



Strong Roots & Sturdy Trees

Investigating the contribution of community capital to
socio-economic development in informal settlements in Nairobi

Jorian Hulst





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&
Sturdy Trees**

Colophon

Title: Strong Roots & Sturdy Trees

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All figures and images in this thesis report are the author's own, unless stated otherwise.

Abstract

Despite the steady growth of the Kenyan economy, poverty rates remain high and informal settlements keep expanding. The economic and spatial inequality in the country is increasing. The informal settlement of Kibera, in Nairobi, is the largest in Kenya and struggles to establish sustainable socio-economic development for its residents. The aim of this research is to unravel the causes for the persisting socio-economic disparity and how they can be overcome. This is achieved by investigating a bottom-up approach of development by means of the concept of community capital. The result is an inclusive urban strategy to promote sustainable socio-economic development in marginalised communities. The research consists of an exploration of the theory of community capital, combined with physical, socio-economic and political analysis. It involves explorative research to methods to effectively achieve development. Essential to the creation of the strategy, is the establishment of a community-based approach, which is key to effective and sustainable co-production. The strategy is composed of several spatial interventions, which can be implemented inside the settlement. They include shared plots, active streets and community centres. Their main function is to enhance the creation of community capital, through building trust and a sense of community among residents, while providing basic services and public space. Improved community capital leads to better collaboration, higher levels of safety and a stronger political voice. These elements are fundamental for enabling sustainable, socio-economic development and diminishing inequality in the city.

Keywords: community capital - co-production - informal settlement - socio-economic development - inclusive urban strategy

Index

Acknowledgements	5
Abstract	7
1 Introduction	10
1.1 Motivation	13
1.2 Main concepts and definitions	14
1.3 Abbreviations	15
2 Context & problem definition	16
2.1 The Greater Scale	18
2.1.1 Introduction	18
2.1.2 Nairobi	18
2.1.3 Colonial remnants	26
2.1.4 Rapid urbanisation	30
2.1.5 Neoliberalism	32
2.2 The Smaller Scale	34
2.2.1 Introduction	34
2.2.2 Kibera	34
2.2.3 Main issues	38
2.2.4 Lack of participation	40
2.3 Problem framework	42
2.4 Problem statement	44
2.5 Research aims	45
2.6 Research questions	46
3 Methodology	48
3.1 Research framework	50
3.2 Methods	52
3.3 Methodology framework	56
3.4 Project phasing	58
3.5 Theoretical framework	59

4 Literature review	60
4.1 Theory	62
4.1.1 Introduction	62
4.1.2 Community capital	62
4.1.3 Social capital	75
4.1.4 Communities	82
5 Analysis	90
5.1 Physical Analysis	92
5.1.1 Introduction	92
5.1.2 Natural features	92
5.1.3 Water typology	98
5.1.4 Mobility	104
5.1.5 Infrastructure typology	110
5.1.6 Amenities	120
5.2 Socio-Economic Analysis	124
5.2.1 Introduction	124
5.2.2 Economic features	124
5.2.3 Aid dependency	130
5.2.4 Tribes	134
5.3 Political Analysis	144
5.3.1 Introduction	144
5.3.2 Constitution	144
5.3.3 Influence	153
6 Synthesis	154
6.1 Demands & Needs	156
6.1.1 Introduction	156
6.1.2 Solving inequality	156
6.2 Solutions	160
6.2.1 Co-Design	160
6.2.2 Interventions	162
6.2.3 Implementations	168
6.2.4 Relations	174
7 Postscript	180
7.1 Reflection	182
7.2 Bibliography	186
7.3 Appendix	200
A. Amenities	201
B. Informed Consent Form	212
C. Interview questions	214
D. Field work routes	215



Chapter 1

Introduction

I, as a Dutch and European citizen, feel that our society, globally, is going through disturbing times. The numerous crises put pressure on people all over the world: climate change, wars, increasing poverty and pollution. They are accelerated by a rapidly increasing population. With this research project I hope to contribute to diminish the stress.

A few years ago, I decided to go on a trip alone in East-Africa. I travelled the region for about two months. During this trip I also visited Kenya, from Mombasa in the east, via Nairobi, to the Maasai Mara in the west. The African continent had always fascinated me and I was not disappointed. Traveling by myself allowed me to engage in interesting conversations with Kenyan locals, from university professors to motor-taxi ('boda-boda') drivers, who could use every shilling to get by. The experience reminded me of two important lessons: just because Kenya does not regularly appear successful in the media, does not mean that the Kenyans do not have the capabilities to be so, and: this relatively uncovered continent has great potential and willingness to write the world's next chapter. When people from developed countries look down on citizens from African countries, they often tend to forget the unfortunate histories of these citizens and that generally, ancestors from such developed countries are largely the culprits of their misfortunes. Being human never the problem. Rather, the decisions that we make as planners, politicians and society are determining the course of our and future lives.

It caught my attention, that from my perspective, despite good efforts, Kenya struggled to build a functional public system. When so many people in a society struggle to survive the day, it becomes very hard to construct public social security networks. Systems, that ensure people of basic services, contribute to resilience and promote development. So, it becomes clear, that the persistence of the informal settlements in the city, is not only detrimental for their residents, but also impeding the overall development of the country. If the aim is to build a sustainable future, then it is essential to improve the daily situation of people in the informal settlements. The health of the majority of the population is the foundation to build strong public systems. I believe this is best achieved by multiple smaller projects in various informal settlements, because it is easier to set up and maintain a project on a smaller scale. Together they can contribute to a strong foundation for further development.

Ultimately, I believe it is beneficial for me personally, as a future planner and designer, to engage in contexts that are different from what I am familiar with. This new knowledge strengthens me in my profession. The Kenyan context is fascinating and provides me with essential lessons.

Main concepts and definitions

Informal settlement

There are many terms in use to indicate the phenomenon of informal settlements: slums, squatter settlements, self-built neighbourhoods, shanty-towns. In this thesis, these other terms are also sporadically used, but they refer to the same concept of informal settlements. Such settlements imply, that they are built without following the agreements of formal regulations. This means, that informal settlements lack the protection of the rights, that are part of formal construction. However, informal settlements are indisputably part of the established city, even though they were not planned in it.

Community capital

The concept of community capital is further explained within the theory section of this thesis. It can be described as the combination, management and interrelationship between the types of capital, that are used by the community to develop and maintain the community. Therefore, social capital should be central in the concept, because a community exists through its social connections.

Abbreviations

CA	–	County Assembly
CBD	–	Central Business District
CBO	–	Community-Based Organisation
CEC	–	County Executive Committee
CECM	–	County Executive Committee Member
CoG	–	Council of Governors
EAC	–	African Community
ERP	–	European Recovery Programme
GDP	–	Gross Domestic Product
GOK	–	Government of Kenya
HIV	–	Human Immunodeficiency Virus
ICT	–	Information and Communication Technology
IEBC	–	Independent Electoral and Boundaries Commission
JKIA	–	Jomo Kenyatta International Airport
KANU	–	Kenya African National Union
KAU	–	Kenya African Union
KDI	–	Kounkuey Design Initiative
KENSUP	–	Kenya Slum Upgrading Programme
KISIP	–	Kenya Informal Settlements Improvement Project
KNBS	–	Kenya National Bureau of Statistics
KPSP	–	Kibera Public Space Project
KUR	–	Kenya Uganda Railway
LMIC	–	Low-Middle-Income Country
MCA	–	Member of County Assembly
MP	–	Member of Parliament
NA	–	National Assembly
NCC	–	Nairobi City Council
NGO	–	Non-Governmental Organisation
NYS	–	National Youth Service
SGR	–	Standard Gauge Railway
STI	–	Sexually Transmitted Infection
UN	–	United Nations
WASH	–	WATER Sanitation and Hygiene
WWII	–	Second World War



Chapter 2

Context & Problem Definition

2.1.1 Introduction

This chapter presents the context and the problems, that emanate from it. There are several topics, that are necessary to discuss, before being able to identify a problem statement. They are present on a greater scale and a smaller scale. The first part concerns the greater scale, after which follows the smaller scale in the next sub-chapter. The problems of the context are linked and summarised in a problem framework, which leads to a problem statement. Thereupon the research aims are described followed by the research questions.

The greater scale involves a brief description of Kenya and Nairobi, their economy and relevant history and the associated poverty. Then follows an explanation of the present urban environment, created by the colonial history, the rapid urbanisation process and neoliberal policies.

2.1.2 Nairobi

The site of this project, Kibera, is located in the city of Nairobi, which is the capital city of Kenya. Kenya is located at the east-coast of Africa. It is neighboured by Somalia, Ethiopia, South-Sudan, Uganda and Tanzania. On the continent, Kenya is considered to be the progressive democracy. Combined with its technological and economic power, the country is an inspiration to other African nations. Yet, Kenya has been and is still dealing with political instability and massive corruption (Rukanga, 2025). After multiple failed attempts, Kenya joined forces with Uganda and Tanzania in the East African Community (EAC) in 2000. This intergovernmental organisation aims to facilitate economic opportunity for the East African region, by, among others, regulating tariffs and promoting cooperation among the countries. Later, Burundi and Rwanda joined in the union, followed by South-Sudan, D.R. Congo and Somalia more recently. Arusha, Tanzania, is the capital of the EAC, while Nairobi is the union's main financial and technological hub (EAC, n.d.; Nabende, 2024).

Nairobi is a relatively young city, that finds its roots in 1899, when Kenya was under British rule. It only officially became a city in 1950, seventy five years ago. Still, the city grew out to become by far the largest city in the country. Nairobi is situated in its own county, marking the official borders, and in 2024 it had an estimated population of around 5,5 million inhabitants. It grew by 4.06% in population since last year, which amounts to 216,000 new people. That is a remarkable increase, compared to the 137,456 people living in Nairobi

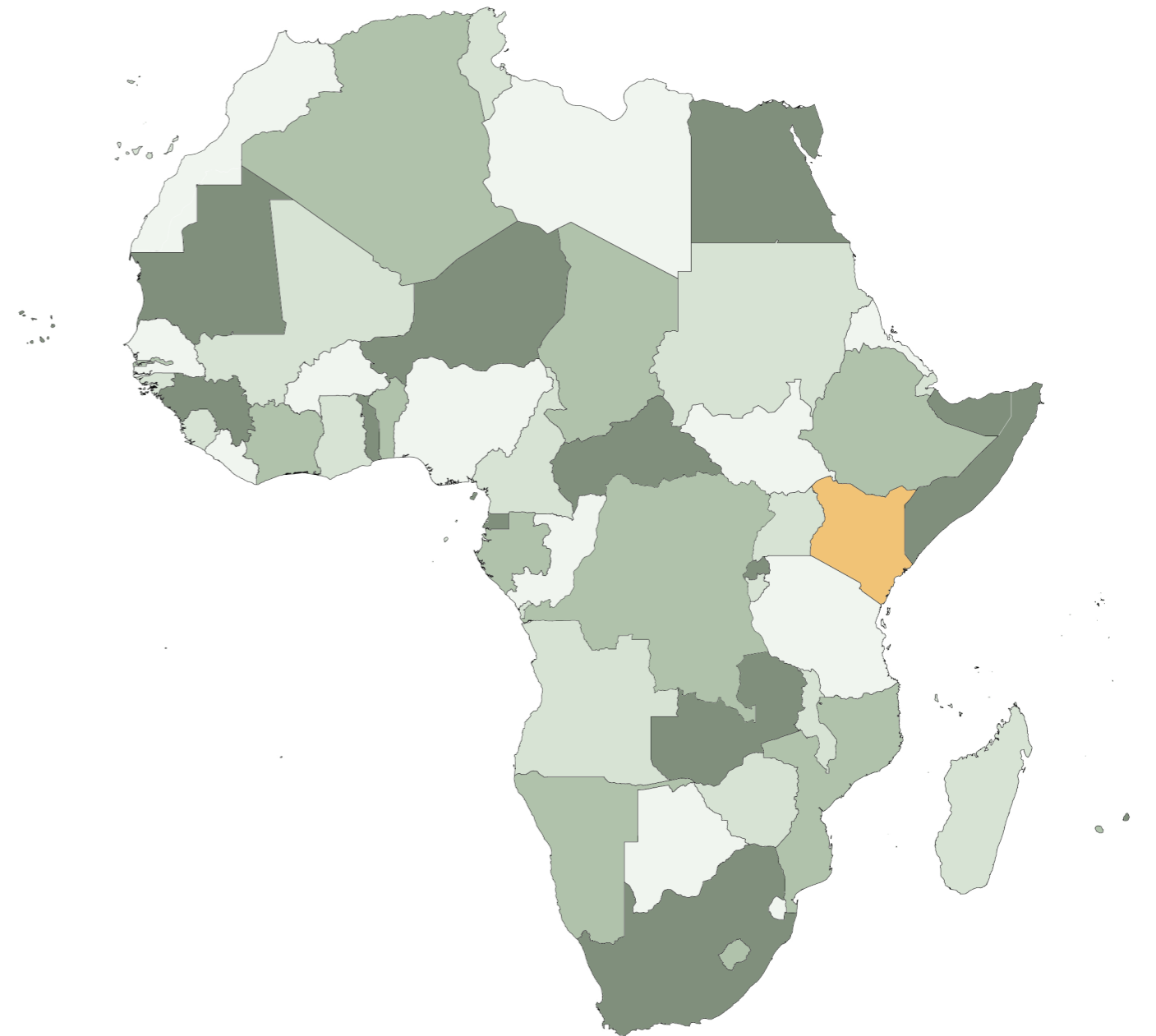


Figure 1: The location of Kenya on the continent of Africa.

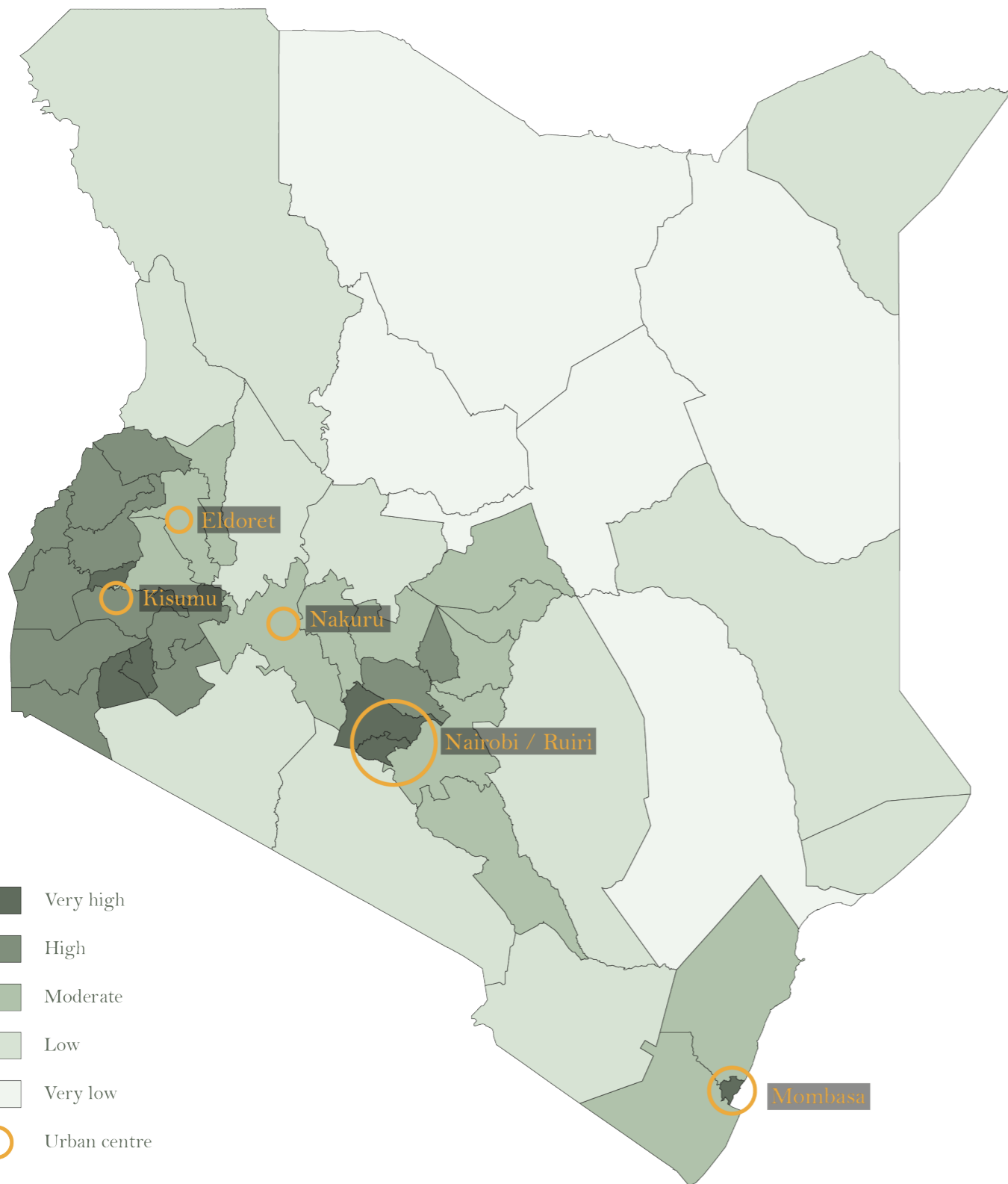


Figure 2: The population density per county and the main urban centres in Kenya. (Adjusted from: Orbital Africa, 2017)

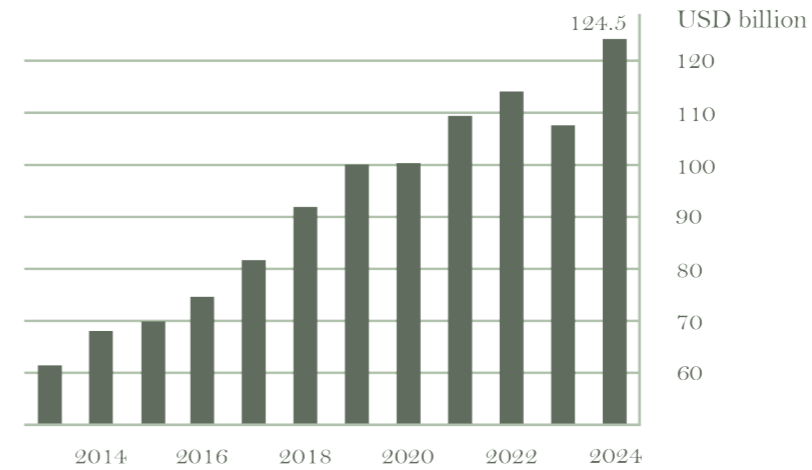


Figure 3: Kenya's GDP in recent years. (Adjusted from: Trading Economics, n.d.)

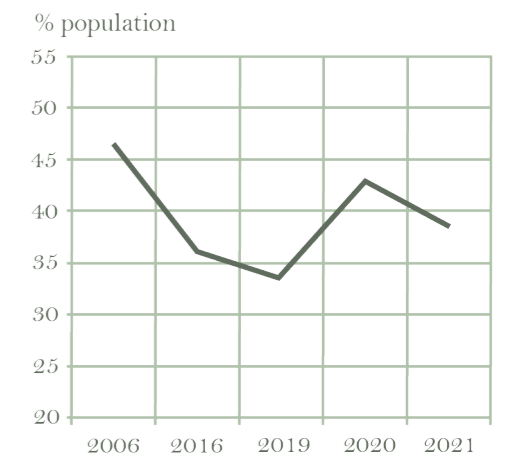


Figure 4: Percentage of population in poverty. (Adjusted from: World Bank, 2023)

in 1950. Moreover, Nairobi is estimated to grow even more rapidly in the coming years, being one of Africa's fastest growing cities (World Population Review, n.d.). Meanwhile, over 60% of Nairobi's residents live in informal settlements, like Kibera, which is the largest informal settlement in Africa (Shirodkar, 2024).

The city is situated in the southern centre of the country and in the middle of the most inhabited part of the country, between Kisumu at Lake Victoria and Mombasa at the Indian Ocean. Other bigger urban regions are Eldoret and Nakuru, as depicted in figure 2. Being located there, it is also the economic centre of Kenya, followed by Mombasa.

Economy & poverty

The economy of Kenya has continued to grow steadily over the last decades. The growth of the economy before the pandemic, between 2015 and 2019, was on an average 4.8%. This is double that of the average of Sub-Saharan Africa. The real GDP increased from 4.9% in 2022 to 5.6% in 2023 (World Bank Group, 2024). Because of this Kenya finds itself in the group of lower middle-income countries (LMIC), just like for instance Bangladesh and India. Yet, this GDP growth and the rate of poverty reduction are lower than the average of LMICs. In 2021, Kenya's international poverty rate was at 36.1%, whereas the average of LMICs was 10.9% (World Bank, 2023).

Kenya fails to let the poor benefit from its economic growth. However, in the period between 2005 and 2016, the country was quite successful in relating economic growth to poverty

reduction. The poverty rate in this period dropped 10.5 percentage points, after 2016, this decline in poverty rates stagnated. This was mostly apparent in rural areas. Before 2016, the poorest benefitted the most and the GDP per capita grew by an annual 2.05%. The ratio of increase of GDP per capita to decrease of poverty rate was one on one. In the years after, until the pandemic, the growth of GDP per capita increased, while the decrease of poverty rate became almost half of that of the previous years (World Bank, 2023).

In Africa, Kenya has positioned itself as a leader in tech business and economic innovations (Smith, 2022). In the decade to 2021 the services sector drove 70% of the economic output increase of Kenya. Additionally, nine out of ten of the fastest growing sectors were in services. A large part of them were in ICT services, technical services, professional services and financial services (World Bank, 2023). Agriculture remains the main contributor to the national GDP, with 23% (Stats Kenya, 2024).

This growth of the services-sector is visible in Nairobi. The city is dubbed 'Silicon Savannah', because of its dynamic start-up culture and the tech businesses it attracts. They are a driving force in Nairobi's economic growth (Smith, 2022). The city has a strategic location in East Africa and has invested in its business infrastructure to enable itself to pull in financial institutions, regional headquarters and international corporations. Next to technology and finances, it also hosts a variety of many other businesses (NEXT, 2024). The strategic location, modernised infrastructure and business climate also caters to other international organisations, like the UN, which has its African

headquarters in Nairobi. This enhances the city's role as the region's leading urban area (Jade, 2025). It shows, that Nairobi developed itself at a quick pace, since its beginning at the end of the 19th century.

East Africa Protectorate

In the second half of the 1880's, after the Berlin Conference in 1885, the German and British rulers were dividing the land in East Africa, except for a small coastal strip that belonged to the sultan of Zanzibar. It concerned the land that today covers Tanzania, Burundi, Rwanda, Uganda and Kenya. The British claimed the north, including Uganda and Kenya, and the Germans got the south, although after World War I this part also became British. Already in 1887, the sultan's coastal strip was handed to the British as well. In order to solve the financial and administrative issues in the Kenyan territories, it was proclaimed the East Africa Protectorate in 1895. Uganda was added in 1902. This was necessary to enable Europeans to settle. Later in 1920, the protectorate became a colony with the name Kenya (Still We Rise, 2020).

In the period of the late 1800s, the land of Uganda was more important to the British, than that of Kenya. Uganda was used for crop growing and the head waters of the Nile river are located there, giving power over Sudan and Egypt (Farnworth, 2023). To further develop the area in Kenya, but mostly to improve the access and communication to fertile Uganda, a railway line was constructed from seaside Mombasa, in the east, to Kisumu at lake Victoria, in the west, initiated in 1895 and finished in 1903 (Still We Rise, 2020). The Kenya Uganda Railway (KUR) connected the line to Nairobi in 1899, marking the establishment of the town. It was even said, that the railway line is the blueprint for the lay-out of modern Kenya. Many of the country's most populated cities are still along this line (Farnworth, 2023). But unlike other urban areas in Kenya, Nairobi's urbanisation was caused by the British colonisation (Obudho, 1997).

Nairobi was chosen as a stop between Mombasa and Kisumu by the KUR, because of its cooler elevated siting, lack of tropical diseases and sufficient water supply. This water was the origin for the Maasai name of the place: Enkare Nairobi. It translates to "place of cold waters". It was a strategic location and, although a small depot for livestock was already built in 1896, the establishment of the town came with the connection of the railway in

1899, which was shortly thereafter followed by the instalment of the KUR headquarters. Half a year later, also the Government of Kenya (GOK) moved its administrative headquarters here. More people began to settle as the Nairobi stop was chosen to host a maintenance depot for the railway. Europeans settled in the west, while Asians, who were mainly workers, settled near the station. Africans were pushed to the outskirts. By 1906 the urban centre had over ten thousand residents (Obudho, 1997).

In 1905, Nairobi became the capital of the East Africa Protectorate (Anyamba, 2011). It meant more serious investment in the town (Farnworth, 2023). So at the end of its first decade, Nairobi's main structuring elements were already laid out. This also included the segregation between the Europeans, Asians and Africans, which would be fortified in the following decades (Obudho, 1997).

The Colony of Kenya

The Protectorate was turned into colonies after World War I. After the war, the British saw the hardships had exhausted the local resistance. So, in 1920 the colony of Kenya was established, named after Mount Kenya. This meant more administrative power, which was sought after by the European settlers to gain better economic and political positions in this new land. Before 1920, the European settlers' only political power had been through pressure groups. Now, as a colony, they got full legal authority. Kenya would remain a British colony until its independence in 1963 (Ntarangwi & Ingham, 2024).

During this colonial period, Nairobi continued to grow and consolidate along the segregated lines. Legal planning documents ensured this. Such city planning regulations lead to the emergence of the spacious north and west for the Europeans, the more dense Asian quarters in the north and east, another dense area in the east and south-east, where many African workers would reside, as well as the formation of informal settlements (Labrujere, 2018).

But after World War I, there was also more attention for the adversity of the Africans and their rights from the main land. African residents were able to gain more political representation during the 1920s and '30s. This political movement was based on ethnic tribes. European settlers tried to protect their political position by fending off the political demands by Asians and Africans (Ntarangwi & Ingham, 2024).

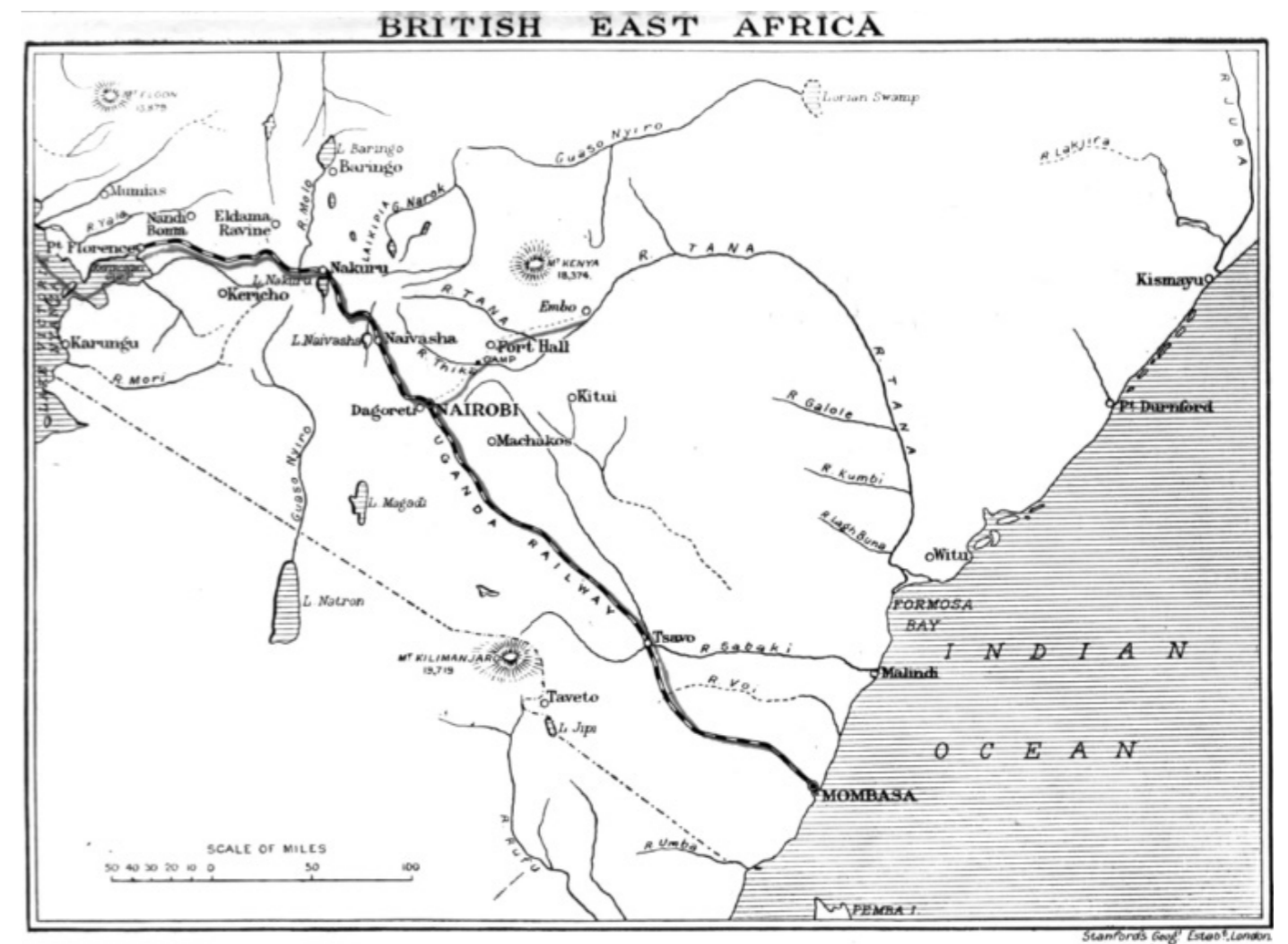


Figure 5: The Kenya Uganda Railway. (Farnworth, 2023)

Figure 6: Nairobi's urban lay-out in 1909. (Obudho, 1997)

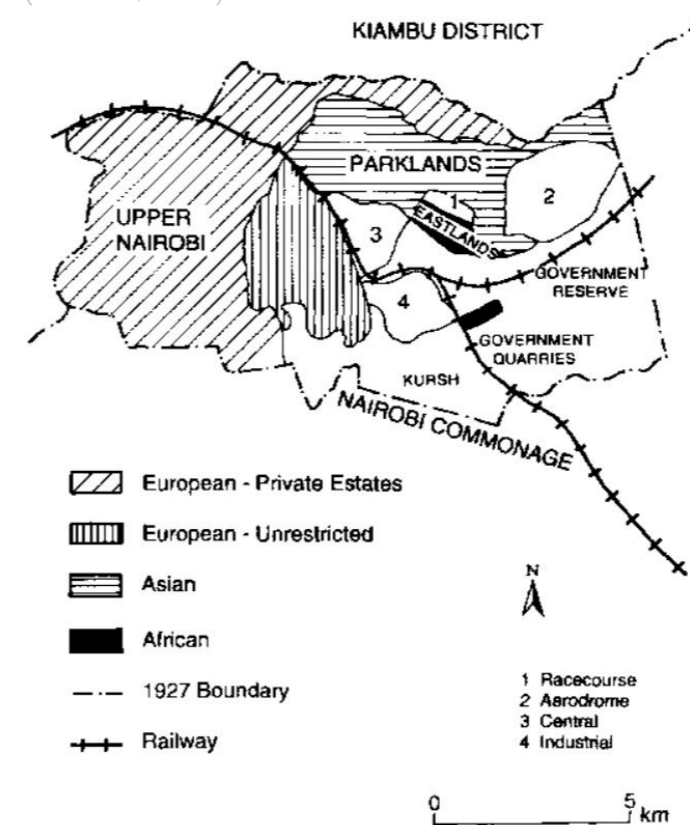
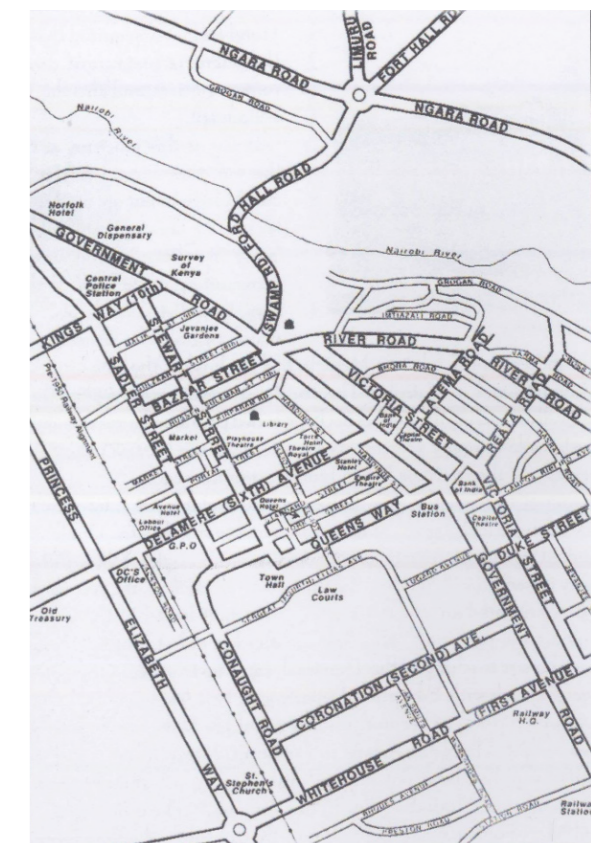


Figure 7: Nairobi's city centre in 1933. (Old East Africa Postcards, 2014)



Then in 1944, during World War II, the first African representative was allowed in the Legislative Council, for him to be followed by more in the ensuing years (Ntarangwi & Ingham, 2024). Asians already had seats in the council in the first years of the colony. These seats were not enough for the African population, leading to the establishment of the Kenya African Union (KAU) in Kenyan politics (Mullenbach, 2025). Jomo Kenyatta became the president of the KAU in 1947 and later Kenya's first president in 1963. The KAU consisted of rich African men, who had travelled and gained a lot of money, and the constitutionalist supporters of Kenyatta and Mathu. The latter group proceeded in rebellions under the name of Mau Mau. The Mau Mau Uprising accelerated Kenya's independence (Throup, 1985). After eight years of rebellion, African parties were allowed again in elections in 1960 and in 1961 Kenyatta's KANU, who was in detention since 1952, won. Kenyatta was demanded to be released and after building their own constitution, Kenya became fully independent in 1963, with Jomo Kenyatta as their president (Ntarangwi & Ingham, 2024).

Republic of Kenya

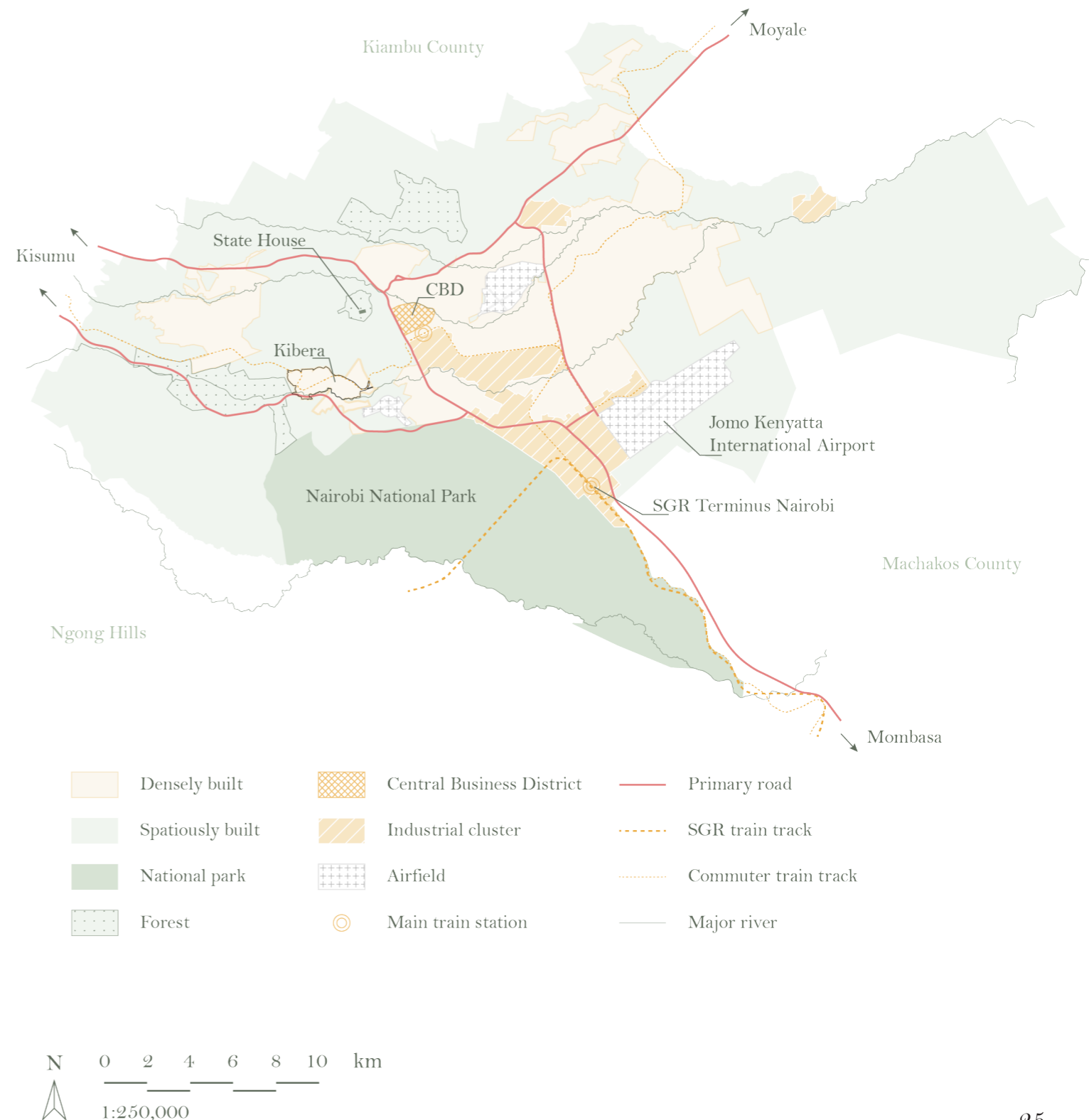
In these first years of the republic, restrictions of movement were loosened. This resulted in the largest peak of population increase of Nairobi since the first years (Obudho, 1997). On the other hand, colonial policies were not really abolished, so the republic's governing could be called neo-colonial. The disadvantages for Kenyans, created by the British, remained and tribalism was enhanced, because the new administration failed to unite the Kenyan people (Labrujere, 2018). The policies, that were subject to foreign investments during the Cold War, were not sustainable for economic growth, while unemployment was increasing and housing was too expensive for most people (Nulty, 2009). In this period, building one's own house in Nairobi outside of the central district was tolerated, so many immigrants ended up in the informal settlements (Macharia, 1992).

In the 1980s, the government steered towards more privatisation. Simultaneously, it was acknowledged, that informality was a part of developing countries. Urban services were handed over to the market. Consequently, mostly the poor were disadvantaged by this policy direction (Anyamba, 2011; Obudho, 1997). But towards the end of the century, Kenyans in power realised a

healthy population was necessary for economic growth, so the state started to invest more in public infrastructure, such as sanitation and health care (Nulty, 2009). Nonetheless, the state of public services in the city has been insufficient to support the overall poor population up to the present day (Smith, 2022).

Looking at Nairobi of today in figure 8, it still shows the structure of the early years, but also the fragmentation caused by the power shifts (Smith, 2022). Most remarkable is the divide between the more open and green west and the more dense and labour-intensive east, split by the central expressway. Although the western side is becoming more intensified with Nairobi's population growth, the east is more densely built and hosting most industrial grounds. Some natural areas are being preserved, while mobility infrastructure has been expanded. The directions Mombasa and Kisumu are still the main artery through and exiting the city, for both train and road vehicles. The CBD is the centre of the city, while other centres are emerging in, for instance, Westlands, Kilimani and Eastleigh, which are still close to the CBD. The presence of a national park within the city limits is another unique feature of Nairobi.

Figure 8: The county of Nairobi and its main characteristics.



2.1.3 Colonial Remnants

The foundation of Nairobi was established by the construction of the railway depot and thus by the British colonists (Farnworth, 2023). However, the area of the present city was long used by the local tribes, mainly seasonally by the Maasai, when the new settlers chased them from the land. With the establishment of the railway town, the settlers only planned for the European staff and European and Asian traders, and not for the Africans and Asian workers. This process resulted in the expropriation of indigenous people by the European settlers and the segregation from the Africans, who were forced to the fringes, and the Asian labourers, who started to settle in the Asian bazaar (Anyamba, 2011). Around 1902, there was a clearly segregated town.

The segregation was reinforced with the implementation of the town's first official zoning plan in 1906, Plan for a Railway Town, after becoming the capital of British East Africa in 1905 (Labrujere, 2018). The Africans and Asian labourers were totally neglected in these plans. The Plan for a Railway Town consisted of a railway centre, a European centre for business and administration, separate quarters for railway workers and washer men, the Indian bazaar and the military barracks in the fringes (Owuor & Mwiturubani, 2022). Yet, the construction of the railway was mainly done by Indian workers, showing the international exchange within the British colonial empire. The plan also exposed the racial hierarchy of white Europeans on top, then the Asians and the Africans at the bottom, while the hierarchy could also be explained as class-based. Race and class were deeply

connected at the time (Dopplinger, 2019). The first informal settlements emerged, because the Africans were forced to settle in the outskirts, where no city planning was involved (Anyamba, 2011).

The majority of the city's main structure was already established in 1909 (Obudho, 1997). The segregation planning regulations by the British were a means of control over the area. This should be read in the sense of control over the people, as well as control over the development of the railway. Following the model of the Garden City, the African population were to be kept small within the area of the railway town, because the Africans would be the main reason for excessive growth. Housing for Africans was barely provided to prevent influx of African dwellers. The amount of people were to be manageable for the colonial government to avoid power struggles and this would also result in better health standards and a minimisation of disease outbreaks, which benefitted the development of the railway (K'Akumu & Olima, 2007, Dopplinger, 2019).

Whereas Africans and Asians were confined to certain areas, the Europeans were free to choose their location of residency and settled almost exclusively in the north and west, distanced from the Africans and Asians. The Indian Bazaar, close to the station, was created by Asian workers, who were eventually discharged from railway labour, and set up other businesses and homes. A few African workers were housed in the east, while others lived in shantytowns. The first phase of consolidation of the town happened through this segregation (K'Akumu & Olima, 2007).

In 1927, the city borders were expanded in act of a new development plan: Plan for a Settler

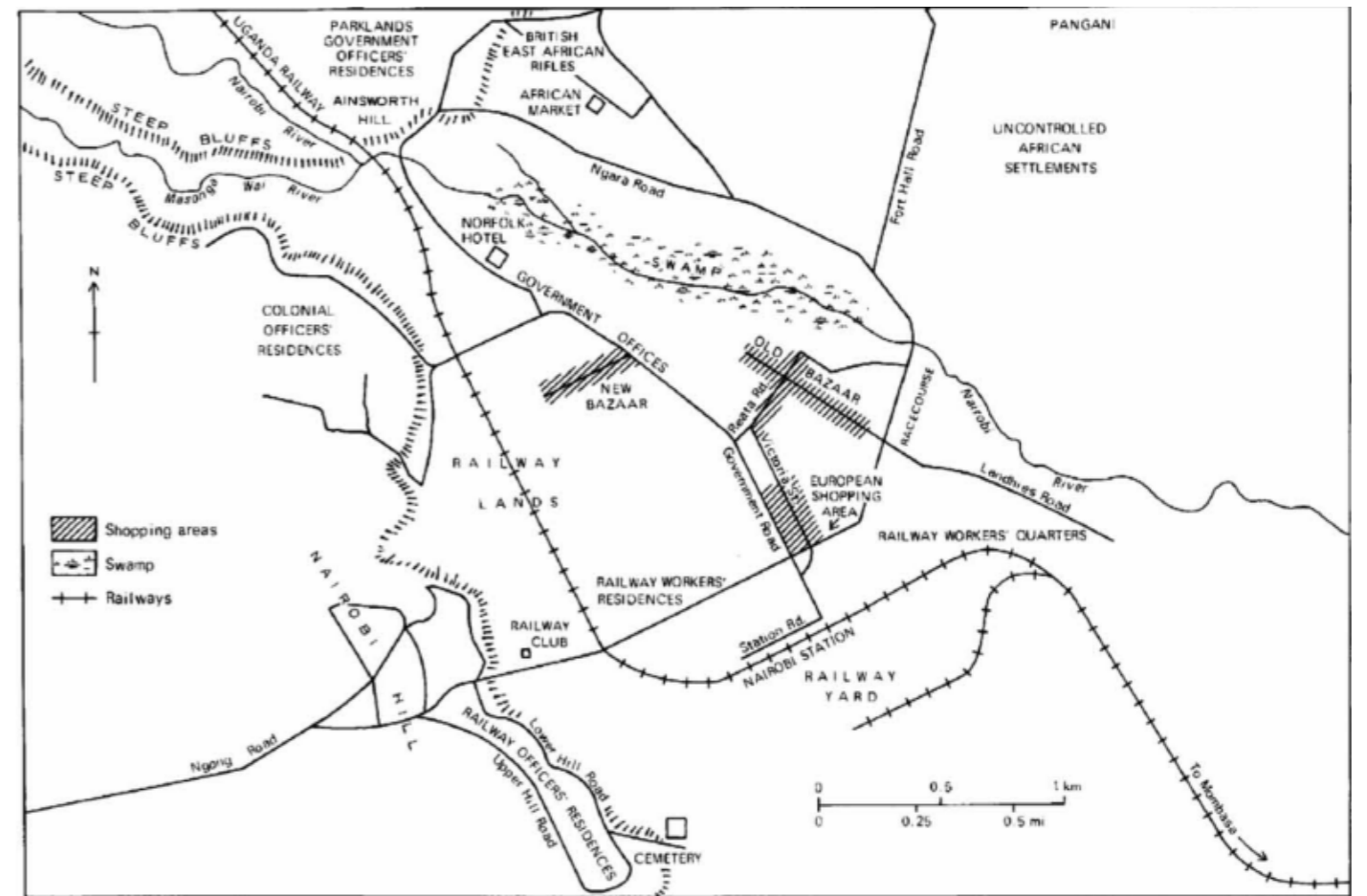


Figure 9: Nairobi's Plan for a Railway Town, 1905, implemented in 1906. (Owuor & Mwiturubani, 2022)

Capital. The city had been growing rapidly and so did the informal settlements, because many people were drawn to the town for work. Additionally, the transport network and infrastructure were expanded (Owuor & Mwiturubani, 2022; Labrujere, 2018). The 1927 plan included planning for the parts of the town, that were not served by the railway administration before, entailing the quarters for the lower classes (Dopplinger, 2019).

Under this plan, informal settlements kept growing and intensifying, especially during World War II, when many more Africans were expropriated from their lands and pushed into the city and more labour was available (Anyamba, 2011). New slums emerged, while others were being cleared by the authorities. The government, dominated by Europeans, refused to recognise the African settlements as part of the city and denied them

permission of permanent settling. Rural Africans were deemed 'unfit' for urban life (Dopplinger, 2019). The clearances were legitimised by the Vagrancy Acts of 1902, 1922 and 1949 (Labrujere, 2018).

The Nairobi Master Plan of 1948 was based on functionalism and clear zoning. It contained zones for industry, commerce, administration, green space and, again, race-based segregated housing. The plan followed the segregation from the existing structure. The Europeans were placed on the more valuable land in the north and west, the Africans were located around the industrial area and the Asians got expansions of their areas in the north-east. The African quarters were designed for labourers, not for permanent residence, still marginalising the African population. This plan also incorporated a designated commercial zone,

Figure 10: Nairobi's borders expansion and the impact of the racial zoning on the present day city.

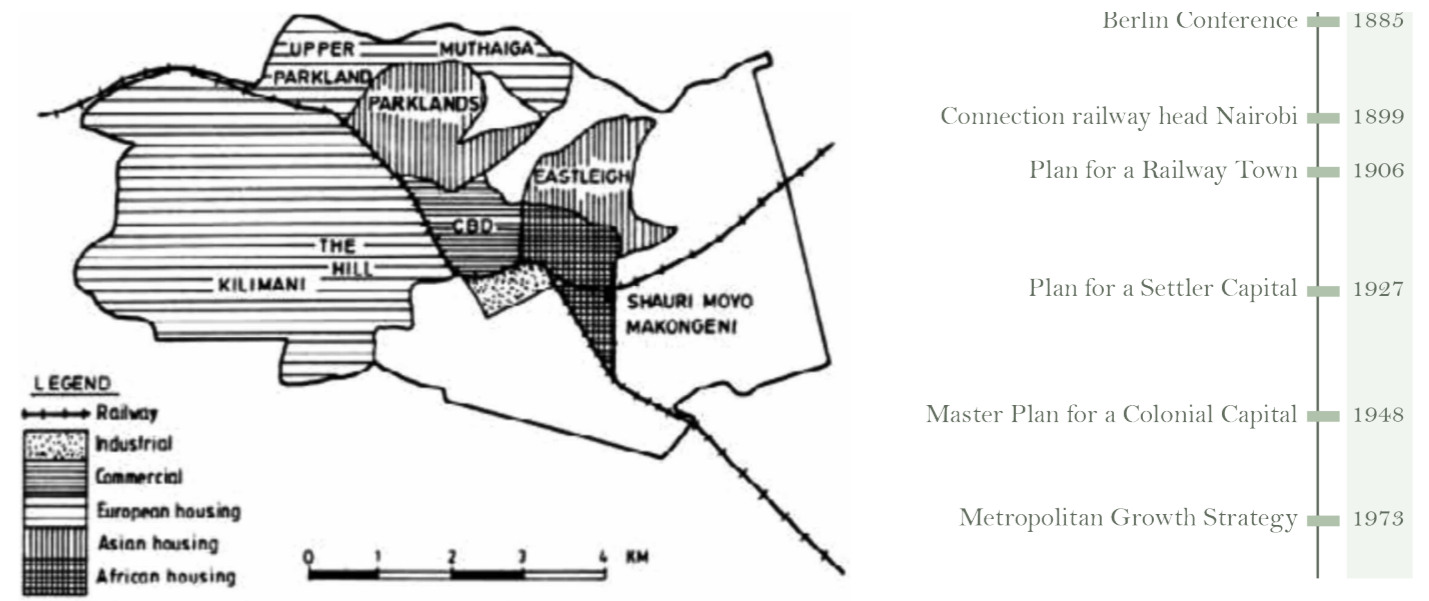


Figure 11: The Nairobi Master Plan of 1948. (Owuor & Mwiturubani, 2022)



Figure 12: Timeline of Nairobi's establishment and planning.

which is mostly covered by the CBD nowadays (Owuor & Mwiturubani, 2022). The 1948 master plan was even stricter than the previous plan and neglecting segregation issues (Dopplinger, 2019).

The borders of present Nairobi were defined in 1963, the year of independence. There was another border expansion, which was a reason for rapid population growth, but even more so African natives were now allowed to enter the city and settle without the restrictive zones. This resulted to massive immigration into the city. However, the zoning structure of the city remained visible. The African and Asian had grown to be the most dense zones, in contrast to the European side, which was very open. This relates to the value of the city's land and so the rich came to live in the European parts, while the middle-class and poor moved to the Asian and African parts, but mostly to the informal settlements. Though no longer based on race, residential segregation persisted and disparity increased (Owuor & Mwiturubani, 2022).

The first decade of independence saw an enormous increase in informal dwellers. The informal settlements increased in size and density. Demolition of the settlements to counter their increase was not uncommon in these years. Later, the government's attitude towards the slums was to let them be, but no aid was provided either. The majority of today's informal settlements stem from this period (K'Akumu & Olima, 2007).

The rapid growth after independence required a new plan. In 1973, the Metropolitan Growth Strategy was introduced. It was supposed to prescribe the city's development until 2000, but it was never officially adopted (Owuor & Mwiturubani, 2022). Therefore the master plan of

1948 remains the latest official development plan for the city (Labrujere, 2018). The 1973 plan was based on decentralisation and aimed for improvements on several themes, such as economy, land use and housing. However, the city council did not have the political means to implement the plan, providing no solutions for the segregation issues (Brookings Institution, n.d.).

The city's foundation on racial and residential segregation from the beginning is still visible today. The north and west of the county are still spacious and greener lands, as is the south-west, which was later added to the county. Designated Asian quarters are now dense urban centres, like Parklands and Eastleigh. The informal settlements, which were established by neglecting the African population, have only proliferated. They are a direct result of the land expropriation by the British and the labour that the British required in their colonial town. They are not a natural consequence of rural-urban migration and the modernisation of the city (K'Akumu & Olima, 2007). The difference with the colonial city is, that the basis for segregation has switched from race to income level. The structural exclusion of the natives in planning and the neglecting of housing and development issues trapped the poor of the present in the under-serviced parts of the city, where their ancestors were forced to live in (Owuor & Mwiturubani, 2022).

2.1.4 Rapid Urbanisation

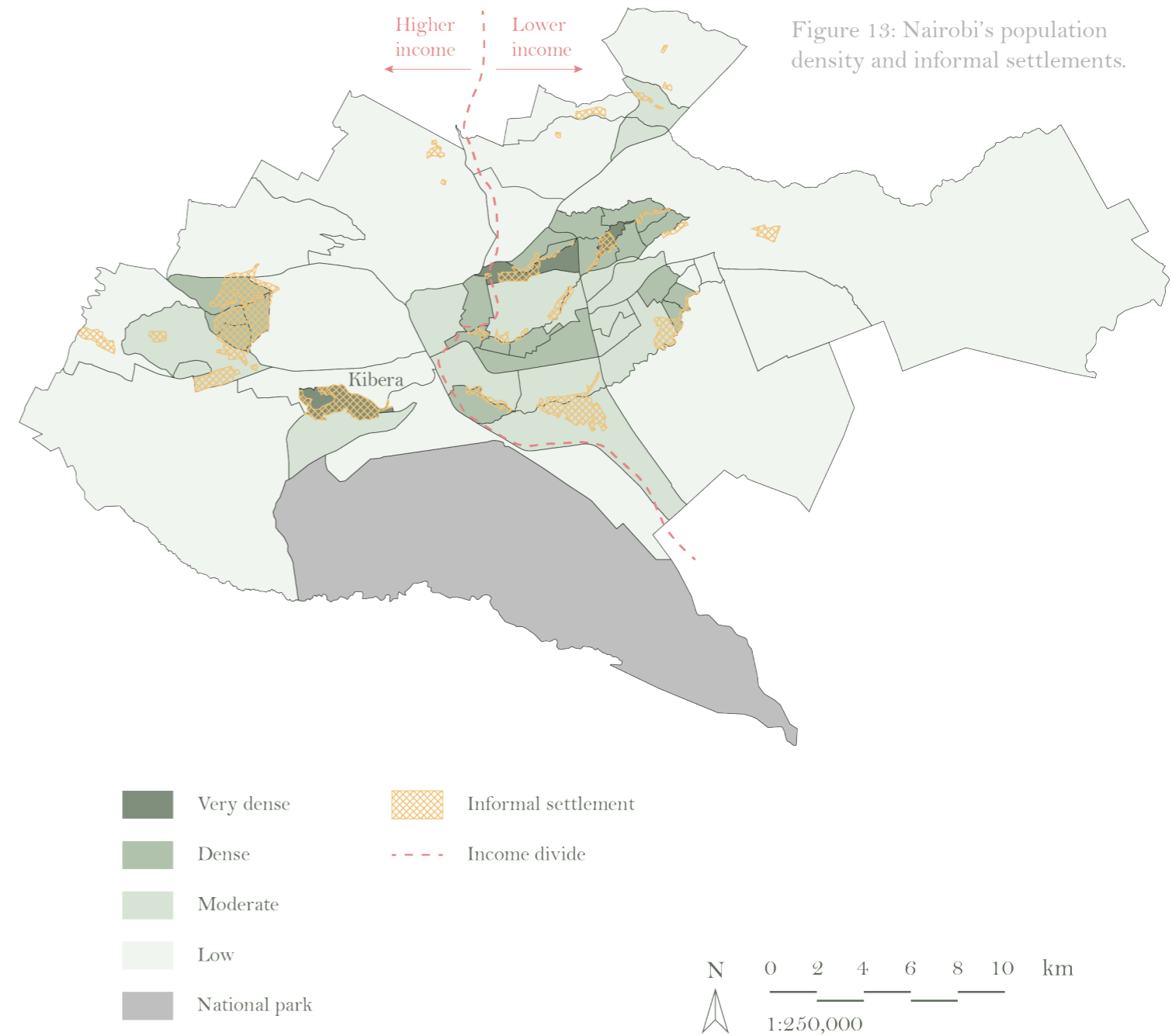
Nairobi's population is growing at an incredible rate. The city is just over a century old and already counts around 5,8 million inhabitants in the summer of 2025. The annual growth of over four per cent is predicted to continue in the coming years. At this point Nairobi has a density of 4850 people per square kilometre (World Population Review, n.d.). But this number will increase rapidly, as is the case all over the continent. Africa has a young population with 70% being under thirty years old. They will cause Africa's population to double in little over thirty years. And many of them are drawn to the cities, hoping for economic opportunities (Savage, 2024).

In its existence, Nairobi has seen a few waves of strong population increase. In its first years, the population grew to about ten thousand in 1906. This number more than ten-folded up to 1948. In this period most growth was experienced during World War II, when many expropriated Africans took to the city. There were 267,000 inhabitants in Nairobi by 1962. After independence, in 1963, the composition of the population changed, because Africans became allowed anywhere in the city, and many Europeans and Asians emigrated. They were already smaller in numbers, but by 1989, they only still made up five per cent of the population. The years after independence were also marked by a massive influx of rural population and by 1969, Nairobi counted over half a million people. From this period onwards, the city's population has been increasing rapidly, with a little plateau in the early 1990s (Obudho, 1997). Economic prosperity and

political stability have impact on the influx into the city. Since Nairobi is the main economic hub in the region, it is also among the fastest growing cities of East Africa (World Population Review, n.d.).

The population in the city is still increasing rapidly, but it is not evenly distributed. Although new urban hotspots in the city, such as Kilimani and Eastleigh, are emerging, the informal settlements are receiving the most newcomers. Ren and colleagues (2020) found, that the most population density increase is happening in the area between four and eight kilometres from the city centre. This is where these hotspots are located, but it is also where informal settlers cluster, because of the opportunities that these places bring. The most populous and dense informal settlements can also be found in this range, such as Kibera and Mathare, which are also among the fastest growing settlements. Meanwhile, the informal settlements make up for only one per cent of Nairobi's land area.

The main reason for the growth is rural-urban migration. Within ten years, half of the world's population will live in urban areas (Acioly, 2020). Many people move from the countryside to the city. The majority comes for economic opportunity. The city has a wide range of possible work places, language barriers are less common and in the large group of immigrants, people feel less like an outlier (Fedele & Imesh, 2019). Moreover, development attracts migration, because innovation creates more job opportunities. This is also reason for many international migrants to come to the city (Flahaux & De Haas, 2016). The other big cause of population growth, is natural growth. Kenya has a young population and high fertility rates. In



combination with longer life expectancies, they create an increasing number of people (Fengler, 2010).

Clearly, Nairobi is not able to effectively cope with the rapid urbanisation and thousands of people are pushed to the slums, annually (Ren et al., 2020). Settling informally should even be seen as the main mode of settling. Many European cities also experienced large influxes during the early period of industrialisation, but these influxes were a consequence of economic growth, which means, that these cities had the means to adequately accommodate the people and introduce new planning, on the contrary of cities like Nairobi, which lack the economic resources to facilitate rapid urban growth (Hill et al., 2014). The large increase of people puts stress on the urban services, such as water, housing and transport. Additional issues

are environmental degradation and the disruption of socio-economic mechanisms (Acioly, 2020). On the other side, a large population also has a large potential to develop a large economy. There is more opportunity for innovations and there is a bigger market to cater for. Beside this, Kenya's young population lowers the dependency rate for future years, because it is mostly elderly who have need for caretaking. With a smaller elderly group there is less dependency (Fengler, 2010).

2.1.5 Neoliberalism

The ideology of neoliberalism is widely spread all over the world, but it is especially present in Africa (Kariuki, 2021). Neoliberalism entails the economisation of social life and the reformation of welfare states. Concretely, this is about privatisation of public services and deregulation of the market. This means, that individual assets become more important, as opposed to public assets. The state promotes the market and protects private property, which often involves reducing taxes and making labour laws more flexible (Baffoe, 2023).

The ideas behind this is, that economic competition through the free capitalist market encourages efficiency and economic growth. Businesses should not be restricted by the public in order to improve themselves. Improvement is the outcome of competition, because one can only profit more if they win the competition from others. Interference by the government or other institutions can interrupt and slow down the competition and thus are privatisation and deregulation important elements of a neoliberal approach. Proponents of neoliberalism celebrate the freedom of choice, that comes with the minimisation of regulations. Another benefit would be the reduction of spending by the state on public services, saving the state great amounts of money (Leary, 2023).

The emergence of neoliberalism is accompanied by an ongoing conflict between public institutions and private investors. Under neoliberal policies the public sector has been losing power to the private sector (Inta Cities, n.d.). Baffoe (2023) describes the degree of transformation to neoliberal

policy in two mechanisms. The first mechanism is neoliberalism by design, which describes the process of powerful individuals gaining power from public institutions to impose neoliberal plans. The second mechanism is neoliberalism by default, which is the result of political actors being forced to adopt neoliberal policies to overcome certain challenges. Under these mechanisms, states are pressured to cater to elite individuals, who continue to yield from the neoliberal deregulation and privatisation (Smith, 2022). This could be seen as the protection of capitalism from democracy mechanisms (Leary, 2023).

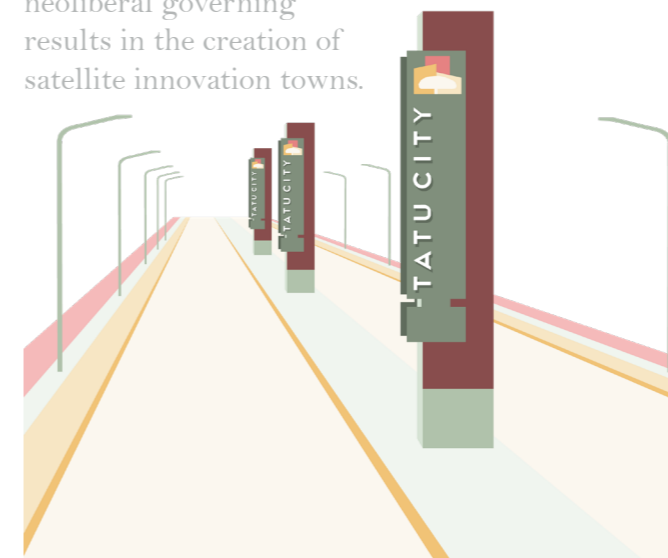
Cities adopt neoliberal policies to attract big national and international investors, who are deemed being capable of leaving iconic marks on the city, in an attempt to become recognised on a global scale (Baffoe, 2023). However, global cities are 'global' because of their reflection of global trends. In other words, global significance is not something to achieve, but rather to maintain in an ever-changing world. It is the capability of connecting the city's own identity to world-wide interests, through experimentation and innovation. In addition, global cities are always in competition with other cities to stay relevant (Roy & Ong, 2011). In order to be perceived as global, cities all over the world tend to neglect the interests of the poorer majority and rather focus on the rich elite, who can much more easily exhibit achievements and bold experimentation to the rest of the world (Greene, 2003).

African cities embraced the neoliberal philosophy in order to match with Western cities (Baffoe, 2023). Nairobi also introduced neoliberal policies of privatisation and deregulation in the

1990s (Smith, 2022). They were supported by utopian imagining of a modern and global city with financial power (Kariuki, 2021). Beside the city's skyscrapers, behind fences, for international financial businesses and technology companies, Nairobi also planned totally new sites for innovation and development for and by the elite, like Konza City and Tatu City. They are largely supported by foreign investment and tend to be top-down managed and neglect the complexity of the existing locus (Inta Cities, n.d.). The neoliberal approach in Nairobi shows in everyday life, where a lot of services, such as water, electricity, road construction, are in the hands of private owners. As one of the local residents in Kibera explained: "Politicians don't have a say in this (electricity distribution), because in anything, there are leaders" (local residents, p.c., 2025).

But the main issue with neoliberal policy is, that private businesses do not have everyone's well-being at stake. In urban development, that is managed by private investors through the free market, the development is aimed at the consumer industry, which in most cases focuses on the more affluent consumers, who are able to spend more. Individual investors have little interest in providing services for those, who render less profit (Kariuki, 2021). This results in a mismatch between meeting the needs of the poorer majority and the actual urban development, built for the rich elite (Inta Cities, n.d.), which creates an urban environment, that is inappropriate for its context (Kariuki, 2021). The consequence is a widening gap between poor and rich and more economic disparity. This has been Nairobi's confronting reality for many years now (Smith, 2022).

Figure 14: Nairobi's neoliberal governing results in the creation of satellite innovation towns.



Because of neoliberalism, the urban market is becoming increasingly unfair, while the majority of Nairobi's residents is almost voiceless. They have very little means to improve their right to the city, which should be safeguarded by the state. But after deregulation, the private sector is more powerful than the public sector. Even more so, the high level of corruption, that is present in Kenya, enhances the position of rich investors (Baffoe, 2023). Moreover, neoliberal governance caused a breakdown of social structures, because the private sector fails to see the community. A city's population is more than just a sum of individuals, and hence it is a crucial task of the government to support the community (Stouthuysen, 1997). In conclusion, the neoliberal governance puts the majority of the city in a unfair and precarious situation.

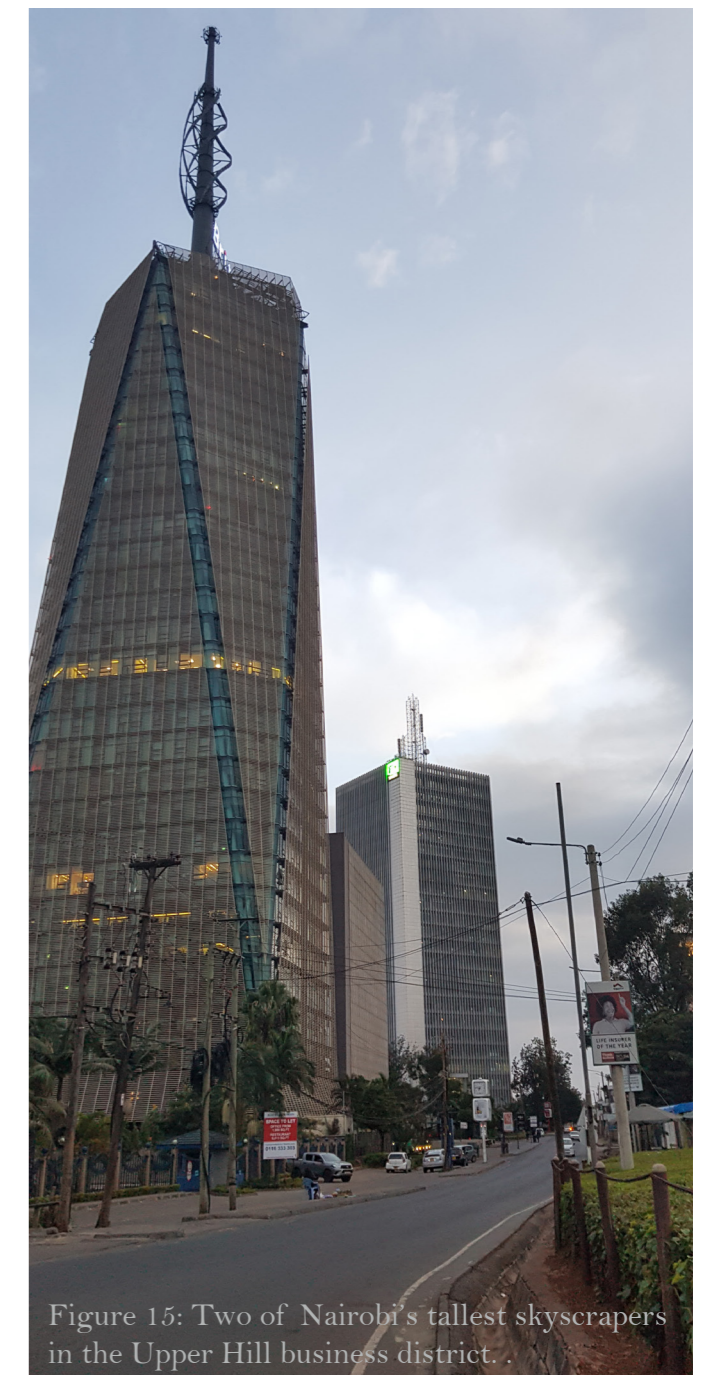


Figure 15: Two of Nairobi's tallest skyscrapers in the Upper Hill business district.

2.2

The Smaller Scale

2.2.1 Introduction

The sub-chapter of the context on the smaller scale is mainly focused on the context of Kibera and the trends and history, that directly influence Kibera and its residents. Topics of this sub-chapter are poverty, informality, housing and some more recent history. The villages of the settlement are introduced, as well as the variety of people, who live in them. There is a brief description of the main issues of living in the slums of Kibera, which are the lack of basic services, income insecurity and high crime rates. Then finally, there is the notion of the lack of participation of the local residents in planning and development.

This information of the smaller scale also contributes to the establishment of the problem framework. The problem framework shows the connection between the different scales and how they affect each other. Information about the informal settlement is not always accurate, as this uncontrolled aspect is part of informality.

2.2.2 Kibera

Poverty

The gap between rich and poor is increasing rapidly in Kenya. A small group manages to gain more and more profit, while millions of others fall into poverty each year. The Kenyan people have great potential with young and educated people, a vibrant private sector and natural resources, but still seventeen of fifty four million people live in poverty. Thirty four per cent of them lives in urban areas, mostly informally (Oxfam International, 2022a,b). In Nairobi, sixty per cent of people live in informality, which is a number that almost doubled over the course of four decades (Shirodkar, 2024).

Kibera is the largest informal settlement in Kenya and one of the largest of Africa (Shirodkar, 2024). The population of Kibera is very poor and struggles to survive each day again. The informal settlement is characterised by inadequate housing, lacking basic infrastructure and overcrowding, combined with numerous social problems, criminality and financial insecurity. Overall the quality of life in Kibera is very low (Zawistowski, 2022). Unsurprisingly, mortality rates in Kibera are very high, especially among young children. Access to health care, but particularly disease prevention, is a big issue. Most people die as a consequence of infectious diseases and HIV-related illness (Oduor, 2023). A great cause for this is the massive pollution, that is present everywhere in the settlement (Shirodkar, 2024). It is a major concern for the residents, who are aware of the health concerns involved (local residents, p.c., 2025).



Figure 16: The informal settlement of Kibera is very cramped.

Informal settlement

The population of the informal settlement reaches estimations between 200,000 and one million people, but the higher numbers are more plausible (Shirodkar, 2024; Barnes, 2019; Translators Without Borders, 2012; Kim et al., 2022; UN-Habitat, 2020; Meredith & MacDonald, 2017). The lower numbers are usually derived from official institutions, whereas the higher numbers are estimations of organisations in the field. The lower counts by officials can be explained by the flawed methods of census, that do not exactly fit the fluid characteristics of informal settlements. Local organisations seem to be better aware of the presence of people in the neighbourhoods (Powell, 2022). The registration of people, dwellings and businesses is a major issue in informal settlements.

Many people are not registered in official documents and their contribution to the city's economy and functioning is hard to estimate, which puts them in a disadvantaged position (T. Kaloki, p.c., 2025). With an estimated surface area of 2.5 km², the population density is up to three thousand people per hectare (Powell, 2022).

The informal nature of the settlement also implies, that the borders are not quite clear. The settlement evolves in an unplanned way. The county of Nairobi is divided in sub-counties and electoral constituencies, but these do not really correspond to the borders of the Kibera settlement. The settlement is split in different ways between the sub-counties and constituencies of Kibera and Lang'ata (J. Kirika, p.c., 2025). The name Kibera is derived from Kibra, which means 'a bushy place' in Nubian, but does not indicate the exact same place

Figure 17: The informal and formal parts of Kibera.

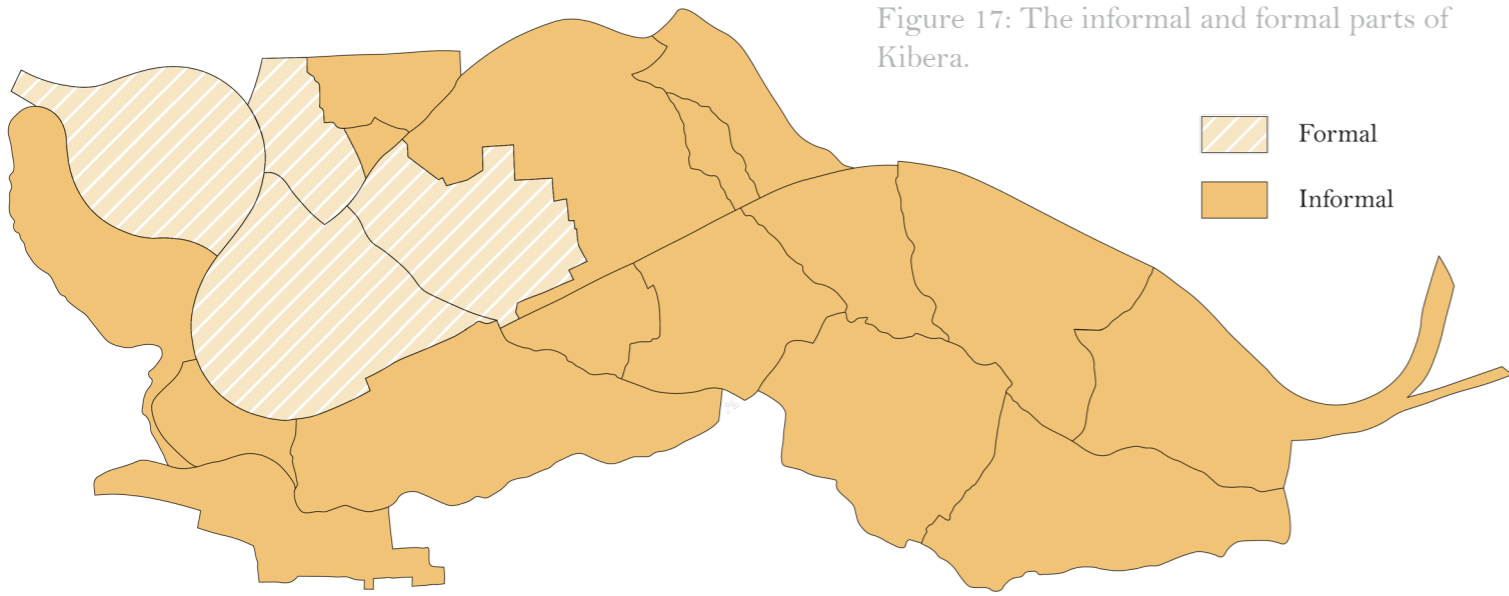


Figure 18: The villages of Kibera and their names.

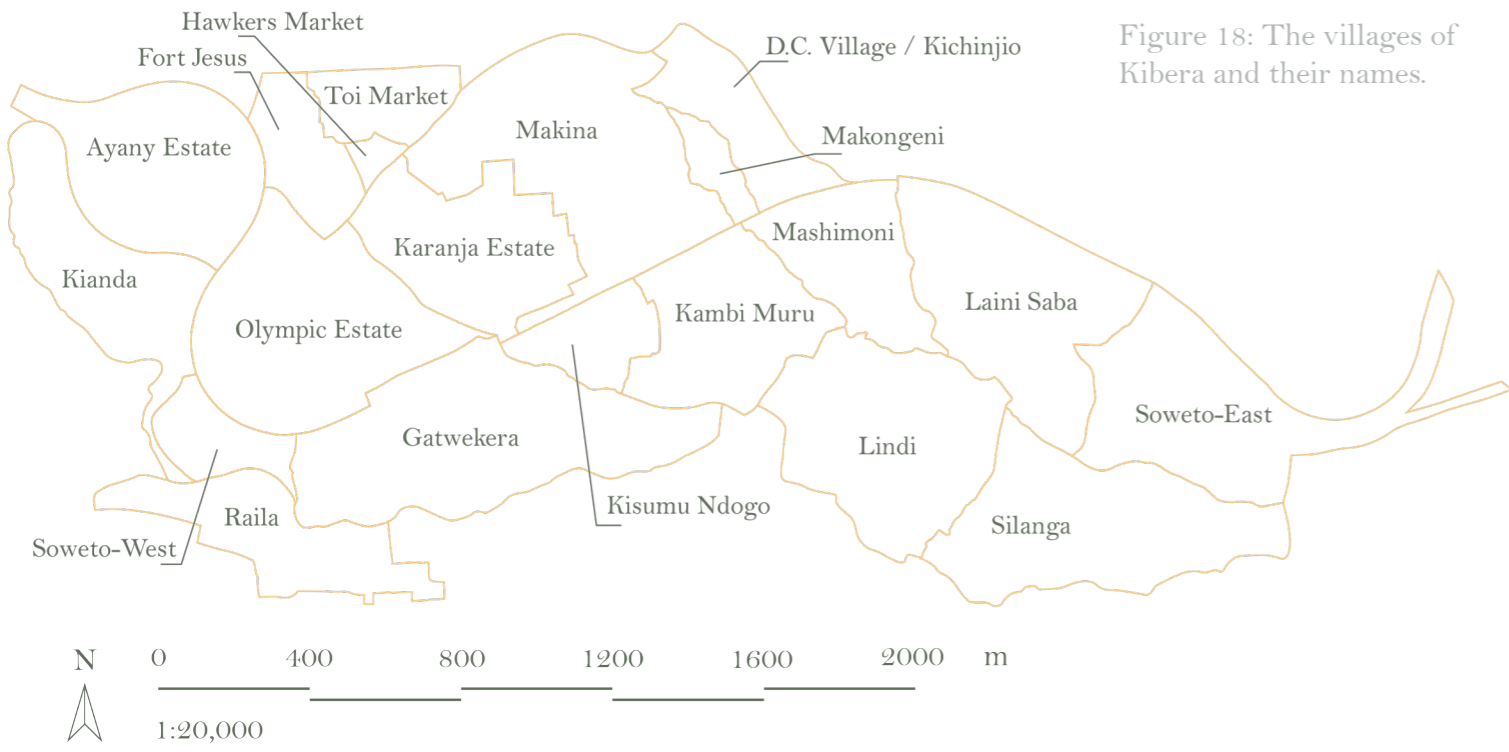
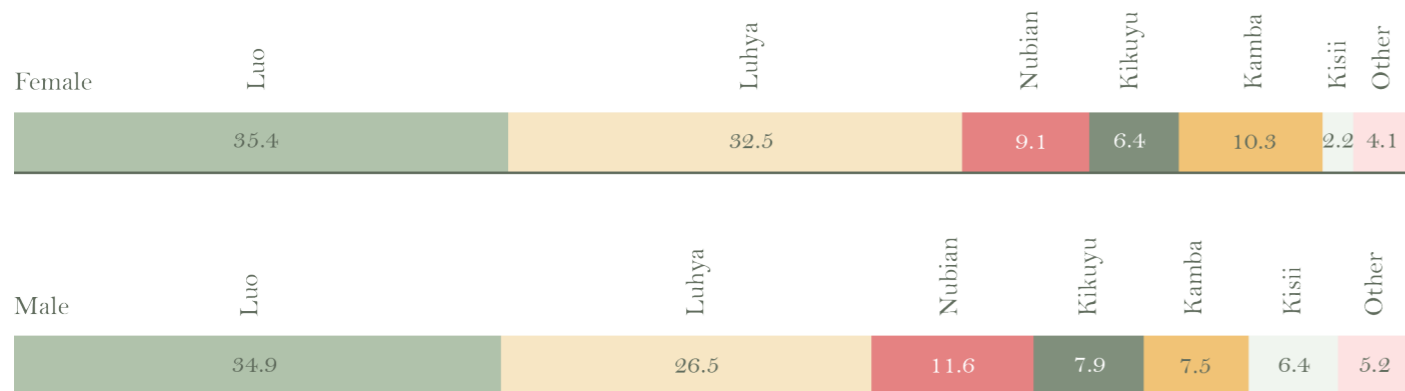


Figure 19: The distribution of tribes in Kibera. Just like population count, this is also hard to accurately measure. (Based on: Ayuya et al., 2021)



(Wanjiru & Matsubara, 2016). The settlement can be divided in several villages and the split of the sub-counties roughly follows some of the village borders.

