant regions, puts pressure on producers to increase yield through intensive industrial farming models, while also destroying the agro-ecosystem of both the rural and urban landscapes.

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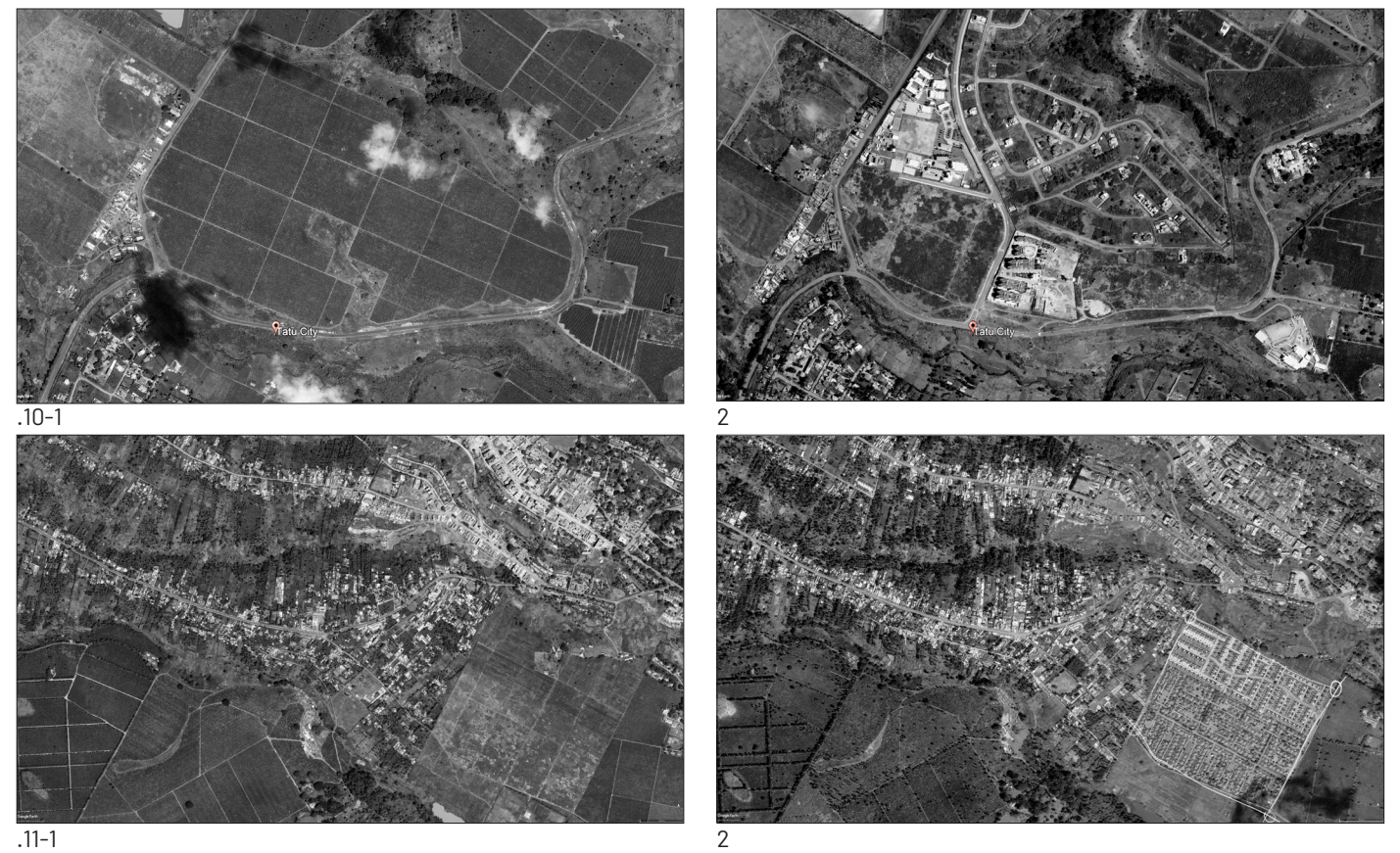
Fig.4 - 20: *Aerial shots of Peri-urban land conversions in Nairobi's peripheries into satellite urban areas. Tatu-City*
Fig.4 - 21: *Similar agricultural land conversion in Kiambu area for real estate development (sources: maps.google.com)*

Within the socio-economic peripheries, accommodation is highly impermanent. Rental housing is the most common casualty of these impermanence lifestyles, as it is left at the mercies of "unsophisticated developers" – Respondent P100. In the peripheries, the impermanence of the renters' needs, is a factor that determines the type of urban environment developed within the peripheries. This impermanence is a factor of their earnings within the informal sector, among other socio-cultural factors. Nairobi's current low-income housing projects continue on the same premise of urban development for services to global financial systems rather than the social capacities of majority of its residents as evident in trading patterns in informal settlements.

Specifically, within the food systems, these peri-urban and rural hinterlands around primate cities provide the best opportunity for diversification of food produce, shorter and circular food chains, resource efficiency, recycling and co-creation of knowledge for more sustainable food chains. By reconfiguring the urban and the peri-urban zones, agroecological systems can reset environmental degradation processes already in play while attending to human and social values that address social justice concerns.

A reconfiguration of the regional framework of urbanisation around second-tier cities also needs to take place for efficient value chains to be established. This could address the large inflow of vulnerable populations to a few urban centres in the country by distributing the level of urban development regionally This should also give food the equal importance it deserves alongside housing or transport in the urbanisation question.

Through this land-use systems and limitations brought about by conventional relationships between the urban and rural and specifically through the splintered food system of Nairobi's metropolitan area, we acknowledge that the regional food system has a great influence on the urbanisation structure. We therefore see the potential for addressing the unbalanced urbanisation by re-looking at these unbalanced agricultural practices and specifically due to the urgent needs of current climate action and resource scarcity awareness, the need to focus on innovative practices that build on local knowledge and capacities. Therefore this research makes an attempt to review the capacities of agroecology as a growing niche system of counter-practices to current conventional agricultural systems.

Applying Agroecology to the Kenyan context.

From the previous analysis, we have seen the current structure of splintered agricultural systems. Agroecology was therefore chosen in this research as a response to conventional food systems which have developed an unsustainable system of food commodification, land exploitative industrial production systems, speculative land practices in urban and peri-urban areas and a neglect

of political and social reproduction processes within producer-consumer relationships. As a broad value-based concept, agroecology is based on enhancing the principles of economic, political, environmental and social-cultural values. (CIDSE, 2018).

What is agroecology?

Agroecology as described by Tornaghi and Dehaene (2020) is *"not just an agricultural method: it is a 'package' of value-based practices which are explicitly addressing social and environmental justice, are culturally sensitive, non-extractive, resource conserving, and rooted in non-hierarchical and inclusive pedagogical and educational models that shape the way food is produced and socialised across communities and generations."*

The need for agroecology as a niche system to be elevated to a landscape cannot be understated. The political values of agroecology as a social movement that advocates for sustainable food sovereignty affects the definition of urbanisation as a social lifestyle as experienced within a city-region. Agroecology prides itself as a multi-disciplinary and multi-action approach and is based on the following facets;

"A scientific research approach involving the holistic study of agro-ecosystems and food systems,
A set of principles and practices that enhances the resilience and sustainability of food and farming systems while preserving social integrity,
A socio-political movement, which focuses on the practical application of agroecology, seeks new ways of considering agriculture, processing, distribution and consumption of food, and its relationships with society4 and nature." (CIDSE, 2018)

Principles in use for Urbanism

For this case study, this research evaluated the principles of Agroecology that relate to spatial and social reproductions. As agroecology is an integrated approach, that applies social and ecological concepts to the design and management of agricultural processes, it interacts optimally with the social processes of urban life identified within the peripherals. It is a bottom-up territorial approach to solving political and ecological reproduction issues at the contextual local level. The challenge for this research was to link these processes of the social movement to the concepts of space, and the definition of urbanisation as practiced in the global south today.

To do this we analysed the principles of Agroecology as highlighted by FAO(2018) and highlighted the dimensions of those principles that are relevant to the development of an agroecological urbanism. From the 10 principles of agroecology by FAO, figures, 4-22 indicates the synthesis of the chosen principles of Agroecology for this research proposal.
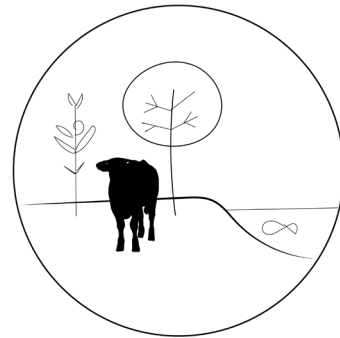
Diversity — Enhancing nutrition; Economic and environmental resilience through; Crop rotation/diversity Agro-forestry mixed Livestock & fisheries
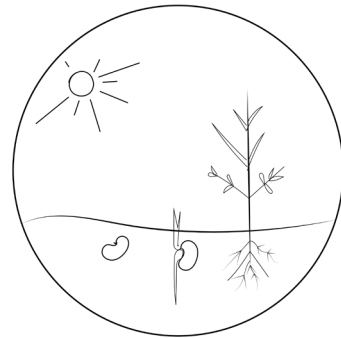
Efficiency — Reduced dependancy on external resources. Reduced environmental pollution and degradation.

Responsible Governance — Based on adaptive and shared knowledge. Empowering local systems Policy and strategy support for innovative agroecological systems
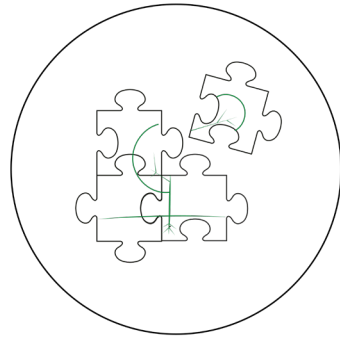
Co-creation and sharing of knowledge — Sharing traditional and indigenous knowledge of crop and livestock production for environmental resilience agricultural practice & governance
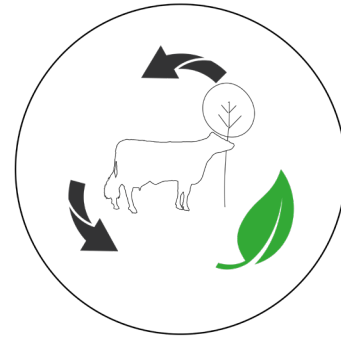
Recycling — Crop livestock systems Closed nutrient cycles for environmental protection
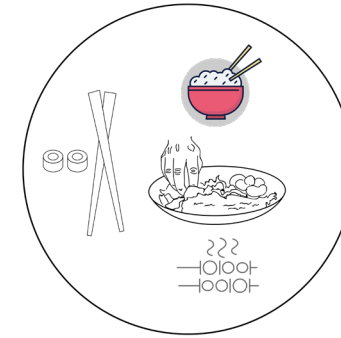
Culture and Food traditions — overcome mismatch between food habits and culture. Enhancing identities/sense of place linked to food landscapes and cultures
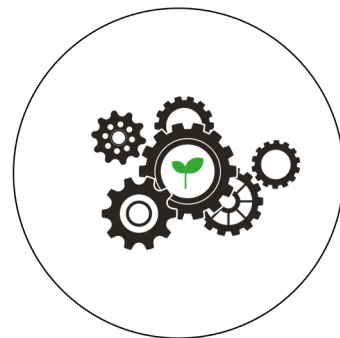
Biological synergies — Enhancing climate resilience through circular agriculture practices

Human and Social Values — Dignity, Equity, Inclusion and Justice overcoming poverty, hunger, malnutrition and gender inequality.
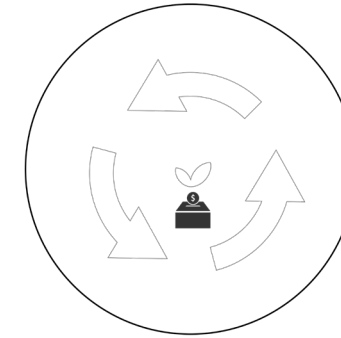
Circular and Solidarity economy — Short food circuits Promoting agritourism and resource efficiency

Fig.4 - 22: *Synthesis of socio-cultural, economic and environmental principles of agroecology that support spatial reconfigurations towards an agroecological urbanism (source; FAO, 2018)*

Spatial response of agroecology to conventional agro-industrial food systems

Therefore, to respond to the spatial limitation issues established earlier in this section, this research proposes a reconfiguration of urban and peri-urban land-use patterns to agroecological principles that will help address the urbanism structure of city-regions. Through the identified principles of agroecology, the following critical responses were synthesised to respond to the new field of agroecological urbanism. This responses evaluate the spatial capacities of new agricultural practices and their effect on spatial redistribution.

1. Agroecological city regions

A

B
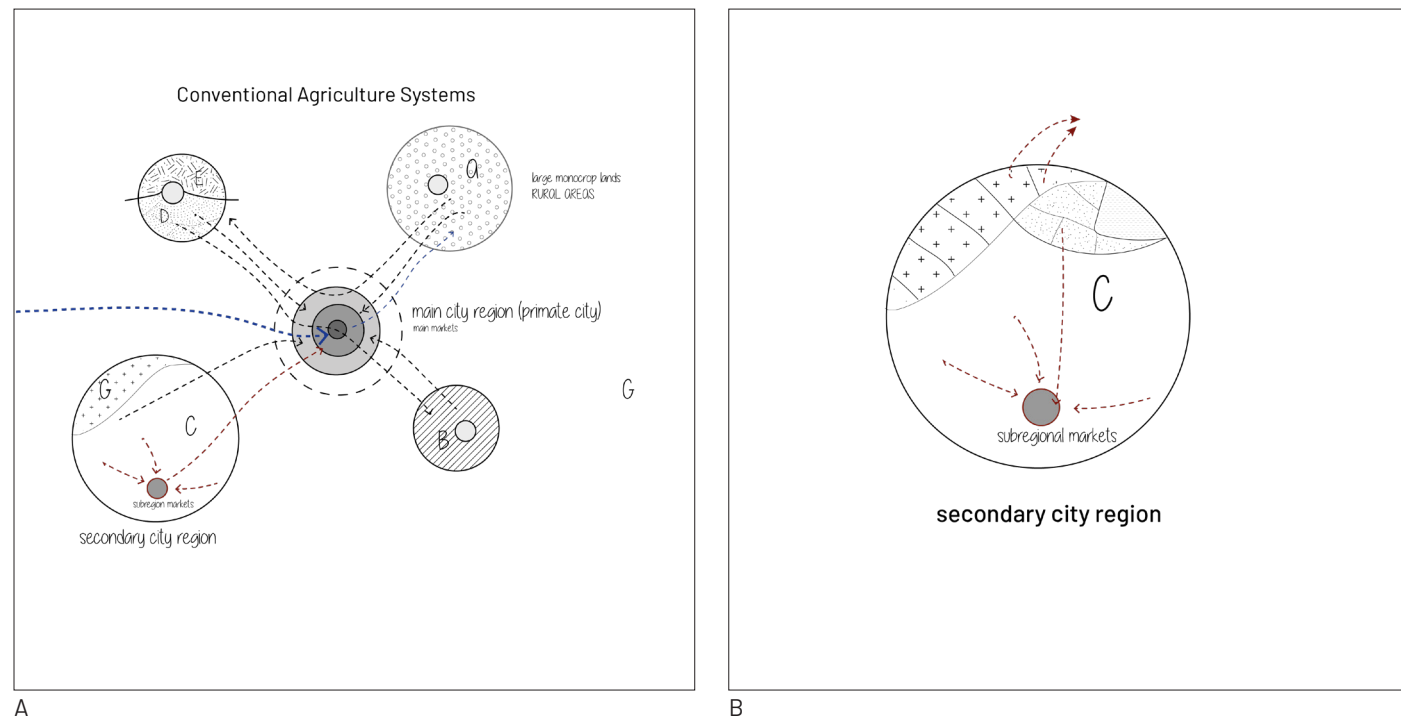
Fig.4 - 23: *A- Illustration of conventional agricultural landscapes and product flows around primary city markets, as they are practiced today. B- Subregional agricultural landscapes e.g.. Nakuru that provide urban functions for conventional rural agricultural landscapes.*

An agroecological city region food system approach provides a critical opportunity for analysis of rural-urban landscapes while questioning current policy suggestions and strategies for agricultures future. Making food the common denominator allows for dealing with the socio-political complexities of rural-urban landscape issues, which can then be addressed individually based on their relationship to food. Agroecological city regions advocate for the diversity of productive agricultural landscapes.

Diversity in the type of crops produced and the reduction of large scale industrial farms to return to a system of bio-diverse farms that conserve ecological systems. Current large scale plantations have been identified to destroy soils while exposing the environment to the constant weather changing patterns accelerating biodegradation. Therefore agroecology advocates for smaller regions that satisfy shorter food chains and the urbanisation of rural areas. Current conventional systems rely on central
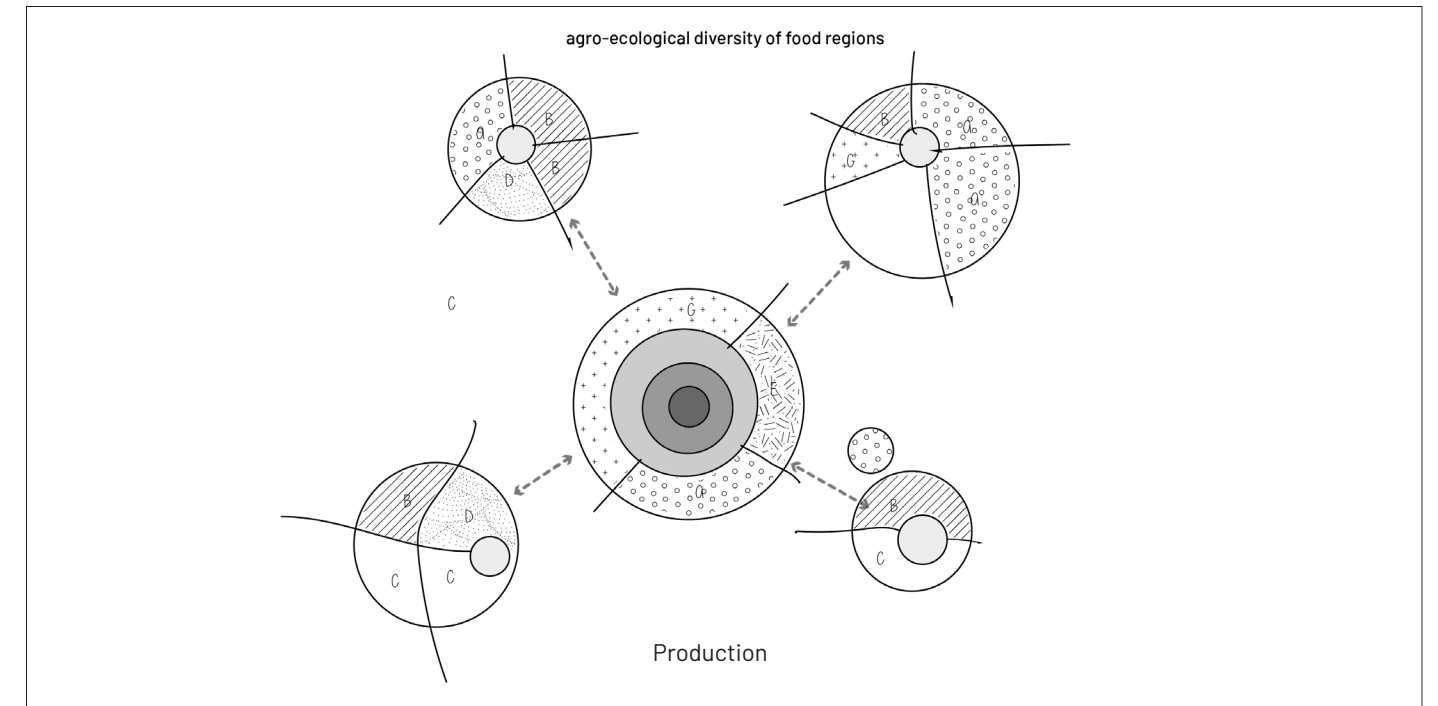
Production

Fig.4 - 24: *illustration of proposed agroecological production landcapes that support diversification of production landcapes to cater to principles such as diversification of crop and livestock sytems, agroforestry and crop rotation*

Processing, Manufacturing & Distribution
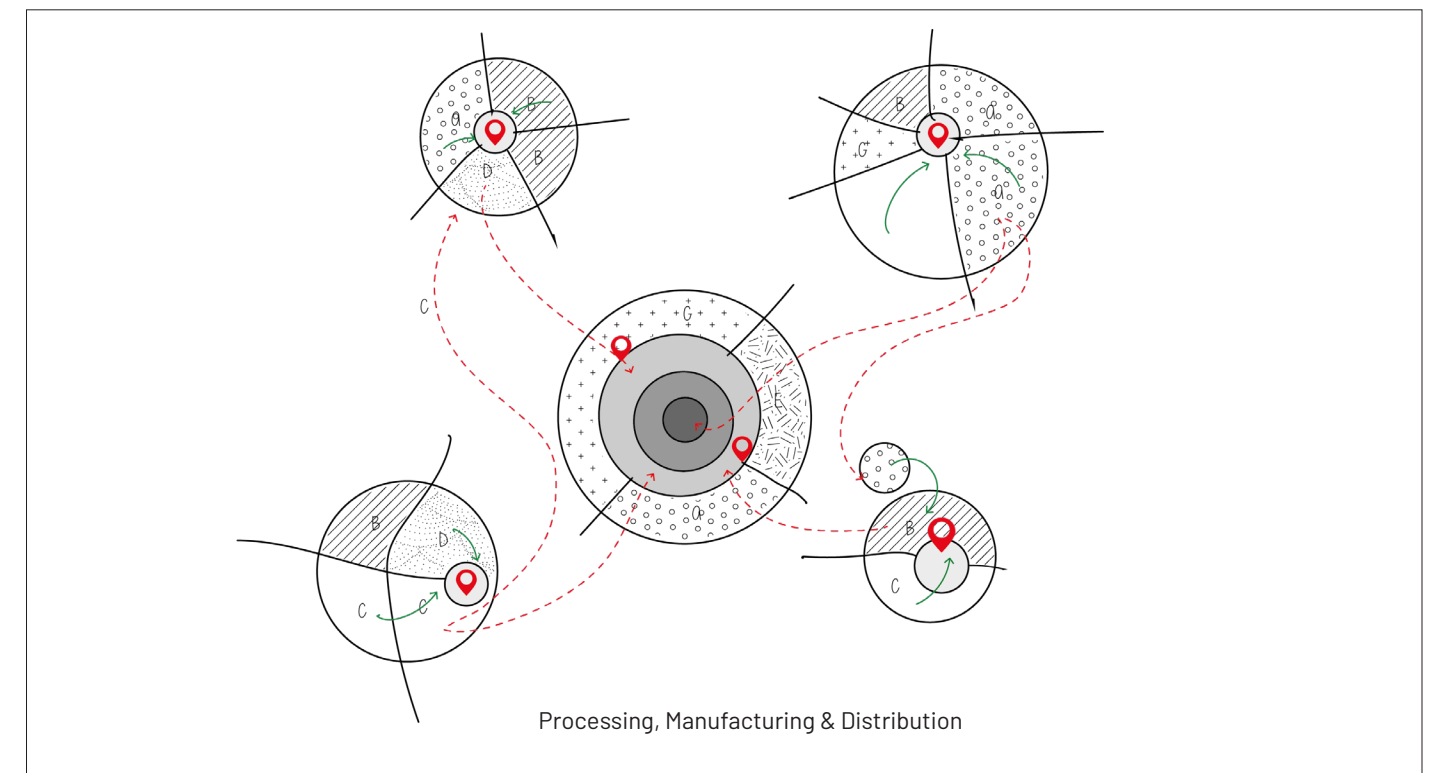
Fig.4 - 25: *illustration of proposed agroecological distribution of processing and manufcturing hubs. A sub-regional approach that creates alternative city-regions through urbanisation of rural areas provides for shorter food circuits and circular interventions in the food production chain.*
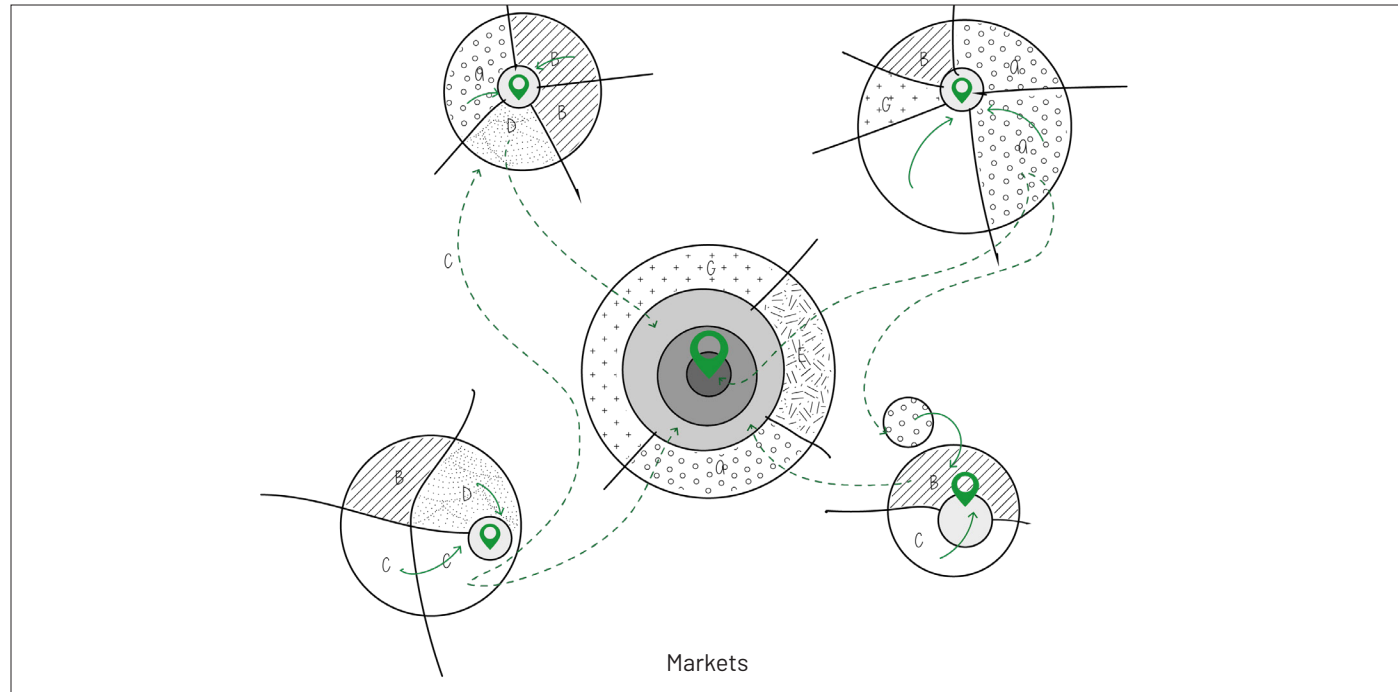
Fig.4 - 26: *illustration of diversification of consumer landscapes. Agroecology proposes the introduction of sustainable value chains that reconfigure the relationship between producers and consumers, and this requires a diversification of consumers from rural, peri-urban and urban landscapes*

2. Shorter food circuits

Fig.4 - 27: *illustration of current food value chains and the multiple stakeholders involved. Agroecology proposes a restructuring of stakeholder relationships to reduce on redundancies and shorten supply chains.*

markets around large neoliberal metropolitan areas that make the current industrial systems viable. Agroecology also calls for the diversification of produce through intergration of indeginous crop and livestock farming practices. In processing and manufacturing, there is a need for agroecological city-regions to decentralize industrial processing hubs to second-tier cities and secondary towns in order to provide opportunities for linking the

main urban centres with the regional rural hinterlands. Rural urbanisation then plays a role in the distribution of markets bringing them closer to the producers and developing sustainable food value chains.

The shortening of the supply chain may be interpreted under three different points of view: the reduction of the physical distance between the producer and the final consumers; the reduction of the number of processes that link the farmer to end retailers and final consumers or the increase of socio-cultural proximity between producers and consumers.

Benefits of Short Food supply chains

The expected benefits of shorter food supply chains will include the reduction in transport and transport costs which can in turn lead to the reduction in pollution. Through shorter food chains we can also achieve benefits of improved diets through easier access to fresh food and increased varieties. Peri-urban agriculture is also preserved

by encouraging its use in forming trade and production links between the rural and the urban.

Networkformed through this reconfigured value chains provide opportunities for strengthening social ties and increasing working opportunities for women, young people and vulnerable groups. The process of shortening agroecological food chains also requires the preservation of small scale farming techniques and food processing processes which are based on local knowledge and local agro-biodiversity, a process that is keen to reempower economic growth for small scale producers and retailers.

However it is also important to note that the shorter value chains have potential risks to overcome. This Short value chains will definitely see the increase in the 'true cost' of food through the reduction of resource efficiency that is

On Farm Selling

Farmer's market

Roadside selling

Box schemes

CSA

Farmers' Shops

SPG

pick your own

Public procurement

LOW
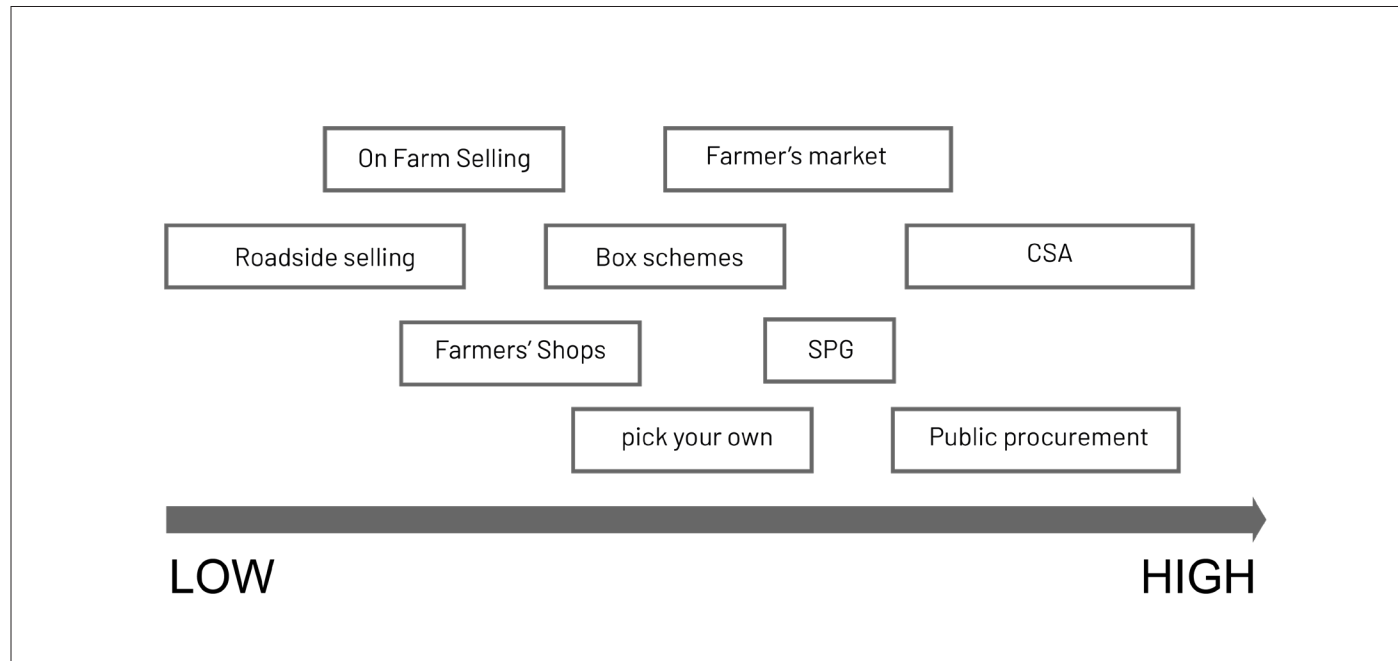
HIGH

Fig.4 - 28: *Current solutions for shortened food supply chains and their percieved socio-economic impact on value creation from low to high. (source: UNIDO, 2020)*

HO.Re.Ca

LOCAL AGRICULTURE

Food Hub

Public/ Collective Procurement

CONSUMERS

Farmers' markets/ Farmers' shops

SPGs, CSA, box schemes, consumer managed shops

on-farm selling, pick your own, roadside selling
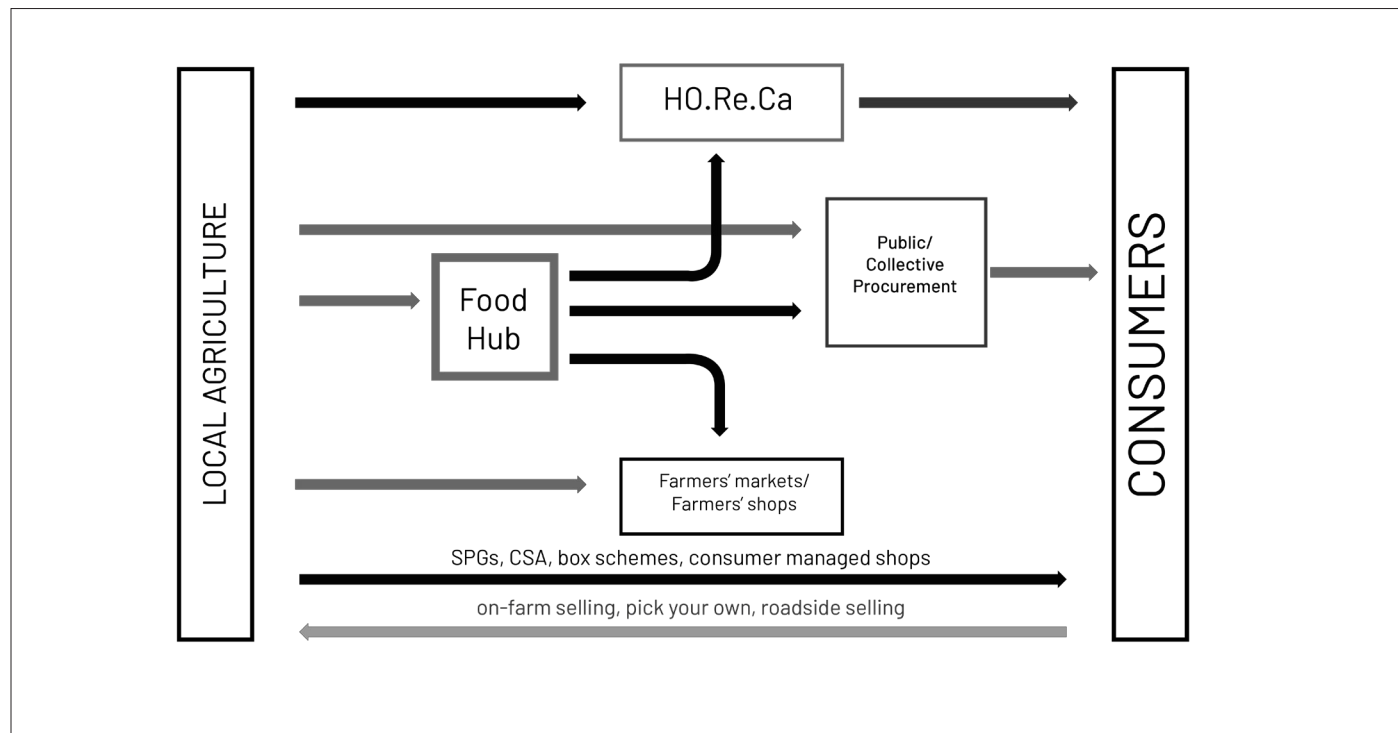
Fig.4 - 29: *Proposed shortened food supply chain landscapes for smaller agroecological city-region supply chains.*

attached to industrial large scale systems. A diversified and decentralized system also requires more resources in dealing with fppd control and safety issues and this needs proper regulation and participation from the relevant authorities.