The number of villages varies among data sources, because in some counts, some villages are combined. Additionally, a few villages are viewed as formal and thus not taken into account by some. Because of consistency reasons, in this thesis, the number from the research by UN-Habitat (2020) is used. They dissect nineteen villages of which three are considered formal. A fourth formal village is projected in maps, because of its proximity: Fort Jesus Estate. Another two, Toi Market and Hawker's Market, are not always considered villages, because they essentially are only market places and not dwelling quarters. Although not officially recognised, the distinct villages are of social and political importance to the slum dwellers. They also have their own leaders and village chiefs (local residents, p.c., 2025).

Settling

The history of the settlement of Kibera dates back to 1902, which makes it one of Nairobi's oldest informal settlements, when the British allowed the Nubians to settle here, because of their military assistance to the British. The Nubians originate from Sudan. It was located around four kilometres from the city centre, but now stretches out over multiple kilometres (Kimari & Kimari, 2022). The settlement grew and consolidated quickly in the following decades, because places like these were locations for African labourers to settle (Anyamba, 2011).

Because of the increasing amount of social troubles with the residents, the GOK attempted various grounds for evictions, but finally agreed to let the informal settlers stay without connection to public services in 1939, and Kibera became permanent. It grew with newcomers from different tribes and therefore attracted political interest from representatives. Conflicts between the Nubians and other groups arose. Up to the independence, the villages started to form, with different dominant tribes. Over the years, Kibera's land area shrank under various developments, until the government claimed the settlement as governmental land in 1969 (Wanjiru & Matsubara, 2016).

After 1979, many evicted communities were forced into Kibera, diversifying the population. These were the poorest people of Nairobi and mainly

single mothers. Another influx wave came with the allocation of land to Kikuyu people by a couple of officials. The Nubian population responded by inviting other communities to the settlement. In the following decades, Kibera was subject to multiple political tactics, while accumulating more people from different tribes. The slums intensified (Wanjiru & Matsubara, 2016). Nowadays, Kibera is a place of great diversity. There are fourteen different tribes with their according language present, with Swahili as the main shared language. English, an official national language, is not common for many residents (Translators Without Borders, 2012).

There is an uncertain status quo in the ownership of land in Kibera. Residents generally settle informally, which is an appropriation of land, that is not planned or part of a formal process, because the formal process fails to properly accommodate the city's residents. Informal land use is however not illegal, but rather a part of the legally planned city (Anyamba, 2011). According to Hill and colleagues (2014), it is structured through extra-legal systems of regulation. Subjective to the share of informal growth in Sub-Saharan African cities, like Nairobi, informal settling has become the general mode of urbanisation.

However, squatters have to deal with tenure insecurity. Residents rarely own their home, nor the land that it is located on. Land ownership in informal settlements is often involved with corruption, land speculation and evictions (Cardosi et al., 2021). Secure land tenure is crucial for the development of stable communities and the improvement of the urban environment in settlements (Werlin, 1999). Since the 1970s, after years of attempted evictions, the municipality tried to implement tenure regulations. Up till now they have had little result (Anyamba, 2011).

2.2.3 Main Issues

Life in an informal settlement comes with myriad daily problems. Most of them can be subdivided under a lack of basic services, income insecurity and high crime rates (Ren et al., 2020). They make for a low quality of life, exacerbate the position of Kibera's residents and hinder personal and community development (Mukanga et al., 2022).

Characteristic of walking through the villages, is the amount of trash in the streets, alleys and streams. It is one of the main complaints by the residents about their living environment (local residents, p.c., 2025). It is the result of an nearly absent waste disposal system. The trash ends up in the rivers, which spread it in the alleys during floods (Barnes, 2019). The floods also cause a lot of trouble in people's homes, unsafe dwellings that are not protected against environmental hazards. Proper housing is not affordable for most people (local residents & S. Chebet, p.c., 2025).

Furthermore, access to sanitary facilities and electricity is limited. In their research, conducted by Kim et al. (2022), they found, that nearly eighty per cent of residents have trouble with the accessibility to water and the reliability of the supply. Sanitary facilities are mainly shared and many complain about their maintenance. In addition, locals almost exclusively get their electricity from illegal cartels, which is unsafe and has poor reliability. They are exposed to electrocution and fires (Zawistowski, 2022; local residents, p.c., 2025).

Additionally, despite the many education facilities in Kibera, many children do not go to school (Oxfam International, 2022a). Their parents

do not have the money to spend on school, which consist of only a few free public schools. The other (private) schools are very overcrowded and do not meet the educational standards (UN-Habitat, 2020; Map Kibera, 2010b; local residents, p.c., 2025). Also health care is an issue. There are amenities to accommodate the population, but they are often not well-equipped and prevention and awareness is lacking (Oduor et al., 2023; Translators Without Borders, 2012). Meanwhile, the heavy pollution is posing serious threats on the locals (Situma et al., 2009).

Finally, the majority does not have good access to transport. People in Kibera have to walk everywhere, which sometimes means walking several hours per day. Other forms of mobility are simply too expensive (local residents, p.c., 2025). Moreover, Kibera is not well connected to Nairobi's mobility network. This is an obstacle for socio-economic development and employment opportunities (T. Kaloki, p.c., 2025).

Unemployment is another major issue in the settlement. In Kibera, half of the residents are unemployed, the other half earns very little in formal employment (Shirodkar, 2024). Job creation is limited and most of the poor remain in self-employment, which renders very unstable income (World Bank, 2023). There is a mind-set of having to survive day to day; making money to get by another day. Finding any job is more important than finding a career. These jobs are often not well-paid (Fedele & Imesh, 2019). Youth unemployment in particular is very high. Seventy five per cent of Kenyans is under thirty five years old and thirty nine per cent of them is unemployed (Kimari & Kimari, 2022).

This is then related to high crime rates in the villages. In one study, ninety nine per cent of participants admitted having witnessed a crime in the last three months (Zawistowski, 2022), and a striking sixty one per cent of crimes in the city were attributed to youth unemployment (Shirodkar, 2024). Poverty and unemployment are triggers for crime and violence, in combination with the lack of social inclusion in the neighbourhoods (Kimari & Kimari, 2022). Residents tell, that there is little trust among people from different villages and that young men form criminal clans (local residents, p.c., 2025).

Figure 20, 21 & 22: Images of the slum dwelling and electricity and water network in Kibera.



2.2.4 Lack Of Participation

The criminality and distrust are a considerable aspect of the social friction within the settlement (Mitra et al., 2017). This friction is augmented by politicians, who use the villages as political arenas. Politics are predominantly played out along ethnic lines. This came once again to a fatal outburst after the 2007 elections. Over a thousand people were killed during the post-election violence and over 350,000 Kenyans were displaced. Kibera was a hotbed of the political tension (Cooke, 2009). Corruption and distrust are still very much cultured in the Kenyan society. Corruption is just viewed as a part of everyday life (T. Kaloki, p.c., 2025). A local taxi driver expressed his regret of having been too kind to his neighbours. He learned the hard way, that in Kenya you have to help yourself first (local residents, p.c., 2025).

Corruption is a basis for distrust in politicians, developers and investors, as is the lack of participatory practices for development in Kibera. Politicians come to make agreements, but rarely comply to their promises. It is a distorted relationship and residents feel, that the politicians are disconnected from the real life in Nairobi's slums (J. Kirika, p.c., 2025). After independence in 1963, Kenya aimed for a lot of capitalist investment, which boosted the economy. But inequality among urban residents remained and increased, as well as unemployment (Labrujere, 2018), which created a gap between elite politicians and the poor majority in informal settlements (J. Kirika, p.c., 2025).

In those first years after independence, policy makers were keen on the modernisation of

the country and slums did not fit the image, so slum eradication was a common practice as a means of rationalising the city, neglecting the needs of slum dwellers. But as informal settling became the main mode of settling in Nairobi, because of the great influx of people, the authorities were not able to keep up with the urban growth. Therefore, the attitude towards informality changed in the 1970s. The NCC recognised informal settlements as part of the urban landscape and started with self-help projects and slum-upgrading to facilitate affordable housing (Anyamba, 2011). The general reality was a laissez-faire attitude to squatters as long as they did not settle near the CBD (Macharia, 1992).

After the economic recess in the 1980s, which disrupted the economic stability (Labrujere, 2018), the informal settlements received more attention in the '90s. There were initiatives to improve the living conditions in informal settlements with central top-down projects. Such projects, like the Kibera High Rise Project, were mainly focused on housing. However, without considering affordability and the needs of the poor residents, they resulted in the displacement of many locals. Community participation was viewed as a time-consuming and complicated effort (Meredith & MacDonald, 2017). Simultaneously, slum evictions were still happening and as a response to the displacement a federation of slum dwellers, Muungano wa Wanavijiji, was established in 1996. They witnessed the corruption and inefficiency involved with slum-upgrading projects and recognised, that such projects need to improve the conditions of people, not of buildings. They brought a shift in the approach of slum-upgrading (Rema, 2011).

However, the Kenyan government

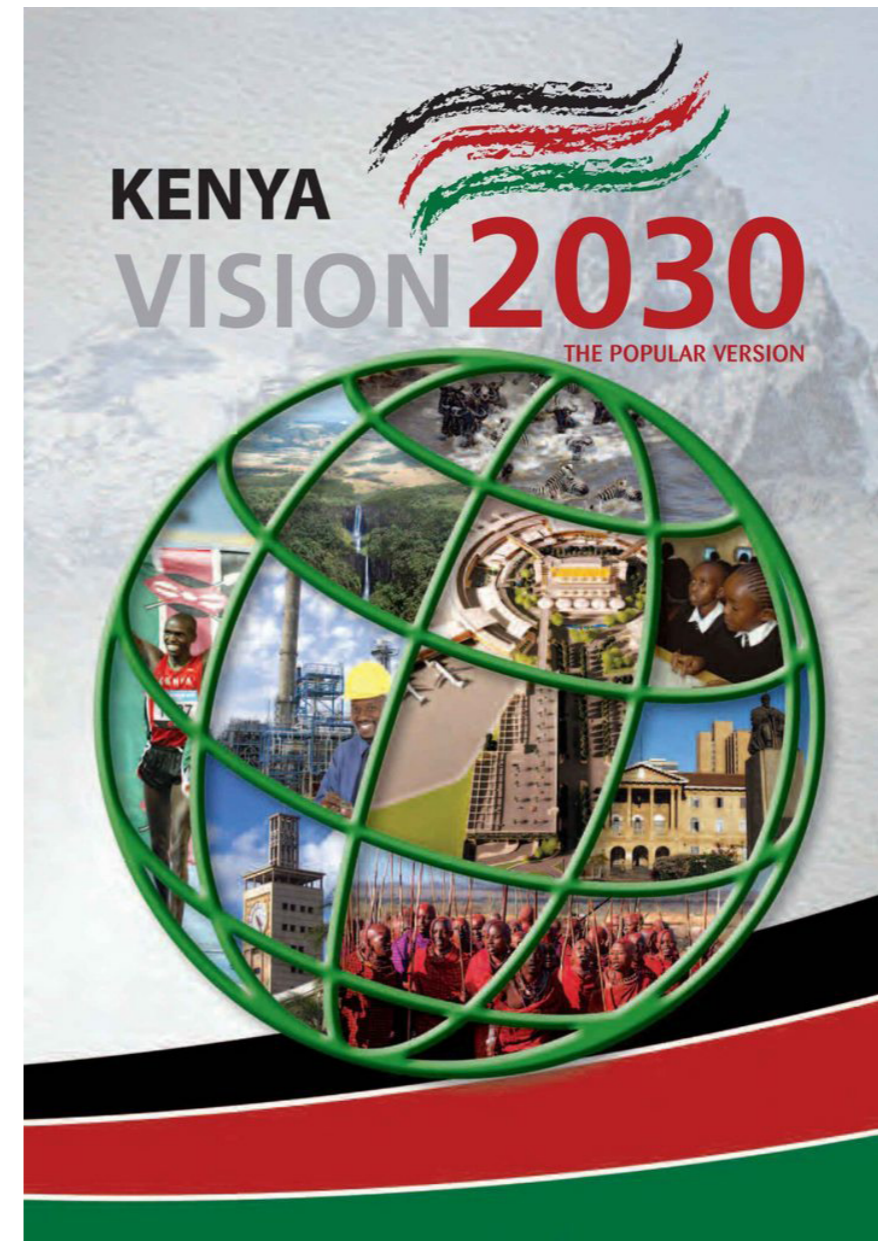


Figure 23: The Kenya Vision 2030 is the guiding plan for Kenya's future. (Source: Institute of Economic Affairs, 2007)

continued to focus on housing with the Kenya Housing Policy of 2004. It was a policy with a central role for the government. But this already indicates, that the capacity of the policy was far too small to accommodate the growing number of informal dwellers. Moreover, it was characterised by corruption and cronyism (Republic of Kenya, 2016). Again, squatters had to rely on unreliable developers to meet their needs.

After the 2007 violence, the GOK realised more action was needed in the informal settlements, in particular Kibera. This is when stronger cooperation with NGOs and CBOs was sought to create more bottom-up approaches. In addition, such organisations not only focus on housing, but also on other vital systems, such as education and health. They launched projects like KENSUP, KISIP and NYS, which had varying impacts (Anyamba, 2011;



Figure 24: Social housing development in Soweto-East.

Labrujere, 2018). While the Kenya Vision 2030 of 2008 and the New National Constitution of 2010 aim to meet the needs of the poor, it is the smaller projects, like KPSP, which focuses on public space, that succeed in more participatory approaches with the local residents. Yet, these national plans are more easily supported by politicians and investors (Mukanga et al., 2022). The participation of the poor in planning remains a struggle (S. Chebet, p.c., 2025).

2.3 Problem Framework

The problem framework (fig. 25) functions as a summary of the problem field in the research's context and shows the relations between different aspects of the problem field. The framework consists of two main parts, which is the problem and its root causes. Their connection includes an intermediary step, which can be called a secondary root cause. Within these parts there is an amplifier of the problem and a driver of the contextual trends.

Starting at the bottom, there is the segregation through colonial heritage, which is the cause for the creation of the first informal settlements. The colonists deliberately fenced the native African population (generalised for simplicity) from settling in preferable parts of the city of Nairobi.

This segregation was continued in the planning mechanisms of the city, even after the independence of Kenya from the British. Throughout the decades the disadvantaged people, living in informality, have been structurally excluded by city planning and the nation's economic model.

Especially in the last four decades, the exclusion is mostly due to the trend of neoliberalism, which is a global trend. Neoliberalism is a driver of decision-making, that favours private actors and pleas for deregulation. It gives more power to the elite and decreases the influences of the public sector. This means, that the market for development, like housing and employment, becomes more unfair and unequitable. Additionally, it is a driver for urbanisation, because neoliberal policy bundles economic opportunity in the urban centres, so the

poor from the countryside are pulled towards the city. The neoliberal planning is also related to the not participating of the poor in planning, because they are rather neglected by bigger investors.

The fact, that the poor majority is not participating in the processes of planning in the city, is a result of the neoliberal view and a continuation of the structural exclusion. Recent projects fail to valuably include the marginalised communities in their planning process. This makes these projects vulnerable, inefficient and unsustainable.

Therefore, the result, as well as the problem in this context, is the persistence of the informal settlements. In this research, this problem has the dimensions of socio-economic inequality and spatial inequality. The marginalised communities in the informal settlements are not able to join in the wealth, economic growth and spatial quality of the city.

The problem is amplified by the trend of rapid urbanisation. The growing number of people residing in the city intensifies the situation in the slums. There are more people in the same place, who put even more pressure on the weak infrastructure and services. The direct result of this, is that the hazardous conditions in the informal settlements worsen, further widening the gap in quality of life between the rich elite and the poor majority.

This problem framework leads to the problem statement, that follows in the next sub-chapter.

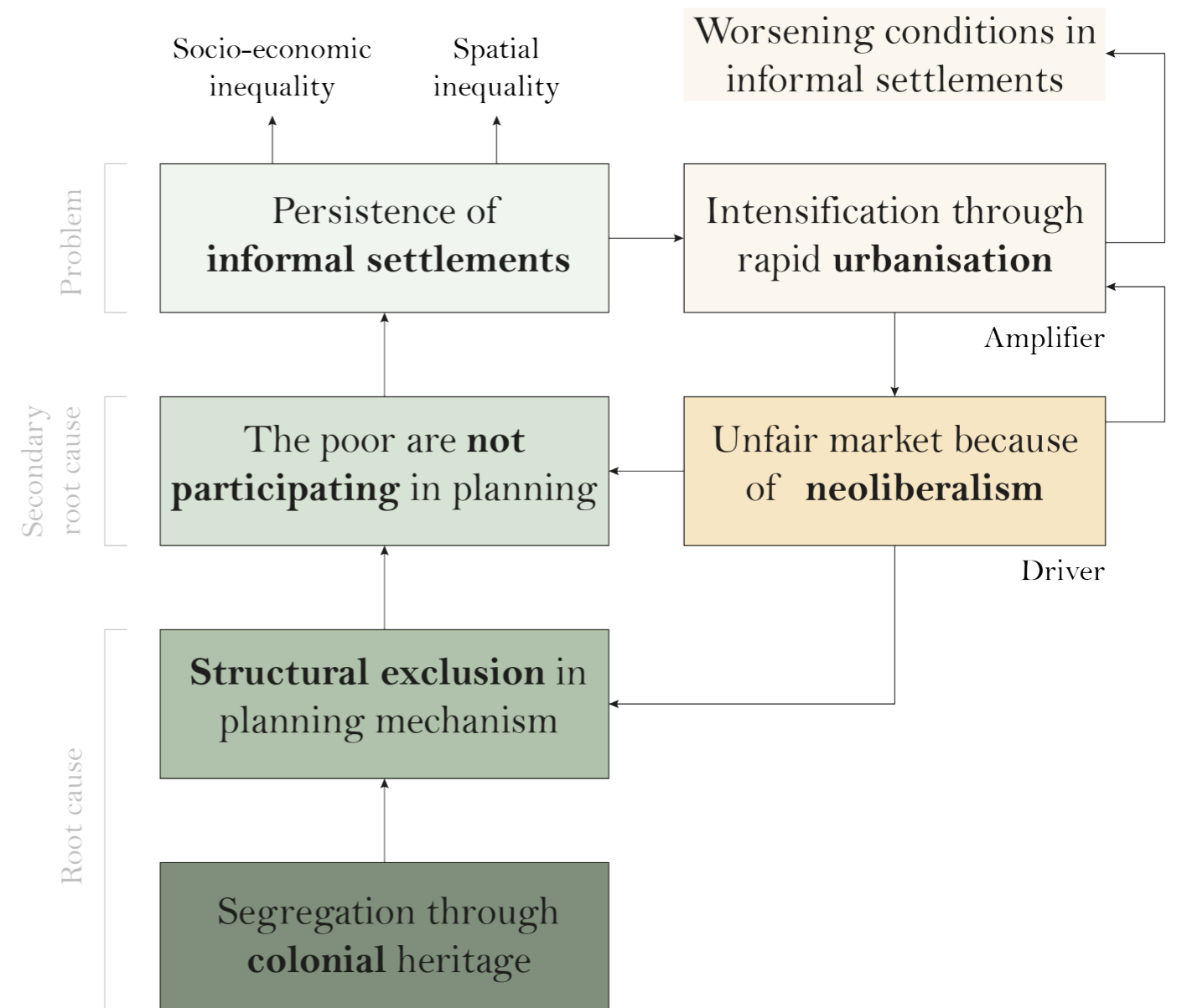


Figure 25: Problem framework

Even though Kenya's economy continues to grow steadily each year (World Bank Group, 2024), the informal settlements of Nairobi persist and moreover grow and intensify. In 2022, an estimated 17 million of 54 million Kenyans lived in poverty, of whom around 34% lived in urban areas. (Oxfam International, 2022a;b). In Nairobi, over 60% of the residents live in informality and this number is increasing (Shirodkar, 2024). This is because Nairobi, like many other cities in the Global South, deals with rapid urbanisation (Labrujere, 2018). Settling informally has become the main mode of housing. The urbanisation intensifies the poor conditions in the informal settlements, which are ever becoming more dense (Hill et al., 2014). In Nairobi's largest slum, Kibera, the living space becomes exponentially more cramped. This leads to seriously dangerous situations, like unstable housing, exposure to environmental hazards and lack of access to basic services, which causes hygiene issues (Hill et al., 2014; Mitra et al., 2017; Shirodkar, 2024).

The urban planning mechanisms of Nairobi still stem from colonial times (Labrujere, 2018), when the British deliberately segregated the various settlers in the neighbourhoods that exist today, causing the first informal settlements to emanate (Still We Rise, 2020). The planning framework does not fit the needs of the city's residents of the present day (Labrujere, 2018). Simultaneously, the neoliberal view of the city, which promotes privatisation and deregulation, reinforces the structural exclusion of the poor by allowing an economic model to operate, that favours the elite and leaves the poor majority empty-handed. Development is focused on the private sector and market-driven, thereby sustaining poverty and unemployment, and the growth of informal settlements, which enhances spatial inequality (Baffoe, 2023).

Additionally, the exclusion of the poor is reflected in current planning practices. Such practices are characterised by inefficiency and vulnerability, because the locals are little involved in the planning processes. This has the result that these practices fail to meet the needs of the residents, making the plans often inefficient and vulnerable on the long-term, which hampers sustainable socio-economic development (Mitra et al., 2017; Owino et al., 2017). As a consequence, the informal settlements of Nairobi persist. By means of promoting community capital, planning practices could become more efficient and less vulnerable to complications. The community, instead of the individual, is able to promote co-operation. Co-operation implies transparency, which creates trust and enables a mode to communicate with the ones that feel unheard. Through co-operation parties can use urban resources efficiently. By improving community capital, an inclusive urban strategy can contribute to the socio-economic development of the city.

The aim of this research is to investigate a bottom-up approach of community development, that focuses on what is already present in the community and how this can be activated. Additionally, the aim is to identify and expose what is missing in current practices, that deal with the socio-economic development of the area. Important in this, that it will also be researched, how these failures can be overcome.

Together with an exploration of community capital and its elements, this knowledge can be used to construct an inclusive urban strategy for the informal settlement of Kibera. This strategy provides an example of a proposal for local planning practices. The strategy serves as an alternative way of promoting socio-economic development. Along with the research, the strategy is provided with knowledge about multi-integrated design, which is useful for setting up projects to effectively target aspects of socio-economic development. The research is, by investigating methods to promote socio-economic development, an effort to reduce the socio-spatial inequality in the city of Nairobi.

The research questions that follow from the problem statement and research aims serve different purposes. In a four-step approach, the answers to the sub-research questions can contribute to answering the main research question. There is a total of nine sub-research questions placed in one of these four steps. Some sub-research questions contain some extra questions, that help to break down the elements of the question. The four steps are: analyse, expose, propose and apply.

Analyse

To investigate the characteristics of the status quo and explore the theory that can contribute to solutions to the issues.

Expose

To reveal what is done to solve the issues and why these actions do not succeed, and to find out how these actions can be improved.

Propose

To find possible solutions to the issues and to investigate how these solutions can be helpful in achieving the research aims, and what and who is needed for this.

Politicise

To examine the proposed solutions and how they contribute to the improvement of the current situation.

Main Research Question:

How can an inclusive urban strategy, that enhances community capital, contribute to the socio-economic development of the marginalised community of Kibera?

Sub-Research Question 1:

Which issues are hampering socio-economic development in Kibera?

- Why does Nairobi have high rates of youth unemployment?
- Why do many residents of Nairobi lack access to basic services?
- What are the root causes of problems with housing and tenure in Nairobi?

Sub-Research Question 2:

What is community capital?

Sub-Research Question 3:

How is community capital present in Kibera?

Analyse

Sub-Research Question 4:

What are recent initiatives to enhance socio-economic development in Kibera?

- How were the initiatives executed?
- What did the initiatives achieve?
- What went wrong with the initiatives?

Sub-Research Question 5:

What are the existing barriers in Nairobi to develop inclusive urban strategies, and how can they be overcome?

Expose

Sub-Research Question 6:

How can urban planning strategies improve community capital?

Sub-Research Question 7:

How does the improvement of community capital contribute to socio-economic development in marginalised communities?

- What are means to develop community capital?
- In what ways does improved community capital lead to socio-economic development?

Sub-Research Question 8:

How can urban planning strategies improve community capital in Kibera?

- Where is improvement needed?
- Who should be involved?

Propose

Sub-Research Question 9:

How does the improvement of community capital contribute to socio-economic development in Kibera?

- How does developing community capital improve employment?
- How can developing community capital contribute to making basic services accessible?
- How does community capital relate to housing and tenure and how do these aspects contribute to each other's enhancement?

Politicise

Chapter 3

Methodology



3.1

Research framework

This chapter explicates the methodology of the research. It starts with the research framework, showing how the research is built up. The next sub-chapter elaborates on the methods that are used in the project. The research questions are grouped in four steps. The questions in each step are linked to a set of methods to answer them. Then, it is also described which outcomes are expected from using the methods. After this elaboration, they are shown in an overview. Subsequently, their function is explained in the methodology framework, which shows how they contribute to aims of the project. Then follows the phasing of the project over the course of the year and the chapter concludes with the theoretical framework, introducing the next chapter, which deals with the theory.

The research framework, depicted in figure 2, shows the steps that are taken to conduct the research. It provides an overview of the elements of the research. The top part contains summaries of the problem statement and research aims. Then follow the research questions, divided in their category. Finally, there is an overview of the methodology and outcomes and the frameworks that are developed for them. The research has a qualitative and exploratory approach, since it is open to new ideas and discoveries during the course of the project. Therefore interviews are also an important part of the research. They can reveal other opinions and perspectives to eventually add volume to the research. This ultimately results in an inclusive urban strategy that is fit to the local context and the community.

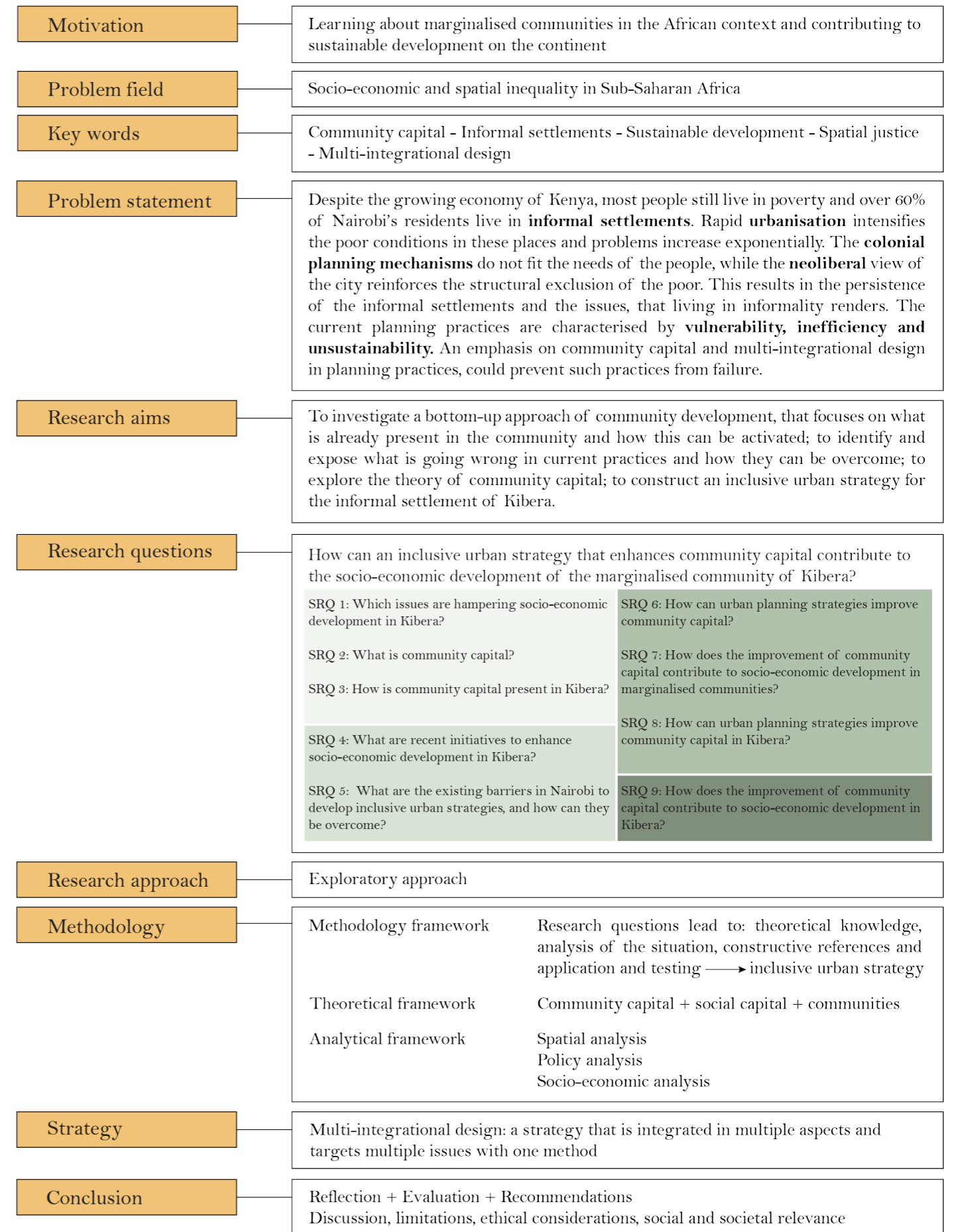


Figure 26: Research framework

Sub-Research Question 1:

Which issues are hampering socio-economic development in Kibera?

- Why does Nairobi have high rates of youth unemployment?
- Why do many residents of Nairobi lack access to basic services?
- What are the root causes of problems with housing and tenure in Nairobi?

Analyse

Sub-Research Question 2:

What is community capital?

Sub-Research Question 3:

How is community capital present in Kibera?

Methods:

Literature review	Reviewing literature to unravel the knowledge about community capital and its functionality.
Case study	Analysing policy documents to discover which obstructions exist for socio-economic development.
Policy documents analysis	Identifying stakeholders and their relationships to reveal who is affected by the issues and who is responsible for their occurrence.
Stakeholder analysis	Mapping spatial characteristics and mapping socio-economic relations to determine the presence of community capital in Kibera.
Visual mapping	
Expert interviews	Interviews with experts is part of qualitative research and serves to test the results of the other methods, and to explore further and elaborate on the findings about the issues in Kibera and the presence of community capital.
Street interviews	Interviews with locals are necessary to hear the voice of the locals and to understand their perspectives on the issues. They are also part of the mapping of community capital in Kibera.

Outcomes:

- The literature review serves as the foundation of knowledge about the strategy.
- The case study reveals the various elements of the problem.
- The expert interviews can confirm the findings and provide new insights to enhance the strategy.
- The street interviews give a good image of the local perspective and identify the local needs.

Sub-Research Question 4:

What are recent initiatives to enhance socio-economic development in Kibera?

- How were the initiatives executed?
- What did the initiatives achieve?
- What went wrong with the initiatives?

Expose

Sub-Research Question 5:

What are the existing barriers in Nairobi to develop inclusive urban strategies, and how can they be overcome?

Methods:

Literature review	Reviewing literature to identify existing barriers for the development of inclusive urban strategies in Nairobi and collect tactics to overcome them.
Case study	Analysing recent projects to learn about what to involve and what to avoid in constructing a strategy, by:
	- Identification of policies, programmes and spatial interventions
	- Review of results
	- Comparison of results
Expert interviews	Interviewing experts to discuss barriers for the development of inclusive urban strategies and explore tactics to overcome them, while testing knowledge from the literature.

Outcomes:

- The case study provides an thorough overview of recent practices in Kibera.
- The literature review and expert interviews contribute to a framework to construct a functional inclusive urban strategy.

Sub-Research Question 6:
How can urban planning strategies improve community capital?

Propose

Sub-Research Question 7:
How does the improvement of community capital contribute to socio-economic development in marginalised communities?

- What are means to develop community capital?
- In what ways does improved community capital lead to socio-economic development?

Sub-Research Question 8:
How can urban planning strategies improve community capital in Kibera?

- Where is improvement needed?
- Who should be involved?

Methods:

Literature review	Reviewing literature to explore ways to improve community capital and how and why this contributes to socio-economic development.
Case study	Comparing other cases to Kibera to find what information is useful for an inclusive urban strategy in this location.
Comparative research	Identifying stakeholders to reveal who should be involved to construct a successful inclusive urban strategy.
Stakeholder analysis	Mapping locations where improvement can be implemented and mapping which places can contribute to the improvement of community capital.
Mapping	

- Outcomes:
- The literature review provides information on methods to improve community capital and contributes to the substantiation of the relevance of this approach, in order to achieve socio-economic development.
 - Case study to discover what elements are necessary to make a successful strategy to improve community capital.

Sub-Research Question 9:
How does the improvement of community capital contribute to socio-economic development in Kibera?

Politicise

- How does developing community capital improve employment?
- How can developing community capital contribute to making basic services accessible?
- How does community capital relate to housing and tenure and how do these aspects contribute to each other's enhancement?

Methods:

Case study	Studying cases in order to compare researches to learn how projects that emphasised on improving community capital contributed to socio-economic development, through: <ul style="list-style-type: none"> - The improvement of employment - The accessibility to basic services - The provision of housing and tenure
Expert interviews	Interviewing experts to predict the outcomes of an inclusive urban strategy that focuses on the improvement of community capital.
Street interviews	Interviewing locals to better predict the results of the strategy and to explore which elements are missing.

- Outcomes:
- The case study provides substantiation for the reasoning for elements of the strategy.
 - The expert interviews help to predict the result of the strategy.
 - The street interviews indicate what elements of the strategy will be useful to achieve the goals and what elements are still missing.

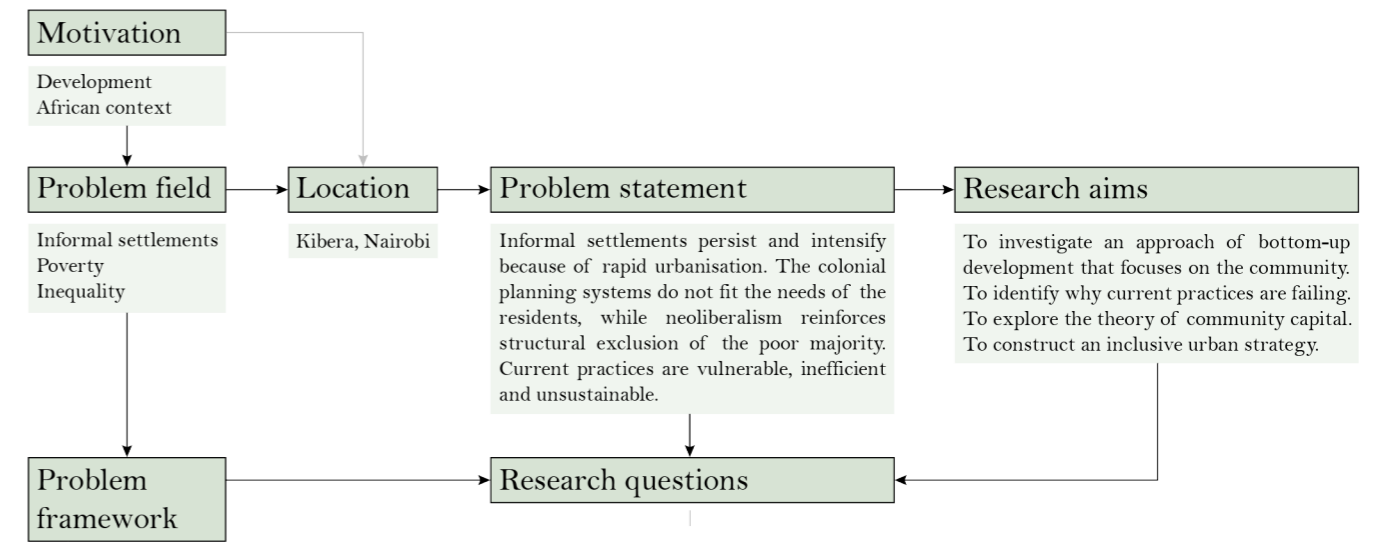
3.3

Methodology Framework

Below is an overview of the sub-research questions and the methods that are used to answer them (fig. 27). The methodology framework (fig. 28) shows how these methods contribute to achieving the aims of the research. In the top is depicted how the problem statement is derived from the problem field and how they lead towards the research questions. Subsequently, nine research questions follow from the main research question. By answering them

with the linked methods, four general outcomes are produced: theoretical knowledge, analysis of the situation, constructive references and an application. The first three outcomes are used to contribute to the last outcome. Thereafter, the application can be tested and evaluated, so that the research ultimately results in the construction of an inclusive urban strategy.

	SRQ 1	SRQ 2	SRQ 3	SRQ 4	SRQ 5	SRQ 6	SRQ 7	SRQ 8	SRQ 9
Literature review		●			●	●	●		
Case study				●					●
Expert interview	●		●		●				●
Street interview	●		●						●
Stakeholder analysis			●					●	
Policy document analysis	●								
Visual mapping			●					●	
Comparative research						●			



How can an inclusive urban strategy that enhances community capital contribute to the socio-economic development of the marginalised community of Kibera?

SRQ 1	SRQ 2	SRQ 3	SRQ 4	SRQ 5	SRQ 6	SRQ 7	SRQ 8	SRQ 9
Expert interview	Literature review	Expert interview	Case study	Literature review	Literature review	Literature review	Stakeholder analysis	Case study
Street interview		Street interview		Expert interview	Comparative research		Visual mapping	Expert interview
Policy document analysis		Stakeholder analysis						Street interview
		Visual mapping						

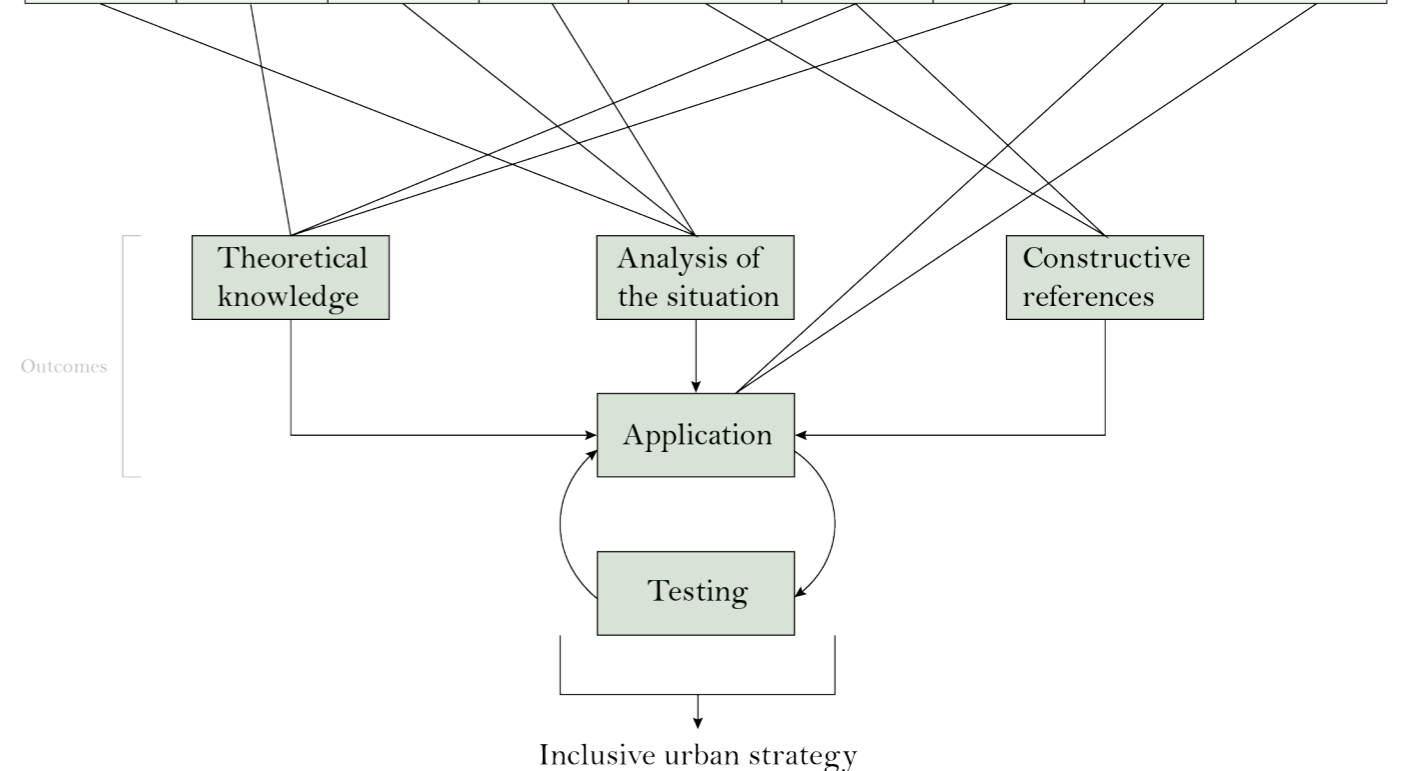


Figure 27 (left): Methodology overview

Figure 28 (right): Methodology framework

The diagram below shows the phasing of the project over the year. The first half of the project, until P2 is mostly covered by orientation and literature review. This is necessary to build knowledge about the topic in order to plan further steps. It is combined with comparative research to gather references, and analysis to collect information about the project location and its context. Fieldwork and expert interviews will be used to elaborate on this knowledge and to test assumptions. Finally, this leads to the construction of the inclusive urban strategy.

Figure 29: Project phasing.

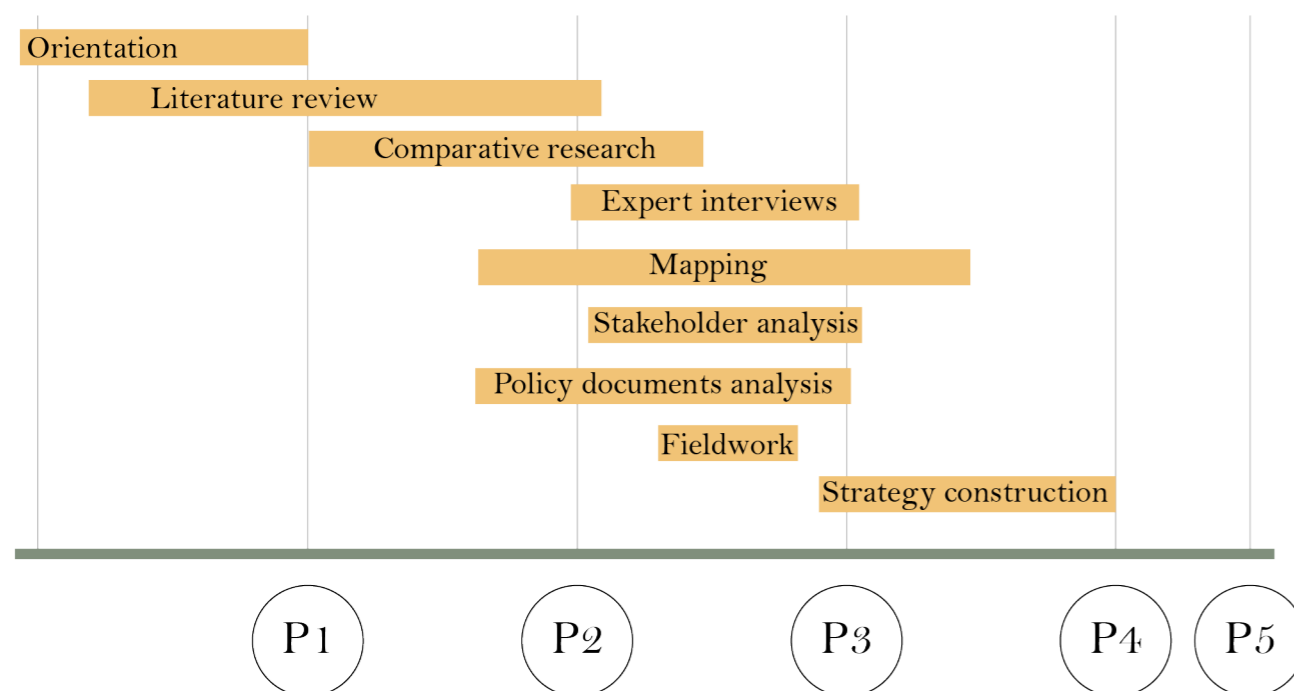
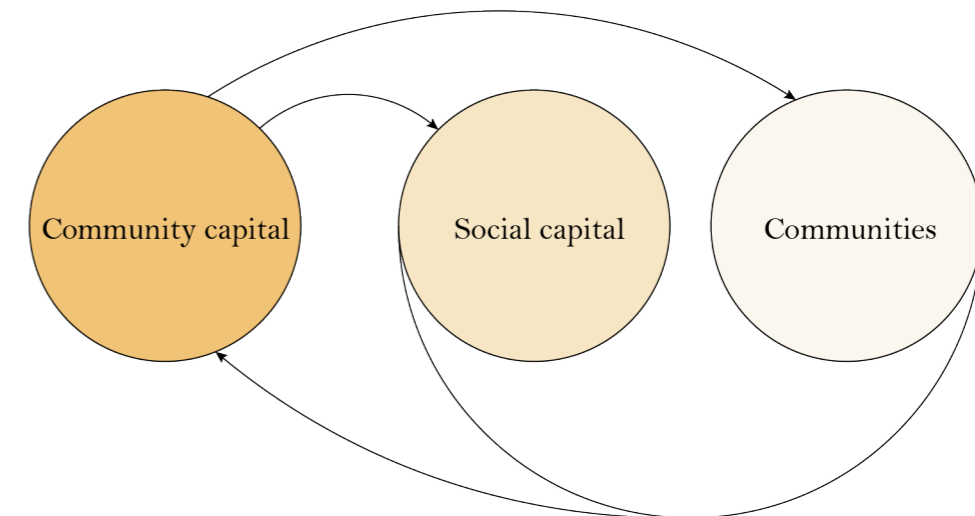


Figure 30: Theoretical framework.



The theory used for this project revolves around community capital. It answers the question what community capital is itself and how it can be used for socio-economic development. Therefore, it is necessary to discover the functionality of community capital and which elements it contains. Two important aspects of the theory are about social capital and the definition and functioning of communities. Social capital is crucial because communities only exist through social interactions. Naturally, to discuss community capital, it is essential to determine what a community is and how communities act. Together these main aspects are linked back to the term of community capital.



Chapter 4

Literature Review

4.1.1 Introduction

This chapter covers the theoretical background of the research. It aims to explain the findings of researchers concerning the meaning and functionality of community capital, social capital, power relations, the community, multiplicity and collaboration. The investigation of community capital and its function is a part of a bottom-up approach in community development, in which planners identify what strengths the community already has and how these can be activated to boost development of the community. It also exposes what is still necessary to enable sustainable development. This theoretical knowledge contributes to the construction of an urban strategy to promote socio-economic development.

The chapter is divided in three topics: community capital, social capital and the community. The first part deals with the different definitions of community capital and the forms of capital it is composed of. It also deals with the relationships between the different forms. The second part delves deeper into a separate form of capital, social capital. The social aspect is essential in the context of a community and therefore needs more attention. Thirdly, it is important to get aware of the definition of the community and the relationship of the community with community capital, to gain more insight about the functionality of community capital.

4.1.2 Community Capital

Numerous scholars have written about the wealth of the community from different perspectives. Hancock (2001), and with him many others, argues that the wealth of a nation is not only based on the financial resources it possesses. He puts the health of the people forward. "A nation's health is a nation's wealth." This means that policy makers cannot only focus on economic activity and that they should use economic activity just as a means to achieve health and thus wealth. Furthermore, wealth is expressed in social networks and the connection to the natural world. They all contribute to the well-being of humans.

According to Hancock (2001), every policy should have human development as its final aim. He wonders what other purpose governance could possibly have than the improvement of human life. This is not to say that efforts for this purpose are spread out equally. The wealth derived from assets and resources that contribute to human development are called capital. Hancock discerns four forms of capital: human, natural, economic and social capital. He puts human capital in the centre, because all other forms of capital are used to enhance human capital, since this is the means by which human development can be achieved. Human capital represents the health, skills, education and ingenuity of people. These qualities can be found in individuals, but furthermore they can be serviceable to the community.

Similarly, the other forms of capital can be described from the perspective of the community, as they serve the community through the various uses

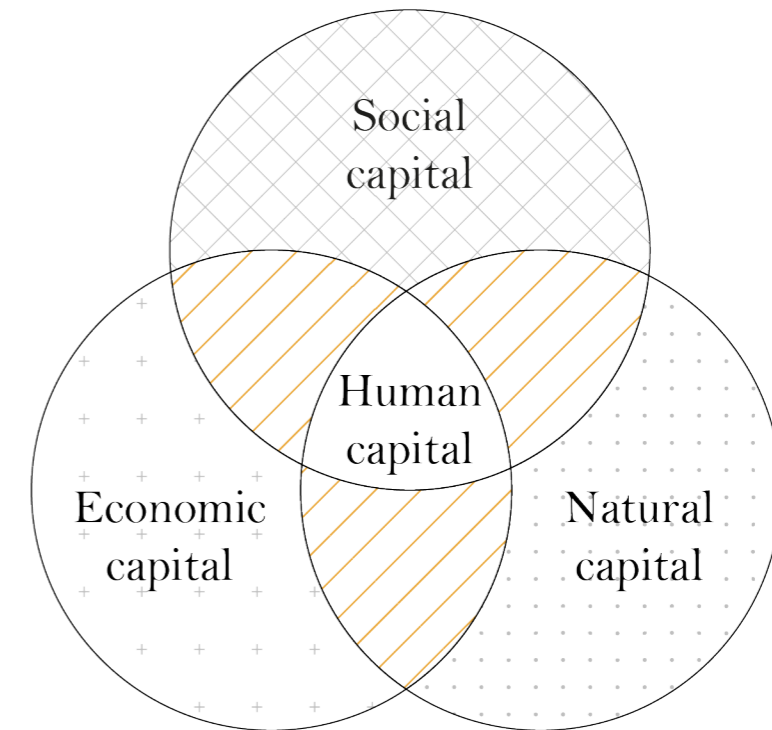


Figure 31: Hancock's (2001) model of community capital, where human capital is the central form.

of capital by actors within the community. Natural capital is about the quality of the environment and the health of its ecosystems, which should imply the sustainability of its resources and the conservation of habitats. Economic capital constitutes the means by which prosperity can be achieved, so that people can be provided with services, like housing and health care. Additionally, it entails the creation of jobs and the systematics for a fair distribution. Social capital contains an informal and formal level. On the informal level, it includes social cohesion and social networks, while on the formal level, it concerns societal goals, such as peace and safety. The level of social capital of the community is dependent on trust.

Natural, economic and social capital revolve around human capital. Hancock (2001) represents this in a way that these three forms of capital together

feed human capital, so it can grow. The growth of human capital is the product of the increase of the forms of capital around it. This should probably not always be taken as a direct outcome. As an example, a high level of natural capital, i.e. the access to a healthy and lush ecosystem, can have a positive impact on the mental health of people. But at the same time, Stijns (2006) found a positive correlation between the access to fertile, arable land, which can be described as natural capital, and the number of years of education, indicating human capital. So, while the high level of natural capital is related to the high level of human capital, it is through the people's economic and social capital, which facilitate education, that the level of human capital can be increased.

Hancock (2001) also describes this collaboration of the forms of capital (fig. 31). This

is why the circles of the outer three forms of capital intersect as well. The forms of capital depend on each other. A healthy community has high levels of all forms of capital. When the circles grow because of high levels, the central intersection, where human capital is located, will also grow. But when one or multiple circles shrink, human capital will shrink too. The development of the community can only be sustainable, when the increase of one form of capital does not drastically deplete another form of capital. All forms of capital are needed to enhance human capital. In the case that one form of capital is depleted too much, it will no longer be able to support the growth of another form of capital, so the development will stagnate or collapse.

Definitions of capital

There are various researchers that introduce other forms of capital. Callaghan and Colton (2007) write about six types of capital, while Kais and Islam (2016) dissect a sum of seven types. In the work of Callaghan and Colton (2007), the types of cultural capital and public structural capital are added. Cultural capital comes in tangible and intangible shapes. The tangible is defined as works of arts and heritage, the intangible aspect relates to the values, beliefs and traditions of the community. Public structural capital represents the man-made structures that are aimed to be public to all of the community. Such structures include road infrastructure, parks and events. Kais and Islam (2016) add political capital to this. Political capital is explained as the access of the community to power and resources.

This is where the definitions start to mingle. Kais and Islam acknowledge that political and cultural capital could as well be a part of social capital. It depends on the perspective of the research, whether they should be divided or included in the same type of capital. The same goes for other types of capital, like economic capital or natural capital. In the research, different terminology is used in order to fit the research best. Some write about economic capital, others about commercial capital. Many researchers use natural capital, others use environmental capital. Hancock (2001) even uses three names for the same form of capital in one article: natural, environmental and ecological.

The differentiation is usually based on the emphasis that the researchers aim to make (fig. 32 & 33). Callaghan and Colton (2007) use environmental and commercial capital. To them, the

emphasis in environmental capital, although they mention that it is also referred to as natural capital, is on the ecosystems that people live in. In other words: the environment, people's natural context. Wilson (2012) proceeds on this notion, by saying that environmental capital is about the interaction of humans with the environment. This differs from the view of Kais and Islam (2016), who use the term natural capital, because they emphasise the function of nature as a resource provider.

The use of commercial capital by Callaghan and Colton (2007) renders more limitations. They stress that commercial capital only applies to those that deliberately step into the realm of commercial activity and that it is not always accessible to all, like public structural capital. This type of capital represents the provision and engagement of people in commercial activities. The accumulation of commercial capital should result in economic growth. Other researchers prefer to use economic capital. It comprises a broader sense of economic activity and value. Economic capital is about financial resources, just as about the provision of services, like housing and reparations, and job creation. So, it has a monetary dimension, in finances and materials, as well as a processual dimension, in the provision of jobs and economic interaction between people (Wilson, 2012; Kais & Islam, 2016; Hancock, 2001). Whereas Bourdieu (1986) states, that other forms of capital can eventually be converted into economic capital, which can be converted into monetary value, Wilson (2012) argues, that the economic interactions between people add another dimension to economic capital. These interactions include the provision of services and the labour market.

Additionally, these definitions of capital change according to the perspective of the research. To some it does not quite matter which term to use, like in the work of Hancock (2001) (he uses three words for the same concept). To others it defines the approach, like Wilson's (2012), who emphasises the relationships of humans and capital (therefore uses environmental capital instead of natural capital). It is therefore interesting to look at the way the forms of capital are used in relation to each other.

Relations

Firstly, all forms of capital can be put at the same level. When looking at the resilience of the community, all forms play a role in achieving resilience. In this approach, all forms of capital

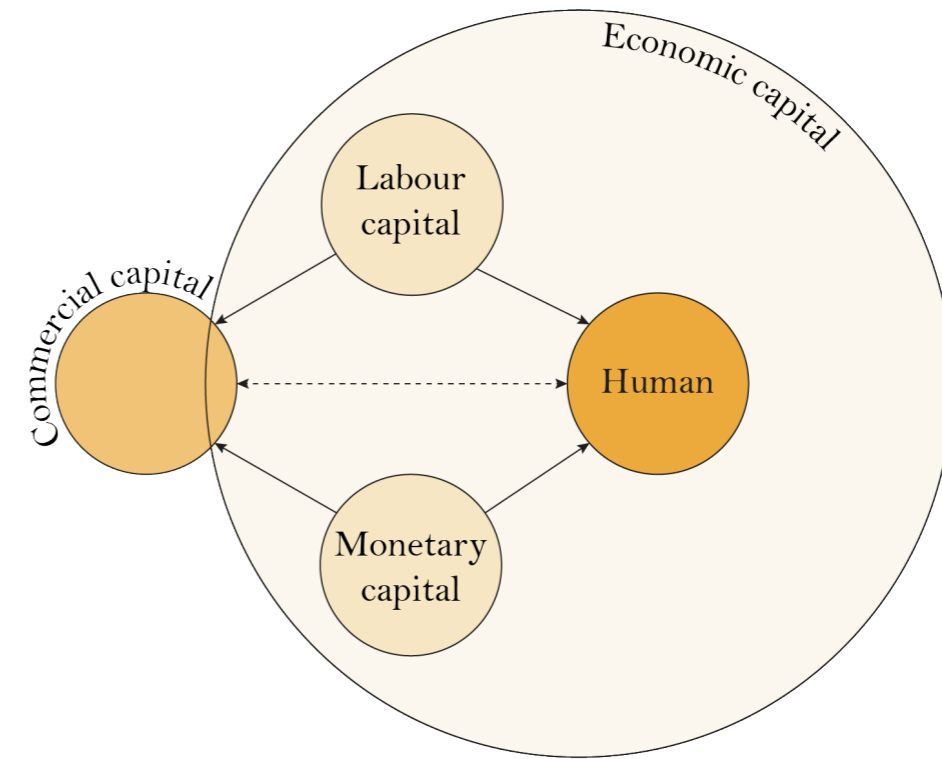


Figure 32: Visualisation of the varying terminology of economic capital.

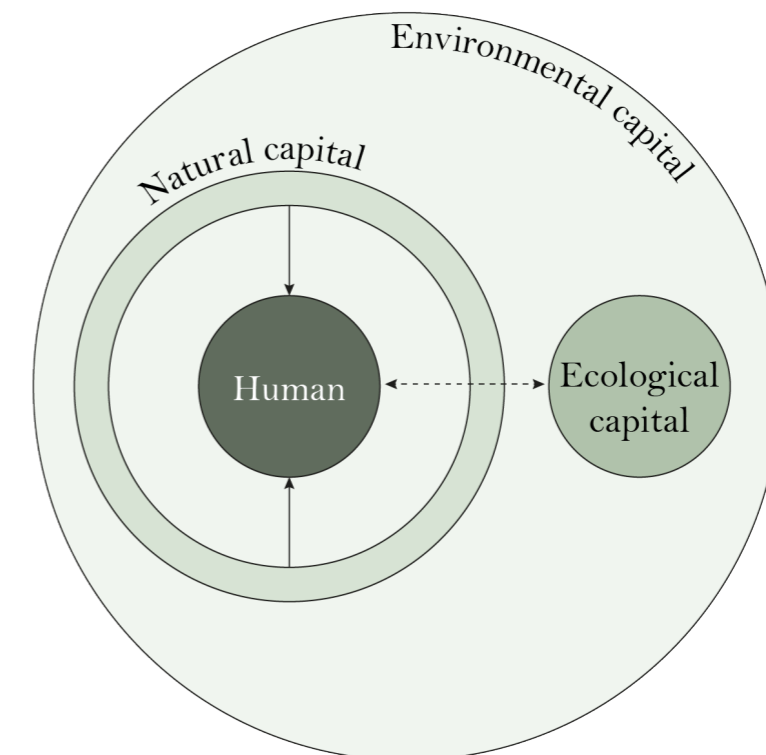


Figure 33: Visualisation of the varying terminology of natural capital.

are interrelated and interdependent on each other. This means that the different forms influence other forms in their size and that people need multiple forms of capital to create resilience. Kais and Islam (2016) stress, that it is necessary to look at how the capital is managed in the community. For this they divide the management into two approaches.

There is the acting on vulnerability, which is applicable to sudden events. Such events are often related to natural disasters, like wildfires or hurricanes. To recover from such events, the community needs to use its different forms of capital. They are acts on the short-term in order to keep the community vital and they often cause the unbalanced depletion of some forms of capital (Kais & Islam, 2016). Two examples: if sustainable energy installations are destroyed, the community might decide to use fossil energy sources instead, in order to meet the community's energy needs, while depleting its natural capital. If the community is suddenly in a large need of housing, it might decide to invest its money, meant for public buildings, in houses instead, while depleting social, public built and human capital. The approach of vulnerability can be used in actions for recovery as well as for prevention. For instance, a community that is vulnerable to earthquakes can invest, and thereby possibly deplete its capital, in order to diminish its vulnerability to damage from earthquakes.

The other approach is acting to create resilience. This approach is more applicable to long-term problem evolution. Such problems are developed over time and the results of trends, like a declining economy or climate change. Resilience expresses the capacity of the community to remain developing, while dealing with change. A resilient community is able to mitigate occurring disturbances, has the capacity to self-organise and recover, and can adapt to new contexts. These characteristics make resilience both a purpose and a process. A resilient community is able to resist disturbances and able to re-adjust to new conditions (Kais & Islam, 2016). This means, that the community does not necessarily deplete forms of capital, but rather uses its capital to regain its strength after an incident, while adjusting to fit optimally to the new status quo. Resilience is the foundation for sustainable development (Wilson, 2012).

According to Kais and Islam (2016), the community can respond to issues, and subsequently use its capital, in three ways. 1) A system, that aims to avoid and resist disturbances and maintain its state

with sufficient resources. This system strokes with the idea of countering vulnerability. It can deplete some form of capital to restore the original state. In this system, those in power are able to decide which form of capital to use to protect the community. This makes this kind of system preferable to the elite. Other scholars note too, that in reality, capital is often related to power. And people with a lot of capital are able to solidify their power (Newton, 2008). 2) A system, that aims to remain stable at the core and allows change in the margins. It is a form of resilience, that allows for adaptation to changing conditions, but in a way that the system's defining features remain intact. Capital can be used for the adaptations, as long as it does not affect the course, that is set by those in power. This kind of response addresses symptoms and not root causes. 3) A system, that aims to optimally adjust to its context. This system is open to adaptation up to its core, so it can cope with (future) incidents. It acknowledges, that it needs to tackle the root causes of issues in order to survive and develop sustainably. Capital in this system is managed more democratically, since it needs to be utilised through the entire community in order to tackle root causes of issues.

The researchers recognise, that not all capital is distributed equally among the community. There will always be differences between individuals. Therefore the community needs to be organised. Consequently, the community capital can be used efficiently to address issues effectively. The community can manage its capital through various dimensions. To be effective, it has to: recognise its capital and its obstructions to enhance capital, inform the community members, adapt to changes, be connected to external actors and promote collectiveness. The community might need officials to insure these dimensions (Kais & Islam, 2016).

In this model, all types of capital can be of importance to create resilience, since they are interdependent. The level of resilience is based on the composition of the types of capital and the management of them. Kais and Islam (2016) created this model to measure resilience of the community (fig. 34). The level of community capital is influenced by the combination of short- and long-term disturbances and the management of the resilience dimensions. The resulting composition of forms of capital shows the resilience of the community. Likewise, it shows the community's strengths and weaknesses. Theoretically, each type of capital can have an equal influence on the community's resilience.

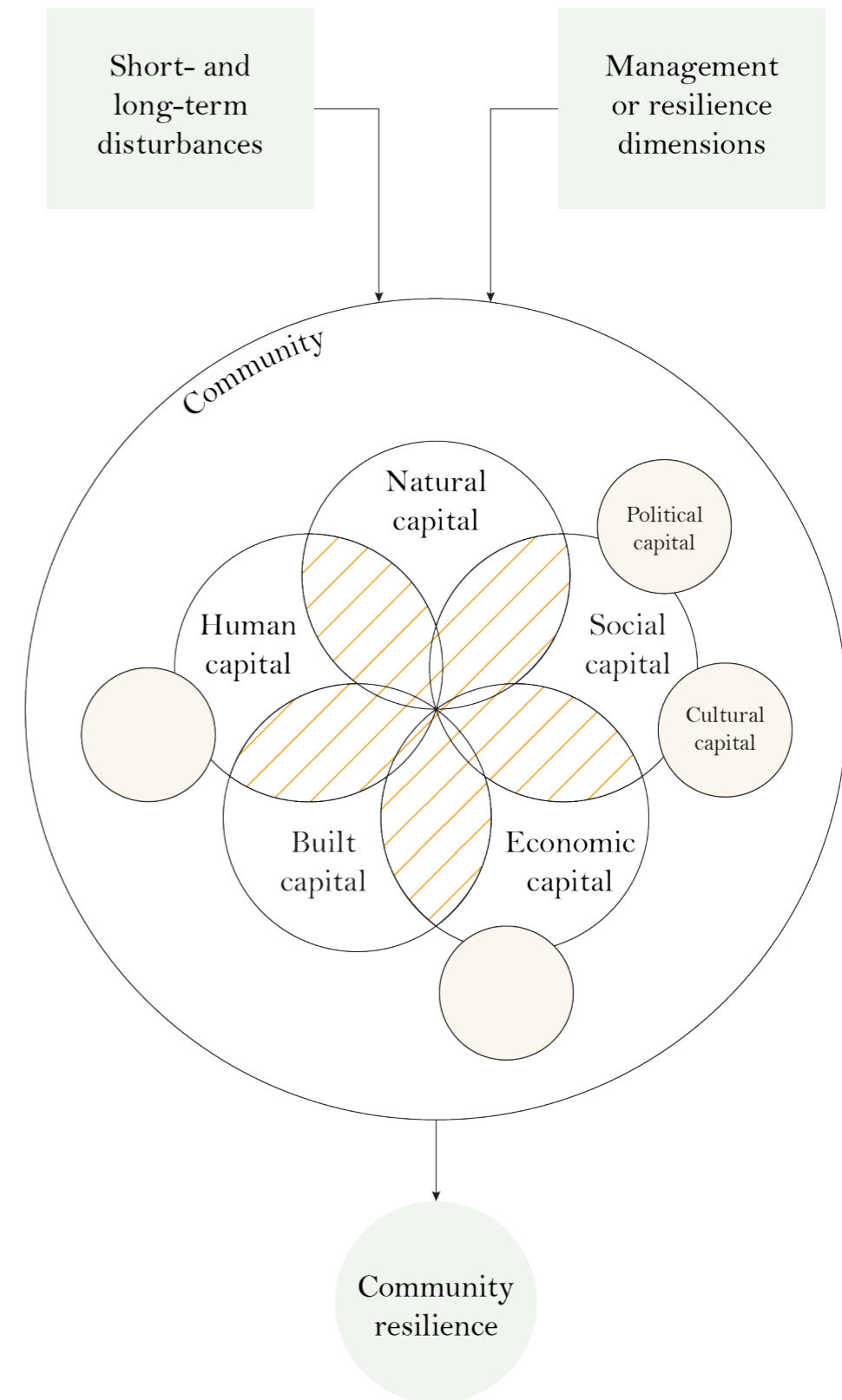


Figure 34: The model for the elements of community capital and their relationships to community resilience, by Kais and Islam (2016).

Figure 36: The Kenyatta International Convention Centre, a landmark in the heart of Nairobi and an icon of Nairobi's international hub function.

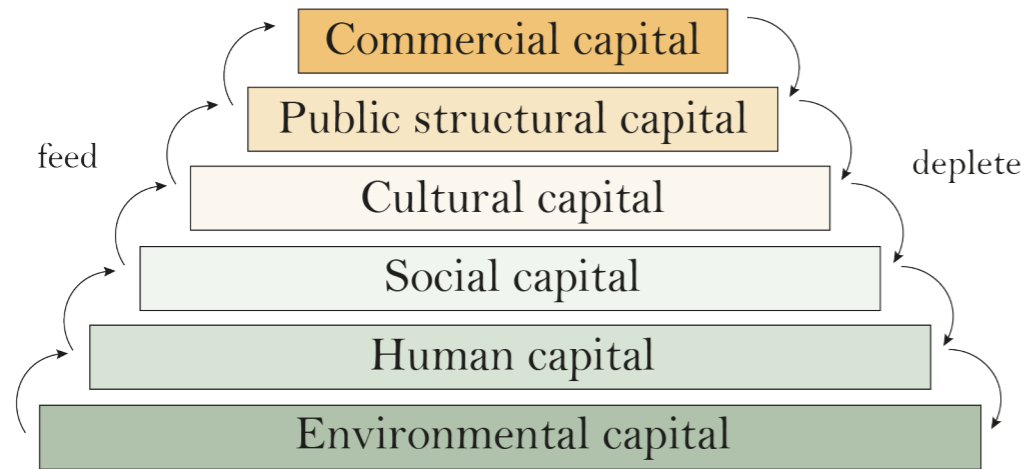


Figure 35: The layered model of community capital, by Callaghan and Colton (2007). One form is the foundation for the next.

Balance

Another method of relating the forms of capital, is the layered approach. Callaghan and Colton (2007) created a scheme, in which one form of capital follows from another (fig. 35). They made an order of when the forms of capital appear in the shape of a pyramid. This does not represent an order of importance, but rather shows, that the higher form needs the lower form as a foundation. The types of capital interrelate to each other through flows of energy. These flows of energy can be operationalised as the relation between forms of capital, that either depletes or feeds the other form. The pyramid scheme offers an alternative visualisation for the system of the community. Instead of identifying different stakeholders in the community, the stakeholders can be related

to stocks of capital and in this way be related to other stakeholders. Their value to others and the community can be established through their capital.

The researchers stack the forms of capital in the following order. Environmental capital includes all that is provided by ecosystems and therefore is the foundation to all life. Human beings live in ecosystems and are the providers for all human activity, thus human capital is the foundation to develop other forms of capital. Human capital provides the capabilities to attain social capital, which entails the relations of values, norms and trust among people. When people form mutual understandings through such relations, they can start to build cultural values and traditions, so cultural capital is produced. Subsequently, the community can, through cultural agreements, create public infrastructure and goods and



thereby develop public structural capital. This public structural capital is necessary to facilitate commercial activity, which generates commercial capital (Callaghan & Colton, 2007).

The levels of capital result in a balance. In the ideal situation, all neighbouring forms of capital feed each other, so the total of community capital grows. But the forms can also deplete each other. Depletion will take the pyramid out of balance. The balance in capital of a resilient community needs to be adapted to the context. Yet, this balance is rarely static. Resilience in the community means, that the community's balance in capital is dynamic and flows with the context that is under the influence of external events (Callaghan & Colton, 2007). In theory, the outcome of this is, that the balance will be disturbed by an external event, which creates a temporary imbalance. Because the resilient community is inherently dynamic, the imbalance will be mitigated by the shifting of capital levels. In the phase of repair that follows, the balance will be altered to a new state, that is adapted to the new situation, leaving an altered balance (fig. 37).

Kais and Islam (2016) mention a similar concept. They argue, that, because of social resilience, the state of the community 'bounces forward' after a disturbance. This is typical for community resilience. The original idea of resilience is, that a subject 'bounces back' to its original state after it has been impacted by an external event. This applies better to physical subjects, such as rubber band. But social resilience is different, because the state of the community is dynamic and not static like an object. This results in a bounce forward to a new equilibrium, in other words: an alteration to a new balance.

Yet, one could argue, that such an alteration of balance is not actual resilience. A true resilient community should be able to mitigate disturbances by substituting some of its capital to the diminished capital, while retaining sufficient levels of all other forms of capital. Over time, the community can regain its abundance in capital (fig. 38). Such a definition of resilience is closer to some more physical disciplines (Herrman, 2011). As social resilience, this might sound like a mixture of system 1 and 2, described by Kais and Islam (2016). But then it should be taken into account, that capital does not function as a physical object and does not necessarily have a physical state. Similar to how Callaghan and Colton (2007) state, that resilience is inherently dynamic, so could the capital that make up the resilience be dynamic as well. System number

3 suggests, that optimal adaptation to a new context happens when the system can be adjusted up to its core. But if having capital itself means, that the community has resources to cope with changes, it also inherently has the ability to adapt properly to such changes. With that insight, the resilience of the community is a balance of capital that does not alter after an external event, but rather recovers to its balance state with high levels of capital, even though the community has adapted to a new context, due to its community capital.

Still, this model of balance by Callaghan and Colton (2007) only depicts the functioning of the total of capital from the perspective of resilience. The pyramid scheme ignores the interaction between types of capital that are not adjacent. However, many scholars describe the relations between different forms of capital. Especially the distance between commercial and environmental capital is remarkable, because in many cases environmental capital can be directly converted into commercial or economic capital, when selling natural products for example. In addition, there are numerous examples of interaction between other forms of capital.

Counterparts

Bourdieu (1986), being one of the earlier writers about capital, has a different view on the relations between the forms of capital. He distinguishes three main forms of capital, economic, social and cultural capital, and a hidden fourth form, symbolic capital. To him, capital is the accumulation of labour. And accumulation takes time and effort. The position of an individual or community in society is the result of the accumulation of capital and this always has precedence, because of the labour of people before them. People do not start at an equal starting point and gain capital onwards. Furthermore, capital amounts to power, so generally, the more capital one has, the more power one has. This idea is deduced from the statement, that all capital can eventually be converted to economic capital, so effectively, money is power.

But Bourdieu (1986) realised, that this idea is unable to explain the social world. That is why he divides capital in economic, social and cultural capital. Economic capital entails property and the generation of it. Cultural capital includes the knowledge and traditions that are passed on through generations, in mental and objectified form. Social capital comprises social networks and

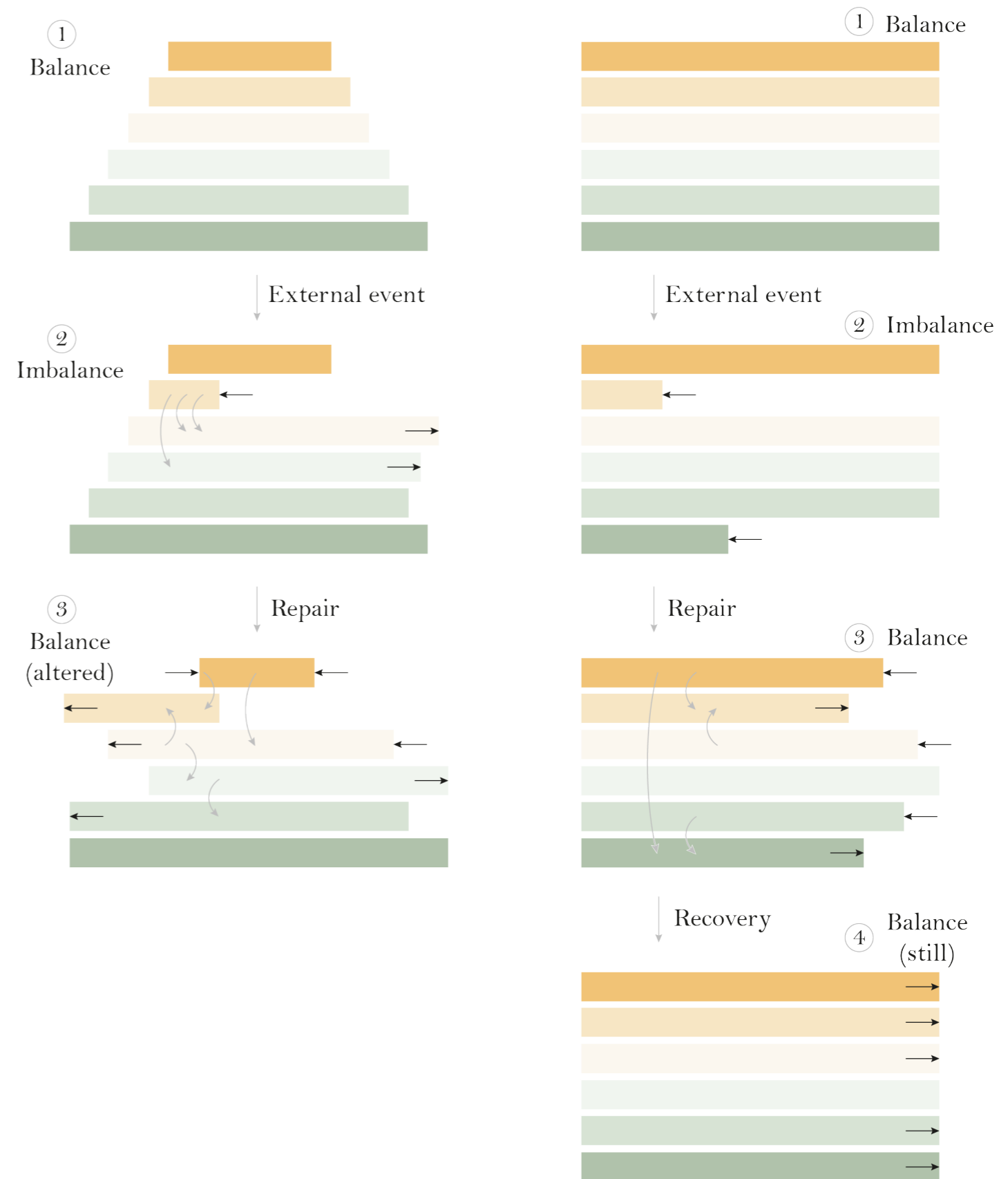


Figure 37: Resilience by alteration. The balance will be altered after an external event into a new balance.

Figure 38: Resilience by substitution. The disturbed forms will be substituted with other forms, until they are recovered.

obligations in relationships of mutual recognition. Capital is the sum of resources in material and immaterial form (Bourdieu, 1986; Newton, 2008). Economic capital is about self-interest, because it is focused on profit. The generation of economic capital is always about gaining more value for one's self. But this implies, that there is capital that is about disinterest as well. This is how Bourdieu (1986) compiles the material and the immaterial. The material world needs the immaterial world to give it purpose. These counterparts are represented in the forms of capital. Economic capital is quantifiable and on the side of self-interest. All that is not quantifiable can be determined as social or cultural capital and is found on the side of disinterest (fig. 39).

Abstractly, the self-interested section is present at the individual level and the disinterested section at the community level. But still economic capital can be found on the side of the disinterest, because economic capital can be used to invest in social and cultural capital. Conversely, social capital and cultural capital can ultimately be converted into economic capital. Usually, this happens through a costly and time-consuming process. As an example, a form of education, which adds to a person's cultural and social capital, as to their peers', can eventually pay out in higher earning jobs, adding economic capital. A much more complex example is, that a person is able to yield economic success more efficiently, when they have learnt about the community's cultural values and social connections, and thus accumulated cultural and social capital, to use for the gain of economic capital, but it costs years, if not generations, to gain this community capital and eventually yield it successfully. To Bourdieu (1986), eventually all capital can be converted into economic capital. But this process is ongoing over a large stretch of time.

Simultaneously, this blurs the line between individual and community capital, because individual economic capital can be invested into the accumulation of capital for the community and vice versa. Furthermore, the conversion of capital has to be understood in two phenomena: economism and semiology. Economism is the idea that every form of capital can be reduced to economic capital. Semiology recognises that social interaction can be there just for the sake of communication. Conversion can be viewed in the same way as energy transmission, meaning that energy that goes in equals energy that goes out and yield equals costs. So, if not all capital is directly converted into

economic capital, it falls apart in economism and semiology. Then, a lot of capabilities and resources are not directly convertible in economic capital. For example, the investment in education and the profit of it are not directly exchangeable. Rather, the yield of education is the result of a combination of economic, cultural and social capital.

In addition, there is the notion of symbolic capital. This type of capital can be seen as the conductor of the other forms of capital. Symbolic capital is specific to a community. It is institutionalised in the interactions between people, the knowing how to handle situations. People use their symbolic capital to be effective in their efforts. Nobles or representatives of the community might have more symbolic capital than other members of the community, which they need to perform well with the status of their position (Bourdieu, 1986). It is in everyday life, that symbolic capital evolves. People develop an understanding of the world they live in and how to function in it. It is a mental structure that exists only in the mind and this is what Bourdieu means by habitus. When this structure is strong and elaborate, people can gain a lot of symbolic capital, because they know how to act in the social world and conduct their capital (Newton, 2008; Bourdieu, 1986).

Interrelations

So, Bourdieu (1986) arranges forms of capital in opposition to each other, because he noticed that policy makers in his time put too much emphasis on economic capital and that other kinds of labour were neglected, even though he still recognises, that every form is convertible to economic capital. Wilson (2012) builds on Bourdieu's notion of conversion, but he extends it to a model in which all three main types of capital can be converted to each other. While cultural and symbolic capital are grouped in social capital, environmental capital is added. Economic, social and environmental capital are the foundation to determine the resilience of the community. Wilson's model looks very similar to Hancock's (2001), but he does not include human capital, because the relation to human utilisation is inherent to the three types. Then again, the perspectives of the researches differ. Wilson writes about resilience, while Hancock discusses wealth. However, it can be argued, that resilience is strongly connected to wealth.

The main difference is, that Hancock's model is circular and Wilson's is triangular. In

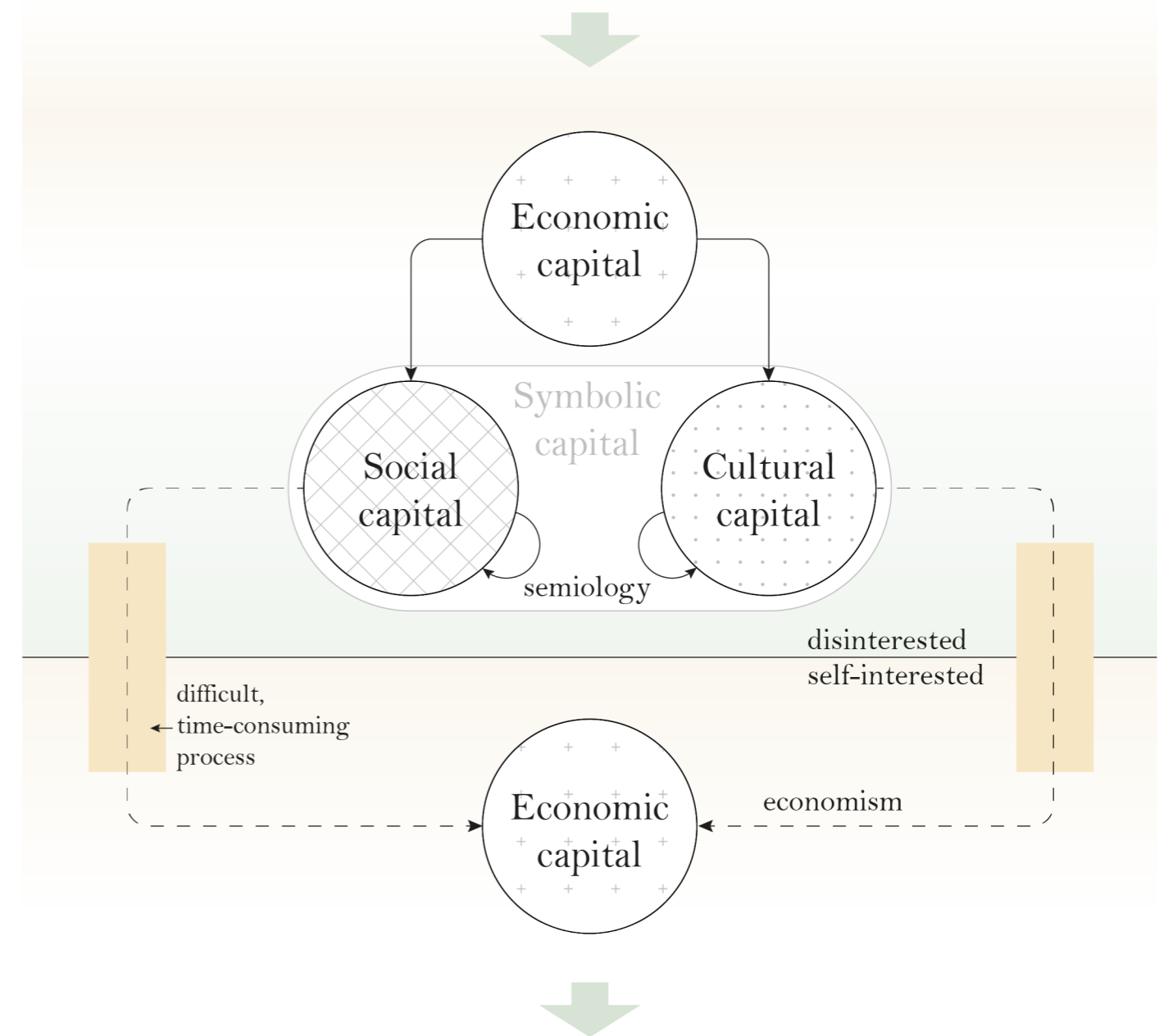


Figure 39: The division of self-interested and disinterested resources, after Bourdieu (1986).

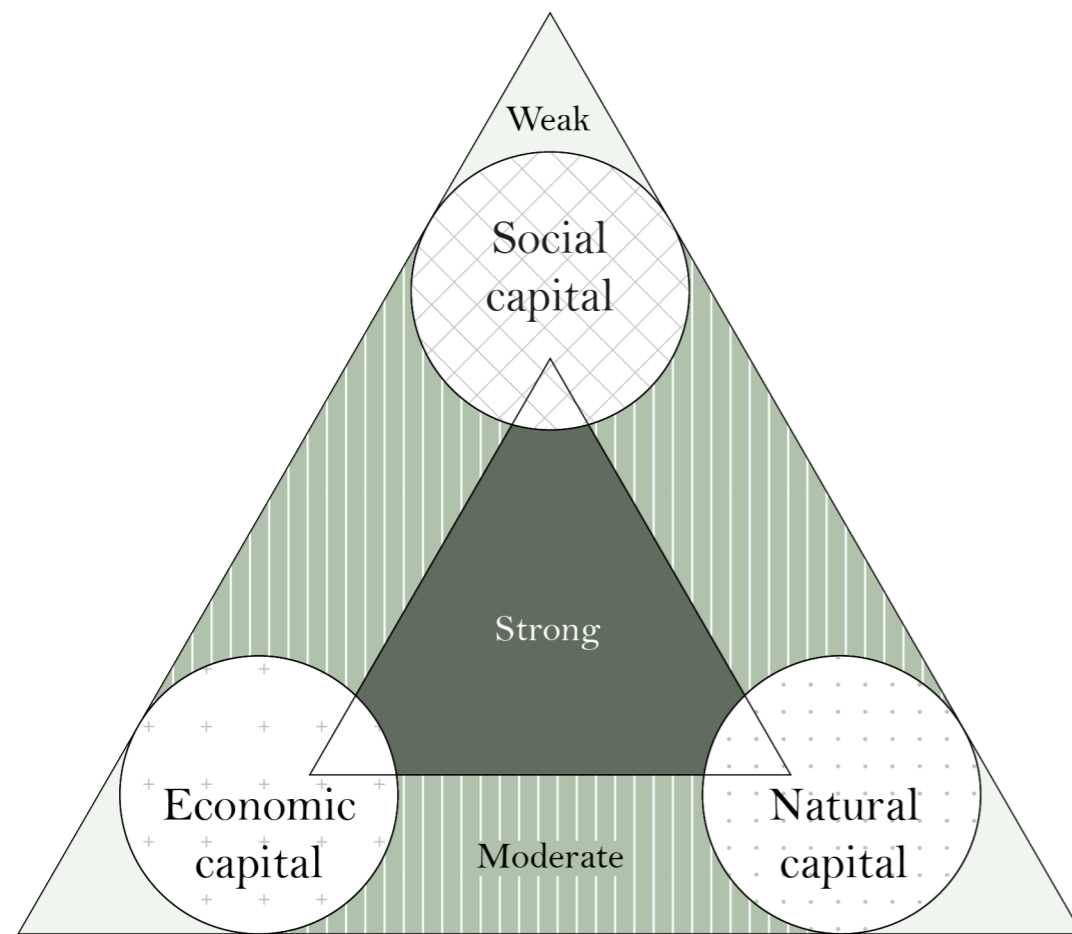


Figure 40: The model of the strength of resilience in the community, with Wilson (2012) called the 'critical triangle'.

Hancock's model, three forms of capital revolve around a central form of capital, which is human capital. Still, the forms of capital are related and dependent on each other. Wilson's model is called the 'critical triangle' and is based on three corners of capital that are connected to each other. The forms of capital are related and dependent on each other but do not revolve around a centre. The overlap of the capital simply depicts the strength of the resilience, rather than a central capital (Hancock, 2001; Wilson, 2012).

Seen from the community resilience perspective, the triangle (fig. 40) is simple to read. The community is strongly resilient, when all three forms are well-developed. The resilience is moderate, when only two forms are well-developed. Communities with only one form of capital or even none, generally have low resilience. The strength

of the resilience is related to the community's vulnerability, in the case that it lacks a certain form of capital. This judgement remains on a spectrum between vulnerable and resilient. In reality, no community has either none of the capital or all of the capital maximised (Wilson, 2012).

Furthermore, Hancock (2001) writes about types of capital feeding and depleting each other. Their volumes morph the circles and the shape of the model and in this way their interdependence is showcased, especially with human capital. The critical triangle by Wilson (2012) is not focused on volume. On the contrary, the state of resilience is not even specified on how much of each capital the community needs to be resilient. Instead, it stresses the importance of interrelations. It matters more how the interdependencies and interrelations between the forms of capital are managed, than

how much capital the community has. This has the consequence, that one form of capital can be used to strengthen other forms of capital, but at the same time, that the possession of capital has the potency to weaken the other forms. This happens especially, when one form of capital is depleted and the other forms are dragged down with it, because they are strongly connected.

Therefore, a resilient community profits from its capital, when its forms of capital are not 'in need' of the other forms, but rather are strong entities on their own, that are connected to the other forms, so that they can be used to assist in the recovery of one form, when it has experienced disturbance. The interrelations between the forms of capital are based on the actions of stakeholders on the individual, household and community level. Some stakeholders, within the community, plausibly have more economic capital than others, who have more environmental capital or social capital. In a resilient community, those with more economic capital can profit from those with more environmental or social capital and vice versa, while both gain capital for the community (Wilson, 2012).

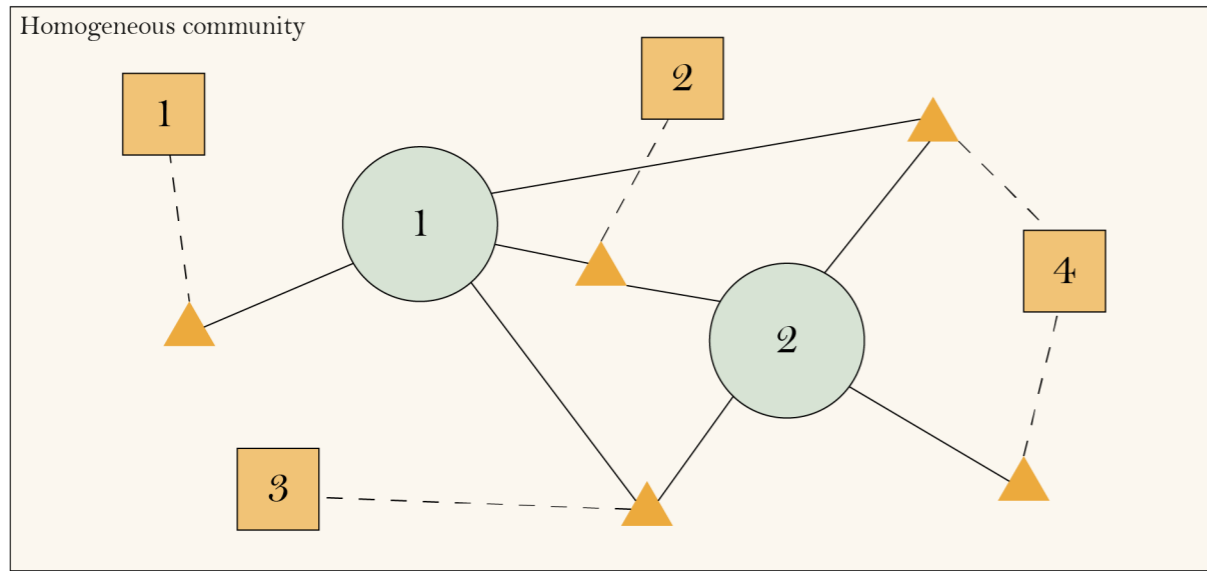
4.1.3 Social Capital

Ultimately, with the transmission of capital and the interaction between stakeholders, there is often impact on the social capital of the community (Wilson, 2012). But the impact of social capital can be hard to measure. After all, social capital only exists in the human mind and is observable through social interaction. Without the interaction, it does not exist. Therefore, the impact of social capital is always related to other forms of capital, which can be quantified more easily (Callaghan & Colton, 2007).

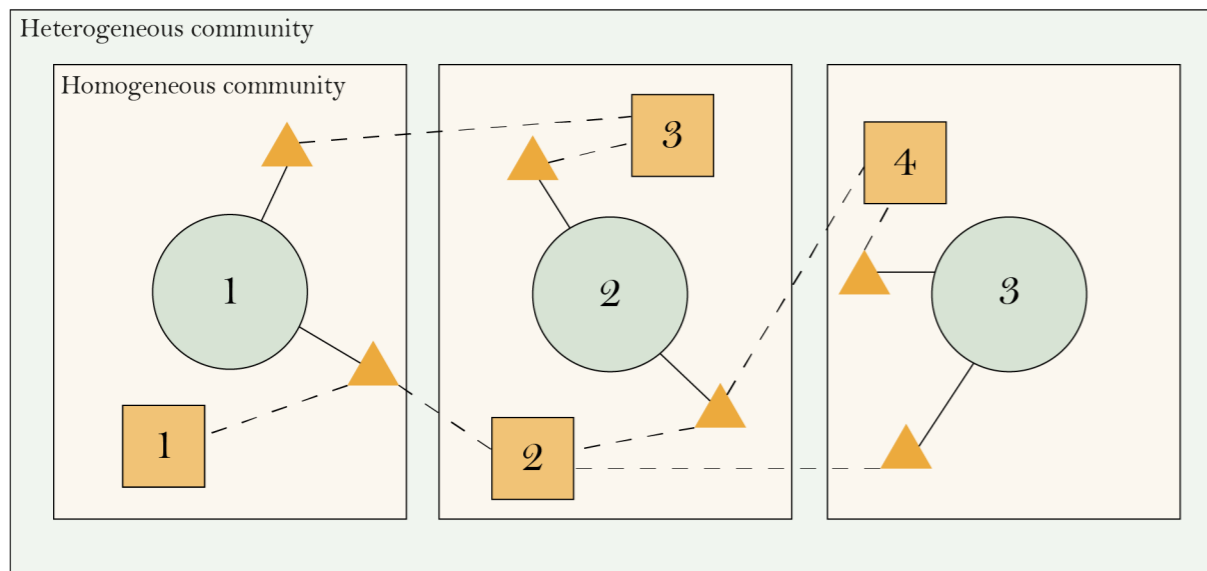
Social capital can be seen as an alternative kind of resource. When people have few physical resources, they need to tap from other kinds of resources in order to develop the community. Social capital can be found within the community and between communities (Lang & Hornburg, 1998). Simply put, social capital is divided into three dimensions: bonding, bridging and linking social capital. But what these three include and how they relate to each other differs across the literature.

A first approach is fairly abstract. In this approach the difference between bonding, bridging and linking is explained in their composition of norms and interests (fig. 41). Norms are linked to people's beliefs and opinions. People with similar backgrounds often share the same norms through a shared culture. This is generally the case, because they are based in the same geographical location or have similar beliefs, like religion. Interests on the other hand, usually differ a lot per individual and are not bound to a specific social group. They are about what a person likes, what matters to them and

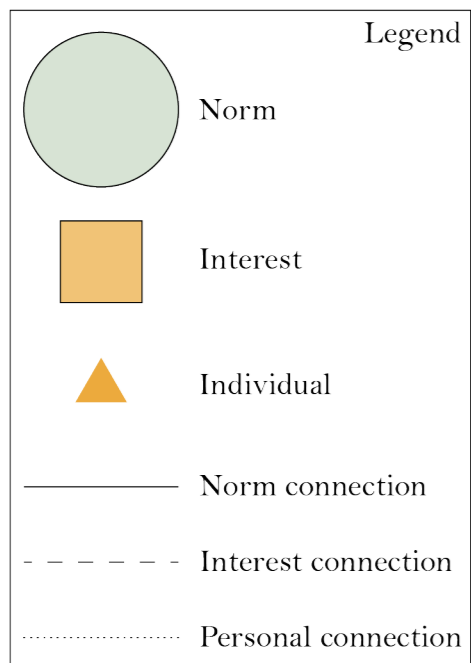
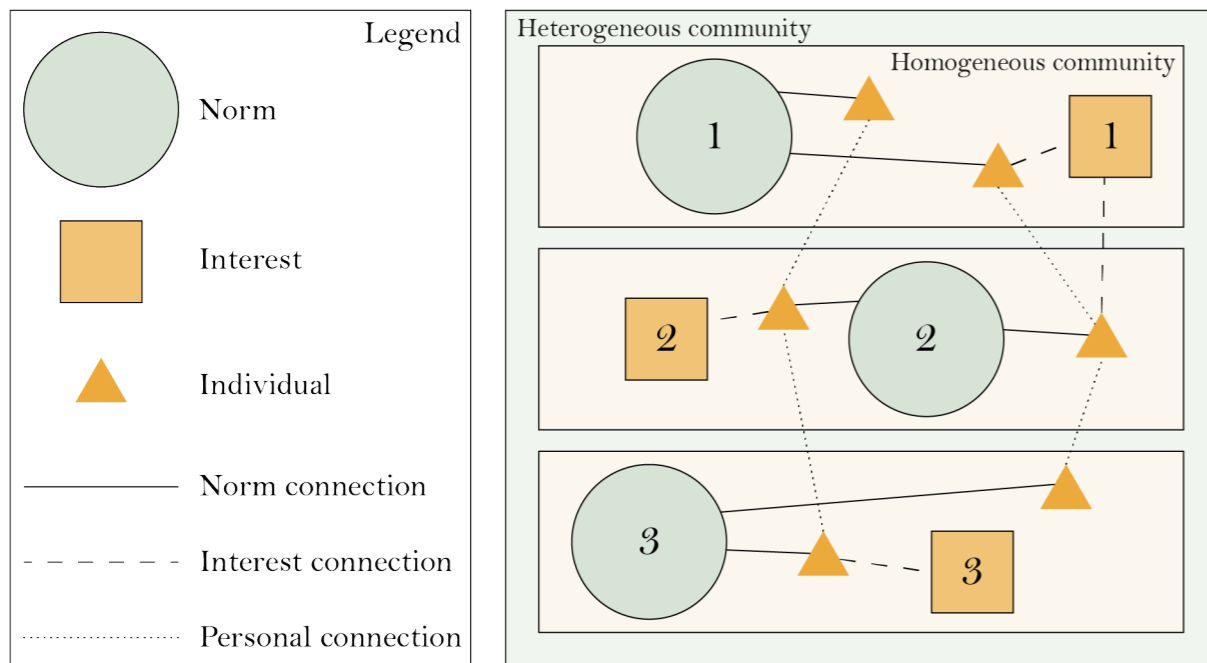
Bonding social capital



Bridging social capital



Linking social capital



how they see their future in career, leisure, social life, etc. (Poortinga, 2011).

Bonding social capital tends to be strong in homogeneous social groups, where people often share the same norms or at least share some norms. Interests however, can be divergent among individuals, just as they can be similar. They 'bond' through recognition of themselves in each other in various ways and consequently feel 'close' to people who are similar. Bridging social capital is composed in the opposite way in this perspective. People connect with each other through shared interests, but do not necessarily have shared norms. By doing so, these people form a 'bridge' between different homogeneous groups and become a heterogeneous social group. They come together, because they follow the same kind of education, are a member of the same sports club or have a similar political vision. Linking social capital includes the type of connections that do not necessarily share norms and/or interests. They are connections with people from different hierarchy levels. They enable the community or individual to converse with those in power. Some describe this kind of social capital as the formal connections (Poortinga, 2011).

Bourdieu, Coleman and Putnam

Many other scholars have taken on this division of three dimensions of social capital, although their definitions and interrelationships can be divergent among the literature. A few visualisations of them will be explained in coming paragraphs. But first the main aspects of social capital will be discussed. They are predominantly derived from the work of Bourdieu, Coleman and Putnam (Guardaro et al., 2022).

Bourdieu's definition is based on the access to resources. These are actual or potential resources, that are comprised of social networks with mutual recognition (Guardaro et al. 2022). As mentioned previously, resources can be seen from an economic perspective and so social capital is eventually convertible to economic capital (Bourdieu, 1986). But Bourdieu made another notion. He wrote about the social stratification of society and the functioning of classes. People from different

backgrounds perform differently in social contexts and therefore have diverse utilisations of their social capital. The performance is related to their cultural and symbolic capital. The elite uses their cultural capital to keep the classes separated and remain dominant in society. Cultural capital, and therefrom resulting symbolic capital, is hereditary and impacts social capital. Through their cultural heritage, people learn about the social world and create their habitus, their cognitive mental structure. But this habitus can be placed commensurate with a social class, because classes are continuously determined by society in an (un)consciousness attempt to organise society. As a result, the stratification influences the social environment of a community or individual and thus impacts their composition of social capital (Bourdieu, 1986; Newton, 2008).

Coleman elaborates on social processes and their outcomes. He emphasises the functionality of social relationships in development (Guardaro et al., 2022). Social capital enables people to organise themselves in a community and to co-operate (Newton, 2008). His definition of social capital is the combination of norms, social networks and relationships that contribute to development (Bogaert & Brondeel, 2010). It shows, that this approach is very much emphasised on results. Following this idea, social capital becomes a function of the development achievements of the community. It is rather a catalyser than something that can be possessed. This separates Coleman's approach from Bourdieu's, who recognised that social capital can be an asset of the individual. Coleman and Putnam were more focused on the community level anyway. Coleman defined community social capital as the interactions between households, and the interactions among households and institutions within the community (Bogaert & Brondeel, 2010; Newton, 2008).

Meanwhile, Putnam researched more quantifiable aspects of social capital. He adds trust and reciprocity as important elements. Together with social norms and networks, they are important to the community and the household in order to achieve common goals (Guardaro et al., 2022). Through the lens of Putnam, the concept of social capital was popularised. The idea, that the combination of social networks and shared norms and trust are desirable to solve problems, was widely adopted. Especially, because Putnam linked social capital to economic growth (Lang & Hornburg, 1998). But moreover, because experts understood that there was too much emphasis on the numeric,

Figure 41: Social capital based on relationships between people with either similar norms or similar interests, after Poortinga (2011).

economic side of development and that the social world is equally important (Hancock, 2001).

To be able to yield the benefits of social capital, the social networks need to be based on trust and reciprocity, which lead to the will to collaborate (Bogaert & Brondeel, 2010). These collaborations allow for economic growth, improved democracy and community development. According to Putnam, the networks, trust and reciprocity are closely related to civic engagement and civil society (Newton, 2008). Stouthuysen (1997) elaborates on this. He followed Putnam's research in Italy, where he found, that high degrees of civic community correlated much better with the functionality and efficiency of democracy of the governments, than the rates of socio-economic development in various regions. The 'civic community' is based on community values, like equality, trust, solidarity and tolerance, and the structure of social networks (Stouthuysen, 1997). Such values foster civic engagement and they are namely present in social associations where people voluntarily participate in (Lang & Hornburg, 1998).

Stouthuysen (1997) proceeds, that a democratic government needs a sense of community, because it can only function with shared values. Without it, everyone would only use politics for their own benefits and would become protective and suspicious of the actions of others, so their willingness to collaborate decreases, deteriorating the efficiency of problem-solving for the community. Simultaneously, the social clubs create the opportunity for members of the community to learn to co-operate, understand each other and solve problems together. Therefore, the civic community is an ongoing process and becomes hereditary. It is

a process in which the community's social capital is strengthened through increasing senses of trust and reciprocity, while social networks are enhanced and expanded (Stouthuysen, 1997). This makes Putnam's definition, at the same time, a circular concept, because communities, that benefit from high levels of social capital, are also able to enhance their social capital by means of the beneficial outcomes (Newton, 2008).

Internal versus external

Returning to the dimensions of social capital, Lang and Hornburg (1998) build on Putnam's idea of trust and reciprocity. They discern social glue and social bridges. Social 'glue' might be exchangeable with the term bonding social capital, used by others. It is explained as a recursive process between group participation and trust. The first step for people is to participate in group life. On the one hand, it takes trust and a sense of reciprocity to participate, but on the other hand, participation in comfortable group life generates feelings of trust in the group. The experience of trust in this social interaction sparks the willingness to join in groups. Subsequently, the degree of participation can be quantified as social glue. The social bridges are the connections between different social groups. They expand the social world of the community and give it access to numerous connections.

This difference between the dimensions can be visualised on three axes, when adding linking social capital (fig. 43). Social bonding can be seen as an internal process. It is an internal experience for the individual to gain a sense of trust and reciprocity, and simultaneously a process of

Bourdieu	Definition	All actual or potential resources, that are comprised of social connections with mutual recognition
	Approach	Social capital is eventually convertible to economic capital, while stratification and habitus influence the composition
Coleman	Definition	The combination of norms, social networks and relationships, that contribute to development
	Approach	The emphasis is on the functionality of social relationships and the ability of the community to co-operate for results
Putnam	Definition	The total of social norms and networks, which are based on trust and reciprocity
	Approach	Social capital equals civil society and is essential to collaborate efficiently and enhance the community

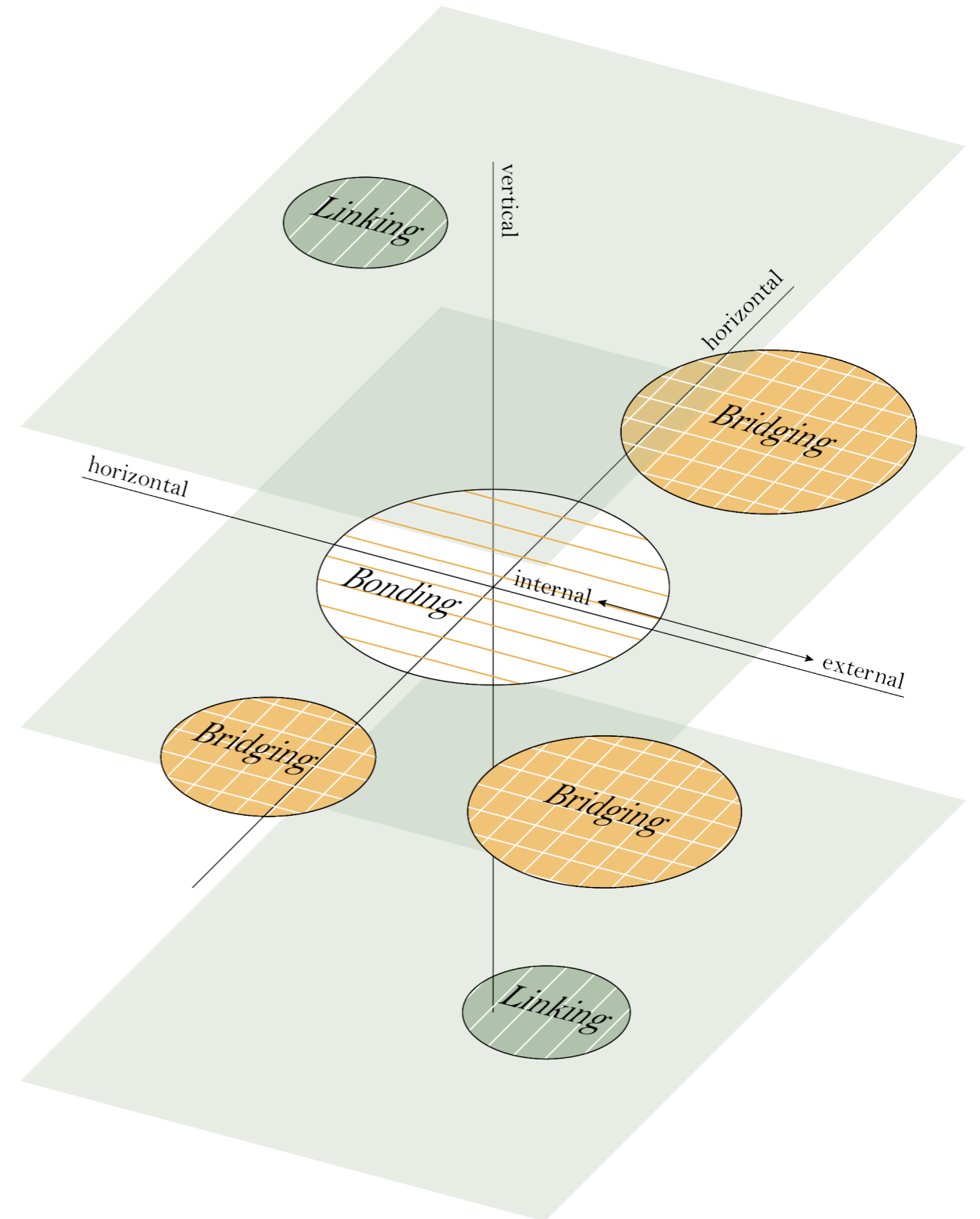


Figure 42 (left): Summary of the definitions of social capital by Bourdieu, Coleman and Putnam.

Figure 43 (right): Social capital projected on three axes with a distinction in external and internal connections, resulting in bonding, bridging and linking social capital.

enhancing the community by the building of trust and reciprocity internally in the group. Conversely, social bridging is a rather external phenomenon. With bridging, people look outside of their own group, and therefore such connections are less tight and close. Still both bonding and bridging ties are considered horizontal, because people are likely to view each other as equals (Kais & Islam, 2016). Additionally, communities that are well bonded and have greater internal senses of community and trust, also tend to be more cohesive and tight to their own people and thoughts, making them less welcoming to the thoughts of outsiders. This is in contrary to communities that are better bridged with other communities, which makes members of such communities more open to other views and thus less cohesive (Poortinga, 2011). On the vertical axis, linking social capital can be found. Linking social capital includes the relationships that are tied across differing levels of power and authority. They can be more internal, when both ends of the relationship share the same norms and values, but also more external, when people have less communalities, but might still connect through similar interests (Kais & Islam, 2016).

Distinctions in the dimensions and their relations can be deepened further. As mentioned previously, strong bonding social capital is often related to homogeneous social groups. Meant by this, are groups of people that are very similar to each other. This can be in religion, age, ethnicity, financial situation, etc. and particularly in a combination of these characteristics (Guardaro et al., 2022). Poortinga (2011) called them homophilic communities, in the sense of communities with shared norms and values and recognisable characteristics, that people like about each other and themselves. They are headed in the same direction and see their reflections in their peers.

Place turns out to be a dominant factor in this regard. Place is a part of the identity of people and most residents want to take care of the place that they live in. Moreover, the way the neighbourhood and its buildings are managed can influence the willingness of its residents to cooperate and the development of social capital of the community. In a study in the USA it was found, that poor, racially-homogeneous communities have stronger bonds with their neighbours, than residents of racially-mixed neighbourhoods, who have more superficial, wide-spread social networks (Lang & Hornburg, 1998). Other outcomes found, are, that city residents have more bridging social

capital, than communities in rural areas, who have more bonding social capital. The same applies to sex, where men have more bridging and linking social capital and women have more bonding social capital (Guardaro et al., 2022).

This distinction can be even taken so far, that bonding social capital leads to exclusion. The strong bonds between members of the community render inclusion, which offers the members feelings of trust and encouragement to develop themselves. But this strong sentiment also leads to the exclusion of outsiders. It can be hard for people in the community to take a different route, because it is discouraged by the community, that demands a kind of conformity from its members. Furthermore, people with different features risk to be discriminated and innovative ideas from outside are likely to be rejected by the community as a form of protection (Callaghan & Colton, 2007; Lang & Hornburg, 1998; Poortinga, 2011).

Therefore, it is important for the community to also have bridging social capital, because social capital is a form of capacity of adaptation and openness to new connections as well. Social bridges generally include more diversity in people. This is because bridges are based on interests and not on identity, although they can overlap. This makes the community's connections more heterogeneous (Guardaro et al., 2022). Bridging social capital has a foundation of mutual respect for diverse people. This provides people with social skills to operate in different contexts and extend their network (Poortinga, 2011). Particularly in regard to linking social capital, such networks are helpful to cross boundaries of power (Guardaro et al., 2022). Putnam sees the assemblage of the dimensions of social capital as a well-designed vehicle. Bonding ties create solidity and bridging ties can foster acceleration. Bridging ties are often weaker, but nonetheless important for social mobility (Newton, 2008).

Intimacy among connections

Meanwhile, Woolcock and colleagues give a more sensitive image of the dimensions. They refer to bonding social capital as intra-community ties and to bridging social capital as extra-community ties. By doing this, the visualisation can be made as a two-dimensional diagram (fig. 44), since linking social capital does not need a separate axis. Intra-community ties are intimate and informal and based on equality, like ties with family and close

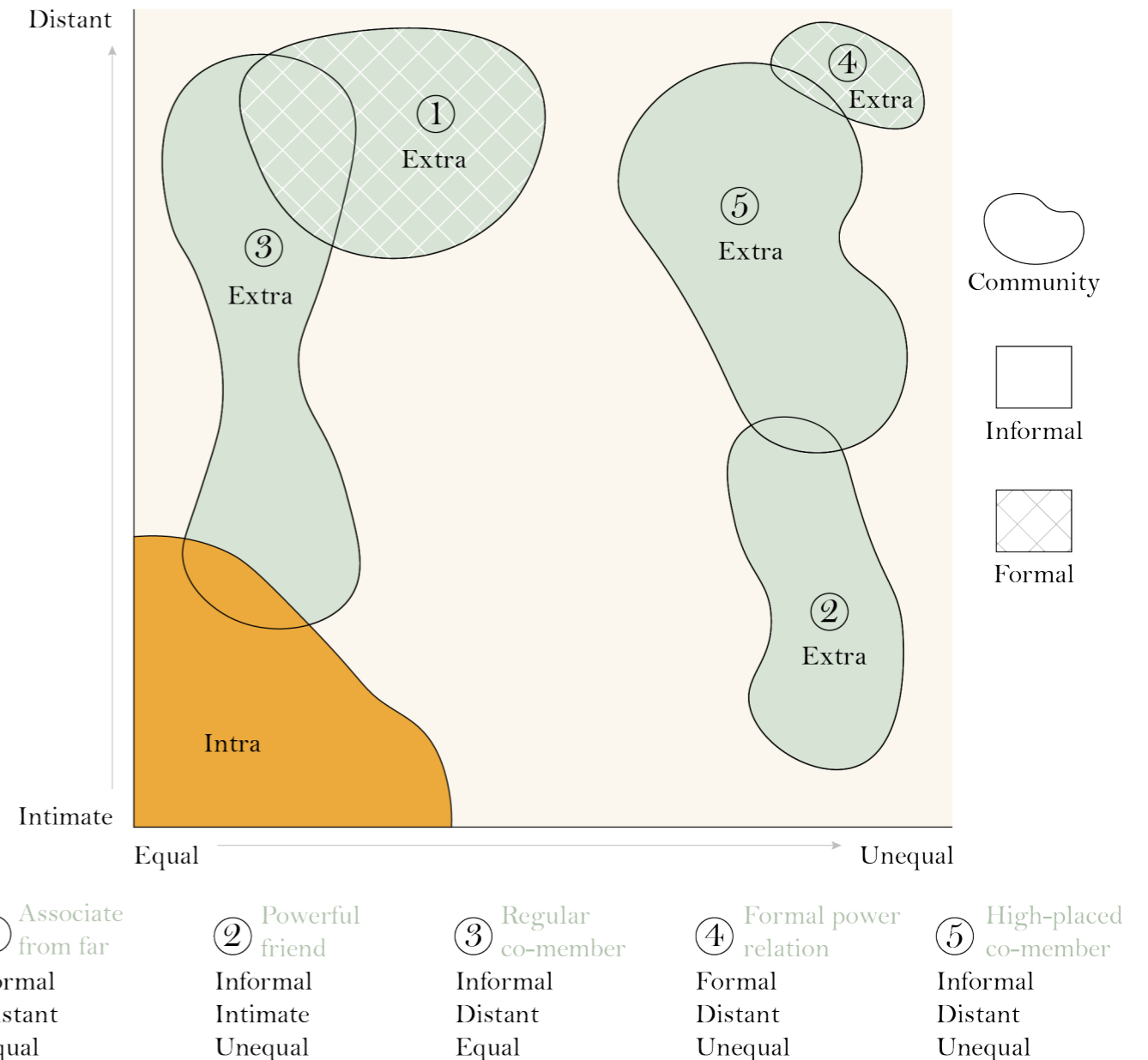


Figure 44: Different communities can be determined on factors like intimacy and formality. The diagram differs per individual.

friends. Extra-community ties can be both formal or informal, but are often less intimate (Newton, 2008).

In the diagram, intimacy and equality in power are on a spectrum on the axis. Intimacy is closely related to the determination of shared norms, earlier discussed after Poortinga (2011), but they are not the same. People that have a close and intimate bond do not always share the same norms. This spectrum of intimacy is rather a feeling of being strongly or more loosely tied to others. Similarly, Poortinga's (2011) bridging social capital is not exchangeable with extra-community ties, because these ties do not concern interests. The presence of linking social capital is visible on the spectrum of equality. However it shows that linking social capital cannot be strictly determined, but it can be considered per connection, whether it is or is

not linking social capital. Formality in relationships and the behaviour toward each other is often more distinct and clear and hence communities are marked as either formal or informal (Poortinga, 2011; Newton; 2008).

The diagram would be different for each person, because each person has different connections. Still, the diagrams would be quite similar for people that are members of the same strongly-bonded community, because they tend to have more similar connections. As discussed before, people that rely more on bridging social capital have more diverse connections, hence their personal diagram would be more diverse (Callaghan & Colton, 2007; Lang & Hornburg, 1998). And then there is the notion, that communities likely will overlap. People have different connections that are part of the same and other communities. This is

also part of the chain of connections, that bridging social capital provides (Lang & Hornburg, 1998). Simultaneously, some members of the community will be more intimate and/or equal in power to the person displayed than others, while these connections are still part of the same community. After all, the community is the sum of its members.

4.1.4 Communities

Hence, it is not easy to define the community. Many researchers write about the community, but very few are clear about what is meant by the term. In Hancock's (2001) essay there is no definition of the community and it seems that community is just the bond of people, which the community is in essence, being derived from the Latin word 'communis'. Its meaning is somewhere in the stretch of 'the share of all' (Ditto, 2022). Most seem to agree, that communities are under the influence of change. They are dynamic, because of their members. As so, they can be seen as a collection of stakeholders (Callaghan & Colton, 2007). Even though this is absolutely true, it does not set the boundaries for a community, since stakeholders can transcend the community.

The most common ways to define the community limits are based on place or mental connection. However, Bourdieu (1986) investigated classes in society. People in the same layer of society could be closer because of similar symbolic and cultural capital. But this really does not guarantee that people consider each other connected in a community. Two statements verify that classes are not exactly related to community boundaries. The first is, that there are multiple relations of power to be found within the community and levels of power are often related to classes. Secondly, Bourdieu (1986) notes, that a single person has the potency to change the dynamics of a community. Since, classes are fairly stably defined, because they are repeatedly being institutionalised and verified by people through their behaviour and language,

it is unlikely that a single person is able to change the institution of class (Newton, 2008; Bourdieu, 1986).

It is much easier to define the community by location borders, e.g. a town or a neighbourhood. Although communities are not per definition space-bound, it is often a defining component. Especially in the Global South, people are very dependent on their neighbourhood in deprived districts. This is because they generally rely on social connections within their neighbourhood, even when they are more powerful. Moreover, place is part of people's identity. Its characteristics are connecting factors for the community (Newton, 2008). Furthermore, the structure of the place is defining for the community. People, who live in separate houses, have different interactions from people, who live together in the same building. This also indicates, that people have smaller and tighter groups within the community. These groups together form the community (Lang & Hornburg, 1998).

Subsequently, it can be argued, that basing the community on place is more concerned with dominant bonding social capital in contrast to bridging social capital. This is because, more deprived, homogeneous neighbourhoods tend to have higher levels of bonding social capital, whereas more affluent, heterogeneous neighbourhoods tend to have more bridging social capital. The bonding is partly based on the communalities in place, while bridging is an inherently more heterogeneous and place-crossing phenomenon. Therewithal, the community can be changed by the establishment of new connections. It can be expanded or separated, or find new common grounds to base the community upon (Lang & Hornburg, 1998).

Therefore, the sense of the community is important to take into account. The sense of community is strong in the 'civic community', which is based on the structure of social networks and community values, such as equality, trust, solidarity and tolerance. These are the elements that keep the community together and functional. But from this perspective, it is easier for the individual to decide, whether they are a member of the community or not, than for the observer. This also means, that it is easier to define the community on a smaller scale, because the community's values and goals are more clear and tangible (Stouthuysen, 1997).

Another way to verify people's belonging to the community is based on social cohesion. Social cohesion is a result of social capital and, from a functional perspective, it describes the degree to

which people are willing to co-operate, because they feel like they can efficiently achieve goals together. It is reinforced by the social contract. The social contract is the exchange, between the community authorities and all community members, of the consent of authority for the insurance of pursuing the community's needs and values. It includes the expectations that the community has of the authorities and the authorities capabilities and willingness to pursue goals with the community's capital. The social contract binds people to their community, because they are invested (Mitra et al., 2017). Still, this does not always bring clarity for the researcher to determine the community.

Yet, Kais and Islam (2016) attempted to make a clear distinction of communities. They base it on the perspective of the characteristics and the research, and state, that every research needs to determine the community according to its specific conditions. They identify three components: composition, context and function. Compositional components entail the characteristics of the individuals of which the community is composed. Individuals in a community have characteristics that are alike or complementary to other members. Contextual components are about the characteristics of the context. Individuals can be grouped on the basis of a shared context, like living in the same neighbourhood. Functional components encompass the processes and mechanisms that are present in the functioning of a certain group. It describes the way members interact and co-operate.

Again, the scale of the community matters for the definition, although the community can also be examined on several scales. For instance, the household is a smaller scale than the community, but it still is part of the entire community. But ultimately, tangible actions are always executed at the smaller scale. On the bigger scale they become more vague and abstract. This is because the multiplicity of paths of interactions and mechanisms are more complex (Wilson, 2012). Social scientists often prefer to place the definition of the community at an intermediary scale level, like the neighbourhood level, because it incorporates the mechanisms of the household level and the interactions between households (Kais & Islam, 2016). A last note, is that communities have the capacity to self-organise. This capacity is what makes people function as a community. And the methods that the community uses to self-organise is what distinguishes it from other communities (Wilson, 2012).

In this thesis, it is logical to base the

community on the geographic location of the district. Even though, there are many compositional, contextual and functional differences to be found across the settlement of Kibera, the residents also have a lot of characteristics in common. It can be argued, that there are multiple communities within the community of the settlement. Locals might feel more connected to their village or even their close neighbours, than to the entire settlement. What is more, is that the view on the sense of the community is based on the perspective. People from other parts of the city might view people from Kibera as one community, while residents from Gatwekera might feel distanced from people from Makina, two different villages. Still, Kibera residents share similar socio-economic and spatial conditions, which matters in this research. When creating proposals, these conditions should be the first concern, but when developing the proposals further, they should be detailed to the needs of smaller more local communities. Additionally, the bridges between the various communities and city-wide connections should be considered, which eventually shapes another community, that stretches beyond the Kibera borders. This consideration is an example of the dynamism of communities. They are not fixed in one determined composition, but are rather able to reflect the community's needs.

In addition, the distribution of power is influential for the functioning of the community. Those in power enable themselves to conceal their power. The obvious reason for this, is that they can profit optimally from the benefits of the community. It changes the dynamics of the community, because different levels of power are accompanied by certain levels of capital. The powerful often have more capital to use. The community is not only defined by one of the three components, composition, context and function, but always have some degree of a mix of them. Subsequently, not every member has the same interests and therefore the powerful will bend the achievements of the community to their preferences. The yield of the community's capital is determined by those in power at the end of the social connections of the community and the conditions that they shape. Capital is not distributed equally across the community members and only a few might actually have access to the majority of the capital. The management of this capital is crucial for the degree to which the community can achieve its goals. A strongly self-organising community will be able to manage its capital optimally (Newton, 2008; Kais & Islam, 2016).

Connection dimensions

Finally, while having obtained this information concerning community definition and power, the dimensions of social capital can be summarised in a much more simplified form. The community is not strictly defined, partly due to its dynamic ties, and power appears gradual. But in order to understand the relationships between the dimensions, it is useful to depict them in an abstract diagram. Wilson (2012) acknowledges that social capital is an umbrella term and also incorporates cultural and political capital. Together they form the social environment and social connections that are subject to trust and cohesion. The social environment is a very complex system of, among others, power relations, cultural heritage and feelings of belonging, and is not to be mapped out in a diagram.

On the other hand, the social connections are explained very simply in the three dimensions. Bonding social capital is about group cohesion, bridging social capital describes the ties between different groups and linking social capital explains the vertical relationships across degrees of power. Since the communities vary according to the perspective of the research, it is more clear to group individuals together in a presupposed community, and draw the connections between people on top of them. This makes it possible to separate the different dimensions from each other and still show their relationships (fig. 45). In the dimension of bonding social capital, people are tied to peers of their own community. By bridging social capital, the communities are tied to each other, albeit through the connections between individuals of the different communities. This happens in a horizontal way, indicating that they are equal in principle. Ties of linking social capital are across different levels of power, but can both be between individuals and communities. The essence of these ties is, that they are vertical, meaning that they are not equal in principle. Taking into account the levels of trust, these ties can be qualified as being strong (bonding) or weak (bridging, linking) (Wilson, 2012; Kais & Islam, 2016; Newton, 2008).

Acting on capital

But inconveniently, just having such connections and having social capital is not enough to lift the community out of poverty. The relations of power of the community determine the extent of the influence that social capital has on development,

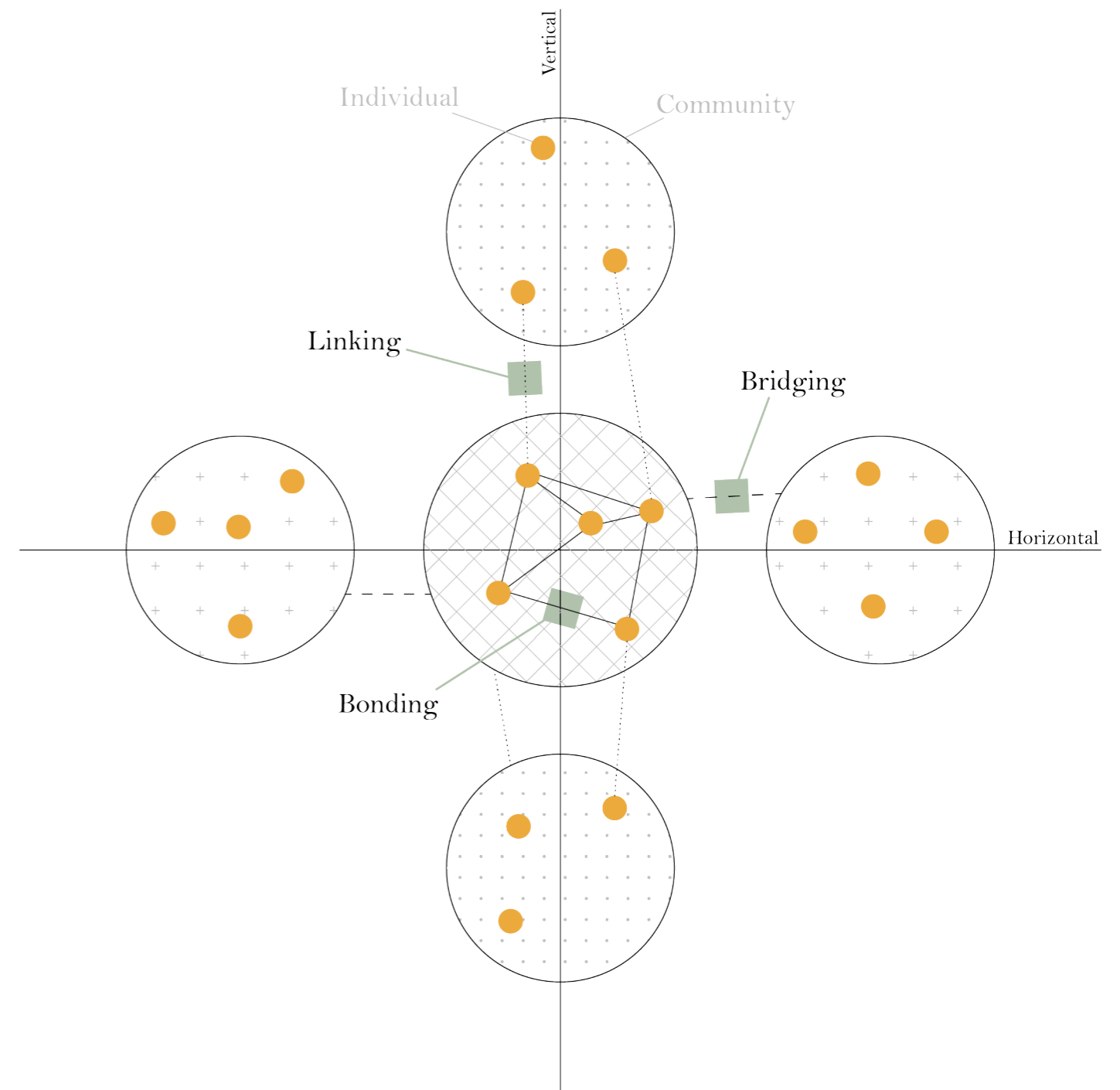


Figure 45: Social capital dimensions explained according to the connections within and between communities, after Wilson (2012).

because powerful people often control the access to resources and services. Moreover, significant social capital can rarely be gained, without the investment with other forms of capital. Social capital cannot be a means on itself in development projects. It is often mistakenly argued, that the increase of social capital leads to the improvement in development of the community. Despite good efforts, in poor communities it is usually just related to a better ability to cope with the hardships and not an improvement of their situation (Newton, 2008).

Deprived communities are deemed to have more social capital, considering strong and intimate bonds among residents, than wealthy communities, whose residents have less eye on each other. This idea corresponds with the findings by Lang and Hornburg (1998), that deprived homogeneous communities have more bonding social capital, and that wealthier mixed communities have more bridging social capital. To the observer, these strong bonds might seem to line up with having more social capital, but then they would ignore the potency of 'weaker' bridging ties, which probably amount to stronger social capital for the entirety of the community. In the end, such ties are indispensable for socio-economic development (Newton, 2008). Additionally, high levels of particularly bonding social capital can also lead to exclusion of people that come from outside of the community. It can make people repulsive towards lines of thinking and acting, that does not stroke with that of the community, which might hinder progress (Stouthuysen, 1997; Poortinga, 2011).

When it is acknowledged, that all dimensions of social capital are needed for a wealthy community, as well as that other forms of capital should be present, a high level of social capital can be key for socio-economic development. Putnam discovered, that the sense of community is determining for the functioning of the community and its government. This sense of community is very tightly related to having social capital, because it is a product of the social connections between members and the feelings of trust and reciprocity that consolidate them. A high degree of civic community leads to efficiency in governing the community. A democratic system needs a sense of community to function, because it aims to achieve common goals, which are derived from shared values, that are the basis of civic community. Consequently, efficient governing is likely to result in improvement for the community. Likewise, trust is crucial for the establishment of progress. When trust is absent,

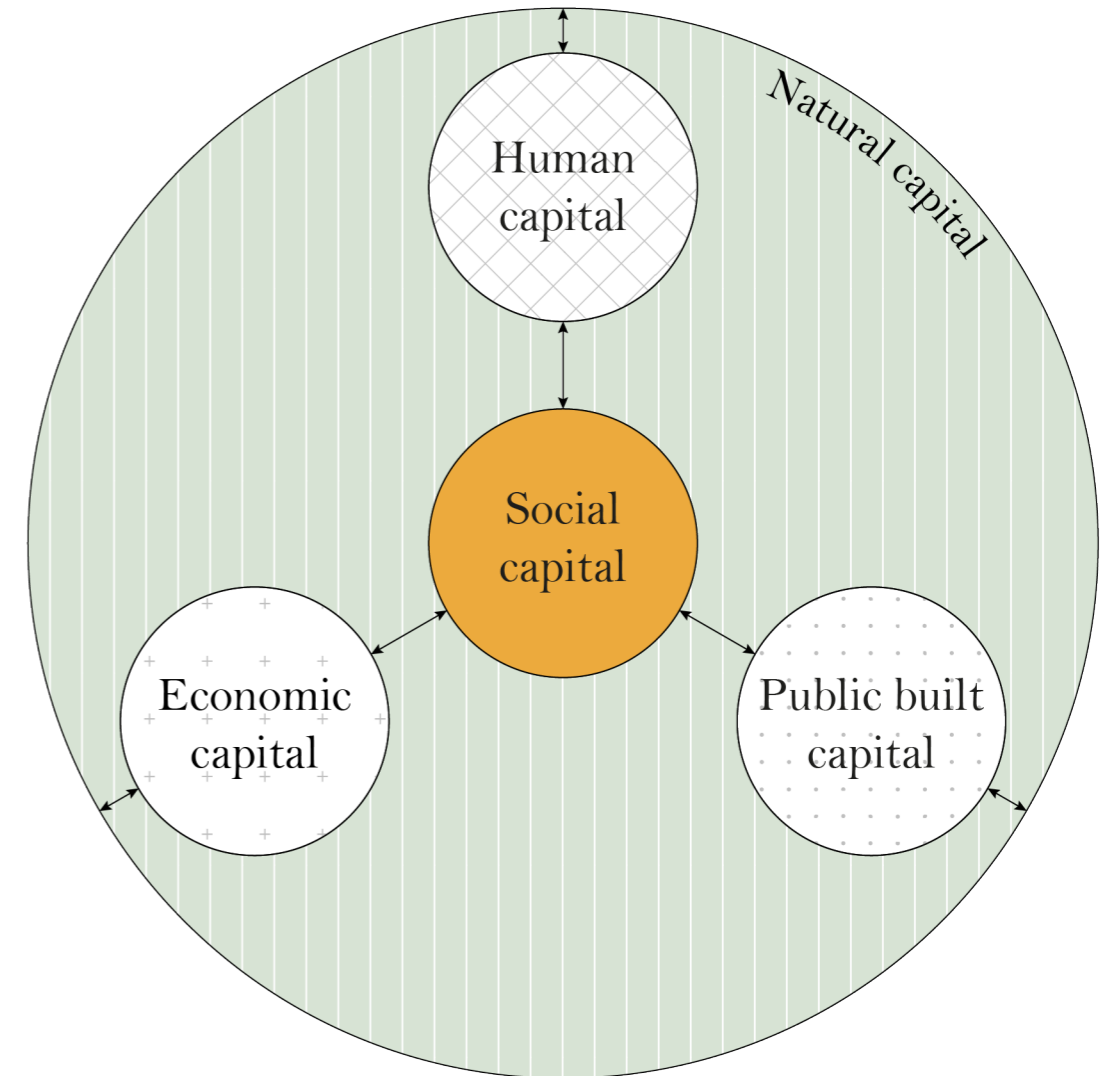
people will not invest in collaboration with others. The result would be, that everyone thinks that the others will solve the problem, meaning that nobody will solve it and so no progress will be made (Stouthuysen, 1997).

Social capital in the management of the community is reciprocal, because social capital is needed to efficiently collaborate and make decisions in the community, while at the same time the collaboration generates social capital for the members and the community. This happens through the learning from each other and the learning how to come to common solutions together. In a positive process of collaboration social capital functions in an upward spiral (Stouthuysen, 1997).

In regard of socio-economic development, the relation of social capital with other forms of capital is crucial. This is because, different forms of capital do not only differ in volume, but also in structure. Some are more prone to be converted into other forms, while others are more affected by erosion. This is explained as the liquidity and convertibility of capital. For example, public built capital can easily be increased by converting economic capital, for instance in a case, where the municipality invests money in building a new railway connection. But when the government decides to plan more green space for wildlife instead of sports fields, it does not directly convert social capital into natural capital, even though social capital might attrite over time, because the community lacks a place for enhancing social connections (Newton, 2008).

So taking this into account, the community is able to control its capital and use it for development. It is important for the community to know the consequences of its actions to its capital. This knowledge contributes to their sustainable increase of capital and with it their level of resilience. For instance, the knowledge, that sustainable wood production, which maintains or increases natural capital, ensures economic capital for the community, can be a foundation for strategic actions to develop the community. From this perspective, social capital functions as a catalyser in decision-making, because it is essential for efficient collaboration, and cannot be simply converted into other capital. Therefore, like Coleman noted, social capital is functional in achieving results and thus it should be an aim for the community to develop social capital, while gaining other forms of capital (Bogaert & Brondeel, 2010; Guardaro et al., 2022; Stouthuysen, 1997; Newton, 2008).

Figure 46: Visual representation of the functioning of community capital.



Multiplicity and resilience

Therewithal, social capital can be viewed as the form of capital, that enables the existence of community capital. Without the sense of community, which emanates from social capital, there is no capital shared by the community (Stouthuysen, 1997). This means, that social capital is needed to manage the community capital. It puts social capital central in the relationship to other forms of capital, in the perspective of development (Fig. 46). This is different from Hancock's (2001) model, who put human capital central, because policy should revolve around human development. But his take is from the perspective of wealth, and not the perspective of socio-economic development of the community, even though it should eventually lead to wealth. For community development, all forms of capital are

connected through social capital. Subsequently, this also makes it different from the models of Kais and Islam (2016), who put all forms as interconnected, and Callaghan and Colton (2007), who put all forms of capital in an order. The latter make the accurate point, that natural or environmental capital is the foundation for all life, hence also the community. Even though natural capital can be managed by the community, it also sets clear boundaries of the extent of community capital, because without natural capital, the community does not exist. Therefore, natural capital forms the foundation and boundary of community capital.

This interconnectedness of capital causes researchers like Hancock (2001) to advocate multiplicity in actions to promote development. He states, that the development of the community is unlikely to be brought about by one big quick fix.

It is wiser to make improvements through multiple smaller projects with various aims. Together they can contribute to sustainable development. They also allow for failures, since the failure of one small project does not cause the entire development to stagnate, which is also driven by other projects. Improvement takes time and as the context changes over time, projects also need eventual steering in a new direction.

This idea of targeting multiple issues at once is also a part of resilience. Resilience is more than just countering vulnerability. Countering vulnerability is about the overcoming or warding off sudden events, whereas resilience includes the overcoming of long-term deterioration into an improved situation. So resilience can be either static or dynamic. Static resilience is the ability of a system to mitigate events and regain its volume and structure to the original state. Dynamic resilience entails the process of adapting to new situations, so the aim is not to return to the original state, but rather to remain healthy under the varying circumstances (Kais & Islam, 2016).

The behaviour of resilience and the subsequent acting on it can be conceptualised in three ways. The first is static and the main goal is to rebound to the original state. It is descriptive and aims to keep the status quo. This type of resilience is often linked to mathematical and ecological resilience. The strategy to achieve such resilience, is to avoid and resist disturbances by creating buffers. This system is not really flexible and often favoured by the elite, because the status quo is in many cases beneficial to the elite.

The second system is more dynamic but keeps a static core. In this system it is acknowledged, that there must be a response to the issues, but at the same time, the functional core has to be protected. It is more normative, meaning it adapts to a situation that coheres with the context. Its measurements are less quantifiable and it is a more qualitative approach. The adaptation of the system to outside-events happens at the margins. This is the strategy to mitigate disturbances. Generally, such a system only addresses symptoms and does not tackle the root causes of problems.

The third type of resilience is about adaptation. It is open to change throughout the whole system. In this way, it is able to address the root causes of issues, and re-shape itself to solve the issues. It can do so, because it accounts for uncertainty. This type is linked to social resilience. It is not linear, because it is unlikely to regain the

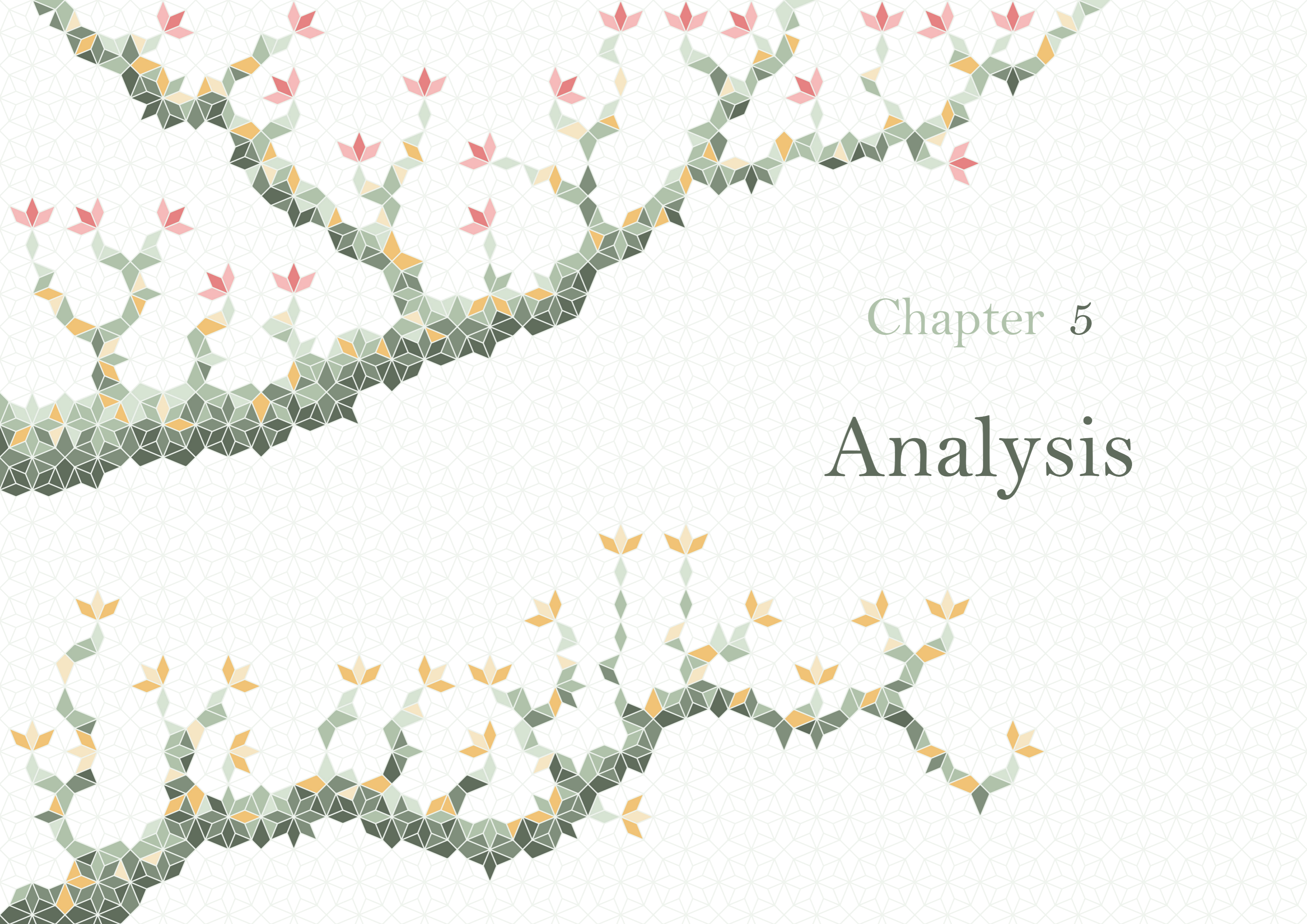
original state, and this makes this kind of resilience both an outcome and a process; to be resilient means to be in the process of becoming resilient (Kais & Islam, 2016; Wilson, 2012).

In a project for the creation of community resilience, the approach can be divided in four elements. 1) Prevention: to minimise vulnerabilities and threats. 2) Action plan: to improve communication and crisis response systems, and to adapt to a new situation. 3) Mitigation: to fortify and expand partnerships and social support systems. 4) Risk spreading: to create strategies that spread impact over time, space and institutions. To have actual impact, the strategy has to be adopted by the members of the community and not only the management of the community, so people will change their behaviour to the resilient system. Again, sustainable resilience means that the community needs to be in a process of becoming resilient (Callaghan & Colton, 2007).

In many projects, resilience is attempted to be achieved by targeting a specific threat. But when projects aim to create resilience over the entire system, they are generally less vulnerable to imbalances across the community (Kais & Islam, 2016). General resilience means, that multiple issues need to be tackled at the same time. In order to do this, the community needs to activate various actors. Sustainable development needs a combination of resources, coming from different actors. So they need to co-operate. To enable this, the community firstly has to identify the social relationships between actors and their interactions. Secondly, institutional strategies should be developed based on the identification. Thirdly, the negative manifestations of their social capital should be turned into positive ones in order to cater for efficient collaboration. This approach of co-operation could be considered as synergy between actors (Newton, 2008).

Crucial to these steps, are the characteristics of the context. Every situation has a different context and subsequently also different actors and socio-cultural aspects. The context is influenced by global or local trends, physical elements, history, culture, social networks, etc. Therefore, not all development projects can be generalised. When the actors are identified under a certain context, strategies to create synergy can be designed (Newton, 2008; Stouthuysen, 1997). The synergy is based on a variety of interests. This is necessary to bring actors together to co-operate. Strategies that address multiple sectors and are integrated with

different actors are more likely to have success, because they can count on wider support, because more people benefit (Mitra et al., 2017). Moreover, they will probably still have overall impact on the community, even when a part of the strategy fails. This also encourages actors to co-operate in future operations (Hancock, 2001). Finally, multi-integrated projects tend to be more sustainable. Projects that focus on specific elements and actors are prone to fail on the long-term. This often is concerned with the maintenance of the work that is done. Therefore it is also important to ensure the maintenance of built projects and their agreements (Werlin, 1999).



Chapter 5

Analysis

5.1 Physical Analysis

5.1.1 Introduction

The first part of the analysis involves the research to physical elements in Kenya, Nairobi and Kibera. It starts with natural features, namely geography, water and pollution, with a closer look to spaces, that involve water flows. Then follows a section to present the mobility infrastructure on different scales. This part is also completed with zoom-ins on particular spaces to showcase the specific types of infrastructure and what they look like in Kibera. The final part of this sub-chapter concerns the amenities of Kibera. It contains descriptions of the different kind of amenities, that are present in the settlement, and how they function.

Please bear in mind, that research in an informal settlement means, that the data is not always complete nor accurate. There are many different data-sets showing diverse results. Examples are the missing buildings in maps of Kibera, the actual courses of waterways or amenities locations. The lack of accurate information provision and registration is one of the reasons for the persisting poverty (T. Kaloki, p.c., 2025). With a combination of the use of reliable sources, the execution of fieldwork and the verification with additional data, an effort is made to present accurate analysis results of the study area.

5.1.2 Natural Features

The equator crosses Kenya, making it a tropical state. But Kenya is much drier than its neighbour Uganda in the west and more than eighty percent of the land cover is arid or semi-arid. This is caused by the highlands inwards, which block the rain coming from the Indian Ocean, so precipitation happens at the coast or moves over to the west. The centre and west of the country see much more rainfall, due to the colder temperatures in the highlands. Additionally, due to the relatively quick north-south shift of the intertropical convergence zone, Kenya experiences much more distinct rain- and dry seasons, while other tropics have more consistent rainfall (Alaso, 2024).

Another interesting feature of the Kenyan geography is the Great Rift Valley. This rift stretches over the entire east-side of the continent. It is the result of the tectonic mechanisms on the African Plate, where the western Nubian Plate and the eastern Somali Plate are moving apart. Under the surface it leads to hot material rising and above the surface, it is visible as a wide and flat valley (Liu, 2022).

Nairobi's geographic situation

The city of Nairobi is situated between Mount Kenya, the Ngong Hills and the Kilimanjaro and finds itself elevated as well. The west is more rugged, while the east is more flat. The elevation ranges from 1850 metres above sea level in the west to 1600 metres in the east. Logically, the three main rivers that traverses the city, Nairobi, Mathare and

Figure 47: Kenya's main natural features.



Ngong, also run down in this direction (Situma et al., 2009). Other major rivers in the north and south of the county area are the Mbagathi, Nango and Thiririka rivers. They later join in the Athi river, which is the second largest river in Kenya, after the Tana river (Bagnis et al., 2019).

Because Nairobi is situated on the eastern edge of the widening Rift Valley, it sometimes experiences minor earthquakes. The city is surrounded by farm land and some indigenous forest in the north and west, and the Nairobi National Park forms the southern border (Situma et al., 2009). The majority of Kenyan farmland is to the north-west of the city, so food production is very nearby. The Rift Valley appears to be very fertile. Moreover, tropical diseases are rarely present (Obudho, 1997).

The subtropical highlands climate of Nairobi is quite moderate. Despite being located near the equator, between -1.60570°S and $-1.444374^{\circ}\text{S}$, the elevation and the Rift Valley bring the average temperature down to about 24°C . The highest peaks are just before the rain seasons, around 27°C , and the lowest are in the long dry season, around 22.5°C . There are two rain seasons and two dry seasons: Long rain season (March – May), short rain season (November – December), long dry season (June – October) and short dry season (January – February). The average difference between day and night is 12°C . The amount of rainfall can differ a lot over the years (Aardenne, 2017).

Habitats

Having a national park within the county limits is a unique characteristic of Nairobi. No other capital city has such a protected area so close to the city centre. That is why Nairobi is called the “safari capital of the world”. The abundant wildlife is the number one reason for tourists to travel to Kenya (Situma et al., 2009). The Nairobi National Park host multiple habitats, such as grasslands, woodlands and wetlands. It serves as an ecological buffer and as an animal migration refuge (Nairobi National Park, n.d.).

But the national park is one of the few protected natural spots left in the county, the other ones being a couple of forests in the north and west and parks in the centre. Even though they play a key role in the county’s ecosystem, they are highly degraded. This is caused by the air- and water pollution in the city and the fragmentation of natural plots. As urbanisation and urban sprawl continue, Nairobi’s natural habitats get more

fragmented (Situma et al., 2009). Fragmentation of habitats disrupts ecosystem cycles and reduces biodiversity, because of isolation. This process leads to the degradation of natural habitats (Haddad et al., 2015).

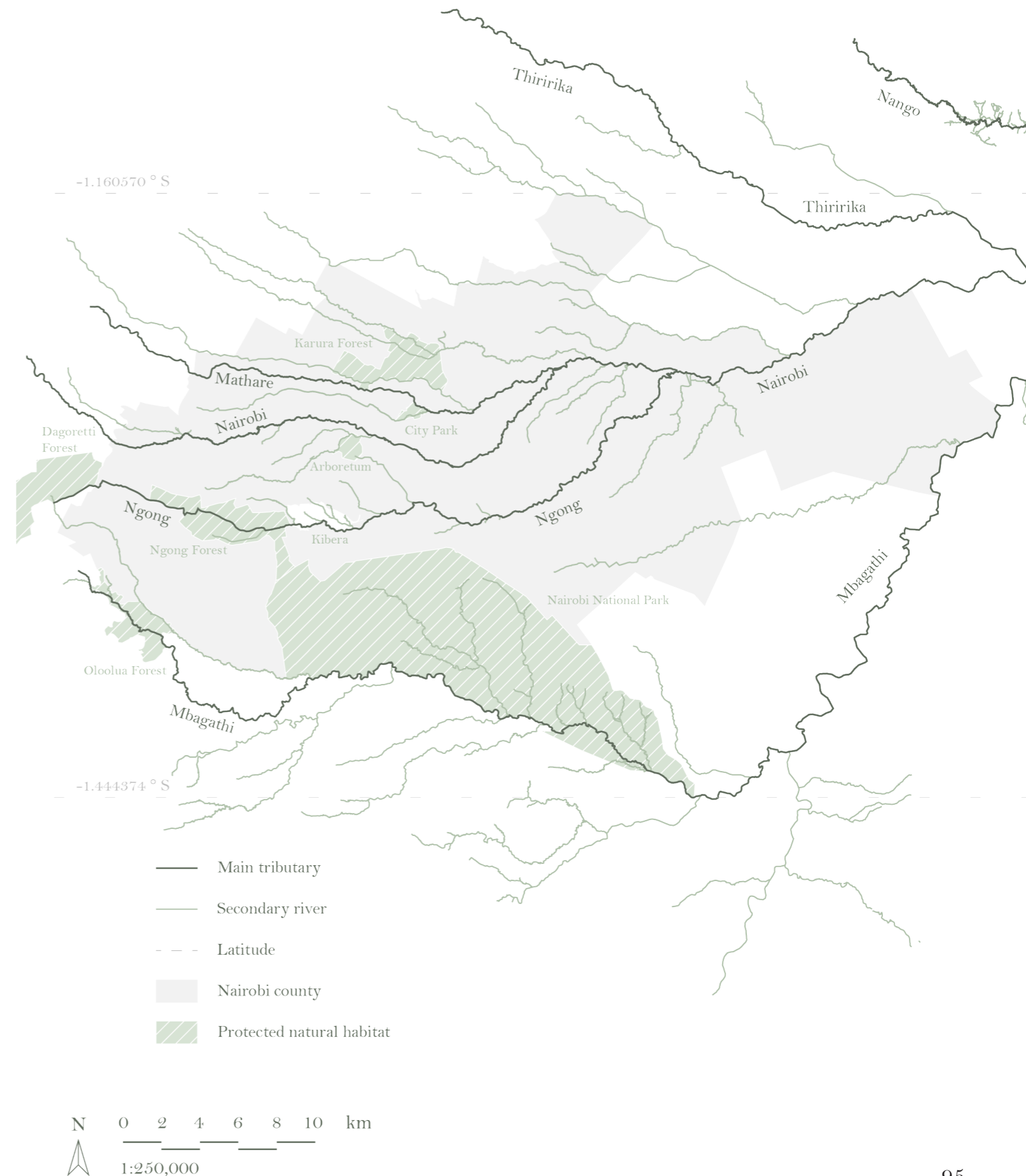
Water

The Athi river basin involves three main tributaries, that flow through the city: Nairobi, Mathare and Ngong. They spring in the Ngong Hills, Aberdare Range and the edge of the Rift Valley, which are all to the west of the city. The Mathare and Ngong flow into the Nairobi and many smaller streams flow through the city towards these three main tributaries (Bagnis, 2019). Often informal settlements are located along these tributaries, about 60% of them (Mwang’a & Wangui, 2014). The Ngong also flows through the industrial area.

These locations draw concerns for the water quality. An estimated 80% of water pollution in the basin comes from wastewater discharge into the Nairobi- and Athi catchment area. Nairobi was once appreciated for its fine environment, called the “green city in the sun”, but nowadays it faces heavy pollution. The county has not been able to keep up its waste management with the rapid population growth and subsequent urbanisation (Bagnis, 2019). Solid waste is deposited into the city’s streams, as well as polluting substances in wastewater. Streams and rivers can generally be recognised by the abundance of trash on their banks (Situma et al., 2009). In addition to the water pollution, air pollution is another major issue, coming from the congested traffic in the city, industries and open burnings. Air pollution has serious impact on humans, animals and the quality of soil, water and vegetation (Situma et al., 2009).

Another concern are the regularly occurring floods during rain seasons. The water levels of Nairobi’s tributaries differ a lot over the year. They are highly impacted by rainfall. The water can add up in the streams and suddenly come rushing down the rivers. The floods have become more intense over the years, even though rainfall amounts have declined, because Nairobi has added more hard surfaces (Owuor & Mwiturubani, 2022). The floods take the lives of many people each year again. Many more are displaced (Wright, 2024b). Over half of all Nairobi residents live in areas prone to floods. Especially the poor in informal settlements live in precarious conditions (Owuor & Mwiturubani, 2022).

Figure 48: Nairobi’s natural features.