3. Bio-diversity

Protecting the wild Rural

Recovering biodiversity in the Industrial Urban

Rewilding the Urban
urban habitat providing immune protective microbial exposure through biodiversity restoration
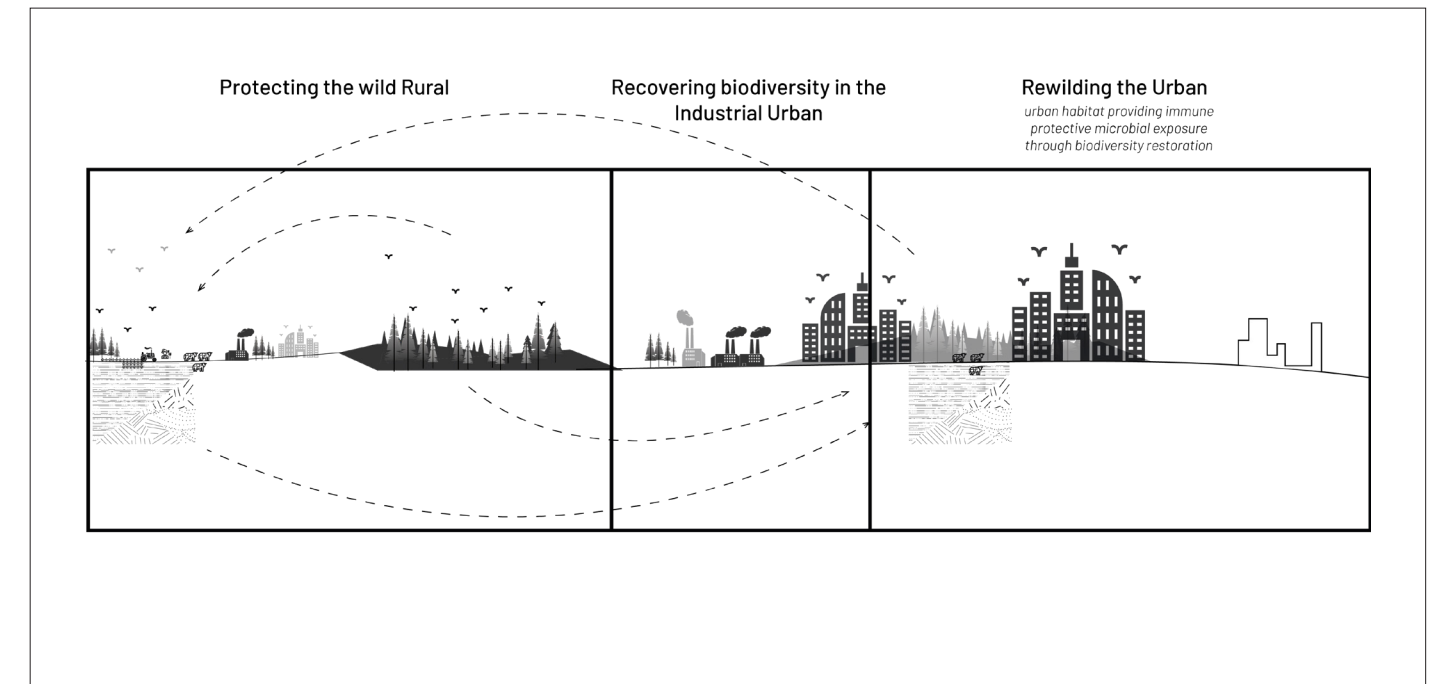
Fig.4 - 30: *Illustration of proposed bio-diversification of rural urban landscapes.*

Current unsustainable agricultural production practices are as a result of a vicious cycle of observed changes in natural climatic conditions, environmental degradation brought about by unsustainable production and consumption practices and an aggressive destruction of environmental and biological resources. Cities are intense energy and material consumption systems that exist in natural environments. This processes of consumption have led to a decline of environmental biodiversity not only within the boundaries of cities but also in the extent of their regional hinterlands. the merging of urban areas and agglomeration of cityscapes into metropolitan regions therefore threatens the viability of ecosystems within their natural contexts. Planning practice and governance should therefore endevour to reconcile urbanisation through city

production to the processes of ecosystem management and restoration. Agroecology proposes the protection of wild rural landscapes through diversification of productive environments for example through the integration of agroforestry and livestock into crop production. There is also a need to protect the peri-urban natural landscapes and restore already degraded landscapes by recovering as much biodiversity as possible. Urban landscapes through urban agriculture techniques can also restore biodiversity into urban areas, not only for environmental restoration but also for ensuring the well being of urban populations.

4. Circularity
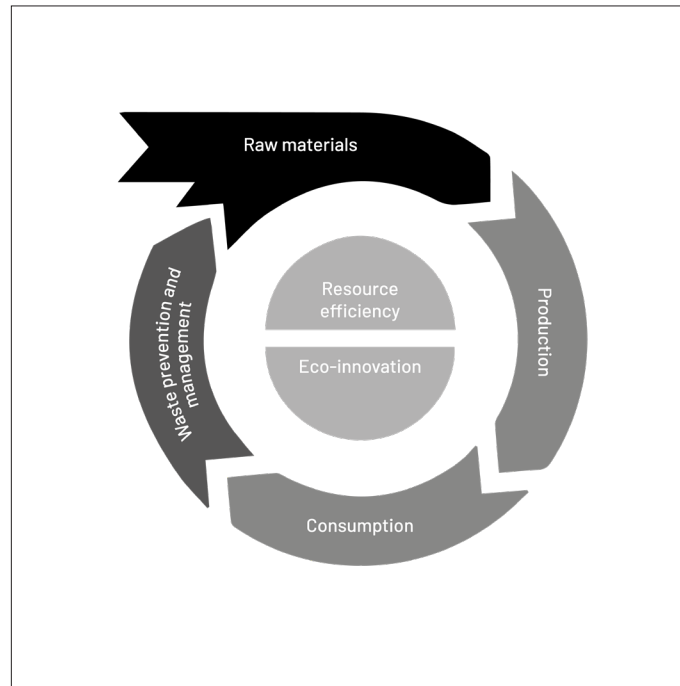
Fig.4 - 31: *Circularity principles of production-consumption relationships B- waste disposal from one of the food markets in Nakuru county (source; Author)*

Ciruclarity in agroecolgical principles then calls for the restructuring of current producer-consumer relationships in order to ensure the efficieny of food producing systems. The need for recycling food waste from consumers to producers across the rural, peri-urban and urban landscapes can increase efficiency in the system of food production. The current system is the Kenyan food system is quite wasteful and there is little symbiosis between the producers and consumers.

The shift to a circular economy is projected to offer benefits such as;

- improved resource security and decreased import dependency especially with the current conventional agricultural structure practised in Kenya

- reduced environmental impacts,

- economic benefits for small scale producers and retailers while empowering innovation of new systems for intended resource efficiency,

- social benefits of creation of new job opportunites across the whole city-region landscape and a reduction in reliance on rural urban migration to primary urban centres.

An Agroecological Urbanism

We therefore reconcile this agroecological principles that deal with urbanisation to develop the toolbox for agroecological urbanism. The concept of agroecological regions allows for reconciling production capacities at the regional level to new forms of markets. Bringing processing and manufacturing sites closer to the production areas and empowering a new rural consumer base will enable the shortening of food supply chains and creating a more efficient city region based on proximity and smaller scale capacities.

The importance of biodiversity in the transition to more sustainable urban landscapes cannot also be understated. The need to reconfigure not only city landcapes but also current conventional industrial rural landcapes provides for opportunities to deal with climate change issues and resource efficiency in agricultural productions.

Circularity also features heavily in the need to redefine producer-consumer relationships. Current agricultural industrial systems are structured to increase efficiency through continuous use of industrial production systems. Although efficient at large scales, they are inefficient for the production systems suggested within agroecological systems. There is a need then to empower innovation of small-scale technologies that will deal with the complexities of diversification of farm produce and the redifined scales of production across the rural-urban divide.

Therefore we see that these principles call for a reconfiguration of how urbanisation in the city-region is perceived. This requires a toolbox for an agroecological urbanism that redifnes the city region based on these new sustainable agricultural practices. The toolbox (see figure 4-32) provides for the basic principles of urbanisation that support the transition from current rural-urban agricultural landscapes to an agroecological city-region landscape (see figure 4-33).

The definition of the limits of the city-region landscape however requires proper governance strategies as urban limits are highly ambiguous and currently mainly defined through administrative boundaries. The change in use of productive landscapes within the peri-urban landscapes and the now proposed rural urban zones also require proper demarcation and governance to protect the necessary food production systems that support the city-region. The role of governance can therefore not be understated and the following section then looks at how the current regional food landscape is configured and how agroecology can respond to agroecological city-region urbanisation.
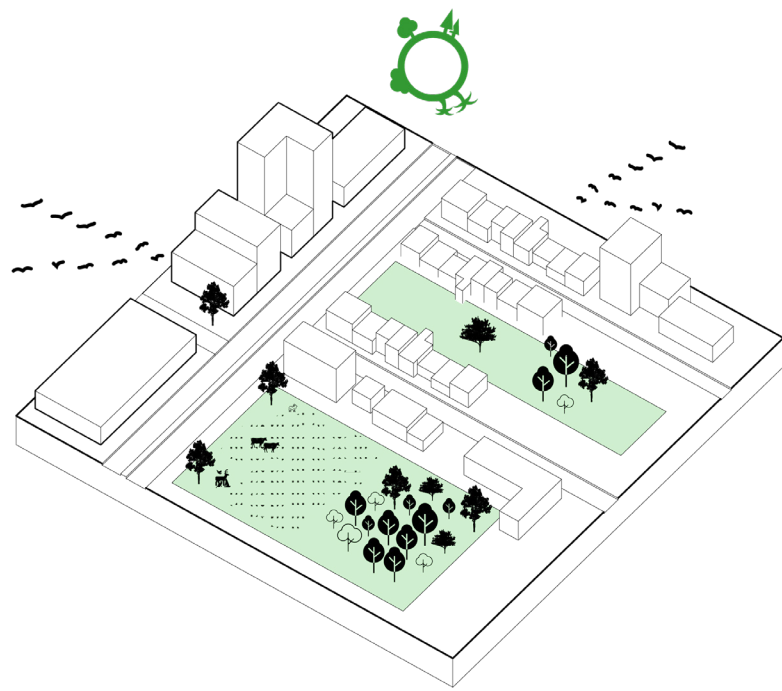
Urban bio-diversification

Urban and Peri-urban Agriculture

Diversified urban farming

Public food retail venues

Public farmers markets
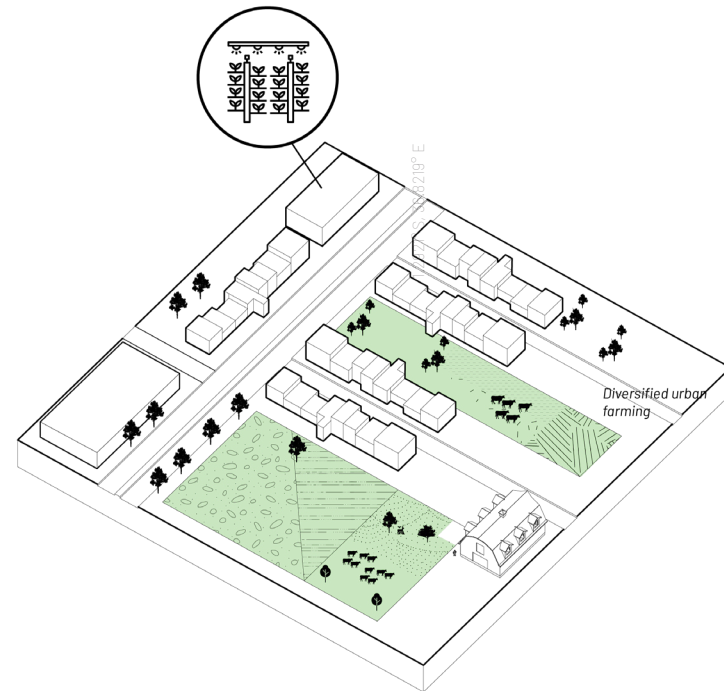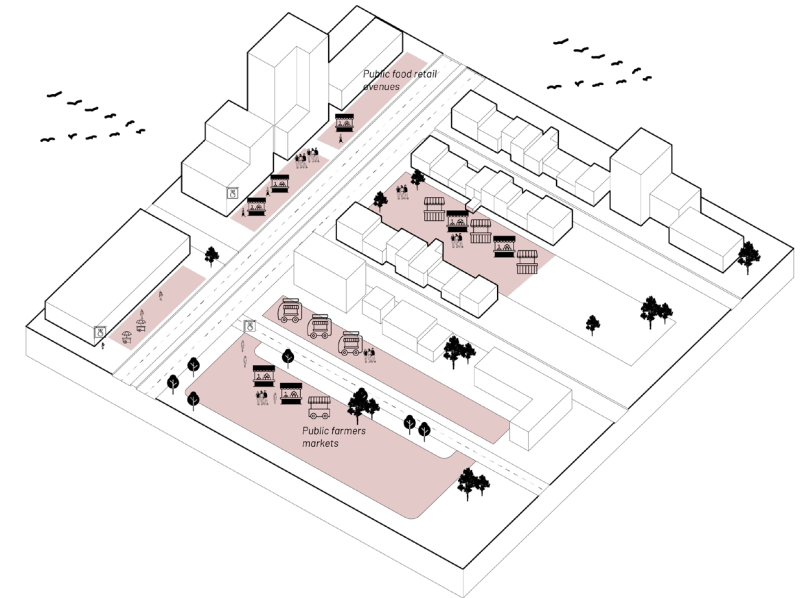
Reconfiguring public urban space for
small-scale producers and retailers

Crop & livestock mixed farming

Crop substitution and r practices

Including agroforestry in diversified environments
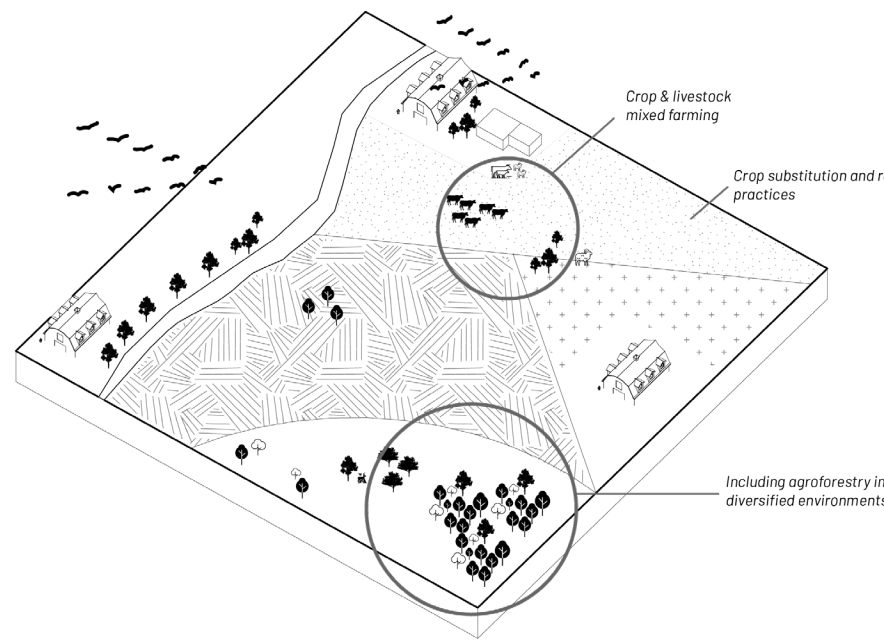
Rural production diversification through
indeginous and shared knowledge
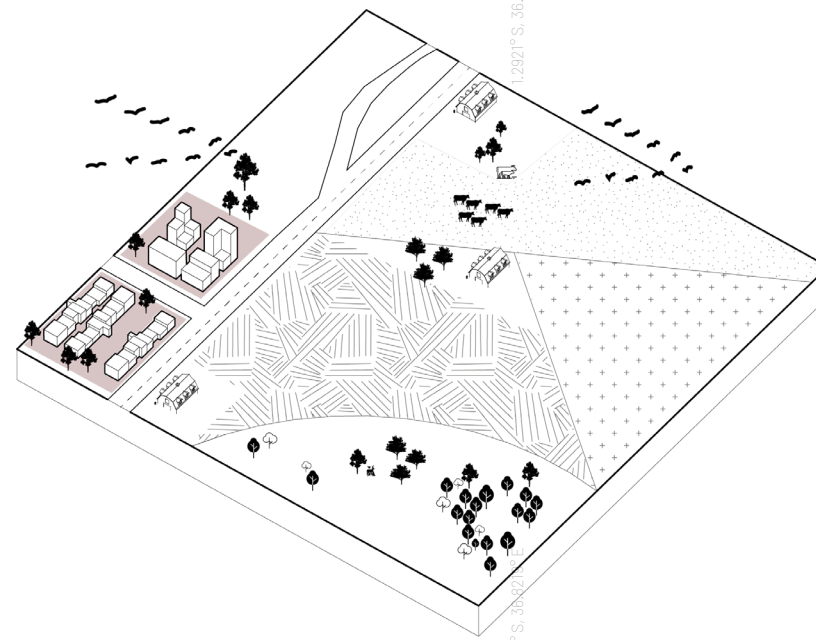
Urbanising rural landscape through
adaptive & diversified planning

Urban

Peri-urban

Rural

Ensuring resource and nutrient efficiency through circular practices

Defining the city-region boundaries

reconfiguring the producer-consumer landscape
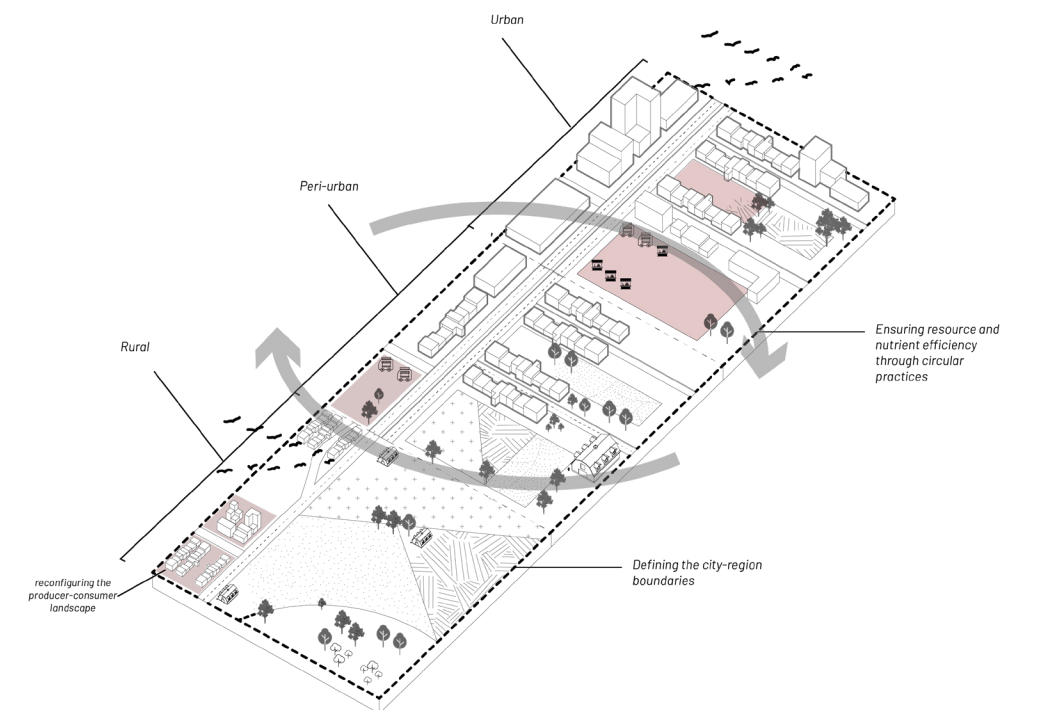
Blurring the rural-urban boundaries in agro-ecological city-regions

Fig.4 - 32: *Toolbox of agroecological urbanism*

diversifying rural production from
typical industrial mono-crop
plantations to indeginous and diverse
crop and livestock operations

creating multi-scale biodiverse
corridors between rural and
peri-urban landscapes with mixed
crop and livestock operations

increasing biodiversity in urban
areas and local urban food
production

urbanizing rural landscapes
to provide more
opportunities outside the
agricultural systems

RURAL

PERI-URBAN

URBAN

identifying city-region
boundaries based on current
agroproduction landscapes and
proximity to existing large urban
settlements

Fig.4 - 33: *proposed agroecological city region landscape based on the proposed toolbox of agroecological urbanism*

Planning practice and Governance and the city-region landscape

Urban governance systems in Kenya trace their history to the colonial period where the main urban centres (Nairobi, Kisumu, Mombasa) developed along the former British built, Kenya-Uganda railway. The current issues facing Nairobi and other urban centres can be attributed to the under-prioritization of urban planning and poor management with a historical anti-urban bias focused towards other productive socio-technical systems such as agriculture (Kitur, 2019). We can therefore see that the separation of social processes and economic processes of spatial production, as problematized in this research, have been historically prevalent in urban governance in Kenya. This led to the opportunistic and unsophisticated urban development that is visible in the current city structure of Nairobi. With this came the current system of donor organisation reliance, and uncoordinated, split action between policy development and implementation; a space for 'shadow states operating as para-state apparatuses' (Wolch, 1990) to thrive, in the provision of services within the growing informal systems. These non-governmental agencies are today among the main stakeholders in governance and planning in the informal settlements resulting in adaptive place-making initiatives, that places individuals and communities as key change agents as an everyday coping and survival strategy (Andres et al., 2019). In the previous section we have also seen the impact of donor funds from private organizations within the conventional agricultural sector. We clearly see the influence of historical and ongoing systems of external influence in socio-technical systems and governance in the Kenyan rural-urban landscape and this brings up issues of the persistence of neo-colonial governance structures within current global south states. Due to the time and scope limits of this research, we could not pursue in depth the issue of this external agents in planning practice and governance. This introduction however provides an opportunity for further research into the issue.

In general, we see a situation where rural planning and governance agendas have generally been relegated to the concerns of the Ministry of Agriculture, while urban areas are within the Ministry responsible for Urban development. This supports Kitur's (2019) observation that the uncoordinated shifts between urban bias and support for productive socio-technical systems have created a fragmented landscape for planning practice and governance.
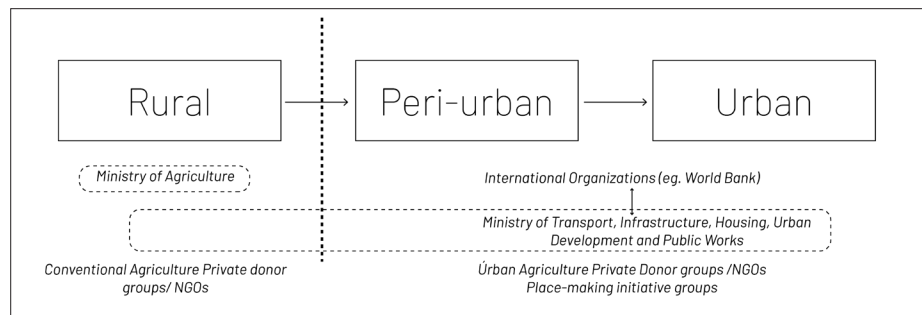
Fig.4 - 34: *Rural-urban governance structure showing the relevant authorities and the private institutions influencing production landscapes*

A

B
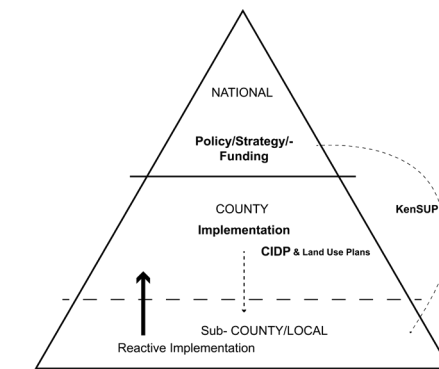
C

Fig.4 - 35: *Current urban renewal projects by the current National government, A- slum clearance for road construction, B- ongoing construction of low cost housing settlements for civil servant and low income earners in the city of Nairobi, C- Current Structure of political governance in Kenya showing the hierarchy between National government and Devolved governments.*

Planning across the city-region landscape is therefore highly disintegrated. The formation of the now familiar community networks within the peripheries; as sources of economic and social sustenance in the city then begins to thrive in a bid to adapt to the shortcomings of normative planning strategies. The actual socio-economic relationships within this 'informal' spaces are differently networked from those in formal spaces. The real power relations are unconventional, and informal (Simone, 2008) African cities are highly characterized by informal settlements – perceived as the negative of transparency (that modernist regimes so desire) and as the shadowy parts of society, where arbitrary political action takes place (Rakodi, 2006).

A common policy and action response by governance systems in Nairobi, to the development of these informal settlements, is the demolition, relocation and renewal of informal settlements, to make way for new high-rise housing estates (see figures 4-35 A & B). This has led to an increasing disconnect between the economic urban infrastructure and the socio-cultural structures of urban dwellers in many Sub-Saharan African cities. The result being the disruption of socio-economic activities and community structures that the inhabitant populations typically rely on for their survival. As a result of this unjust displacement techniques of formal governance systems, majority of urban informal residents turn to transitory patterns and networks within the city-region for their socio-economic sustenance. For most Nairobi urbanites; the city provides mainly economic resource connections, while maintaining strong socio-cultural rural connections. (Bassey & Obwona Aber, 2017; Rakodi, 2006; Landau, 2018). The city-region as a social-economic landscape is alive and well and this provides a perfect opportunity for restructuring adaptive governance along this landscape.

There is a need to define urban governance in Kenya from the context of the everyday encounters of the majority of urban citizens. To acknowledge that in the African context, the 'informal' is indeed the formal and to define these systems as urbanism principles in order to give power of contest to the majority population of global south cities.

Planning practice & governance in Kenya

Based on the constitution of Kenya (2010), Planning and Agriculture are partially devolved functions of government where the national government focuses on Policy and Strategy development and Capacity building while the counties focus on implementation (See figure). Implementation is therefore distributed to the 47 county governments (devolved territories) in Kenya. These two functions are similarly categorized within their two respective Ministries of the National Government, with subsequent devolved ministries created at the county level. This structure of governance provides adequate opportunities and challenges for efficient governance. Different stakeholders are therefore active at different

national

Ministry of Agriculture

- State Department for Livestock
- State Department for Crop development & Agricultural Research
- State Department for Cooperatives
- State Department for Fisheries, Aquaculture & the Blue Economy

Research & Innovation | Agricultural Policy & Linkages | Knowledge Management

RESEARCH ECOSYSTEM

Research Insitutions | Policy Analysis groups | Funding & Innovation Agencies

Universities | NGO's | Professional Bodies | CBO's

Ministry of LANDS & PHYSICAL PLANNING

National Land Commission

- Land Administration
- Survey & Mapping
- Physical Planning Advisory

Ministry of Transport, Infrastructure, Housing, Urban Development& Public Works

- State Department for Transport
- State Department for Infrastructure
- State Department for Public Works
- State Department for Housing & Urban Development
- State Department for Maritime & Shipping Affairs

Department of Housing | Kenya Slum Upgrading Programme(KENSUP) | Urban & Metropolitan Department | CSHSF & Estates Management

Donor Working Groups | NGO's

county

County Executive Member - Food/ Agriculture/ Forestry/ Livestock/ Irrigation etc | County Assembly committee member

Sector Ag.- Food/ Agriculture/ Forestry/ Livestock/ Irrigation etc

Extension Officers

County Executive Member - Urban development/ Lands/ Physical Planning/ Municipal Administration *executive* | County Assembly committee member *assembly representation* | County Planners *planning unit*

NGO's | Professional Bodies

local

Local Community Members/ Farmers etc. | CBO's

CBO's | Sub county Sector Ag.- Urban development/ Lands/ Physical Planning/ etc | City/ Municipality/Town Board | Sub-County/City/Town Planners

Fig.4 - 36: *Analysis of current governance structure indicating the relationships between different stakeholders within the spatial planning department and the agricultural departments at the national and county level. The structure also indicates the role of the ministry of lands and physical planning which is a regulatory and administrative intermediary for all socio-technical ministries that deal with land.*

levels of governance based on their influence and power.

Additionally, In the Kenyan case, there is a Ministry of Lands that oversees all Ministries that have a claim on land resources by providing planning advisory and capacity building. Its main aim is land administration and it operates at the national level. Through the national Land Commission, which plays a huge role in arbitration of land issues and planning that affects cultural issues. Figure 4-36 shows this structure of governance of Agricultural and Urban Planning governance within the Kenyan context.

Implementation and Participation

The split between policy creation and implementation has been identified as one barrier to the proper administration of planning in the region as counties do not have incentives to implement policies that they did not create (Kitur, 2019). This structure of split policy and implementation needs to be re-evaluated if meaningful planning has to take place. Similarly, In Kenya the focus has been on economic planning with little or no regard for spatial/physical Planning. This has led to a major disconnect between the two aspects leading to uncoordinated and unguided development (Department of Physical Planning, 2015).