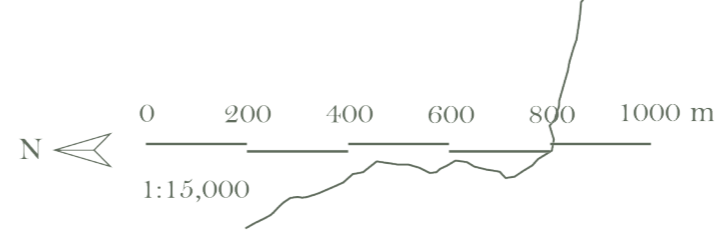
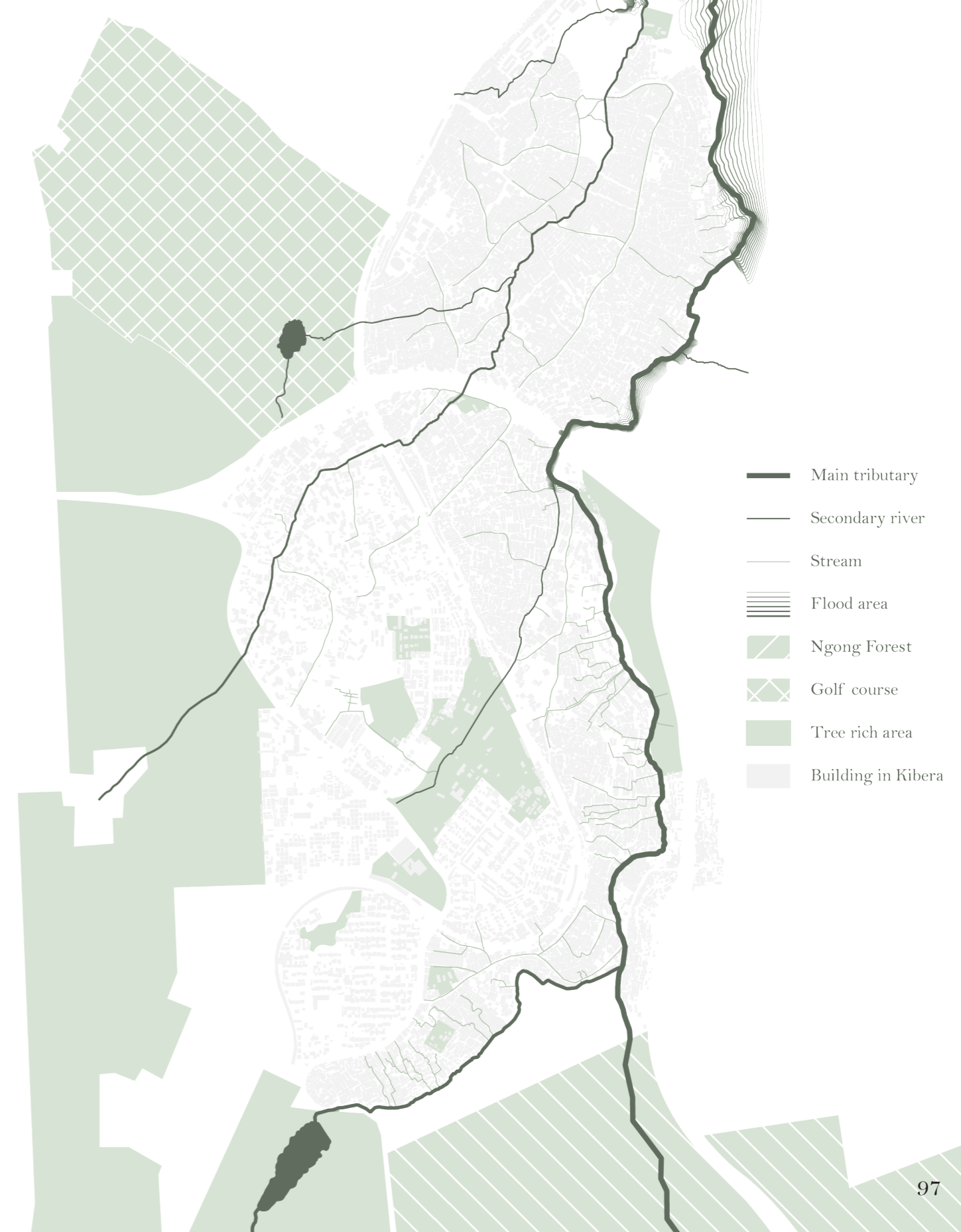


Figure 49: Satellite image of Kibera.
(Source: Google Maps, 2024)

Figure 50: Natural features of Kibera.



Yet, also the rain itself brings flood risks directly. Heavy rainfall floods the streets and flushes everything on them. They add even more pollution to the water system. Some streets become impassable and dangerous during these rains. The water issues in combination with bad sanitation and housing facilities for people in informal settlements contribute to a cycle of poverty, because these people have no money to protect themselves from floods and contamination, while they are continuously being harmed (financially) by illnesses and damages (Situma et al., 2009).

Kibera

The water is also a major issue in Kibera (S. Chebet, p.c., 2025). The south border of the settlement is marked by the Ngong river. Other smaller rivers are traversing through the villages and many streams are flowing between the shacks, especially in the south. They run down the slopes to the bigger rivers. There is a hundred metre elevation difference across the settlement, from 1770 metres in the west to 1670 metres in the east, above sea level. Some slopes can be quite steep (Topographic-Map, n.d.).

During heavy rains, water comes dangerously running down the rivers and the streets. The main roads have gutters installed next to them, but they are not always sufficient and many of them are clogged with trash (J. Kirika, p.c., 2025). Many residents experience trouble with water coming into their homes. It is not only inconvenient, but it also spreads diseases, because the water is often contaminated. An even bigger problem might be the flooded streets. Residents tell, that they cannot

use the streets during heavy rains and floods and in some parts they even have to wade through it to get anywhere, despite the danger with open electricity wires (local residents, p.c., 2025).

The biggest floods are along the Ngong river. They take lives every year and many people fear them. The water can come down with quite a lot of force. There is a warning system of 'bunnies'. They are people, who are responsible for warning people, when a flood is predicted. But many homes are built in, what is called, the flood zone, because they are the most affordable. These people risk losing their homes (J. Kirika, p.c., 2025). For this reason the municipality tries to riddin this zone of all buildings, but meanwhile no valid housing alternative is provided (S. Chebet, p.c., 2025).

Another problem people complain about, is the amount of trash in the streets. There is no functional trash collection system. Moreover, even when people try to keep their villages clean, trash is often left behind by the floods. The rivers are used as an alternative dumping place. This also involves human faeces, because the settlement does not have sufficient sanitation options. It result are bad smells in the streets (local residents, p.c., 2025).

Natural habitats do not really exist in Kibera. Trees are hard to find, apart from a few school yards and in the formal villages. Yet, the Ngong forest is adjacent to the west. The wetlands of the flood areas along the Ngong river are covered with low vegetation. One resident said, he used to swim there, but nowadays it is too polluted (local residents, p.c., 2025).

The next few pages present some zoom-ins of the different natural elements in Kibera.

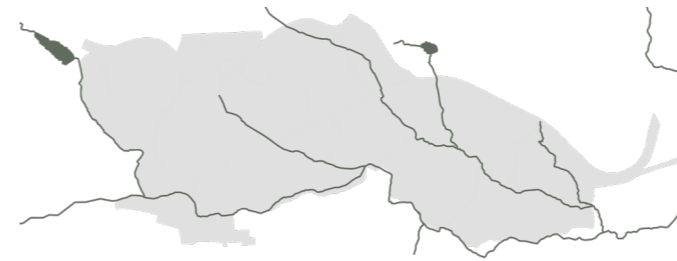
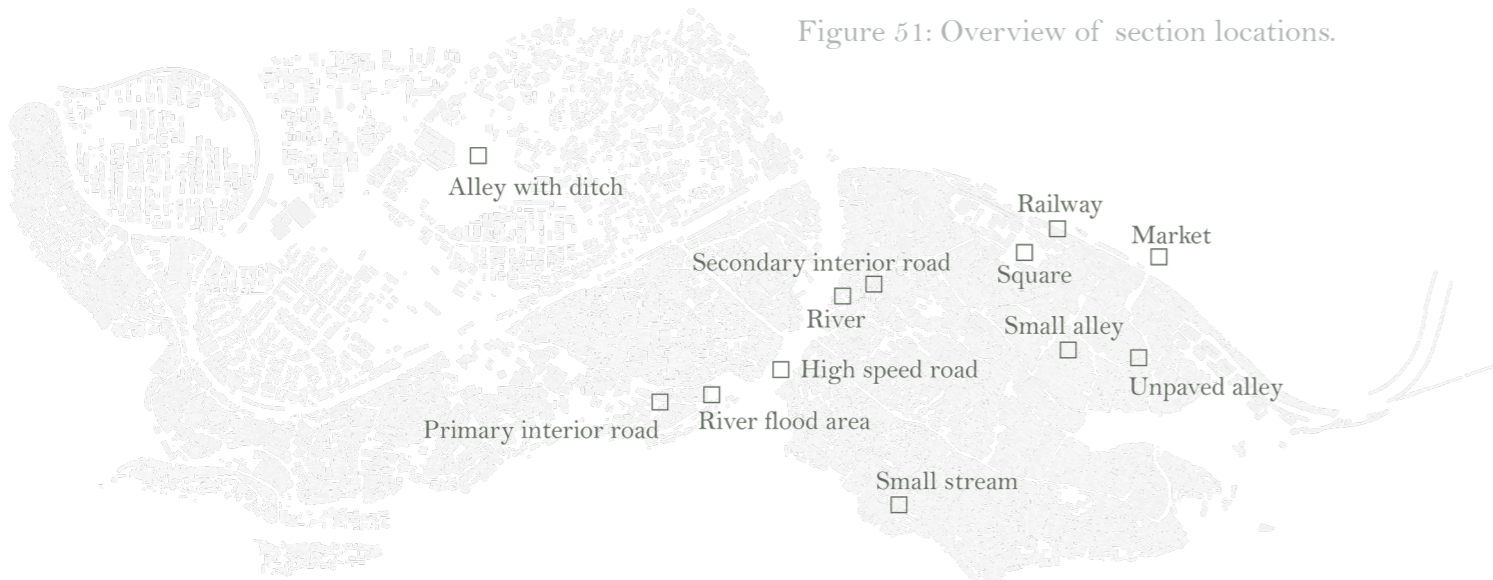
5.1.3 Water Typology

The following pages give an overview of the natural elements in Kibera, which are in Kibera's case about waterways. The flowing water can be a great deal in daily life in the informal settlement, especially during rain seasons. Floods occur regularly and make the streets and alleys impassable.

The image below shows the places where sections of these elements are taken and based on. The sections are not really accurately showing these exact places, but rather portray an average of how these places occur in the settlement. Yet, the shown locations form the base for the sections.

The sections are accompanied by a small map of Kibera, with a focus on the portrayed element, and a photograph of such a location. All of the photographs are taken during local fieldwork.

Figure 51: Overview of section locations.



Rivers

The banks of the rivers can be steep, meaning the water level can rise rapidly during heavy rains. Along the Ngong River, buildings are generally further separated from the river, but along the smaller rivers, people build their shack right on top of the banks, despite the risk of floods. River banks are some of the few places, where small vegetation can grow. But the rivers are also severely polluted.

Figure 52, 53 & 54: Map, photograph and section of the rivers in Kibera.

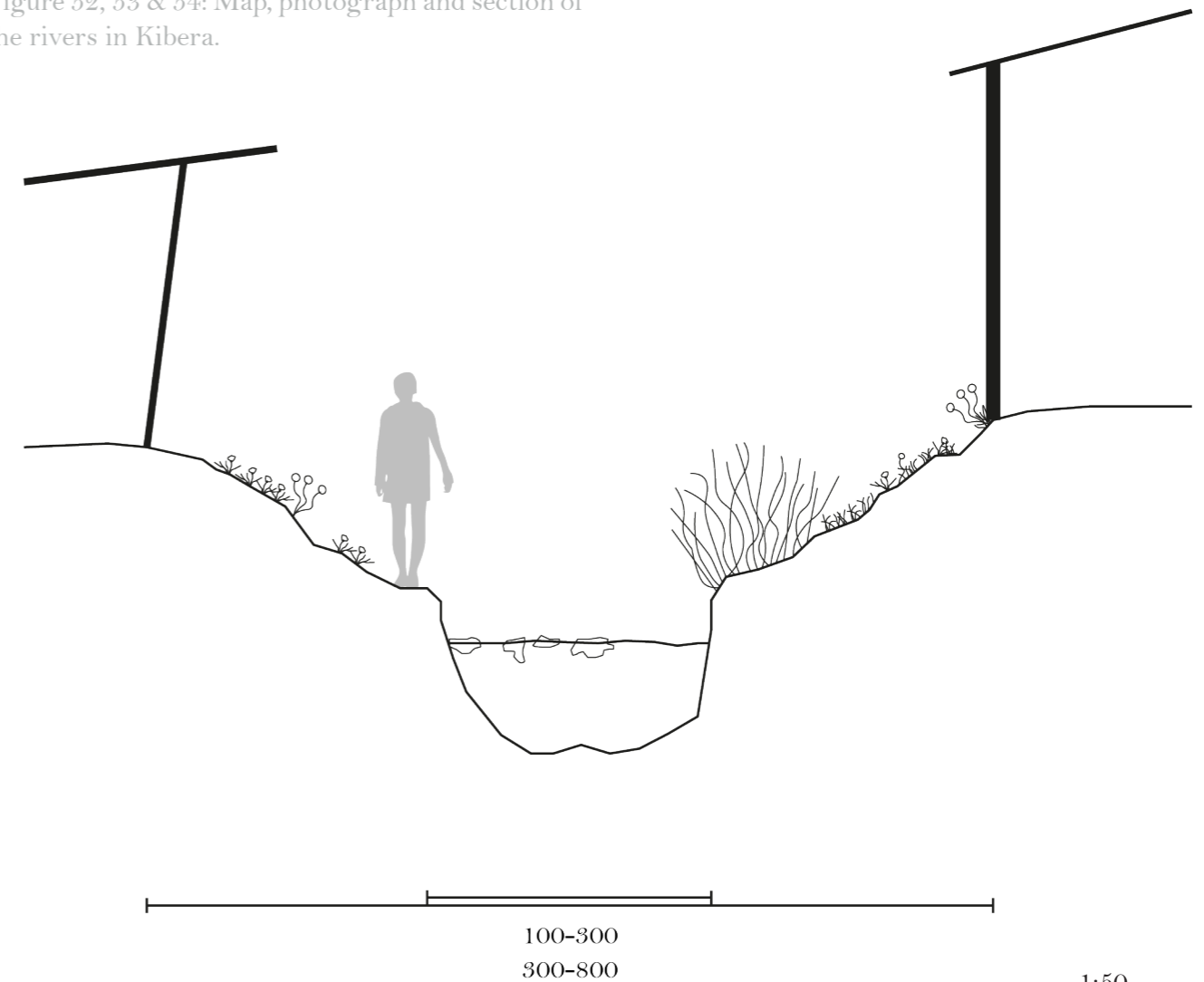
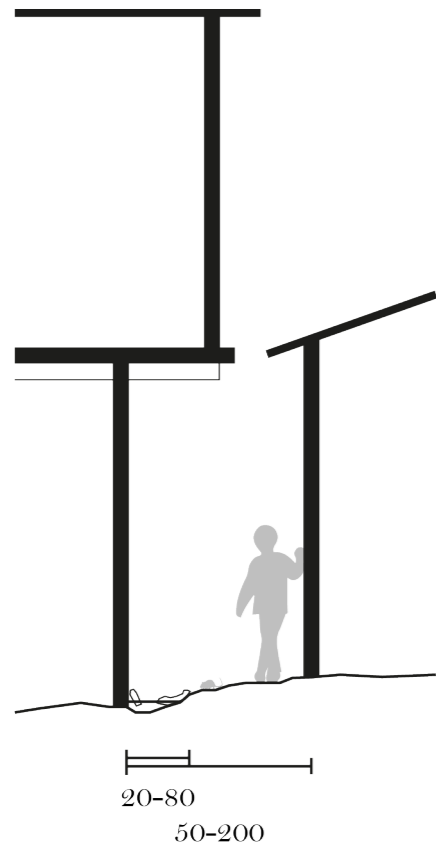




Figure 55, 56, 57 & 58: Map, photograph and section of the streams in Kibera.



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Streams

There are many streams flowing through Kibera's alleys, especially along the southern border, flowing to the Ngong River. Residents try to build their homes around them, but that does not prevent water getting inside the shacks during rains. Gutters were added with the creation of the main access roads, in an attempt to direct the water away from the homes. But the gutters are easily clogged with trash, so the water still finds its own way through the settlement (local residents, p.c., 2025).

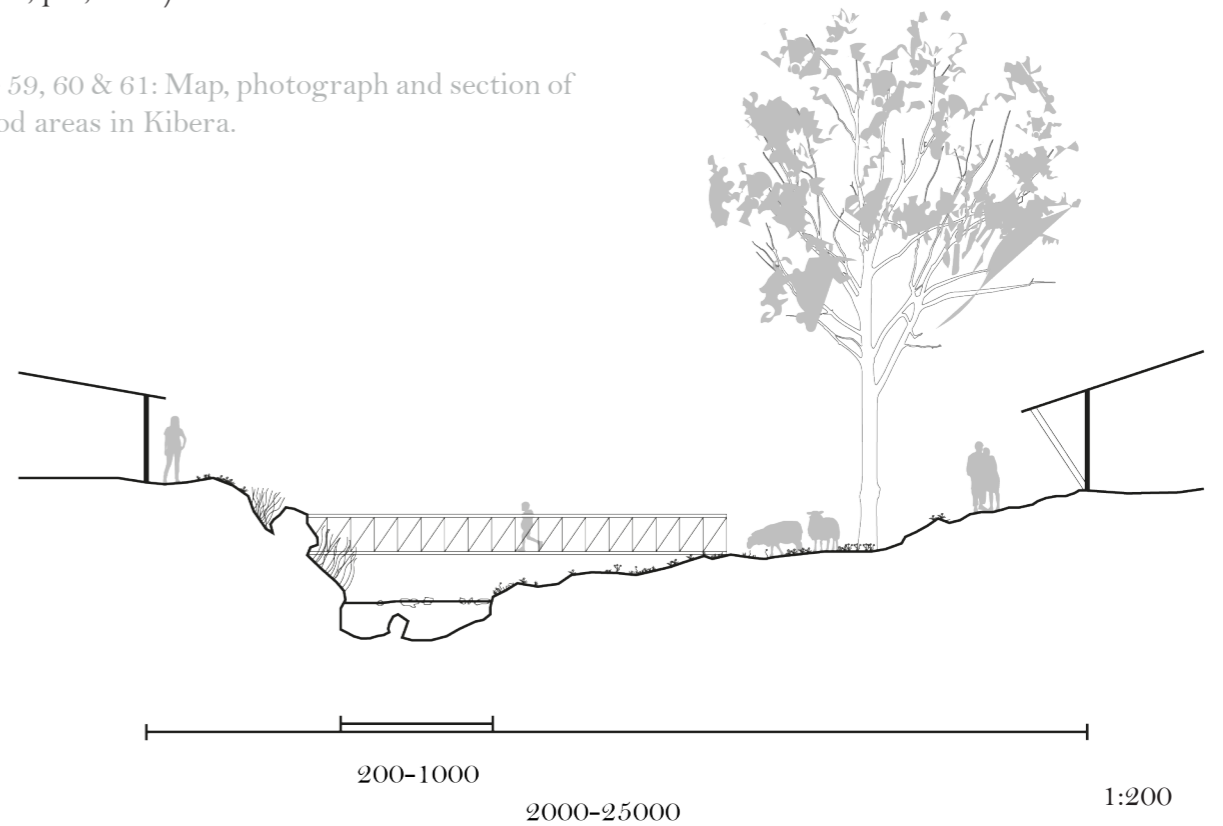


Flood areas

There are a few areas, where nobody dares to build their shack. These are areas along the Ngong River, which flood easily. The biggest area is around the Nairobi Dam. They are flatter river banks and wetlands, covered with small vegetation. The residents are aware, that these are dangerous areas. Decades ago, people went swimming there, but now it is too polluted. It is not uncommon to see cattle, such as sheep, cows and pigs, looking for food here (J. Kirika, p.c., 2025).



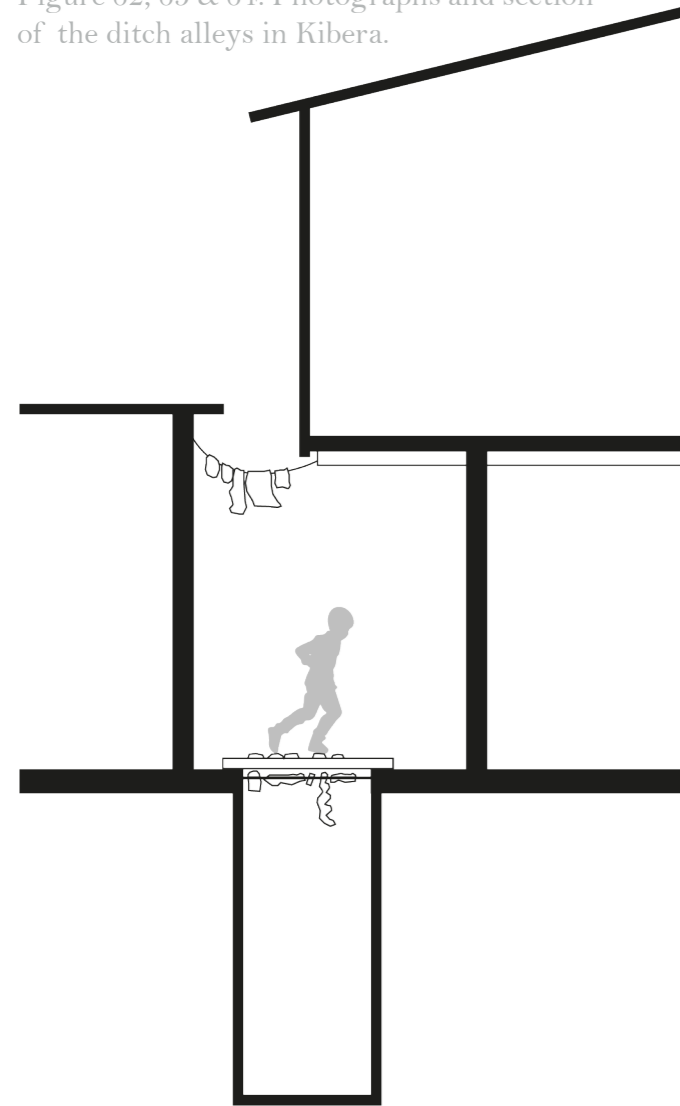
Figure 59, 60 & 61: Map, photograph and section of the flood areas in Kibera.



Alley with ditch

A rather striking view are the alleys in Makina, where the local government built ditches, two metres deep, in the middle of the alleys, in order to direct the water. The local formal secondary school was experiencing nuisance from the water each year, so they pulled up a wall to prevent water coming in. But this disturbed the natural flow, so the water made its way through the slums. The solution for this were the ditches. But they soon clogged and now the water stays year round and during rain season they totally overflow. Residents have to go through the water to get out of the streets. This is very dangerous, because they can easily slip into the ditch and even more, there are many electricity wires in poor condition around (local residents, p.c., 2025).

Figure 62, 63 & 64: Photographs and section of the ditch alleys in Kibera.



Pictures of waterways in Kibera:

Figure 65: The Ngong River in Lindi.

Figure 66: Cattle grazing in a flood area.

Figure 67: The Ngong River in Kisumu Ndogo.

Figure 68: Sedimentation of trash on the river bed.

5.1.4 Mobility

With the intention of attracting more foreign investors and improving the own market-functioning, the Kenyan government, as part of the Kenya Vision 2030, has invested a lot in developing its infrastructure. It has invested in telecommunication, roads, railways, etc. This is deemed to be necessary to keep production and transport costs low, so that the country's businesses can compete with other countries (Nyaosi, 2011). And by these kind of investments, Nairobi has become considered a low-middle-income country, also ranking average in this group, when measured by infrastructure quality (PPIAF, n.d.). However, Nairobi is notorious for terrible congestion, unsafe mobility and air pollution. It has not proven capable of dealing with the tremendous increase of inhabitants and commuters (Akoko, 2022). This sub-chapter elaborates on some aspects of the mobility infrastructure.

Yet, the majority of trips by Nairobi citizens, and in Kenya overall, is made by non-motorised transport. Apart from the notion, that there might be better options than motorised transport to reach a destination, many people cannot afford a vehicle. This results in almost half of all daily trips being made by foot. But still, in infrastructure projects, non-motorised transport is often overlooked and not accommodated for. Busy city streets, places where many people need to be, are dangerous to use for pedestrians, let alone crossing them (UNEP, n.d.).

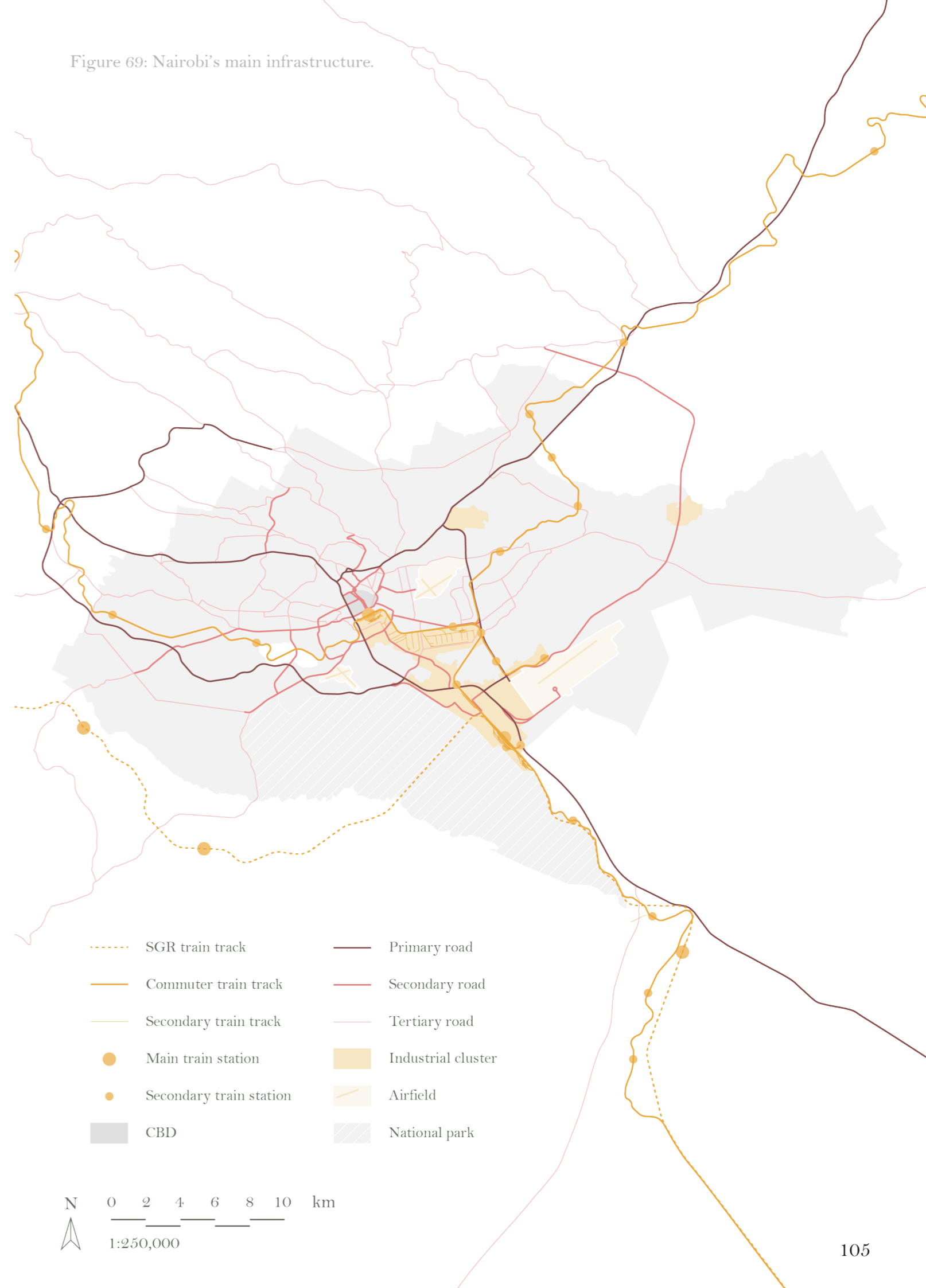
Roads

In spite of its short existence, Nairobi is, as the capital city, the central hub for transport in the country and the EAC and a main node in the country (International Trade Administration, 2024). Two Trans-African highways lead through the city, connecting Mombasa to Lagos (Nigeria) and Cairo (Egypt) to Cape Town (South-Africa) (Johnson, 2024). Some of the first roads are now important corridors through the city. Bigger roads are state-owned trunk roads or county roads. Recently, toll roads, like the central Expressway, were opened to moderate traffic (International Trade Administration, 2024).

The map shows primary, secondary and tertiary roads. These are all more prominent roads and most of them are concentrated around the CBD. The primary roads are the highways, such as the Expressway, with multiple lanes, which serve countrywide. The secondary roads serve more citywide purposes and have more accesses to the city's streets, but still often have multiple lanes. They are made to process large amounts of vehicles. The smaller versions of these are the tertiary roads. Tertiary roads are also often connectors to and between smaller settlements just outside of the city. Finally, there are streets in between the roads, which are not projected in the map. Further from the city centre, these are often not paved.

Despite the efforts by the county to improve the road network, many commuters find themselves stuck in traffic on a daily basis. On average, commuters lose over fifty minutes time in traffic every day. As the number of commuters is increasing, the congestion issue is predicted to

Figure 69: Nairobi's main infrastructure.





worsen as well, while Nairobi is already among the most congested cities in Africa. Severe congestion, a great cause of air pollution, has serious impact on mental and physical health and consequently the economy. Meanwhile, Nairobi proves to be the African tech capital, by developing apps, that show real-time traffic and assist in picking the quickest routes (Okafor, 2025; Ibukun, 2025).

Public transport

Also public transport exists mostly of road users. And public transport road vehicles add substantially to the congestion in the city, since only a small percentage of commuters use a private car (Salon & Gulyani, 2019). The so-called ‘matatus’, or minibuses, serve the largest share of people. They make up for 80% of all public transport trips. But their chaotic use of the roads to pick up as many travellers as they can, causes a lot of trouble in the city and is considered a significant reason for the congestion. Matatus are mostly privately owned and started out as an informal mode of public transport. This means, that they earn their income per passenger. Subsequently, there is the formation of cartels, which extort passengers and control the market unfairly. Furthermore, matatus are known for breaking traffic rules and being rude to and overcharging passengers, contributing to unsafe transit. Many public transport vehicles are involved in deadly road accidents (Nyachio, 2018).

The matatus significantly outnumber the regular bus services, because the bus network is simply not extensive enough and incapable of meeting the demand, even though they are the safer and more consistent mode of transport (Nyachio,

2018). A third increasingly popular option is the ‘boda boda’, a type of motorcycle. They offer the possibility of continuing the ride, even on congested roads. They are used privately, as well as taxi service, beside regular taxis. Boda bodas are popular among youth as a source of income. On the flip side, in Nairobi’s chaotic traffic, it is much riskier to ride such vehicles (Raman, 2019).

The only option for public transport off the road is the train. The railway line, that marks the birth of Nairobi and the modern Republic of Kenya, is still in use. This is the line between Mombasa and Kisumu. Already in its first decades, the line was extended with several branches. Not all of them are still in use today and most of them only served as freight line (Living Nairobi, 2014; Farnworth, 2023). This is visible on the map, that shows that many tracks are located along the industrial areas. Most of their secondary side tracks are no longer in use.

Nowadays there are three different types of passenger lines in Nairobi. Two of which still use the old tracks, and one that uses new tracks, although renovations on the old tracks are under construction of a new plan, Nairobi Railway City. This also means that some stations are not being served until they are finished. The first one is the Nairobi Commuter Rail. It consists of several relatively short lines, that all stop at Nairobi Central Station, the most important station within the city, that is adjacent to the CBD. There are four lines eastward and one line westward, including Kibera station. The lines towards the west and southeast are only served in each direction once per day, the line to Ruiru twice a day and the other two have seven trains back and forth. The second type is the

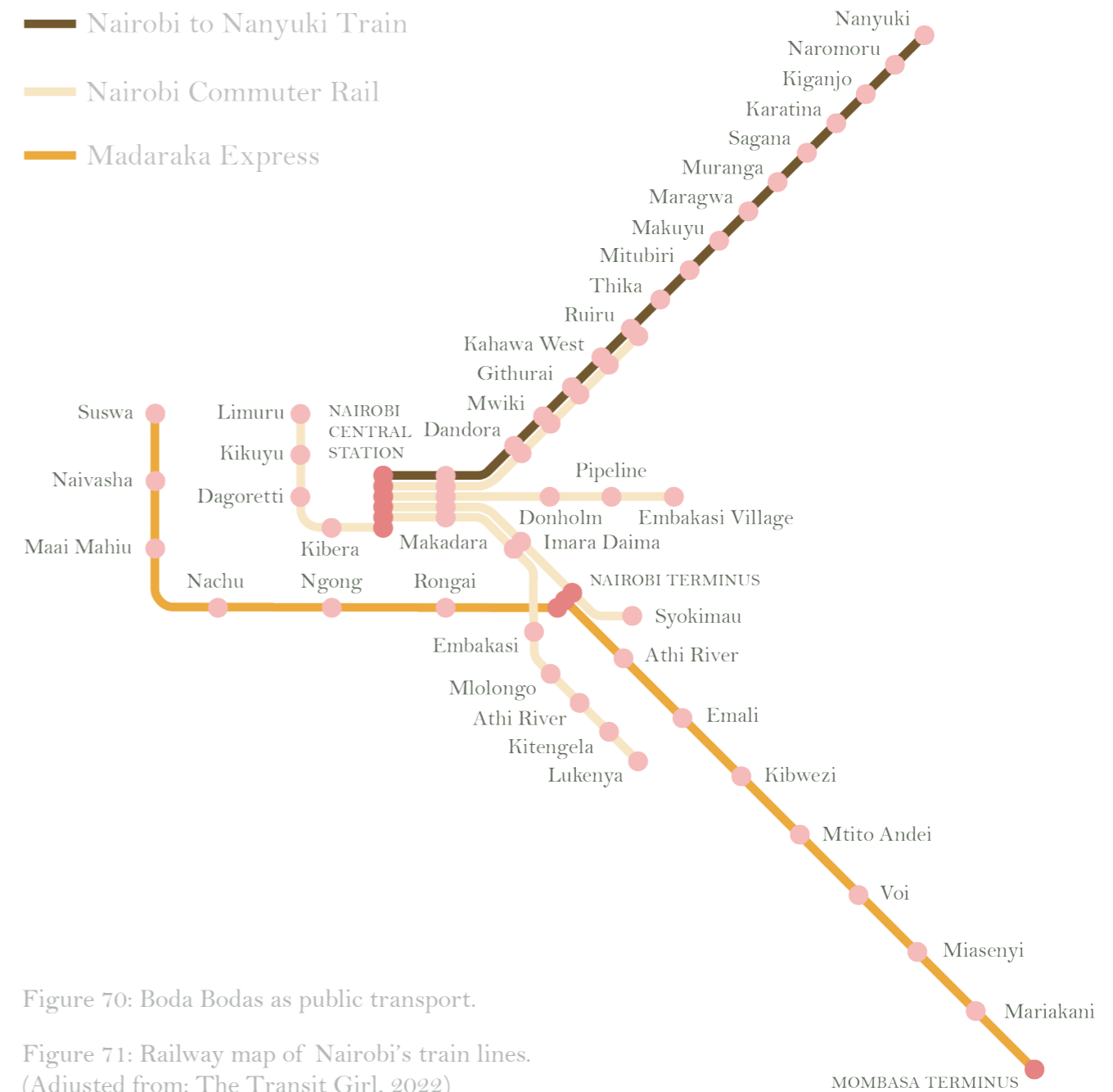


Figure 70: Boda Bodas as public transport.

Figure 71: Railway map of Nairobi’s train lines. (Adjusted from: The Transit Girl, 2022)

Nanyuki Train. This one is an extension of the Ruiru line and only operates once a week (Kenya Railways, n.d.; The Transit Girl, 2022).

The third line is the Standard Gauge Railway (SGR), also known as the Madaraka Express. Nairobi was connected to Mombasa in 2017 and Naivasha in 2019. More extensions are planned (Ole Sereni, n.d.). This system is not compatible with the old system and so the Nairobi station of this line is on the edge of the city at Terminus Nairobi. Here commuters have to transfer to travel to the centre. But the new line still managed to take half of the travel time to Mombasa. Both ends serve three trains back and forth per day (The Transit Girl, 2022). The Madaraka Express is a perfect example of Chinese funding to invest in future trade and to create economic leverage (International Trade Administration, 2024).

Airports

As East Africa’s main economic hub, Nairobi also host the region’s second largest airport, after Addis Ababa, Ethiopia. This is Jomo Kenyatta International Airport (JKIA) (Flights From, 2025). It is located in the southeast of the county. Two other airports are within the city: Wilson Airport and the military Moi Air Base. Even though Kenya is a popular African destination, both JKIA and Addis Ababa also function as transfer hubs. Many East African destinations can only be reached by transferring on these airports. So both airports are competing to be the region’s main transfer hub, by looking for expansion opportunities (Bauck, 2024). JKIA processes one hundred and eight flights per day to sixty-four destinations, of which most of them to other African countries, followed by Asia

and Europe and one to New York City (Flights From, 2025).

Wilson Airport, which is much closer to the city centre, is focused on regional flights. Despite this, it is still one of the busiest airports in East Africa, based on aircraft movements. Almost all flights taken from here are domestic. It is capable of serving a range of smaller planes, jets and helicopters (Henci, 2023). Moi Air Base is located in the middle most densely built parts of Nairobi, between Mathare and Dandora. It is a military air base used by the Kenya Air Force. Additionally, it hosts an aviation school (Moi Air Base | Skybrary, n.d.).

Kibera

Kibera is surrounded by multiple main roads and traversed by the western commuter train line. But apparently, it has not been deemed necessary to really connect the settlement to these corridors. There is only a single one-sided exit in the north. Other than that, the Kabarnet CI road, which was built to connect the Ngong Road to Lang'ata Road, by demolishing Kibera homes and schools, is not connected to the Kibera villages. A striking two thousand families were evicted without compensation to build a road, that is not built for them. It is a harsh reality of the lacking property of land in the informal settlement. Even more so, vehicle ownership is rare in Kibera, because most people cannot afford one (Golla, 2018).

The majority of trips are made by foot, even when they are very long. A perk of living in Kibera is, that it is relatively close to the city centre and affluent parts of the city, like Westlands and Karen, where many residents manage to find jobs (M. A. Otieno, p.c., 2025). This is in comparison to other poor parts of the city, like Soweto or Dandora, but it is still around five kilometres from the CBD. Seldom, Kibera residents use public transport. There is a train station to the west, but there is only one train per day. Because of this low frequency, people used to set up shop along the tracks, but nowadays they are removed for safety reasons by the government. For most residents the station is already far to walk to. More frequent options are the matatus or buses. But these are mainly used to make further trips, for instance to visit family (local residents, p.c., 2025).

Entry into Kibera is possible through secondary roads. In recent years, these roads have been connected to new main roads, that lead

through the informal parts of Kibera. For this project, people's homes needed to be demolished, so families were displaced. But overall, people received it positively, because these roads offered economic opportunity for businesses and improved the mobility and safety for residents (J. Kirika, p.c., 2025). In addition to these primary roads, there are some other paved secondary roads. Kibera is very cramped and dense, but there are a few unpaved corridors, that are a little wider and provide shortcuts through the slums. They are accompanied by many small alleys, that exist in the caveats left open between the unplanned shacks. The informal settlement has only two public squares, which are often used by schools for their children.

A further analysis of the road typology will follow ahead.

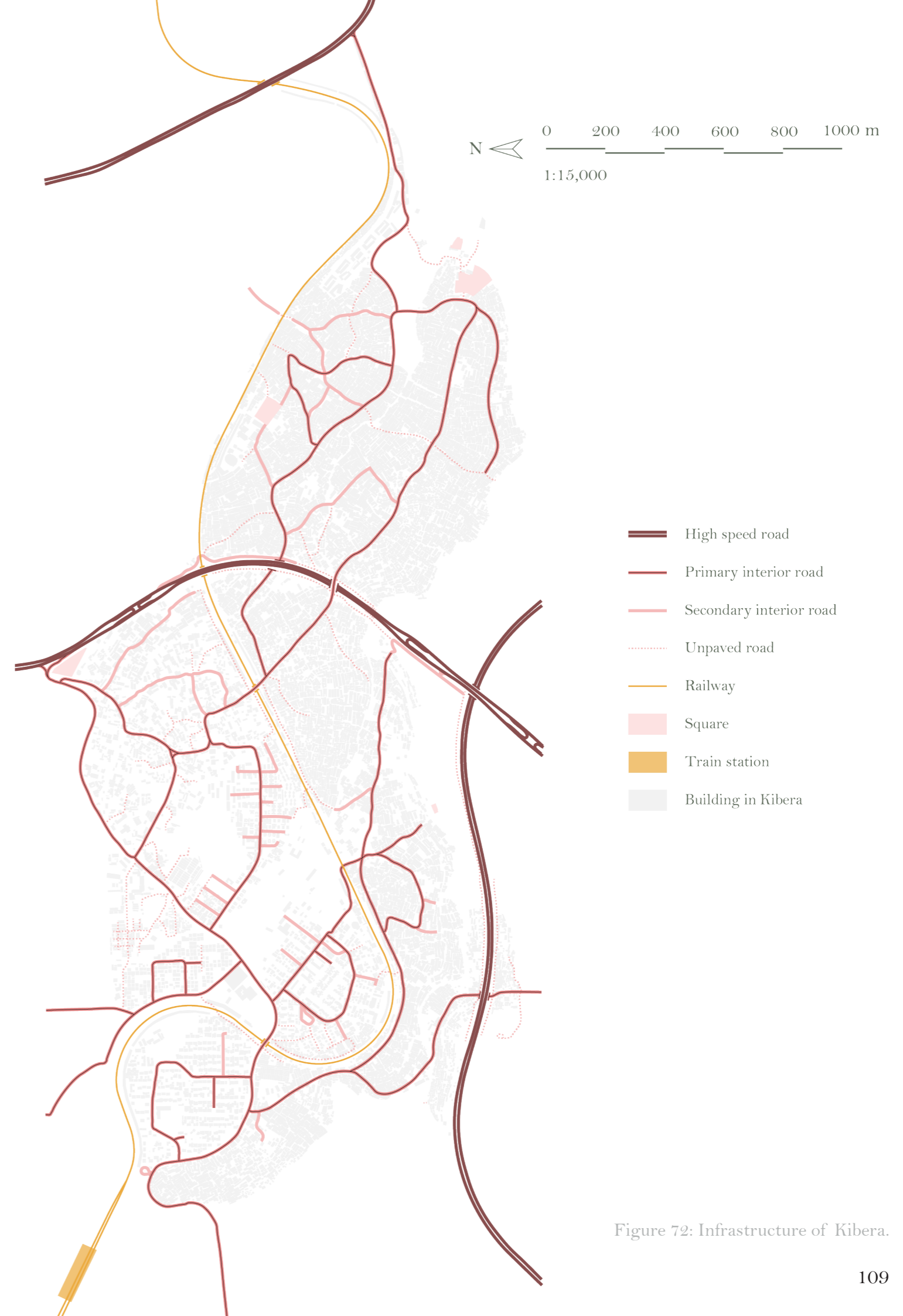


Figure 72: Infrastructure of Kibera.

5.1.5 Infrastructure Typology

This sub-chapter gives another overview of spatial elements in Kibera. This part is focused on mobility infrastructure, which is mainly road infrastructure. The different types of roads have different characteristics, which are explained by sections, maps and photographs. The sections provide information about the measurements, street furniture and surroundings.

The image above shows the places where sections of these elements are taken and based on. The sections are not really accurately showing these exact places, but rather portray an average of how these places occur in the settlement. Yet, the shown locations form the base for the sections.

The sections are accompanied by a small map of Kibera, with a focus on the portrayed element, and a photograph of such a location. All of the photographs are taken during local fieldwork.

Figure 51: Overview of section locations.

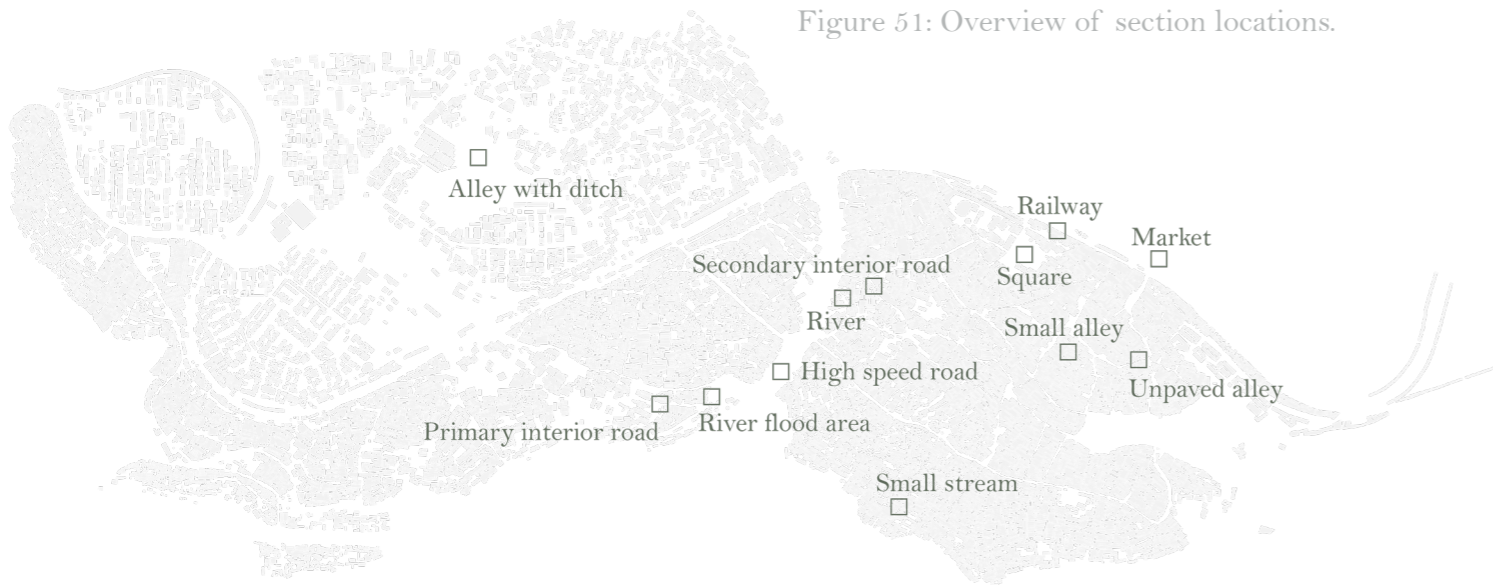
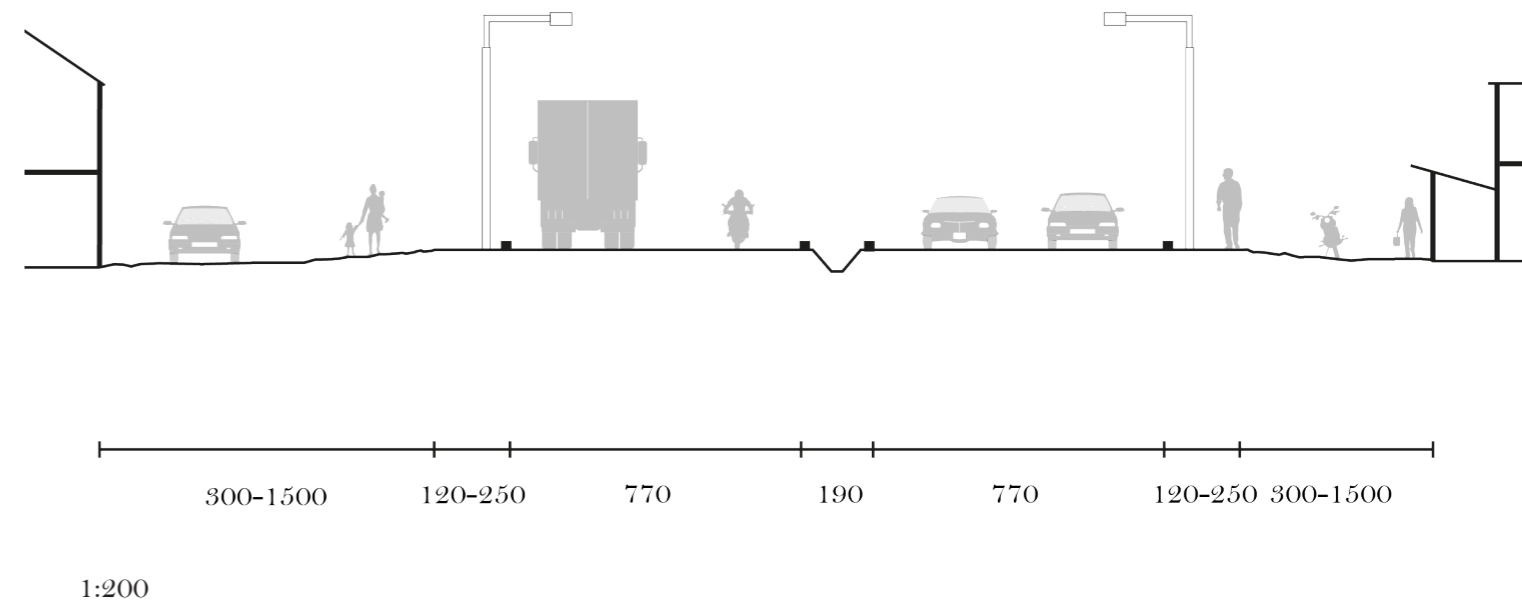


Figure 73, 74 & 75: Map, photograph and section of the high speed roads in Kibera.

High speed roads

There are several high speed roads around Kibera. Since they are not really connected for vehicles to the settlement itself, they are not really part of the infrastructure. Instead, they are rather a dangerous barrier and contributors to air and noise pollution. After the demolishing to make space for the road crossing through the villages, secondary unpaved roads have emerged alongside it. However, the high speed roads have been executed with lampposts and sidewalks, separated by the road with concrete beams.



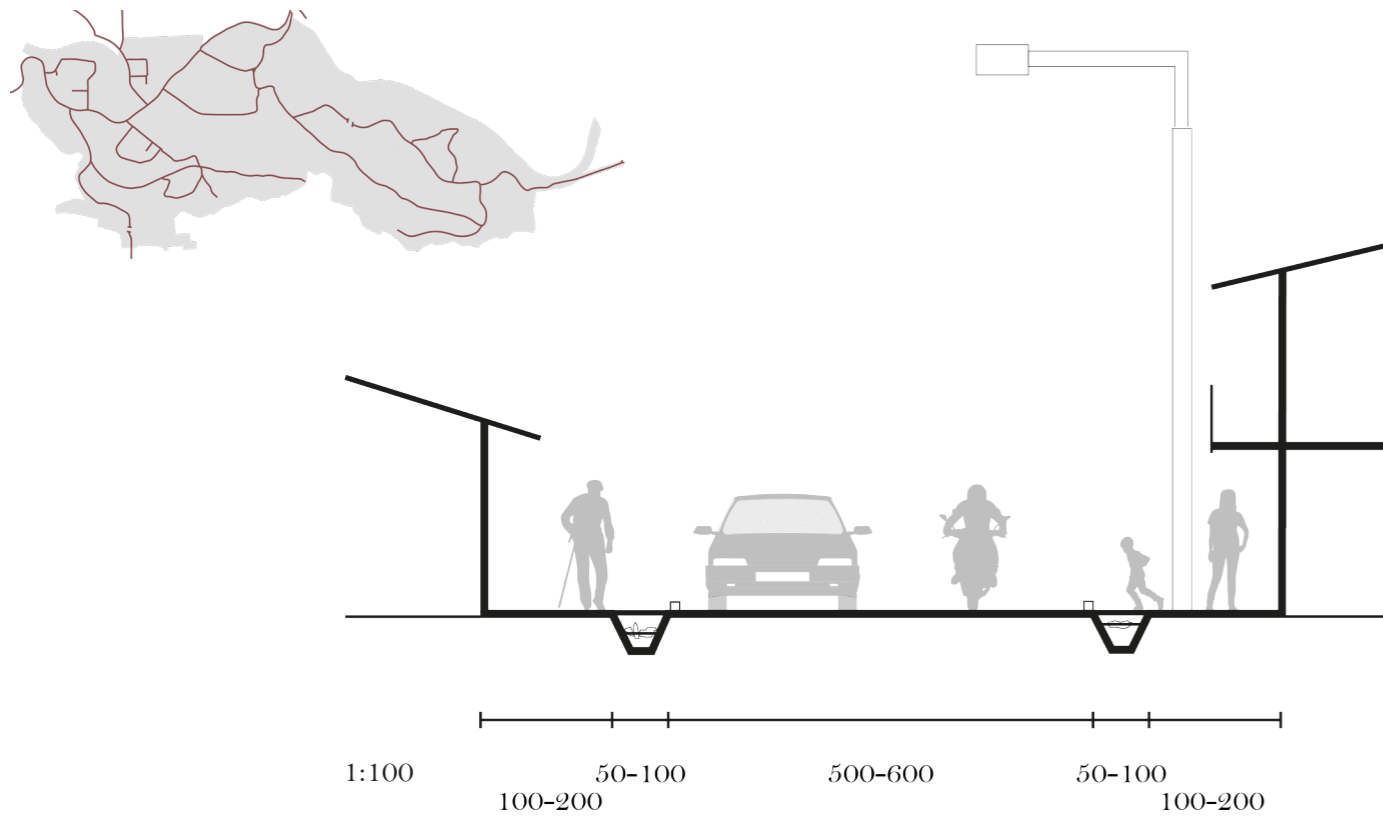


Figure 76, 77 & 78: Map, photograph and section of the primary interior roads in Kibera.

Primary interior roads

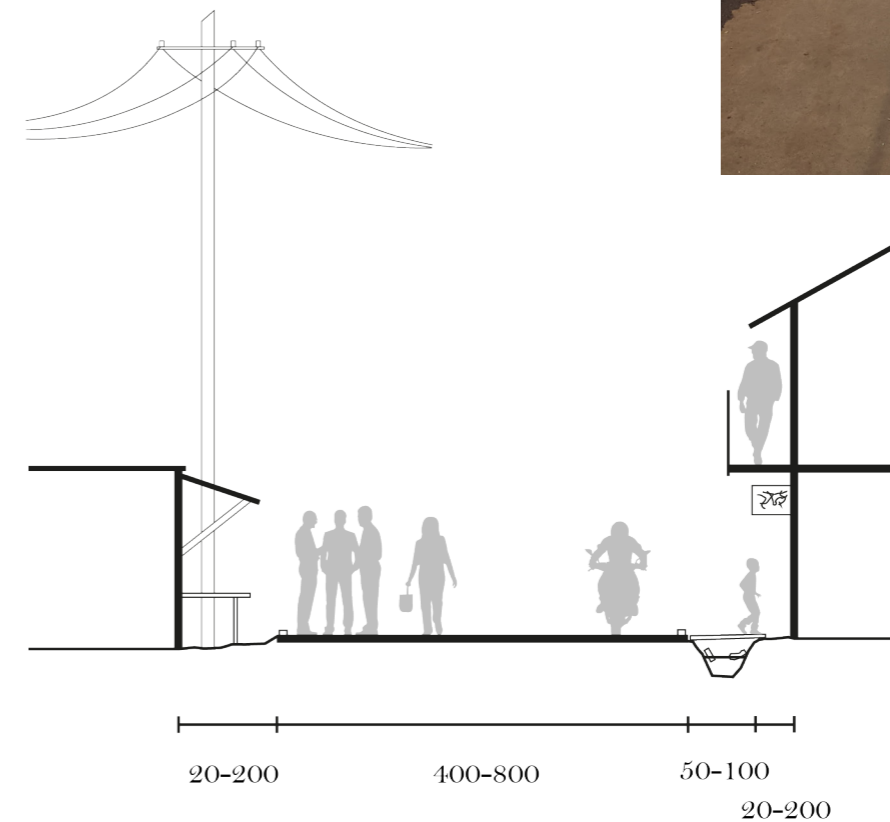
This type of road comprises the main access roads to and within the informal settlement. Generally, these roads are asphalted and executed with gutters for rain water on both sides and also marked with concrete beams, although this is not always the case. There is some space left for sidewalks and sometimes lampposts are added. They were made by removing shacks on their path, with the intention to open up the slums, to improve accessibility and safety. Some buildings were not totally removed and were adjusted with closed-off walls to the road. Soon enough, the left-over space along the roads became occupied by shops and stalls, built against those walls. The wider roads lead to better economic opportunities for businesses and now they are the main locations for commercial activity, apart from the markets, and one of the few public spaces in the settlement (J. Kirika, p.c., 2025).



Secondary interior roads

The secondary interior roads are similar to the primary interior roads, but predominantly not as continuous and consistent. They serve as a supplement to the main roads. Usually, they are a little less wide and have different kinds of pavements. They do not always have gutters on both sides. Additionally, they are not always suitable for all vehicles. They still serve the same commercial function as the primary roads, as many people set up their shops along them, by using bridging woodwork over the gutters.

Figure 79, 80 & 81: Map, photograph and section of the secondary interior roads in Kibera.



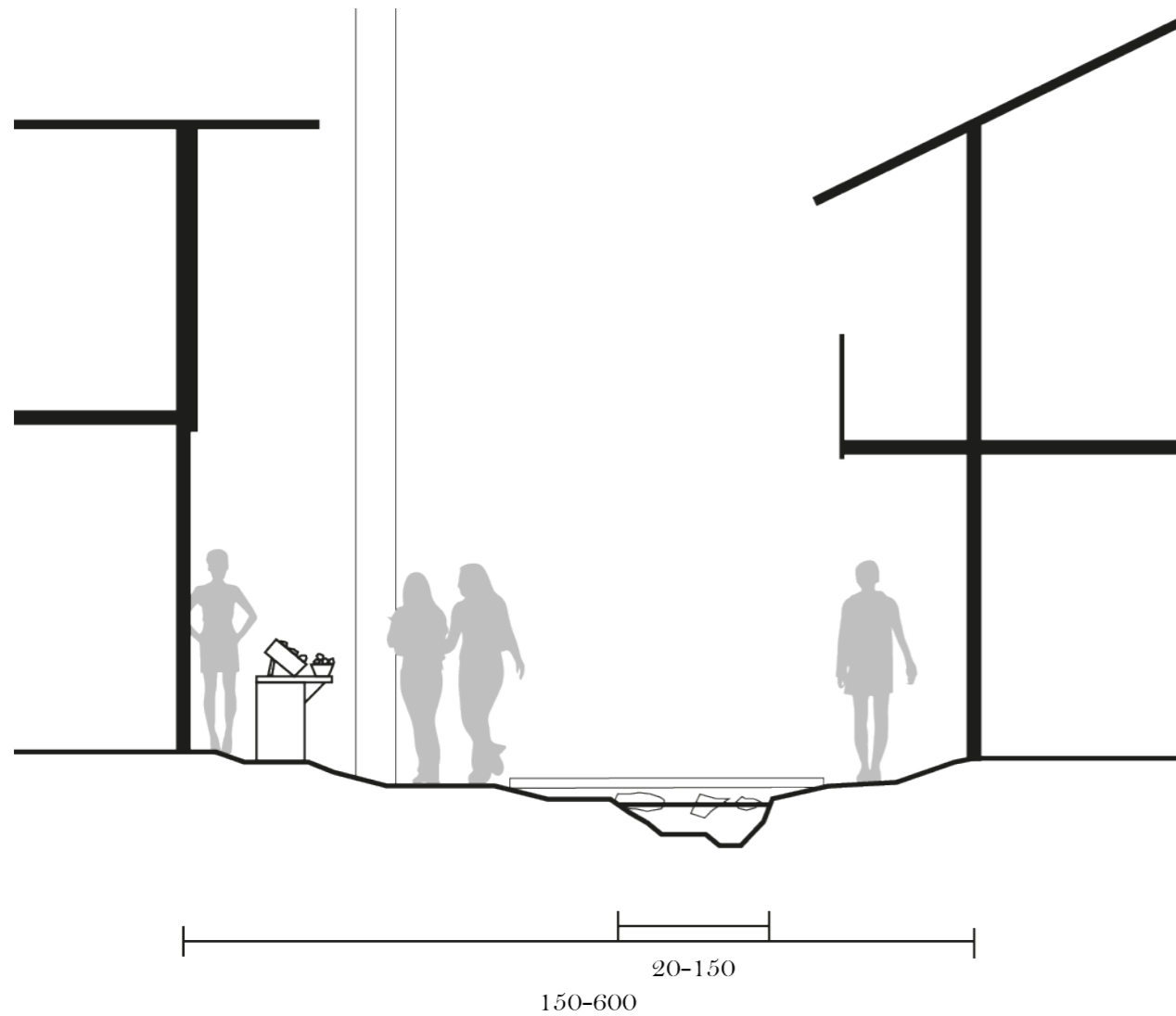
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Unpaved roads

A tertiary type of access road is the unpaved road. These often exist on steeper terrains and are accompanied by water streams, which are a reason for the paths to be unbuilt. They can be just as wide as secondary interior roads, but they are not fit for vehicles, due to the rugged terrain. Because they are less passable, they are less attractive for businesses, but some people will set up a stall there. They provide easier access to people's homes.

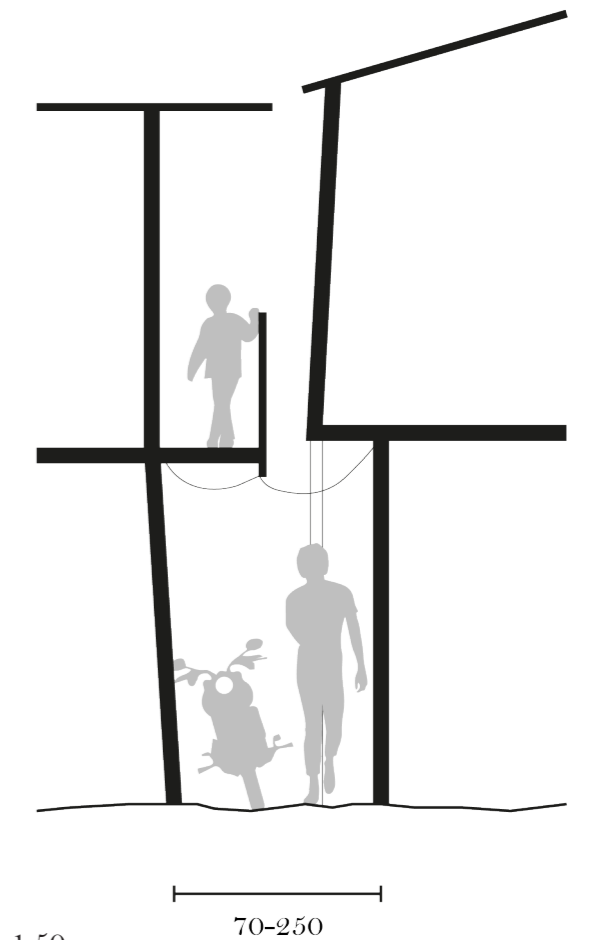
Figure 82, 83 & 84: Map, photograph and section of the unpaved roads in Kibera.

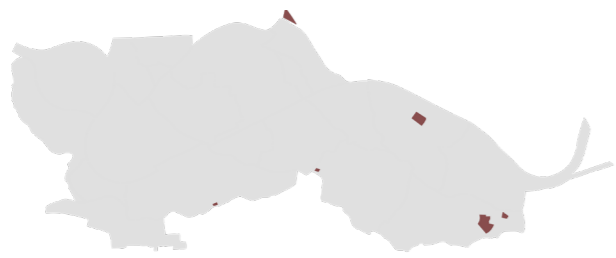


Small alleys

Between the roads there are dozens of alleys. They give access to most shacks in the cramped settlement. Some of them are so narrow, that they are hard to pass through. The alleys are shaped by the left over space between the shacks. When there are upper floors, these are often built even more close to each other. Therefore it can be quite dark in the alleys. There is little social surveillance on these alleys, which can result in unsafe spaces.

Figure 85, 86 & 87: Photographs and section of the small alleys in Kibera.

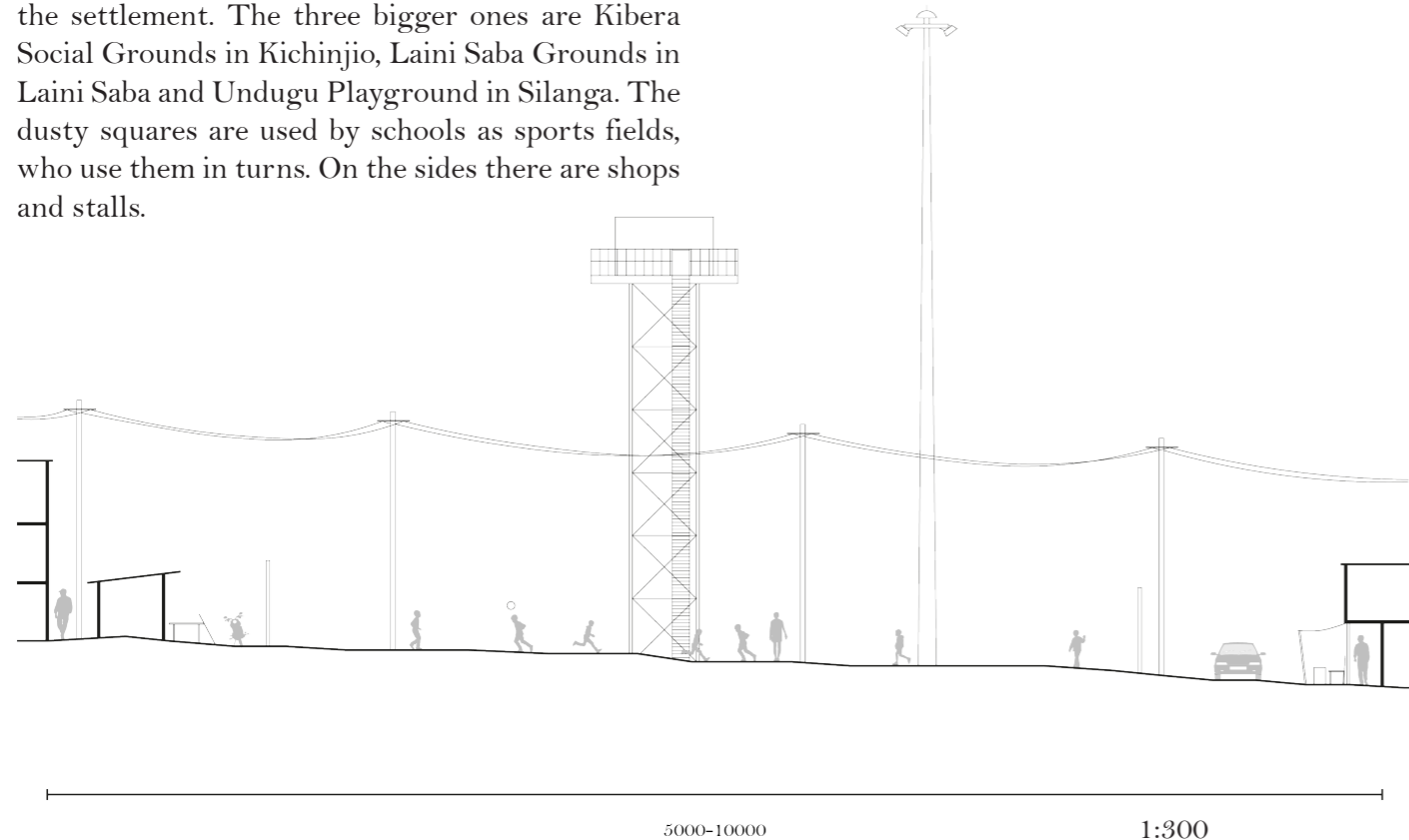




Squares

There are a few public squares in Kibera. The others are behind fences and usually belong to schools or churches. They are all in the fringes of the settlement. The three bigger ones are Kibera Social Grounds in Kichinjio, Laini Saba Grounds in Laini Saba and Undugu Playground in Silanga. The dusty squares are used by schools as sports fields, who use them in turns. On the sides there are shops and stalls.

Figure 88, 89 & 90: Map, photograph and section of the squares in Kibera.

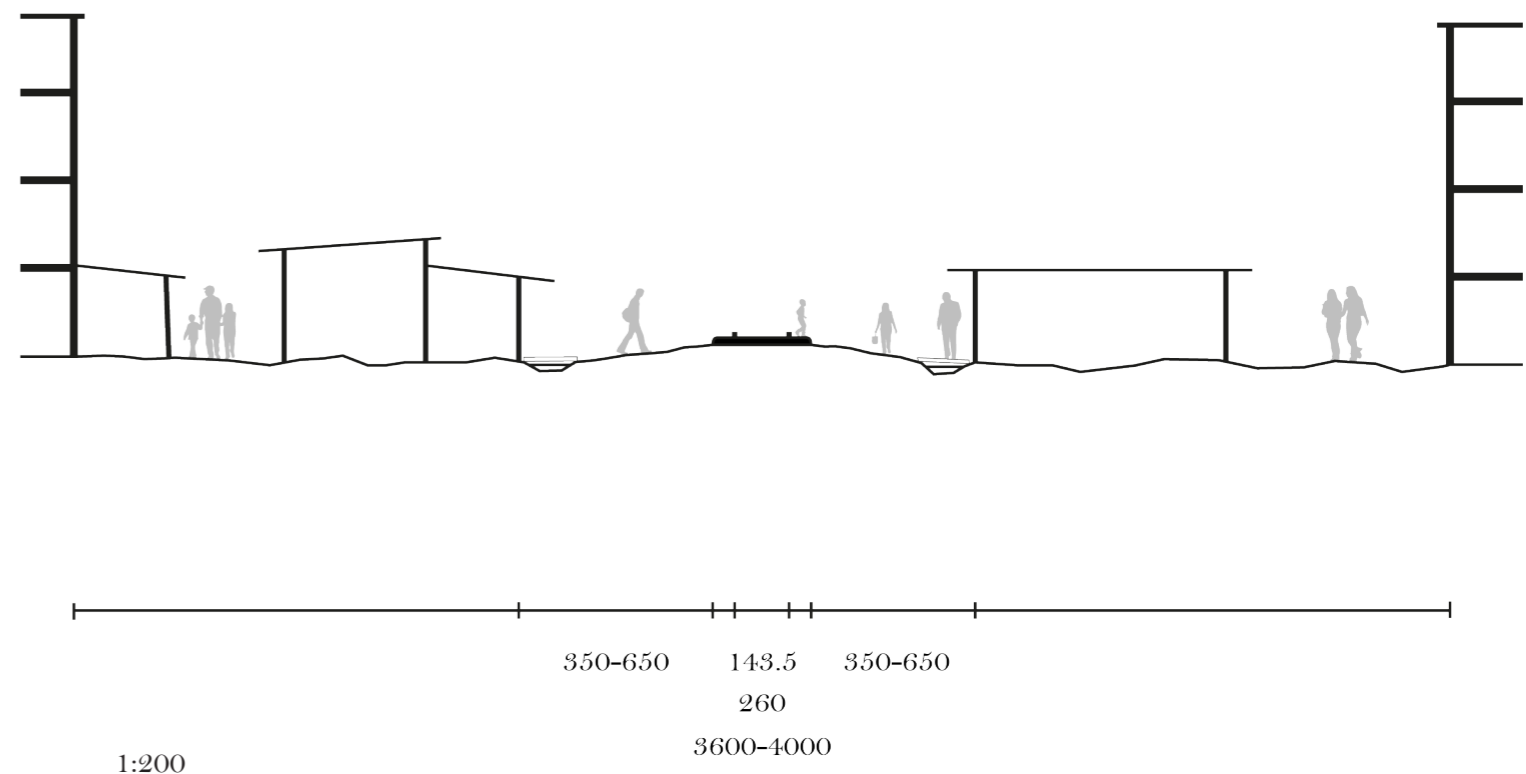


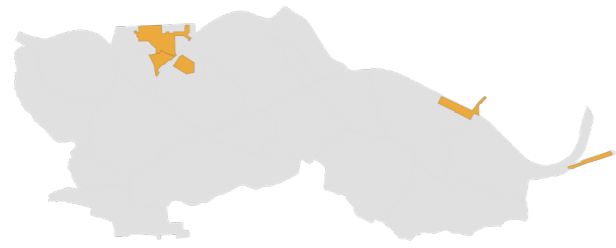
Railway

The train tracks pierce through the informal and formal parts of Kibera. Whereas Kibera consists of slanted terrains, the tracks needed to be on even ground. Consequently, the western part of the railway is in trenches between the villages. The eastern part however, is mostly on the ground level. The outdated tracks have a width of 1.435 metres on a base of 2.60 metres. Because the train only passes twice a day, people used to build along the tracks, but for safety reason they have been removed, so there is a larger open distance to the tracks. With the Railway Project, as a slum-upgrading project, multi-storey buildings were built at both sides of the railway in the east and a smaller part in the west. Some people, who were removed from these spots, moved into the buildings, but the majority is no longer affordable for them.



Figure 91, 92 & 93: Map, photograph and section of the railways in Kibera.





Markets

The markets can be found in the fringes of the settlement. Two have started along the access roads and the railway in the east, another three are on dedicated places in the north. These are Toi Market, Hawker's Market and Makina Market. They serve as the main purchase locations for other shops within Kibera, because there are generally lower prices. There was a huge fire in Toi Market recently, but in a few years the market has totally been rebuilt.



Figure 94, 95 & 96: Map, photograph and section of the markets in Kibera.



Figure 97, 98 and 99:
Most daily activities in Kibera happen along the main access roads. Some homes were cut off by making space for the roads and fixed with new walls.

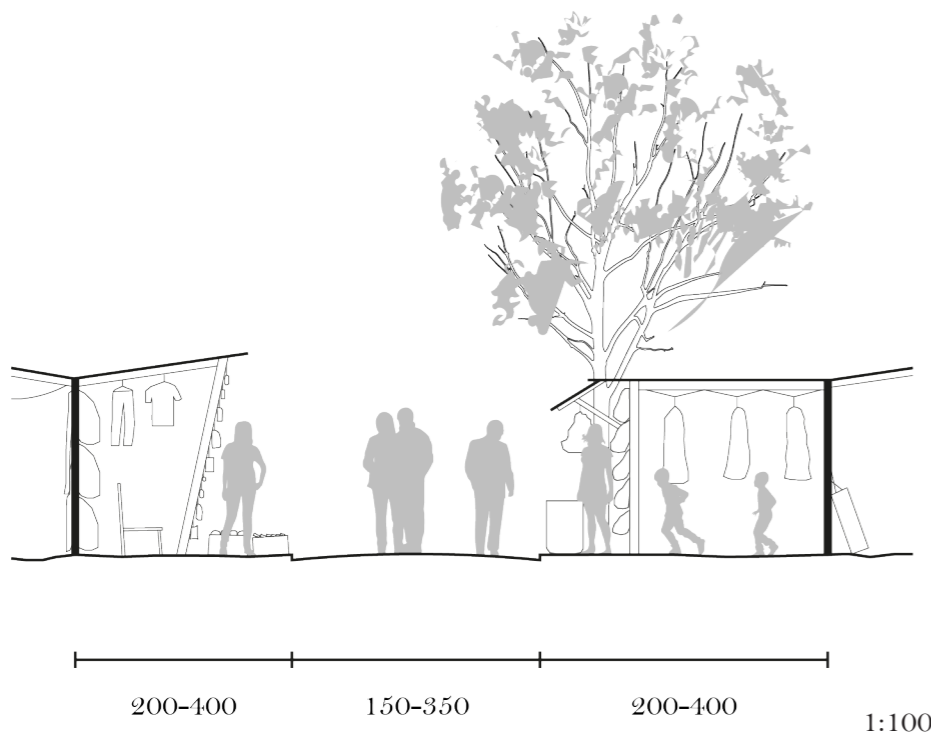
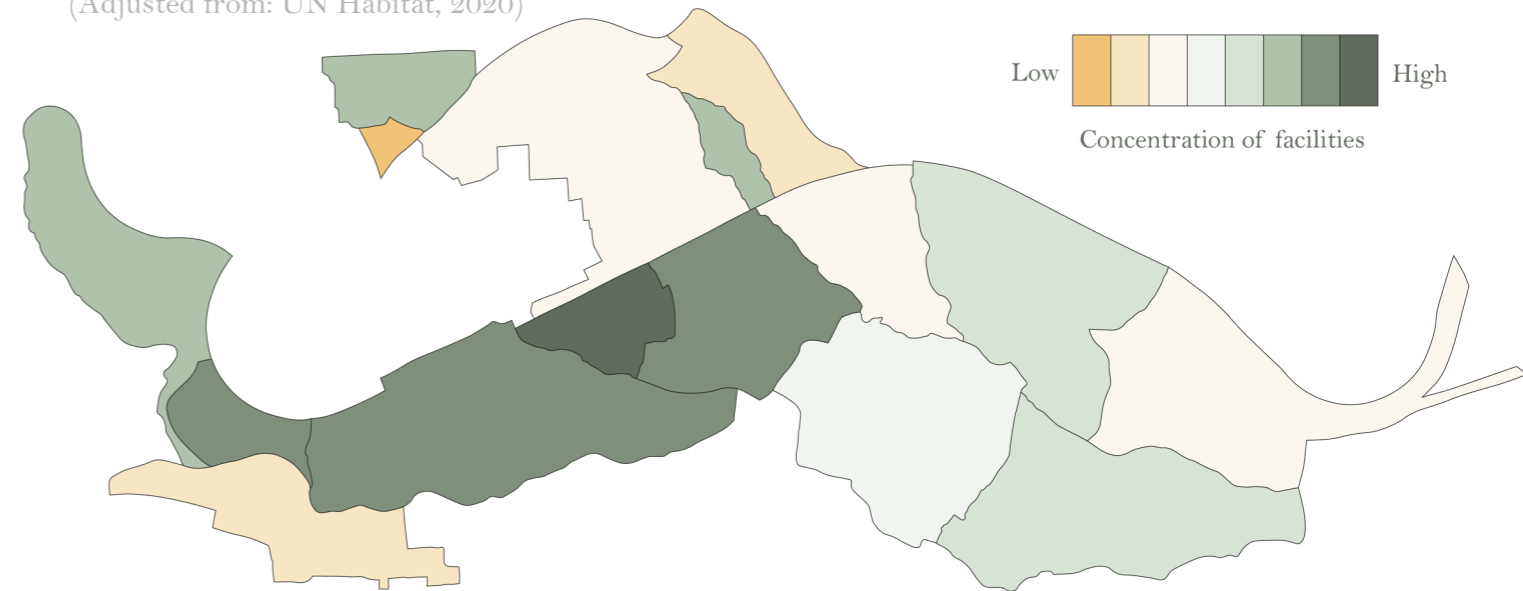


Figure 100: Concentration of facilities per village in Kibera.
(Adjusted from: UN Habitat, 2020)



5.1.6 Amenities

In 2020, UN Habitat (2020) conducted research in several informal settlements in Nairobi, like Kibera, and Kisumu to investigate the impact of Covid-19. They made an effort to map out the facilities, that were present in the settlements, which was done by volunteers doing fieldwork. They mapped several different types of facilities, but almost exclusively on the communal level and not on the household level. This research forms the base for the amenity mapping in this thesis project. Additional sources are used to verify information.

Still, this mapping is not always accurate. This is implicit in studying an informal settlement and life in informality. There is a lack of registration of businesses and the facilities that they are providing. Furthermore, people in informal settlements are very unstable in their income and might have to close their business any day. Many facilities are privately owned or managed and therefore also dependent on their owner, who do not have the protection of regulations (T. Kaloki, p.c., 2025). Additionally, people often do not have formal or legal access to basic services. Just like they have an informal and insecure lease to their landlord, almost every Kibera resident gets their electricity through informal providers and not directly from the energy company (local residents, p.c., 2025).

Not surprisingly, many amenities are located along the main access roads, just like most other businesses. These places have the best accessibility and the most people passing by. But simultaneously this means, that people, who live further from these streets are disadvantaged. Not all amenities

are in good conditions. Generally, over 70% is functional, but not always reliable. The amenities, that are managed by individuals, are usually in better conditions, but since they are often a type of business, they are not affordable to everyone, decreasing their accessibility (UN Habitat, 2020). The amenities can be grouped in a few types. The mapping of each type can be found in the appendix.

WASH

The term WASH is an abbreviation for Water, Sanitation and Hygiene. The fieldwork was mostly focused on these types of facilities, because of the relation to Covid-19. Very few dwellings have running water inside, let alone sanitary facilities. Over 80% of residents have access to a water point within a hundred metres of their home. But reliability is the real challenge, as only 50% functions consistently. There are different suppliers of water, depending on the village. The majority of the villages are supplied by water from the county's main water supplier, Nairobi City Water and Sewerage Company. The villages Gatwekera, Kisumu Ndogo and Ayany are primarily supplied through private boreholes (UN Habitat, 2020).

Handwashing facilities were mapped separately. They are shared by thousands of people per facility. But here the distance is even more important, because many are not within a range of fifty or even a hundred metres. Very few people would walk this far to just wash their hands (UN Habitat, 2020).

There are various communal sanitation facilities, including toilets and showers, which are mainly concentrated in Gatwekera and Kisumu

Ndogo. They have been sponsored by NGOs, but many are also in private hands. This means that users have to pay for them (UN Habitat, 2020) and in a poor area like Kibera, people often cannot spare money for these things. Beside the payment, many of the facilities are not open at night, because those who manage them are also asleep. The result is, that people try to use wash rooms elsewhere or use plastic bags and throw them in the river, the 'flying toilets'. Toilets are often not in good conditions (local residents, p.c., 2025).

A system for solid waste disposal is almost non-existing. The areas dedicated for dumping are often open-dump sites and over 85% is dilapidated. The majority of residents do not have access to these sites within a hundred metres (UN Habitat, 2020).

Health

Facilities for health care are fairly spread out over the settlement, although the majority of the actual hospitals and health centres are in the formal part. However, many of these facilities are just chemists/pharmacies and small clinics (UN Habitat, 2020; Map Kibera, 2010). Chemists in Kibera are basically small shops, that focus on medical products. Their primary role is dispensing medical products, but because of their easy accessibility, they are also the first line for medical advice. They do not require costly appointments and are therefore the preferred option for health care. The problem is however, that they are often not equipped with adequate knowledge to effectively advise people. Additionally, they tend to provide medication without prescriptions (Wanjiro & Terefe, 2025).

The result is that the majority of residents is under-informed about health. The provision of information is a major issue in the neighbourhood, because many people do not understand the written text of brochures. This information barrier is one of the main reasons why prevention of health issues is difficult. It is also a key indicator for the spread of STI's among residents. An estimated twenty per cent of the population is HIV-positive, whereas the rate among those who try to educate them is only one per cent (Translators Without Borders, 2012). Moreover, the prevention of illnesses, if aware, is not always possible for people, living in slum conditions (local residents, p.c., 2025).

The clinics in the settlement are often only capable of providing a limited number of services. In informal settlements, the number of users of private clinics, as opposed to public clinics, is much higher than in formal parts of the city. Even though public clinics, managed by the government or NGOs, are often cheaper. This can be explained by the levels of satisfaction and trust in clinics (Wambiya, 2021).

The health centres are capable of providing more elaborate services, but they are not able to serve such large amounts of people. As a low estimate, health centres need to serve fifty thousand people per centre (UN Habitat, 2020).

Education

Public child education is subsidised by the government and therefore free. But Kibera has only a handful of public schools. However there are over two hundred private educational and child care facilities. The initiative of Map Kibera (2010b)



Pictures of amenities in Kibera:

Figure 101: School yard of an informal school.

Figure 102: Floodlight post as a type of public lighting.

Figure 103: Pharmacy in the street.

Figure 104: Community police post at the square.

Figure 105: One of the few public schools of Kibera.



started in 2009 to map out different amenities in Kibera and produced a map and according list in 2010 of all facilities. Since then the map has already changed a lot, with new schools appearing and others disappearing. It shows the uncertainty in education for Kibera children. The majority of the informal schools is related to NGOs, CBOs and religious institutions (Map Kibera, 2010b; UN Habitat, 2020).

The first problem for these informal schools, is that they do not have sufficient space and are not adequately equipped to national education standards. Secondly, the teachers are mostly untrained and underpaid, unable to provide qualitative education. This is exacerbated by the third point, that informal schools are less strict about age regulations and often combine different age groups (Map Kibera, 2010b).

Teachers at informal schools need strong motivation to help the children. The payment is usually lower than in other teaching jobs. One teacher explained, that he still wants to do this job in order to give back to the community. There is a strong sense that education is essential to be given a fair chance in life. But still, some children are not attending school. They need to help their parents or there is no money left to send them to school. Some NGOs focus on education, but it is not enough to provide for everyone and the government is not present to help out (local residents, p.c., 2025).

Social

There are numerous community groups and most villages have community leaders. For them to gather and to have open meetings, there need to be community halls. There are several, but they are generally very cramped and unable to comfortably accommodate gatherings. Also public space is very scarce in Kibera and places to sit together are absent (UN Habitat, 2020). Consequently, people meet each other in their own homes, making it hard to expand networks.

There are two other types of places where people socialise: commercial spaces and religious institutions. The main access roads are where most businesses and shops are located, apart from the markets. These are also the places where most people are active by day. In most villages, these wider streets are the only spaces where children can play. Other spaces are too narrow and cramped. They also provide more social safety than in the alleys (J. Kirika; local residents, p.c., 2025).

Religious institutions generally use their space for multiple functions. The first one being religious gatherings, the other ones providing a community space and providing education. There are numerous different types of churches. And so, one can find multiple churches next to each other. Muslims are a minority, but there are also a couple of mosques. The Muslims are less split up in religious directions than the Christians (local residents, p.c., 2025).

Other

There are very few amenities for finances. Banks and ATMs can only be found in the formal parts of the settlement. In the informal parts, there are a few bank agents, many of which are combined with other types of businesses. They are able to provide some financial services, such as withdrawals and deposits. They make banking a little more easier for people and create extra revenue for business owners (Chepkwony, 2013).

Finally, there are police posts and a few chief's offices. They are an attempt by the government to increase safety, but they seem rather powerless. Their main function is to increase perceived safety. Some posts have been placed in locations with high crime rates. The police posts provide better possibilities for surveillance and quicker response to crime. Yet, police officers are not really trusted by Kibera residents, because of high corruption rates (local residents, p.c., 2025).

Figure 106: Commercial hotspots in Nairobi.

5.2

Socio-Economic Analysis

5.2.1 Introduction

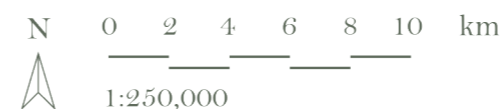
The second part of the analysis dives deeper into the socio-economic characteristics of Kenya, Nairobi and Kibera. The first sub-chapter describes the economic features in Kenya on various scales. This includes the commercial zones, driving sectors and unemployment issues, followed by a closer look on socio-economic conditions in Kibera, being different from other parts of Nairobi and Kenya. It continues with an elaboration on the effect of aid programmes on the Kenyan economy, which play a significant role in most African economies. Then, in the exploration of the more social realm, follows a description of the existence and interactions of the present tribes. Finally, this part of the analysis is concluded with an introduction into the manifestations of the community and the functioning of the community, while making a connection to the theory, discussed in chapter 4.

5.2.2 Economic Features

Fragmentation and commercial hubs

The city of Nairobi is marked by fragmentation (Smith, 2022) and this is visible in its geographical lay-out. It is shaped by the segregation strategy by the British and the rapid expansions after independence (Obudho, 1997). The more affluent parts of the city are typically located in the former European areas, while the poorer parts are in the former Asian and African quarters. The latter parts are generally also the most densely populated locations, apart from the slums (Ren et al., 2020). This is, because the European settlers were custom to occupying large stretches of land to build their homes. In the present, these areas are still the more spacious neighbourhoods with generally more vegetation. The labourer quarters on the other hand, are much more densely built. They were designated to labourers from the Asian colonies and others to occasional African workers (K'Akuma & Olima, 2007). With the expansion of the city boundaries, (usually poor) newcomers started to settle further away from the city centre, especially in the east. Generally, informal settlements emerged in proximity of the richer parts, because this is where informal settlers could find jobs (Martha Otieno, p.c., 2025).

Nowadays, the most commercial activity of the city (fig. 106) can be found in the former Asian and African quarters and the CBD, although some new centres, like Kilimani, have emerged. The district of Upper Hill has become a hotspot for office buildings. The industrial area, that was originally



planned next to the railway station, has expanded towards the east, following the railway line (Owuor & Mwiturubani, 2022). It is logical to find, that the most commercial activity is present in places with higher population densities, because they have the highest demand for goods and services (Martha Otieno, p.c., 2025).

Already in the times of the protectorate, the Asian workers founded a bazaar in their neighbourhood. Soon, another was added. These places have expanded and are still shopping areas in the CBD of today. Accordingly, the area of the CBD was already marked a commercial area in the master plan of 1948 (Owuor & Mwiturubani, 2022). But the districts with the most significant boom of the attraction of businesses have been the former Asian quarters. Places like Eastleigh and Westlands, by 1909 named Parklands, have transformed into new urban centres with lots of commercial activity. Whereas Eastleigh is popular for retail shops with products for daily usage, Westlands is characterised by more mixed commercial activity with local and international entrepreneurs, while both districts are known for their business-friendly environments (Obudho, 1997; RG Sacco, 2025).

Employment

The Kenyan economy reflects the increase of businesses. Kenya has the largest economy in the EAC. This is partly due to a strong private sector and its location as a transport hub, while having proven to be dynamic in moving with new trends. It has been appealing for the development of digital technology and ICT-services (DTDA, 2025). These characteristics are a cause of why the economic output of Kenya is slowly shifting from agriculture to services (World Bank, 2023). Next to agriculture, accounting for about one third of the working population, other big sectors are transport & storage, manufacturing, real estate and financing (Stats Kenya, 2024; World Bank Open Data, 2025). But the largest driver of economic output over the decade up to 2021 was the services sector, covering 70% of the increase. A large part of the services were in ICT-services, technical services, professional services and financial services (World Bank, 2023).

Although decreasing in share over the decades, agriculture remains the largest sector in the country (World Bank Open Data, 2025). Unfortunately, this is also correlated with the poorest areas of Kenya. The sector is very

vulnerable to climate change and over the last decade, yields have been increasingly affected by the changing conditions. In rural areas, many people depend on agriculture (Ariemba, n.d.). In the major cities, like Mombasa and Nairobi, there is a much larger middle-income group. They are predominantly active in other sectors, namely, education, manufacturing, retail, financing and construction (Owino et al., 2023). Meanwhile, education is converting towards other realms. The most demanded skills of today's Kenya are in IT, marketing, medicine and engineering (Talmage-Rostron, 2023). Nairobi markets itself as the main hub for digital technology and financing of East-Africa. Therefore, these subjects are popular with students (local residents, p.c., 2025).

However, such education intents to boost the development of the formal labour market for future generations. But the majority of the employable population works in the informal market. It is estimated, that over eighty percent work informally and that this share is increasing more rapidly than the formal sector. This has an effect on the national economic development, because formal employment is crucial for poverty reduction and socio-economic development. The size of the group of middle-income earners is related to the GDP. Although the group is rather small, consisting of about twenty three percent of the formally employed, they account for a large part of the tax revenue, which is necessary for further development. Only three percent is considered top-earners and the rest belongs to the group of low income (Owino et al., 2023).

The increase of informal work instead of formal work is a big issue. Generally, formal workers are more productive, higher paid and better protected. These conditions lead to more stability for employees and employers, resulting in stronger socio-economic development (Puerta, 2024). There are many informal jobs, that could be turned into formal jobs, with the right regulations. The transformation of informality to formality could help to impose a minimum wage, protect employees from total financial collapse at disasters and promote collaboration between businesses with strong foundations (Titus Kaloki, p.c., 2025). There are some barriers to the creation of more formal jobs. In the first place, the creation of new, formal, productive firms is low, because there are some hindering trading policies and business environment components. Secondly, such productive firms do not necessarily create more formal jobs. And thirdly, the

skills of possible employees often do not match the needs of the firms (Puerta, 2024). Because many people work informal jobs, the state misses a lot of tax revenue, that could be used to improve public services (Titus Kaloki, p.c., 2025).

Another great economic issue is the high unemployment rates. The national rate of unemployment is around thirteen percent (Federation of Kenya Employers, 2024). The rate for the youth (15-34 years old) is much higher, at around thirty five percent. Each year, about one million people are added to this unemployed group. Seventy five percent of the Kenyan population is under thirty five years old (Kingdom of the Netherlands, 2023). The bigger cities deal with larger unemployed groups. The estimated rate in Nairobi is up to sixty percent. Many people find, that formal jobs are out of reach without secondary

or tertiary education and even then hard to attain. For women it is even harder to find a suiting and well-paying job. They are often paid less than their male equals (Ariemba, n.d.). But numbers about unemployment might not be exactly correct, because the informal sector is not mapped well. Many people might in fact be underemployed, instead of unemployed. This is mainly due to the fact, that people will try to make money in other ways, i.e. informally, in order to get by (Titus Kaloki, p.c., 2025). In addition to this, the numbers of child labour might also be much higher. The Kenya National Bureau of Statistics (KNBS) estimates the national rate at 8,5%, coming down to around 1,3 million children. But the KNBS does not have a good view on the large group of informally employed families, especially in rural areas, where poverty rates are higher (DTDA, 2025).

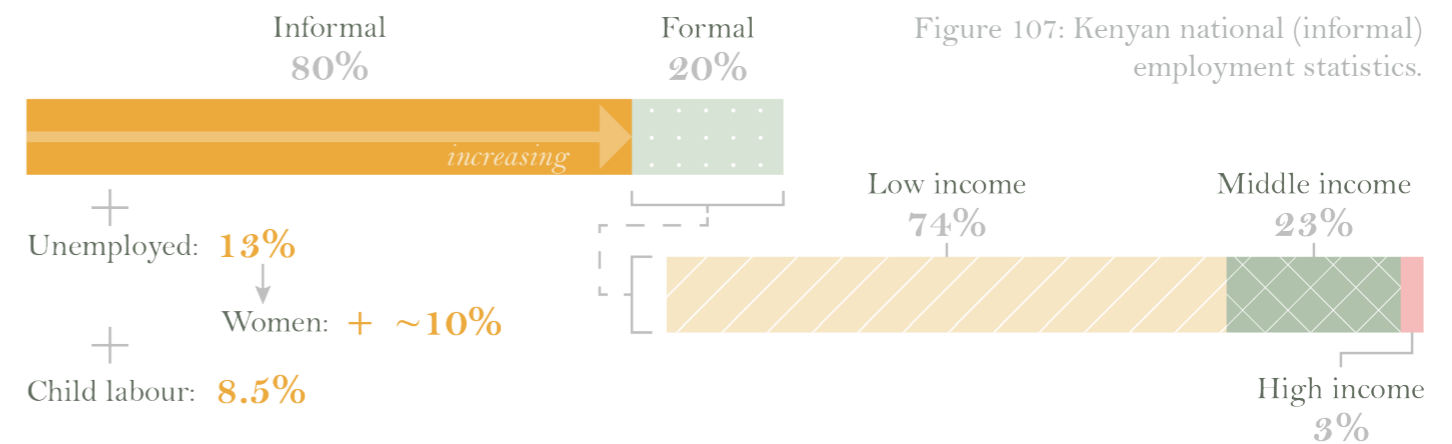


Figure 108: Urban development in Westlands, Nairobi.



Finally, the growing services sector is especially beneficial for a limited number of people. Those in the top of the booming IT and finances service providers are able to increase their earnings rapidly, but most of the jobs created are for low-skilled employees and many of these jobs have little potential to boost their income. Therefore, the growth of the services sector is causing the economic inequality to increase. It is a reason why the majority of the people is not able to benefit from the growing economy of Kenya (World Bank, 2023).

Kibera's economy

In Kibera, the economy can be seen as a system, that functions separately from the county-level and national systems. The majority earn a living informally or do so next to their formal job, which are almost exclusively low paying jobs (Martha Otieno, p.c., 2025). It is estimated, that half of the population is unemployed (Shirodkar, 2024). But it should be noted, that people in the informal settlements are not monitored well and that their contribution to the economy is hardly mapped. It is very plausible, that many unemployed people earn an income on the informal market. Around seventy percent of Kibera's buildings would also serve a commercial use (Titus Kaloki, p.c., 2025). Moreover, formal employment is usually out of reach for informal settlers, because there is a lot of competition. This is already a huge issue with formal dwellers, but for the informal population it is even more difficult to find a job. They lack the opportunities, like good education and housing, to succeed and compete. As a result, the unemployment, especially with youth,

is increasing and causing more inequality (Martha Otieno, p.c., 2025).

The informal market is the main form of economic activity and the locals depend on the informal market in order to survive. An important aspect of the informal market is, that prices are low and that quantities can be small. Such low prices cannot be found outside of the informal settlements. The prices are low, because businesses mostly do not comply with licences and regulations. This goes beyond the selling of basic goods and services. It also applies to other essential services, such as house rental, connection to electricity and the supply of water and sanitation services. In addition, salespeople in Kibera offer goods in very small quantities, for instance a cup of rice instead of the entire box that one would buy in a store. They know, that their customers often cannot afford an entire box, because they only earn small amounts of money per day and are unable to save. Sellers can do business this way, because they can count on a large customer base and they cater to the needs of the poor population. The formal market is out of reach for the majority (Titus Kaloki; Martha Otieno; Shirley Chebet, p.c., 2025).

But on the other hand, the margins in the informal market are very small. This is a reason why they are not able to develop and expand their businesses. Even when they manage to save a little, it can all be depleted in a day, when facing misfortunes. Because of their living conditions, informal settlers are much more vulnerable to adversity than their fellow Nairobi citizens. Additionally, there is little demand for higher end products (Martha Otieno, p.c., 2025).

This economy of low costs, low prices

Figure 109: The role of the markets in Kibera.

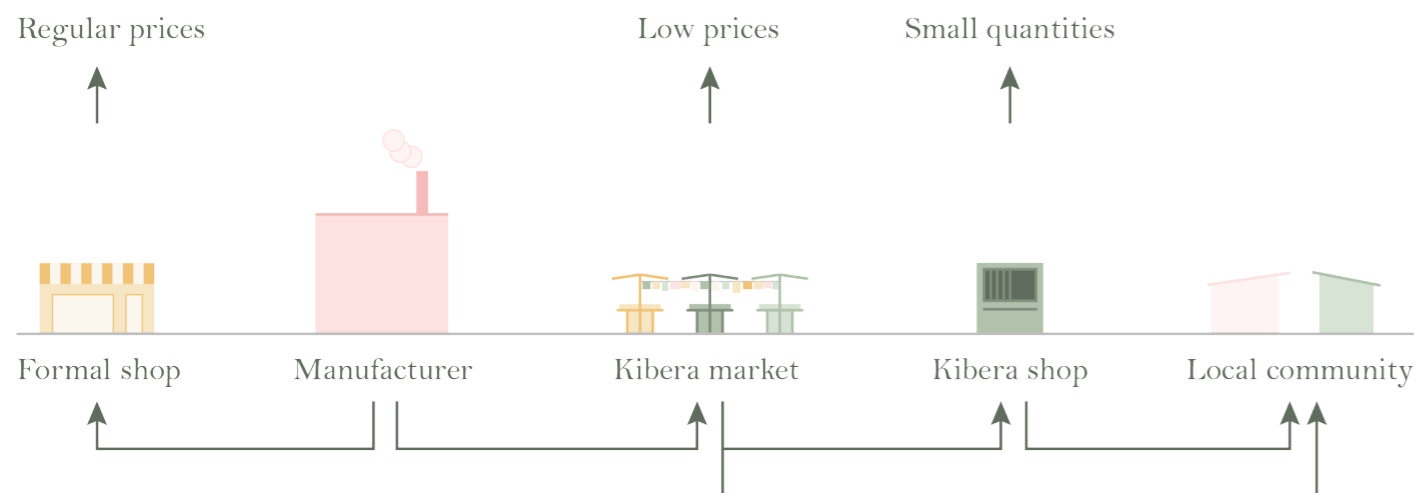
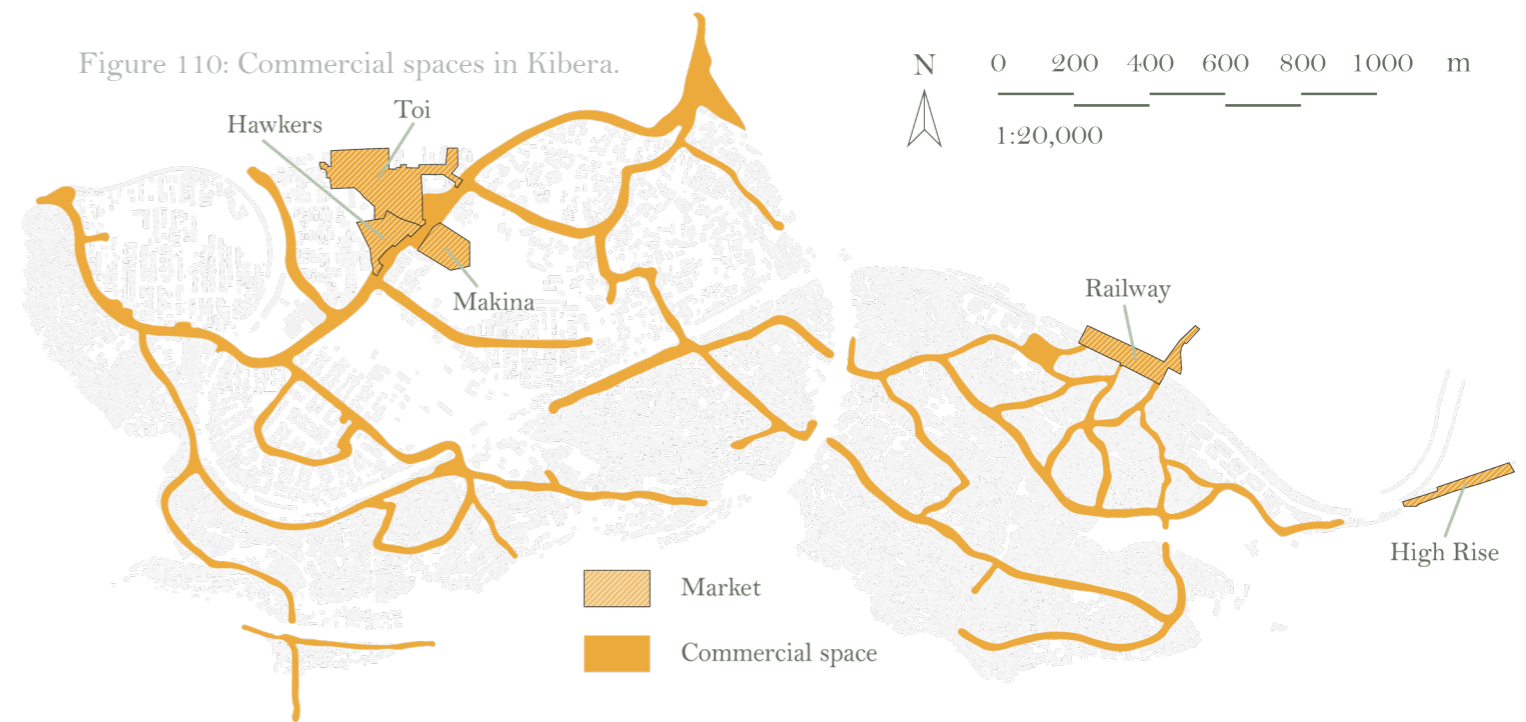


Figure 110: Commercial spaces in Kibera.



and small margins is keeping the people inside the informal settlement. Kibera particularly, is located relatively close to the city centre and income opportunities, but in contrast to other neighbourhoods in this range, the costs of living are low. People choose poor conditions with low costs over better conditions with higher costs, even the small share that could afford it. The vast majority is unable to earn enough to live outside of Kibera in this proximity, so they spend their extra income on better schooling and food. Another strong reason to stay in Kibera, is the easy access to free aid programmes, which help to support themselves (Martha Otieno, p.c., 2025).

Spatially, the economy of Kibera functions with a few markets and many small businesses. Sales are based on visibility and verbal networks. Therefore, it is important for businesses to be located on the busiest places. In recent years, a few wide asphalted roads have been constructed right across the neighbourhoods of Kibera. These roads have quickly turned into the main commercial spaces. There are still many shops to be found off of these roads, but they are often not doing as well (James Kirika; local residents, p.c., 2025). The markets have existed for longer, of which Toi market is the most important one, expanded with Hawkiers market. The markets allow the salespeople to cooperate and increase the margins of their sales and it makes them more resistant to eradication. The unification helps them to organise better and protect their businesses from adversity (Cardosi et al., 2025). It helped them to get governmental support after the last fire, that demolished most of Toi market (UN Habitat, 2020).

The markets play a key role in the local

economy (fig. 109). The marketeers can buy in bulk from manufacturers and they do not comply to regulations, so they can offer lower prices. Formal shops also buy from the manufacturers, but they usually have higher expenses, so their prices are higher. Kibera residents and shop owners buy from the markets. The shops function as local dispensers of the market products. They are usually a little bit more expensive, but they are often the more convenient option for residents. They are close to their homes and they often offer very small amounts of the products. This way they cater to the local communities. Because of their cheap goods, the markets are also visited by people from formal neighbourhoods (Martha Otieno; Titus Kaloki; James Kirika; local residents, p.c., 2025).

And yet, even though the people of informal settlements are large in numbers and they create lots of economic activity, their contribution to the Kenyan economy is very little taken into consideration. Still, informal settlers are a large consumer of transport and goods and they provide a lot of labour in the city. Many affluent citizens depend on the work that these people do. And on the other side, the poor majority is the main driver for the rising demand of urban services, pushing up the prices and economic input. A great opportunity for economic development of the city would be taking the informal economy into account and provide it with support, so they could pay taxes in return, which could lead to better public investments with focus on the needs of Nairobi's people, which are needed for development. But instead, investments are mainly focused on smoothing the formal, because they are seen as more valuable (Titus Kaloki, 2025).

5.2.3 Aid Dependency

Repeating the Marshall Plan

Since the 1970's, the African continent started to receive a lot of aid money from Western countries, and Kenya is no exception. But during this period, inequality and poverty have only increased, so evidently, this financial aid is not benefitting the country's economic development. Instead of helping the African people, aid money has actually made them poorer (The Invisible Hand, 2025).

The idea to scale up the foreign aid programmes was sparked by the success of the Marshall Plan or European Recovery Programme (ERP), initiated in 1948 after WWII. The ERP was a substantial financial aid programme, including the provision of over thirteen billion US dollars to sixteen West-European countries over the course of four years. The intention of the programme was to help rebuild the devastated European economies, which was motivated by humanitarian, but especially political and economic incentives. The political motivation was to prevent the West-European countries from turning to the luring communism of the East-European countries. The economic motivation was, that the USA needed strong partners to promote trade. European businesses lacked the economic capital to support the US export market. So, improved European collaboration and financially stronger businesses could increase Europe's import of American products (Historiek, 2025).

This plan turned out very beneficial for the European countries and the USA. Therefore,

it was logical to think, that the same could work for African countries, which in that period were also a lot poorer than the Western countries. It was thought, that the main reason for the African poverty was simply a lack of money. With similar motivations, which are politically the contestation of the Western capitalism versus the Soviet communism, and economically new trade partners with an abundance of valuable natural resources in Africa, monetary aid increased quickly during the seventies and the following decades. The end of the Cold War in the early nineties consequently resulted in a decline of foreign aid. But at the end of the 2000s the amount was already exceeded again. Even though the attitude towards and shape of aid programmes have changed over the decades, they have not been able to deliver the promised development. Instead, such programmes have made African countries extremely aid-dependent, with large percentages of their budget consisting of foreign money. The two foremost reasons for this are the massive amount of money sent and the unlimited time it is provided in, which differs from the ERP, being restricted by a fixed amount and period (Stein, 2009; Hussain, 2014; The Invisible Hand, 2025). There is no evidence, that such monetary aid programmes are beneficial for development on the long-term (Flahaux & De Haas, 2016).

Aid programme failure

There are seven main reasons to be explained as to why aid money to Africa, and Kenya, leads to dependency and fails to contribute to economic development.

1. Lack of strong institutions

A big difference between nations like Kenya and post-war Europe, is the stability of their democratic institutions. They are needed to provide fair distribution of tax money, correct law enforcement and capital gain for the collective. Such institutions had been build up for centuries in Europe, but were to be reinvented in African states, who were to organise themselves after independence from colonial rulers. A problematic characteristic of new state administrations is, that they tend to strengthen the administration itself, and not the people (Titus Kaloki, p.c., 2025; The Invisible Hand, 2025). Additionally, the growing cities in Africa lack the support by institutions, that were indispensable for the spurt of industrialised European cities to take care of the new workers, for instance by providing labour jurisdiction, health care, solid housing and preventive hygiene measurements (Hill et al., 2014). And on top of that, the neoliberal policies further erode the public sector and governance institutions to favour the free market. Strong institutions ensure, that power and money are benefitting the majority, instead just the elite, and are essential to build stability. But with Kenya's neoliberal governance, investments made in the country are predominantly benefitting the few rich market leaders (Baffoe, 2023).

2. Corruption

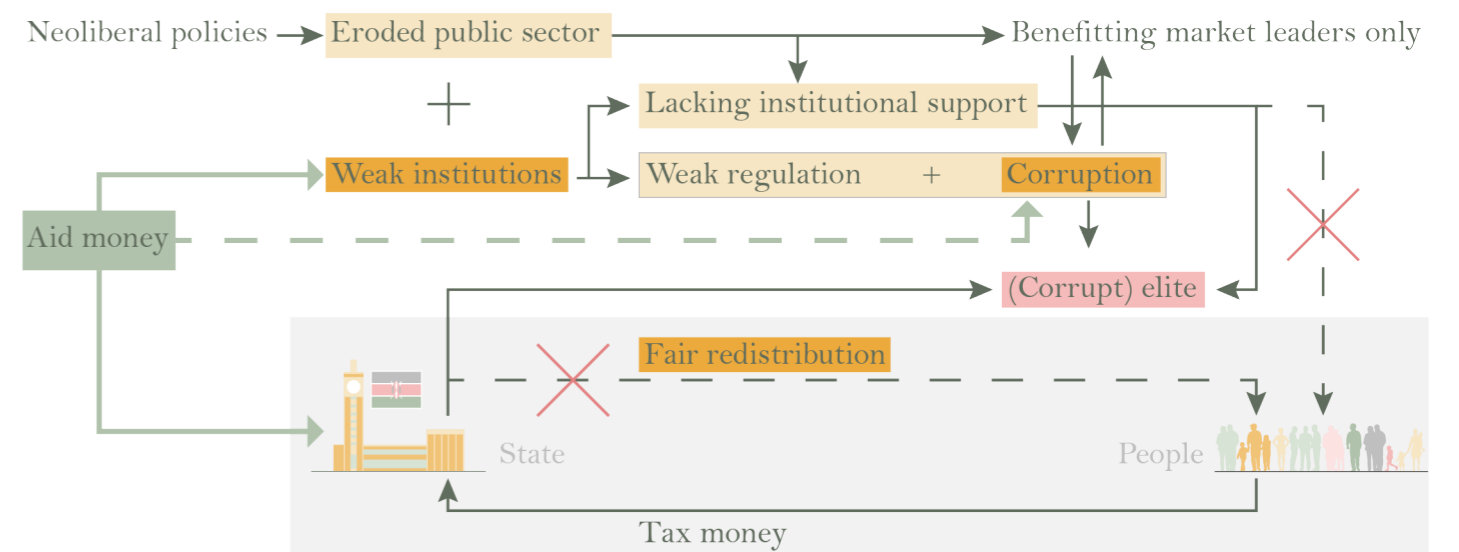
Because of this favouritism, weak institutions are easily paired with corruption. They serve to enhance the positions of the administration and rich elite. A considerable amount of aid money received by institutions goes directly to the hands of the powerful or is used to benefit them. Those in power

form corrupt alliances to create regulations that benefit themselves. In this way, the aid money keeps the corrupt actors strong (Baffoe, 2023). Corruption is so embedded in the Kenyan society, that it is difficult for people to have trust in collaboration. Meanwhile, this trust in partner actors is essential for development (Titus Kaloki, p.c., 2025). Many projects have been terminated, because of cases of corruption, so a lot of investments have been wasted (Kimari & Kimari, 2022).

3. Failed redistribution

In addition to the lack of strong institutions and the following corruption, the aid money also results in failed redistribution. The main reason for this, is that with aid money, the state is no longer dependant on its people for income and therefore loses its accountability to its people. Because of the excessive amount and unlimitedness of the African aid programmes (Powell, 2022), the state is able to abstain from fair distribution of the state resources. In a well-functioning democracy the state needs to provide its people with the fair redistribution of their tax payment in the form of services, in order to keep the people's cooperation. If the state fails to do this, the people will protest by no longer paying taxes, resulting in a deficiency in the state's budget. In the case of a state with excessive aid, the state is able to repair this deficiency with the aid money, which is then used to benefit those in power, instead of used for the development of the country (Mitra et al., 2017; The Invisible Hand, 2025). In such manner, the aid programmes feed the corruption and the infirmity of institutions in the public sector, and it leaves the people with very little power to coerce change.

Figure 111: Reason 1, 2 & 3 of failed aid delivery.



4. Spending inefficiency

Overall, a large part of the aid money never reaches the people who actually need it. If not stolen along the way by corrupt officials, it is often wasted on matter, that are part of the process of giving aid. It is used for paying the salaries and covering costs of expensive professionals and the use of logistics, and it is often simply not managed well. Since the aid comes from foreign countries, there is already a lot of money spent on covering costs from within the donating country alone, which usually deal with much higher costs than the intended country, but the budgeting is typically based on the receiving country's costs. That is where a lot of money gets lost (Titus Kaloki, p.c., 2025).

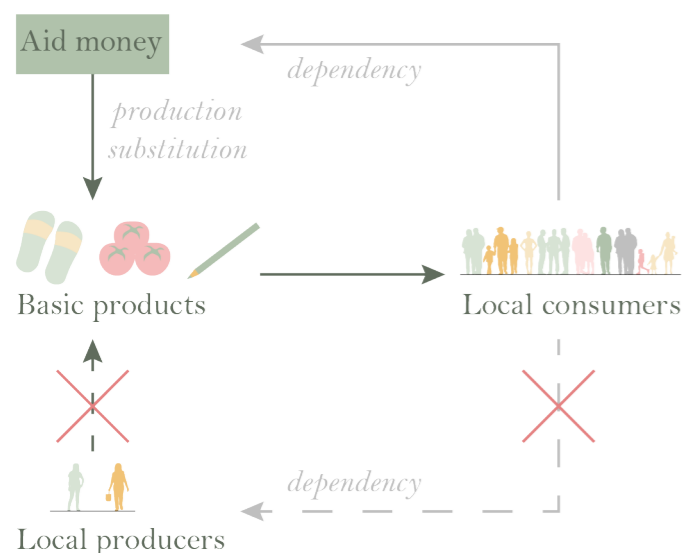
5. Lacking incentive for efficiency

On top of that, there is no strong accountability of the donors towards the recipients. The two groups are usually not known to each other, especially when aid happens through governments. Locally, beneficiaries would demand change in a project from the executors, when the project is not executed well. But in the case of foreign donations, there is little the beneficiaries can demand from donors. Therefore, there is a lack of incentives for the donors to improve the efficiency and execution of aid programmes, even when they are not achieving the imagined goals (The Invisible Hand, 2025).

6. Substitution of local production

Then, with the part of financial aid that actually reaches the poor in meeting their needs, though with good intentions, the money is used to provide goods and services to the people, but while in competition with local productions. The products

Figure 112: Reason 6 of failed aid delivery.



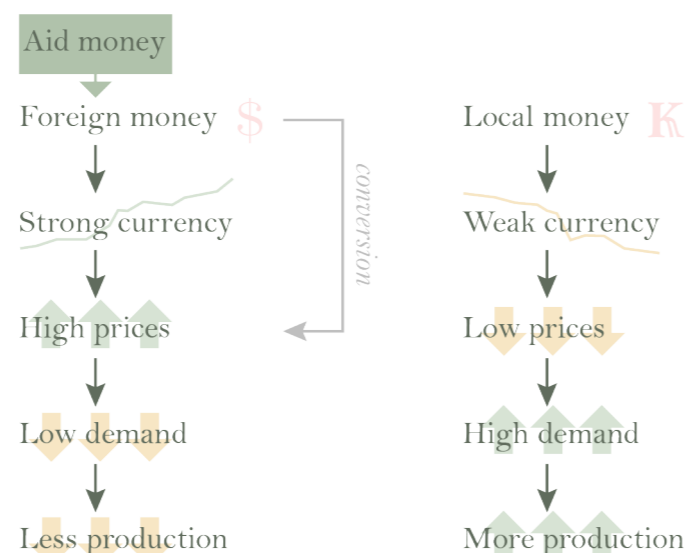
donated by aid organisations, such as clothes and food, are unfair competition with local businesses. Their production is no longer needed to meet the needs of their local customers, so they get driven out of the market. Once the local businesses are gone, the local population becomes dependent on the aid programmes (Powell, 2022). This is visible in Kibera's market, which lacks well-paying manufacturing, like it has been a successful element of the development of Asian countries over the recent decades. The competition from aid organisations makes industrialisation in the country difficult and therefore the necessary export to gain economic capital is small (Titus Kaloki; Martha Otieno, p.c., 2025).

7. Currency use

Lastly, connected to the small export is the use of weaker local currencies versus high-value currencies, typically used by aid-giving countries. Import is more appealing from countries with a weaker currency, because it keeps the prices lower. Thus, the use of a stronger currency hinders the increase of the demand for local products and the development of local businesses. Additionally, in the process of the currency conversion of aid money, the high-value currency becomes more expensive and therefore products from aid-receiving countries do as well. This impedes the growth of Kenyan sales on the global market (The Invisible Hand, 2025).

It becomes clear from this list, that financial aid programmes are not particularly helpful for economic development as a long-term plan and seem to rather impede progress (Powell, 2022).

Figure 113: Reason 7 of failed aid delivery.



However, as a short-term project, they are able to kick-start processes, that can contribute to sustainable development. Money is needed to finance infrastructure construction projects or to overcome natural disasters (Titus Kaloki, p.c., 2025). But this aid should not continue for too long, nor should it substitute local production. Otherwise, aid-receiving countries will become dependent on the aid. So, the extra money can give temporary relief, but is not a long-term solution (Ijaka, 2024).

Dependency

The dependency on aid takes shape in various ways. Firstly, when aid causes local producers to close shop, the residents become dependent on the donors for their basic products, instead of being able to choose for local products. They are not able to buy from other sellers, because those are generally too expensive. So, that is when they depend on aid programmes to meet their needs (Shirley Chebet, p.c., 2025).

Alternatively, the state itself is also dependent on foreign aid. The part of the state budget, that is not being paid by a healthy workforce through taxes, is being filled with aid money. Therefore, the state is dependent on this extra money to keep being able to execute its administrative functions (The Invisible Hand, 2025). Simultaneously, the residents of marginalised communities are dependent on the use of power by state officials. The aid money provided can easily lead to cases of corruption and corruption is oftentimes a cause for the collapse of development projects (Mitra et al., 2017). Moreover, those in power are able in their corrupt ways to manipulate outcomes of local politics, which renders the poor majority voiceless and even more dependent on the powerful (James Kirika, p.c., 2025).

Finally, there is the interdependency with NGOs. The NGOs are often the local providers of aid or are cooperating with the government to execute projects. They also cause the substitution of local businesses, by for instance giving food and school material, that would otherwise be sold by locals. But to a larger extent, NGOs have caused the local residents to be dependent on their donations. The free money has become a considerable amount of their income. Residents move from NGO to NGO to get benefits. They care little about the training they are offered, but more about the compensation that is paired with it. And they are frequently participating in multiple programmes at once,

without the NGOs knowing. The opportunity to qualify for free aid has become a significant reason for people to stay in Kibera, beside the cheap living expenses and proximity to the city centre. This appearance of NGOs changed the people's attitudes and created a culture of beggars. Some even believe it is their right to be helped and they are aware of the NGOs' dependency as well (Martha Otieno, p.c., 2025).

Because just like the people depend on the NGOs for meeting their basic needs, the NGOs also depend on the misfortune of the poor in order to stay relevant (Shirley Chebet, p.c., 2025). Some local beneficiaries would say: "If I move, who will they help? They need someone to help." (Martha Otieno, p.c., 2025). This expectation makes, that some NGOs are not in Kibera for the right reasons (Shirley Chebet, p.c., 2025). It is a delicate phenomenon in informal settlements, that the organisations that should represent human compassion, might also be corrupt and fraudulent offenders. Yet, it is remarkable, that with over five hundred NGOs on a population between 200,000 and one million, the situation in Kibera is only worsening and the money spent seems to be wasted. NGOs profit from the deteriorating settlement and it is suspected, that many are just a façade for criminal activity (Ijaka, 2024). Such NGOs would run short programmes to justify all the donations they are receiving, but they deliver little change to the communities (Martha Otieno, p.c., 2025).

Therefore, the more successful organisations focus on empowerment and construction, instead of free material, and local involvement. Aid programmes should aim for independency, not the supply of goods (Mukanga, 2022). This involves training and co-creation, so the people will know how to maintain and improve their environment and businesses themselves (Shirley Chebet; Titus Kaloki; Human Needs Project, p.c., 2025). In addition, the attitude of dependency has to change towards self-entrepreneurship for people to start developing sustainably (Powell, 2022; Martha Otieno, p.c., 2025).

5.2.4 Tribes

Similar to many African nations, socio-economic and political features of Kenya are embedded in the tribal culture. The number of tribes usually mentioned by government officials is forty two and over, but even this number is politically charged. Only once in the history the census came to forty two separate tribes, but the opaqueness around the number benefits political manipulation, when discussing the inclusion and representation of minorities (Balaton-Chrimes, 2021).

Language families

Although the unification of the people on Kenyan land by the establishment of the Kenyan state has created a unified Kenyan identity and culture, and will continue to enhance this in the future (Harari, 2015), the tribes still influence social interactions between people, the expressions of culture, political power and economic advantages (Balaton-Chrimes, 2021; J. Kirika; T. Kaloki; local residents, p.c., 2025). The main classification of different tribes is based on language. The tribes are divided into three language groups, which are Bantu, Nilote and Cushite. Then they are further divided based on topographical distribution (MEACARD, n.d.), which is not related to the state borders, that the colonisers created. This entails, that ethnic groups were separated by the colony borders (Africa Facts Zone, 2025). All three main language groups also come from three of five different African language families (Bendor-Samuel, 2025).

The Bantu people originated from present-

day Nigeria and Cameroon and spread all over Sub-Saharan Africa and also inhabited the more fertile southern half of Kenya. The Bantu language stems from the Niger-Congo family. While other branches spread westward, Bantu went east. Over the course of millennia the people and language split in hundreds of new groups. The much-spoken Swahili, which is a lingua franca and does not belong to a specific tribe, is also a Bantu language (Bendor-Samuel, 2025). The Bantu tribes are divided into Western, Central and Coastal tribes (Hollingsworth, n.d.).

Then, Nilotic stems from the Nilo-Saharan family, that spread through central and eastern Africa. The Nilotic groups took south-east, from current South-Sudan to Tanzania. It is the largest Nilo-Saharan language in East-Africa. In Kenya, the Nilotic tribes inhabited the western part, from north to south. The famous Maasai are part of the Nilotic group (Goodman & Dimmendaal, 2017). The three geographical divisions of the Nilote are the Plain, Highland and Lake River tribes (Hollingsworth, n.d.).

Finally, the Cushite are connected to the Horn of Africa. The Cushitic languages belong to the Afro-Asiatic family. This family covered most of North-Africa and the Horn of Africa. These peoples moved south into Kenya and followed the Tana River to the ocean to turn north along the coast again, covering the entire Somali peninsula. The Cushitic tribes are characterised by Islamic beliefs, highly influenced by the Arab and Persian tradesmen. In addition, they are often marked by nomadic lifestyles in the arid lands (Marcus, 2025). Different from other Cushitic groups, the Somali have always been part of the census of Cushite, but



Figure 114: Distribution of the five language families in Africa. (Based on: Bendor-Samuel, 2025)



Figure 116: The eleven tribes in Kenya with over one million members. (Based on: Stats Kenya, 2025)

Figure 115: Distribution of the three main language groups and dominant tribes in Kenya. (Based on: Isbell, 2022; Hollingsworth, n.d.; Barmoiben Kipkemoi Aarap Korir, 2025)

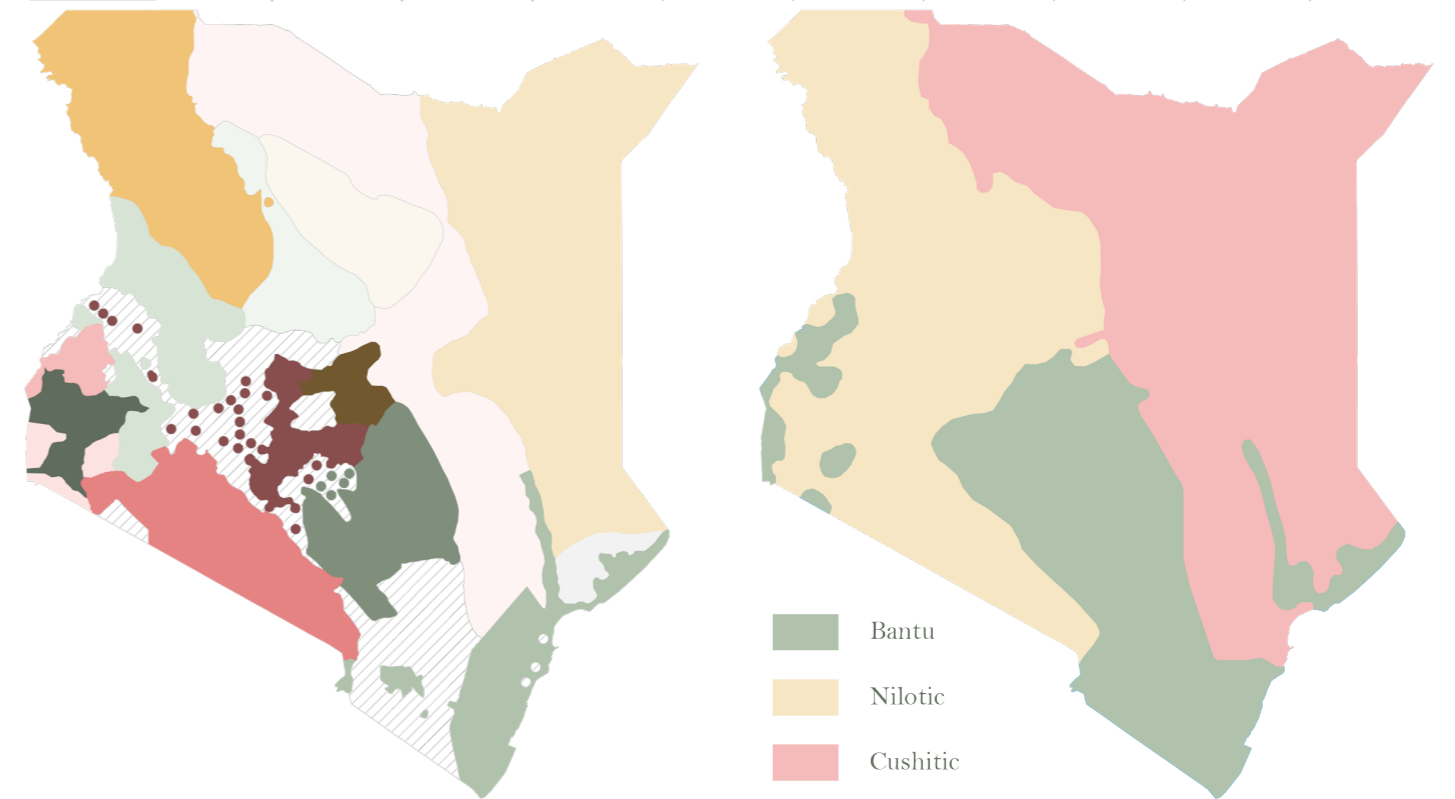
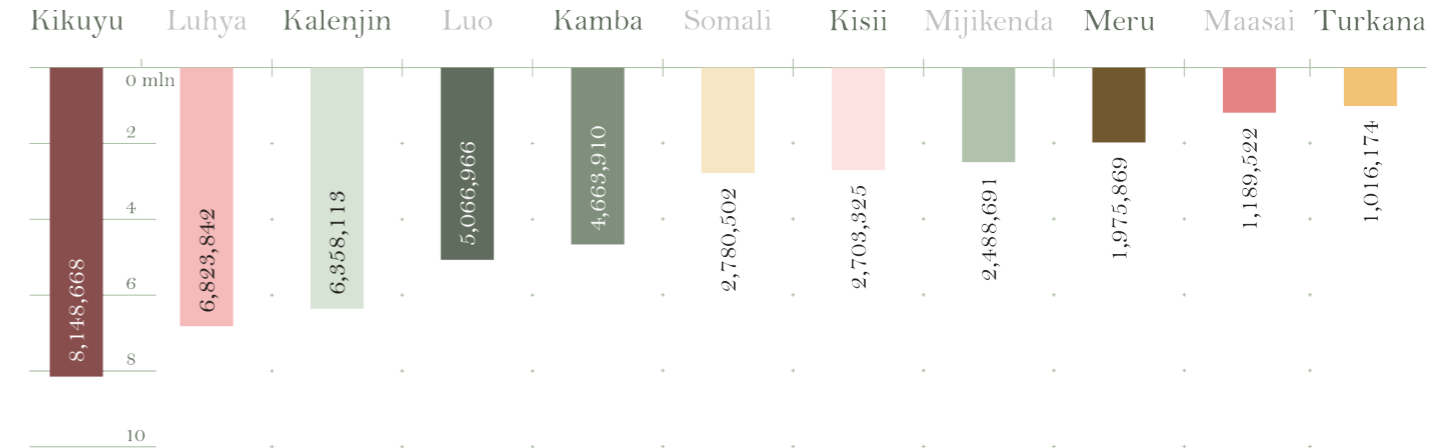
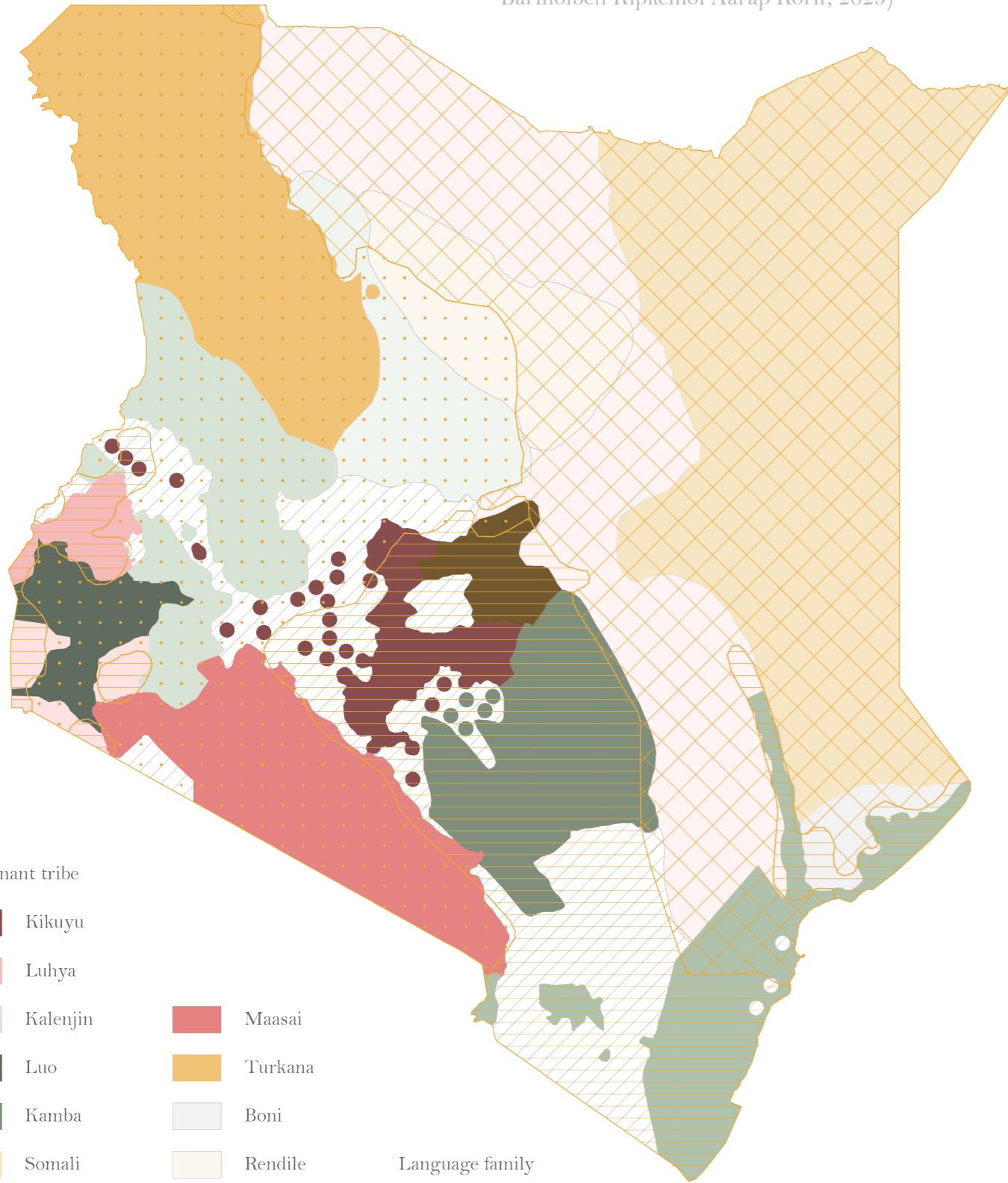


Figure 117: Distribution of dominant tribes in Kenya. (Based on: Isbell, 2022; Hollingsworth, n.d.)

Figure 118: Distribution of the three main language groups in Kenya. (Based on: Barmoiben Kipkemoi Aarap Korir, 2025)

they have been defined under various classifications (Balaton-Chrimes, 2021). They are divided in the Eastern and Southern Cushitic (Hollingsworth, n.d.).

Expressions

In the 2019 census there were eleven tribes, of which members proclaimed themselves belonging to, with over one million members in Kenya (see fig. 116). The Kikuyu were the largest, with over eight million people, followed by Luhya, Kalenjin, Luo and Kamba, with populations between four and seven million. The last considerable groups are the Somali, Kisii, Mijikenda, Meru, Maasai and Turkana, having amounts between one and three million people (Stats Kenya, 2025).

The Bantu people are the largest group in

Kenya, including six of the eleven significantly large tribes, namely: the Kikuyu, Meru, Kamba, Luhya, Kisii and Mijikenda. The other big group is formed by the Nilotic speaking tribes, including the Maasai, Turkana, Kalenjin and Luo. The Cushitic people are much smaller in numbers and only have the Somali as a large tribe (Hollingsworth, n.d.), but yet they are widely spread over the eastern part of the country. This classification of the Bantu, Nilote and Cushite is rather easy, because it is based on the language that they speak. The classification of separate tribes however, is much harder, because this also entails origins, culture, beliefs and feelings of belonging (Balaton-Chrimes, 2021). Within the language families, language differences among tribal languages are much smaller (Bendor-Samuel, 2025). As an example, the Cushitic Somali have been especially confusing. Their people have been

counted as separate tribes in the past, but have also been considered sub-tribes of the larger Somali tribe. Although being different from other Somali, in the 2019 census, many of these people proclaimed themselves part of the Somali, making them one of Kenya's larger tribes (Balaton-Chrimes, 2021).

In addition, tribal distinction will fade over time, because of unification and external cultural influence, while distinction (or the absence of it) can be used to promote ideological mobilisation (Harari, 2015; Balaton-Chrimes, 2021). One of such cultural influences is religion. Kenya is predominantly Christian in the west and Muslim in the east, but the Christian group contains a much larger amount of people. The Cushitic tribes have been highly influenced by the Islamic Arabs, while the stationary Nilotic and Bantu tribes have been converted to Christianity by Western missionaries (Marcus,

2025). The various tribes adhere to their own forms of these religions and found their own churches. The combination of geographical ancestry, mother tongue and religion is indicative for the tribe, that people belong to. These characteristics reveal to other Kenyans, where people originate from and what customs they have (local residents, p.c., 2025).

Political mobilisation

The belonging to a tribe is still a strong element of identity for the Kenyan people. Many counties are shaped after tribe presence (Isbell, 2022) and people feel the most comfortable with people, who speak the same language and have the same cultural customs (local residents, p.c., 2025). Hence it is also a useful tool for political mobilisation. This has two faces. On the one hand, the classification



Figure 119 & 120: Scenes from a traditional Maasai village.

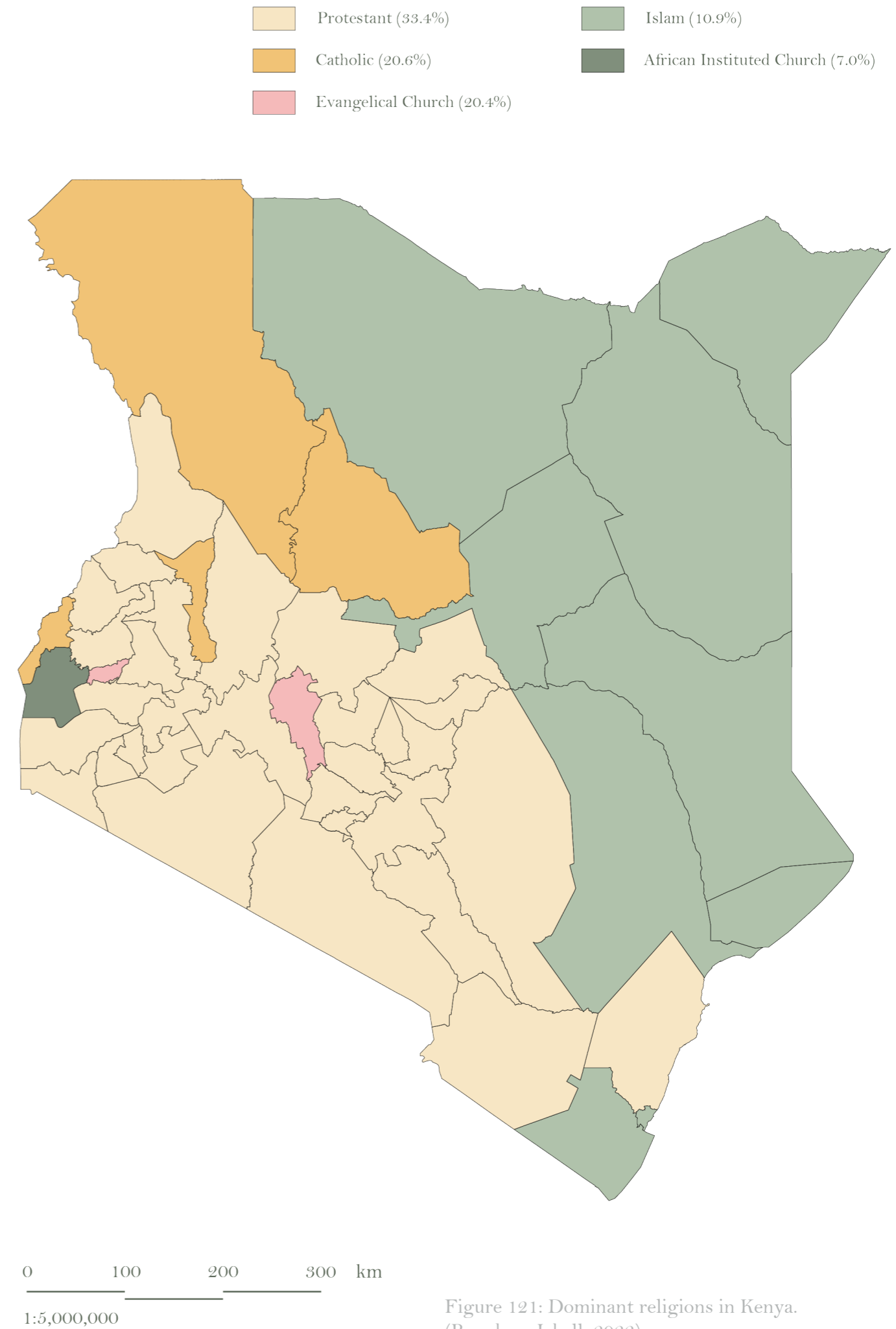


Figure 121: Dominant religions in Kenya. (Based on: Isbell, 2022)

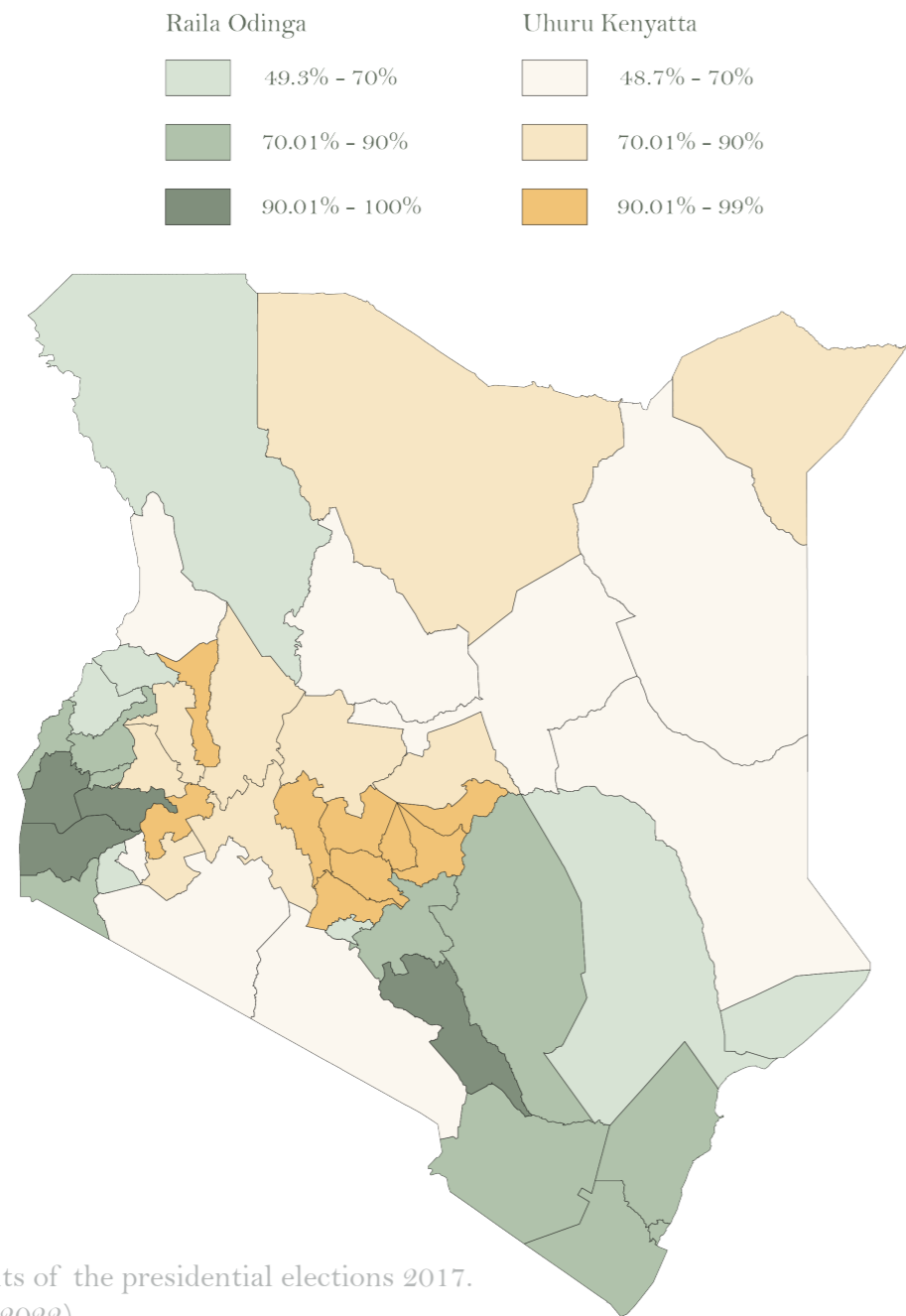


Figure 122: Results of the presidential elections 2017.
(Based on: Isbell, 2022)

and determination of the different tribes can lead to the inclusion of marginalised minorities and the acceptance and comprehension of each other's differences, resulting in the understanding, that all of the tribes together make up the rich Kenyan culture. On the other hand, emphasising the distinctive aspects of the tribes can also induce xenophobia and discrimination towards outsiders. It feeds the perspective of a status quo of 'us' versus 'them' and this leads to tensions between different ethnic groups (Balaton-Chrimes, 2021).

The latter is particularly used during election campaigns. Politicians try to build their support through ethnic lines, seeking alliances with people from similar ethnic groups and exposing the disconnections with people from other groups, especially the tribe of the opposing candidate. And consequently, ethnicity has been a deciding aspect

of elections throughout the entire independent Kenyan history. Exemplary are the results of the presidential elections. Each time, one of the contenders has been of Kikuyu descent. Their largest opponent is usually of another large tribe. Figure 122 and 123 show the results of the two most recent elections. In 2017, the contenders were Uhuru Kenyatta, Kikuyu, and Raila Odinga, Luo. In 2022, Odinga tried again, this time losing to William Ruto, from the Kalenjin tribe. Despite creating an alliance with former president Kenyatta to enhance his tribal support, connecting Bantu with Nilotic people, Ruto turned out to be more persuasive, leaning on the youth and economic issues after Covid-19. Even though, because of the epidemic, the 2022 elections were more focused on national issues, the tribal blocks were still visible in the results on the map (Isbell, 2022).

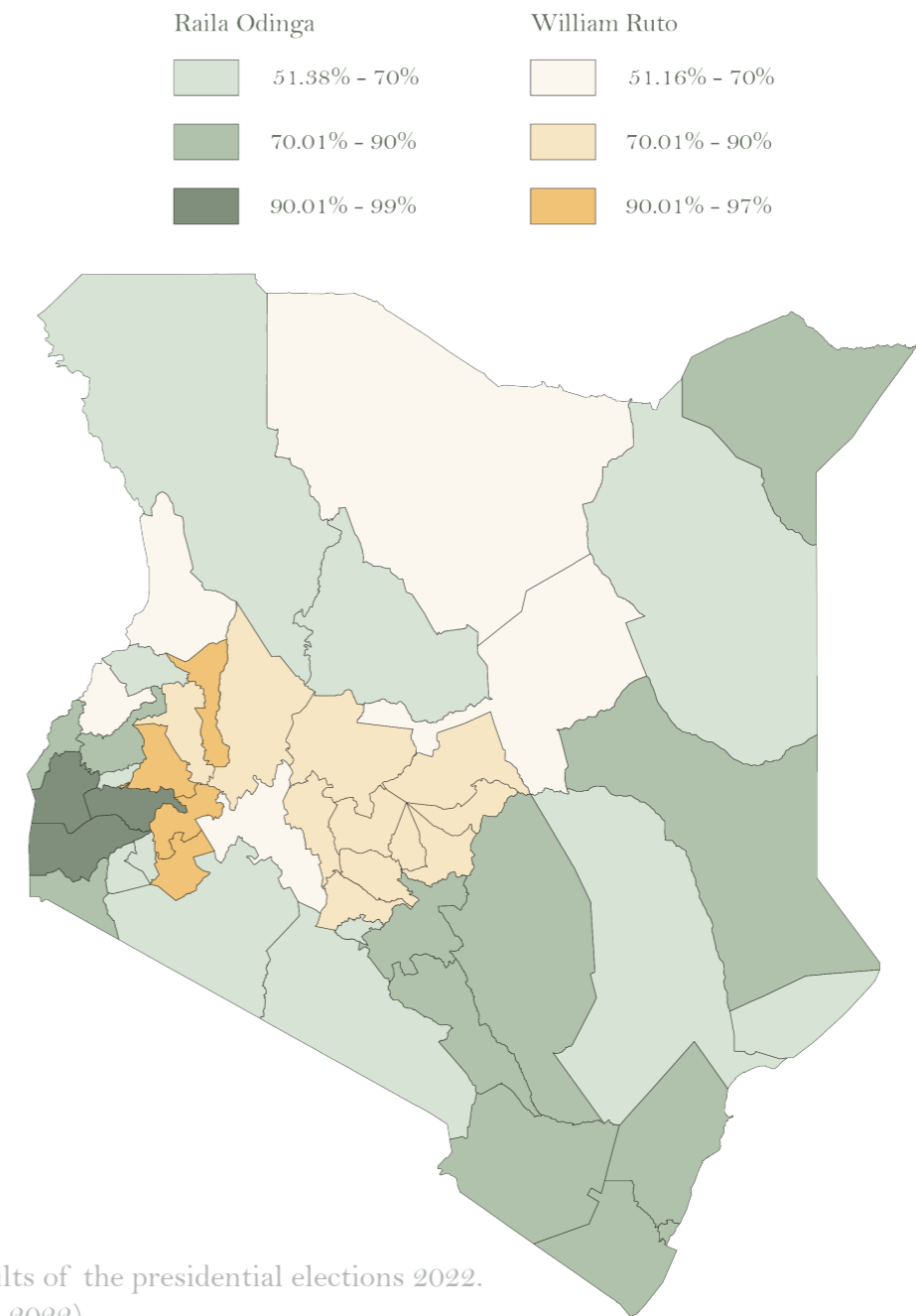


Figure 123: Results of the presidential elections 2022.
(Based on: Isbell, 2022)

Zooming into Kibera, it becomes clear, that political mobilisation has shaped the settlement as well. Certain tribes are present because of the use of political power in the past. The first settlers in 1902 were actually not Kenyan at all. They were the Nubians, stemming from Sudan. Hence, the Nubians are a particularly large group in Kibera, while they are only a small group in Kenya (Wanjiru & Matsubara, 2016). Other sizeable tribes in Kibera are the Luo, Luhya, Kamba, Kikuyu and Kisii (Ayuya et al., 2021). The settling of the foreign tribe and joined land ownership disputes caused tensions between ethnic groups, next to inequality among them (Cooke, 2009). These tensions are the result of political interference (Wanjiru & Matsubara, 2016).

The first act was to officially award the land of Kibera to the Nubian Sudanese soldiers.

But the relationship between the Nubians and the government deteriorated quickly, when social problems started to arise. Meanwhile, the settlement continued to grow with other poor, native Kenyans. Close to the independence, Nubians were despised by the other communities, because they were linked to supporting the British Colonial Government, and therefore lived secluded lives. Nonetheless, the Nubians left their mark on the settlement. The name Kibera, or Kibra in Nubian, is Nubian for a bushy place. And many places and villages still have a Nubian name, typically originating from physical features or social activities. Thereafter, some names have been changed by other tribes into their own native languages (Wanjiru & Matsubara, 2016).

Secondly, after independence, other tribes got land allocations in the reduced land of Kibera, following tribal tensions. They were often paired

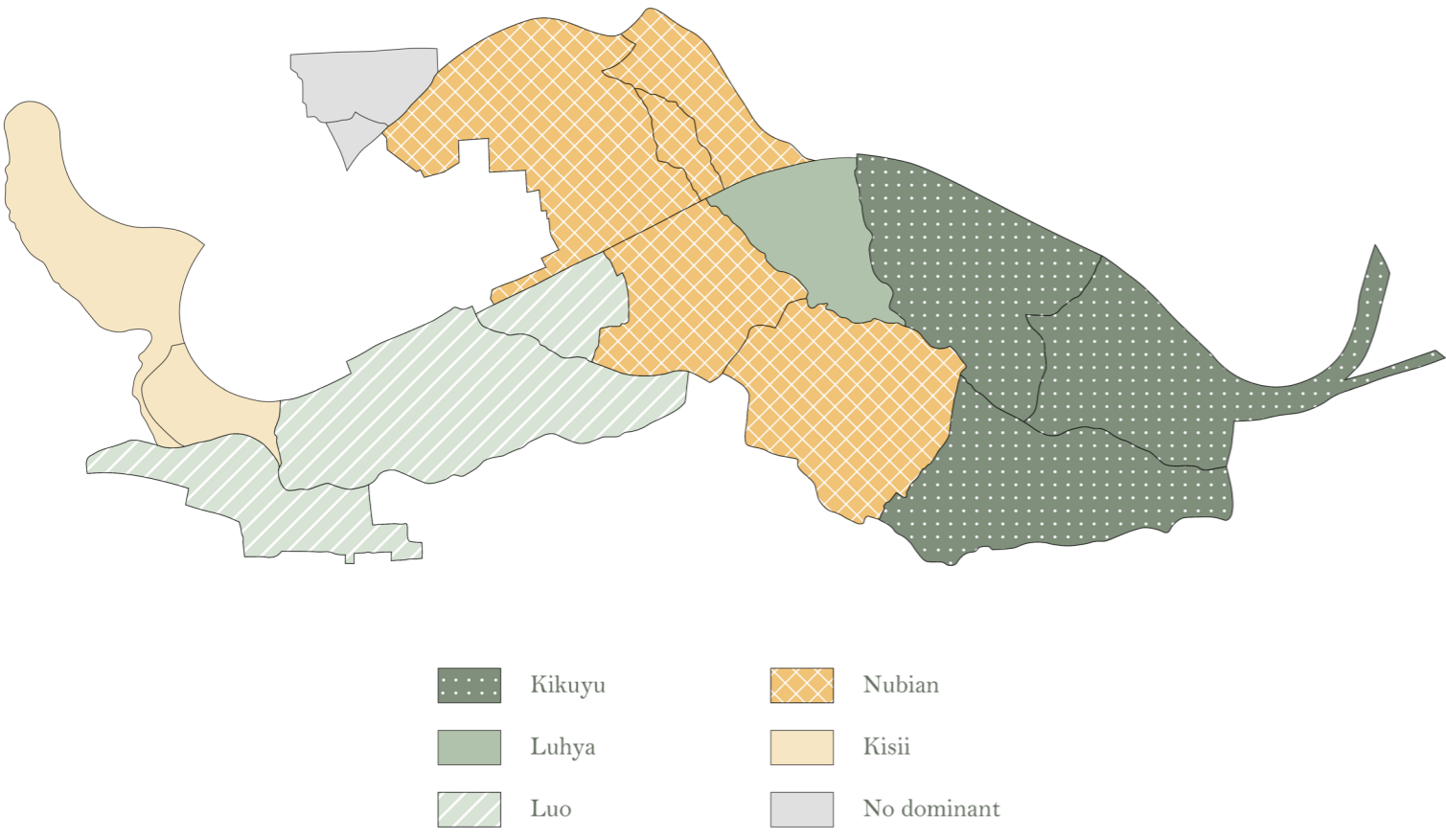


Figure 124: Dominant tribe per village in Kibera. (Adjusted from: Wanjiru & Matsubara, 2016)

with evictions in other parts of Nairobi, forcing these people to move to Kibera. Consequently, expanded villages in Kibera were named after political movements, such as the Soweto Uprising in South-Africa, to incorporate the sentiments of the population (Wanjiru & Matsubara, 2016).

The third way of interference was, when politicians used their power to place people from their own supporting tribes in Kibera, causing an especially large influx of Kikuyu. The Nubians, as a reaction, invited other tribes to the settlement, creating a diverse community. The politicians needed more supporting people in the district to win more votes in the elections. This way, Raila is named after Raila Odinga, who placed a lot of his own Luo in this village, currently also inhabited by a lot of Kisii (Wanjiru & Matsubara, 2016). Such political actions are the reason for much of

the ethnic tensions in the informal settlements. In between election periods, the tensions are generally low (local residents, p.c., 2025).

In Kibera, the different tribes generally moved in at different points in time (Wanjiru & Matsubara, 2016). While doing so, they tended to settle close to their tribe members, who they were comfortable with. Additionally, they bring along their tribal customs, which are related to their origins in Kenya. These shape their way of living and settling. It seems, that those, who stem from the lake, prefer to settle close to the water, and those, who come from the mountains, like the elevated parts of the land. In this way, they settlers founded villages where certain tribes are the dominant group, making distinctions among the settlement. The mix of tribes created Kibera's diverse population (J. Kirika, p.c., 2025).