The Urban Areas and Cities Act -2011, which is the main legal document that provides for the classification, governance and management of urban areas in Kenya, provides for multi-stakeholder participation within the formal systems of planning. It allows for provisions of institutionalization of resident participation in the service delivery concerns of their local urban centres. However, administration and implementation still remain in the purview of the state. The devolution of governance and planning functions provides an avenue for reform in urban planning and land-management institutions that were previously highly centralized, technocratic and largely non-participatory, rendering urban planning ineffective (Kitur, 2019, Cira et al., 2016). Similarly, the provision that allows each county to develop their own county development plans as well as collaborate on integrated inter-county development plans, is seen as a tool for collaborative governance and an opportunity for other metro-regions to emerge. This is supported through the Ministry of Lands and physical planning which developed the physical planning act recommending the relevant stakeholders, committees, policies and plans that are required for the urban development in the country- see Figure 4-39.

However, the main shortcoming of this new system of governance is its reliance on the territorialization of devolved units of government along administrative boundaries, where inter-county development is backed only by policy recommendations that rely on administrative goodwill at the devolved level. Current county governments have over the past regimes been heavily focused on the development of County Integrated Development Plans (CIDPS) and county sectoral plans which makes the work of regional integration quite bureaucratic (see fig 4-40). The city-region analysis of the Nairobi metro-region is already a clear indicator that socio-technical systems operate oblivious of administrative boundaries(fig 4-41). Actions towards integrated socio-technical and spatial systems, which is the norm in city-regions, might therefore eventually not take place, if it is not backed by decisive legislations and action. Within the current governance systems, where metropolitan integration is taking place, as in the case of the Nairobi region, it is based on the premise of administrative take overs that give prominence to clientelist agendas of metropolitan city planning. Planning and governance remain highly attached to utopian mindsets within administrative territories while on the contrary, individual actions in the peripheries are highly reliant on social relationships with little formal governance support.
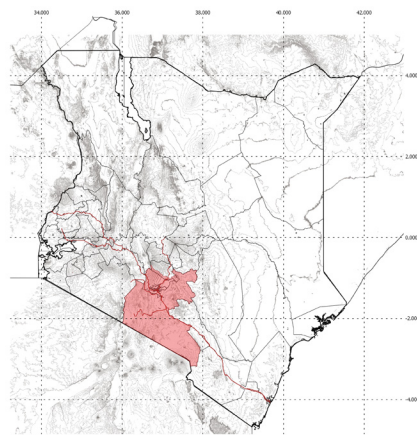
Fig.4 - 37: *Nairobi metropolitan region*
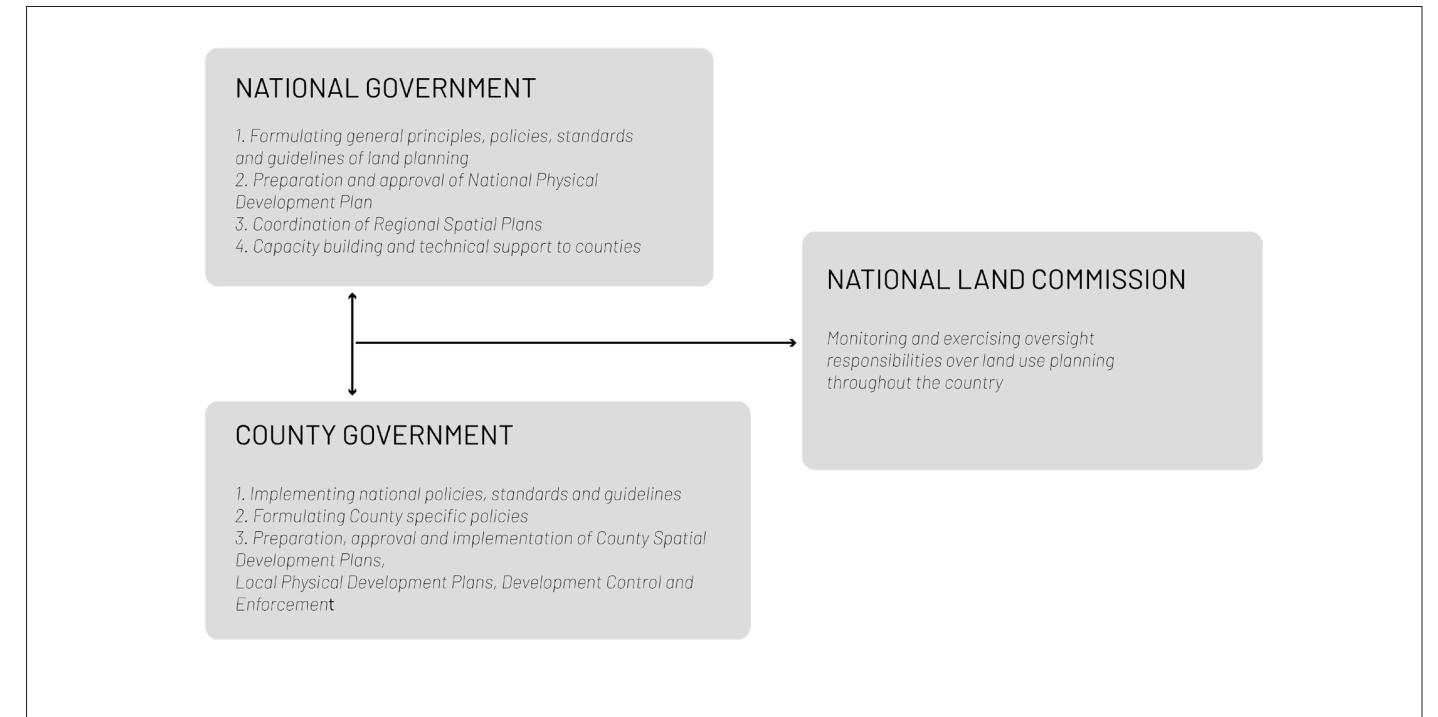
Fig.4 - 38: *Functions of the different levels of government in spatial planning and their relationship to the national land commission within the Ministry of Lands and Physical planning.*
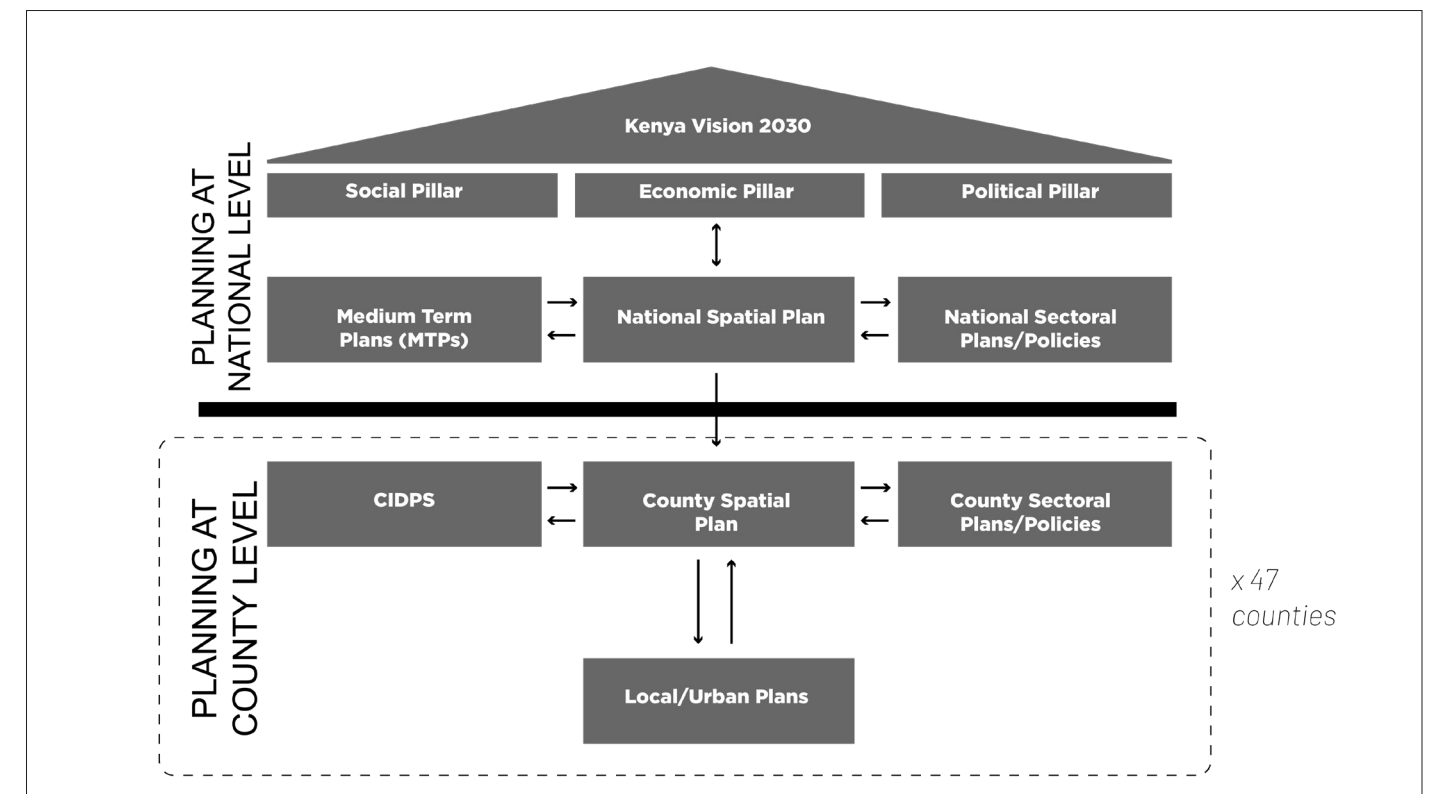
Fig.4 - 39: *National framework of planning and the relevant policies and plans required for urban development in the country. Planning at the county level takes place within the 47 devolved territories of county government*
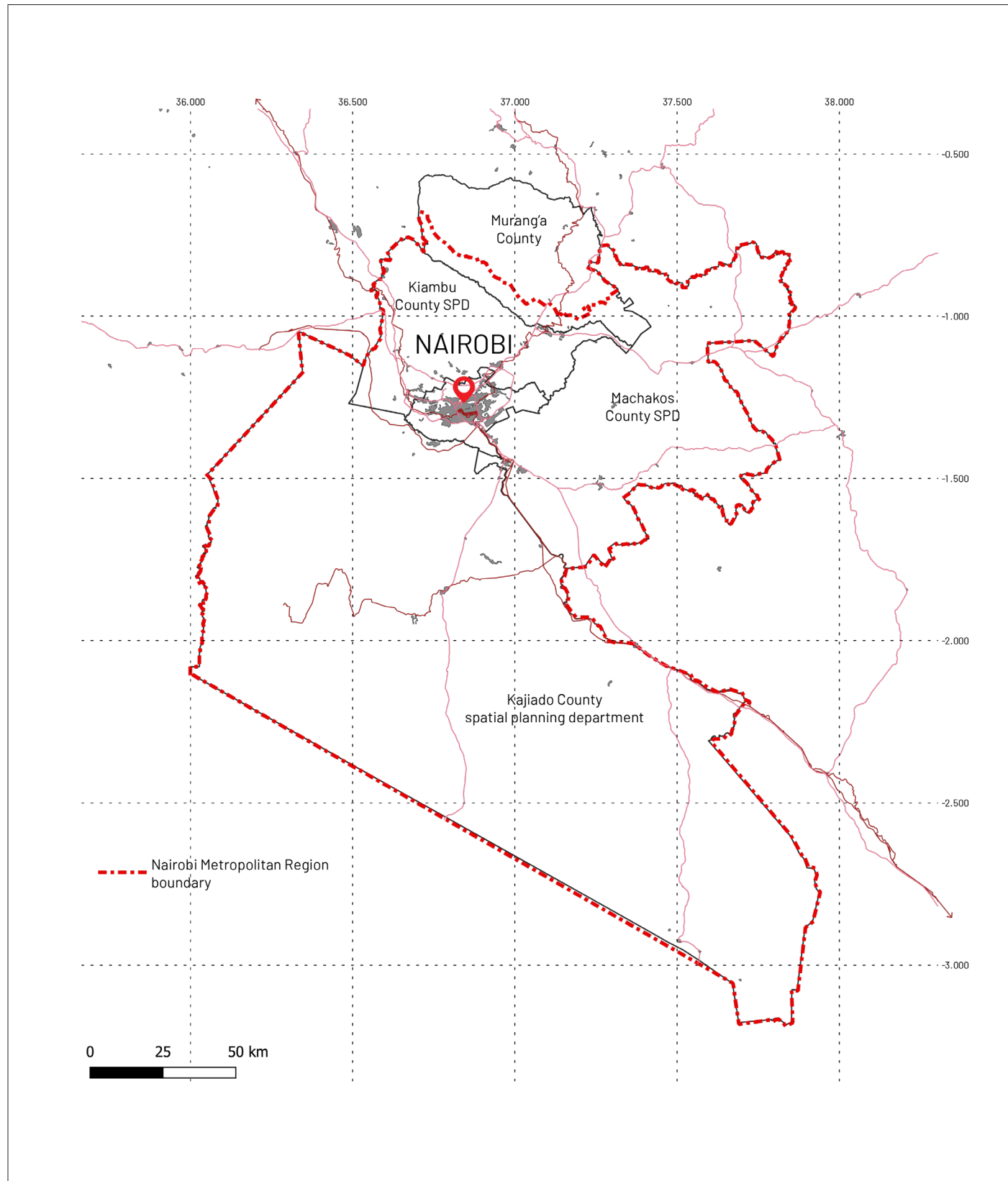
Fig.4 - 40: *Administrative boundaries of Nairobi Metropolitan region and the counties that it covers. The metro-region includes 3 other counties(Kiambu, Machakos and Kajiado) besides Nairobi and a portion of Murang'a county on the upper boundary.*
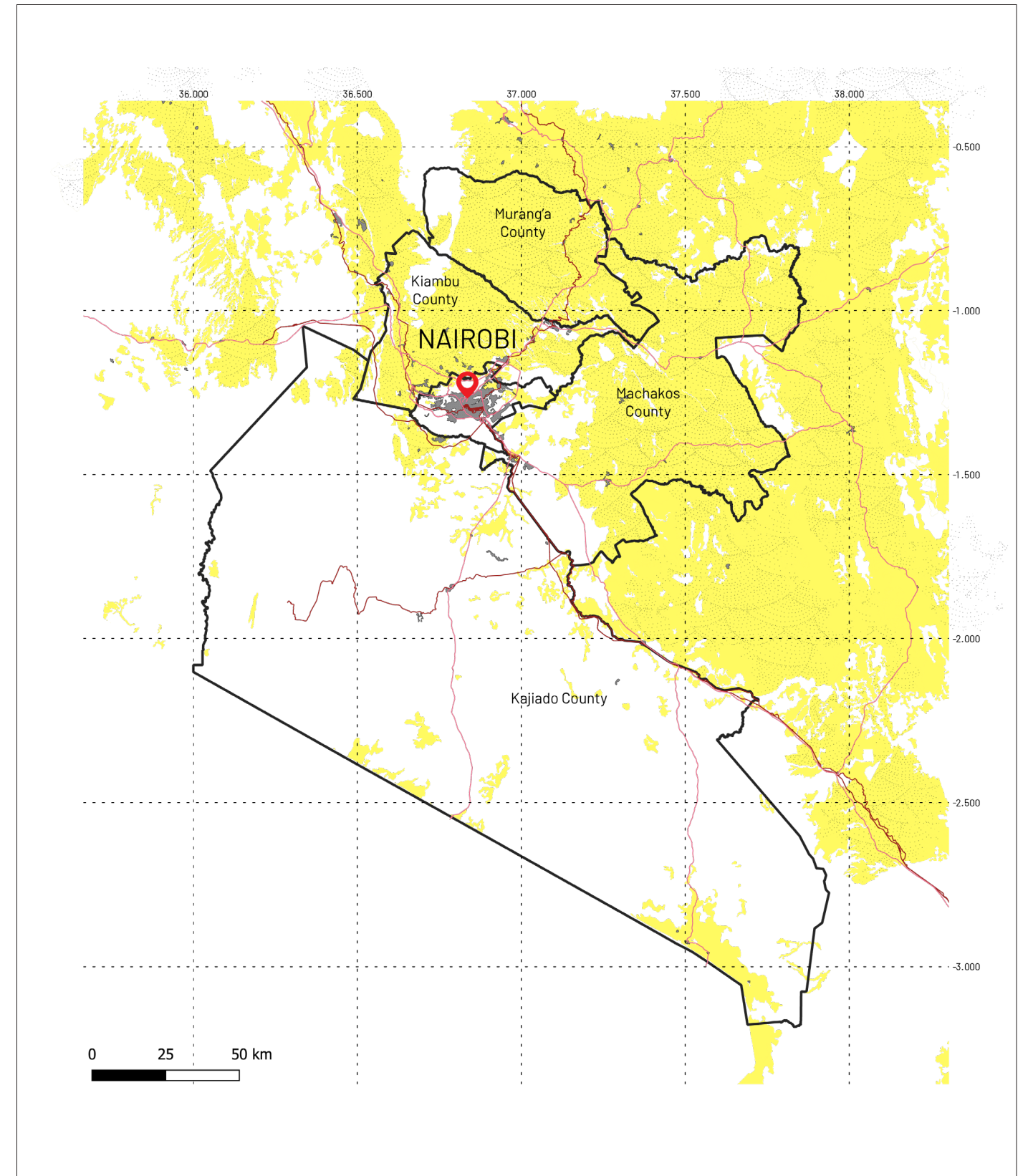
Fig.4 - 41: *An illustration of the agricultural extents of Nairobi's rural city-region food system. The region heavily relies on food produce from the rural hinterlands and this affects the capacity for this city-regions to sustain independent urban growth*
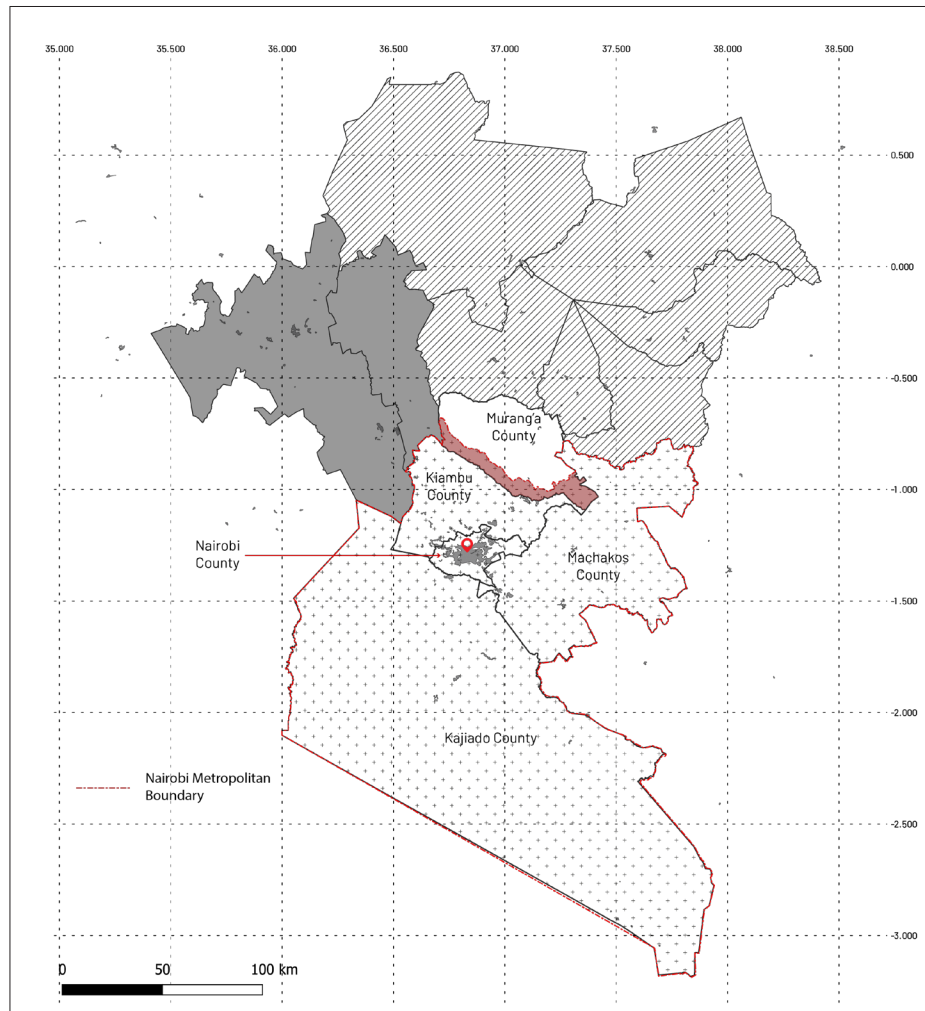
Fig.4 - 42: *Direct Administrative and economic influence extent of the Nairobi metro region on its sur-rounding regions.*

As illustrated in figures 4-40 the metropolization of nairobi shows the potential for regionalizing urbanisation in the country for distributed regional planning but it also creates administrative issues where it tries to integrate Spatial planning departments that work with independently created County Integrated Development Plansfor their admnistrative boundaries. In the case of integrating the Nairobi region, we see a situation where this metropolitan plan requires hostile administrative actions for integration. Looking at figure 4-41, we see a situation where the agriculturally productive hinterlands that feed the city extend beyond city boundaries and with the current primacy issues this dependence extends across the entire country. There is a need therefore to relook at how regional distribution of urbanisation can take place through sustainable city region food systems. As identified earlier that the two towns of Nyeri and Nakuru already function as sustainable city regions, perhaps this provides a case for reconfiguring the Nairobi Metropolitan area into a sustainable agro-ecological city-region as illustrated on figure 4-42.

Governing Common Space

A main point of concern for the governance and planning of multi-sectoral socio-technical systems is the use of public space. Formally recognized public land uses do not extend to the economic activities of peripheral individuals as practised within the current setup of urban informality. This is widely observed among the activities of food vendors within the city. This brings about conflicts of land tenure in commercial land use within informal agro-food activities. Although formal planning policies and strategies recognize issues of urban and city-region development, micro-scale networked strategies as practised in the peripheries, are hard to govern through formal rigid systems. The gap in dealing with temporary and fluid rhythms of the everyday and the associated place-making dynamics become clearly visible. in informal systems. The dynamic nature of informal activities (see figures 4-43 A, B & C) conflicts with the limited adaptability of planning at the macro-scale. Socio-economic micro-activities and systems of city-regions, such as in the agro-industrial food sector, are highly dynamic and complex, and insurgent spatial interventions that deal with the absence of institutional interventions become quite place specific. This place-specificity and dynamism needs to be properly addressed in order to foster adoption of these systems across city-region scales.

As observed from peri-urban farmers making use of public space to achieve shorter food chains and direct producer consumer relationships, the city-region governance system needs to establish the capacity for such adaptive needs especially where they take place as a result of unexpected vulnerabilities.

A

B

C

Fig.4 - 43: *Spatial appropriation of public space by the informal sector. A- informal roadside food and goods stalls. B- A busy informal market along the roadside in one of Nairobi's settlements. C- Roadside car food sales along a busy road where peripheral and rural farmers sell their produce directly to consumers.*

Policy analysis

To understand which policies and strategies have been developed to address urban planning and agriculture governance and practices, this research undertook an in-depth review of the following policies and strategies that are in use in Kenya today;

National Spatial Plan,
Agricultural Sector Transformation and Growth Strategy (AGTS),
Physical Planning and Land Use Act,
Urban Areas and Cities Act, Vision 2030,
Nairobi Metro 2030 Strategy,
National Land Use Policy (2019),
County Spatial Planning Guidelines,
Agricultural Act of Kenya

Unfortunately, at the time of developing this final proposal, I had yet to review the National Urban Policy due to accessibility issues.

Findings

The two Constitutional Acts (Agriculture and Physical Planning) reviewed were precise in the issues they addressed and both give reference to the importance of inclusive planning that takes into consideration the culture and heritage of the people. However, a major glaring omission in the Physical Planning and Land Use Act is the omission of the Ministry of Agriculture representatives in the National Physical Planning and Land Use Consultative Forum. The inclusion of other representatives from different socio-technical systems in the country, e.g., Energy, Tourism and Culture and the omission of agriculture representatives as default members, despite national consensus in other documents, on the importance of agriculture to the economy of the country, needs further review. This indirectly reduces the influence of Agricultural systems in the representation of Land Use discussions at a time when the reconfiguration of the City-region landscape for sustainable urbanisation, highly relies on food systems.

The National Spatial Plan is an integrated document based on other policies and technical fields to create a comprehensive national vision for spatial development. It clearly articulates the problems facing urbanisation and other socio-technical systems in the country such as unregulated urbanisation, environmental degradation and unbalanced development, making it a comprehensive plan for sustainable growth within the current economic mindset. Despite its comprehensive analysis of the issues facing spatial planning, it falls shot of proposing visions outside the normative structure of planning inherited from the colonial government of viewing the northern ASALs as regions in need of modern urbanisation rather than development based on their capacities. Its need for inclusive planning to address former marginalization development patterns should also comprehensively address potential capacities

of the region, both as productive industrial zones and as agricultural regions with indigenous knowledge for sustainable ecological inclusion

The Agricultural Sector Transformation and Growth Strategy and the Agricultural Act, outline the roles of different stakeholders in improving the socio-economic situation of farmers, by increasing agricultural output, to improve food security, household resilience and nutrition. The AGTS briefly highlights the importance of research and development of agroecological farming systems in ensuring resilient farming, but however mostly focuses on the empowerment of conventional systems in order to empower small-scale productivity to achieve improved incomes for small-scale farmers. The role of agroecological systems in the transformation of the agriculture sector should however be given more prominence as it has already established the importance of shared traditional and indigenous knowledge and agriculture produce for addressing food sovereignty and nutrition issues.

At the County Level, the County Spatial Planning Guidelines, clearly define the role of the County administration in the implementation of urban planning policies developed at a national level. It also clearly articulates the challenges of devolution on planning practice and governance. It highlights the inadequate capacity (institutional and financial) to tackle planning at the county level, the poor co-ordination between the national and county government and the poor implementation of existing plans. The challenges at the county level, although at a very early stage of devolution implementation, need proper coordinated response as socio-cultural and economic processes are highly fluid against the rigid systems of territorial administration. The lack of proper spatial plans by most counties also makes it difficult for planning to keep up with the rapid economic growth in the country. There is a need to address vision planning both at the national and county level as a point of departure for other economic planning processes.

The lack of an policy on urban agriculture also needs to be addressed if the issues of urban land-uses within agro-food systems are to be formally resolved. With proposals for distributed urban growth to cover rapidly growing towns, A policy for urban land-uses that comprehensively tackles the Urban Agriculture issue might help create the missing link for city-region agroecological planning. The National Urban and Peri-Urban Agriculture and Livestock Policy, 2010, is still in the first draft stage (Omondi, 2020). A multi-sectoral approach that relies on policies and laws from different sectors of government is currently in use to manage urban agriculture.

Most of the documents are keen to align visions and purpose to the socio-economic and political development of the country, with cultural heritage being recognized as a very important factor for inclusive development. The documents majorly align to the Vision 2030 plan which is based on the growth of social, economic and political principles.

Peripheral food system governance

To maximise the benefits derived from the regional agricultural socio-technical system, individuals and households within the informal sector develop adaptive socio-economic, and political structures over time, in an attempt to adapt to the terror of a system of governance that only sees the potential for modernity rather than the reality of adaptive informality. Subsequently, community-led and community-based organizations such as the Nairobi and Environs Food Security, Agriculture and Livestock Forum (NEFSALF) which we engaged with in the field research, develop within the networks of stakeholders involved in this system. NEFSALF brings together stakeholders in the Urban agriculture sector to advocate for the empowerment of urban farming within the different government frameworks available. Figure 4-44 illustrates how this adaptive networks engage with different stakeholders within the Nairobi county region.
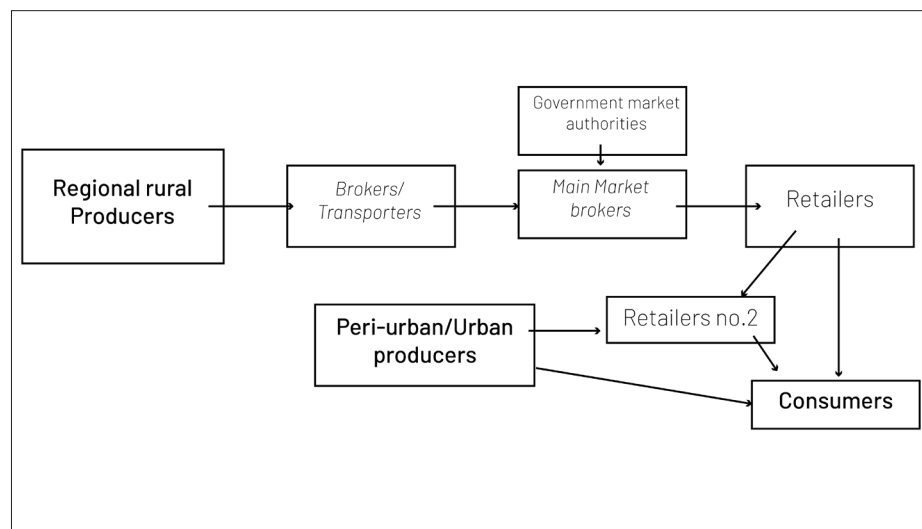
Fig.4 - 44: *Network of stakeholders in the regional food system of Nairobi*

For instance, in the food systems of Nairobi, small scale rural and urban producers pool together to provide bulk produce in order to negotiate better prices for their produce from distributors. In the markets, the wholesalers and retailers also create their own networks that enable them negotiate better prices from distributors and also as bargaining tools for better spaces and services from government agencies. Supply and demand information and feedback is also disseminated through an intermingling of these networks of consumers, retailers and producers despite their broad regional extents. Within the urban centres, where formal trading space is unavailable, informal traders similarly align together to either negotiate for public retail space or in the case of small-scale traders, to appropriate it as insurgent action for their economic activities. Commonly, urban farming is practised informally on empty parcels of public land or along infrastructure way-leaves and riparian zones (see figure 4-45 A-C).

Fig.4 - 45: *Urban agricultural practices across the Nairobi peripheries indicating land access issues. A- farming along a municipal open drainage channel. B- Vertical farming by young people in Nairobi. C-Urban farming in small public parcels of land in Kibera Slum. (Source; A- Author, B-, C, https://www.architectural-review.com/buildings/gardens-of-kibera-the-kibera-public-space-project-by-kounkey-design-initiative.)*

At times these insurgent urban farmers enter in-formal lease agreements with private land owners to farm on private land. Urban farmers form networks that allow them to negotiate informally with communities, local authorities and land owners or in recent cases to advocate for legal rights to urban farming as with the case with NEFSALF. Although some government institutions recognize and participate in these informal negotiations of space, they remain unrecognised in formal urban management systems as the laws of urban farming are still new and rigid. Dealing with the bureaucratic processes of urban farming as they are currently set up becomes too tedious as Respondent P400.

Para-state apparatuses are similarly heavily felt within the informal networks. Multi-stakeholder collaboration across different scales is also highly prevalent. Collaborative initiatives between NGOs such as RUAF, Mazingira Institute, FAO-Kenya etc. and local stakeholders in the food system, have been crucial in advocating for city-region food system approaches both formally and in the informal sector. Such systems geared at building resilience for stakeholders at the individual and household level appreciate the need for place-based policies and initiatives and this provides an advocacy voice for multi-level stakeholder engagements. It is through advocacy within these multi-stakeholder settings that urban farming is now recognized as a formal land use category in Nairobi's spatial planning by-laws.