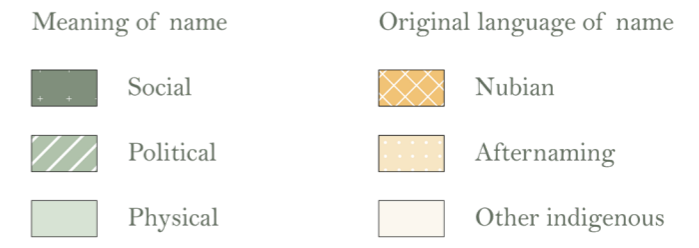
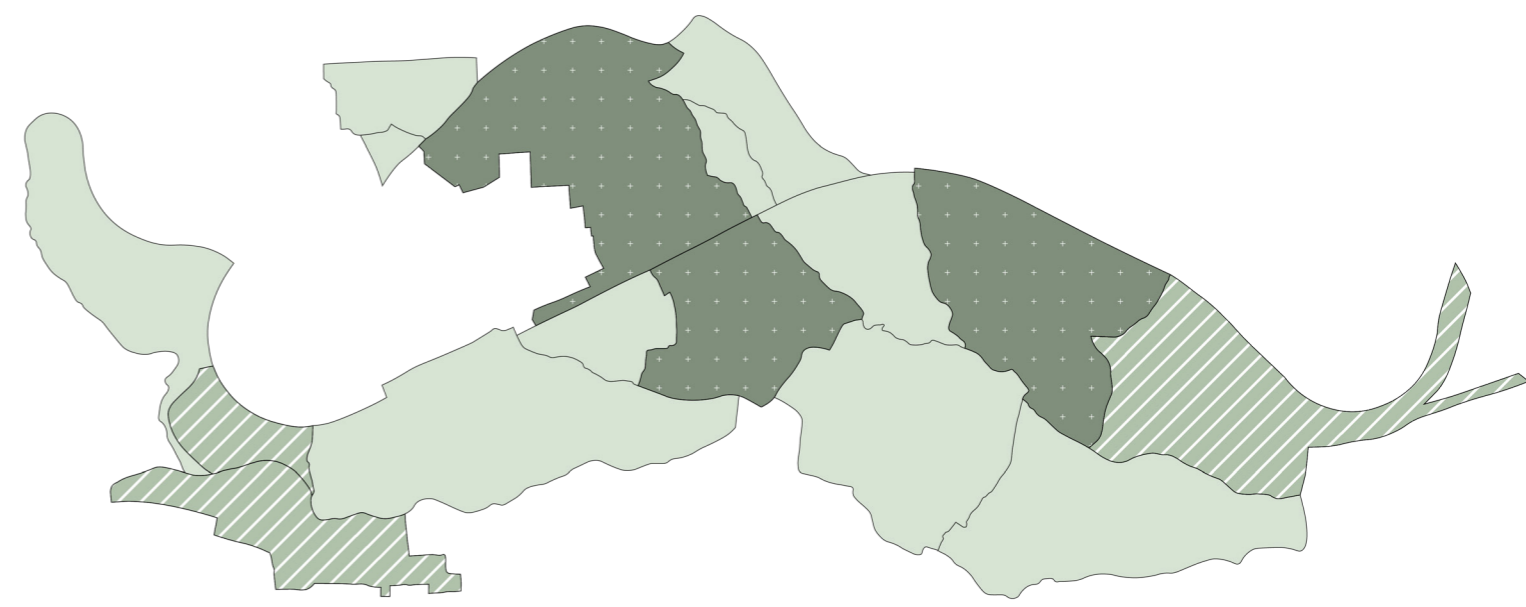
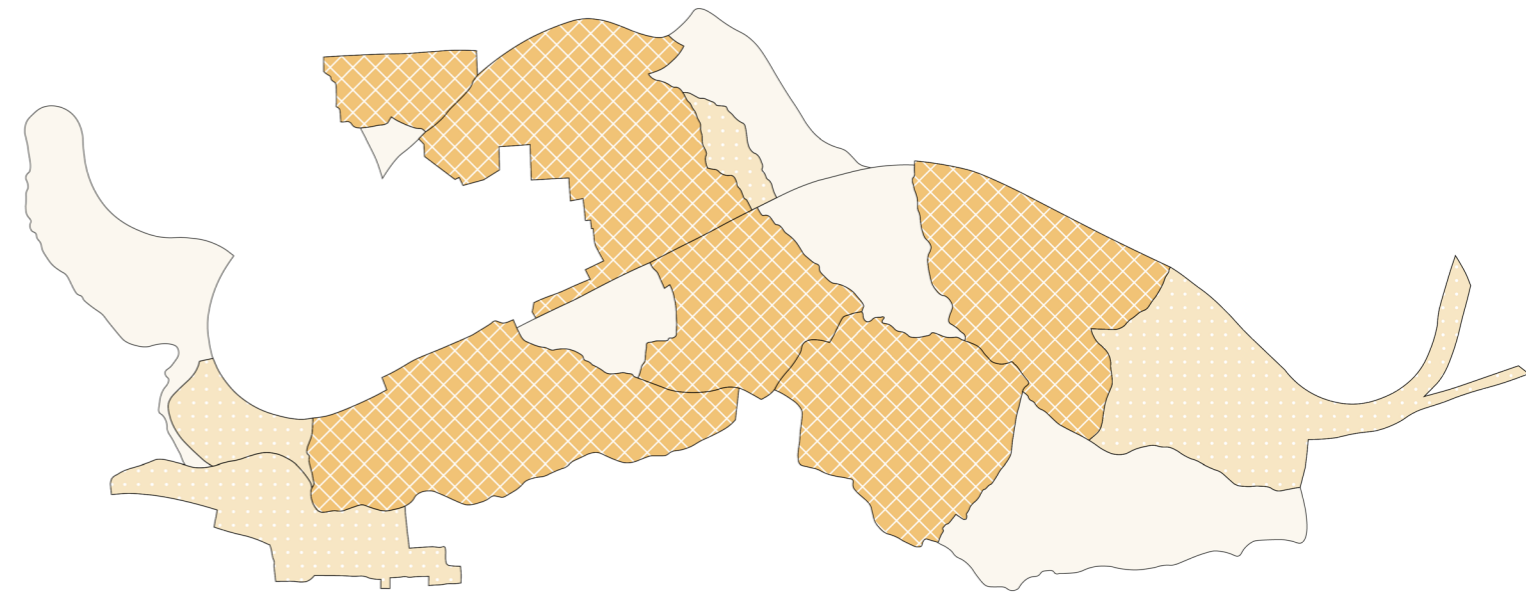


Figure 125: Origins of village names in Kibera. (Adjusted from: Wanjiru & Matsubara, 2016)

5.3.1 Introduction

This sub-chapter explores the political system of Kenya and the implications that it has on the people of marginalised communities. After independence, there has been a lot of political unrest, which is a consequence of the colonisation. Steps have been taken to improve the democracy and governance of the country, of which the new constitution has been the most impactful.

The sub-chapter first discusses the aspects of the constitution. This consists of spatial and governmental structures. In the spatial aspect, the division of administration units are covered. Then follows an explanation of the structure of the governments. The final part includes a description of the implications of Kenyan politics on the marginalised communities of informal settlements.

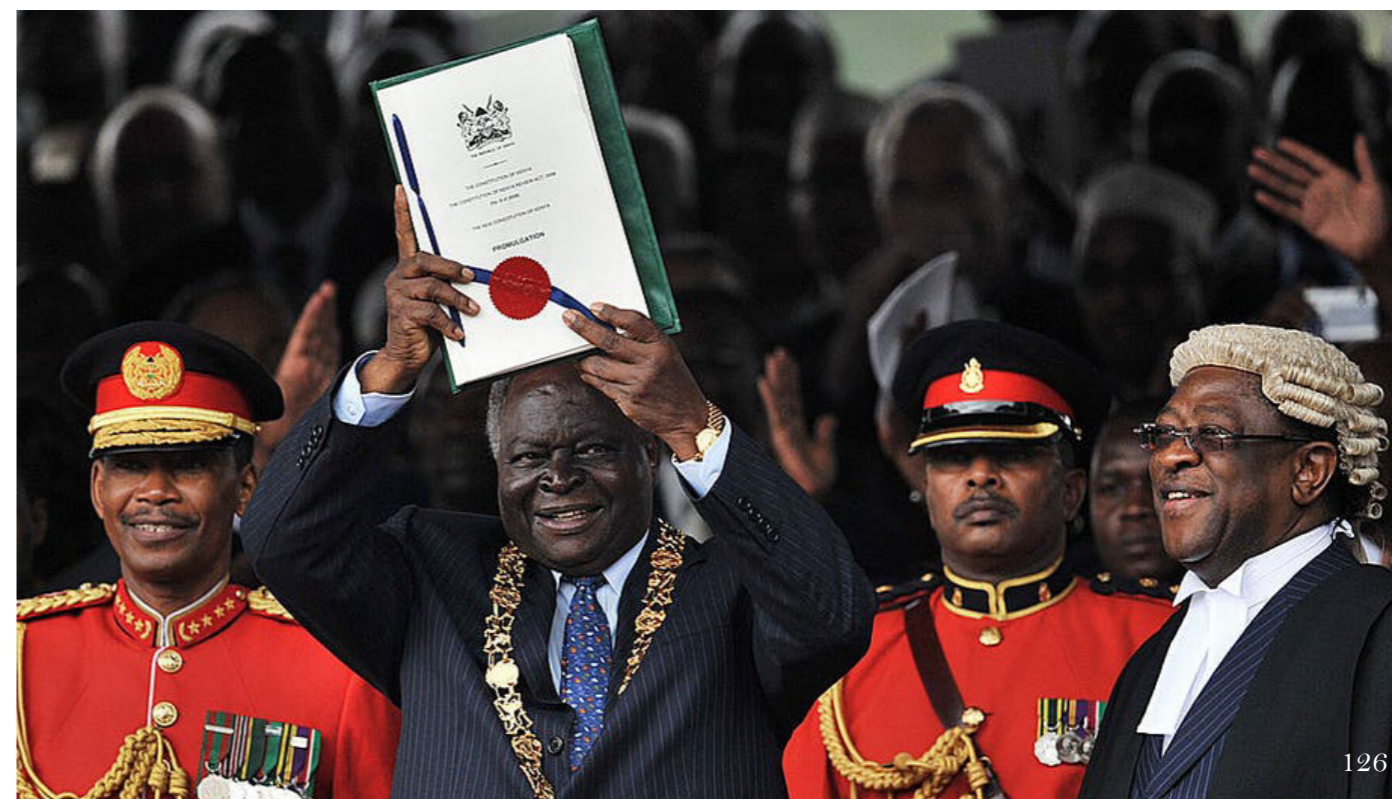
5.3.2 Constitution

The structure of the Kenyan government was largely transformed with the new constitution of 2010. This was the result of the decentralisation policies, that were adopted in the 1990s, because decentralisation was believed to be more democratic and preventive for corruption, leading to less tension (Cheeseman et al, 2016). Additionally, the new constitution was a response to the centralised power of the president and the one-party governments of the preceding decades (Kramon & Posner, 2011). And even though Kenya had been a relatively more stable country, compared to others in the region, the post-election violence of 2007 and 2008 proved the contrary. Similar events happened in 1992 and 1997 (Cooke, 2009).

In 2010, the new constitution was adopted, after a national referendum. The main elements are reducing executive power, devolving power and providing minorities and disadvantaged with a stronger voice (Kramon & Posner, 2011). With the new constitution, the country aimed to abandon ethnicity-based politics, which are a big reason for the tensions and subsequent violence. But decentralisation also affects the national cohesion in the country and the relations between different communities (Cheeseman et al, 2016).

Administration units

The renewal of the constitution also meant a new structure of administrative units in the country. This was necessary to activate the decentralised power of the constitution, which allows for



126

Pictures of governmental change in Kenya:

Figure 126: President Kibaki showing the signed new constitution in 2010. (Albert, 2021)

Figure 127: First president Jomo Kenyatta at the effectuation of Kenya's independence in 1963. (Provost, 2013)

Figure 128: Campaign for current president Ruto. (Josse-Durand, 2023)

governing closer to the people. In the next pages, it is depicted how the country's division changed from eight provinces to forty seven counties. Nairobi transformed from its own province to its own county and separate city administrations were also abolished (Cheeseman et al, 2016).

But, though not constitutionalised, the old boundaries of units are often still in use by the ministries for their organisation. For example: the Ministry of Interior and National Administration has regional commissioners and their regions are still based on the old provinces. Definitive renewal and the necessary adjustment to the new system does not happen overnight. And additional acts to better define the boundaries and functioning of the administrative units were adopted in the following years (Ministry of Interior and National Administration, 2024).



127



128

Figure 129: Kenya's former eight provinces.

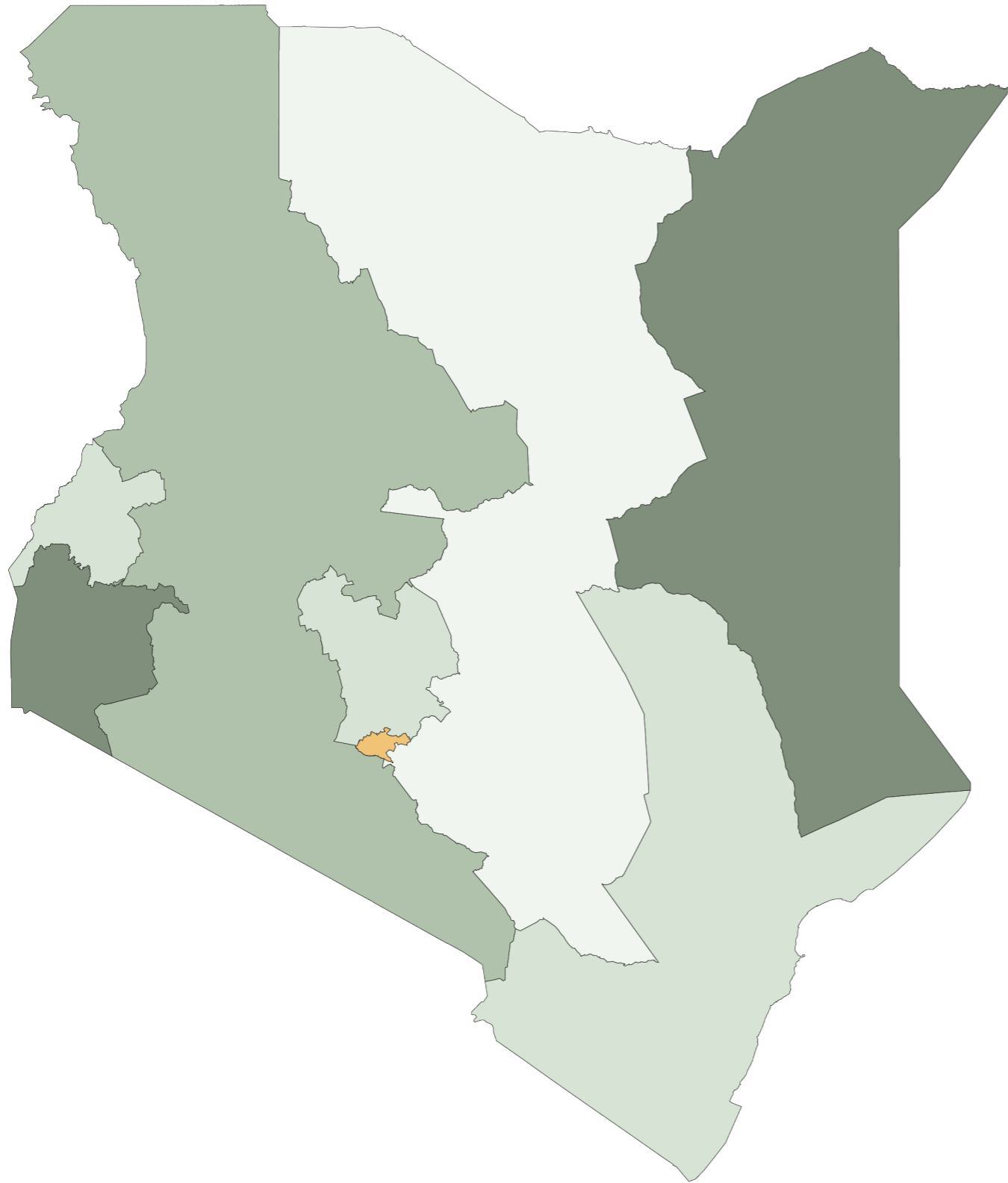
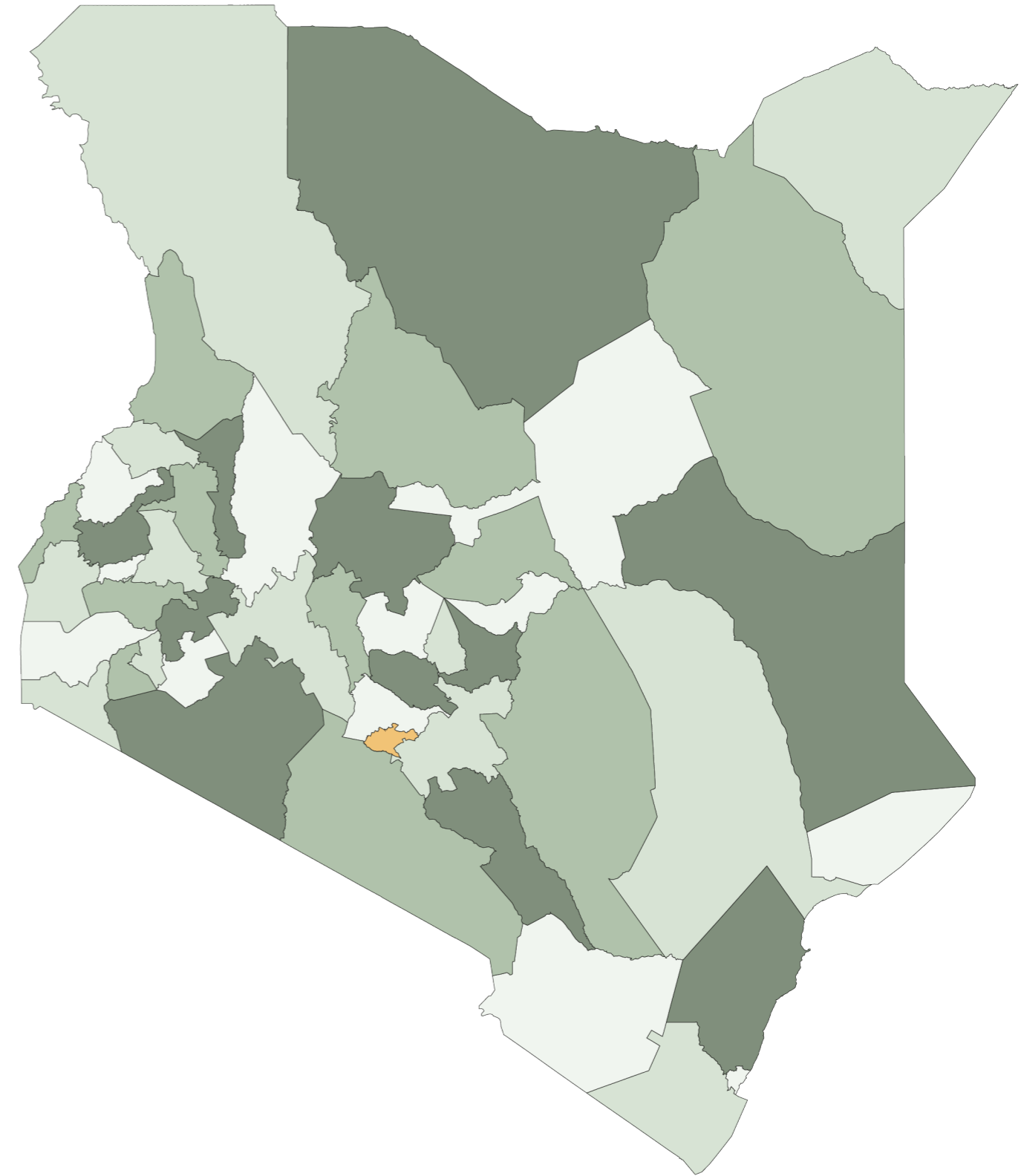


Figure 130: Kenya's forty seven counties.



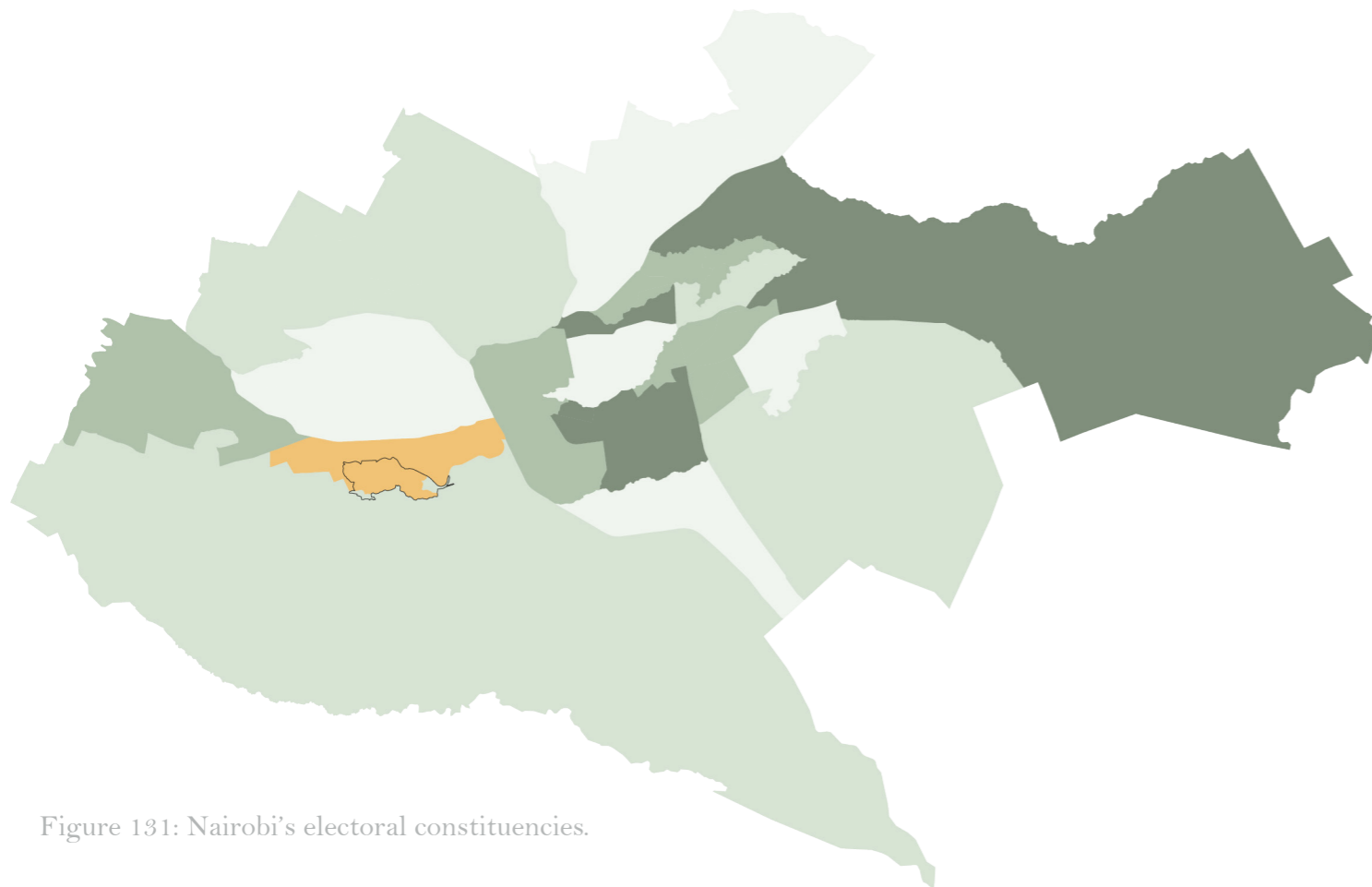


Figure 131: Nairobi's electoral constituencies.

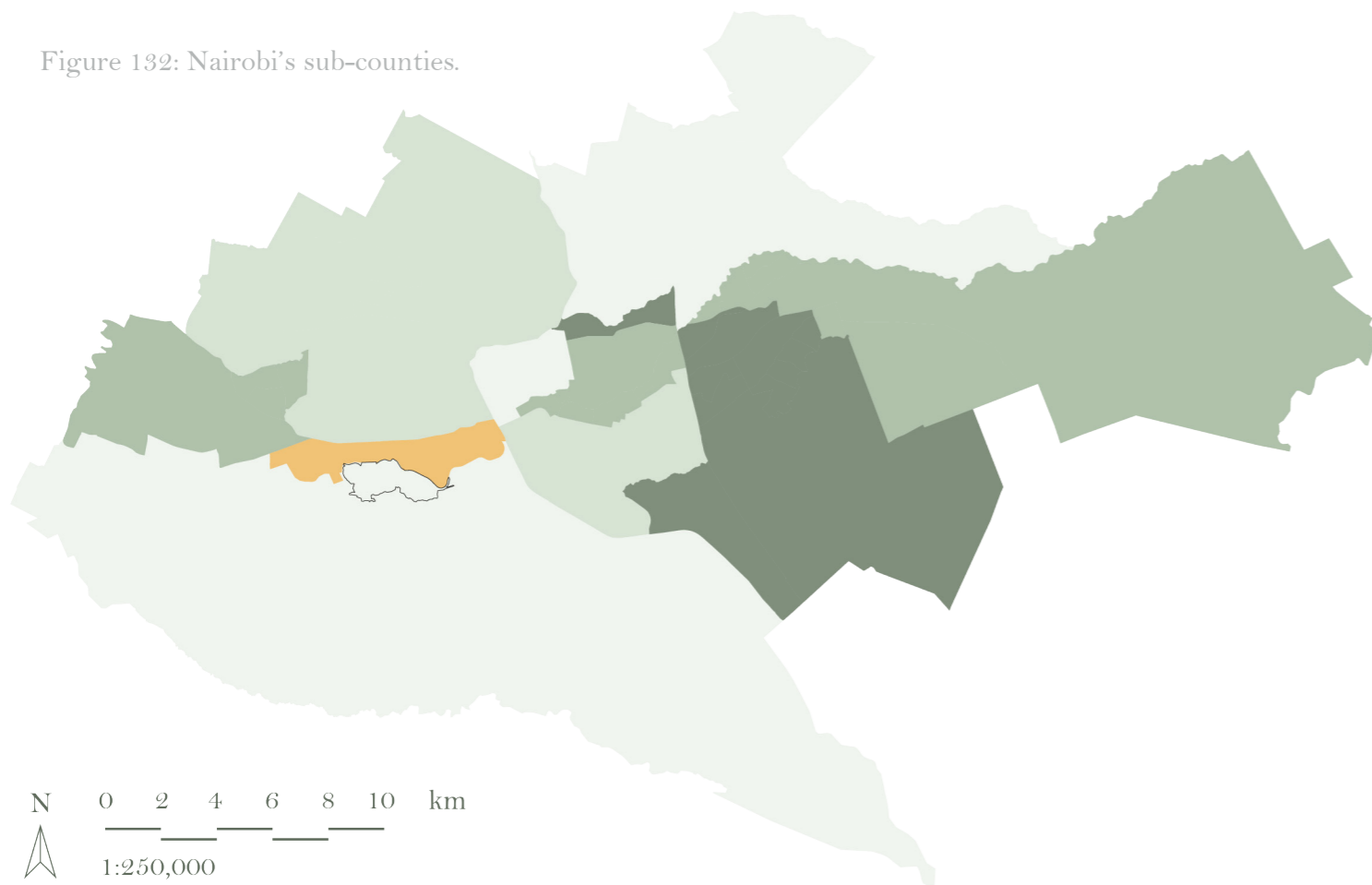


Figure 132: Nairobi's sub-counties.

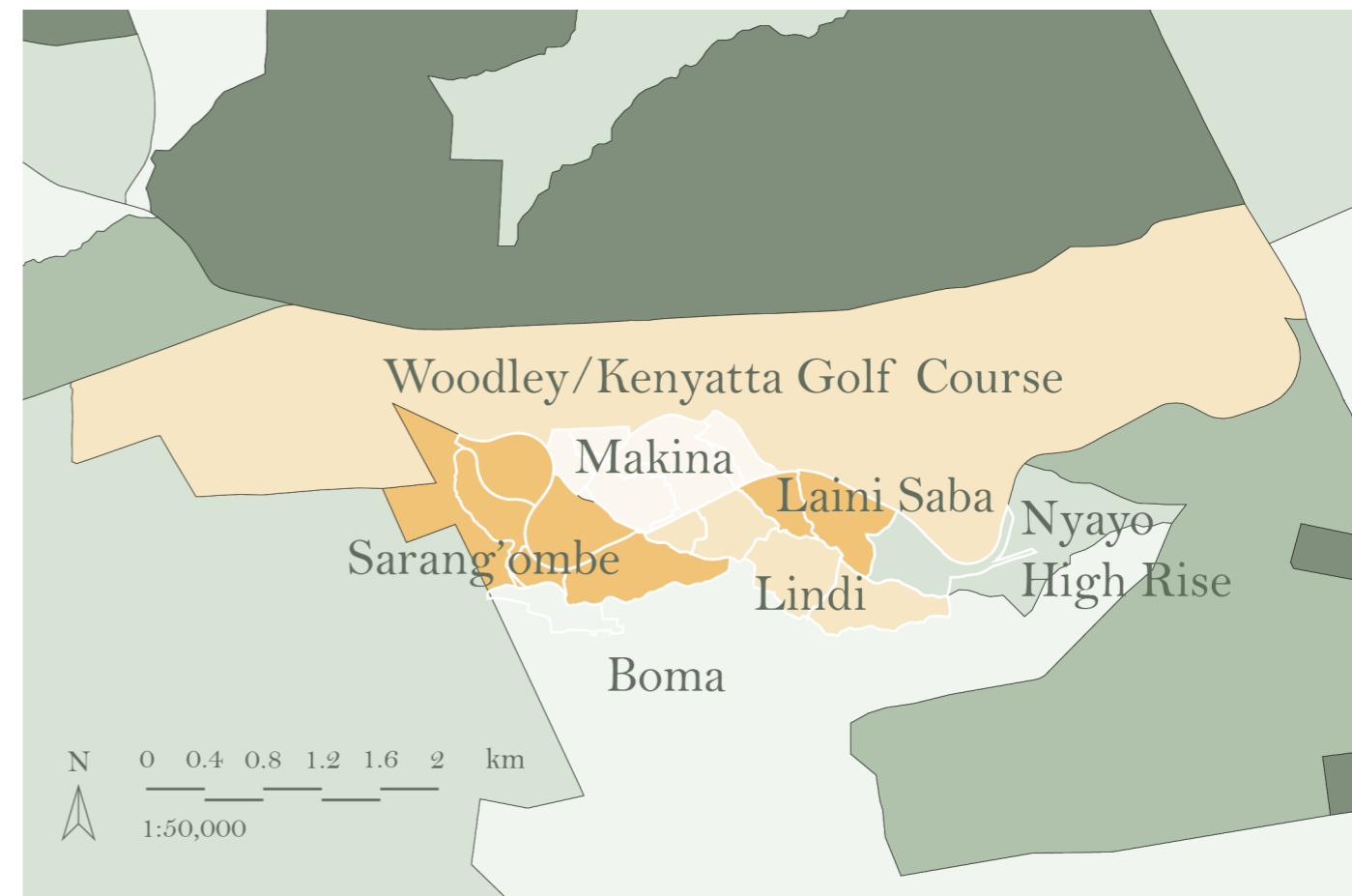
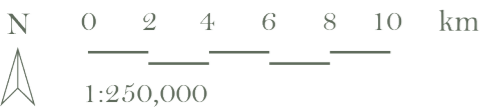


Figure 133: Wards containing Kibera villages.

The division of the country is further structured with administrative and electoral units. The boundaries of these distinct units are often the same, but this is not always the case, which can cause confusion. The administrative units consist of the counties, divided into sub-counties. Then, the sub-counties are further structured in divisions, locations, sub-locations and, in some cases, but informal, villages. The electoral units of the counties on the other hand, are subdivided in constituencies and wards. Constituencies function on a national level and wards on a county level. This means, that the constituencies are used to elect national representatives, who are the Members of Parliament (MP), and the wards are used to elect local, county-level representatives, who are the Members of County Assembly (MCA) (Nyambura & Grant, 2022).

Yet, the boundaries of these electoral units are defined on a national level by the Independent Electoral and Boundaries Commission (IEBC), the institution that is also responsible for fair elections. The Ministry of Interior and National administration defines the boundaries of the administrative units. And these two institutions dividing the same land areas can result in confusion. The boundaries of these distinct units are often

the same, but this is not always the case, making it difficult for citizens to understand to which unit they belong (Ibrahim, 2024).

This is also the case in Nairobi, where there are seventeen constituencies, but only eleven sub-counties. In Kibera, this results in an odd situation. Almost all of the villages are located within the Kibera constituency (yellow on the maps), with only Raila and Soweto-East falling within Lang'ata limits, while the entire settlement is administered by the Lang'ata sub-county (Kiambi, 2018). Moreover, this number of sub-counties may differ over time, because the ministry can alter the division to improve service delivery, so often sub-counties are added. The same goes for locations, sub-locations, etc. (Mwende, 2024).

The constituencies and wards are much more definitive, because they need to be clear for fair elections (Ibrahim, 2024). Most Nairobi constituencies are divided in five wards, as is Kibera's prominent constituency. Kibera's five wards are Woodley, Sarang'ombe, Makina, Laina Saba and Lindi. The two other wards, that contain the left-over Kibera villages of Raila and Soweto-East, are Boma and Nyayo High Rise, being part of the Lang'ata constituency (NGCDE, n.d.; Mwaura & Liza, 2016).

Structure

The Kenyan governmental structure exists in two parallel systems, that both function on a national to a local level. They are referred to as the National Government and the Devolved Government and they are based on the threefold separation of power: executive, legislative and judiciary. Although they are two distinct bodies of government, they need close cooperation (Embassy of the Republic of Kenya in Japan, n.d.). The constitution dictates, that at least fifteen percent of the national revenue should be awarded to the devolved county governments. This is to ensure local power and promote equity among the people (Nyambura & Grant, 2022).

Starting with the National Government's executive power, the president is the head of the state and government. In addition, the president chairs the National Security Council and is Commander-in-Chief of the Kenya Defence Forces (Embassy of the Republic of Kenya in The Hague, n.d.). As the head of government, the president still holds the power to delay or adjust bills, because all new bills, passed by the legislative branch, need the president's assent (The National Assembly, 2022). During elections, the president is joint by a running mate, who typically becomes the deputy president with the president's election (Laws of Kenya, 2022). The president appoints the Cabinet, which consists of the Cabinet Secretaries, who are the heads of the ministries. They are supported by the Principal Secretaries and Secretaries. These are all people, who have been selected for their knowledge and experience, and they are not elected by the people (Wanzala, 2020).

At some ministries, these positions continue up to the local scale. The Ministry of Interior and National Administration appoints leaders at various scales (see fig. 134). The Regional Commissioner oversees at a regional scale and Chiefs and Assistant Chiefs work on locations and sub-locations. Some bigger cities, like Nairobi, make use of even smaller scales and people, who are closer to the communities, such as village elders, but they are not formalised in the constitution (Wanzala, 2020). Chiefs are essential in this structure. They have eyes and ears in the neighbourhoods through the community leaders and village elders and have direct lines to the higher placed commissioners (Labrujere, 2018).

The legislative power does not contain such hierarchy. The parliament has a bicameral system, with the National Assembly (NA) as the lower house and the Senate as the upper house. The Kenyan

constitution aims for fair representation of all people, which means that a part of the representatives are not directly elected, but nominated by political parties (The National Assembly, 2022). The National Assembly is composed of 349 MPs and one speaker. Out of this number, 290 MPs are elected as one per constituency. Then each of the forty seven counties elects one woman as representative. Finally, twelve members are nominated by political parties to represent certain minority groups, such as disabled people (Embassy of the Republic of Kenya in The Hague, n.d.).

The Senate is a smaller organ with only sixty seven Senators and a speaker. The forty seven counties all elect one Senator. They are joint by sixteen nominated women, two youth representatives and two representatives for people with disabilities (Embassy of the Republic of Kenya in The Hague, n.d.). The General Elections are typically held every five years, on the second Tuesday in August. This cycle is the same for the candidates for the presidency and the parliament (Embassy of the Republic of Kenya in Japan, n.d.).

The judiciary branch protects the constitution and ensure justice. The superior courts are the Supreme Court, High Court, Court of Appeal and Specialised Courts, and they are governed by the Chief Justice and the Judicial Service Commission. This is constitutionalised on a national level. The devolved government does not have a judiciary arm, except for judicial service on the county level (Embassy of the Republic of Kenya in The Hague, n.d.).

The devolved government functions in a similar way. It consists of forty seven county governments, that cooperate on a national level, while governing their own county. Firstly again, the executive arm is explained. The head of the county is the Governor, joint by a Deputy Governor. Like the president, they are elected directly by the people, of the concerning county, during the General Elections every five years (Nyambura & Grant, 2022). The governors cooperate on a national level as an organ for consultation and advocacy in the Council of Governors (CoG). The governors appoint the members (CECM) of the County Executive Committee (CEC), which is the equivalent of the Cabinet on the county level (Cheeseman et al., 2016).

From the CEC there is a hierarchy down to the local level, who are all professionals appointed by the CECMs. Chief Officers and Directors

Level	Title	Reports to
National	President	-
National	Cabinet Secretary	President
National	Principal Secretary	Cabinet Secretary
National	Secretary	Principal Secretary
Region	Regional Commissioner	Ministry
County	County Commissioner	Regional Commissioner
Sub-county	Deputy County Commissioner	County Commissioner
Division	Assistant County Commissioner	Deputy County Commissioner
Location	Chief	Assistant County Commissioner
Sub-location	Assistant Chief	Chief
Village	Village elder (informal)	Assistant Chief / Chief

Figure 134: Hierarchy in positions of executive power at the Ministry of Interior and National Administration.

Level	Title	Reports to
County / National	Governor	-
County	County Executive Committee Member	Governor
County	Chief Officer	County Executive Committee Member
County	Director	Chief Officer / CEC
Sub-County	Sub-County Administrator	Chief Officer / CEC
Ward	Ward Administrator	Sub-County Administrator / Director
Village	Village Administrator	Ward Administrator
Village	Support Staff	Chief Officer / Director
Ward	Youth Leader (informal)	Ward Administrator

Figure 135: Hierarchy in positions of executive power at the county level.

function on the county level. Then follow the Sub-County Administrators, the Ward Administrators, the Village Administrators and the support staff (Nyambura & Grant, 2016). Kibera also has Youth Leaders, which is common in Nairobi County. They work on a voluntary basis and not under the constitution, but with the interest of pursuing a political career. Youth Leaders support the Ward Administrators and provide better representation for the youth in the city (local leaders, p.c., 2025).

In addition, the Youth Leaders also report to the MCAs, of the legislature, to help them understand the needs on a local level. The same function is carried out by community leaders and village elders. They are not an official part of the government structure, but they are however recognised by the governments. There are official elections held every five years, after the General

Elections, which are called the Grass-root Elections (local leaders, p.c., 2025).

The legislative arm of the counties is unicameral and is performed by the County Assembly (CA). The County Assembly is composed of elected MCAs, nominated MCAs, a speaker and a deputy speaker. Each ward elects one MCA and the political parties nominate the other members. The MCAs are supported by professionals in committees and local leaders to consult them (Ibrahim, 2024). Nairobi contains eighty five wards, so there are eighty five elected MCAs, joint by thirty eight nominated MCAs, who represent under-represented groups, making a total of one hundred twenty three members (Nairobi County Assembly, n.d.). An overview of the governmental structure is displayed on the next page, showcasing both the National and Devolved government.

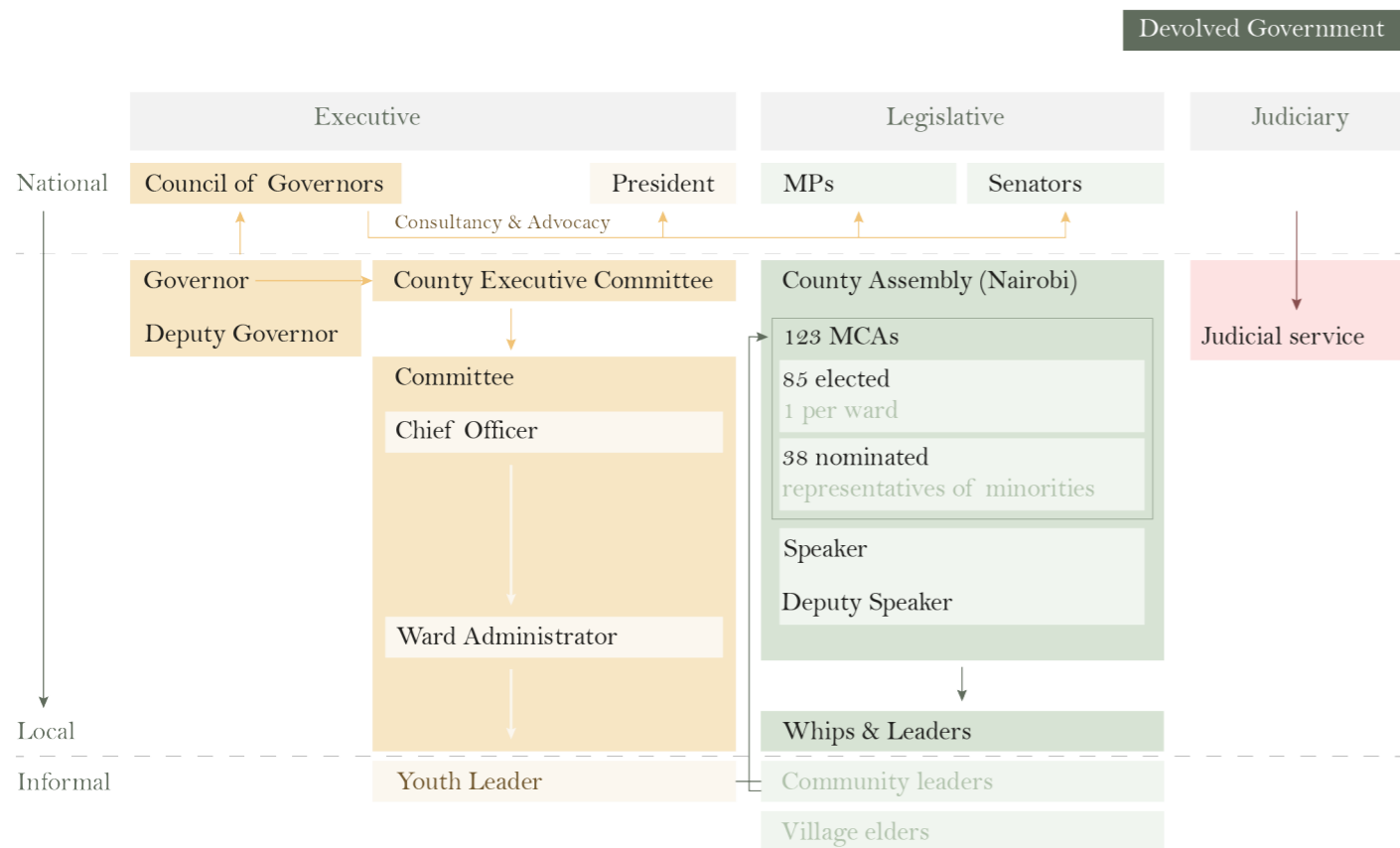
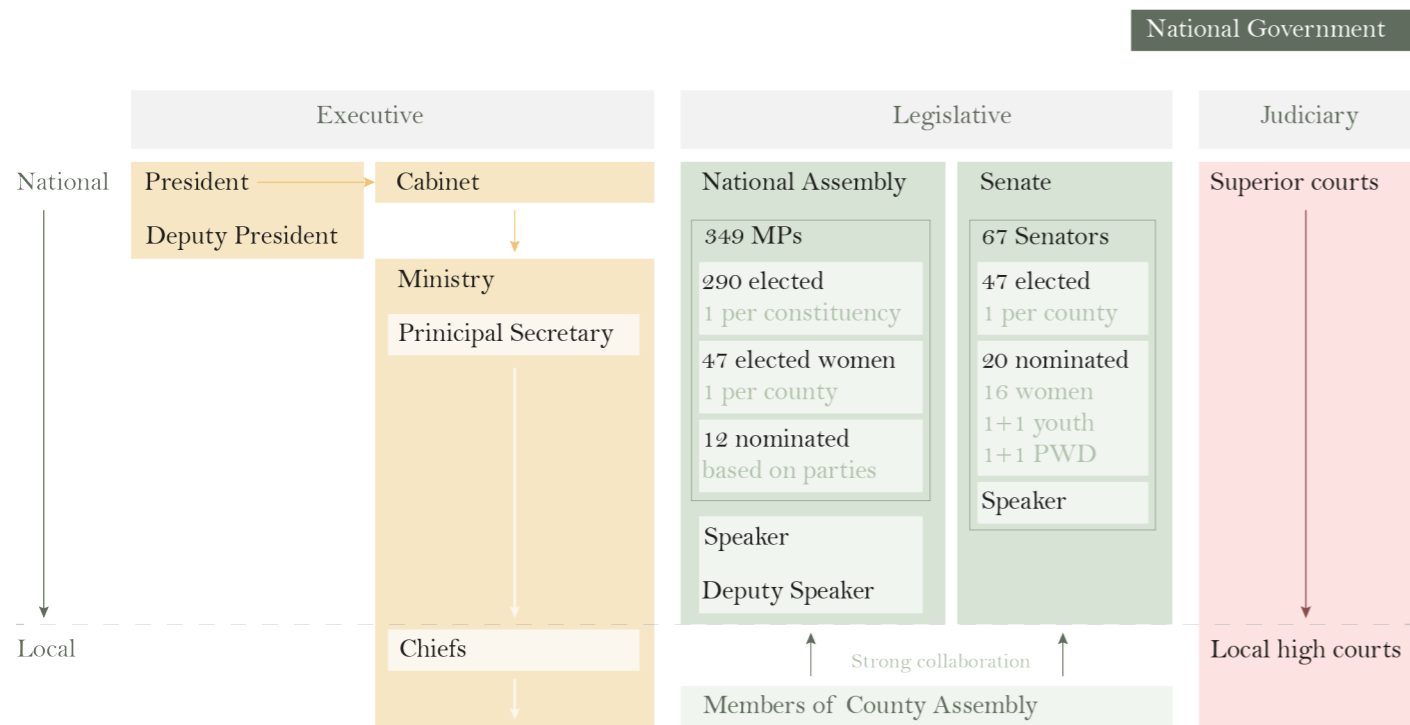


Figure 136: Structure of the National Government and the Devolved Government.

5.3.3 Influence

Despite the carefully elaborated governmental and electoral system, political tension remains a big issue in the country. Politicians are often suspected of corruption and the trust in politics is very low. Ever since independence, there has been conflict around the presidency, with the current president, William Ruto, probably being the least supported by the people (Ntarangwi & Ingham, 2024).

The post-election violence of 2007 and 2008 was the last violent outburst of the political tension. The conflict took over a thousand casualties and left around 350,000 Kenyans displaced and Kibera was one of the hotbeds of the violence. Ethnic groups collided, right after the announcement of the national election's winner in December, while there was high suspicion of the tallying being rigged. The initial violence was directed towards the Kikuyu, but later evolved between other ethnic groups and held on into 2008. The conflict was settled by international mediation, with which was decided, that the power would be divided equally between the two candidates and their parties. Kibaki became president and Odinga prime minister (Cooke, 2009).

The cause for the violence can be found in the tensions between ethnic groups, which is based on inequality and land ownership (Cooke, 2009). Historically, the support for the five elected presidents is based on their ethnicity. Therefore, ethnicity is a decisive element in elections (Ntarangwi & Ingham, 2024). Politicians use ethnicity to win votes and do this by implementing favourable regulations for certain groups. An example of this, was the allocation of land to

Kikuyu in Kibera, which changed the composition of tribes in the settlement and thus in the electoral wards (Wanjiru & Matsubara, 2016). Again, in the period building up to the elections, it was a contention between Kibaki's Kikuyu majority and Odinga's, of Luo descent, minorities (Cooke, 2009).

And also today, after the constitutional change, politics are rather ethnicity-based than issue-based. And this means, that politics are prone to corruption. During election campaigns, informal settlements are an easy target for the bribery of voters, because of their poor situation and large numbers. Candidates pay people to motivate voters to elect them, especially based on their ethnic background. But after the elections, they usually show little interest in the people, who voted for them. These hired motivators incite the tensions between tribe members. Outside the election periods, there is usually much fewer conflict between tribes (J. Kirika; local residents, p.c., 2025). Recently, there have been protests to promote issue-based politics, but remarkably, residents of informal settlements do not join in these protests, because they appear to rather follow their tribe's leaders (T. Kaloki, p.c., 2025).

Voting based on ethnicity instead of issues, leaves the marginalised communities of informal settlements voiceless. They should be voting for those people, who are able to meet their needs and improve their living conditions. But instead, they vote for people, whose priority it is to be elected, so they can receive a politician's salary. They usually have little interest in the demands of the poor, because they deal with difficult issues. And surrounding themselves with the rich and powerful ensures them of a stronger position (T. Kaloki, p.c., 2025).

Currently, it is because of the major issue of corruption and favouritism, that it is wise to only include politicians later in the process of development projects. There are multiple examples of projects, that were ended because of corruption scandals. Because of this and the neglect of the poor by politicians, the trust in politicians is very low, so local organisations rather not cooperate with them. Political involvement can lead to local protest, because of trust issues, and this hinders co-production (Kimari & Kimari, 2022; T. Kaloki, p.c., 2025).

Chapter 6

Synthesis



are explained here. The links between the goals and needs form an endless web of impacts and outcomes, which together can add up to effective approaches for sustainable development.

Firstly, mapping the contribution of the informal economy leads to the recognition of the value of the informal market. This recognition raises the political interest in the poor majority, giving the informal settlers a political bargaining position. Simultaneously, information on the informal market facilitates cooperation and allows for strategies to create more formal jobs, which eventually result in more tax revenue, that can be used to boost public investment. These are necessary for the improvement of basic public services, so the entire economy can benefit. At the same time, the economy benefits from improved access to funding and financing, which creates resilience and more business opportunities for the largest population group of the country. Big numbers are a great strength of the poor (Titus Kaloki, p.c., 2025).

As a second example, tenure security is essential for the establishment of sustainable neighbourhoods. It brings certainty of permanency for residents, which is fundamental for community stability. From this point, it is easier to start collaborating on the long-term, because there is more dedication to success. This means stronger communities, housing improvements, better access to public services and reduced corruption. All of these are needed for more sense of ownership (Werlin, 1999). Permanency and recognition gives the people a better bargaining position in decision-making (Titus Kaloki, p.c., 2025).

Thirdly, a database of NGOs is helpful in coordinating aid to the neighbourhoods. This enables the NGOs to be transparent about their work and get transparency from those who they are trying to support. This makes their work more effective and it prevents corruption by the NGOs and beneficiaries. Subsequently, this results in more improvement in public infrastructure and better trust among participants, as well as less dependency on aid and more empowerment, which is necessary for discipline and personal development, helping informal settlers to have success in their entrepreneurship and cooperation among neighbours. Additionally, NGOs can use a database to better support participants in attaining certificates and job opportunities, while redundant NGOs are likely to collapse, making donations to NGOs more efficient (Martha Otieno, p.c., 2025).

The fourth example is the improvement of

public infrastructure. This generally has a direct impact on the daily lives of the informal settlers, improving access to water, electricity or waste disposal, and having solid infrastructure also makes the communities more resilient. Moreover, the infrastructure enables further development and allows for more profitable businesses and production. This helps the residents to create more jobs and income. Simultaneously, the construction of infrastructure teaches the locals new skills in building, maintaining and collaborating with others, strengthening the community (Titus Kaloki; Human Needs Project, p.c., 2025; Kimari & Kimari, 2022).

The community central

What seems to be missing in such development projects, is the focus on the community itself. Interventions become much more effective and sustainable, when they are invented and implemented by the local people (Stouthuysen, 1997). In Kenya, the public investments are controlled by the elite private sector. At first, this means, that they preferably intend to benefit those in the private sector and not the poor majority. Public investments unequally target the formal city over the informal settlements. And when such investments actually reach those who need it the most, they often do not match the needs of the local community (Baffoe, 2023).

In the end, executing sustainable development projects includes meeting the demands and needs of the users. The way to do this is co-design and co-production. This ensures, that the people who are responsible for maintaining and using the outcomes of the project are happy with the interventions and feel a sense of ownership in taking care of its success. At the same time, it teaches participants to collaborate, with each other and with officials, and promotes social capital, so indirectly the strengthening of community capital (Shirley Chebet; Titus Kaloki, p.c., 2025).

The sense of community and collaboration skills are indispensable in successful projects. They are products of feelings of trust and reciprocity, which are created by strong social bonds and connections (Stouthuysen, 1997). Therefore, it is essential for such projects to include the creation of these two properties. They should be seen as the foundation for development. In a Kenyan environment, that is marked by corruption and distrust, it is important to make an effort to

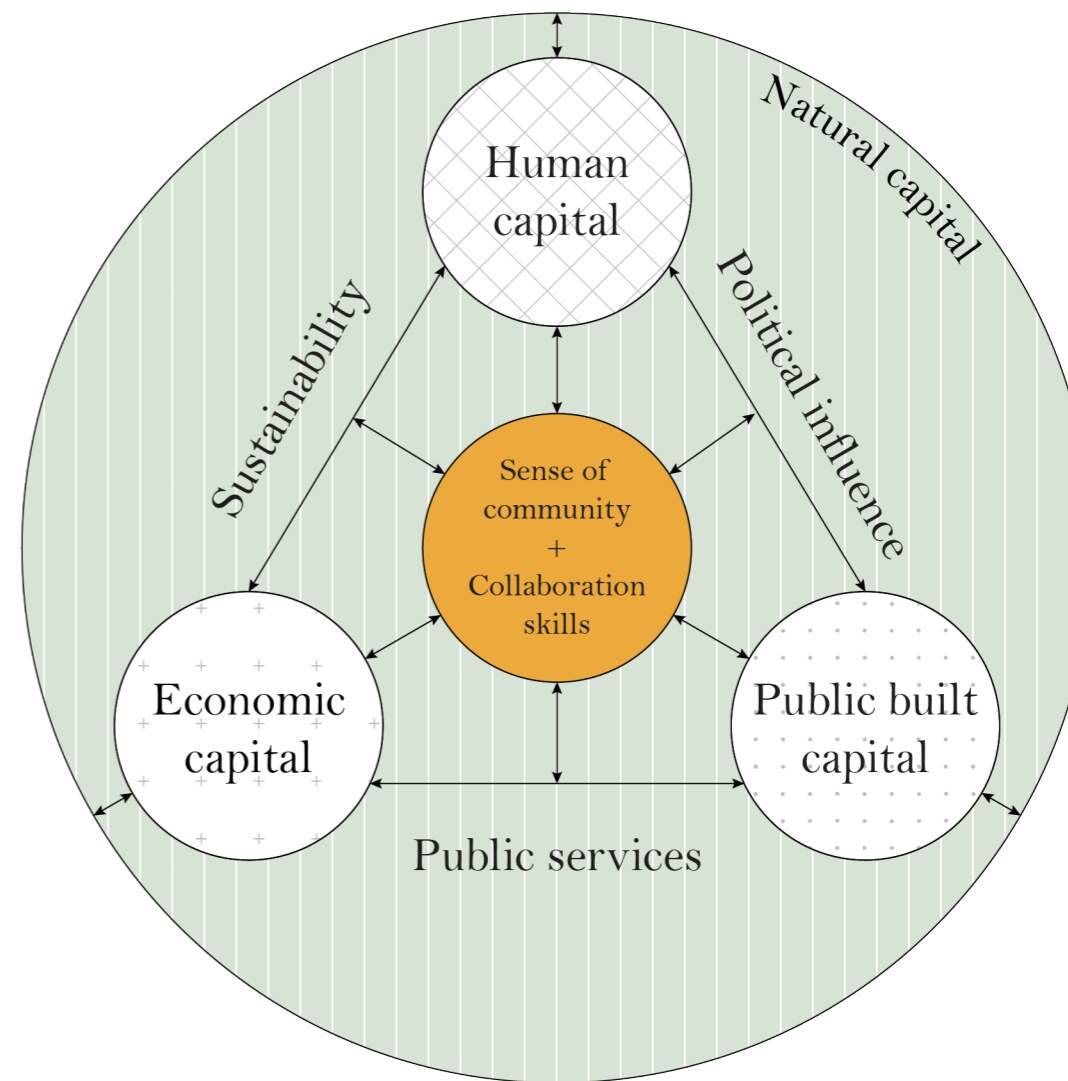


Figure 138: Visualisation of community capital, related to the essential goals to enhance it.

improve collaboration and trust. That is why the sense of community and collaboration skills are central to enhancing community capital. Figure 138 shows the visualisation of community capital from the theory section, but this time the main focal aims for the enhancement of community capital are added. Sense of community and collaboration skills exist within social capital of the community, which all affect all the other forms of capital. But additionally, they also effect the strengthening of sustainability, political influence and public services. Although all connected through social capital, the sustainability, political influence and public services generally take their place between either economic, human or public built capital. The next chapter further elaborates on how community capital can be enhanced by an inclusive urban strategy, based on co-design.

6.2

Strategy

6.2.1 Co-Design

In order to develop community capital, it is essential to create a strong sense of community and preparedness to cooperate. The interventions in this project are based on spatial improvements, that will enable the residents to form stronger communities. The interventions are purposed to function on different scales. In this project, they are designed from the household to the village scale, but are meant to eventually affect national decision-making. This is plausible, because when local communities are stronger and able to use their strengths, which foremostly is their presence in large numbers, they will also be able to use their voice more loudly, to successfully influence governing, and actually counter the growing inequality (Martha Otieno, p.c., 2025).

There are three main interventions, on three scales: the shared plot, the active street and the community centre. The shared plot is created on the smallest scale. It consists of households, that are grouped with a shared entry space. This can be an alley with a number of five to twenty-five households. The active street connects several shared plots and thus serves a larger group of people. The community centre is central in the configuration of the neighbourhood and is fairly close to reach for the residents of the surrounding shared plots. Then on the village scale the community centres form a network to enhance collaboration and create better resilience for their programmes and services provision.

However, this thesis cannot produce an actual implementation of the interventions, because

such projects should be done in co-production with the community. That is the only way to really understand and be able to meet the demands of the local residents (Chebet, p.c., 2025). Therefore, these interventions should serve only as an example for development projects. Real participatory projects take time and continuous effort, but they are effective in producing sustainable results. Shirley Chebet (p.c., 2025), working at KDI, described their typical process. All projects are demand-driven and not imposed by the organisation. They want to team up with a local organisation. She listed the steps that are taken in their projects:

- Connecting with a local organisation.
- Involving the wider community and mapping out stakeholders in co-design workshops.
- Validating the site, preferably a public space.
- Making the problem assessment.
- Narrowing the problems down to addressable challenges.
- Following up by adding other needs and aspirations, that are not directly addressed by the challenges.
- Assessing the space and budget and resulting priorities.
- Developing some implementable ideas with the available budget and space.
- Discussing the ideas with the community in a co-design process.
- Implementing the final ideas, while preferably assigning the unskilled labour to community members, so that there is understanding and a sense of ownership of the project.

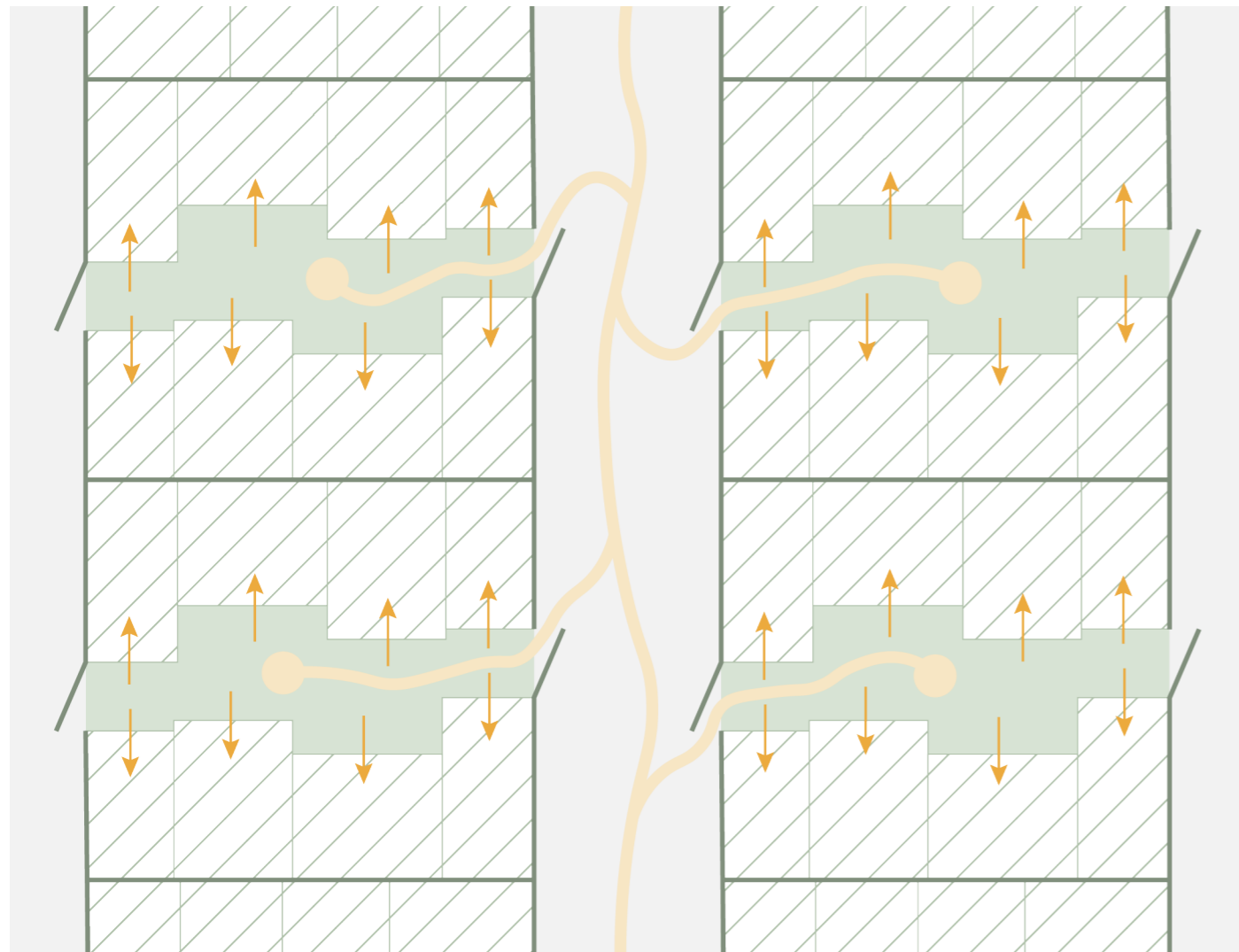
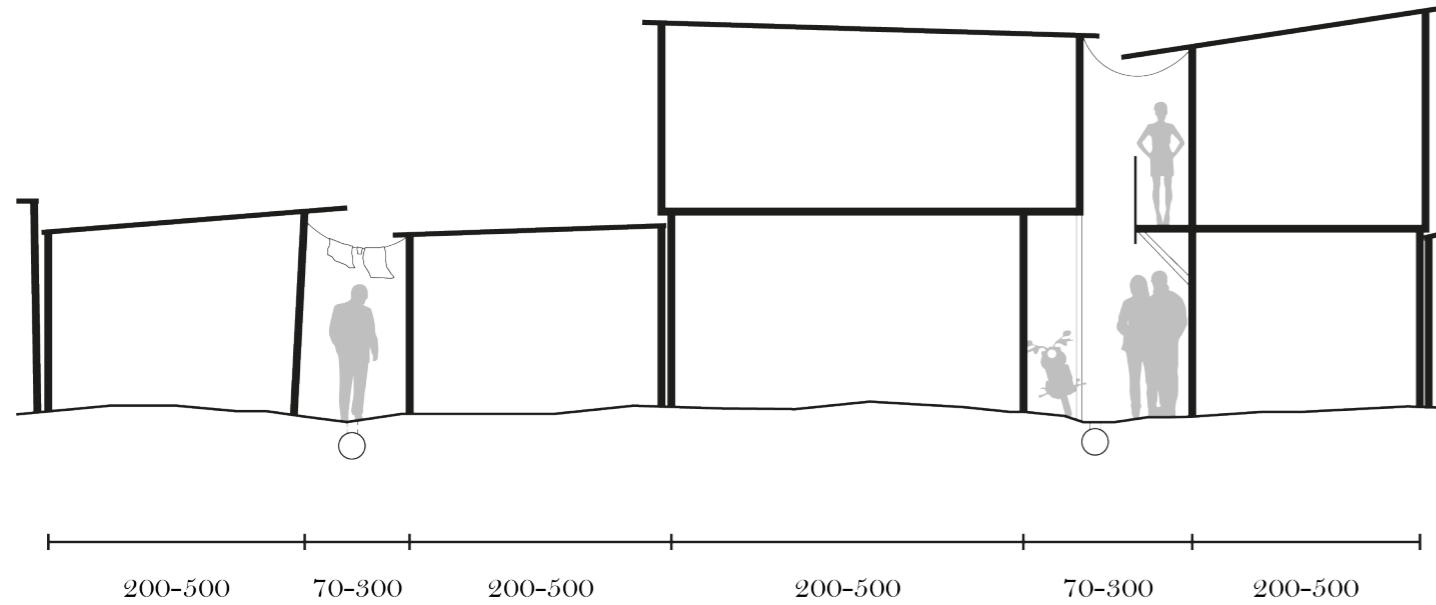


In addition, the community members receive training from external coaches to train the community in commercial aspects, to ensure the maintenance of the project and the solidness of the business plans. They can get other skill trainings as well, such as carpentry and bead-making. This should lead to a more sustainable outcome of the project. Finally, the process is recorded in inventories for transparency and to be able to learn from the project and improve future projects.

This approach should be the foundation for any project, that is trying to tackle spatial problems in the informal settlements and is simultaneously having the purpose to stimulate socio-economic development. Within the scope of this thesis project, such a lengthy process is not possible to execute. Therefore, the focus of the design in this project is on interventions, that could be taken

into consideration, while doing such a co-design developments. They aim to improve the community capital in the settlement and thereby enhance the efforts for socio-economic development. In order to show the implementation of the interventions, a part of the village of Silanga is chosen to serve as an example. In the next pages follow descriptions of the three interventions and subsequently an example of the implementations in Silanga. The final part contains explanations of the relations between interventions and their functionality.

6.2.2 Interventions



Shared Plot

The idea of the shared plot is, that all the front doors of a certain plot are directed to the same access space. This access space, or alleyway, has limited access through two or three entrance points, creating a semi-private space. In this way, the dwellings of the neighbourhood are grouped in smaller, comprehensible units. The reason for this is, that it improves safety and the feeling of safety for the residents, because they can keep an eye out on each other and together have better control on their surroundings. It is no longer usual for outsiders to enter this semi-private space. Being able to trust who is passing by the front door increases feelings of safety. It should be noted, that these shacks can easily be broken into, so it is hard to feel safe, even when inside.

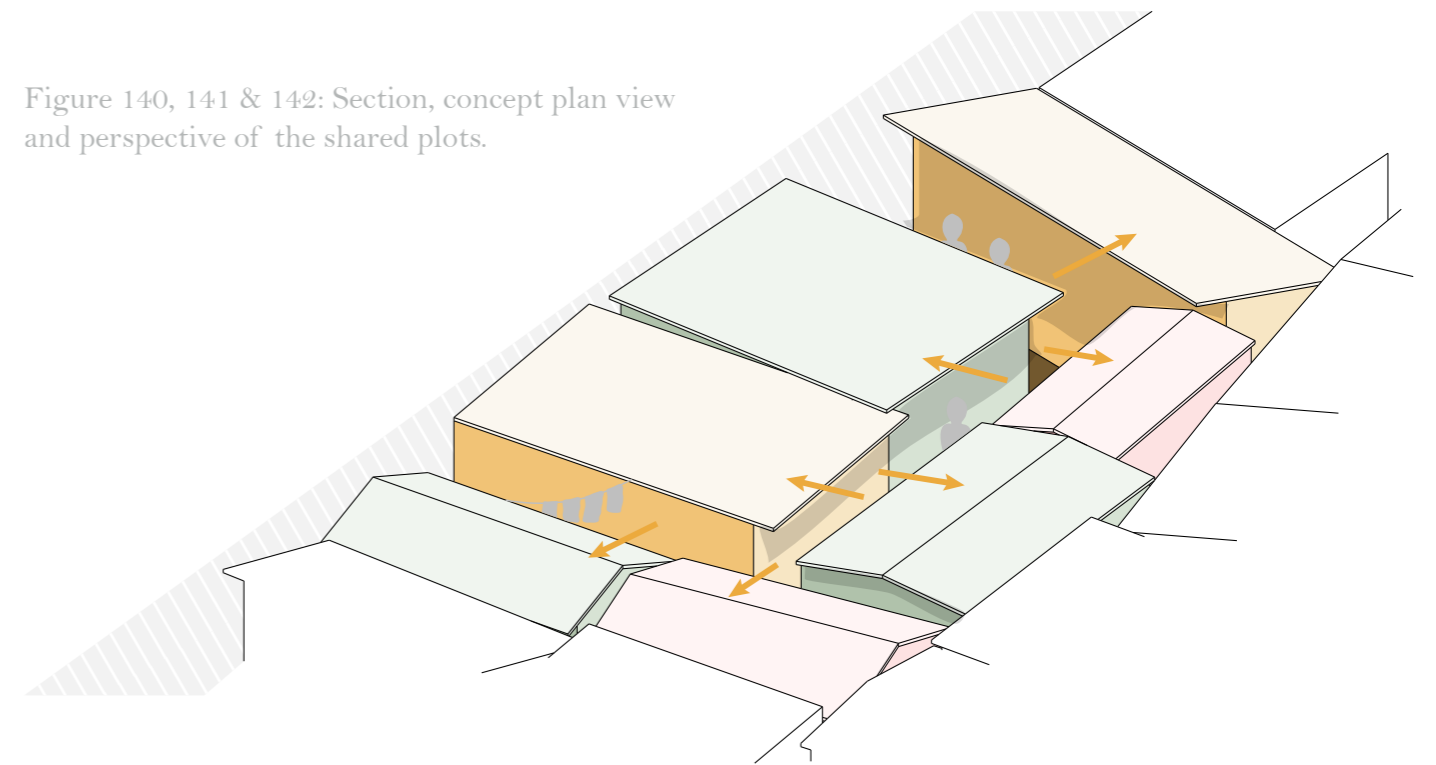
Secondly, this configuration enables the residents to have easier contact with neighbours. This has the intention to increase the residents' bonding social capital with people in the same location and situation and to create a stronger sense of community and neighbourship among locals.

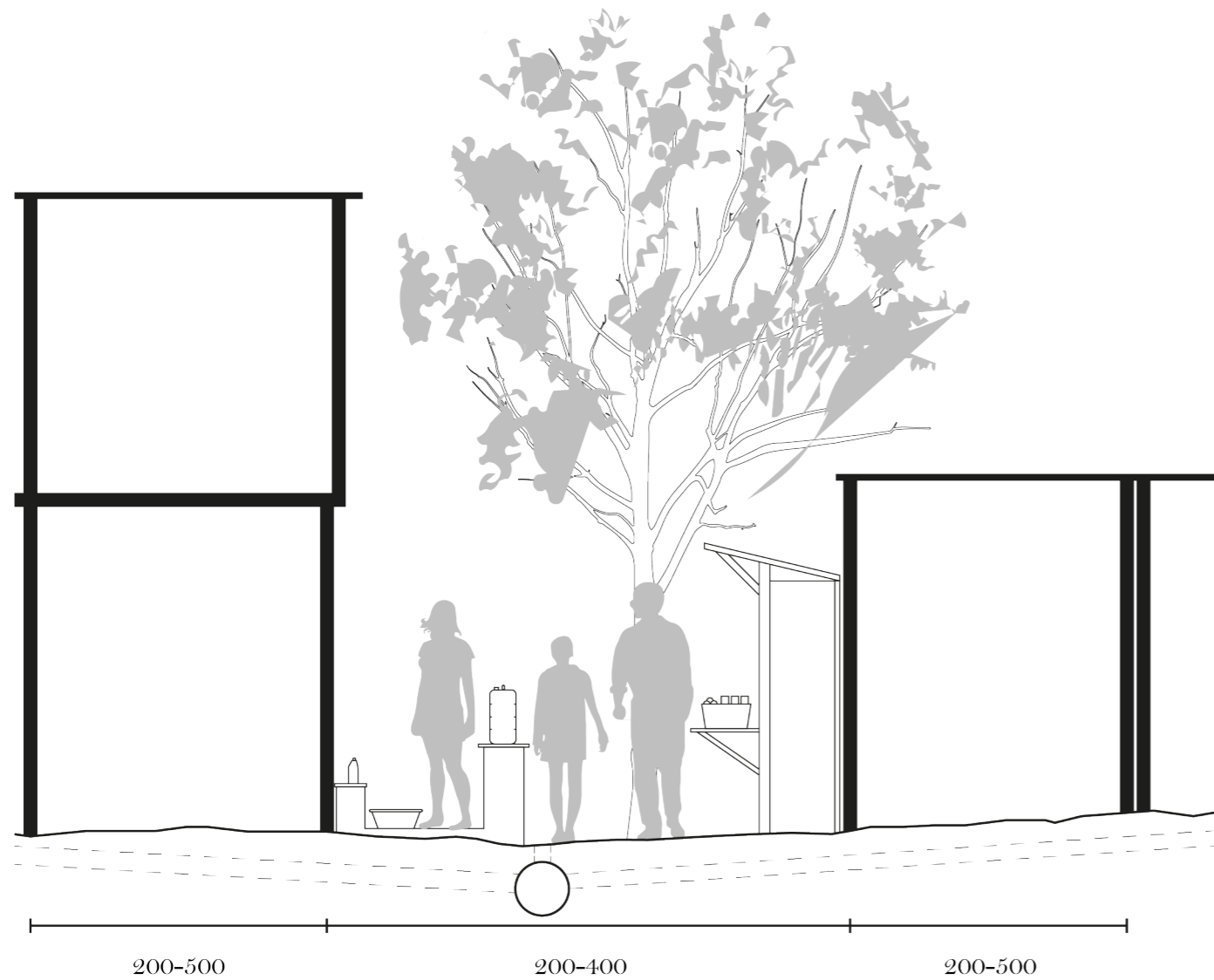
Then subsequently, this can lead to better trust among these smaller social groups. And this is fundamental for effective and successful

representation. The representation plays a part in democratically organising community meetings. Often, people are invited to join community meetings or government officials organise barazas, which is a public gathering. Taking turns, members of the same plot group could attend such meetings to represent their group. They can better represent their group, when they have higher levels of trust and mutual understanding. Additionally, they can discuss political opinions and base their vote on these discussions, rather than being divided by politicians, based on ethnicity, providing themselves with more political influence to improve their situation.

Lastly, the shared configuration can make installing and maintaining infrastructure easier and more efficient. Examples of such infrastructure are storm water drainages and electricity cables. The improved trust and social bonding is also beneficial for the capability of fixing problems together and increases the capacity of collaborating in improving their own shared living environment, such as improving their homes and keeping the area clean. A strong amplifier of this benefit would be the implementation of tenure security, because being assured of a permanent place to stay increases the willingness to put effort in improving one's home.

Figure 140, 141 & 142: Section, concept plan view and perspective of the shared plots.





Active Street

The active streets are the entry routes to the shared plots. A little more space is created between the dense structure of shacks to enable activity away from the main commercial roads. They provide a linear type of public space, which is seriously lacking in Kibera. The space should be just wide enough to be able to implement some functions on the street. Some of the functions have permanent structures to ensure the continuous existence of the space. There are functions, such as business stalls, washing areas, sanitation blocks and playgrounds to render activity over the course of the entire day. Also trees can be added to provide shading.

Again, this intervention aims to improve safety. The social activity on the street prevents criminal activity and harassment. Different from the shared plots, the active streets are fully public space, but there are no entrances of people's homes located towards the street, which diminishes their vulnerability to burglary.

The entrances of the shared alleys of the plots are located along the active streets. This connects the different groups of the plots to the other groups, who make use of the same street. Although less strongly than in the shared plots, the

active streets enable the increase of bonding, and additionally, bridging social capital. People from different groups meet each other at functions of the street and might be interested in similar activities. Social gathering is enhanced by the creation of 'third spaces', such as seating areas, play areas and washing stations. The business stalls, combined with the safe environment of the shared plots also support commercial cooperation. The shared street, where activities take place, enhances the shaping of a sense of community.

The active streets are necessary to provide the residents with basic urban services. They can be used for sanitation points, laundry areas, vegetation, waste collection points, etc. With the implementation of these streets, the needed infrastructure can also be installed, connected to the shared plots. So for instance, the drained water from the plots can be routed through the streets to be taken out of the neighbourhood.

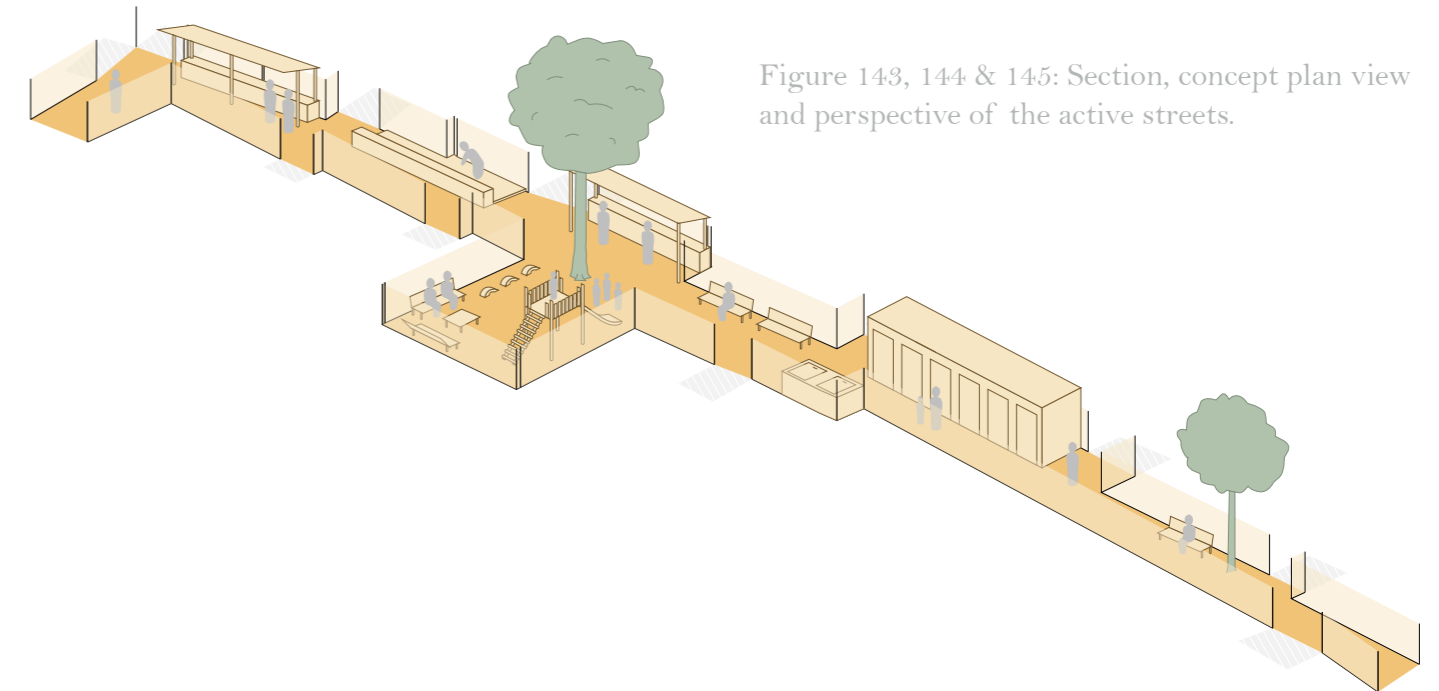
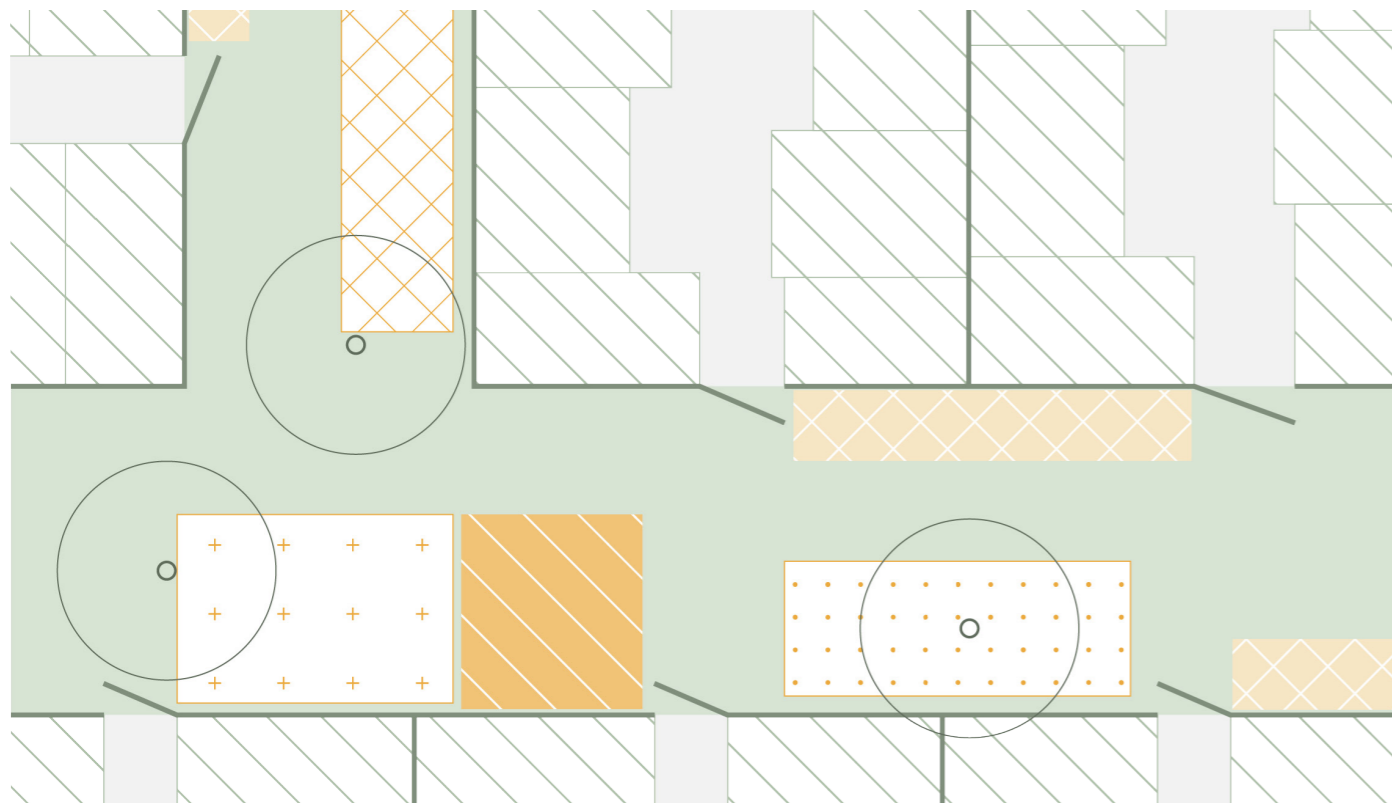


Figure 143, 144 & 145: Section, concept plan view and perspective of the active streets.

Community Centre

The community centres are the central part of the system. These centres are equipped with the essential community functions and provide public space for the neighbourhood. It is a place for residents from all over the neighbourhood to gather, combined with services and programmes for the area. A physical centre gives direction for people to find help and it increases feelings of trust and stability. The community centre houses rooms for trainings, gatherings, sanitation facilities and more.

Different social groups can come together and join programmes and trainings, which increases their bridging social capital, because they are able to meet like-minded people to do activities with. When programmes and trainings are successful, they become noticeable for government officials and this can enhance the linking social capital of people, who are active in the centre. Being able to constructively meet other people in the neighbourhood leads to a stronger sense of community. In addition, training aims to empower people and this creation of empowerment and awareness of personal capabilities is beneficial for the smaller social groups of the plots, because empowered people are better capable of initiating

local improvement (Otieno, p.c., 2025).

Similar to the active streets, the community centres can provide basic services for residents, also those that need a little more space. Examples of this are sanitation blocks, play areas, electricity provision and even food production. But in addition to this, the centres are better suited to be an entry-point for programmes, such as trash removal programmes or saving group programmes. They can be home to CBOs, that aim to improve the neighbourhood.

To further expand the idea of bringing people together and enabling collaboration, the centres should be part of a network of multiple community centres. They can learn from each other to make improvements to their own centre and they can support each other in times of misfortunes. A step further would be to create specialisation at each centre, that complements the specialisations of the others, such as a work place for motored vehicles in one centre, connected to a vehicle parts collection in another.

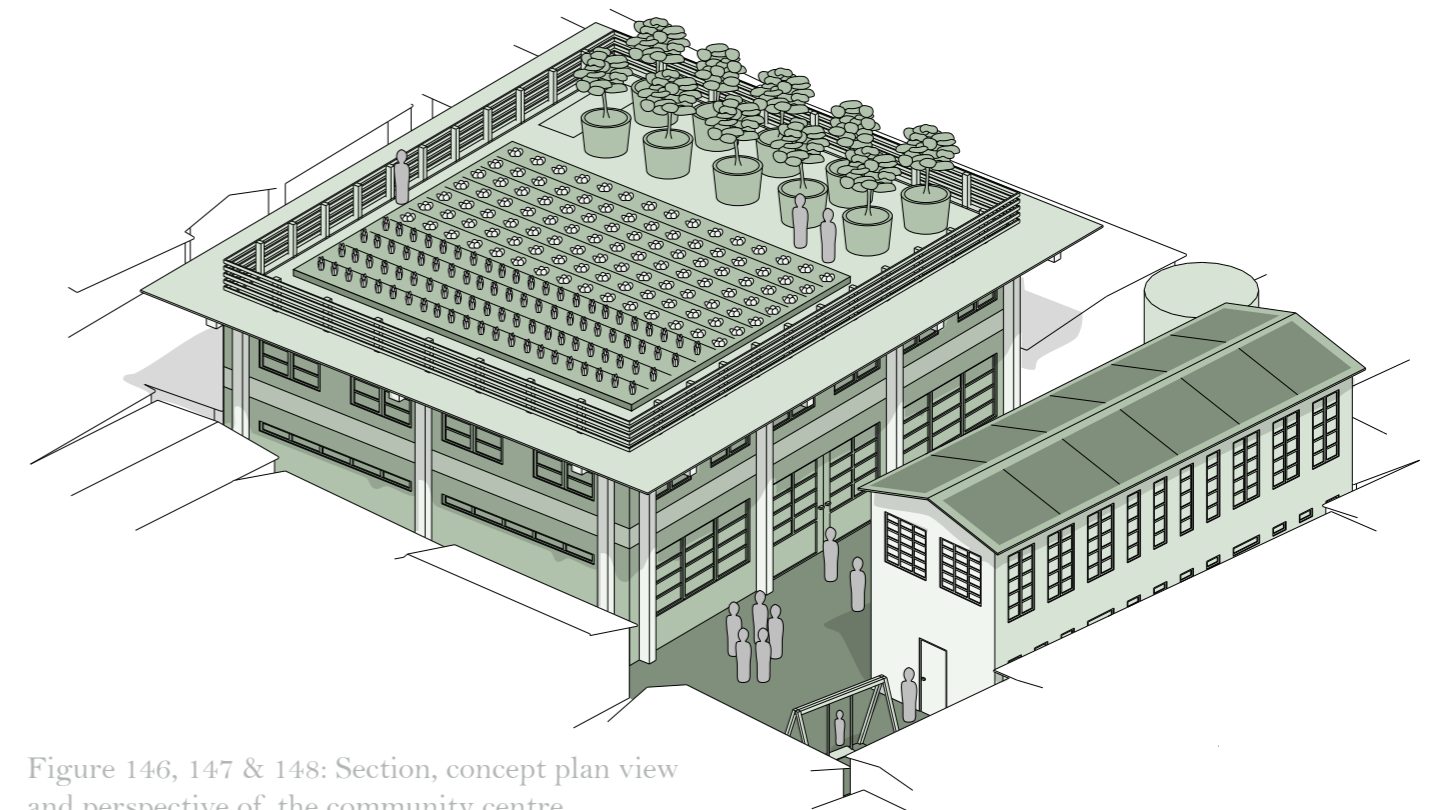
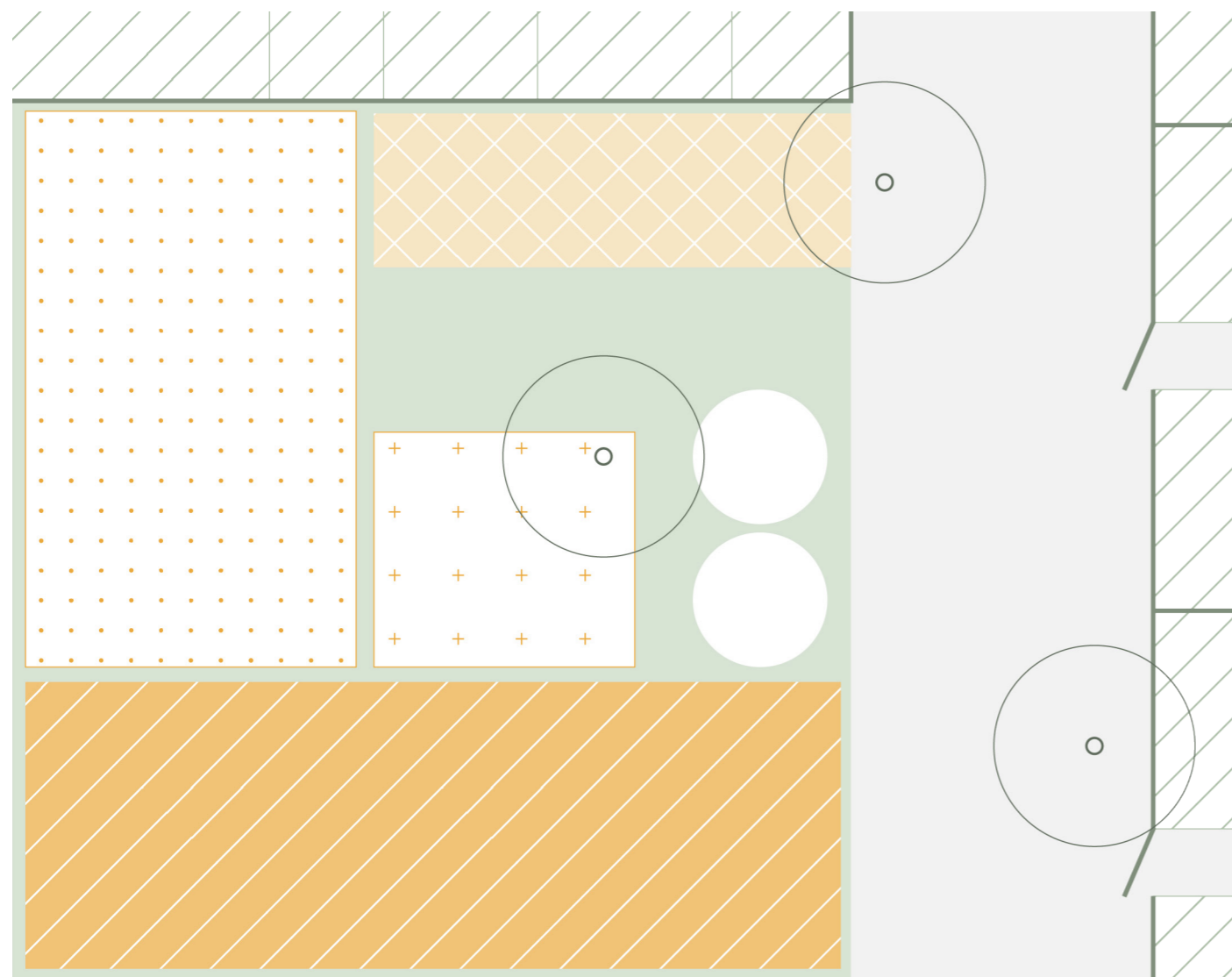
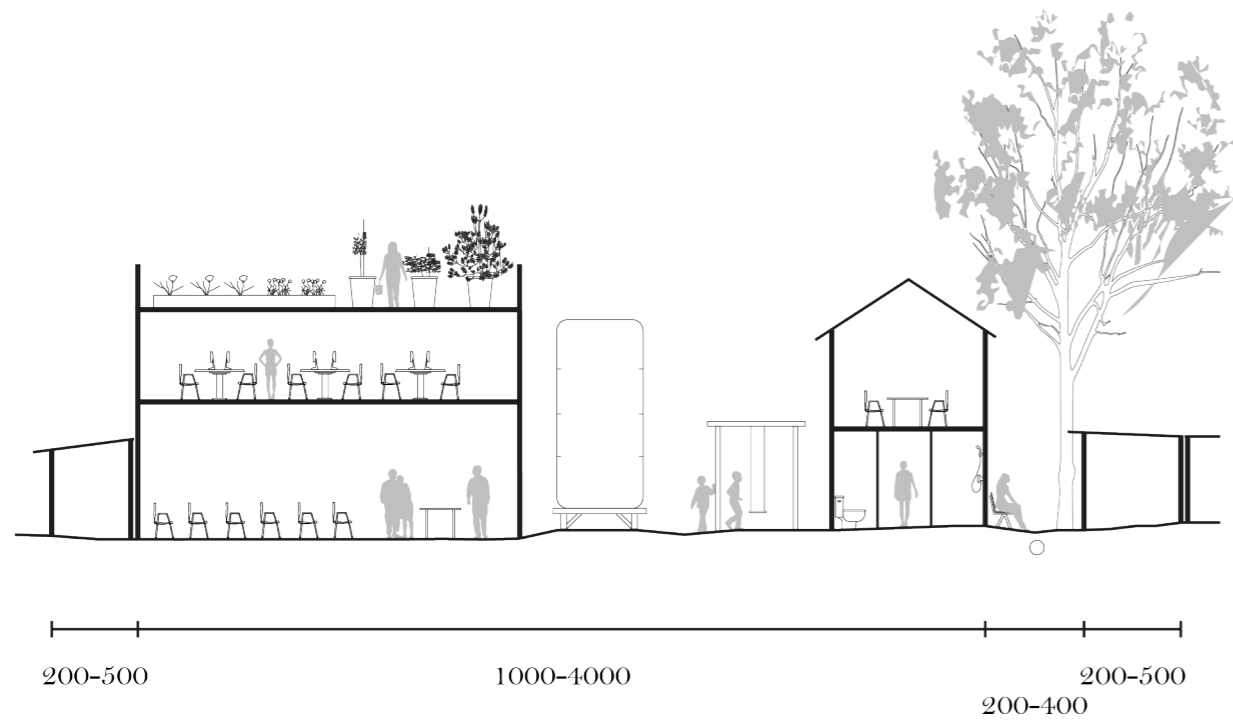


Figure 146, 147 & 148: Section, concept plan view and perspective of the community centre.

6.2.3 Implementations

Shared Plot

The plots should not be too big, so the group of users stays comprehensible. The alleys all have at least two exits.

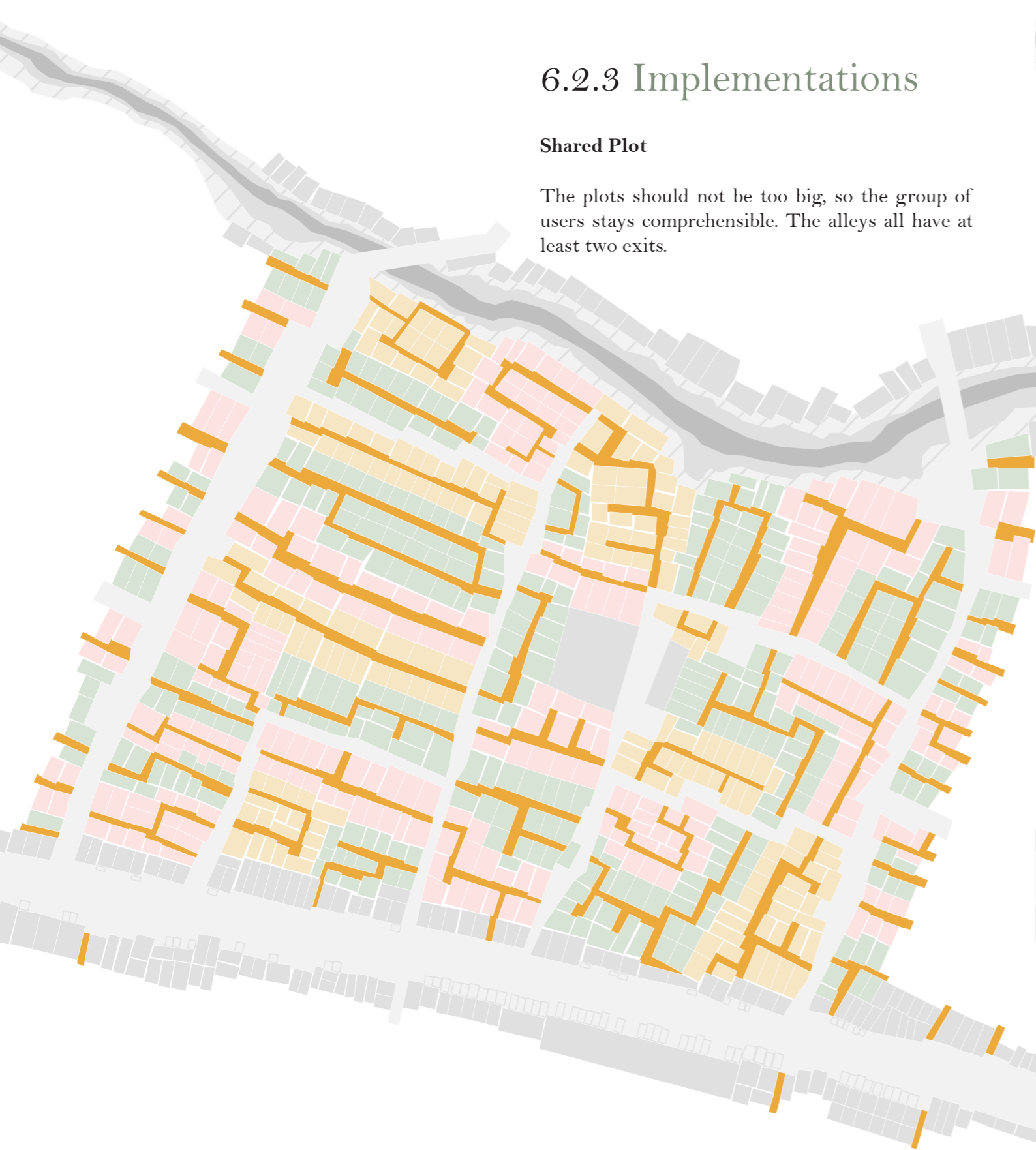


Figure 149: Plan view of the shared plots in Silanga.

Active street

The streets differ in width and contain many corners. This allows for the placement of various amenities. Some need bigger spaces than others. It is important that the active streets give access to the shared plots.



Figure 150: Plan view of the active streets in Silanga.

Community Centre

The community centre should be located centrally in the neighbourhood. It should be easy to reach for every member of the community and they should not be hindered by unsafety or disability.

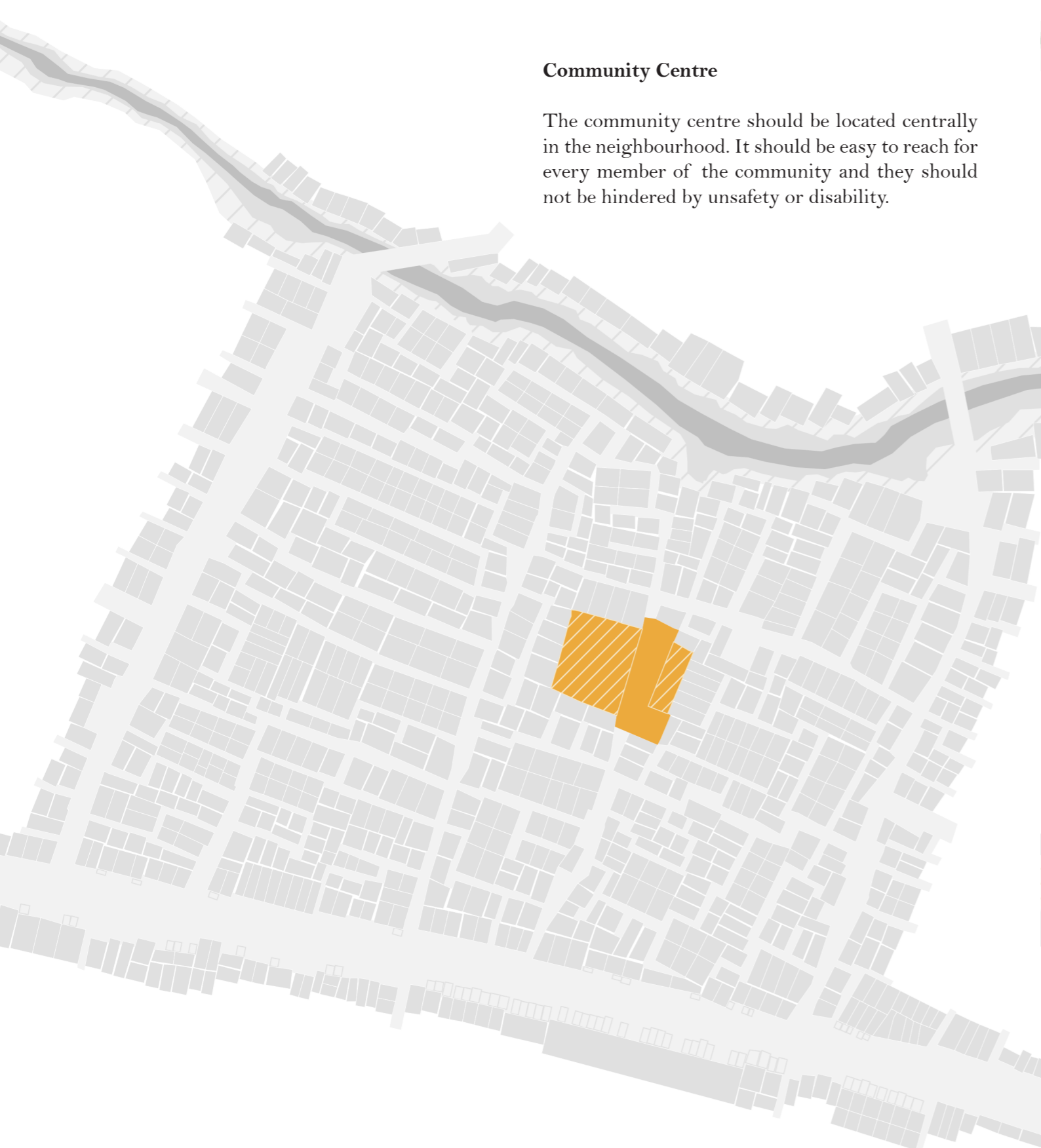


Figure 151: Plan view of the community centre in Silanga.

Combined Interventions

This schematic map shows the implementations of the three interventions combined in the village of Silanga. It shows how they are connected and how together create a re-imagined space, that promotes the development of community capital.



- Community centre
- Active street
- Shared alley
- Commercial road
- River
- Shacks, stalls and buildings

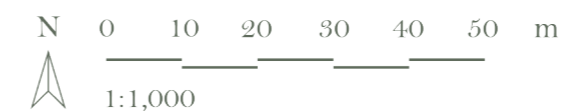


Figure 152: Schematic plan view of the implementations in Silanga.

Network of community centres

The same concepts could be extended to the adjacent neighbourhoods in Silanga. That means, that Silanga would have multiple community centres. Together they can create a network. Such a network helps to make them more resilient and they promote collaboration. Members of the centres can support the other centres with materials and knowledge in the case of misfortunes. This also helps in promoting collaboration on a larger scale, which could further support development of the village. The same principle can be used for other villages in Kibera or other informal settlements.

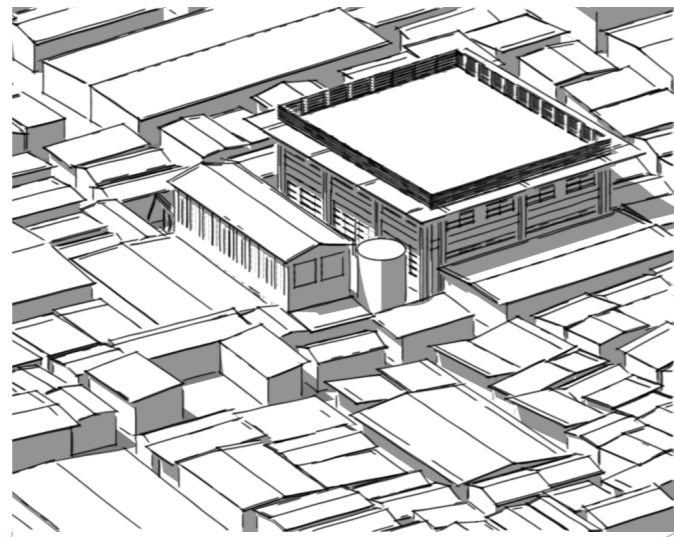


Figure 153: The network of community centres in Silanga.

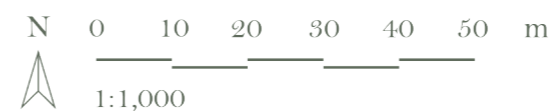


Figure 154: Semi-realistic plan view of the implementation in Silanga.

6.2.4 Relations

Connecting neighbours

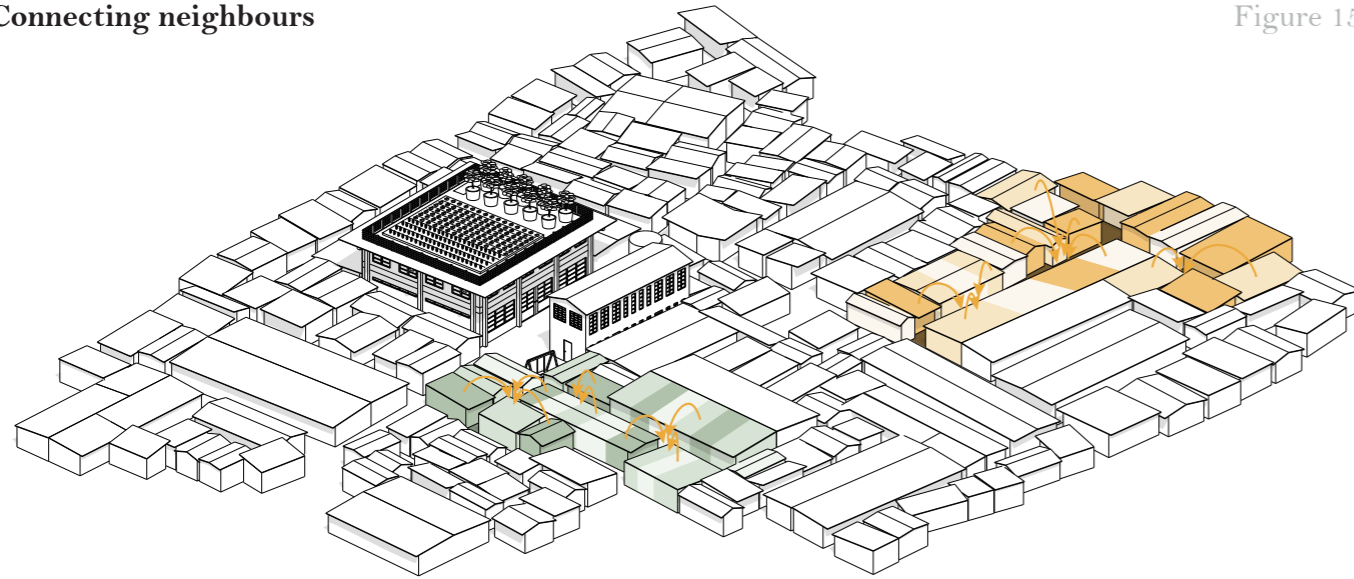


Figure 155.

The shared plots with shared entrances and alleys give the residents a communal space, that is semi-private to them. They share it with a limited number of neighbours. It enables them to make stronger connections with their close neighbours, who care for the same space, which becomes a shared interest for the residents and therefore brings them closer together.

The re-arrangement of plots is an opportunity to improve the infrastructure in the process and connect it well and safely to the central points, like the active streets. Examples of such infrastructure are drainage systems and electricity provision. This improves the access to basic services.

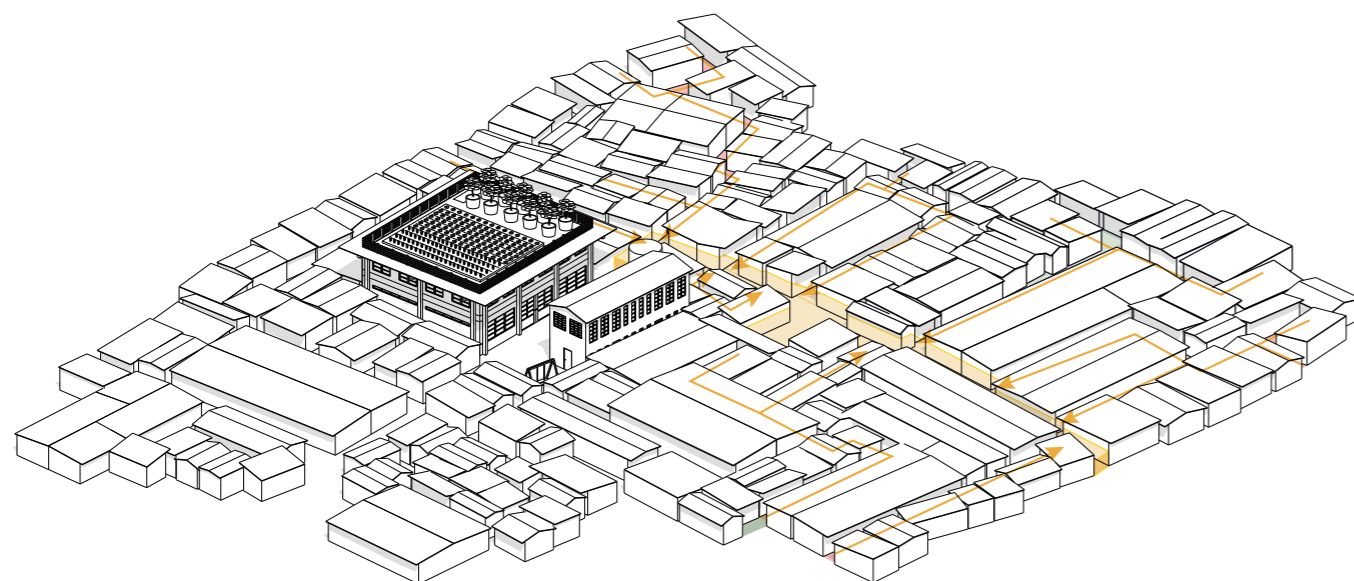


Figure 156.

Improving infrastructure

Facilitating cooperation

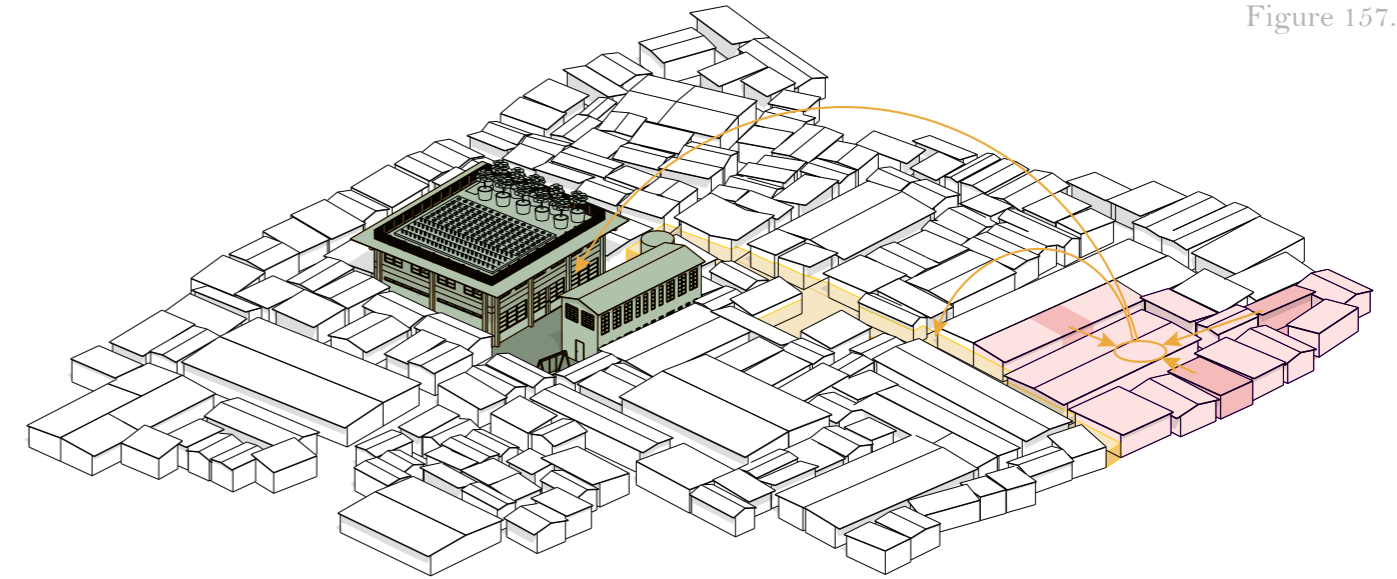


Figure 157.

The strengthening of the social connections between neighbours through the shared plots helps them to initiate cooperations. Such cooperations can be exploited within the own shared plots, but probably more profitable is taking it to the public streets or community centres. These public spaces allows for bonded neighbours to develop and locate their ideas for cooperation.

Whereas the shared plots help to connect direct neighbours more closely, the active streets then bring together the people of the different grouped plots. This is where most of the activity happens, that is close to their homes. The active streets enable recognition of other people in the proximity and provide space for people from different social groups to connect.

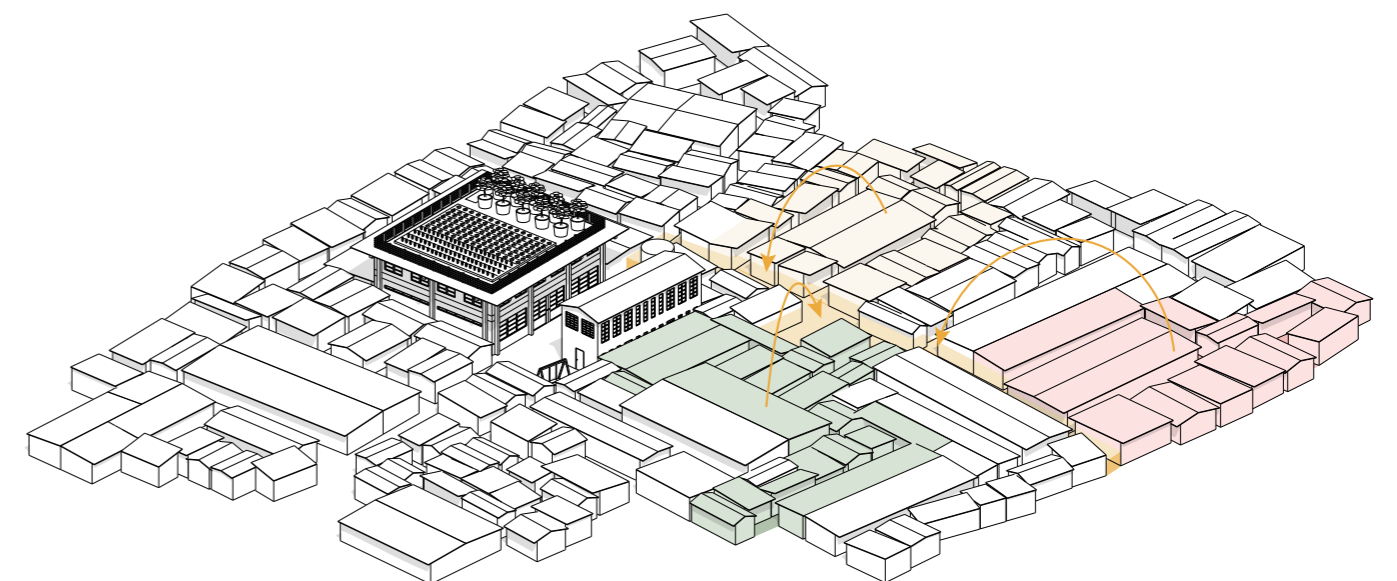


Figure 158.

Connecting near social groups

Facilitating basic services

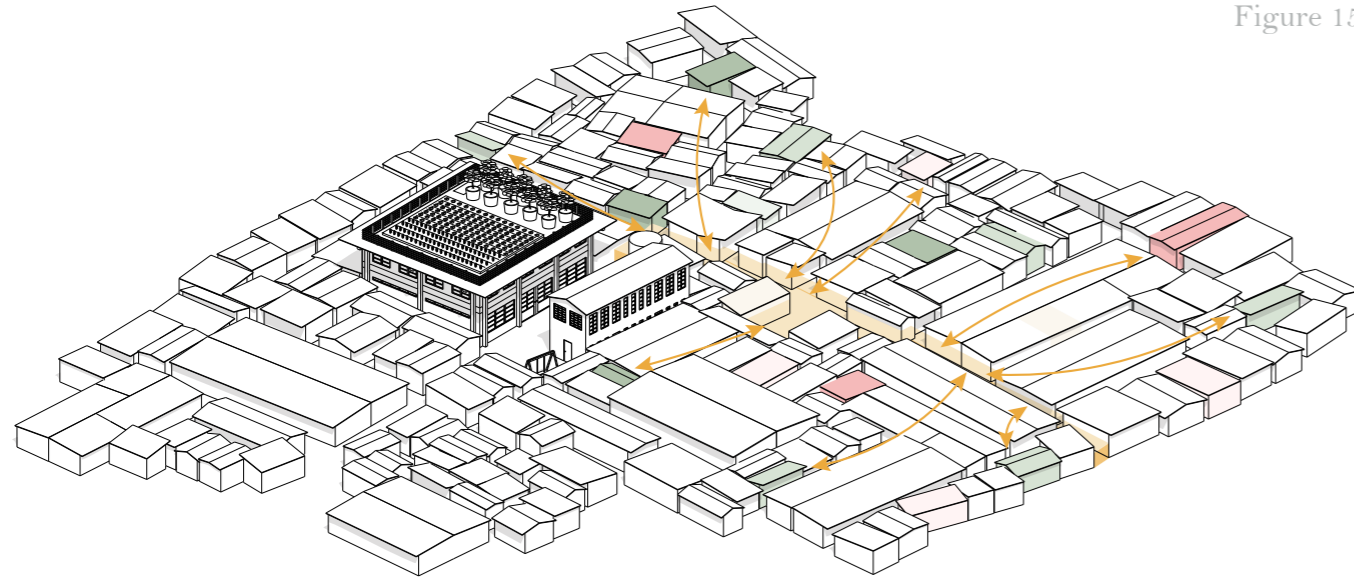


Figure 159.

The active streets provide basic services to the residents, who live in the connected shared plots. This is where there is space for washing facilities, small shops, sanitary facilities, waste disposal or playgrounds. The active streets bring these services closer to people's homes, so they do not need to walk far through unsafe alleys.

Public space is usually hard to be found in the informal settlements. The active streets provide a type of public space, that can be used for playing, meeting and other public functions. In addition, because of the public activity, it is also safer to use than most of the current alleys.

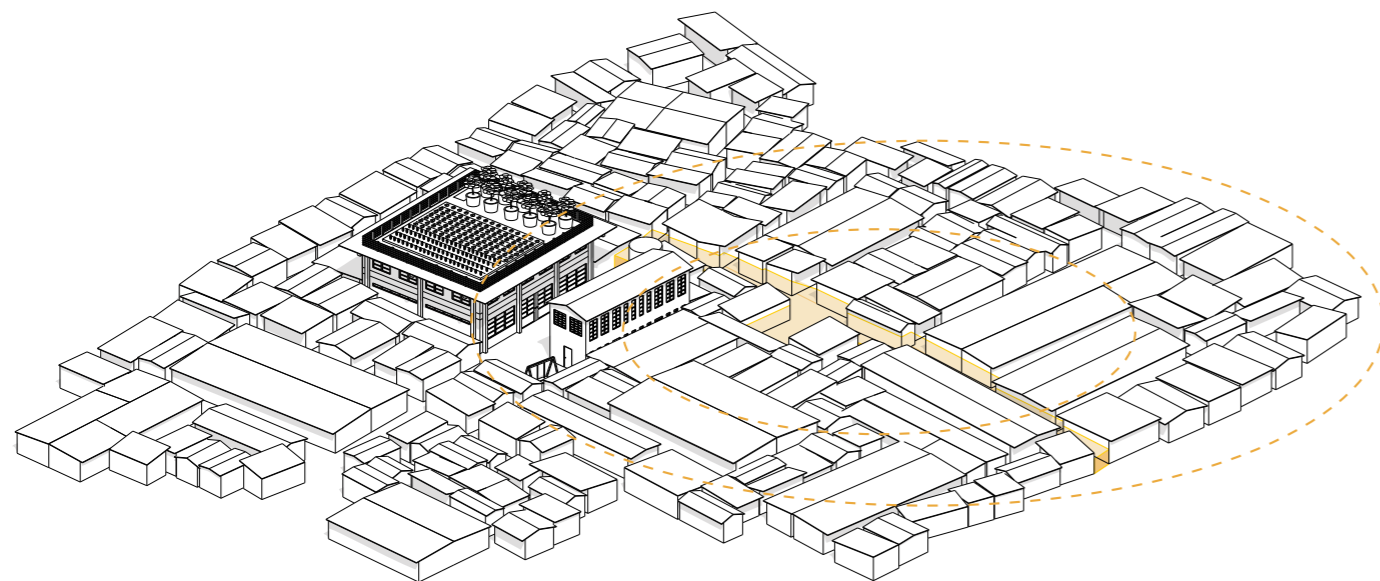


Figure 160.

Providing public space

Improving infrastructure

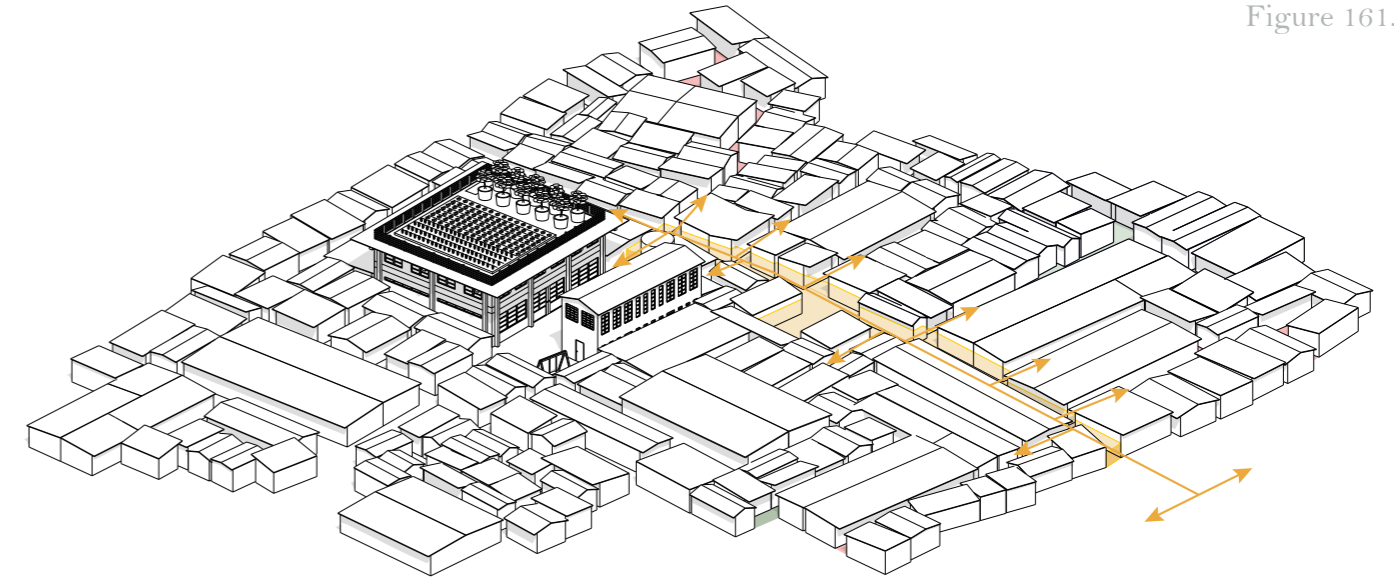


Figure 161.

As is the case for the shared plots, the creation of the active streets can be paired with the bundling and the improvement of the neighbourhood's infrastructure. The active streets can function as central nodes for these systems. Subsequently, they active streets connect to the larger roads in the settlement.

The primary social function of the community centre should be to provide space for the community, consisting of the near social groups of the shared plots, for social interaction. The community centre is the place, where people go to for social activities. It reaches a larger area than the active streets, meaning that people within the same area, but connected to different active streets are also able to meet here.

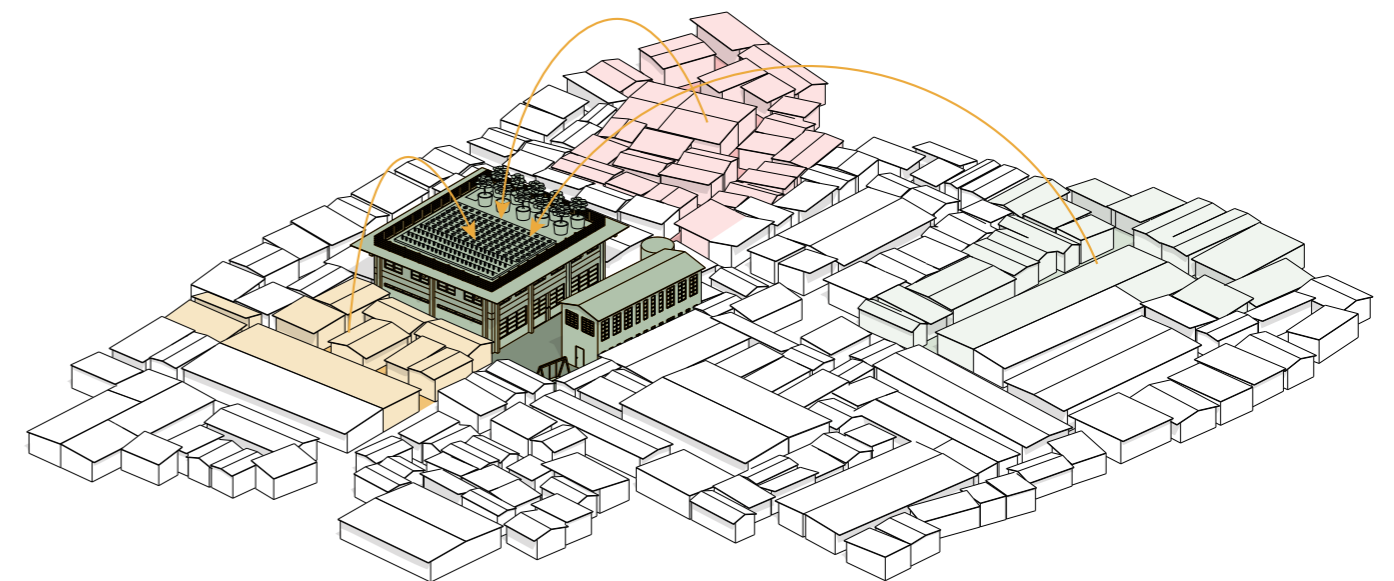


Figure 162.

Connecting the community

Improving strengths

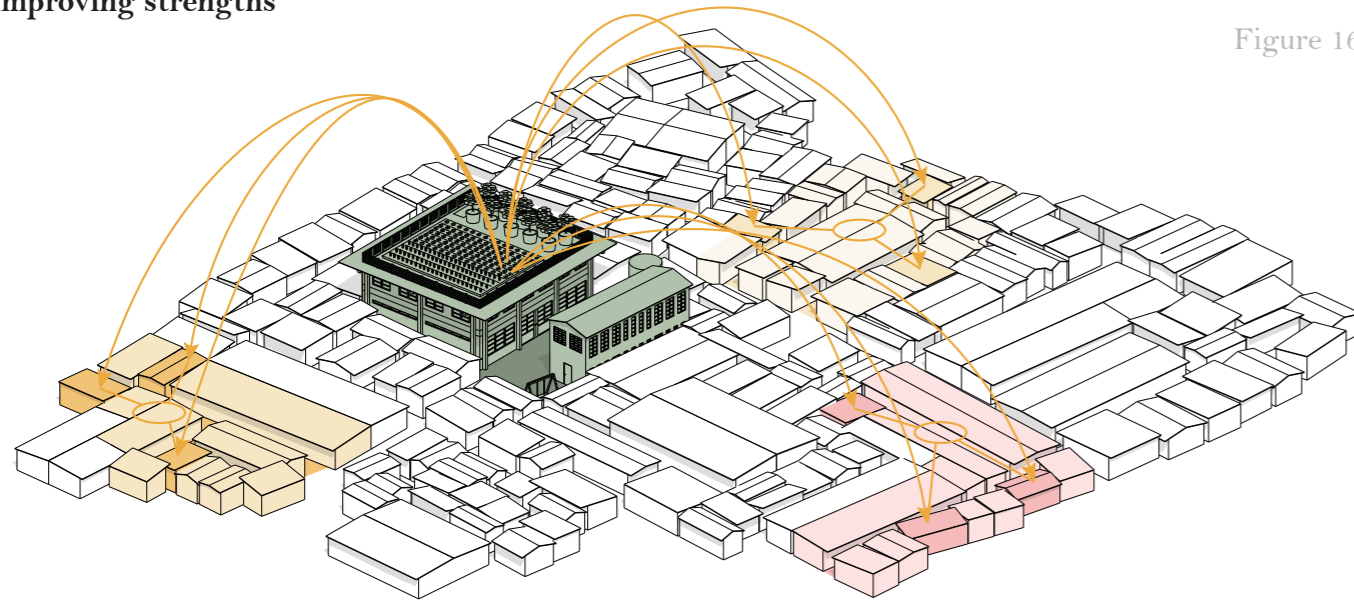


Figure 163.

The community centre provides space for education and programmes for empowerment. Participants improve their skills and learn to collaborate with others better. They can take these properties home to their social groups. They use their knowledge to help their neighbours and this way improve their strengths and collaboration. Sometimes, people just need someone to take the lead.

Just like the active streets provide space for services to the connected shared plots, the community centre is able to provide public services to the larger area. They can be similar to the services of the active streets or an addition to them, such as the production of local vegetables or access to computers and internet.

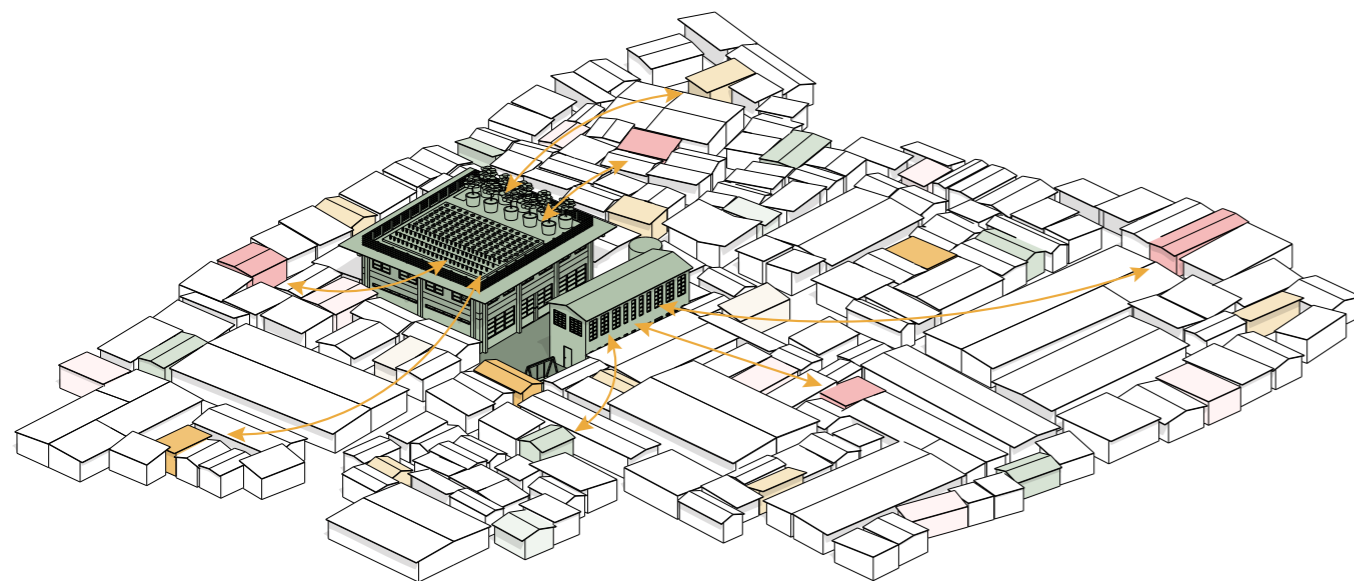


Figure 164.

Providing services

Coordinating programmes

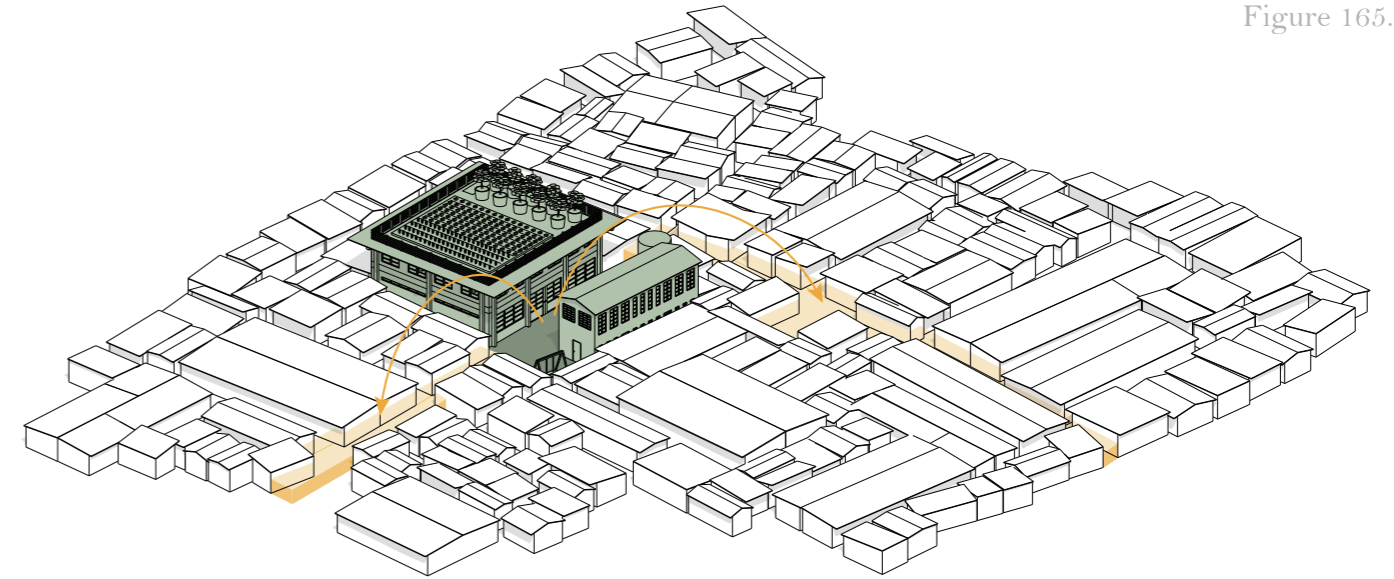


Figure 165.

The community is able to function as a central physical space to coordinate programmes for the neighbourhood and village. It is easier to coordinate such programmes from a central point, that is recognisable and accessible to local residents. If problems occur, they would know where to go to. Such programmes include street clean-ups or local food provision. It is an excellent spot for CBOs to be based.

In addition to the active streets, the community centres offer more public space. They are usually better suited as meeting space for larger groups and could house different activities. Community centres can include public and semi-public spaces inside and outside the buildings.

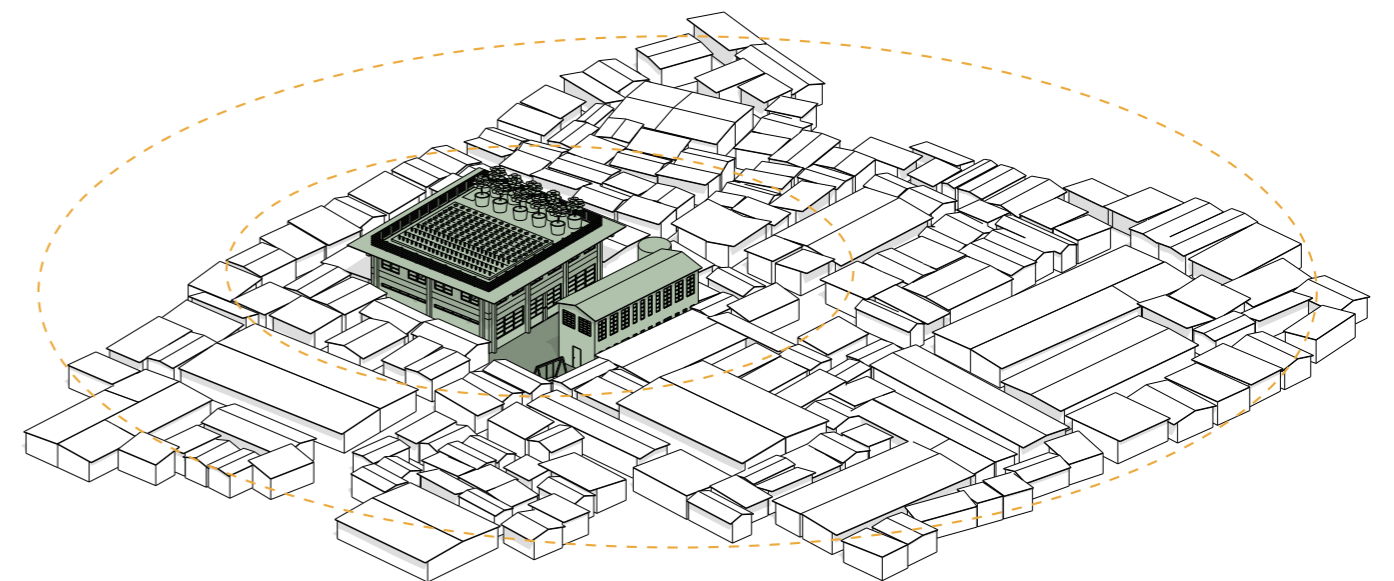


Figure 166.

Providing public space



Chapter 7

Postscript

Process

With this thesis project I aimed at investigating a topic and site, that I did not study before in the past and might not study soon again. I took the opportunity of being a student to be able to immerse myself in a totally different context. This context became Kenya. However, the choice for the site of Kibera was not easily made and probably took too long to decide on. This is a consequence of jumping into the deep. There is not enough knowledge to base a decision upon, while trying to do this well-substantiated. In this situation, it can be hard to hold on to the solid options, even when they might seem obvious.

On the other hand, this could be viewed as the ultimate exploratory research. And in a way, progressing as a researcher always contains an exploratory process. Previous findings and overcome obstacles add to the knowledge base of the researcher and the ability to position themselves, their work and the work of others in the current project. Hence, it can be very useful for urban designers to work in various contexts. This provides the opportunity to review similarities and differences and examine relations between varying contexts, while creating connective knowledge (Priaulx & Weinel, 2018). Subsequently, such knowledge and experience can be used to be more thorough and considerate in current and future projects.

Yet, it was difficult to give direction to the project. During the first period, I tried to gather a lot of information by reading many articles. Instead of achieving focal points and direction, this resulted in an expanding field of information and possible topics. Consequently, it became hard to frame a consistent and relevant problem statement, so it had to be re-written multiple times. Looking back, this process took a lot of time and the progress of the project was too slow. While time was pressing, when the presentations approached, the production of substantial contributions to the project was low. This is because, the sense that more tasks needed to be completed in the near future was adding to the unfinished tasks, and this results in a cognitive overload, which can disrupt the focus and prioritisation of the most important tasks (Qin et al., 2009). There is a feeling of 'being behind' all the time.

Additionally, getting to know a city and its essential elements can take a really long time. This is especially the case, when the research project entails the social elements of the city. Nairobi was not totally new to me, but neither was I familiar with it. From an engineering perspective it might seem less important to know the finer components, but from a social studies perspective also the smaller cultural and social details matter, in order to fully understand the functioning of the city. People will be able to pick up such details over time

and it is difficult to do this by only studying the site from the outside. This strokes with the idea of symbolic capital by Bourdieu (1986), who describes the accumulation of symbolic capital as a lengthy learning process. Moreover, Nairobi is described as a city that should be understood by its fragmented identity (Smith, 2022). The fragmentation makes Nairobi less readable, in particular for outsiders like me, who are used to a European context.

Personally, the understanding of the city was accelerated by another visit in the third quarter, after which it took several more months to relate various aspects to each other. Though, this process is still ongoing. It is a part of the exploratory nature of this research project. The process of understanding the city was a method of exploring ways to cope with the existing challenges. Meanwhile, the chapter concerning the context of the project was not written yet. The outline of the main elements was already clear in the first months and this was also necessary for composing the problem statement.

But only after studying the city for longer and beginning to understand its functioning, the different elements of the context started to relate to each other and make sense. Simultaneously, the writing of the context helped in further understanding the city and the related problems and opportunities. This chapter might be relatively extensive, compared to other thesis projects, but it was also part of the process of understanding the analysis and coming to conclusions.

The unravelling of socio-economic structures of the city, while thinking about inclusivity and equality, is connected to the studio of Planning Complex Cities in the Urbanism track, because it has a focus on urban challenges, concerning conflict, inequality and injustice. Inequality is the most visible and obvious issue in a city with informal settlements and deliberate segregation.

But the causes and structures behind the inequality are generally less easy to see. I believe it is necessary to make these structures clear and explicit to be able to substantiate the design, that follows from the research. But even then, the design, in the case of this thesis, can only be presented as an explanation of the perspective on the posed challenges and subsequent solutions. An actual design should follow a participatory approach, which is part of the creation of community capital, the subject of this thesis. Myself alone, I cannot design interventions, that should be owned by the users in a sustainable way.

Relevance

The thesis deals with the persistence of informal settlements, which keep increasing and intensifying, because of the trend of rapid urbanisation and increasing inequality in African cities. It is a challenge, that keeps getting more pressured at a quick pace. The societal relevance of this research project, is that it aims to contribute to reducing inequality by proposing an alternative approach to facilitate socio-economic development for the marginalised population of the city of Nairobi. The research makes this contribution in two ways. Firstly, it offers the alternative perspective of using community capital and the indispensable sense of community as a foundation for community development, as opposed to using the usual set of interventions, developed by organisations and professionals, as an entry-point for change. Secondly, the research provides insight into the layered mechanisms of persisting impairment of socio-economic development, which result in increasing inequality.

In addition to this, the thesis is relevant in respect to some of the Sustainable Development Goals (SDGs), developed by the UN. In particular, SDG 1 (no poverty), 8 (decent work and economic growth), 10 (reduced inequalities) and 11 (sustainable cities and communities) are relevant in this research (Acioly, 2020). Whereas SDG 1, reducing poverty, is a rather broad goal, I think that the others, especially in this project, contribute to achieving this goal. As mentioned before, a prominent aim of the project is to reduce inequality and this accomplished by improving economic opportunities and creating

sustainable communities through resilience and independency.

A final societal relevance, and a personal goal, is to show, that people present similar behaviour anywhere in the world. It is their environment, that impacts their social functioning and their ability to achieve socio-economic development. Not in any way, the location of birth nor racial background influences human capabilities. Effective cooperation and development only starts by recognising each other's strengths and wishes, and treating each other as equals.

Therefore, the scientific relevance relates to the societal relevance by contributing to studying communities in the Global South. In regard of equality, there is a necessity for more social studies in this part of the world. This adds to the base of knowledge concerning urban communities in the developing world. An expansion of data eventually results in a better understanding of this context and more effective interventions. This research contributes to this knowledge by investigating the context of informality in Nairobi, while exposing the relations with former colonisers, global trends and the mechanisms of inequality.

Secondly, the thesis offers a way of approaching informality, that seems not to be as relevant in other studies. The approach has shifted from top-down to bottom-up approaches. Institutions and organisations with professional designers and planners seem incapable of effectively and sustainably designing interventions for communities, that they are not part of. Therefore, more developers turn to participatory development in more recent projects. But very few pay adequate attention to the foundation of participation, which is related to community capital and sense of community, especially in informal settlements. This is how this research offers an alternative approach.

Finally, the research provides a strategy for achieving socio-economic development in informal settlements in the context of Nairobi. A purpose of the research is to expose the mechanisms, that impede the ability of informal settlers in joining the growing economy. Additionally, it is explained which steps are necessary to counter these mechanisms, to result in socio-economic development. Some elements of the strategy could be seen as universal for informal settlements and some elements are specific for the context of Nairobi. The outcomes should serve as content for further debate around development for the poor urban majority in Nairobi.

There are a few ethical considerations concerning this research. Firstly, in this project, I got myself involved with a country and culture, that is not my own and that I am not so familiar with. Working in a different context includes (un)consciousness reasoning from my own Dutch background. This can lead to false conclusions and assumptions, that do not apply to the Kenyan context. Therefore, conclusions must always be based on local information and verified sources, rather than the translation and projection of own experiences and ideas. However, it should also be noted, that this is not fully possible and that personal background will inevitably be used to tackle certain issues. Still, I hope to have encountered the research with a mind as open as possible, in order to learn as much from new experiences.

Secondly, the research involves studying the most vulnerable population of the city. My presence and interaction could be harmful to the population in terms of social dynamics. In conversations, it is useful to be considerate of cultural differences and to be aware of each other's positions. The conduct of conversations can be very delicate and I tried to avoid feelings of pressure to give answers. In the following use of the gathered data, I kept statements anonymous.

Lastly, in the literature and the field, experts make the distinction between the formal and informal city. This is useful for clarity in the conduction of research, but in reality they are not two separate entities. The formal and informal are always related to each other and often overlap. The term informal should be considered as those elements

and processes, that are not formally regulated or planned, but it is not a synonym for the part of the city, that is not considered the formal part.

Discussion

To conclude, there are two pressing challenges, that I have not been able to properly deal with in this thesis research. The first one is, that some people are simply not accepted by their community. There are people, who are excluded from their social groups. Social dynamics and human interaction are very complex. With this research project, I did not find adequate solutions to enable the inclusion of every individual. Exclusion and bullying are issues, that are not specific to a certain context. It remains a major problem all over the world. But in an environment, where almost everyone has been involved with emotionally and socially devastating experiences, such issues can be excessive.

The second challenge is the issue of rapid urbanisation. Cities like Nairobi are increasing in population at an incredible rate. The proposed strategy is not able to deal with such a massive influx on the long term. The settlement of Kibera is already alarmingly cramped and conditions can deteriorate quickly, when the issue of rapid urbanisation is not diminished in the near future. Therefore, a question for new research is: how can the large influx of people to informal settlements and rapid urbanisation in major African cities be reduced?

Another question is related to the distorted relationships among Nairobi citizens and the related lack of trust and cooperation. To achieve effective socio-economic development, the cooperation between stakeholders should reach out beyond the limits of Kibera. The question is: how can trust among citizens of different parts of the city of Nairobi be enhanced to accommodate more cooperation? Eventually, inequality in the city can be reduced through co-production and cooperation.

- Aardenne, L. van (2017, November). *Nairobi Climate Profile: Full Technical Version*. University of Cape Town. Consulted on 15th January, 2024 from: https://assets.publishing.service.gov.uk/media/5f89cf25d3bf7f49ae830cd7/Nairobi_climate_profile_full_technical_v2_0.pdf
- Acioly, C. et al. (2020). *The New Urban Agenda: Illustrated*. Nairobi: United Nations Human Settlements Programme (UN-Habitat)
- Africa Facts Zone (27th January 2025). *Major African Ethnicities that were Divided by Colonial Boundaries* [Post]. Facebook. <https://www.facebook.com/AfricaFactsZone/posts/major-african-ethnicities-that-were-divided-by-colonial-boundaries-east-africa-1/1140955347697900/>
- Akoko, J. A. (2022). New Infrastructures in Enhancing Mobility in the City of Nairobi. *Scientific Papers of Silesian University of Technology, Organization and Management* (155/2022). <https://doi.org/10.29119/1641-3466.2022.155.1>
- Alaso, D. et al. (2024, September 2). Development of a Spatial Synoptic Classification Scheme for East Africa with a Focus on Kenya. *Climate*, 12(9), 133. <https://doi.org/10.3390/cli12090133>
- Albert, R. (2021, August 25). *Kenyan Judges Stop President's Reforms as Attempt to 'Dismember' the Constitution*. Mail & Guardian. <https://mg.co.za/africa/2021-08-25-kenyan-judges-stop-presidents-reforms-as-attempt-to-dismember-the-constitution/>
- Anyamba, T. (2011). Informal Urbanism in Nairobi. *Built Environment*, 37(1), 57–77. <https://doi.org/10.2148/benv.37.1.57>
- Ariemba, J. (n.d.). Youth Unemployment Crisis in Kenya: Causes and Options. *Technical University of Kenya*.
- Ayuya, O. I. et al. (2021, May 8). Socio-Economic Drivers of Fish Species Consumption Preferences in Kenya's Urban Informal Food System. *Sustainability*, 2021(13), 5278. <https://doi.org/10.3390/su13095278>
- Baffoe, G. (2023). Neoliberal urban development and the polarization of urban governance. *Cities*, 143, 104570. <https://doi.org/10.1016/j.cities.2023.104570>
- Bagnis, S. et al. (2019, December 2). Characterization of the Nairobi River Catchment Impact Zone and Occurrence of Pharmaceuticals: Implications for an Impact Zone Inclusive Environmental Risk Assessment. *Science of the Total Environment*, 703(2020). <https://doi.org/10.1016/j.scitotenv.2019.134925>
- Balaton-Chrimes, S. (2021). Who are Kenya's 42(+) Tribes?: The Census and the Political Utility of Magical Uncertainty. *Journal of Eastern African Studies*, 15(1), 43–62. <https://www.tandfonline.com/doi/epdf/10.1080/17531055.2020.1863642?needAccess=true>
- Barnes, R. (2017). *A Bridge over a River in Kibera*. Grid-Arendal. <https://www.grida.no/resources/13095>
- Barnes, R. (2019). *Kibera and Surrounding Area*. Grid-Arendal. <https://www.grida.no/resources/13175>
- Barmoiben Kipkemoi Aarap Korir (1st November 2025). *Nilotic, Bantu and Cushitic Map Distribution in East Africa* [Post]. Facebook. <https://www.facebook.com/mombilen/photos/nilotic-bantu-and-cushitic-map-distribution-in-east-africa/10234504810695936/>
- Bauk (2024, February 4). *A New Era for Air Travel in East Africa*. Kenya Association of Travel Agents. Consulted on 16th August, 2025, from: <https://katakentia.org/a-new-era-for-air-travel-in-east-africa/>
- Bendor-Samuel, J. T. (2025, March 11). *Bantu Languages*. Encyclopedia Britannica. <https://www.britannica.com/art/Bantu-languages>
- Bogaert, Q. & Brondeel, T. (2010). *De Effecten van Gemeenschaps Sociaal Kapitaal op de Gezondheid en het Gezondheidsgedrag van Kinderen uit Kansarme Buurten. Een Systematische Review: Partim Kwantitatief Onderzoek* [Master dissertation, Gezondheidsvoorlichting en -Bevordering]. Universiteit Gent. https://libstore.ugent.be/fulltxt/RUG01/001/459/328/RUG01-001459328_2011_0001_AC.pdf
- Bourdieu, P. (1986). The Forms of Capital. In I. Szeman & T. Kaposy (eds.), *Cultural Theory: an Anthology* (2011) (pp. 81-91). Chichester, UK: Wiley-Blackwell.
- Brookings Institution (n.d.). *The 10 Traits of Globally Fluent Metro Areas*. Nairobi. <https://www.brookings.edu/wp-content/uploads/2016/07/Nairobi.pdf>
- Callaghan, E. G. & Colton, J. (2007, April 26). Building Sustainable & Resilient Communities: A Balancing of Community Capital. *Environment Development and Sustainability*, 10(6), 931-942. <https://doi.org/10.1007/s10668-007-9093-4>
- Cardosi, G. et al. (2021). Consolidation Design as an Adaptation Strategy in the Toi Market, in Nairobi, Kenya. In *Enhancing Disaster Preparedness*, 167–187. Elsevier E-Books. <https://doi.org/10.1016/b978-0-12-819078-4.00009-5>

- Cheeseman, N., Lynch, G. & Willis, J. (2016). Decentralisation in Kenya: the Governance of Governors. *Journal of Modern African Studies*, 54(1), 1–35. <https://doi.org/10.1017/S0022278X1500097X>
- Chepkwony, M. K. (2013). Influence of Access to Agent Banking Services on Rural Communities in Kenya: A Case of Ololung'a Division, Narok County. *University of Nairobi*. <http://hdl.handle.net/11295/91100>
- Cooke, J. (2009, August 6). *Background on the Post-Election Crisis in Kenya*. Centre for Strategic & International Studies. <https://www.csis.org/blogs/smart-global-health/background-post-election-crisis-kenya>
- Ditto, J. (2022, August 19). Dissecting the True Meaning of Community. *American Public Power Association*. [https://www.publicpower.org/periodical/article/dissecting-true-meaning-community#:~:text=According%20to%20the%20New%20World,and%20the%20word%20munis%20\(which](https://www.publicpower.org/periodical/article/dissecting-true-meaning-community#:~:text=According%20to%20the%20New%20World,and%20the%20word%20munis%20(which)
- Dopplinger, X. (2019). *The Emergence of Colonial Nairobi, 1898–1939: Urban Planning, Housing, Segregation and Imperial Connections* [Academic dissertation, Global Studies]. Ghent University.
- DTDA (2025). *Labour Market Profile: Kenya 2024/2025*. Ulandssekretariatet Danmark. <https://www.ulandssekretariatet.dk/wp-content/uploads/2024/09/Kenya-LMP-2024-final1.pdf>
- EAC (n.d.). *EAC at a Glance*. EAC.int. Retrieved from: <https://www.eac.int/>
- Embassy of the Republic of Kenya in Japan (n.d.). *The Government and the Political System*. Government of Kenya. Consulted on 8th October, 2025, from: <https://www.kenyarep-jp.com/en/kenya/government/>
- Embassy of the Republic of Kenya in The Hague (n.d.). *Government Structure*. Government of Kenya. Consulted on 8th October, 2025, from: <https://kenyaembassy.nl/government-structure/>
- Environmental Risk Assessment. *Science of the Total Environment*, 703 (2020). <https://doi.org/10.1016/j.scitotenv.2019.134925>
- Farnworth, R. (2023, April 15). Railways in Colonial Times in what was known as 'British East Africa' *Railways and Tramways Blog, Uganda and Kenya Railways*. Consulted on 10th August, 2025, from: <https://rogerfarnworth.com/2023/04/15/british-east-africa/>
- Fedele, D. & Imesh, K. [David Fedele]. (2019, March 21). *Revenir (To Return)* [video]. <https://youtu.be/R1UPKAO2N3E?si=GxkjAU3iaz8wvJJy>
- Federation of Kenya Employers (2024). *Youth Employment*. Consulted on 30th October, 2024, at: <https://www.fke-kenya.org/policy-issues/youth-employment>
- Fengler, W. (2010, April 28). *Demographic Transition and Growth in Kenya*. World Bank Group. Consulted on 26th August, 2025, from: <https://www.worldbank.org/en/news/opinion/2010/04/28/demographic-transition-growth-kenya#:~:text=There%20are%20two%20reasons.,Second%20%20Kenyan%20are%20living%20longer.>
- Flahaux, M. & De Haas, H. (2016). African Migration: Trends, Patterns, Drivers. *Comparative Migration Studies*, 4(1). <https://doi.org/10.1186/s40878-015-0015-6>
- Flights From (2025, July 23). *Top 100 Busiest Airports in Africa*. Consulted on 16th August, 2025, from: <https://www.flightsfrom.com/top-100-airports-in-africa>
- Golla, R. (2018, August 20). 'The Rich Man's Road': Nairobi Slum Demolished for Highway. *The Guardian*. Consulted on 17th August, 2025, from: <https://www.theguardian.com/cities/2018/aug/20/it-will-not-benefit-us-we-dont-have-cars-nairobi-kibera-community-cleared-road>
- Goodman, M. F. & Dimmendaal, G. J. (2017, November 7). *Nilo-Saharan Languages*. Encyclopedia Britannica. <https://www.britannica.com/topic/Nilotic-languages>
- Google Maps (2024). Airbus Maxar Technologies. Retrieved on 5th April, 2025, at: https://www.google.com/maps/@-1.3122213,36.7892222,2423m/data=!3m1!1e3?authuser=0&entry=ttu&g_ep=EgoyMDI2MDIxMC4wIWKXMDSOASAFQAw%3D%3D
- Gourdine, C. et al. (2025). Social Capital as a Commons: Towards A New Framework for Leadership and Governance. *Journal of Behavioral and Applied Management*, 25(1), 13–21. <https://jbam.scholasticahq.com/>
- Greene, S. J. (2003). Staged Cities: Mega-events, Slum Clearance, and Global Capital. *Yale Human Rights & Development Law Journal*, 6, 161–?. <https://law.yale.edu/sites/default/files/documents/pdf/LawJournals/greene.pdf>
- Guardaro, M., Hondula, D. M., & Redman, C. L. (2022). Social capital: improving community capacity to respond to urban heat. *Local Environment*, 27(9), 1133–1150. <https://doi.org/10.1080/13549839.2022.2103654>
- Haddad, N. M. et al. (2015). Habitat Fragmentation and its Lasting Impact on Earth's Ecosystems. *Science Advances*, 1(2). <https://doi.org/10.1126/sciadv.1500052>
- Hancock, T. (2001). People, Partnerships and Human Progress: Building Community Capital. *Health Promotion International*, 16(3), 275–280. <https://doi.org/10.1093/heapro/16.3.275>
- Harari, Y. N. (2015). *Sapiens: A Brief History of Humankind*. Vintage Books
- Henci (2023, June 22). Wilson Airport Kenya: All You Need to Know. Airports and Travel. Africa Aviation Executive Services. Consulted on 16th August, 2025, from: <https://aes.aero/wilson-airport-kenya-all-you-need-to-know/>
- Herrman, H. et al. (2011, May 1). What is Resilience. *The Canadian Journal of Psychiatry*, 56(5), 258–265. <https://doi.org/10.1177/070674371105600504>

- Hill, A., Hühner, T., Kreibich, V. & Lindner, C. (2014). Dar Es Salaam, Megacity of Tomorrow: Informal Urban Expansion and the Provision of Technical Infrastructure. In F. Kraas et al. (eds.), *Megacities: Our Global Urban Future*. Springer Science.
- Historiek. (2025, March 31). *Het Marshallplan: het Amerikaanse Economisch Herstelplan voor Europa: Hoe Amerika het Westen Won*. Historiek.net. Consulted on 19th August, 2025, at: <https://historiek.net/marshallplan-amerika-west-europa/22754/>
- Hollingsworth, L. W. (n.d.). *The Native Peoples of the East Coast*. Historic Mombasa. <https://www.friendsofmombasa.com/migration-rich-cultures/migration-tribes-of-kenya/>
- Hussain, Z. (2014, March 17). The Ever Changing Landscape of Aid. *World Bank Blogs*. Consulted on 18th August, 2025, at: <https://blogs.worldbank.org/en/endpointvertyinsouthasia/ever-changing-landscape-aid>
- Ibrahim, A. M. (2024). The Evolution of Local Administration in Kenya. *Global Scientific Journals*, 12(6), 32–45. <https://doi.org/10.13140/RG.2.2.33139.54567>
- Ibukun, A. (2025, April 11). *Top 5 African Cities With the Most Traffic* [Gridlock Giants]. 234 Drive. Consulted on 16th August, 2025, from <https://234drive.com/african-cities-with-the-most-traffic/>
- Ijaka, E. (2024, September 21). *Kibera: Where NGOs Thrive While People Survive* [Post]. LinkedIn. Consulted on 13th February, 2025, at: <https://www.linkedin.com/pulse/kibera-where-ngos-thrive-people-survive-evans-ijaka-9gwtf/>
- Institute of Economic Affairs. (2007, December 8). *Kenya Vision 2030 – Popular Version*. Retrieved on 3rd September, 2025, from: <https://ieakenya.or.ke/download/kenya-vision-2030-popular-version/>
- Inta Cities (n.d.) The Impact of Neoliberal Urban Planning on Everyday Life in Three African Cities (Lubumbashi, Nairobi, Takoradi). *Planning Poverty?*. <https://citeserx.ist.psu.edudocument?repid=rep1&type=pdf&doi=5672efb2a064ba0c6ee321453b620e2bcce69e3f>
- International Trade Administration (2024, July 5). *Infrastructure*. Kenya Country Commercial Guide. <https://www.trade.gov/country-commercial-guides/kenya-infrastructure#:~:text=Kenya%20enjoys%20an%20extensive%2C%20but,undergoing%20major%20expansion%20and%20rehabilitation.>
- Isbell, M. (2022, September 22). *Issue #70: Kenya's 2022 Presidential Election and Avoiding Ethnic Violence*. The MCI Maps Report. <https://mcimaps.substack.com/p/issue-70-kenyas-2022-presidential>
- Jackowska, O. (2023). *Disrupting the Gendered Order: How to Advance Beyond Vienna's Strategic Approach to Gender Mainstreaming in Urban Planning* [Master thesis, Urbanism]. Technische Universiteit Delft.
- Jade, D. (2025, July 23). *5 Reasons Nairobi has Emerged as the UN's Top Regional Operations Hub*. Pulse. Retrieved from: <https://www.pulselive.co.ke/articles/business/why-un-is-eyeing-nairobi-for-regional-operations-2025072306262380570>
- Johnson, M. A. (2024, June 13). *Africa's Mega Infrastructure Project: The Trans-African Highway Network Nears Completion*. EHS Africa Logistics. Retrieved from: <https://ehsafricalogistics.com/africas-mega-infrastructure-project-the-trans-african-highway-network-nears-completion/>
- Josse-Durand, C. (2023, December 1). *Kenya's 2022 Election. Ruto's Win and Intra-Elite Struggles*. French Institute of International Relations. <https://www.ifri.org/en/studies/kenyas-2022-election-rutos-win-and-intra-elite-struggles>
- Kais, S. M., & Islam, M. S. (2016). Community Capitals as Community Resilience to Climate Change: Conceptual Connections. *International Journal of Environmental Research and Public Health*, 13(12), 1211. <https://doi.org/10.3390/ijerph13121211>
- K'Akumu, O. K. & Olima, W. (2007, March). The Dynamics and Implications of Residential Segregation in Nairobi. *Habitat International*, 31(2007), 87–99. <https://doi.org/10.1016/j.habitatint.2006.04.005>
- Kariuki, G. J. (2021, June). *City-Regions for Cultural-Economical Nomads: Leveraging Transitory Rural-Urban Networks in Nairobi's Peripheries Through Regional Agroecological Systems; A Guide to City-Region Planning in Kenya* [Master's thesis, Technische Universiteit Delft].
- Karuga, J. (2024, April 2). *Youth Unemployment in Kenya: Challenges and Solutions*. Development Aid. <https://www.developmentaid.org/news-stream/post/177052/youth-unemployment-in-kenya>
- Kenya Railways (n.d.). *Services*. <https://krc.co.ke/>
- Kiambi, S. et al. (2018). Mapping Nairobi's Dairy Food System: An Essential Analysis for Policy, Industry and Research. *Agricultural Systems*, 167(2018), 47–60. <https://doi.org/10.1016/j.agsy.2018.08.007>
- Kim, J. et al. (2022). An Examination of Water, Sanitation, and Hygiene (WASH) Accessibility and Opportunity in Urban Informal Settlements During the COVID-19 Pandemic: Evidence from Nairobi, Kenya. *The Science of the Total Environment*, 823, 153398. <https://doi.org/10.1016/j.scitotenv.2022.153398>
- Kimari, W. & Kimari, B. (2022). Impact of the National Youth Service Cohorts Programme in Kibera. *Centre for Human Rights and Policy Studies*. <https://chrips.or.ke/wp-content/uploads/2022/03/Impact-of-the-NYS-Cohorts-Programme-in-Kibera.pdf>
- Kingdom of the Netherlands (2023, September 13). *The Netherlands and Kenya: Challenge Fund Youth Employment Kenya*. <https://www.netherlandsandyou.nl/web/kenya/w/challenge-fund-youth-employment-kenya#:~:text=The%20skills%20gap%3A%20there%20is,able%20to%20absorb%20a%20few>
- Kramon, E. & Posner, D. N. (2011). Kenya's New Constitution. *Journal of Democracy*, 22(2), 89–103. <https://doi.org/10.1353/jod.2011.0026>
- Labrujere, E. (2018, July). *An Alternative Urban Paradigm?: Local Knowledge and the Power of Community as a Base for Sustainable Development in Mathare Valley, Nairobi* [Master's thesis, Urbanism]. Technische Universiteit Delft.