However, the influence of this private para-state entities in governance structures especially in the rural and informal sector raises questions of self sustenance in governance and their effect in creating non-responsible governance systems especially in such vulnerable contexts where they practice community

A

rural Consumers

small-scale producer networks

small scale rural producer 1

small scale rural producer 2

small scale rural producer 3

Agriculture & Planning authorities

urban retailers networks

In-market retailer

Small scale retailer 2

Independent retailer 3

urban Consumers

Farm broker

Main market broker

Farm broker 2
new B2B business model

large scale producer 1

Producers

large scale producer 2

peri-urban producer 1

Peri-urban producer 2

Urban producers

Urban producers

Urban producers

urban producer networks

B

Youth Group

Urban Farmer (Public land) 1

Savings Cooperative

Urban Farmer 2

Peri-Urban Farmer 4

Urban Farmer (own land) 3

NGO's

NGO 1

NETWORKING ORGANISATION
eg. NEFSALF
(Nairobi and environs food security Agriculture and Livestock Forum)

Consumer

Research Organisations

Water & Sanitation

Urban Agriculture department

Lands, Urban planning Sector

Food, Agriculture and Forestry Sector

State Department crop development and Agricultural Research

Health Services

NAIROBI CITY COUNTY

Ministry of Agriculture

Ministry of Health

Fig.4 - 46: *Regional structure of stakeholders in the food provision system of Nairobi and the networks formed within the stakeholder system for self-regulation B- Analysis of the Urban producers network and how it operates and the relationships between stakeholders as highlighted in C.*

engagement.

Responsible governance should cater to the provision of public resources for improved planning practice in such vulnerable situations. Until then, the system remains highly regional, relying heavily on rural and peri-urban production forces and insurgent appropriation and place-making actions within urban public spaces. This networking around common challenges has sometimes evolved into formal financial systems/cooperatives that enable the stakeholders to access finance for other needs such as housing. Seemingly, the governance of financial services has been quicker in adapting to dynamic socio-cultural patterns than the planning systems. These is however an indicator that planning systems have the potential to leverage the evolving adaptive systems.
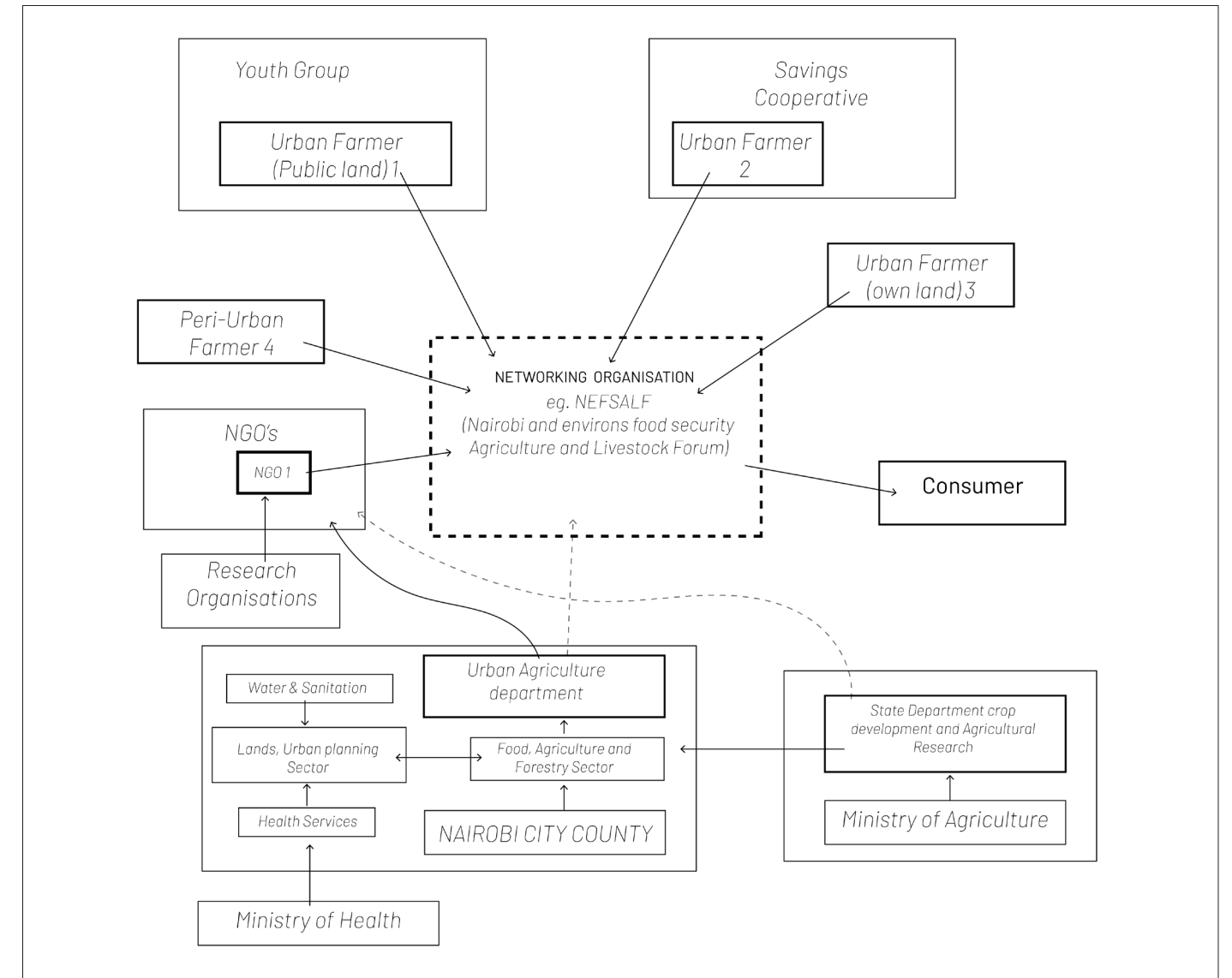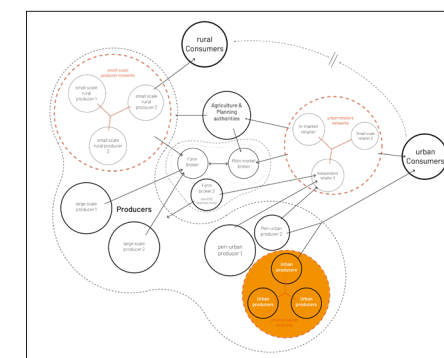
C

Spatially, local wholesale food markets play a crucial role in securing livelihoods and food security for vulnerable groups in the food system. They are a crucial link in the food value chain. In the case of Nairobi, most markets struggle with inadequate spatial infrastructure, planning and governance leaving them vulnerable to shadowy networks of exploitative administrative agencies and cartels- Respondent P401. Some markets regularly pop up in non-designated trading areas, with others gaining formal recognition after years of public land appropriation. Informal pop-up markets are usually based on internal network information on supply and demand, or even as responses to sudden economic downturns such as the current COVID-19 pandemic.

The lack of planning to respond to this constantly evolving changes often affects the value derived from the food value system for all stakeholders. Formal

planning with its slow processes focused only on formalizing trading spaces within designated market spaces, is left to play catch up with constantly moving and evolving spaces and systems. Formalizing this informal wholesale markets, either through relocation, or designating spaces has proven to be inadequate due to the large number of informal traders involved in this ecosystem. The focus of formal systems tends to overlook small-scale producers and traders within informal markets despite their immense role in the value chain, therefore affecting their ability to secure sustainable livelihoods. This directly translates to the typology of urban environment that they can afford and the amenities provided therein. For formal systems to catch up with the fast-evolving dynamics of the food system, they need to acknowledge adaptability as a core element of planning systems. An adaptive and flexible governance is required to optimize the food system at city-region scale (Blay-Palmer et al., 2021).

The informal systems are the crucial link between rural-urban producers and the consumers in the informal and formal urban markets. It is through these fluid networks of agro-industrial systems within the peripheries, that producers and consumers in urban areas are ensured resilient livelihoods. Their impermanence and quick adaptiveness are therefore a major learning point for urban governance both at the economic and spatial level.

City-region Agroecology governance

What then are the potentials of Agroecological governance in solving this adaptive planning systems? In this section we introduce a set of principles/tools that define responsible governance for the growth of sustainable agroecological city-regions.

Sustainable and just agroecological systems require responsible and effective governance systems at all territorial scales (local-national and global to ensure that the niche system develops into a landscape. Transparent, accountable and inclusive governance mechanisms are necessary to create an enabling environment that supports producers to transform their agricultural systems within resilient concepts and principles (FAO, 2018).

At it's basic, agroecology prioritises the needs and interests of small-scale food producers and suppliers who provide the majority of the world's food, dis-empowering the influence and interests of large industrial agriculture and food systems.

Supportive and complementary public policies and policymakers and institutions are necessary for agroecology to maximise its potential. Government's involvement in creating sustainable markets and proper regulation of markets that allows for differentiation of agroecological produce, subsidies and incentives for ecological services and innovative practices, will ensure empowerment of small-scale farmers and traders towards economic growth. Government public procurement programmes such as schools and institutional feeding programmes can also ensure sustainable growth for the ecological farming practices.

Agroecology also depends on equitable access to land and natural resources – a key to social justice, but also in providing incentives for the long-term investments that are necessary in the protection of soils, biodiversity and ecosystem services. (FAO,2018). The spatial limitations of urban and peri-urban farming need to be addressed to ensure the resilience of shorter supply chains along city-regions. For the Kenyan peripheries, this might entail looking into the issues of land-use distribution and zoning especially in large dense settlements.

In a multi-cultural setting such as Kenya, traditional and customary governance models are also crucially important in fostering co-operation between stakeholders while reducing or managing cultural-economic trade-offs. Territorial landscape and community level governance needs to be re-embedded in the cultural systems of governance. A proper alignment of cultural values to public land management in rural and urban landscapes is necessary in order to foster proper agroecological planning practices and governance. This can also be used in addressing responsibility issues in current public space management.

An integrated approach to resource management can also be achieved through

agroecological governance as it puts control of seed, biodiversity, land and water territories, knowledge and the commons (CIDSE, 2018) in the hands of the people who are part of the general food system. This is as a response to the concentration of power that is prevalent in the current conventional industrial agriculture practices.

Alternative/ adaptive Social organisation is also needed to decentralise governance and power form the national levels. Local adaptive management systems of food and

agricultural systems should be encouraged based on the cultural norms and socio-economic capacities of communities. Self-organisation and collective management of groups and networks, which is currently highly prevalent at local levels should be continuously encouraged. This includes groups of farmer organisations, consumers, research and academic institutions etc. all geared towards promoting the principles of agroecology.

Empowering small scale producers and retailers through seed control policies that favour diversity & indeginous produce

Government support through public procurement systems for agroecological services

formal recognition of bottom–up collective management groups and networks within territorial management systems

AGROECOLOGICAL GOVERNANCE POLICY RECOMMENDATIONS

Equitable and just agricultural land distribution systems specifically in the urban and peri-urban zones

Empowering traditional and indeginous land management values especially with regards to public space

Towards an city region agroecological governance system

Reconciling principles of agroecological
planning practice & governance in Kenya
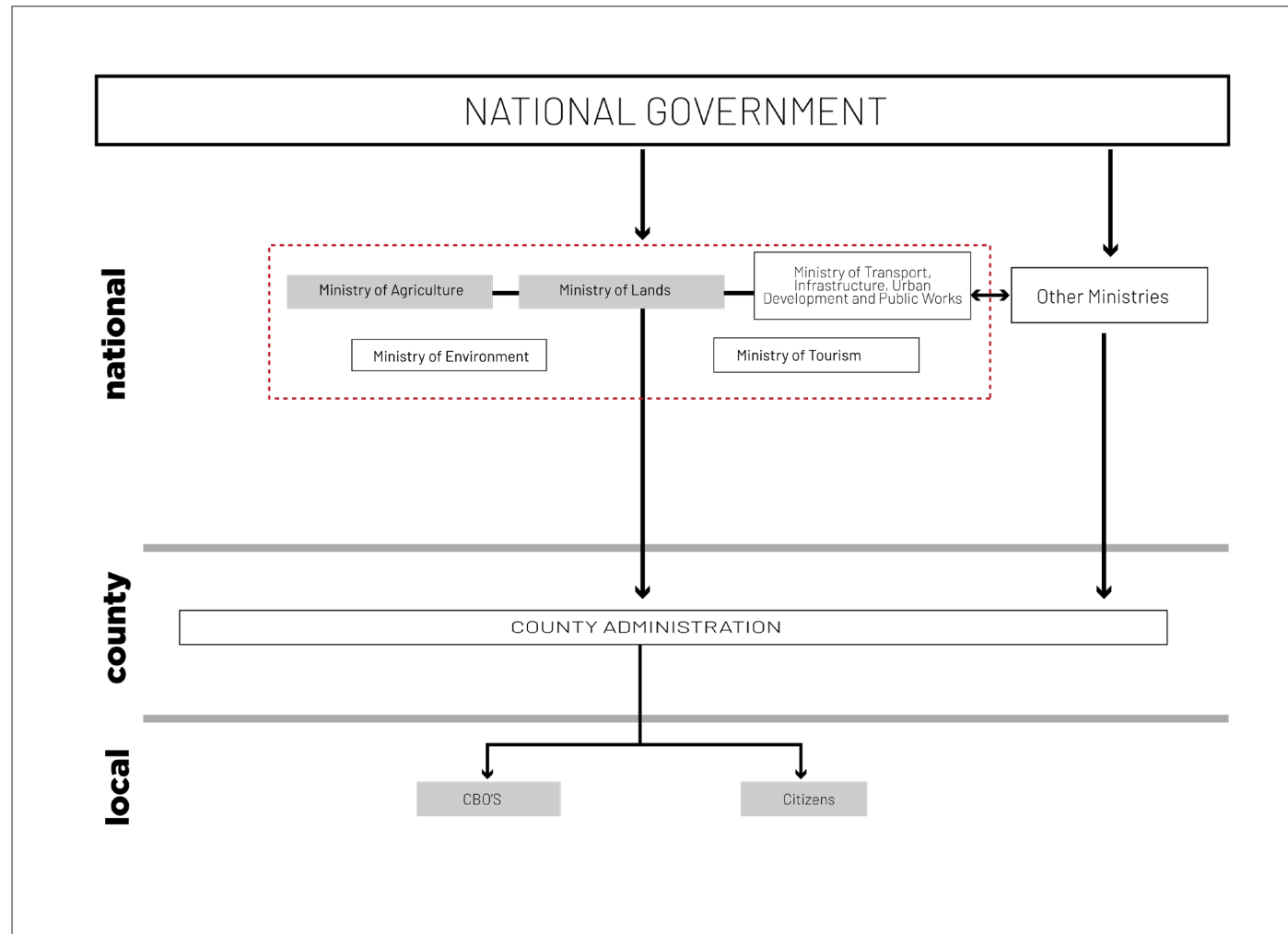
Fig.5 - 1: *Current National governance structure of agriculture and urban planning practices showing the main levels of government*

Restructuring National governance structures

From the previous analysis we see that spatial planning and agricultural planning have generally been viewed through the rural-urban dichotomy, although agriculture is a highly regional socio-technical system. There is a need to reconfigure the agricultural sector beyond the national policies of rural planning that give prominence to conventional systems for productivity gains, and the administrative systems that now advocate for urban agriculture. Agroecology should focus on the scope of city-region social and economic processes.

For this purpose, these proposal looks at the need to include a regional authority (figure 5-2), not only as a proposed national committee at the national level

Fig.5 - 2: *Proposed new levels of governance indicating the hierarchy of a new regional authority that caters to the intermediate processes of socio-technical planning between national and county governments*

as proposed by the National Spatial plan, but as a recognized constitutional organ, that oversees the governance of regions based on the main socio-technical systems that support economic growth in Kenya. Through agroecological city-region planning we see that, the devolution of administrative power from the National level to the counties although with its benefits, does not have the capacity to oversee cross-regional systems especially if left at the expense of goodwill in administrative governance. The need for creating Integrated Inter County Spatial Development Plans as provided in the Physical Planning Act of Kenya, increases the bureaucracy of regional development especially in contexts such as Kenya witnessing rapid population and economic growth. This exposes populations to uncoordinated urban development and interventionist planning rather than coordinated planning for growth.
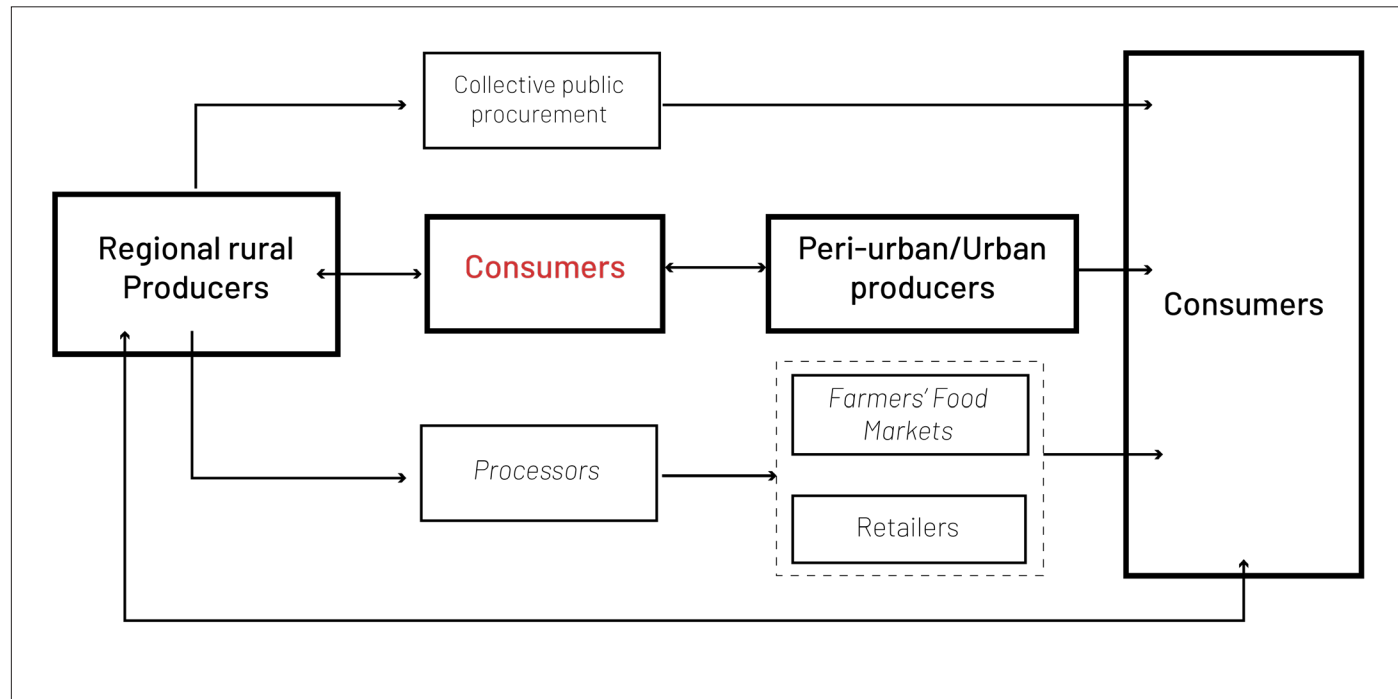
Fig.5 - 3: *Reconfiguration of consumer producer stakeholder relationships based on city-region agroecological planning practices.*

The need to redistribute governance functions from the National level to smaller devolved administrative units followed by advocacy for collaboration is a tedious process that can be overcome by including an intermediary regional planning authority to oversee regional functions of development. This should oversee regional socio-technical systems in order to promote a more cohesive planning and governance framework.

For this proposal, the regional planning authority would collaborate with the Ministry of Agroecology (A proposed need to reconfigure the Ministry of Agriculture to cater to the wide range of principles that sustainable agriculture should advocate for) to develop a city-region framework of spatial planning that identifies counties that should collaborate to form an integrated city-region plan.

As indicated in figure 5-3 the need to reconfigure the city region advocates for the urbanisation of rural landscapes in order to provide shorter food supply chains. Bringing consumers with higher economic capacities closer to the production chain increases the incomes for rural producers and provides alternatives to current rural-urban migration practices. In figure 5-4 we then see how the reconfiguration of urban producer networks can reduce the reliance on para-state organs and the required links to governance systems in order to create efficient communication systems that enhance proper governance.
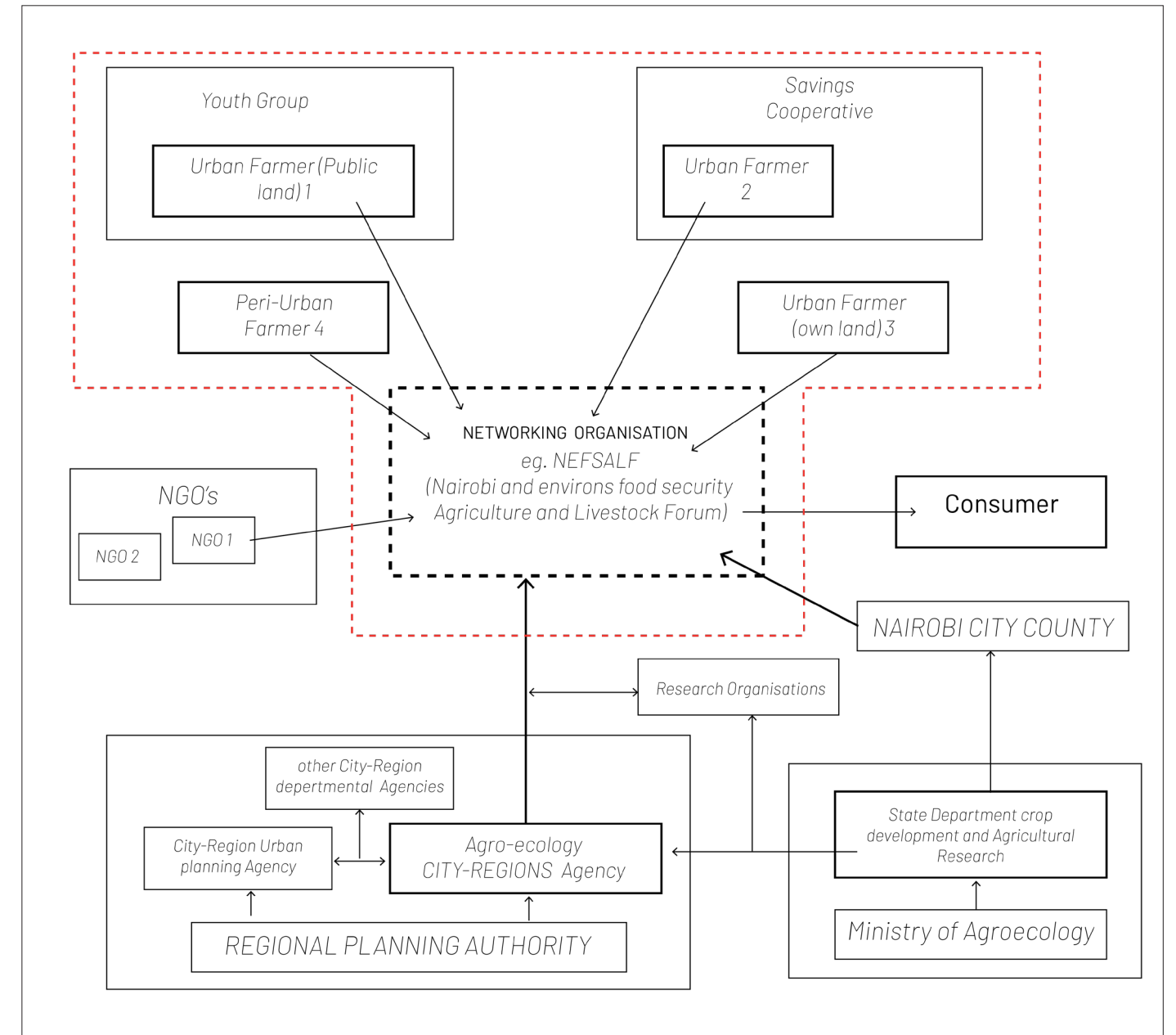
Fig.5 - 4: *Reconfiguring Urban producer networks to include the role of Regional authorities and tackle the issue of external shadow state forces whose control on the process of governance indicate a neglect by current administrative structures to responsible governance*

The need to reduce on the influence of external para state groups is in order to enable coordination of the Regional Planning Authority across the city-region territory. Their influences at Urban level and Rural levels make it hard for current governance systems to operate uniformly across territories. Similarly, as will be observed later in this section, a change in City-region structure empowers urban and rural communities by providing space and capacity to operate in collaboration with adaptive governance systems.

Vision for City-Region planning.

Based on the analysis of agroecological city regions we begin to see the need to reconfigure urbanisation in Kenya along productive (agricultural) city-region boundaries. According to the Agricultural Sector Transformation and Growth strategy (2019) we see a classification of farmers along regional blocks. (see figure 5-6) This is based on the configuration of already established agroecological zones in the country. Unfortunately, the main concerns of this proposal is the demarcation of productive zones based on historical agricultural patterns and the potentials of proposed conventional industrial farming techniques. As seen on figure 5-6 this definition also aligns with already existing county administrative boundaries. Looking at the case of the Nairobi metropolitan region, there is a visible conflict between the agricultural productive region aligned to Nairobi and the current economic metropolitan boundaries. The identified farmer regions do not take into consideration the need for shorter food supply chains, but instead make proposals for shorter production chains by establishing regional processing centres, with the target consumer market remaining unchanged. From our analysis of agroecological city-regions,we have established that a reconfiguration or split into smaller city-region boundaries would be necessary to ensure that the basic principles of a city-region agroecological urbanism are met. There is a need to dissociate planning as it is currently practised from political administrative demarcations to potential productive systems such as the agricultural system.

From the agroecology analysis of agriculture planning we have seen the need to cater to shorter food supply chains and more diverse agricultural produce and landscapes in the practice of sustainable agriculture. Therefore by analysing proximity concerns alongside potential urban growth areas as proposed in the National Spatial plan (2015), we see that the current proposed spatial distribution of regional blocks can be further subdivided into spatially viable agroeconomic blocs based on available infrastructure and proximity concerns. For example for the lower southern bloc of farmers that comprise Nairobi and the Eastern bloc, the Nairobi metropolitan region can maintain a smaller agroecological bloc based on already established potentials (see figure 5-7). These regions would however need to reconfigure their regions of agricultural dependency based on the suggested principles of agroecology.

There is similarly a need to consider the demarcation of new regions to overcome the current monocrop landscapes (see figure 5-8) identified in the agroecological zones in order to ensure that diversity in productive regions is achieved uniformly across the region.

For instance, the central highland agroecological zone can be split into two to cater to the number of counties already represented and the proximity to already established urban areas. This spatial proposals are further analysed in this section. (see figure 5-9)
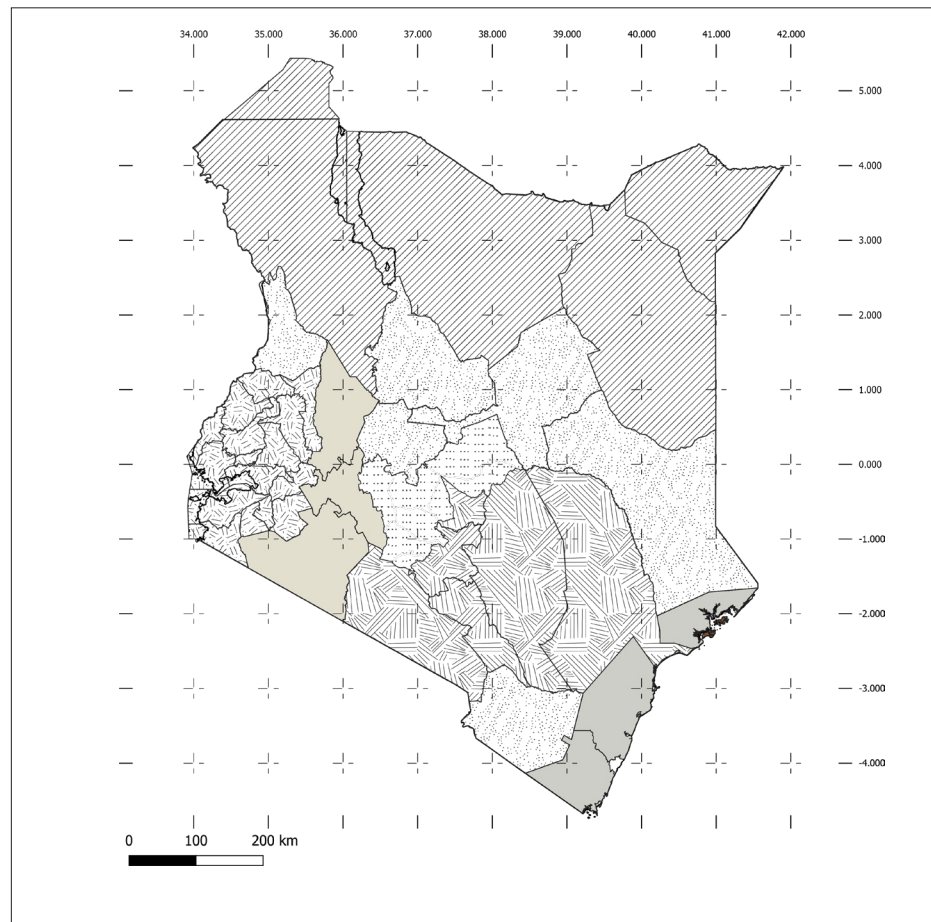
Fig.5 - 5: *Types of farmers across the different agroecological landscape, according to the Agricultural Sector Transformation and growth strategy*
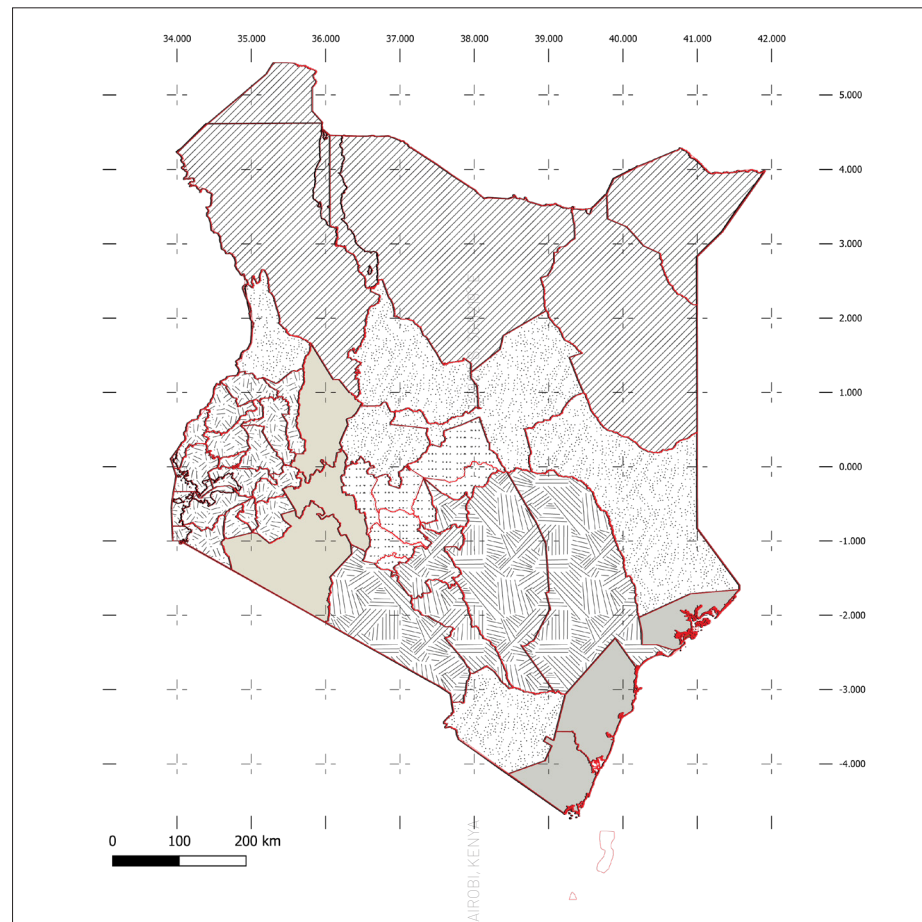
Fig.5 - 6: *Types of farmers across the different agroecological landscape, against existing county administrative boundaries*
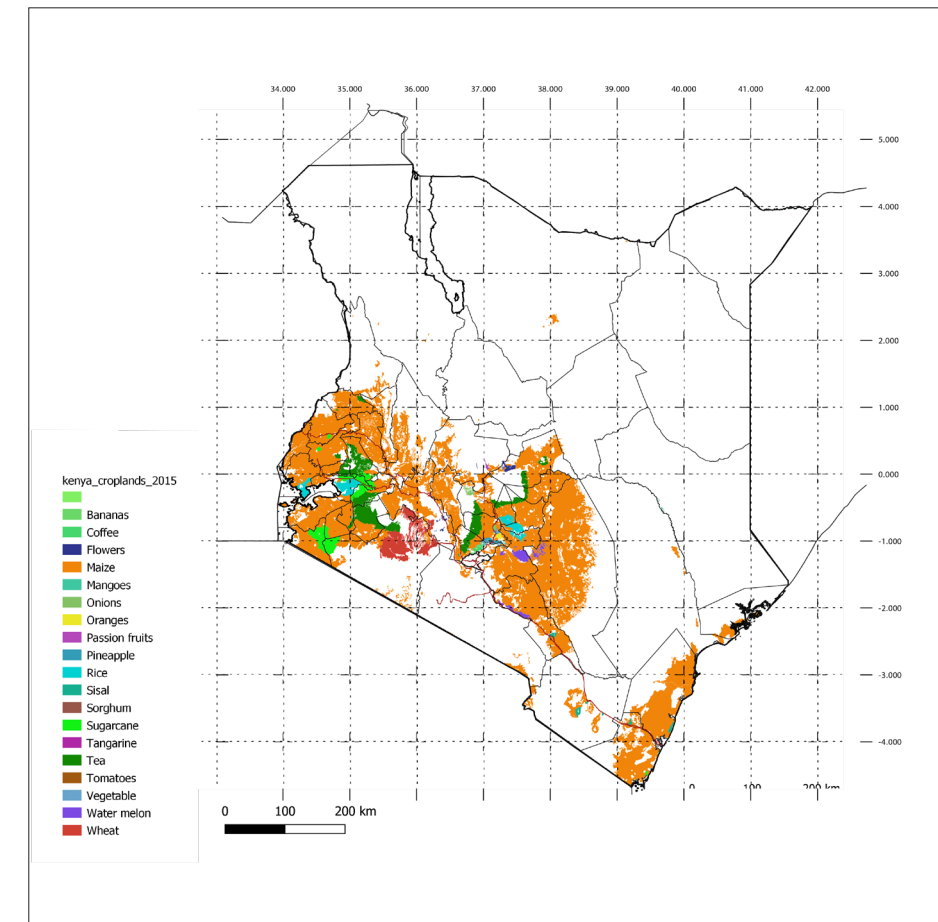
Fig.5 - 8: *Current crop diversity distribution across the entire region within different county administrative boundaries.*
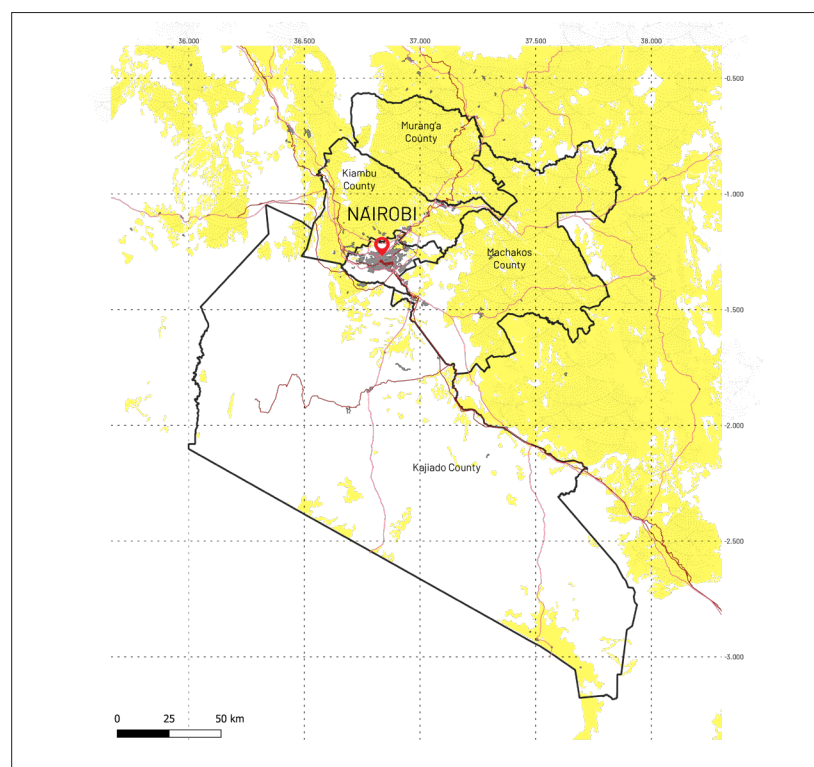
Fig.5 - 7: *Maintaining the current Nairobi metropolitan region administrative boundaries and agroecological productive zones*
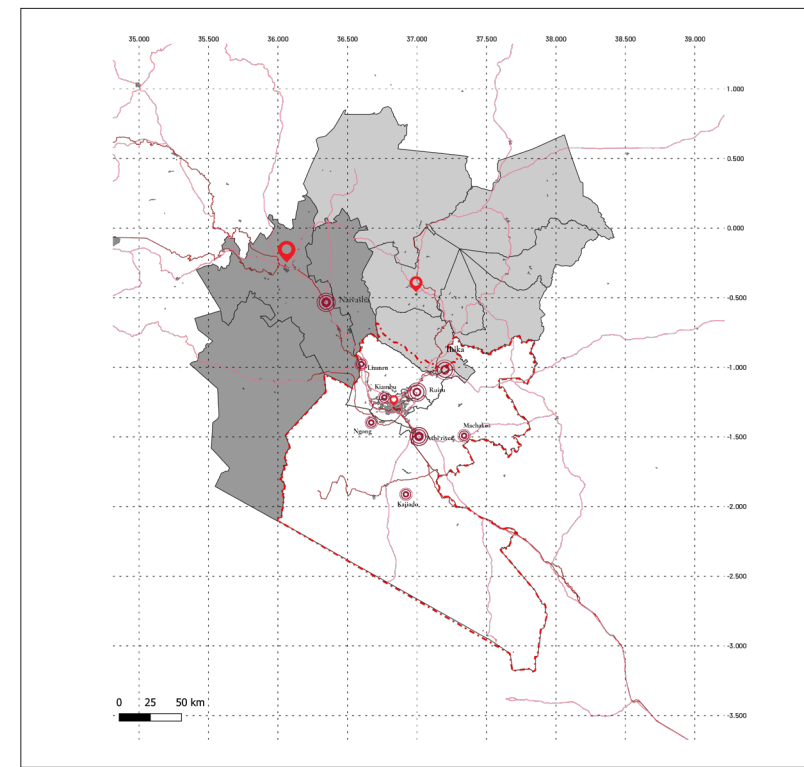
Fig.5 - 9: *Splitting the central highland block into two agroecological productive zones*