- Lang, R. E., & Hornburg, S. P. (1998). What is social capital and why is it important to public policy? *Housing Policy Debate*, 9(1), 1–16. <https://doi.org/10.1080/10511482.1998.9521284>
- Laws of Kenya (2022). *The Constitution of Kenya*. The Government Printer, Nairobi
- Leary, J. P. (2023, March 14). *What Is Neoliberalism? An Economic and Political System Devoted to the Free Market*. Teen Vogue. Retrieved from: <https://www.teenvogue.com/story/what-is-neoliberalism>
- Lens, D. (2023). *Roadmap to Belonging: Urban Planning as a Tool to Facilitate the Sense of Belonging of Syrian Status Holders in Small Towns in the Netherlands* [Master's thesis, Urbanism]. Technische Universiteit Delft.
- Liu, Y., et al. (2022). Developmental Mechanism of Rainfall-Induced Ground Fissures in the Kenya Rift Valley. *Water*, 14(20), 3215. <https://doi.org/10.3390/w14203215>
- Living Nairobi (2014, April 7). *Inter-City Passenger Train Service in Kenya*. Jambo Nairobi. Consulted on 16th August, 2025, from: <https://jambonairobi.co.ke/services/public-transport/railway-services/inter-city-passenger-train-service-in-kenya/>
- Macharia, K. (1992). Slum Clearance and the Informal Economy in Nairobi. *The Journal of Modern African Studies*, 30(02), 221–236. Cambridge University Press. <https://doi.org/10.1017/S0022278X00010697>
- Map Kibera. (2010a). *Health*. <https://mapkibera.org/wiki/images/4/4d/KiberaHealth.pdf>
- Map Kibera. (2010b). *Education*. <https://www.mapkibera.org/download/maps/watsan/bak/atlas.pdf>
- Marcus, H. G. (2025, December 23). *Eastern Africa*. Encyclopedia Britannica. <https://www.britannica.com/place/eastern-Africa/The-interior-before-the-colonial-era>
- MEACARD (n.d.). *People and Culture*. Government of Kenya. Consulted on 15th May, 2025, from: <https://meacard.go.ke/people-and-culture>
- Meert, H., & Kesteloot, C. (2000). Sociaal-ruimtelijke Kenmerken van Economische Integratiesferen. *Tijdschrift Van De Belgische Vereniging Voor Aardrijkskundige Studies*, 68(2), 249–281.
- Meitiner, B. (2024, December 11). *Kibera Slum: Life in Africa's Largest Shanty Town*. BEA Adventurous. <https://bea-adventurous.com/kibera-slum-2/>
- Meredith, T. & MacDonald, M. (2017). Community-Supported Slum-Upgrading: Innovations from Kibera, Nairobi, Kenya. *Habitat International*, 60(2017), 1–9. <http://dx.doi.org/10.1016/j.habitatint.2016.12.003>
- Ministry of Interior and National Administration (2024). *National Government Administration*. Consulted on 6th October, 2025, from: <https://interior.go.ke/national-government-administration>
- Mitra, S. et al. (2017). Developing Risk or Resilience? Effects of Slum Upgrading on the Social Contract and Social Cohesion in Kibera, Nairobi. *Environment and Urbanization*, 29(1), 103–122. <https://doi.org/10.1177/0956247816689218>
- Moi Air Base | Skybrary (n.d.). Consulted on 16th August, 2025, from: <https://skybrary.aero/airports/hkre>
- Mukanga, P. et al. (2022). From Kibera to Kalobeyei: Public Space as a Catalyst for Transformation and Integrated Planning. *The Journal of Public Space*, 7(1), 311–322. https://www.researchgate.net/publication/379860896_From_Kibera_to_Kalobeyei_Public_Space_as_a_Catalyst_for_Transformation_and_Integrated_Planning
- Mullenbach, M. (2025). *British Kenya (1920–1963)*. University of Central Arkansas. <https://uca.edu/politicalscience/home/research-projects/dadm-project/sub-saharan-africa-region/british-kenya-1920-1963/>
- Mwang'a, K. & Wangui, M. (2014). *Rivers of Shame to Rivers of Glory: A Negotiated RTR Approach to Rehabilitating Nairobi River Basin, Kenya*. ISOCARP. https://isocarp.org/app/uploads/2014/10/KeziahMelissa_ISOCARP-Poster_-.pdf
- Mwende, S. (2024, November 26). *Mudavadi Gazettes 27 New Sub-Counties*. The Star. Consulted on 8th October, 2025, from: <https://www.the-star.co.ke/news/realtime/2024-11-26-mudavadi-gazettes-27-new-sub-counties?>
- Nabende, P. (2024). *Comparing the Capitals of the East African Community*. Tio. Retrieved from: <https://tiotours.travel/news/comparing-the-capitals-of-east-africa>
- Nairobi National Park (n.d.). *Ecosystem*. Retrieved from: <https://nairobi-park.org/ecosystem/>
- Newton, C. (2008). *Social Housing, Urban Policy and Social Capital: Spatial Interrelations in a Third World Context (Cape Town)* [Doctoral dissertation, Institute for Social and Economic Geography]. Katholieke Universiteit Leuven. ISBN 978-90-8649-211-4
- NEXT (2024, July 18). *Nairobi: The Economic Powerhouse and Investment Hub of Kenya*. Retrieved from: <https://nextgroup.ge/tpost/1ud0844sy1-nairobi-the-economic-powerhouse-and-inve?srsltid=AfmBOoqwOzbrKgKP4cXUcS12Ed5VWW96LLiJvCOLJ-vnVNigMbu2oxMB>
- Ntarangwi, M. & Ingham, K. (2024, January 23). *History of Kenya*. Encyclopaedia Britannica. <https://www.britannica.com/topic/history-of-Kenya>
- Nulty, C. (2009). The Kenyan Development Experience: A History of Hindrances and Limiting Factors. *Colgate Academic Review*, 3(1). Retrieved from: <http://commons.colgate.edu/car/vol3/iss1/8>
- Nyachio, G. M. M. (2018, January 29). *Exploring Public Road Passenger Transport in Kenya*. T2M. Consulted on 16th August, 2025, from: <https://t2m.org/exploring-public-road-passenger-transport-in-kenya/#:~:text=Currently%2C%20about%2080%20per%20cent,of%20salary%2C%20among%20other%20issues.>

- Nyaosi, E. N. (2011). The Effect of Infrastructure on Foreign Direct Investment in Kenya. *KIPPRA Discussion Paper* (DP/127/2011). Kenya Institute for Public Policy Research and Analysis. <https://kippra.or.ke/wp-content/uploads/2021/02/the-effect-of-infrastructure-on-foreign-direct-investment-in-kenya-dp-127.pdf>
- Obudho, R. A. (1997). *Nairobi: National Capital and Regional Hub*. In C. Rakodi (Ed.), *The Urban Challenge in Africa: Growth and Management of Its Large Cities*. Tokyo & New York: United Nations University Press. <http://archive.unu.edu/unupress/unupbooks/uu26ue/uu26ue00.htm>
- Odongo, N. O. (2018, May). *Housing microfinance and the empowerment of low-income households in Kenya* [Master Thesis]. KDI School of Public Policy and Management, Sejong, South-Korea. DOI: 10.13140/RG.2.2.10441.60000 https://www.researchgate.net/publication/325403207_Housing_Microfinance_and_the_Empowerment_of_Low-Income_Households_in_Kenya
- Oduor, C. et al. (2023). Mortality Patterns over a 10-Year Period in Kibera, an Urban Informal Settlement in Nairobi, Kenya, 2009–2018. *Global Health Action*, 16(1). <https://doi.org/10.1080/16549716.2023.2238428>
- Okafor, C. (2025, January 10). *Top 5 African Cities With the Most Crippling Traffic at the Start of 2025*. Business Insider Africa. Consulted on 16th August, 2025, from: <https://africa.businessinsider.com/local/lifestyle/top-5-african-cities-with-the-worst-traffic-congestion/eqxxw8e>
- Old East Africa Postcards. (2014, March 3). *Map Nairobi Then*. Retrieved on 11th August, 2025, from: <https://www.oldeastafricapostcards.com/nairobi/map-nairobi-then/>
- Ole Sereni (n.d.). *Ultimate Guide to Public & Private Transport in Nairobi*. Consulted on 16th August, 2025, from: <https://ole-sereni.com/ultimate-guide-to-public-private-transport-in-nairobi/>
- Orbital Africa. (2017, June 25). *Population Distribution in Kenya*. Consulted on 27th June, at: <https://sites.orbital.co.ke/downloads/population/#page=1>
- Owino, K., Wamalwa, N. & Ndekei, I. (2017, June 30). How Kenya is Failing to Create Decent Jobs. *Africa Research Institute: Counterpoints*. <https://www.africaresearchinstitute.org/newsite/publications/kenya-failing-create-decent-jobs/>
- Owuor, M. O. & Mwiturubani, D. A. (2022). Correlation between Flooding and Settlement Planning in Nairobi. *Journal Of Water And Climate Change*, 13(4), 1790-1805. <https://doi.org/10.2166/wcc.2022.335>
- Oxfam International a (2022, May 25). *Kenya: Extreme Inequality in Numbers*. <https://www.oxfam.org/en/kenya-extreme-inequality-numbers>
- Oxfam International b (2022, May 25). *Kenya*. <https://www.oxfam.org/en/what-we-do/countries/kenya>
- Poortinga, W. (2011, October 13). Community Resilience and Health: The Role of Bonding, Bridging, and Linking Aspects of Social Capital. *Health & Place*, 18(2), 286-295. <https://doi.org/10.1016/j.healthplace.2011.09.017>
- Powell, C. (2022, November 30). *Effective Community Development in Informal Settlements Through Analysis of the Kibera Slum in Kenya* [Undergraduate thesis, Bellarmine University]. Louisville, Kentucky. https://scholarworks.bellarmino.edu/cgi/viewcontent.cgi?article=1112&context=ugrad_theses#:~:text=In%20Kibera%20alone%2C%20there%20are,relation%20to%20its%20small%20size
- PPIAF. (n.d.). *Kenya*. Retrieved on 15th August, 2025, from: <https://www.github.org/countries/kenya/>
- Priaulx, N. & Weinel, M. (2018). Connective Knowledge: What We Need to Know About Other Fields to 'Envision' Cross-Disciplinary Collaboration. *European Journal of Futures Research*, 6(21). <https://doi.org/10.1186/s40309-018-0150-z>
- Provost, C. (2013, December 12). *How Has Kenya Changed Since Independence? – Get the Data*. The Guardian. <https://www.theguardian.com/global-development/datablog/2013/dec/12/kenya-how-changed-independence-data>
- Puerta, M. L. S. (2024, March 16). A blueprint for better jobs in Kenya. *World Bank Blogs*. <https://blogs.worldbank.org/en/jobs/blueprint-better-jobs-kenya>
- Qin, S. et al. (2009). Acute Psychological Stress Reduces Working Memory-Related Activity in the Dorsolateral Prefrontal Cortex. *Biological Psychiatry*, 66(1), 25–32. <https://doi.org/10.1016/j.biopsych.2009.03.006>
- Raman (2019, April 29). *The Boda Bodas of Kenya*. Rostra Economica. <https://www.rostraeconomica.nl/post/the-boda-bodas-of-kenya>
- Rema, E. (2011). Slum Upgrading: The Muungano Wa Wanavijiji Vision. *The East African Review*, 44, 55–63. <https://doi.org/10.4000/eastafrica.526>
- Ren, H. et al. (2020). Population Density and Spatial Patterns of Informal Settlements in Nairobi, Kenya. *Sustainability*, 12(18), 7717. <https://doi.org/10.3390/su12187717>
- Republic of Kenya (2016, April). National Housing Policy for Kenya. *Sessional Paper*, 3(2016). <https://www.housingandurban.go.ke/wp-content/uploads/2019/10/Updated-Sessional-Paper-No.3-of-2016-National-Housing-Policy.pdf>
- RG Sacco (2025). *Best Places to Start a Business in Nairobi*. Consulted on 15th July, 2025, at: <https://rg.ke/best-places-to-start-a-business-in-nairobi-2/>
- Roy, A., & Ong, A. (2011). *Worlding Cities: Asian Experiments and the Art of Being Global* (2nd ed.). Wiley-Blackwell. ISBN 978-1-4051-9276-7
- Rukanga, B. (2025, June 27). Are East African Governments Uniting to Silence Dissent? *BBC News*. Retrieved from: <https://www.bbc.com/news/articles/c4gk7435xl0o>
- Salon, D., & Gulyani, S. (2019). Commuting in Urban Kenya: Unpacking Travel Demand in Large and Small Kenyan Cities. *Sustainability*, 11(14), 3823. <https://doi.org/10.3390/su11143823>

- Savage, R. (2024, August 22). Rapidly Urbanising Africa to Have Six Cities With Populations Above 10m by 2035. *The Guardian*. Consulted on 25th August, 2025, from: <https://www.theguardian.com/world/article/2024/aug/22/rapidly-urbanising-africa-to-have-six-cities-with-populations-above-10m-by-2035>
- Shirodkar, S. (2024, May 8). *Urbanisation Challenges in Kenya's Nairobi: A Tangled Web of Issues*. Population Matters. <https://populationmatters.org/news/2024/01/urbanisation-challenges-in-kenyas-nairobi-a-tangled-web-of-issues/#:~:text=The%20challenges%20faced%20by%20Nairobi's,health%2C%20education%2C%20and%20employment>
- Situma, C. et al. (2009). Chapter 5: Nairobi and its Environment. In *Kenya: Atlas of Our Changing Environment* (pp. 145–160). United Nations Environment Programme. <https://www.unclearn.org/wp-content/uploads/library/unep23.pdf>
- Smith, C. (2022, May 26). Nairobi. *Oxford Bibliographies in Urban Studies*. DOI: 10.1093/obo/9780190922481-0053. <https://www.oxfordbibliographies.com/display/document/obo-9780190922481/obo-9780190922481-0053.xml?rsk=Ox7POD&result=41>
- Stats Kenya (2024, December 18). *Kenya: Gross Domestic Product - Kenya GDP*. Retrieved from: <https://statskenya.co.ke/at-stats-kenya/about/kenya-gross-domestic-product-kenya-gdp/116/>
- Stats Kenya (2025, September 17). *Tribe and Ethnicity in Kenya – Number of People by Tribe*. Retrieved from: <https://statskenya.co.ke/at-stats-kenya/about/tribe-and-ethnicity-in-kenya-number-of-people-by-tribe/93/#>
- Stein, H. (2009). A Brief History of Aid in East Africa: The Political Economy of Convergence. *CEISifo Forum*, 4(2009), 13–22. <https://www.ifo.de/DocDL/forum4-09-focus2.pdf>
- Stellmacher, G. (2011). Mapping Kibera: New Strategies for Mapping and Improving the Slum. In *ARCH 442 Middle East & Africa Seminar* [Final Independent Research Report]. https://mapkibera.org/wiki/images/4/49/Stellmacher_Mapping_Kibera_Project.pdf
- Stijns, J.-P. (2006). Natural Resource Abundance and Human Capital Accumulation. *World Development*, 34(6), 1060–1083. <https://doi.org/10.1016/j.worlddev.2005.11.005>
- Still We Rise. (2020, September 2). *East Africa Protectorate*. <https://stillwerise.uk/2020/09/02/east-africa-protectorate/>
- Stouthuysen, P. (1997). Gemeenschapszin & Sociaal Kapitaal: over Robert Putnam. *Samenleving & Politiek*, 4(3), 36–43. https://www.sampol.be/pdf/sampol_1997_03_p36_43_stouthuysen_patrick.pdf
- Talmage-Rostron, M. (2023, November 14). Skills supply and skills demand in the Kenyan economy. *Nexford University*. <https://www.nexford.edu/insights/skills-supply-and-skills-demand-in-the-kenyan-economy>
- The Invisible Hand. (2025, August 29). *Why Giving Money to Africa Makes it Poor* [Video]. YouTube. <https://www.youtube.com/watch?v=rXuPTQdVv7U>
- The Transit Girl (2022). *Kenya Railways System Map*. Consulted on 16th August, 2025, from: <https://thetransitgirl.tumblr.com/post/678451104205406208/kenya-railways-system-map-kenyas-rail-system-is>
- Throup, D. W. (1985). The Origins of Mau Mau. *African Affairs*, 84 (July), 399–433. <https://scispace.com/pdf/the-origins-of-mau-mau-2ipwavo1h2.pdf>
- Topographic-Map (n.d.). *Kibera Topographic Map, Elevation, Terrain*. Retrieved from: <https://en-gb.topographic-map.com/map-6679tf/Kibera/?zoom=15¢er=-1.31482%2C36.78936&lock=15%2C1663%2C1802>
- Trading Economics. (n.d.). *Kenya GDP*. World Bank. Retrieved on 8th August, 2025, from: <https://tradingeconomics.com/kenya/gdp>
- Translators Without Borders. (2012, February 3). *Call for Translation in Kenya's Kibera Slum*. The #Language Matters Blog. Consulted on 12th February, 2025, from: <https://translatorswithoutborders.org/blog/call-for-translation-in-kenyas-kibera-slum/#:~:text=Kibera%20is%20home%20to%2014,third%2C%20fourth%20or%20fifth%20language>
- UNEP. (n.d.). *Kenya. Active Mobility*. Retrieved from: <https://www.unep.org/topics/transport/active-mobility/kenya>
- UN Habitat. (2020, June). *The Case of Kibera*. Informal Settlements' Vulnerability Mapping in Kenya: Facilities and Partners' Mapping in Nairobi and Kisumu Settlements. https://unhabitat.org/sites/default/files/2021/08/the_case_of_kibera_edited.pdf
- Wambiya, E. O. A. et al. (2021, May 3). Patterns and Predictors of Private and Public Health Care Utilization Among Residents of an Informal Settlement in Nairobi, Kenya: A Cross-Sectional Study. *BMC Public Health*, 21(850). <https://doi.org/10.1186/s12889-021-10836-3>
- Wanjiru, M. S. & Terefe, E. M. (2025). *Evaluating Community Pharmacists' Involvement in Patient Counselling and Health Education in Nairobi, Kenya: A Cross-Sectional Study* [Unpublished Manuscript]. United States International University-Africa, Nairobi. <https://doi.org/10.1101/2025.03.31.25324939>
- Wanjiru, M. & Matsubara, K. (2016). The Slum Toponymy of Nairobi: A Cultural Arena for Socio-Political Justice and Symbolic Resistance. In C. Hein (Ed.), *International Planning History Society Proceedings* (4), 261–271. TU Delft Open. <http://dx.doi.org/10.7480/iph.2016.4.1295>
- Wanzala, O. (2020, July 2). *Government Rebrands Regional Administration*. Daily Nation. Consulted on 12th October, 2025, from: <https://nation.africa/kenya/news/government-rebrands-regional-administration-985112>
- Werlin, H. (1999). The Slum Upgrading Myth. *Urban Studies*, 36(9), 1523–1534

- Williams, W. (2024, January 9). *African Migration Trends to Watch in 2024*. Africa Center for Strategic Studies.
<https://africacenter.org/spotlight/african-migration-trends-to-watch-in-2024/#:~:text=Push%20Factors%20Driving%20African%20Migration&text=in%20the%20world.,An%20estimated%2035%20percent%20of%20people%20in%20Sub%2DSaharan%20Africa,follows%20seasonal%20economic%20opportunities%20regionally>
- Wilson, G. A. (2012). Community resilience, globalization, and transitional pathways of decision-making. *Geoforum*, 43(6), 1218-1231.
<https://doi.org/10.1016/j.geoforum.2012.03.008>
- World Bank. (2023, December). *Kenya Poverty and Equity Assessment 2023 - From Poverty to Prosperity: Making Growth More Inclusive: Executive Summary (English)*. Washington, D.C.: World Bank Group. <http://documents.worldbank.org/curated/en/099121323073037589/P1773530a7eb3009308e3f08663aa95c826>
- World Bank Group (2024, October 6). *The World Bank in Kenya: Overview*.
<https://www.worldbank.org/en/country/kenya/overview>
- World Bank Open Data (2025, January 7). *Employment in Agriculture (% of Total Employment) (Modeled ILO Estimate) - Kenya*. World Bank Group.
<https://data.worldbank.org/indicator/SL.AGR.EMPL.ZS?locations=KE>
- World Population Review. (n.d.). *Nairobi, Kenya Population 2024*.
<https://worldpopulationreview.com/cities/kenya/nairobi>
- Wright, E. (2024a, July 2). The Incredible New City Just 12 Miles from Bustling Capital Costing £338m to Build. *Express.co.uk*. <https://www.express.co.uk/news/world/1917984/incredible-new-city-12-miles-capital-338m-build>
- Wright, G. (2024b, April 24). *Kenya: Floods Cause Widespread Devastation in Nairobi*. BBC News. Retrieved from: <https://www.bbc.com/news/world-africa-68888110>
- Zawistowski, A. (2022, August 13). *Poverty and Inequality in the Kibera Slum*. The Borgen Project. Retrieved from: <https://borgenproject.org/kibera-slum/>

The appendix contains four parts:

A. Amenities

This section shows the mapping data of the different amenities, that are relevant in this research. There are several themes, namely: safety, education, health care, finance and religion. This data is used for the analysis during the project. It is gathered from several sources, among which MapKibera.com and research by UN-Habitat, supplemented with online research with Google software. Data from informal settlements can be hard to reach and the accuracy can be questioned. It is part of the unstable environment of such places. An effort is made to display the data as accurately as possible, but unfortunately, not all of the following maps are complete. It might still be useful for those working in the settlement of Kibera.

B. Informed Consent Form

For transparency reasons, the Informed Consent Form, that was used to inform the participants of interviews about the topics of the interview and the processing of the collected data, and to verify their consent to use the data, is included in the appendix.

C. Interview Questions

Although the interviews were semi-structured and the set-up was never actually precisely followed, these questions were leading in the conversations, that were held with local residents of Kibera. A paper cheat sheet with the questions was present during the visits to ensure all relevant questions were to be asked.

D. Field Work Routes

To provide a visualisation of the fieldwork in Kibera, the maps of the walked routes are displayed here. They show the routes that were taken on each field work day. In addition, they show at which places interviews with locals were held and some specific sites, that were considered interesting for the project. The maps are created by tracing back the locations, that were visited during the day. The basis for this was the location tracker on a mobile phone, but this tracking is not very accurate. Therefore, the routes might not be completely correct, though the largest parts were easily deduced and verified by the supplemental photography during the field work.

A. Amenities

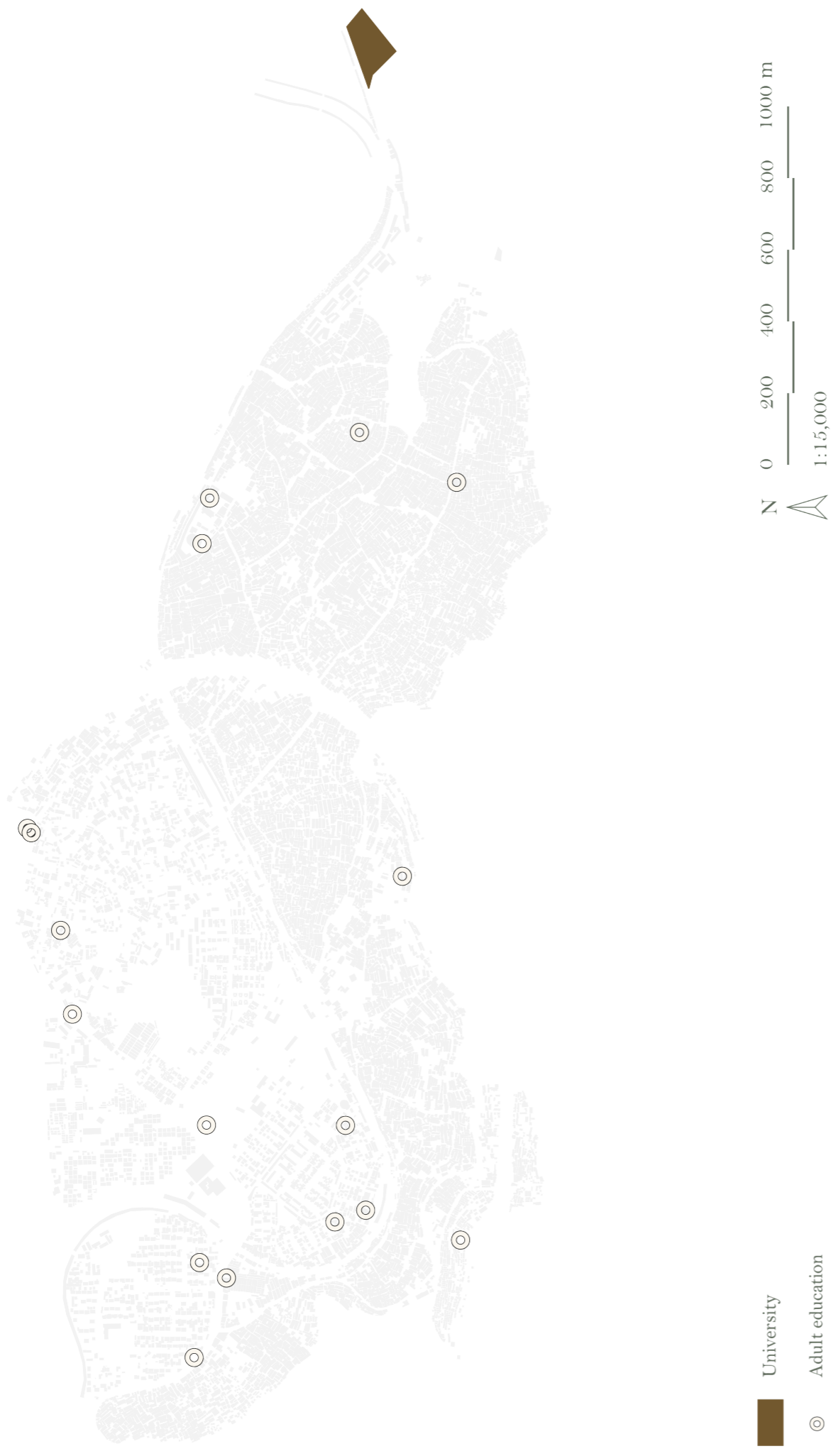
There are a few police stations located in the area. An attempt is made to make Kibera more safe by placing several police posts at alleged unsafe locations, so there is more surveillance on the street.

Safety



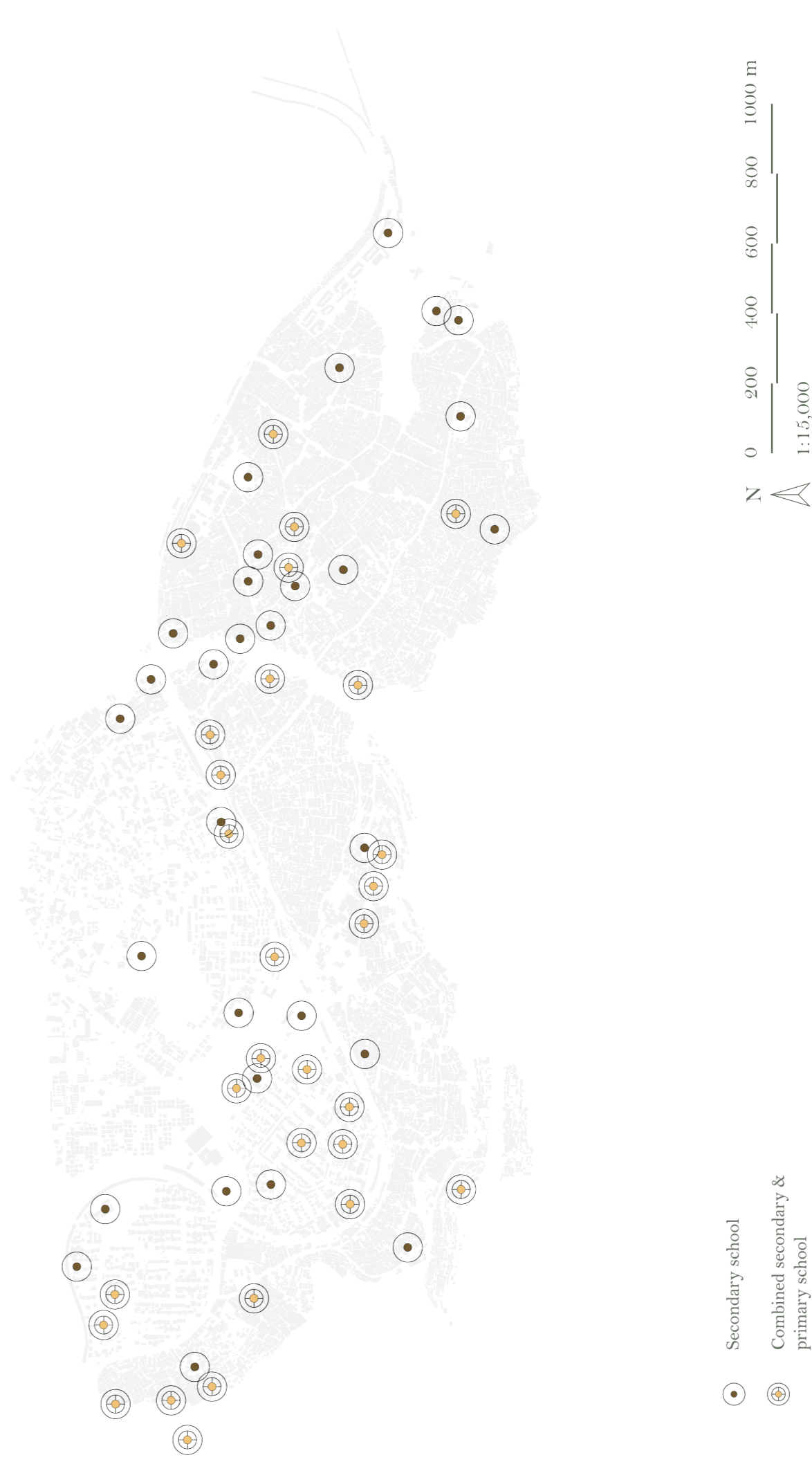
Education: University / Adult education

Riara University is located at the eastern border of Kibera. The bigger Strathmore University is just a little further to the east. In Kibera there are several locations, that offer additional education for adults, predominantly in practical jobs.



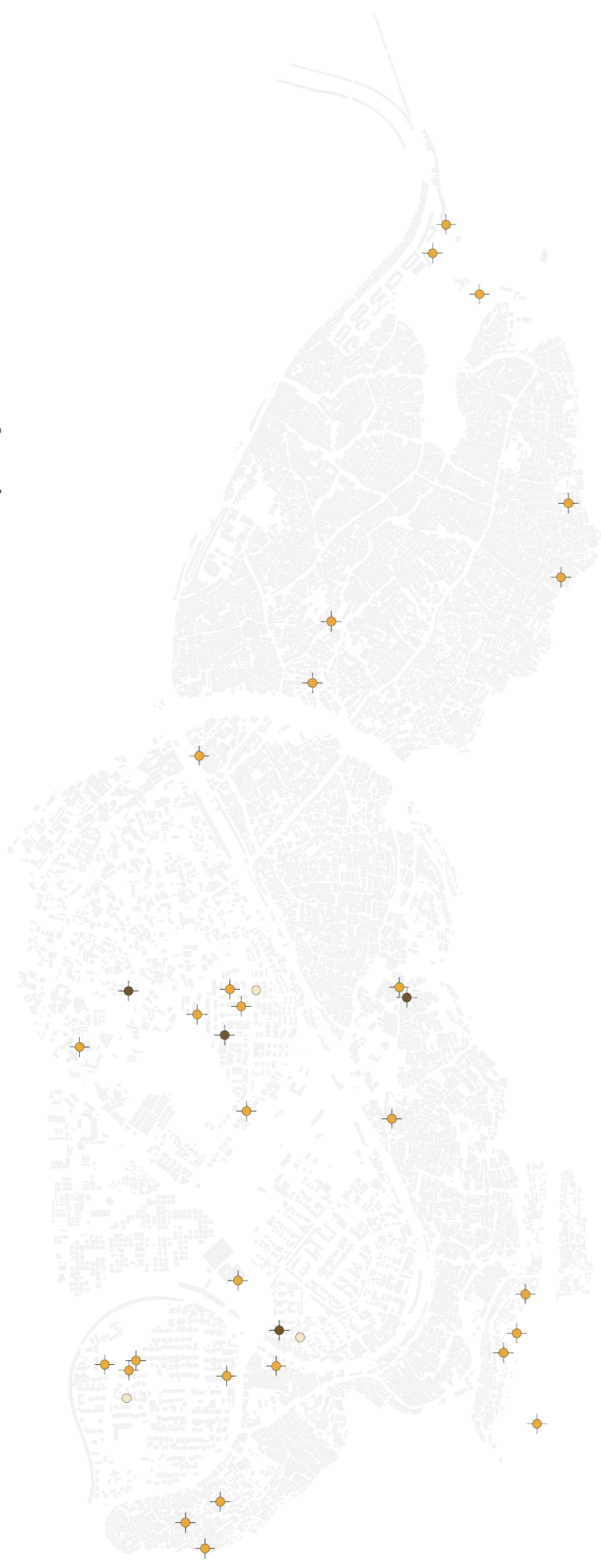
Education: Secondary schools

Although there are only a few formal schools in Kibera, there are still a lot of secondary schools around. They often function as a combined facility for secondary and primary education, sometimes even with nurseries.



Education: Primary schools / Nurseries

As is the case with secondary schools, the majority of primary schools is informal. The primary schools are sometimes fused with nursery schools, but many times there are separate amenities for nursery schools and child care. The mapping of this category is not totally complete.

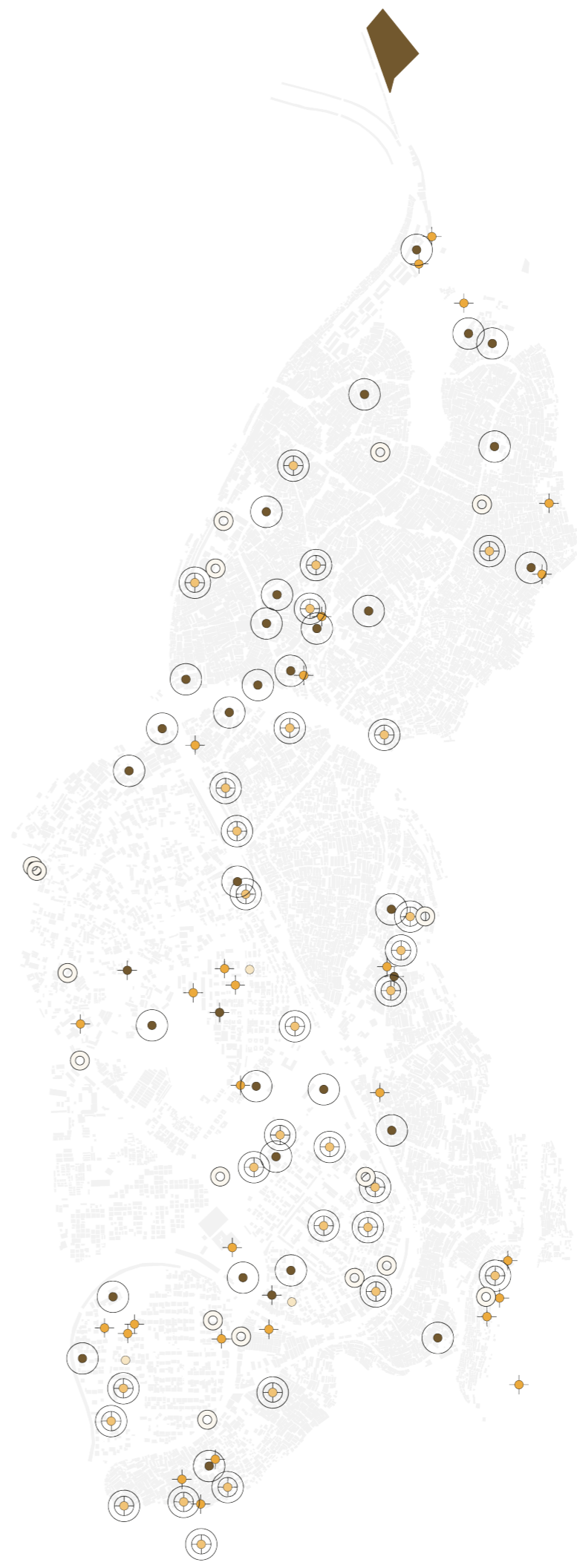


- ✦ Primary school
- ✦ Combined primary & nursery school
- Nursery school & child care



Education: All amenities

This map shows the combination of all mapped education amenities. It allows to view all separate and combined amenities of the different education categories in the same map.



- University
- ⊙ Adult education
- Secondary school
- ⊕ Combined secondary & primary school
- ✦ Primary school
- ✦ Combined primary & nursery school
- Nursery school & child care



Health care: Hospitals / Health centres

Kibera has a large population, that is often living in bad health conditions. There are some hospitals or health centres, but they are insufficient to take care of all residents.

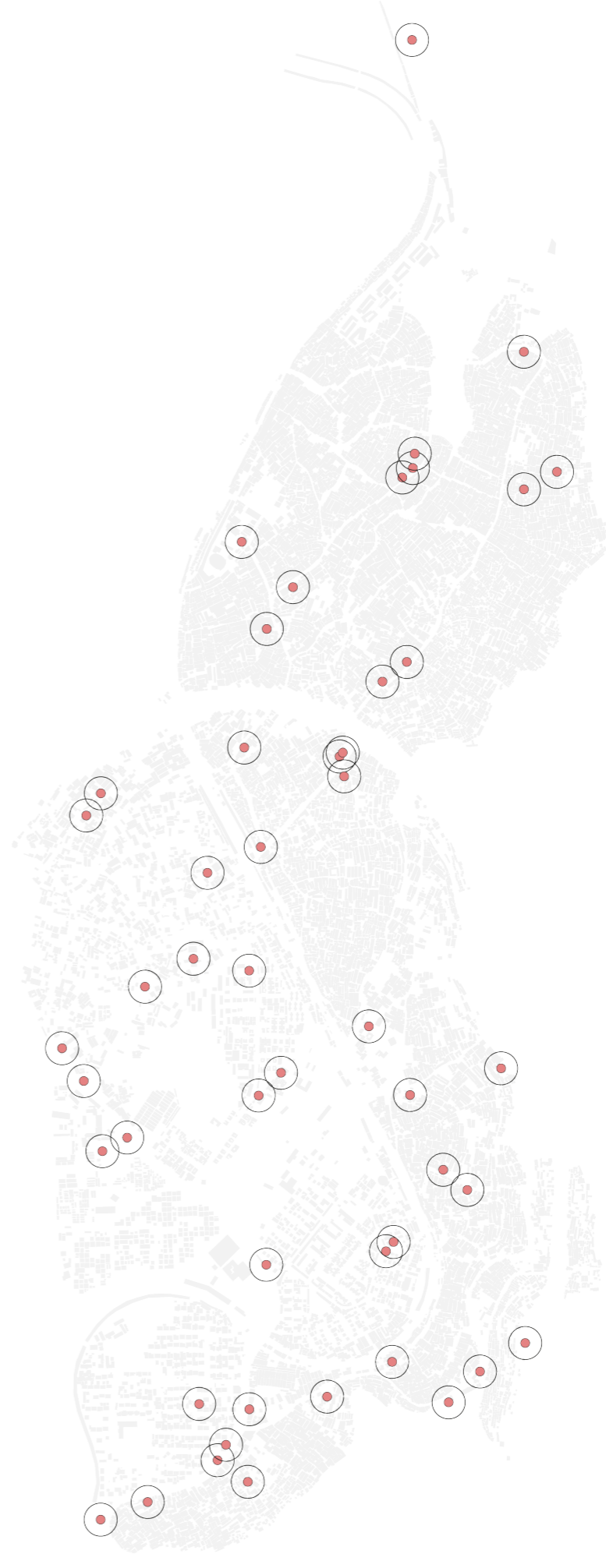


- + Hospital & health centre
- Clinic
- Pharmacy & chemist



Health care: Clinics

The clinics in Kibera are the first line of health care for many people. They are very approachable and low in costs. However, there expertise and medical equipment are limited.

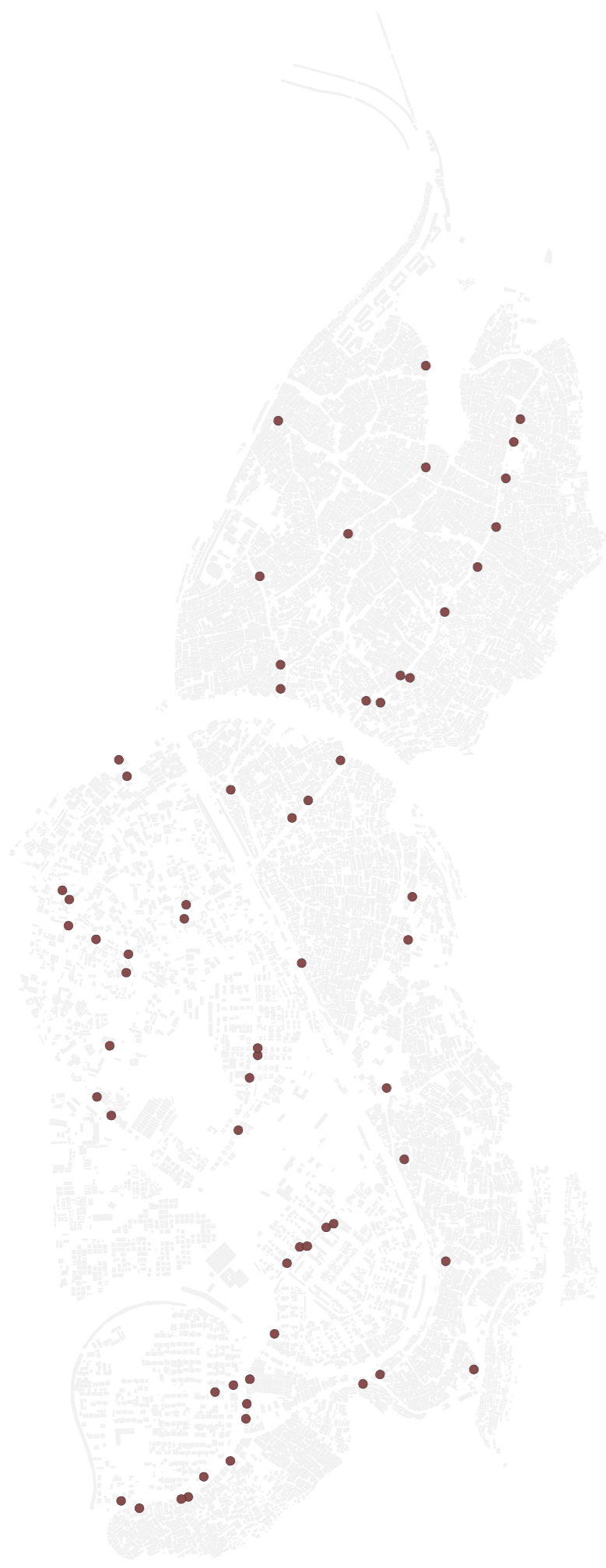


- + Hospital & health centre
- Clinic
- Pharmacy & chemist



Health care: Pharmacies / Chemists

For basic medical supplies, residents can attend one of the many pharmacies and chemists in the neighbourhood. Many of these amenities also provide some basic medical care.

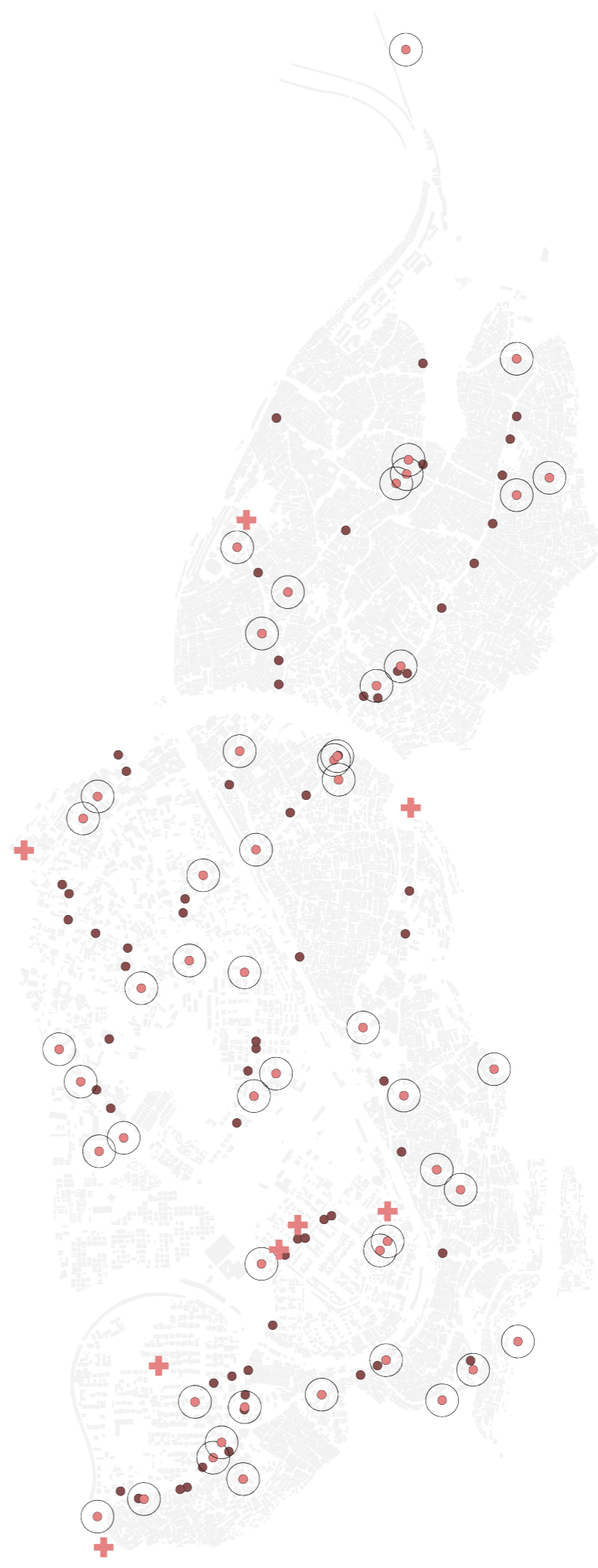


- + Hospital & health centre
- Clinic
- Pharmacy & chemist



Health care: All amenities

This map of all the health amenities combined shows that the amenities are spread over all the villages of Kibera. Still, health care is alarmingly insufficient.



- + Hospital & health centre
- Clinic
- Pharmacy & chemist



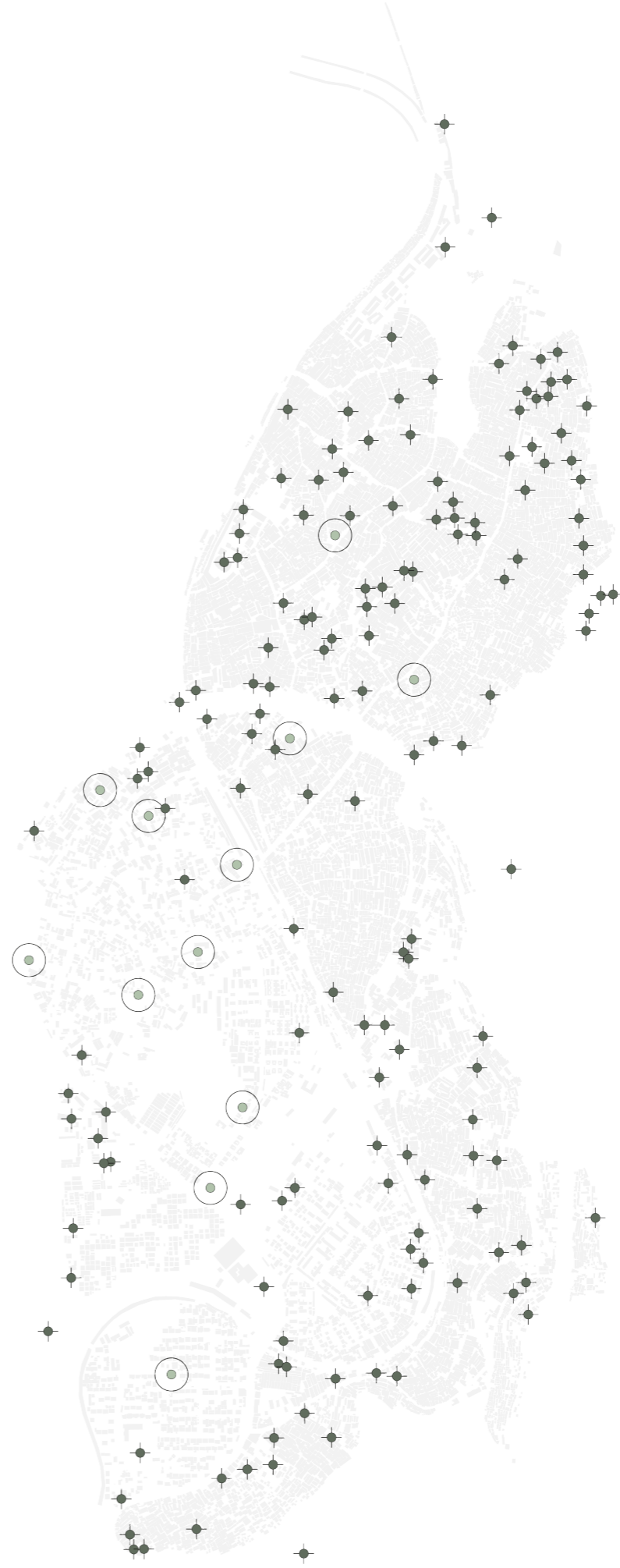
Finance

Financing is important for economic development of the community, but there are little amenities to help the people do this. Even ATMs are difficult to find.



Religion

Kibera houses many tribes, but most people practice christianity. There are many different kinds of christian communities with each their own church. The second biggest religion is the islam. Muslims tend to be more unified in a few bigger mosques.



B. Informed Consent Form

This document is the Informed Consent Form, that was used to verify consent before the conduction of each interview:

Informed Consent Form

You are being invited to participate in a research study titled Strong Roots & Sturdy Trees. This study is being done by Jorian Hulst, urbanism master's student from the Delft University of Technology, faculty of Architecture and the Built Environment.

The purpose of this research study is to investigate the presence of community capital in Kibera, Nairobi, and how this can be used to construct an inclusive urban strategy for the informal settlement to promote socio-economic development and diminish socio-spatial inequality in the city. The data will be used for:

- Providing the empirical evidence for the research, which complements the literature review.
- Exploring local perspectives on the topic of community capital.
- Understanding experiences of living in Kibera.
- Publishing results in the final master's thesis.

I will be asking you (if applicable) to:

- Answer questions about social, economic, general health and environmental aspects about life in Kibera.
- Elaborate on urgencies concerning the community.
- Provide information about experiences with development projects.
- Discuss opportunities to promote development.
- Elaborate on co-operation with other organisations and institutions.

Your answers and data will remain confidential and will be safely stored in the university storage drive of the TU Delft.

Your participation in this study is entirely voluntary and you can withdraw at any time. You are free to refuse any questions. Data of participants, that will not be anonymised, can be requested to be removed up to May 1st, 2025. Data of participants, that will be anonymised, can be requested to be removed up to March 12th, 2025.

Contact details:

Corresponding researcher: Jorian Hulst.

Responsible researcher: Roberto Rocco.

PLEASE TICK THE APPROPRIATE BOXES	Yes	No
A: GENERAL AGREEMENT – RESEARCH GOALS, PARTICIPANT TASKS AND VOLUNTARY PARTICIPATION		
1. I have read and understood the study information dated <i>DD/MM/YYYY</i> , or it has been read to me. I have been able to ask questions about the study and my questions have been answered to my satisfaction.	<input type="checkbox"/>	<input type="checkbox"/>
2. I consent voluntarily to be a participant in this study and understand that I can refuse to answer questions and I can withdraw from the study at any time, without having to give a reason.	<input type="checkbox"/>	<input type="checkbox"/>

PLEASE TICK THE APPROPRIATE BOXES	Yes	No
3. I understand that taking part in the study involves an audio-recording of the interview, accompanied by written notes; that the recordings will be transcribed and useful parts will be published in the report; and that the recordings and transcripts will be destroyed after completion of the project.	<input type="checkbox"/>	<input type="checkbox"/>
4. I understand that the study will end with the completion of the project on October 29 th	<input type="checkbox"/>	<input type="checkbox"/>
B: POTENTIAL RISKS OF PARTICIPATING (INCLUDING DATA PROTECTION)		
5. I understand that taking part in the study also involves collecting specific personally identifiable information (PII), such as name and profession, and associated personally identifiable research data (PIRD), such as gender and age, with the potential risk of my identity being revealed, which could have influence on my professional life, because of my answers on topics concerning my profession.	<input type="checkbox"/>	<input type="checkbox"/>
6. I understand that some of this PIRD is considered as sensitive data within GDPR legislation, specifically political views, opinions on aid programmes and views on marginalised communities.	<input type="checkbox"/>	<input type="checkbox"/>
7. I understand that the following steps will be taken to minimise the threat of a data breach, and protect my identity in the event of such a breach: collected data will not be shared online, collected data will be temporarily stored on the recording device and then transferred to the secured university storage, data that will not be published in the final report will be destroyed after the completion of the project.	<input type="checkbox"/>	<input type="checkbox"/>
8. I understand that personal information collected about me that can identify me, such as my name and profession, will not be shared beyond the study team.	<input type="checkbox"/>	<input type="checkbox"/>
9. I understand that the (identifiable) personal data I provide will be destroyed after completion of the project in October 2025.	<input type="checkbox"/>	<input type="checkbox"/>
C: RESEARCH PUBLICATION, DISSEMINATION AND APPLICATION		
10. I understand that after the research study the de-identified information I provide will be used for the creation and publication of a master's thesis report.	<input type="checkbox"/>	<input type="checkbox"/>
11. I agree that my responses, views or other input can be quoted anonymously in research outputs	<input type="checkbox"/>	<input type="checkbox"/>
12. I agree that my real name can be used for quotes in research outputs	<input type="checkbox"/>	<input type="checkbox"/>
D: (LONGTERM) DATA STORAGE, ACCESS AND REUSE		
13. I give permission for the de-identified data that I provide to be archived in the TU Delft repository so it can be used for future research and learning.	<input type="checkbox"/>	<input type="checkbox"/>
14. I understand that access to this repository is restricted only to TU Delft researchers and students.	<input type="checkbox"/>	<input type="checkbox"/>

C. Interview Questions

The following questions were taken along during the field work and used in the interviews with local residents. The interviews were intended to be structured as natural conversations, but these questions ensured, that the necessary topics would be included in the recordings. They were asked depending on what the participant was comfortable with.

Who are you and what is your background?

How long have you lived here and how did you get here?

Which social connections do you have with neighbours?

Do you have connections with the outland?

Do you have connections with people from different backgrounds?

Do you ask others for help?

How do you earn money and are you able to save?

Do you feel like you have certain skills to help others?

Which access to infrastructure do you have?

What is the first thing you would change in the settlement?

Would you rather have your own business or work for a company?

Can you trust others?

Do you take part in community groups?

Do you think there is good education available?

Do you think you have a voice in politics?

Do you have access to decide on the settlement?

Which cultural traditions are important to you and the community?

Do you share beliefs with others?

Do you feel like you need to teach others about traditions?

Do you use public or green space to relax?

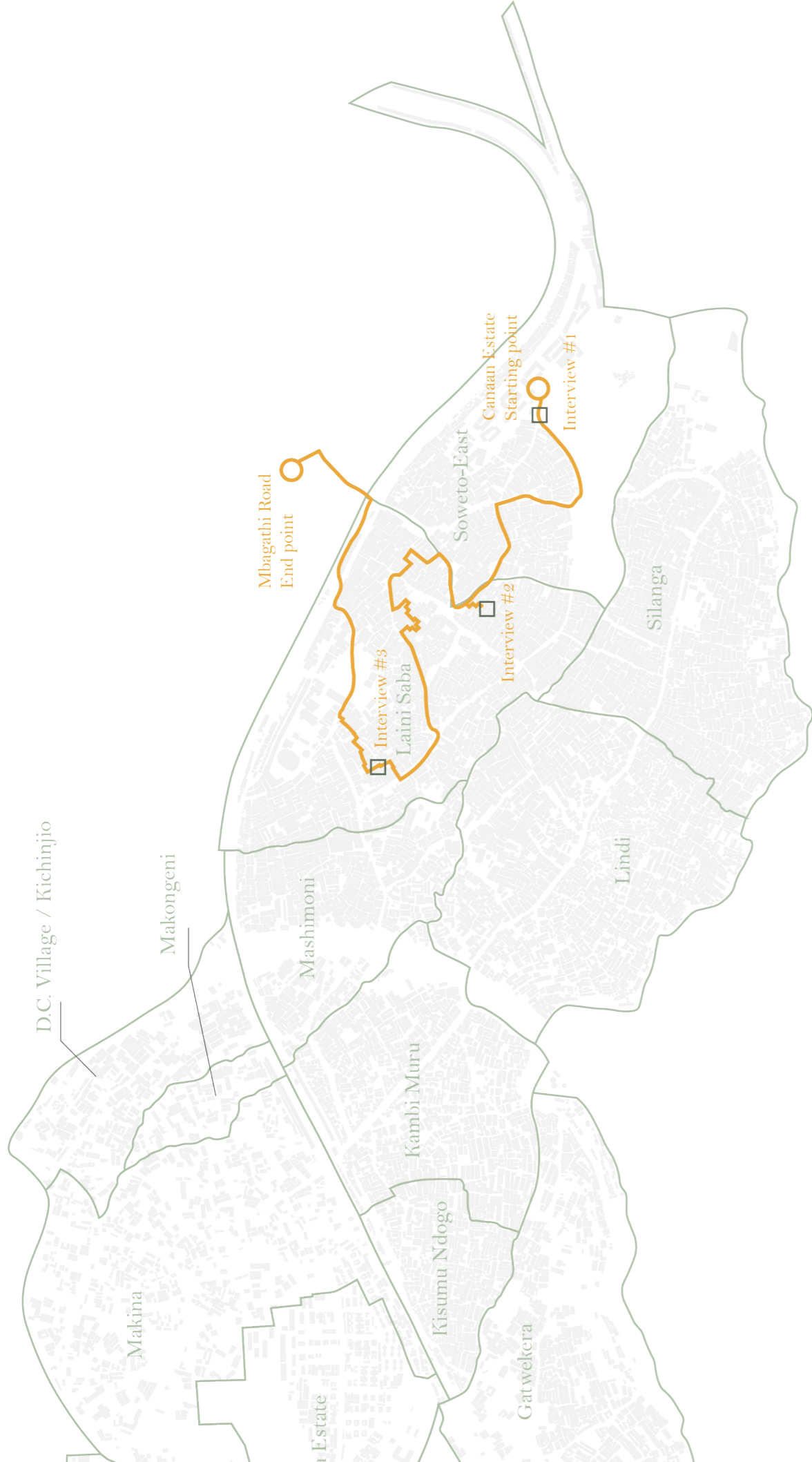
What do you think of the pollution?

Do you or the community act against the pollution?

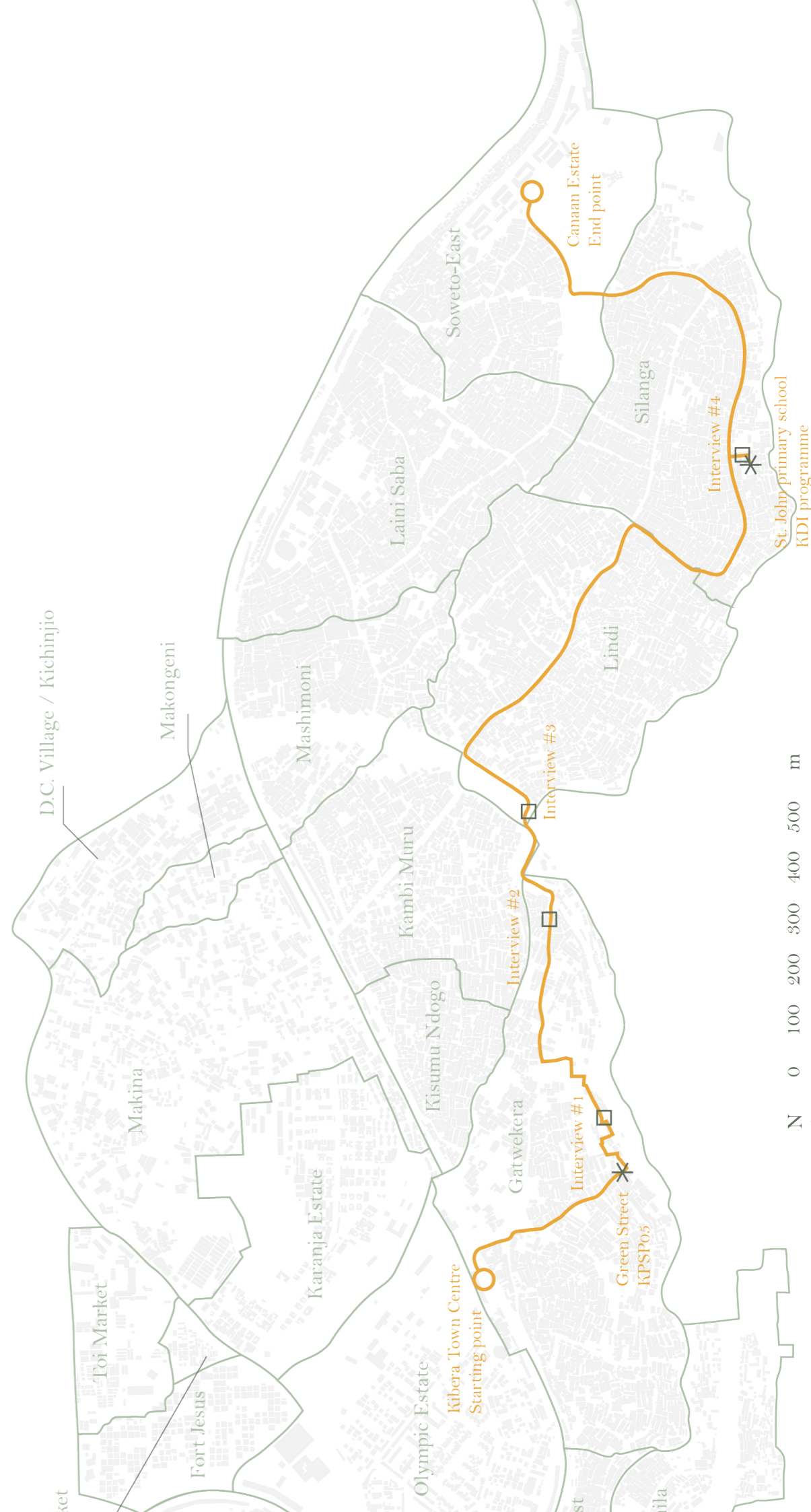
D. Field Work Routes



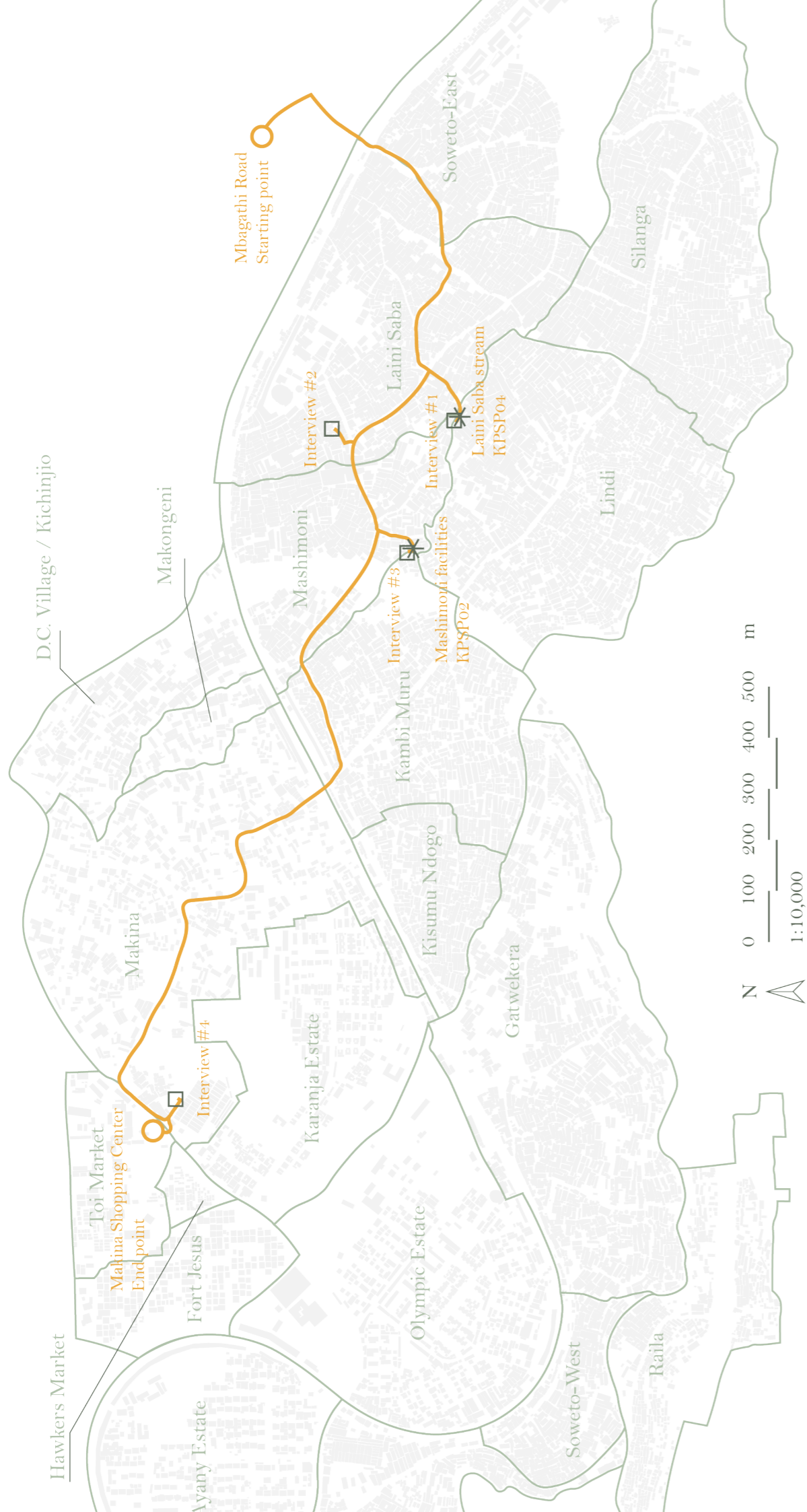
Day 1



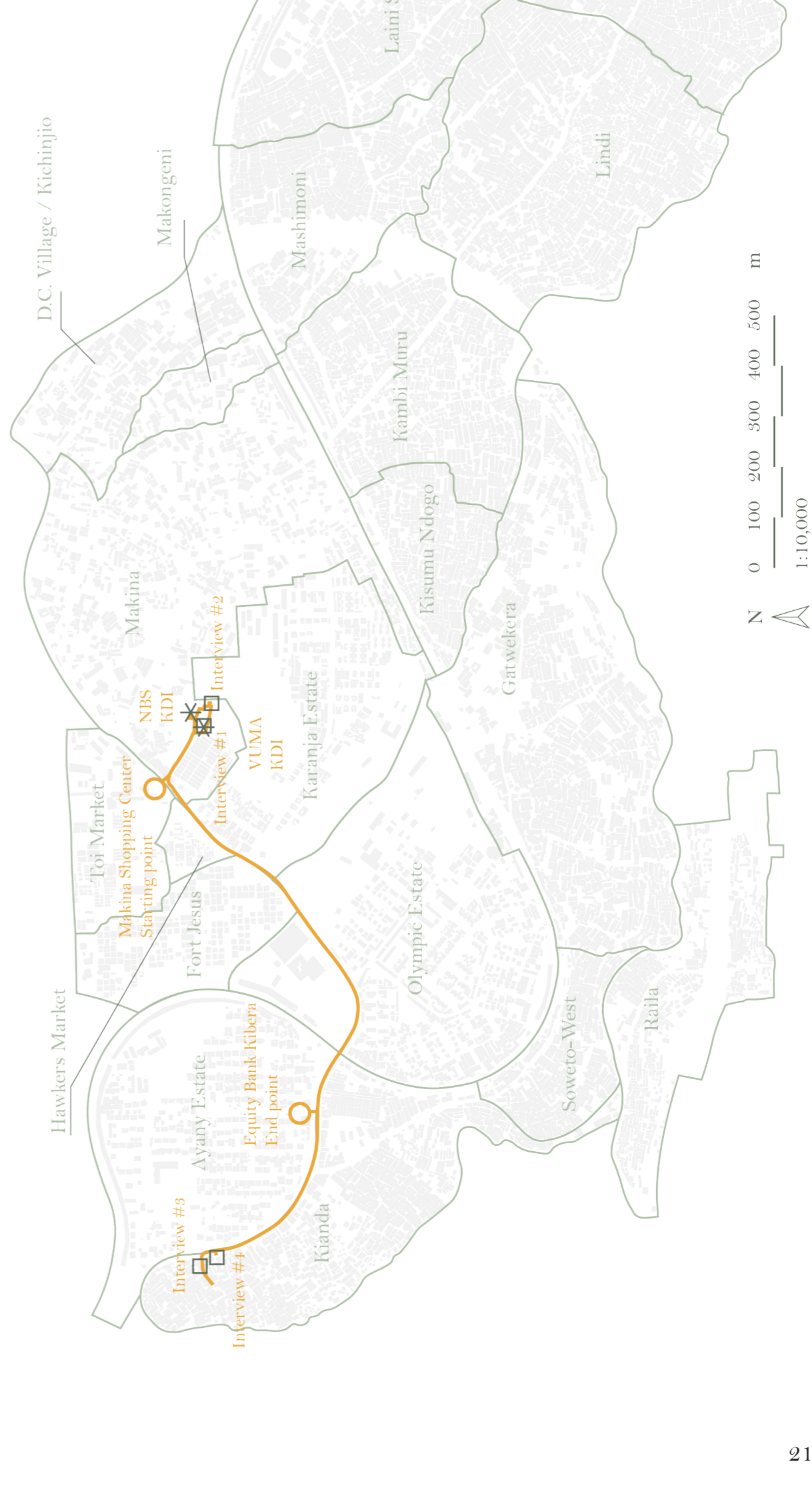
Day 2



Day 3



Day 4



Total of routes of field work in
Kibera, Nairobi

Strong Roots
&
Sturdy Trees



Jorian Hulst