The exercise illustrated in figures 5-10 to 5-15, illustrate the process of analysing the identified agroecological zones, and layering of different agroecological, infrastructural and resource distribution zones, to develop the proposed new regional blocs of planning. This follows on the principles advocated for by agroecological urbanism discussed earlier in this chapter to create efficient city-regions, that cater to the principles of a just and sustainable urbanisation.

The layering involved analysing the extent of current agroecological zones across existing population distributions (5-10 and 5-13). The chosen sites of urban growth are based on identified urban centres in the National Spatial plan and the National population data that indicates the current centres of rapid urban growth regionally. This is divided into potential large urban centres that would compete with Nairobi, potential secondary urban centres that support the primary urban centres, and boundary urban centres which are developed urban centres that are spatially located along boundaries of different city-regions.

The next stage (5-12 & 5-11) involved the layering of water catchment resource zones on the existing agroecological zones and the potential urban centre nodes. This shows the potential planning processes for reconciling urbanisation resource systems across the region to develop more efficient governance and planning boundaries. This shows the extent of influence of these urban areas across different resource distribution zones. As water is a significant resource for agriculture and other socio-economic and technical activities, the distribution of zones should take into consideration the issues that deal with this resource distribution. The extent of the scopes of influence of the potential urban centres across the region, are therefore contained within the boundaries of their respective water-catchment areas to ensure a fair distribution of this resource. This then outlines the proposal for new agroecological city-regions as shown in figures 5--14 and 5-15.

This process is summarized in the next section on figures 5-16 to 5-18.
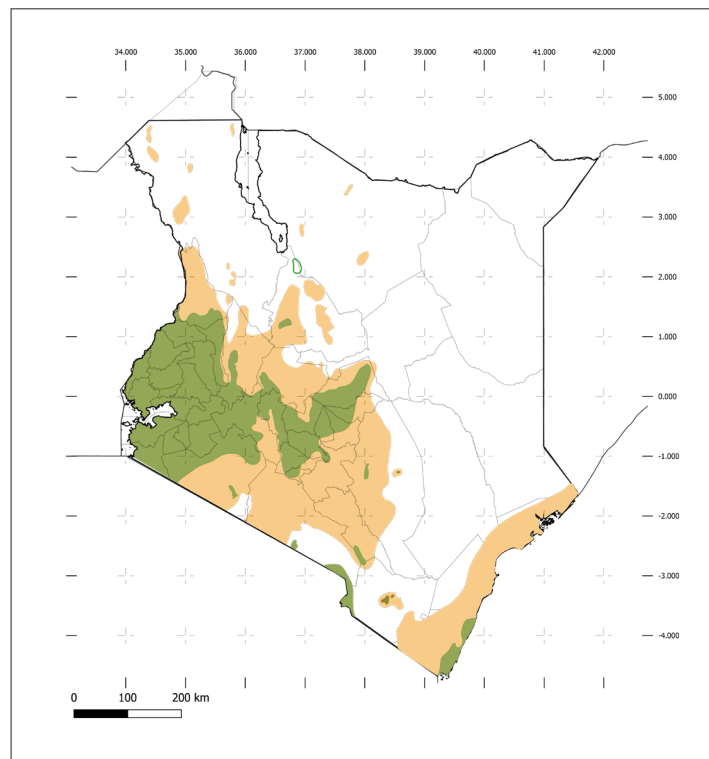
Fig.5 - 10: *Agroecological zone distribution in Kenya (source; rcmrd.org*
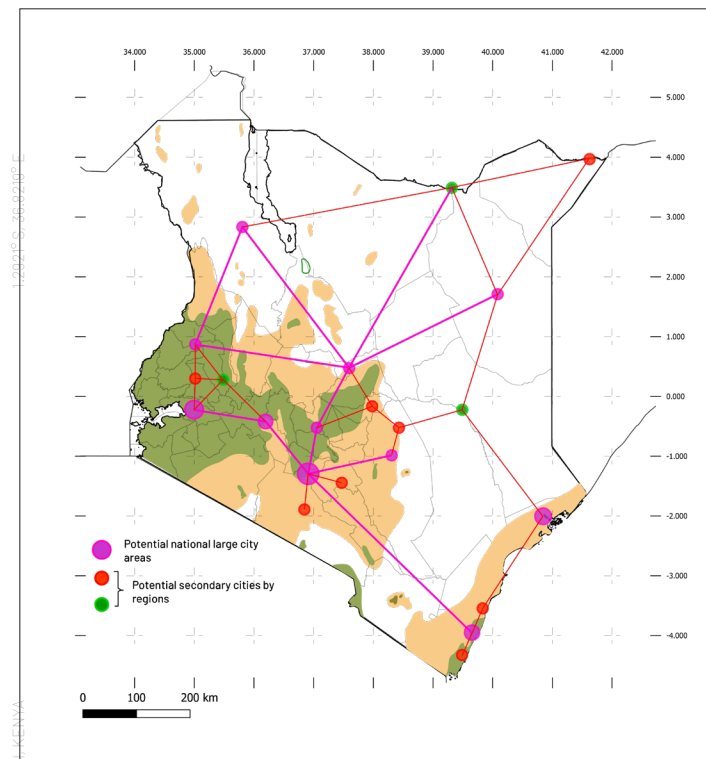
Fig.5 - 13: *Current and potential national urban growth centres based on the National Spatial Plan (Source: Department of Planning, 2015)*
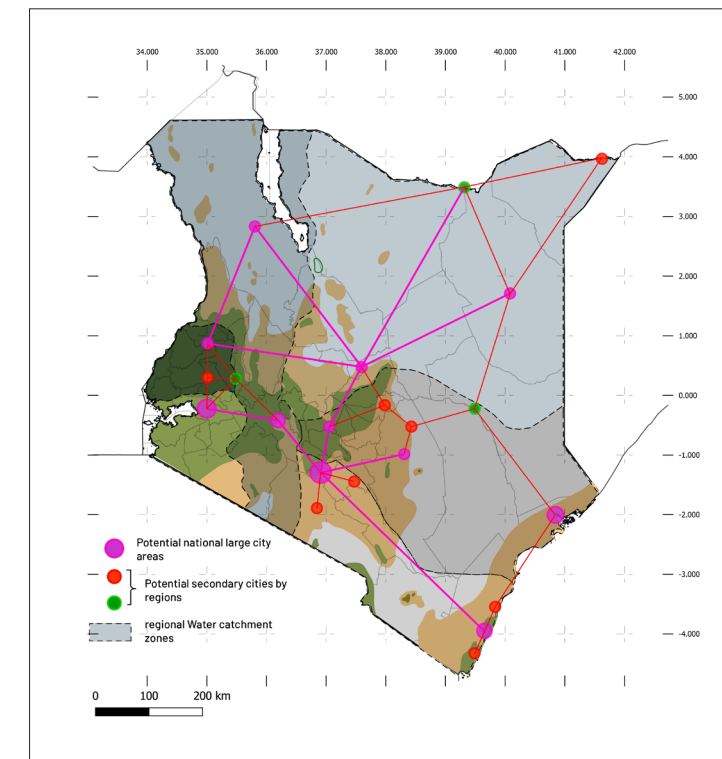
Fig.5 - 12: *Potential urban growth centres, agroecological zones and water catchment zone distribution in Kenya*
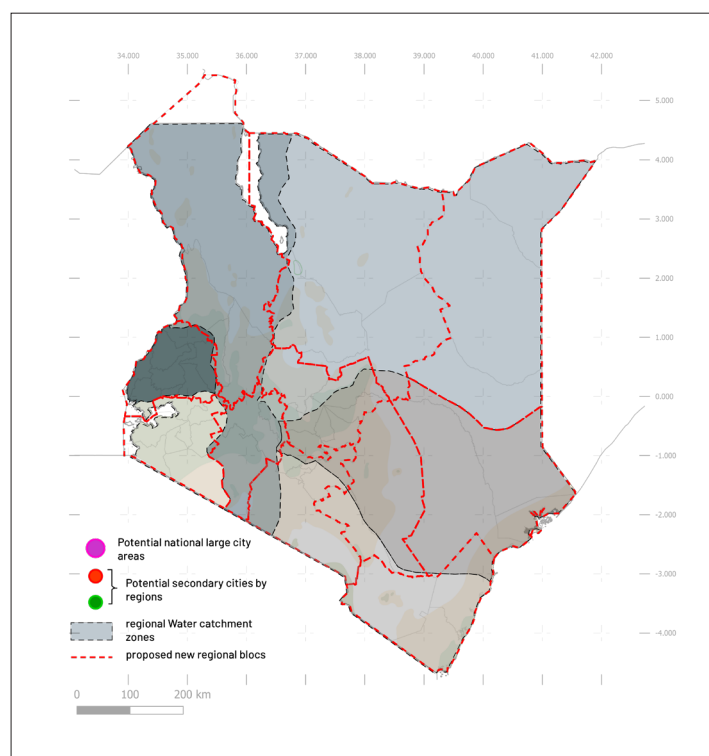
Fig.5 - 11: *Reconfiguring new city-regions based on water resource catchment zones and agroecological zones.*
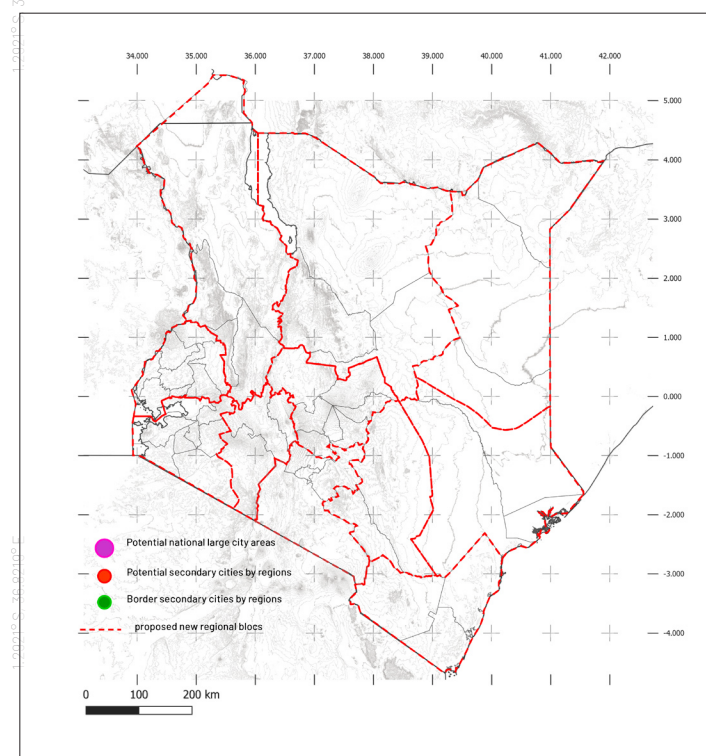
Fig.5 - 14: *Proposal for new city-region boundaries*
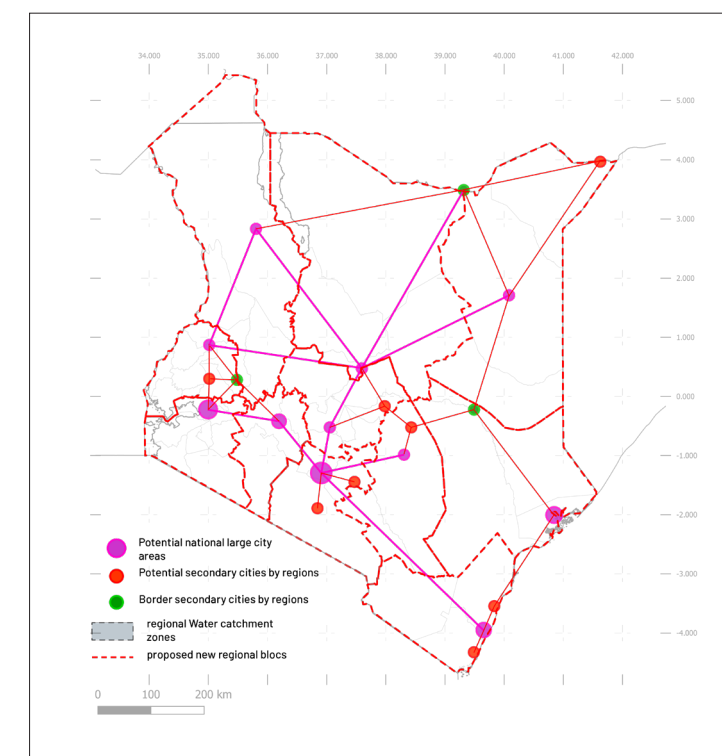
Fig.5 - 15: *Proposal for new city-region connectivity between proposed urban centres of the new city-regions.*
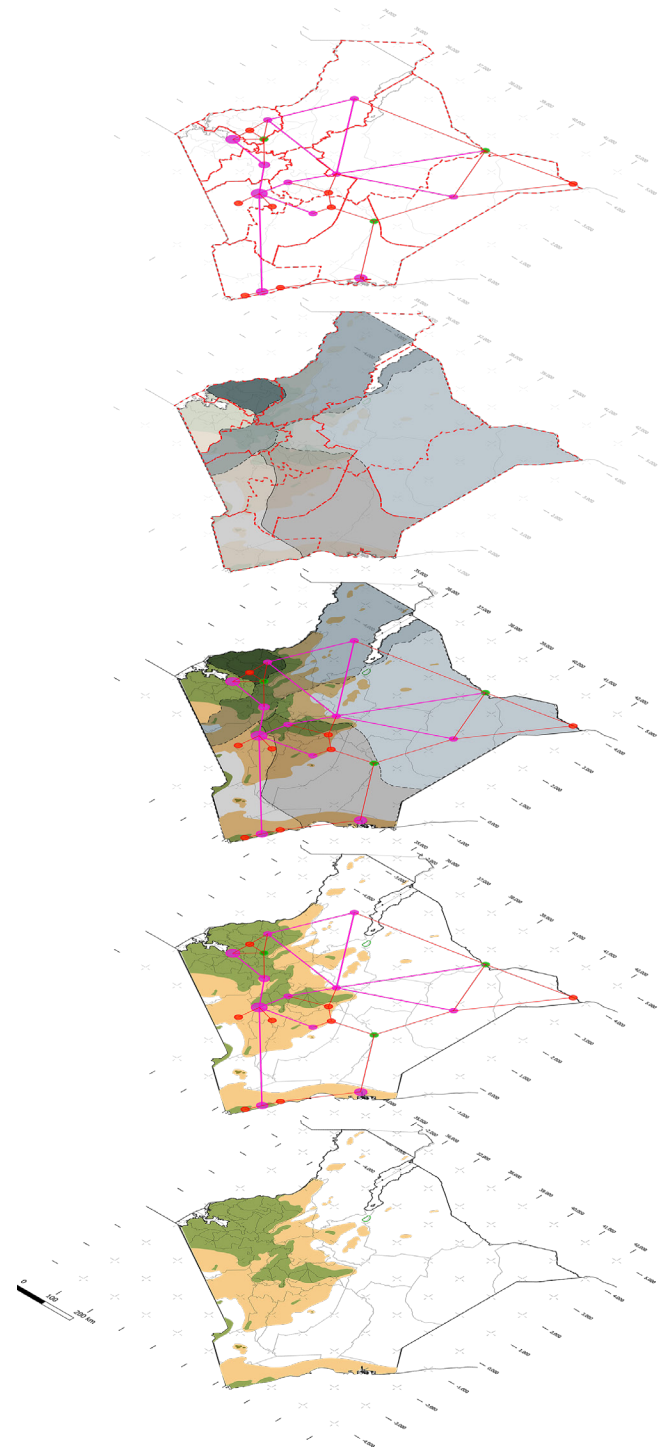
Fig.5 - 16: *Layering process of agroecological zones, potential urban growth sites and water resources.*

A

B
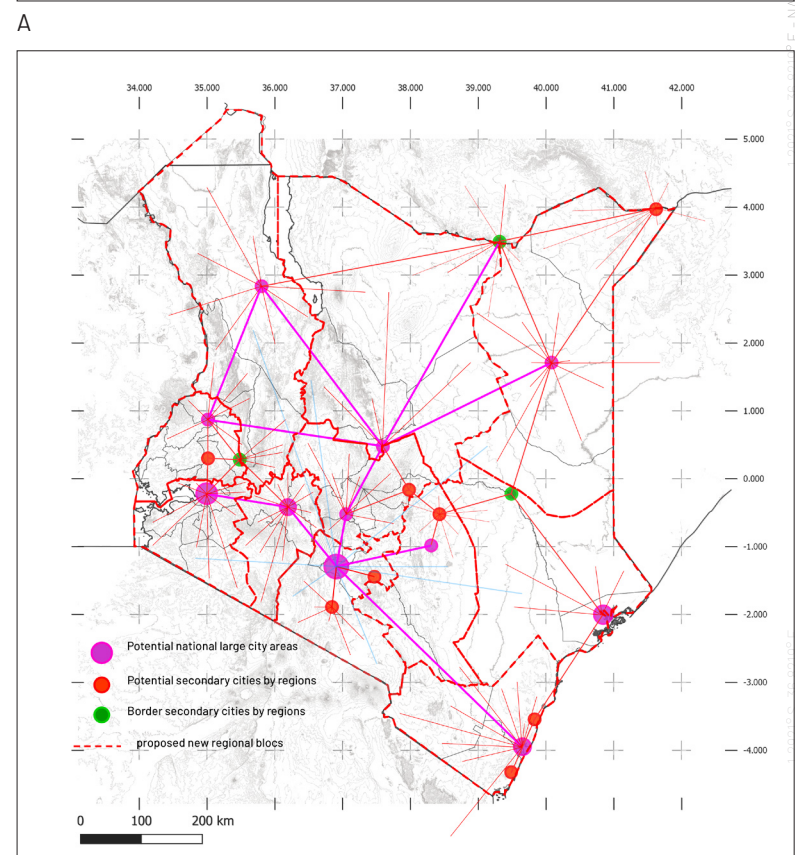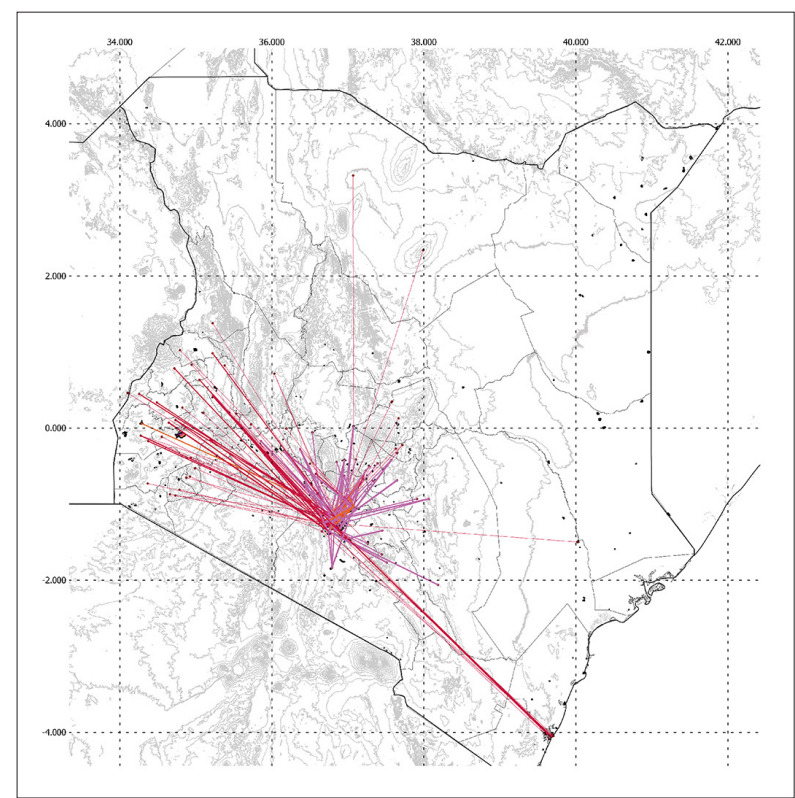
Fig.5 - 17: *A- Current network of rural-urban migration patterns to the Nairobi metro-region B- proposed network of primate cities and secondary cities and envisioned rural-urban migration patterns*

Potential national large city areas

Potential secondary cities by regions

Border secondary cities by regions

proposed new regional blocs

0   100   200 km
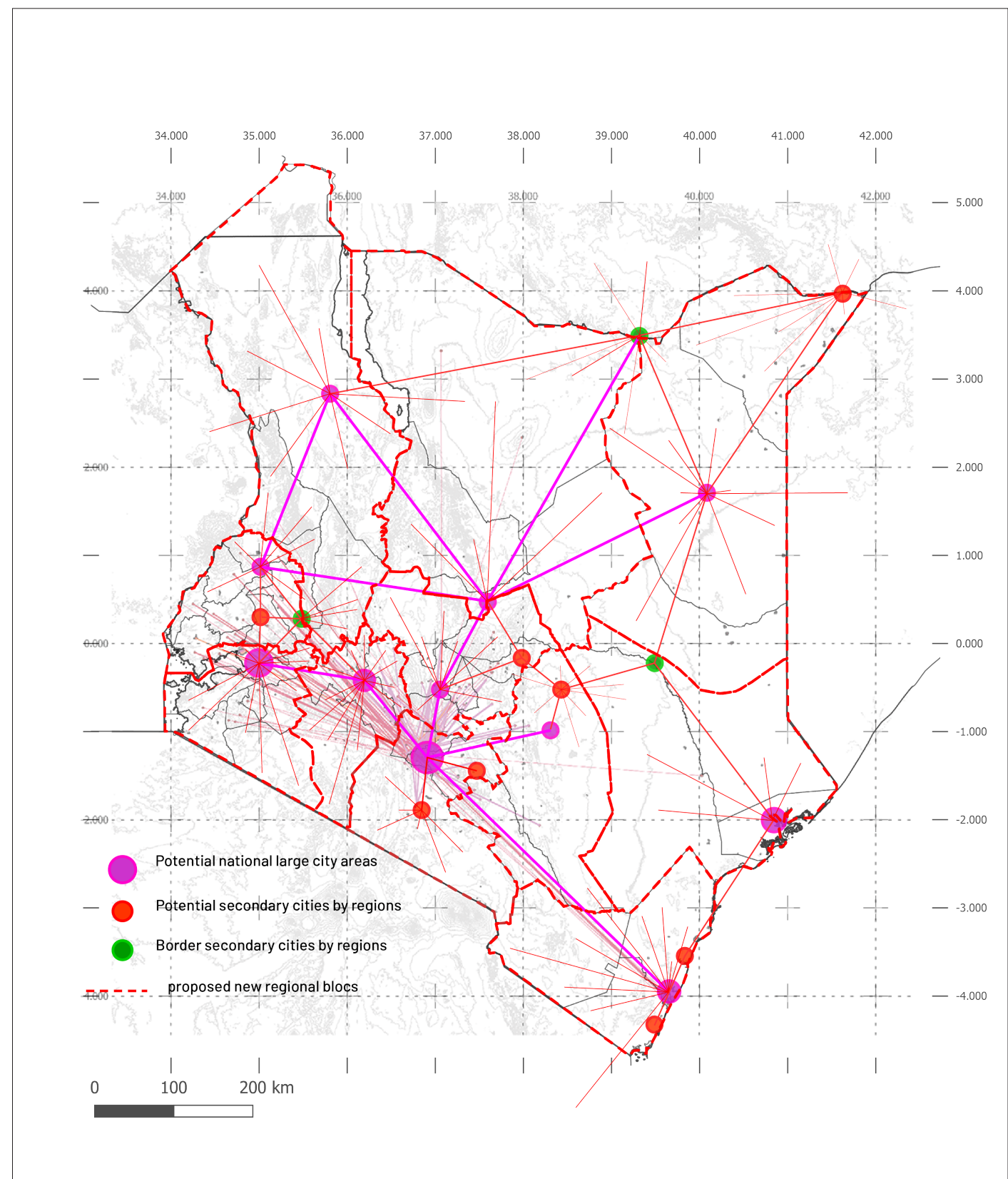
Fig.5 - 18: *Proposed decentralized City-region vision for the Kenyan territory against the underlying current primate city-migration patterns.*

Looking closer at the new city-regions with a focus on the metropolitan region of Nairobi, in figure 5-19A & B we see the scope of agricultural hinterlands that Nairobi currently relies on for its food system. Through the monocrop culture, that is observed in this region, we can conclude that the majority of unaccounted food produce in this data, is grown through small-scale informal production networks that are prevalent mainly in the informal sector. This can partly be attributed to the reason behind the continued propagation of metropolitan growth mindsets as agriculturally productive land is highly monopolized to serve one major market- Nairobi.

From this monopoly of markets we become aware of the influence of the primary city markets on the productive forces of the rural hinterlands. By reconfiguring the city-region extents we can then begin to support the needs of the small scale producers by shortening the scope of their supply chains. The reconfiguration of the city region will have most influence on the conventional monocrop plantations as they rely on the current unregulated rural structure of land-use. However, from the analysis of the adaptive systems of small scale producers, we see a flexibility that allows for the required change without the major pitfalls of breaking down path dependent systems.

The restructuring of city boundaries (figure 5-20) to produce shorter supply chains can then take place by understanding existing and proposed infrastructure outlays, the scope of population distribution, size of secondary cities, prominence and historical patterns of population distribution. For the proposal in figure 5-21, we see the potential for redistributing city regions around Nairobi based on a proximity and population distribution structure. The 2 new upper regions, although consisting of a similar farmer typology as per the ASTGs, proposal, have the potential for restructuring based on the distribution of geographic landscapes, indigenous crop varieties and proximity; as earlier highlighted.

This proposal due to limits of time and scope did not investigate further into the details of the distribution of city-region boundaries. However, through the proposed regional structure of governance, we propose the creation of an institution that can further look into the details of city-regions, resource flows and the supply and value chains of the food system at local levels. Local restructuring and the potentials of local producer-consumer networks can be used as a starting point for identifying the limits of city-region boundaries.

This proposal puts forward the concept of the agroecological city-region as a solution to the current uncoordinated sprawl of primary cities creating large metropolitan regions that rely on unsustainable rural-urban landscapes. These metropolitan systems in turn sets off the vicious cycle of rural-urban migration that leads to the development of the peripheries, which as seen in the case of Nairobi have no potential for sustainable urban lifestyles. There is a need therefore to look into the potentials of second-tier cities and towns in developing alternative city-region structures to support the urbanisation already
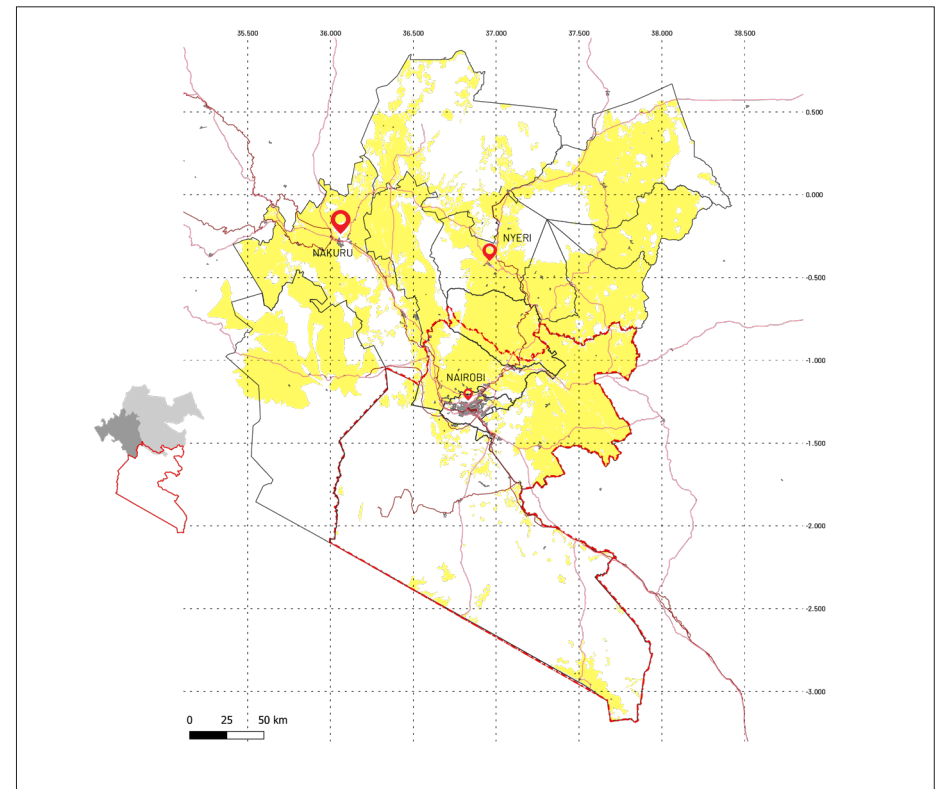
A
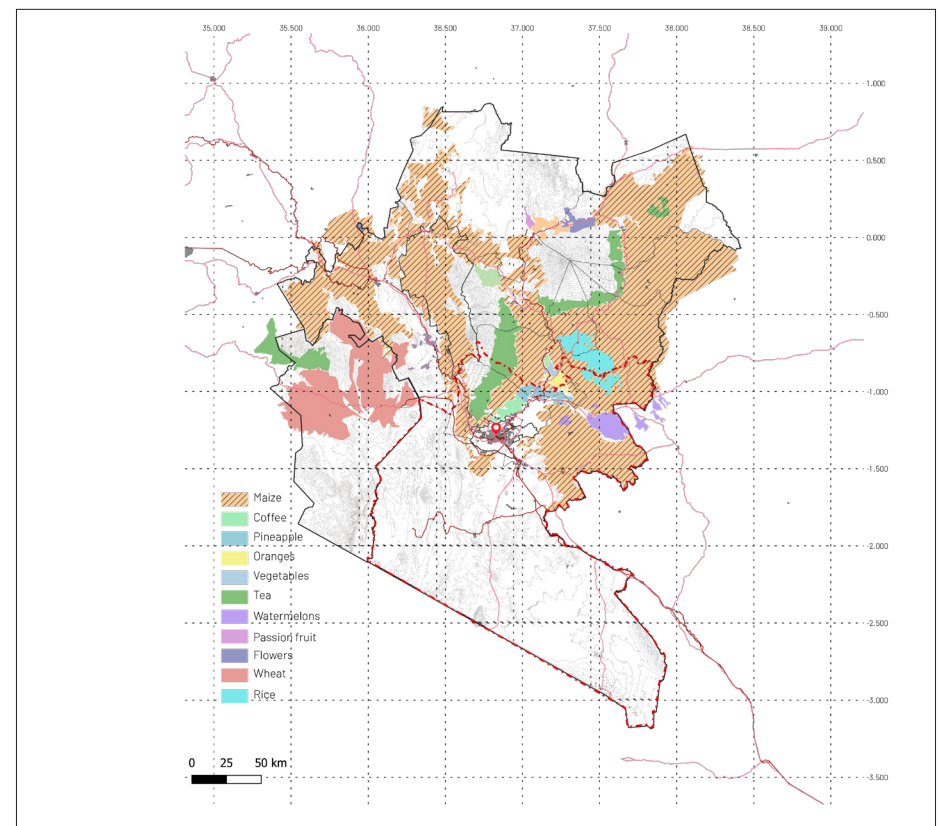
B

Fig.5 - 19: *A- Current immediate regions that Nairobi's food system relies on. This covers an area administered through 12 administrative divisions (counties). B- Crop diversity in the regional hinterlands of Nairobi metropolitan's influence zone.*
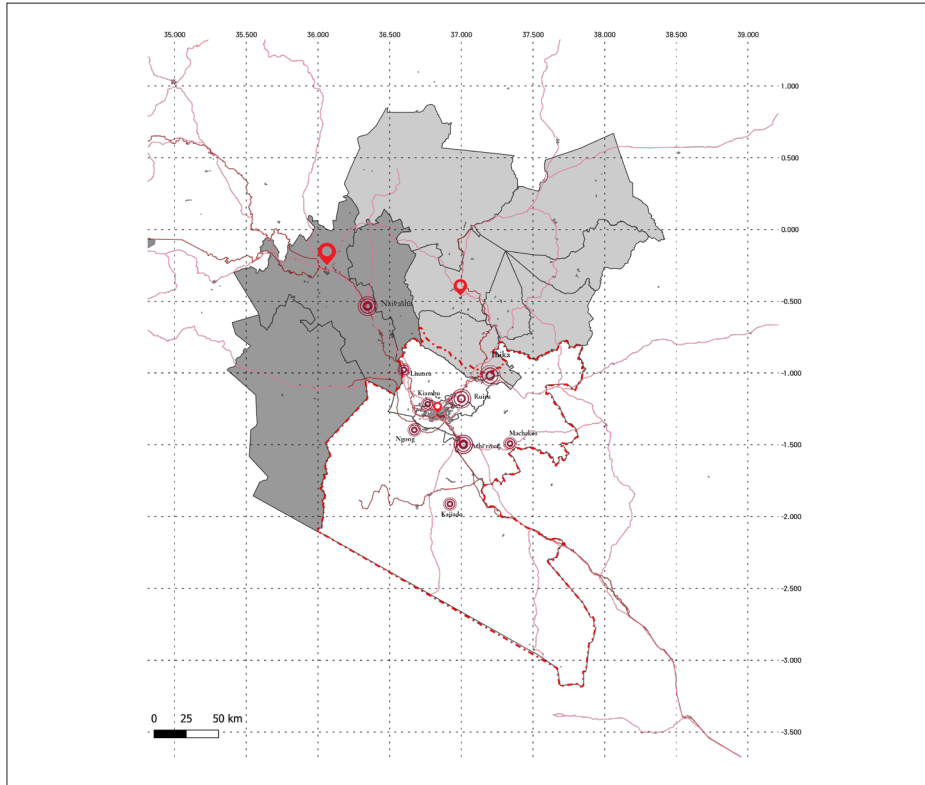
Fig.5 - 20: *Secondary towns within and around the Nairobi region where majority of urban workers in the city reside.*

taking place in the country. Urbanisation as we see is a regional process and the emphasis on growth of primary metropolitan areas across such diverse cultural and geographic landscapes as in the case of Kenya and the rest of the global south, will only exacerbate growing inequalities.

Through the proposals of more decentralized and city-regional agroecological zones as seen on figure 5-21B, we see that the potential for reconfiguring shorter food supply chains that can empower regions to build on existing indigenous knowledge and capacities for varied agricultural produce (figure 5-22). This in turn supports the current growing agenda of sustainable food security and proper nutrition. The different agricultural regions in Kenya already have different indigenous crops and livestock that are resilient to their agroecological zones. This therefore provides a huge potential to counter the growing introduction and monopolies on crops from large agricultural industries and support the resilience of indigenous communities in the processes of current urbanisation systems.
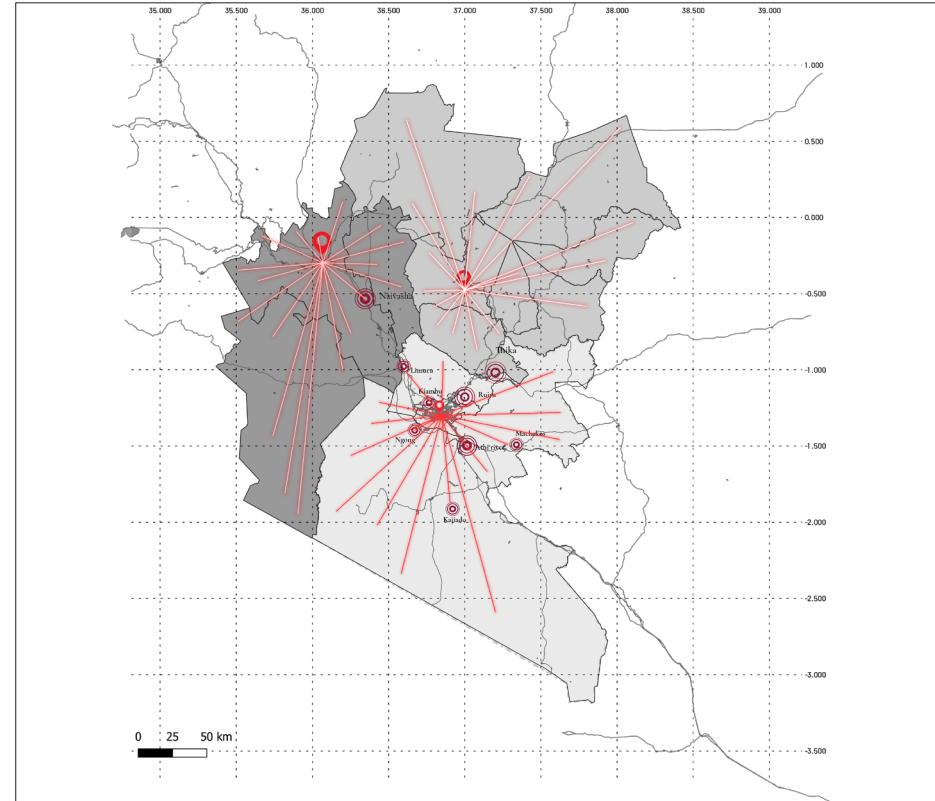
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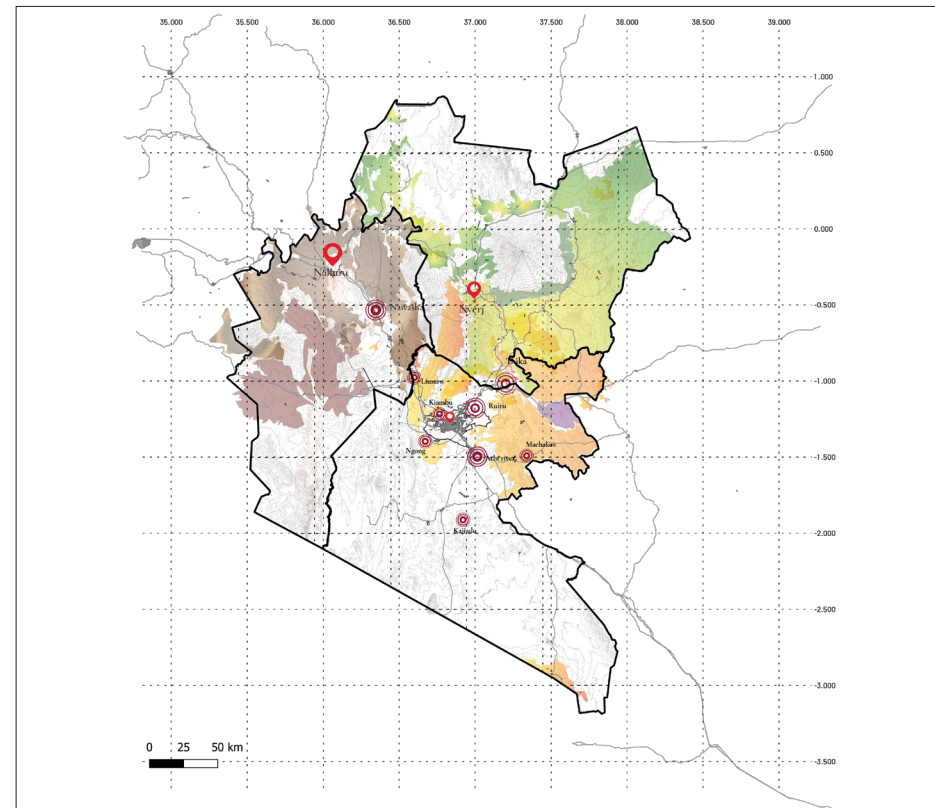
B

Fig.5 - 21: *A- New primary city migration patterns in each city-region. B- distribution of agroecological production zones within each city-region boundary.*

Mangoes

Wheat

Potatoes

Vegetables

Bananas

Sweet potatoes

green grams

sorghum

0 25 50 km
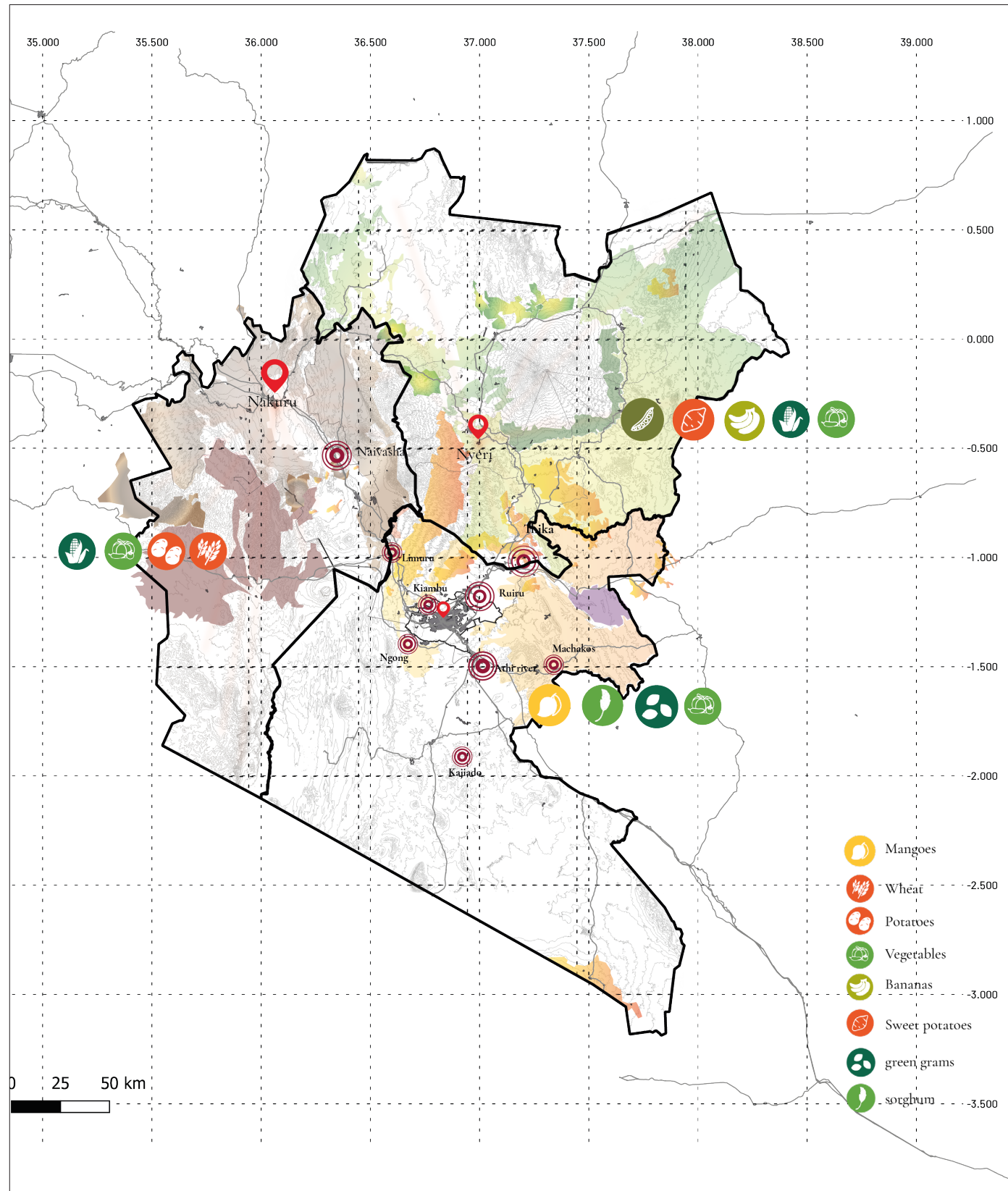
Fig.5 - 22: *Distribution of agroecological production zones within each city-region boundary and potential crop production capacities; indigenous and conventional (source AGTS, 2019).*

Implications for everyday life

From this proposal of city-region planning, we see the importance of integrated landscapes in maintaining sustainable urban areas. The urbanisation processes that take place between the rural and urban divide therefore provide the crucial link between the productive landscapes and the consumption landscapes. Adapting from the continuity of natural landscapes therefore, urbanisation should be viewed as continuous and ambiguous across territories. This means that the planning and governance practice should embrace a regional approach to ensure that, as urbanists, we not only advocate for the rights of the urban dwellers, but also for the rights of the rural communities within the urbanisation process.

Rural

From our case study of Nairobi's peripheries, we see how the peripheries, through their socio-economic activities in the splintered food system, have continued to serve as the crucial city-region link in the urbanisation process of Nairobi. Their vulnerability in city-life, a consequence of modernisation-inspired governance mindsets, ensures that they maintain their rural links in their socio-economic activities as a relief from the terror and impermanence of city-life. Through the splintered food system of Nairobi, we have witnessed how they are able to sustain their livelihoods by providing the crucial services within a regional food system. The agroecology counter-narrative gaining traction against unsustainable conventional agricultural systems, provides a great opportunity for promoting sustainable ecological and socio-economic lifestyles especially within this mobile rural-urban societies. We have seen in Chapter 4 how this socio-political movement can empower an urbanism of ecological care and sustainable integrated landscapes by harnessing the spatial elements of its basic principles. An agroecological urbanism proposes an empowerment of rural landscapes in order to reduce their dependence on urban areas for economic sustenance.

We therefore anticipate that with this vision of city-region planning across Kenya, we can begin to see the engagement of local authorities in rural areas in developing economically sustainable spatial strategies that will see the introduction of urban systems at the rural scale. This includes policies and strategies that will empower agroecological processing zones for rural agricultural production as well as infrastructure investments that will attract financial opportunities to rural areas. This could begin to reverse the current trend of rural-urban migration as well as provide scalable economic opportunities for vulnerable groups in rural areas. As agroecological principles advocate for integrated landscapes, this could also provide the necessary mixed environment that could induce the de-growth of city-scapes as unsustainable concrete jungles in order to develop more sustainable diverse ecological landscapes. For the rural environments, there is a need to enhance infrastructure planning that will ensure habitable environments for urban groups, a subtle

modernisation of the rural landscape into more integrated environments.

The city-region territories will also begin to tackle the issue of unsustainable agricultural rural land-use, such as the current mono-crop landscapes of horticulture and cash-crops that currently characterizes the fertile rural hinterlands of rapidly growing urban centres in Kenya. This requires a more sustainable approach to land subdivision in order to ensure sustainable agroecological practices and the agglomeration of living areas around efficient infrastructure outputs. The current distributed network of habitation, although culturally efficient will require proper reconfiguration to enable the provision of more sustainable infrastructure outlays.

This also ties into the decolonization of landscapes that has a history in the colonial period, where land injustices saw natives stripped off their land for the development of large export-oriented farmlands that exist to this day. Nairobi being a good example of this as most of its fertile rural hinterlands are divided into large monocrop horticulture and cash-crop landscapes focused on export markets, while relying on other regions to provide staple crops and food for its inhabitants. The city-region boundaries are focused on advocating for shorter ecological food supply chains, and metropolitan areas such as Nairobi will need to reconfigure their immediate rural landscapes for food production as they attempt to review historical injustices that deal with rural-land allocations. Figures 5-23 and 5-24 show potential vision changes in rural landscapes as infrastructure and development investments begin to take shape in the rural areas.

Infrastructure investment in rural areas needs to take place in order to increase and support production capacity of this landscapes. Due to the large scale of rural areas, and the socio-cultural diversity of rural lifestyles, there is a need for local authorities to engage in proper rural planning in collaboration with local communities in order to ensure that infrastructure investments are economically sustainable and beneficial to the cultural economic practices of each community.

Before

After

Fig.5 - 23: *Visioning of potential rural changes in the new city-region planning structures*

Before

After

Fig.5 - 24: *Visioning of potential rural changes in the new city-region planning structures*

Peri-Urban

Current peri-urban landscapes in secondary city-regions have portrayed the closest semblance to sustainable agroecological landscapes. The integration of accommodation, modern urban services and agricultural production portrays integrated landscapes that cater to some proposed agroecological principles of cultural diversity, agricultural and ecological landscape diversity and circularity. Nairobi's peri-urban settlements are characterised by suburbs and in the fertile rural hinterlands where food production should take place, there is a dominance of monocrop horticulture and cash crops. However, due to the planning and governance strategies of the Nairobi Metropolitan authorities, these territories are continuously under threat of reconfiguration through change of use policies that create modernisation oriented Real Estate products on potentially viable agricultural land.

There is a need therefore for governance authorities to identify the potentials of these areas and promote harmonious real-estate innovations alongside agricultural practices that cater to the role of the peri-urban area as identified in the city-region landscape. In the City-region proposal we will see the continuous growth of the peri-urban area as an extension of the urban and the rural landscapes while absorbing more urban functions in order to promote the de-growth of the primary city concept. The diversity at Peri-urban level can only continue to grow with more emphasis being placed on principles of ecological sustainability and economic opportunities. There is a need therefore for the city-region authorities to focus on diversification of current monoculture farming landscapes in order to provide space for sustainable agroecological practices as well as accommodation. The figures 5-25, show envisioned changes in peri-urban monocrop landscapes.

Current prominent horticulture and cash-crop landscapes on the spatial peripheries of Nairobi and other proposed new urban centres regionally need to be rethought and reconfigured to cater to sustainable farming practices for feeding local capacities. This ties into land justice claims which have seen majority of local communities in such areas disenfranchised from speculative land practices associated with current neoliberal planning practices. The historical issues that have successively propagated unsustainable peripheral land-uses need to be addressed for the growth of sustainable urban environments
.

Before

After

Fig.5 - 25: *Visioning of potential peri-urban changes in the new city-region planning structures*

Urban

The urban landscape and the urban communities will experience the most intense changes with the proposed changes to city-region territories. A deceleration of cross regional rural-urban migration could see large centres such as Nairobi and Mombasa begin to shrink, economically and demographically as rural population begin to move into closer urban territories. Generally, with shorter food supply chains, urban dwellers are bound to experience higher food prices with the empowerment of rural producers and the dissolution of middlemen activities. However, this will mean that individuals in the peripheries will have more opportunities for local production as large regional food chains will have to be scaled down. The main challenge in the current urbanisation trend of city-scapes is the lack of space for vulnerable groups and inadequate capacity for urban agriculture. Although advocacy around urban agriculture has began with proposals such as the Milan Urban Food policy Pact, there is still room for huge improvements into the type of urban agriculture practiced in primate cities today. With the proposed changes in the structure of city-regions, and the subsequent shrinkage of urban areas, we should see the increase in open space within this peripheral neighbourhoods, not only for decent and sustainable low-cost accommodation, but also for urban agriculture practices.

In the new city-region territories, the growth of secondary urban areas within the city-region territories must be encouraged in order to produce more sustainable integrated landscapes and to avoid the growth of large metropolitan areas such as Nairobi. This is bound to reduce on the negatives of everyday metropolitan urbanism such as long commute hours, higher land prices and subsequently higher rents and the growth of unsustainable low-income neighbourhoods and slums. Local governance and planning authorities in the new territories have to plan for low-income settlements as the changes in socio-economic capacities are not expected to be immediate. There should be proper demarcation and allocation of space for low-income self-adapting neighbourhoods to reduce on the appropriation of public space by vulnerable groups. Similarly, urban and peri-urban areas should begin to focus on the creation of adaptable public space that can be appropriated for different uses at different times as observed across the Kenyan region currently. This involves strategies of public space governance and use as advocated for by agroecological urbanism, so as to enable direct producer-consumer interactions. However, a lot of regulation needs to be developed for the management of dispersed production capacities as nutrition and health remain to be a crucial factor of agricultural production.

Before
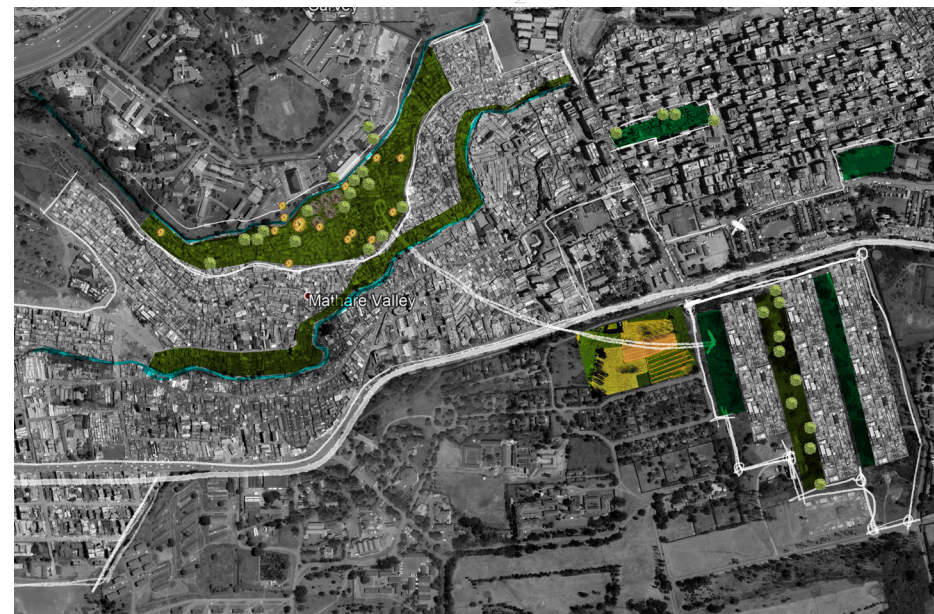
After

Fig.5 - 26: *Visioning of potential urban changes in the new city-region planning structures*

Before

After

Fig.5 - 27: *Visioning of potential urban changes in the new city-region planning structures*

City-region planning for cultural-economic lifestyles

Summary

This research set out to investigate the impact of neoliberal planning on vulnerable groups in the peripheries of the rapidly growing primate city of Nairobi, Kenya. As a growing metropolitan area, Nairobi represents similar primate cities in Africa and the global south which are a direct product of their historical and ongoing planning and governance practices, that continue to focus on neoliberal visions of cities as economic agents of socio-economic development, within a global financial services system. In the process, this external outlook and dependency on economic growth within the globalization framework, has continued to ignore local cultural-economic capacities in the development of urbanisation and therefore exacerbating growing inequalities. The result is the continued growth of vulnerable socio-economic peripheral populations within these metropolitan regions whose existence is highly dependent on adaptive impermanence strategies that link rural and urban landscapes, culturally, economically and politically. Similarly, agriculture plays a huge role in urbanisation in Nairobi and other African cities, where urban socio-economic activities are highly informal and based on the agro-food industry. This is similarly supported by strong cultural identities of agricultural producers inherent in many communities across the Kenyan region.

The continued insistence on conventional methods of agricultural production based on visions of efficiency in production, higher yield productivity and nutritional gains is only projected to exacerbate growing rural-urban migration as it caters to unsustainable rural ecological land-uses, that are associated with land degradation and extreme climate change patterns. This ties heavily to the current narratives of new buzz concepts such as 'urban farming' and 'the 15-minute city' that view cities as containers that need to be retrofitted with food (Tonarghi and Dehaene, 2019). This patterns of conventional urban growth and agro-industrial food production, unless focused on leapfrogging unsustainable socio-cultural, economic and political practices are only going to distance current vulnerable populations from their land and economic capacities as socio-cultural practices associated with land are still an important factor of identity in most African cultures.

By reviewing the rural-urban links prevalent within the urban peripherals in Nairobi, we begin to see the link between rural production sites and urban consumption sites. This ties to the theories of capital and work, which look into the impact of dissociating the labourer from his work- the city from the countryside. Through the impermanent lifestyles and cultural associations of rural and urban landscapes for food and economic sustenance in the socio-economic peripheries in Nairobi, we see the importance of merging the rural and urban landscapes into sustainable city-regions. Urban prominence of one or two primate cities in a region of such cultural diversity only serves to diminish urban opportunities for rapidly growing populations. There is therefore a need to reconfigure the current governance and planning practices into systems that empower balanced and decentralized urban growth to provide adequate opportunities for all.

Role of productive planning in Urbanism – Agroecological urbanisation

This research began by analysing the socio-cultural lifestyles of the peripheral populations in Nairobi, and through this, was able to establish the role of agricultural practices in sustaining vulnerable and impermanent lifestyles in the city. This discovery process, begins to uncover the socio-cultural patterns of rural-urban attachment, not only within the peripheries but also among most urban populations in Nairobi who have cultural attachments in other regions of the county. These socio-cultural regional attachments are an important factor of contextual planning that is evident in multi-cultural/ethnic urban settings especially in contexts such as Sub-Saharan Africa. The role of colonial practices on planning and governance regimes, that have created the current urban primacy contexts, cannot be overlooked. The urban agglomeration and development patterns established in the early 20th Century in Nairobi, and their persistence in subsequent governance regimes since are clearly visible, as they have continuously shaped the current rural urban landscapes and the socio-cultural production of impermanent spaces, despite their glaring shortcomings. Through the historical records of colonial government practices (Anderson, 1988) we can also begin to identify the impact of colonial land systems on defining cultural identities and their persistence today. Therefore, we insist on the significance of identifying and locating any planning and governance learning and recommendations, within states recovering from colonial systems, to their local socio-economic, political and cultural capacities, as a means of addressing social-justice issues already exaggerated by continued planning ignorance. There is a need to re-configure urban planning, not only as a process that caters to the factors of globalization and external financial systems, but also to the local capacities of their immediate populations. This is why, this proposal, identifies heavily with the agricultural identities prevalent among majority of the communities in the Kenyan region and proposes productive urban planning that caters to the empowerment of sustainable agricultural practices. Introduction of conventional agricultural practices that distance agricultural identities of food production from the people will only extend and exacerbate the growing inequalities visible in the urban settlements to the rural and peri-urban landscape. Indigenous knowledge of resilient farming techniques and food production already exist within such communities and counter narratives such as agroecology advocate for the empowerment of such activities. Therefore, for Kenyan communities, it is important for planning and governance practices to focus not only on advocating for the right to the city, but also for the right to the city-region and the inherent capacities within each region. This will not only distribute concentration of knowledge and production capacities, but also increase the resilience of regions as they extend over different territories.

City-region systems (water, energy, food); productive landscapes as a criteria for integrated planning.

This city-region rights have a huge focus on future sustainability agendas as it is now clearly visible how the current resources of urbanisation are tied to the city-region landscape. Similar to Food, Water and Energy landscapes are city-region systems that cater to resilient urbanisation agendas. The capacities to provide for sustainable, and resilient energy and water systems is also tied to the capacities of land at large territorial scales. Similarly, communities that live in associated productive landscapes have traditionally developed indigenous resilient systems that the urbanisation agenda can build on. It will therefore be crucial for individuals involved in planning city-regions to cater to the capacities of communities living in the relevant productive landscapes and take up similar productive planning approaches in order to ensure that the rights and knowledge of communities are safeguarded.

Death of the city as we know it? – The future of integrated regional landscapes.

Therefore, from this proposal, we have seen that the current system of planning has relied too much on the dichotomy of the rural-urban divide. This disconnect has enabled the current splintered system of governance and planning practices that relegates the rural to private para-state apparatuses whose main focus is the extension of current conventional agro-industrial systems, while the city continues to acts as a container of food markets for consumption. The rural-urban disconnect clearly frames the antagonistic nature of capitalism, between forces of production and forces of consumption. The rural is continuously viewed as a productive landscape with no capacity for effective consumption. Therefore, resources on rural landscapes are geared towards improving efficiency and productive capacity, while the city is viewed as an isolated system of modern production that is fed by the rural production forces. However, we have established that this relationship is unsustainable and in order to cater to the growing concerns of resource scarcity and climate change awareness, there is a need for integrated and harmonious diverse landscapes. Production and consumption are symbiotic processes that can only be made more resilient by integration, the urbanisation of the rural and the diversification of the urban. In the case of Nairobi, as witnessed during the ongoing pandemic, the previous cultural-economic patterns of resource flows from urban to rural landscapes have been reversed and the rural continues to support the urban in such precarious situations. Similarly, the continue to witness that the decentralization of work has been made possible by decentralized infrastructure and therefore, there is room for decentralizing city production processes across the city-region territory. Productive planning in the Kenyan case therefore needs to focus not on the metropolisation of primate areas such as Nairobi, but the decentralization of the needed infrastructure for city-region growth.

Agroecological Urbanism - An urbanism of Respect/Care to ecological, socio and political processes of life.

In conclusion, as witnessed in the growing movement of agroecology, there is a need to develop symbiotic production processes in the urbanism field that are in tune with nature's capacity and the socio-cultural and political processes of life supported within it. An agroecological urbanism represents an urbanism of respect, that not only imposes foreign urban systems but also focuses on learning and strengthening inherent local capacities.

Recommendations for further research

What is the extent of the city-region?
The works of Lefebvre point out that, boundaries should serve to distinguish and not to isolate. The vocabulary of urban and architectural modernity has however continuously been used to colonise space and attach economic value to it, and this has propagated the current economic agency of city growth that is supported by privatisation of productive capacities. In this research, by introducing the city-region concept, we do not advocate for the creation of new boundaries that serve to isolate. As observed from the historical effects of colonial boundaries in Africa and the subsequent socio-cultural and political issues that arise, we see the need to dissociate boundaries from socio-cultural identities and capacities. Boundaries should remain abstract, and only as tools of enabling socio-economic planning. Integrated landscapes should be continuous and without strict delineations of territory. Therefore, following this research there is room for further research on what are the extents of the city-regions, what defines the extents of the city-region and how do you regulate the edges of the city-region?

How to define/strengthen governance at the local level of a city-region?
By creating an integrated city-region landscape, we begin to blur the boundaries between the urban and the rural. Therefore the definition and scope of the local begins to change , if we begin to attribute similar capacities across localities (rural or urban) within territories. Therefore, there is a need to identify the scale of the local, within the city-region and identify governance systems that empower local capacities.

Mapping resource flows within the city-region- SSA
In the case of Nairobi, there was limited data of resource flows within the broader region and therefore making it hard to establish the capacities and influence of each region based on the source of resources. Data enables proper planning and governance practices and therefore, the new proposed city-regions will require that information regarding resource flows be adequately provided. This will enable mapping supply and consumption chains and similarly inform the circularity concepts needed to develop resilient spatial systems.
Climate change effects in multi-functional landscapes. (integrated city-regions)
The purpose of the city-region landscape is to decentralise the impact of climate

change for more local interventions. Modelling of climate data for mono-functional landscapes (urban/rural) is ongoing and has made significant strides over the last few decades. The city-region landscape through bio-diversification principles however calls for the integration of landscape to overcome this mono-functional approach to planning. There is therefore need to develop tools and strategies that will enable the study of climate change effects across integrated landscapes.

Chapter 7; Reflection

Like a play, where the end is already predetermined, modern day city planning ideals adopted by politicians create policies with specific goals in mind, – future modernist cities. However, the everyday cannot be predetermined. Planning is continuous and adaptive to the decisions of everyday life...

Relationship between graduation project and Studio

This research proposal was set in the Planning Complex Cities Studio in the Urbanism Track. This studio builds upon the expertise in spatial development, spatial planning, territorial governance, and participation present within the Urbanism track. The proposal followed the process of critical analysis of social conflicts arising from unequal distribution of spatial resources and evaluating the institutional and contextual causes of such conflicts. The global context of the studio provided a good fit for this proposal as it focuses on the context of the global south, particularly with a case study of Nairobi, Kenya. The studio is also focused on multiple scales of urbanisation from regions to local rural-urban contexts while investigating the relevant planning practices, governance arrangements and civil-society engagements. This outlines the focus of this proposal which tried to establish how the adaptive socio-cultural, economic and political regional patterns observed within the peripheries of Nairobi, influence the multi-scale spatial context as it is currently experienced.

Theoretical and Conceptual underpinnings of the study

This research and design proposal involved an iterative process between document review and fieldwork analysis. The document review involved the study of critical urban theories relating to the production of space and this provided in depth understanding of how the concept of space as both a process and product have developed over the years. The process of developing this proposal began with a review of Lefebvre's work, The Critique of Everyday Life, and Abdoumaliq Simone's City Life from Jakarta to Dakar; Movements at the crossroads. This provided a good starting point in understanding urbanisation as a lifestyle and the importance of the contextual analysis of urbanism. Further reading recommendations from my supervisor on the works of Foucault, were equally important in discovering the impact of governance as a crucial aspect of Urban life. The works of Foucault have been very relevant in further understanding how governance as a relational concept in society has developed over the recent decades. I was able to gain more insight on the relationship between power and 'visibility'. A concept of modernism that allows for the glaring exposure of social life to the 'agents of Power', therefore bringing it under control/domination. This has been very relevant in understanding how space and power relate to each other and the impact of modernist state mindsets in creating order that can be controlled. This concept relates very well with the works of Simone, where he brings up the concept of individuals in the peripheries and how they adapt to different systems of opportunism and self-governance within the grey areas of modern-day life in the global south. This research therefore picks up from this relationship to understand how these concepts of peripheries, governance and social reproduction of space relate within the chosen case study of Nairobi. The phenomenon of transitory cultural-economic lifestyles was observed that is a reality and response to the brutal reality of urban impermanence in primate neoliberal cities that serve clientelist

governance mindsets over the needs of the people. A view of current critical issues that threaten this model urbanisation and city life, such as Climate change action and Resource Scarcity awareness then articulate the need for identifying alternative systems of urbanism. The works of Mark Swilling and Eve Annecke, Just Transitions, provide a critical highlight into why the global south and Africa in particular need to re-evaluate borrowed systems of urbanisation from the global north. The need for sustainable ecological transitions in the current system of urban planning and governance necessitated looking into concepts of sustainable transitions – agroecology- that can react to the current context of the chosen case study of Nairobi.

Research Method and Approach

Generally, the literature review process yielded positive results in developing the important theoretical framework that underpins this research. The choice of onsite fieldwork as a crucial part of the methodology was an eye-opening experience as a process of contextualizing personal perceptions and literature readings. The use of the senses (sight, touch, feel, smell etc.) in the understanding of urban contexts and the general collection of information for analysis provides an important aspect of any qualitative study that looks into socio-cultural factors of urbanism. Given concerns of the current COVID-19 pandemic and travel advisories, I believe a different methodology would have yielded different results. The ability to receive first-hand information from respondents, to travel within different geographical territories to better understand the differences in spatial scales and geo-contexts was crucial in understanding the role of the urbanist not only as a visualising professional but also as a social and networking being who needs to understand urban life as a contesting relationship between society and nature. The role of adaptiveness in planning practice and governance, in Nairobi and perhaps within similar contexts around the region, against the ongoing modernisation policies and actions from government agencies, is clearly visible through an experiential study of the socio-economic setting of respondents on the ground.

Research and Design

The relationship between research and design remains quite strong, but should be approached with caution. Through the case study of Nairobi, I became more aware of the influence of historical and socio-political contexts in the influence of urbanism as experienced by the majority of the population. Nairobi as with similar primate cities across Africa have deep historical and colonial contexts. The impact of historical events in shaping the current socio-cultural context of the region needs further investigation. The creation or erasure of identities across different geographic territories through historical processes of spatial production have had a major impact on the type of urbanisation that continues to take place. The design and remodelling of old cities and the creation of new cities altogether might -with caution- be attributed to the escape from

this political and historical processes. Urban design as practiced in Kenya's context today cannot afford to ignore the important work of research into the trauma/identities of historical and social processes of spatial production. However, the work of the urban designer as a tool for visualizing possible futures and providing alternatives through in depth research into the capacities of sustainable and resilient socio-ecological systems should continue. A lot of research has already been done in the Kenyan case and this research builds on existing policies and frameworks that have already been developed by different entities. However, action towards the findings of this proposals is minimal. The role of the urban researcher/designer as I practice it today, is therefore to communicate to the results of this work to the public. To take up research and design action that does not only explain power to the state, but also to the people.

Social, Professional and Scientific Framework

The social relevance of this research is based on its context which was chosen specifically to address the peripherals who make up the majority of Nairobi's urban context. The intention of the research is to provide a view point of urbanism from the bottom-up approach rather than from the state. To visualise the socio-cultural production processes that make up urban life across the region, as opposed to the current process of urbanisation that views the urban as a product/ agent of economic change through global financial systems. Scientifically, this proposal builds on the concept of city-regions as not only a product but also as a relationship of social production processes between nature and society. Through referring to the transitory socio-cultural processes of regional production that the peripheries of Nairobi rely on, we see the importance of urban research today to refer to existing socio-capacities of populations and to identify the influence of cultural and political processes in the development of current urban crises in the global South.
Similarly in the development of this proposal the use of agroecology as a sustainable and resilient sociotechnical system to rival the current conventional industrial agricultural systems provided an opportunity to analyse and understand the scope of agricultural systems in the creation of current rural-urban landscapes. However, as of the time of development of this proposal, a huge amount of literature is focused on the political and ecological aspect of agroecology and their potential to foster social-relationships of governance, and environmental change. Further scientific research on the potentials of an agroecological urbanism building on recent works of professionals such as Chiara Tornaghi and Michiel Dehaene needs to continue in order to empower the socio-ecological process into urbanisation literature. Its ability to respond to current ecological global issues of climate change and resource scarcity provides a potential for reconciling everyday city life to the natural processes of food production.

Ethical issues.

The choice of case study for this proposal within a personally familiar context required that I evaluate my biases and make all possible attempts to reduce or eradicate it. The Kenyan context although highly familiar for me as a citizen, required that I detach my preconceived ideas and experiential knowledge when dealing with respondents in order to ensure that the information collected during the field study was entirely based on the respondents' experiences and not on familiar shared knowledge. I had to also ensure that all participants made voluntary contributions and provided informed consent before participating in the research. All private information about the respondents was made confidential while preparing this proposal and all secondary information used in the production of this final product has been credited to the respective authors.

Transferability

The results of this research proposal although highly contextualized to the Nairobi context can be viewed in two separate sections. Results that reflect the empowerment of the city-region concept as a social production process and those that are specifically geared towards the development of an agroecological urbanism. For the social production processes, the phenomenon of transitory cultural processes within Nairobi's peripherals are empowered by the fact that Kenya is a multi-ethnic society where individuals maintain values of strong cultural connections to their ancestral homelands. This therefore empowers the concept of city-regions as social processes of spatial reproduction. Similar contexts across the African context that display similar social-cultural values can benefit from this proposal by looking into the socio-cultural capacities of their society. However, it is important to take note that, similar to the diversity of different communities in Kenya, Africa also includes an immense range of ethnic communities with diverse socio-cultural practices and generalisation of cultural values is highly discouraged.
For the introduction to an agroecological urbanism, this proposal suggests an urbanism approach of socio-technical planning and governance in order to empower similar sustainable niche systems within current socio-technical fields. The agroecological urbanism approach builds on the current political agroecology social movement to include urbanisation as a way of life that reflects the impact of current food and agricultural systems in creation of the current urbanisation landscape.

Impact of COVID- societal level

Finally, this proposal has been developed within the 2019-2021 academic year when the COVID-19 pandemic is ongoing. Restrictions on unnecessary movement during the pandemic affected the amount of fieldwork possible during this pandemic and the current socio-economic situation of most of the respondents within this proposal, reflected a period when the pandemic had heavily affected cultural, political and economic lifestyles. This proposal made

attempts to reflect the situation as it currently existed during the pandemic and as much analysis and literature review reflecting similar or recent situations, although minimal, was sought.

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Appendices

Rural-Urban links in Kenyan cities

Thank you for taking the time to fill in this short questionnaire. It is prepared as part of a MSc Architecture, Urbanism and Building Sciences thesis project to evaluate the rural-urban networks between Kenya's main cities and the rural areas. Where relevant, there are a few questions related to farming practices and food production in within these rural and urban areas.
The information shared in this questionnaire is collected anonymously and for education purposes only. It will not be shared with other parties and will be treated with confidentiality.
* Required

1. Age *

    Mark only one oval.

    ◯ 18-25
    ◯ 26-35
    ◯ 36-55
    ◯ Above 55

2. What is your current residence status in Kenya? *

    Mark only one oval.

    ◯ Citizen
    ◯ Resident
    ◯ Asylum seeker
    ◯ Other: _____

3. Gender *

    Mark only one oval.

    ◯ Female
    ◯ Male
    ◯ Prefer not to say

4. Are you a student? *

    Mark only one oval.

    ◯ Yes
    ◯ No

Current residence

In this section we would like to know which City/Town in Kenya you reside in.
For residents in Nairobi, we have made the distinction between Nairobi City County and the Nairobi Metropolitan region.
Please read below to inform yourself about the difference, for your answers.

Nairobi city proper consists of; (Embakasi N, S, E, C & W), Makadara, Kamkunji, Starehe, Westlands, Lang'ata, Mathare, Kibra, Roysambu, Kasarani, (Ruaraka, Dagoretti N & S)

Nairobi metropolitan region comprises other specific areas surrounding Nairobi City county; i.e.. Some towns in the neighbouring Kiambu, Murang'a, Machakos & Kajiado Counties.
This towns outside the city boundaries include;
KIAMBU - (Kiambu Town, Thika, Limuru Ruiru, Karuri, Kikuyu, Ruaka, Kahawa, Githunguri)
MURANG'A - (Gatanga, Kandara, Kenol)
KAJIADO - (Kajiado town, Olkejuado, Bissil, Ngong, Kitengela, Kiserian, Ongata Rongai)
MACHAKOS - (Tala, Machakos town, Athi river)

For further information you can look it up here > https://en.wikipedia.org/wiki/List_of_constituencies_of_Kenya

5. Which city/town do you currently live in? Please refer to the description above to answer this question. (If you reside outside the named areas, you can fill in the name of the town in the option "Other"). *

    Mark only one oval.

    ◯ Nairobi City
    ◯ Nairobi Metropolitan region
    ◯ Mombasa   *Skip to question 28*
    ◯ Kisumu   *Skip to question 28*
    ◯ Other: _____

Nairobi resident

You have indicated that you currently reside in Nairobi/Nairobi Metropolitan area. With this section we would like to know the nature of your stay in Nairobi.

6. Which constituency/ward Do you live in? *

Mark only one oval.

- ◯ Embakasi North
- ◯ Embakasi South
- ◯ Embakasi Central
- ◯ Embakasi East
- ◯ Embakasi West
- ◯ Makadara
- ◯ Kamukunji
- ◯ Starehe
- ◯ Westlands
- ◯ Lang'ata
- ◯ Mathare
- ◯ Kibra
- ◯ Roysambu
- ◯ Ruaraka
- ◯ Dagoretti North
- ◯ Dagoretti South
- ◯ Kiambu
- ◯ Thika Town
- ◯ Limuru
- ◯ Ruiru
- ◯ Karuri
- ◯ Kikuyu
- ◯ Ruaka
- ◯ Kahawa
- ◯ Githunguri
- ◯ Gatanga
- ◯ Kenol
- ◯ Kandara
- ◯ Kajiado town
- ◯ Olkejuado
- ◯ Bissil
- ◯ Ngong
- ◯ Kitengela
- ◯ Kiserian
- ◯ Ongata Rongai
- ◯ Tala
- ◯ Machakos
- ◯ Athi River

7. Which of the following best describes the main reason you live in the Nairobi metropolitan area? *

Check all that apply.

- ☐ Work
- ☐ Residence
- ☐ School

Other: ☐ _____

8. Which of the following do you think best describes the type of housing you live in? *

Mark only one oval.

- ◯ Self contained- Apartment
- ◯ Self contained - Stand alone house
- ◯ Single/double Room (Shared Services)
- ◯ Other: _____

9. Were you born in Nairobi or have you moved there from another part of the country? *

Mark only one oval.

- ◯ Moved in
- ◯ Born & raised in Nairobi   *Skip to question 18*

Moved in

(if you are unsure of the name of the constituency, you can look it up here > (https://en.wikipedia.org/wiki/List_of_constituencies_of_Kenya)

10. From which constituency did you move from? *

Mark only one oval.

- Changamwe (Mombasa County)
- Jomvu (Mombasa County)
- Kisauni (Mombasa County)
- Nyali (Mombasa County)
- Likoni (Mombasa County)
- Mvita (Mombasa County)
- Msambweni (Kwale County)
- Lunga Lunga (Kwale County)
- Matuga (Kwale County)
- Kinango (Kwale County)
- Kilifi North (Kilifi County)
- Kilifi South (Kilifi County)
- Kaloleni (Kilifi County)
- Rabai (Kilifi County)
- Ganze (Kilifi County)
- Malindi (Kilifi County)
- Magarini (Kilifi County)
- Garsen (Tana River County)
- Galole (Tana River County)
- Bura (Tana River County)
- Lamu East (Lamu County)
- Lamu West (Lamu County)
- Taveta (Taita-Taveta County)
- Wundanyi (Taita-Taveta County)
- Mwatate (Taita-Taveta County)
- Voi (Taita-Taveta County)
- Garissa Township (Garissa County)
- Balambala (Garissa County)
- Lagdera (Garissa County)
- Dadaab (Garissa County)
- Fafi (Garissa County)
- Ijara (Garissa County)
- Wajir North(Wajir County)
- Wajir East (Wajir County)
- Tarbaj (Wajir County)
- Wajir West (Wajir County)
- Eldas (Wajir County)
- Wajir South (Wajir County)
- Mandera West (Mandera County)
- Banissa (Mandera County)
- Mandera North (Mandera County)
- Mandera South (Mandera County)
- Mandera East (Mandera County)
- Lafey (Mandera County)
- Moyale (Marsabit County)
- North Horr (Marsabit County)
- Saku (Marsabit County)

11. Which of the following best describes your reason for moving to Nairobi? *

Mark only one oval.

- Work
- To live with family/relatives
- Schooling
- Safety
- Other: _____

12. Did you consider moving to another city in Kenya, other than Nairobi? *

Mark only one oval.

- Yes
- No
- Maybe

13. Which other city/town did you consider moving into?

_____

14. Do you have ties/relationships/networks to another constituency/county in Kenya or outside the country? *

Mark only one oval.

- Yes
- No   *Skip to question 33*

Rural-urban networks

Which constituency do you have /ties/networks/relationships in Kenya or region outside Kenya?

17. Which of the following best describes the nature of your relationships/ties to the other regions of the country outside Nairobi? *

    Mark only one oval.

    ◯ Work
    ◯ Family/relatives
    ◯ School
    ◯ Other: _____

Skip to question 22

Born & raised in Nairobi area

18. Do you have /ties/networks/relationships in another county in Kenya or region outside Nairobi?(work/family) *

    Mark only one oval.

    ◯ No   *Skip to question 33*
    ◯ Yes   *Skip to question 19*

Skip to question 19

Nature of external links

In which constituency do you have other ties/relationships?

Nairobi opportunities

22. Given similar work/living opportunities as the ones you have, would you move to another city within Kenya?

    Mark only one oval.

    ◯ Yes
    ◯ No
    ◯ Maybe

23. Do you think other cities in Kenya currently provide similar work/living opportunities as Nairobi?

    Mark only one oval.

    ◯ Yes
    ◯ No
    ◯ Maybe

24. Which two aspects among the following would you consider to be Nairobi's best performing attributes? *

    Check all that apply.

    ☐ Governance
    ☐ Transport and Services Infrastructure
    ☐ Telecommunication Connectivity
    ☐ Accommodation
    ☐ Physical connectivity
    ☐ Cost of Living
    Other: ☐ _____

25. Which two aspects would you consider, require the greatest improvement in Nairobi? *

    Check all that apply.

    ☐ Accomodation
    ☐ Transport and Services Infrastructure
    ☐ Governance
    ☐ Telecommunication connectivity
    ☐ Physical connectivity
    ☐ Cost of Living
    Other: ☐ _____

26. How often do you travel between Nairobi (metropolitan) and the area you have links/networks with? *

Mark only one oval.

- ( ) Once a month
- ( ) More than once a month
- ( ) Once a year
- ( ) Several times a year.
- ( ) Other: _____

27. Would you consider living in the city for the rest of your life?

Mark only one oval.

- ( ) Yes
- ( ) No
- ( ) Maybe

Skip to question 31

Not from Nairobi

28. Do you have relationships/networks in another county/region outside the town you currently live in? *

Mark only one oval.

- ( ) Yes
- ( ) No   *Skip to question 33*

Urban -rural ties

30. which of the following best describes the nature of your relationships/ties to other areas of the country outside your current residence? *

Mark only one oval.

- ( ) Work
- ( ) Family/relatives
- ( ) School
- ( ) Other: _____

Skip to question 31

Rural-urban connectivity

How well would you rate the connectivity between where you currently live and the other areas you have ties to in terms of ;

31. 1. Transport infrastructure?

Mark only one oval.

	1	2	3	4	5	
Poorly connected	( )	( )	( )	( )	( )	Well connected

32. 2. Mobile Phone network connectivity

Mark only one oval.

	1	2	3	4	5	
Poorly connected	( )	( )	( )	( )	( )	Well connected

Source of food

In these next sections we would like to know the source of food that you consume in the city and the farming activities related to it

33. Which of the following best describes the main source of your daily food consumption? *

Mark only one oval.

- ( ) Kiosk/small scale retail traders
- ( ) Supermarket (large retailers)
- ( ) Main food markets
- ( ) Own production
- ( ) Other: _____

34. Do you know which region the vegetables and crops you consume are produced?

Mark only one oval.

- ( ) Yes
- ( ) No
- ( ) Maybe

Rural-urban Farming

35. Do you practice farming?(crops/horticulture/vegetables/dairy etc) *

Mark only one oval.

( ) Yes

( ) No   *Skip to question 40*

Type of farming

36. Where do you practise this farming?

Mark only one oval.

( ) Where I live/ Backyard/Adjacent land

( ) Rural Area

( ) Outer parts of the city/town

37. Which type of farming?

Mark only one oval.

( ) Dairy

( ) Crops/Vegetables

( ) Flowers

( ) Trees

( ) Other: _____

38. which of the following best describes the reason you practise farming?

Mark only one oval.

( ) Main source of income

( ) Complementary source of income

( ) Leisure

( ) Availability of land

( ) Other: _____

39. Are you involved in any other sector of the agriculture/food industry in Kenya? (Distribution/retail) *

Mark only one oval.

( ) Yes

( ) No

Skip to question 41

Agroindustrial sector

40. Are you involved in any other sector of the food industry in Kenya? (Distribution/packaging/Retail) *

Mark only one oval.

( ) Yes

( ) No   *Skip to question 43*

Food chain

41. In which sector of the food industry would you categorize yourself?

Check all that apply.

[ ] General Production

[ ] Transportation & Distribution

[ ] Wholesale

[ ] Retail

Other: [ ] _____

42. Which one best describes your main customer base for your produce? *

Check all that apply.

[ ] Individual consumption

[ ] Immediate neighbours

[ ] Intermediate distributors/farmers

[ ] Direct Wholesale (supermarkets)

[ ] Main food markets

[ ] Direct retail (small markets/kiosks)

Other: [ ] _____

Governance

In this last section we would like to ask a few quick questions about how you understand the management of cities in Kenya and the current level of citizen engagement in the management of these areas.

43. How much would you consider yourself to be involved in the management of the neighbourhood you reside in?

Mark only one oval.

	1	2	3	4	5	
Not involved	( )	( )	( )	( )	( )	Very active

44. Do you understand the city/town leadership structure of the area you currently reside in?

Mark only one oval.

( ) Yes

( ) No

( ) Maybe

45. Do you understand the channels for addressing complains with regards to service delivery within your city/town?

Mark only one oval.

( ) Yes

( ) No

( ) Maybe

46. Are you engaged in any alternative organizations that address issues of service delivery within the community or putting forward complaints to the relevant authorities?

Mark only one oval.

( ) Yes

( ) No

( ) Maybe

47. Have you heard about your County's Urban Redevelopment Plan?

Mark only one oval.

( ) Yes

( ) No

( ) Maybe

Thank you.

Thank you for filling in this questionnaire. We highly appreciate your time and effort in the provision of information towards this research proposal. If you would like to receive feedback about the results of this form or would like to provide more information about your engagement with the agro-industrial sector between rural-urban areas, feel free to leave your email address in the section below.

Thank you for your time and we wish you a prosperous year 2021!

48. Email address

_____

Rural-Urban links in Kenyan cities

372 responses

Publish analytics

Age

372 responses

- 18-25
- 26-35
- 36-55
- Above 55

63.4% | 18% | 13.7%
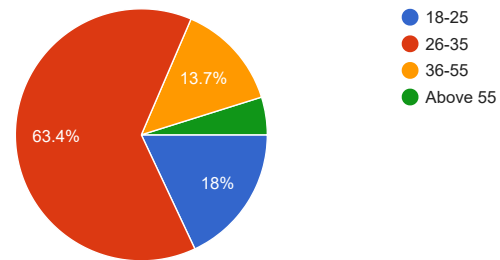
What is your current residence status in Kenya?

372 responses

- Citizen
- Resident
- Asylum seeker
- Foreign student

96.8%

Gender

372 responses

- Female
- Male
- Prefer not to say

57% | 42.7%
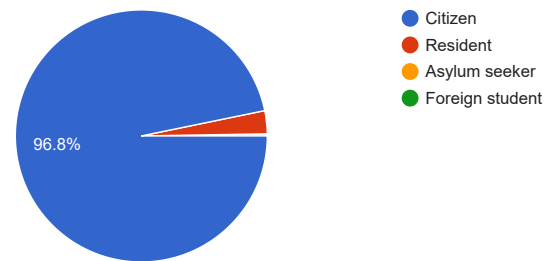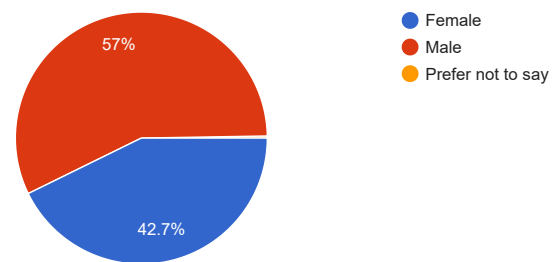
Are you a student?

372 responses

- Yes
- No

82.5% | 17.5%
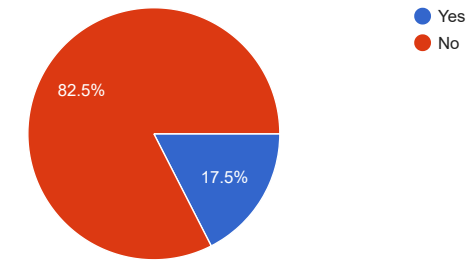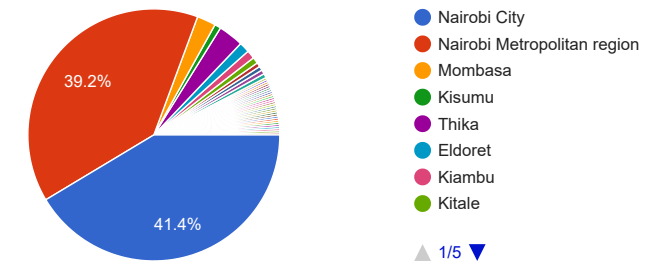
Current residence

Which city/town do you currently live in? Please refer to the description above to answer this question. (If you reside outside the named areas, you can fill in the name of the town in the option "Other").
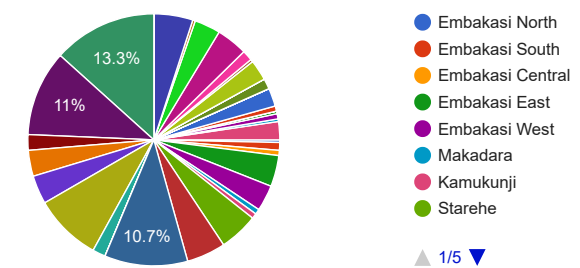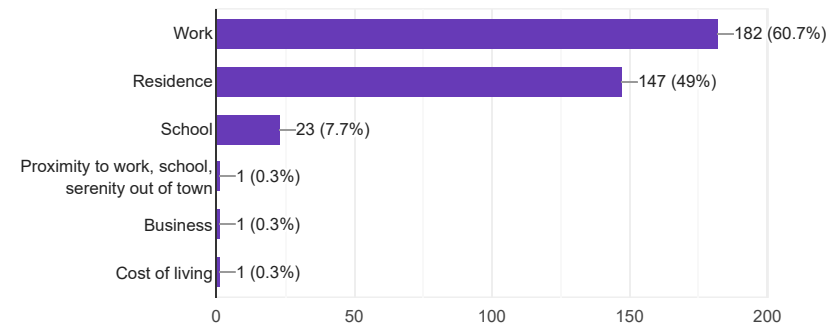
372 responses

- Nairobi City
- Nairobi Metropolitan region
- Mombasa
- Kisumu
- Thika
- Eldoret
- Kiambu
- Kitale

39.2% | 41.4%

⬛ 1/5 ▼

Nairobi resident

Which constituency/ward Do you live in?

300 responses

- Embakasi North
- Embakasi South
- Embakasi Central
- Embakasi East
- Embakasi West
- Makadara
- Kamukunji
- Starehe

13.3% | 11% | 10.7%

⬛ 1/5 ▼

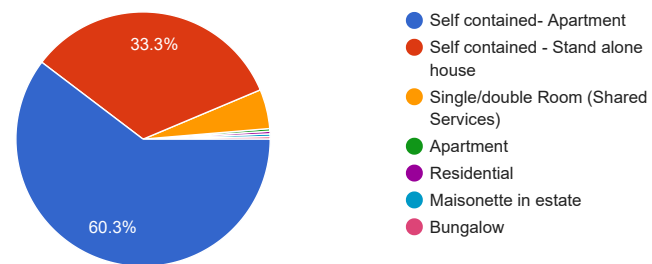## Which of the following best describes the main reason you live in the Nairobi metropolitan area?

300 responses

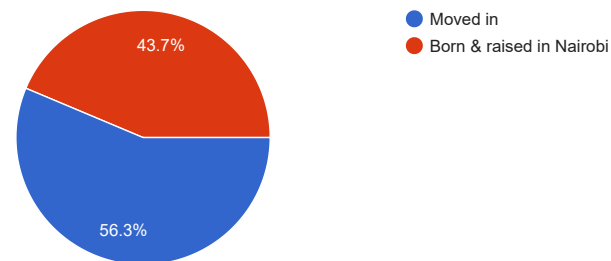| Category	Count (%)
Work	182 (60.7%)
Residence	147 (49%)
School	23 (7.7%)
Proximity to work, school, serenity out of town	1 (0.3%)
Business	1 (0.3%)
Cost of living	1 (0.3%)

Which of the following do you think best describes the type of housing you live in?

300 responses

- Self contained- Apartment — 60.3%
- Self contained - Stand alone house — 33.3%
- Single/double Room (Shared Services)
- Apartment
- Residential
- Maisonette in estate
- Bungalow

Were you born in Nairobi or have you moved there from another part of the country?

300 responses

- Moved in — 56.3%
- Born & raised in Nairobi — 43.7%

Moved in

From which constituency did you move from?

169 responses

- Changamwe (Mombasa Cou...
- Jomvu (Mombasa County)
- Kisauni (Mombasa County)
- Nyali (Mombasa County)
- Likoni (Mombasa County)
- Mvita (Mombasa County)
- Msambweni (Kwale County)
- Lunga Lunga (Kwale County)

9.5%

1/37
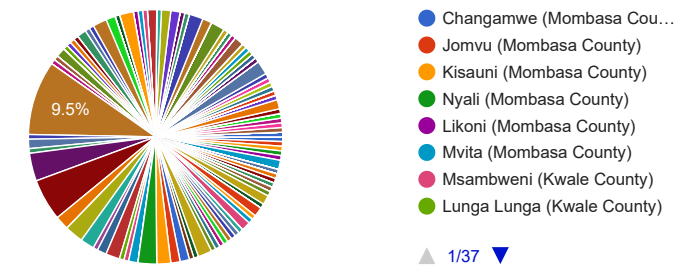
Which of the following best describes your reason for moving to Nairobi?

169 responses

- Work — 58%
- To live with family/relatives — 13.6%
- Schooling — 27.2%
- Safety
- Marriage
- Business opportunities and closeness to amenities
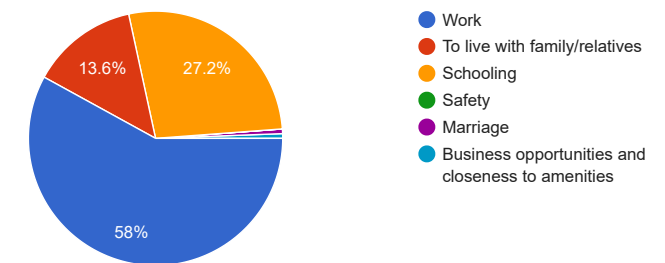
Did you consider moving to another city in Kenya, other than Nairobi?

169 responses
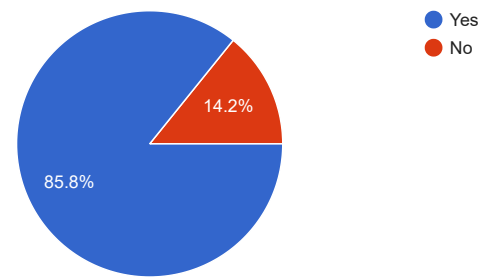
- Yes — 38.5%
- No — 46.7%
- Maybe — 14.8%
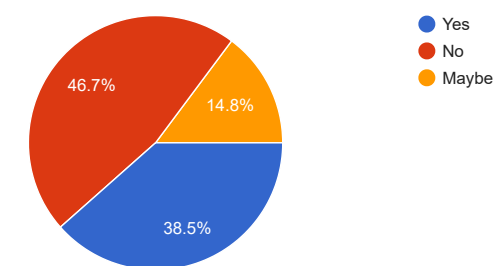
Which other city/town did you consider moving into?

107 responses
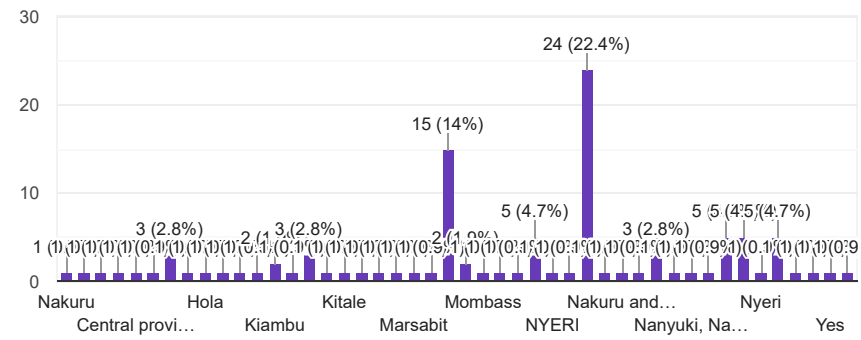
Do you have ties/relationships/networks to another constituency/county in Kenya or outside the country?
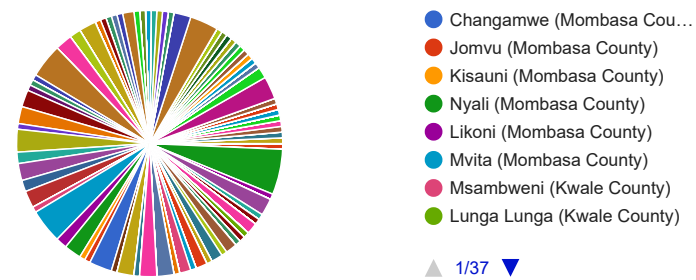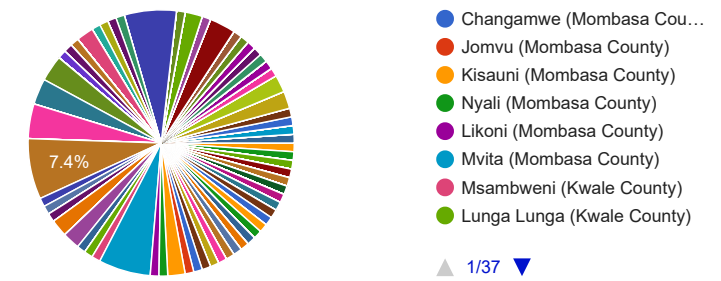
169 responses

- Yes
- No

85.8% 14.2%

Rural-urban networks

Option 1

145 responses

- Changamwe (Mombasa Cou…
- Jomvu (Mombasa County)
- Kisauni (Mombasa County)
- Nyali (Mombasa County)
- Likoni (Mombasa County)
- Mvita (Mombasa County)
- Msambweni (Kwale County)
- Lunga Lunga (Kwale County)

△ 1/37 ▽

Option 2

95 responses

- Changamwe (Mombasa Cou…
- Jomvu (Mombasa County)
- Kisauni (Mombasa County)
- Nyali (Mombasa County)
- Likoni (Mombasa County)
- Mvita (Mombasa County)
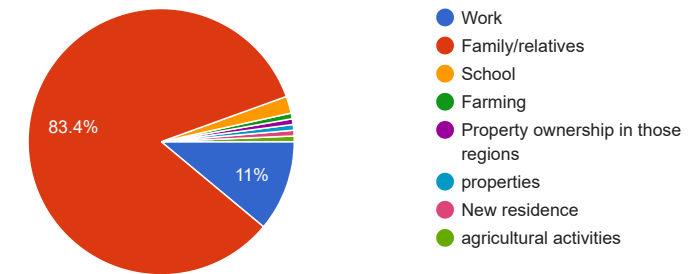- Msambweni (Kwale County)
- Lunga Lunga (Kwale County)

△ 1/37 ▽

7.4%

Which of the following best describes the nature of your relationships/ties to the other regions of the country outside Nairobi?

145 responses

- Work
- Family/relatives
- School
- Farming
- Property ownership in those regions
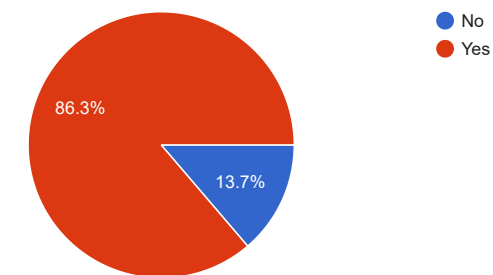- properties
- New residence
- agricultural activities

83.4% 11%

Born & raised in Nairobi area

Do you have /ties/networks/relationships in another county in Kenya or region outside Nairobi?(work/family)
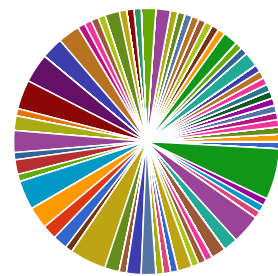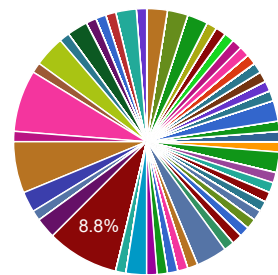
131 responses

- No
- Yes

86.3% 13.7%

Nature of external links

Option 1

113 responses

- ● Changamwe (Mombasa Cou…
- ● Jomvu (Mombasa County)
- ● Kisauni (Mombasa County)
- ● Nyali (Mombasa County)
- ● Likoni (Mombasa County)
- ● Mvita (Mombasa County)
- ● Msambweni (Kwale County)
- ● Lunga Lunga (Kwale County)

△ 1/37 ▽

Option 2

80 responses

8.8%

- ● Changamwe (Mombasa Cou…
- ● Jomvu (Mombasa County)
- ● Kisauni (Mombasa County)
- ● Nyali (Mombasa County)
- ● Likoni (Mombasa County)
- ● Mvita (Mombasa County)
- ● Msambweni (Kwale County)
- ● Lunga Lunga (Kwale County)

△ 1/37 ▽

Which of the following best describes the nature of your relationships/ties to the other regions of the country outside Nairobi?
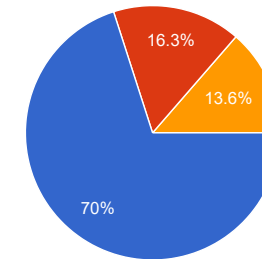
113 responses

90.3%
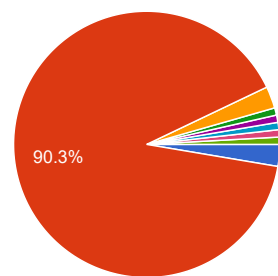
- ● Work
- ● Family/relatives
- ● School
- ● Friends
- ● Farming
- ● Family and Property
- ● Friends
- ● businesses

Nairobi opportunities

Given similar work/living opportunities as the ones you have, would you move to another city within Kenya?
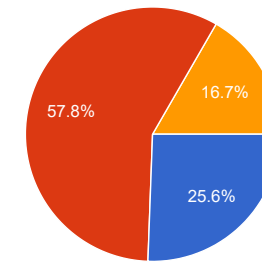
257 responses

16.3%

13.6%

70%

- ● Yes
- ● No
- ● Maybe

Do you think other cities in Kenya currently provide similar work/living opportunities as Nairobi?
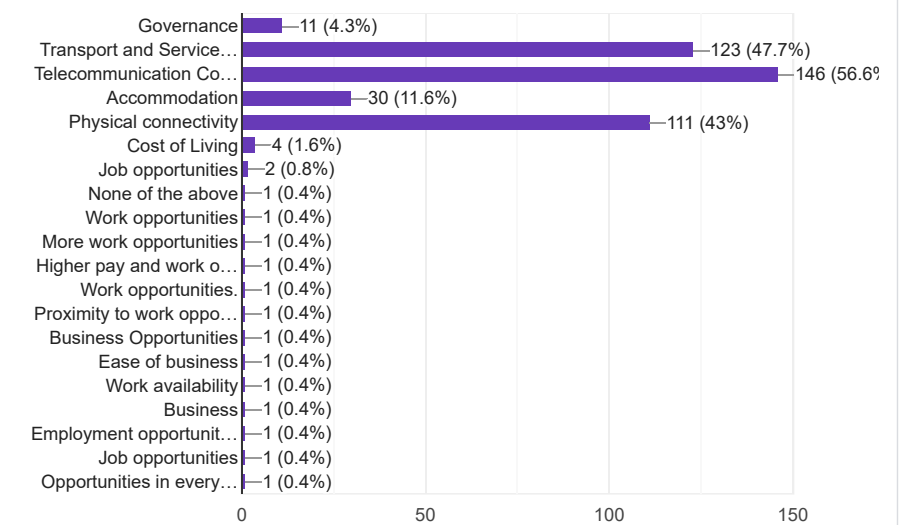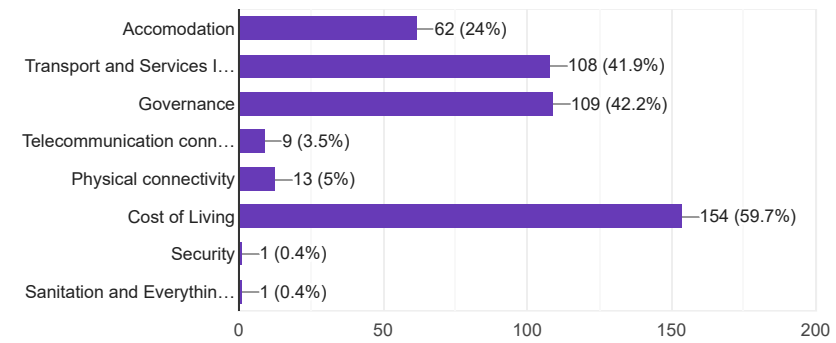
258 responses

57.8%

16.7%

25.6%

- ● Yes
- ● No
- ● Maybe

Which two aspects among the following would you consider to be Nairobi's best performing attributes?
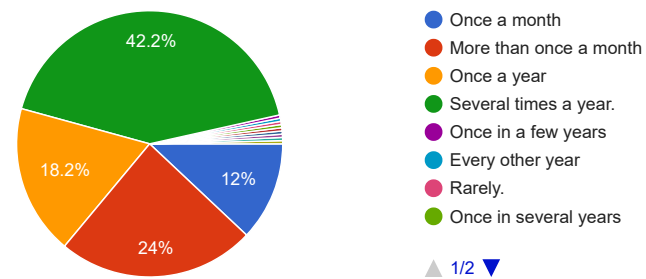
258 responses

Attribute	Value
Governance	11 (4.3%)
Transport and Service…	123 (47.7%)
Telecommunication Co…	146 (56.6%)
Accommodation	30 (11.6%)
Physical connectivity	111 (43%)
Cost of Living	4 (1.6%)
Job opportunities	2 (0.8%)
None of the above	1 (0.4%)
Work opportunities	1 (0.4%)
More work opportunities	1 (0.4%)
Higher pay and work o…	1 (0.4%)
Work opportunities.	1 (0.4%)
Proximity to work oppo…	1 (0.4%)
Business Opportunities	1 (0.4%)
Ease of business	1 (0.4%)
Work availability	1 (0.4%)
Business	1 (0.4%)
Employment opportunit…	1 (0.4%)
Job opportunities	1 (0.4%)
Opportunities in every…	1 (0.4%)

0   50   100   150

Which two aspects would you consider, require the greatest improvement in Nairobi?

258 responses

Aspect	Value
Accomodation	62 (24%)
Transport and Services I…	108 (41.9%)
Governance	109 (42.2%)
Telecommunication conn…	9 (3.5%)
Physical connectivity	13 (5%)
Cost of Living	154 (59.7%)
Security	1 (0.4%)
Sanitation and Everythin…	1 (0.4%)

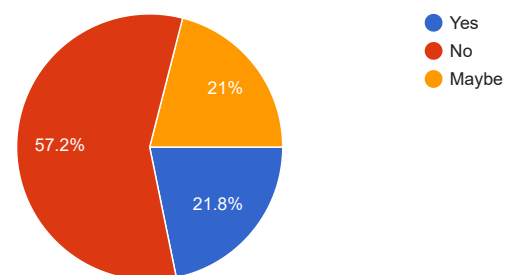## How often do you travel between Nairobi (metropolitan) and the area you have links/networks with?

258 responses

- Once a month — 12%
- More than once a month — 24%
- Once a year — 18.2%
- Several times a year. — 42.2%
- Once in a few years
- Every other year
- Rarely.
- Once in several years

1/2

Would you consider living in the city for the rest of your life?

257 responses

- Yes — 21.8%
- No — 57.2%
- Maybe — 21%
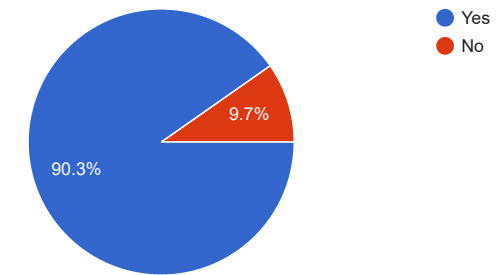
Not from Nairobi

Do you have relationships/networks in another county/region outside the town you currently live in?

72 responses

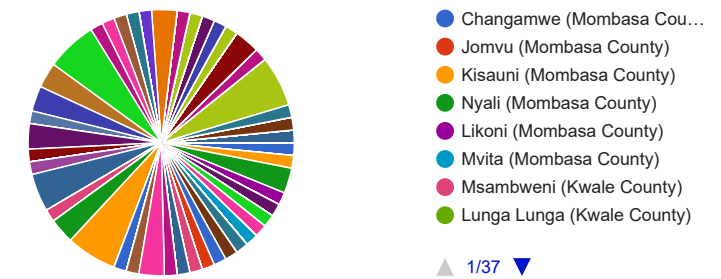- Yes — 90.3%
- No — 9.7%

Urban -rural ties

Which other constituency do you have extra ties/relationships with?

65 responses

- Changamwe (Mombasa Cou…
- Jomvu (Mombasa County)
- Kisauni (Mombasa County)
- Nyali (Mombasa County)
- Likoni (Mombasa County)
- Mvita (Mombasa County)
- Msambweni (Kwale County)
- Lunga Lunga (Kwale County)

1/37

which of the following best describes the nature of your relationships/ties to other areas of the country outside your current residence?
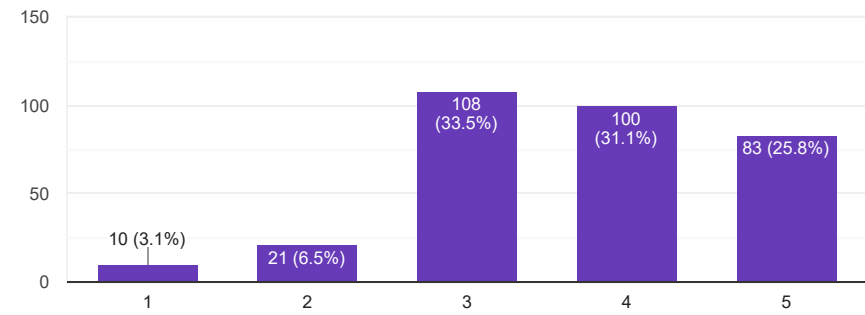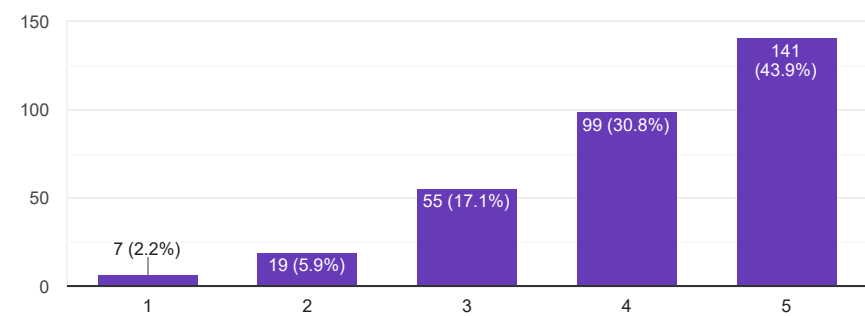
65 responses

- Work — 15.4%
- Family/relatives — 80%
- School
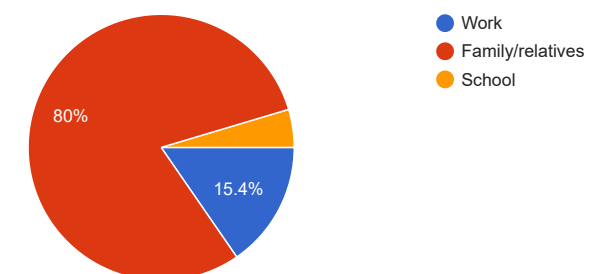
Rural-urban connectivity

1. Transport infrastructure?

322 responses

Bar chart values:
- 1: 10 (3.1%)
- 2: 21 (6.5%)
- 3: 108 (33.5%)
- 4: 100 (31.1%)
- 5: 83 (25.8%)

2. Mobile Phone network connectivity

321 responses

Bar chart values:
- 1: 7 (2.2%)
- 2: 19 (5.9%)
- 3: 55 (17.1%)
- 4: 99 (30.8%)
- 5: 141 (43.9%)
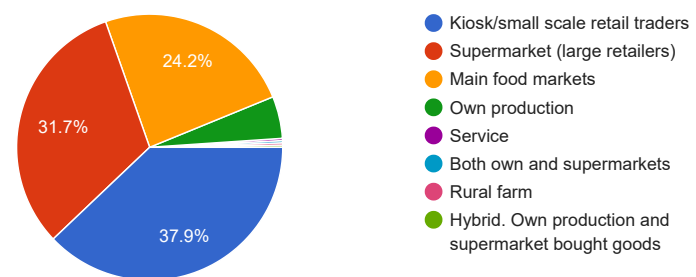
Source of food

Which of the following best describes the main source of your daily food consumption?

372 responses

- Kiosk/small scale retail traders — 37.9%
- Supermarket (large retailers) — 31.7%
- Main food markets — 24.2%
- Own production
- Service
- Both own and supermarkets
- Rural farm
- Hybrid. Own production and supermarket bought goods

Do you know which region the vegetables and crops you consume are produced?

372 responses

- Yes — 36%
- No — 50.5%
- Maybe — 13.4%
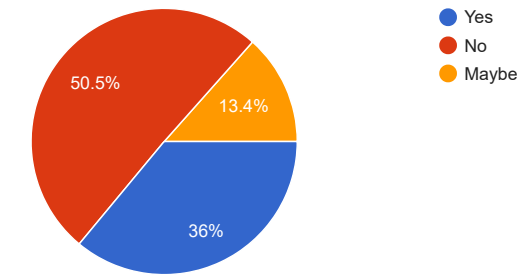
Rural-urban Farming

Do you practice farming?(crops/horticulture/vegetables/dairy etc)

372 responses

- Yes — 33.6%
- No — 66.4%
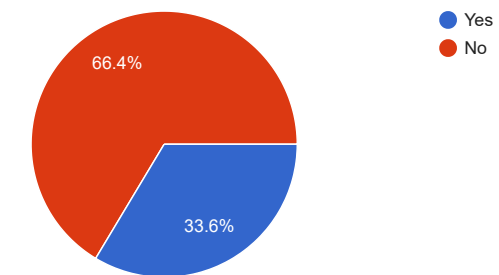
Type of farming

Where do you practise this farming?

125 responses

- Where I live/ Backyard/Adjacent land — 38.4%
- Rural Area — 52.8%
- Outer parts of the city/town — 8.8%
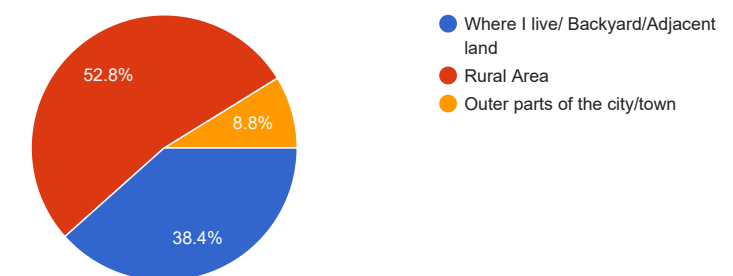
Which type of farming?
123 responses

- Dairy
- Crops/Vegetables
- Flowers
- Trees
- Maize
- Poultry
- Poultry
- Poultry farming

▲ 1/2 ▼

75.6%
12.2%
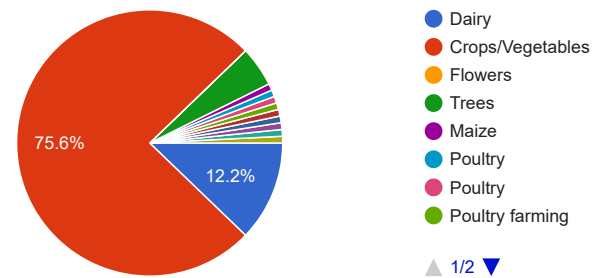
which of the following best describes the reason you practise farming?
124 responses
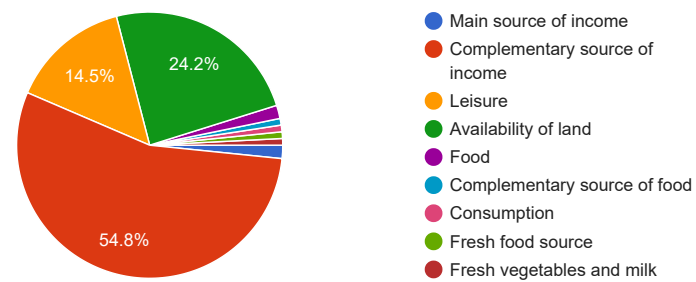
- Main source of income
- Complementary source of income
- Leisure
- Availability of land
- Food
- Complementary source of food
- Consumption
- Fresh food source
- Fresh vegetables and milk

14.5%
24.2%
54.8%

Are you involved in any other sector of the agriculture/food industry in Kenya? (Distribution/retail)
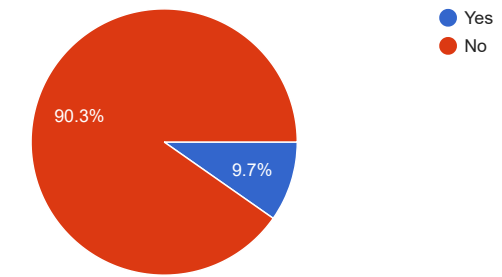125 responses

- Yes
- No

76%
24%
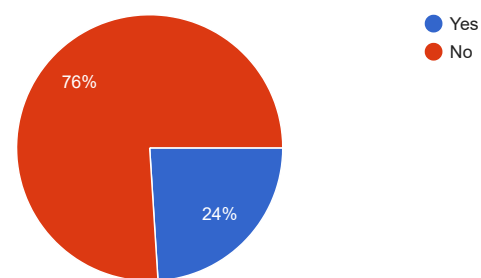
Agroindustrial sector

Are you involved in any other sector of the food industry in Kenya? (Distribution/packaging/Retail)
247 responses

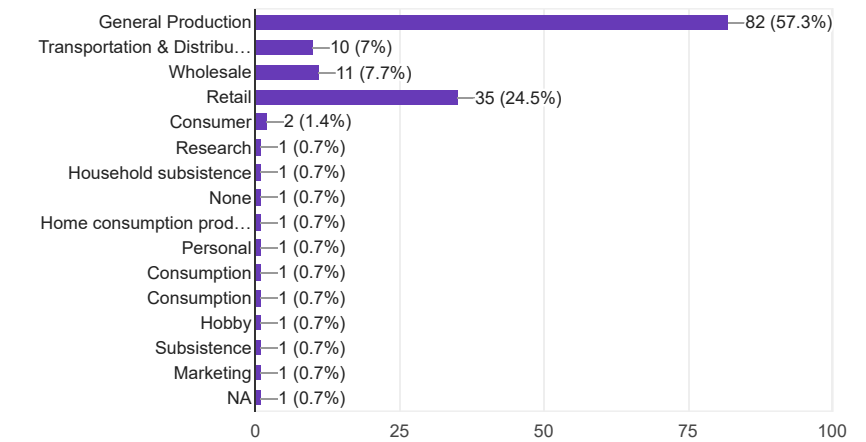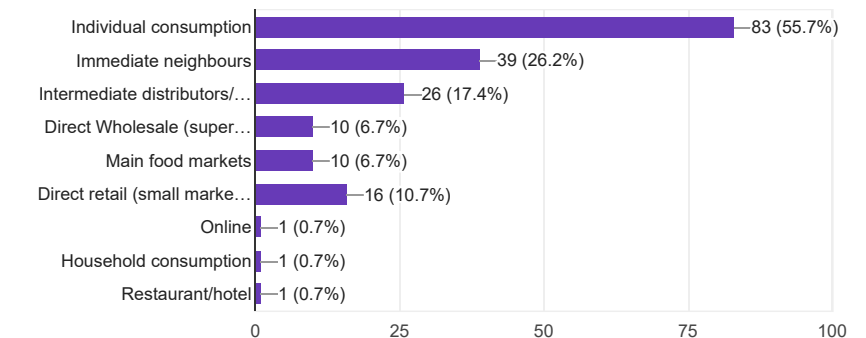- Yes
- No

90.3%
9.7%

Food chain

## In which sector of the food industry would you categorize yourself?
143 responses

General Production	82 (57.3%)
Transportation & Distribu…	10 (7%)
Wholesale	11 (7.7%)
Retail	35 (24.5%)
Consumer	2 (1.4%)
Research	1 (0.7%)
Household subsistence	1 (0.7%)
None	1 (0.7%)
Home consumption prod…	1 (0.7%)
Personal	1 (0.7%)
Consumption	1 (0.7%)
Consumption	1 (0.7%)
Hobby	1 (0.7%)
Subsistence	1 (0.7%)
Marketing	1 (0.7%)
NA	1 (0.7%)

Which one best describes your main customer base for your produce?
149 responses

Individual consumption	83 (55.7%)
Immediate neighbours	39 (26.2%)
Intermediate distributors/…	26 (17.4%)
Direct Wholesale (super…	10 (6.7%)
Main food markets	10 (6.7%)
Direct retail (small marke…	16 (10.7%)
Online	1 (0.7%)
Household consumption	1 (0.7%)
Restaurant/hotel	1 (0.7%)

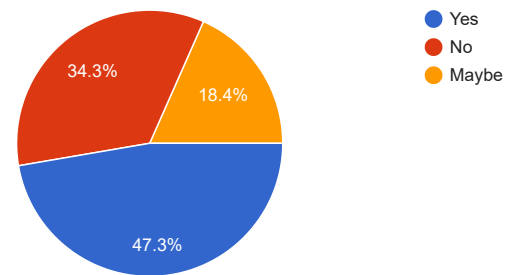## How much would you consider yourself to be involved in the management of the neighbourhood you reside in?

370 responses

Bar chart:
- 1: 179 (48.4%)
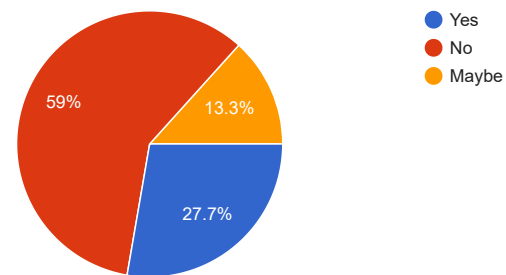- 2: 74 (20%)
- 3: 71 (19.2%)
- 4: 25 (6.8%)
- 5: 21 (5.7%)
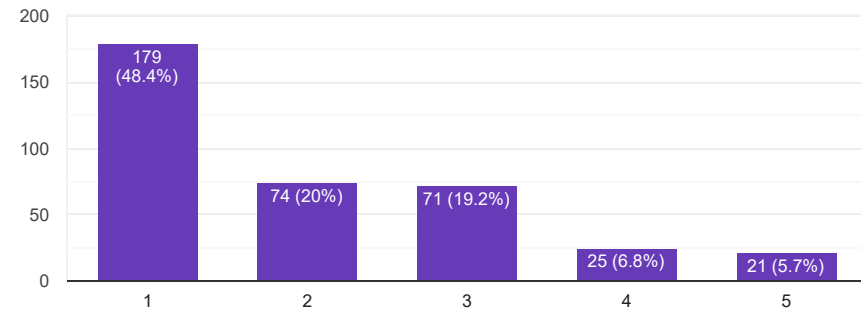
Do you understand the city/town leadership structure of the area you currently reside in?
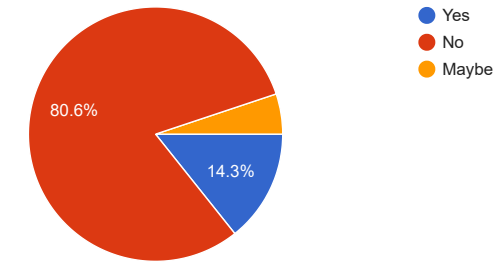
370 responses

- Yes: 47.3%
- No: 34.3%
- Maybe: 18.4%

Do you understand the channels for addressing complains with regards to service delivery within your city/town?

368 responses

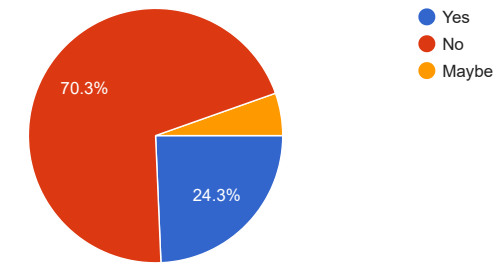- Yes: 27.7%
- No: 59%
- Maybe: 13.3%

Are you engaged in any alternative organizations that address issues of service delivery within the community or putting forward complaints to the relevant authorities?

371 responses

- Yes: 14.3%
- No: 80.6%
- Maybe

Have you heard about your County's Urban Redevelopment Plan?

370 responses

- Yes: 24.3%
- No: 70.3%
- Maybe

Thank you.

Email address

224 responses

Musungu73@gmail.com

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