UN-HABITAT AND CITIES ALLIANCE JOINT WORK PROGRAMME

Equitable Economic Growth in Cities

Local Assessment Report (LAR)
Kajiado County, Kenya

UN-HABITAT
FOR A BETTER URBAN FUTURE

Cities Alliance
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REPUBLIC OF KENYA

COUNTY GOVERNMENT
OF KAJIADO

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About the Report

This report was produced by UN-Habitat as part of the Cities Campaign of the Cities Alliance Joint Work Programme (JWP) for Fostering Equitable Economic Growth in Cities.

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United Nations Human Settlements Programme (UN-Habitat)
P. O. Box 30030, 00100 Nairobi GPO Kenya
Tel: 254-020-7623120 (Central Office)
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Principal Authors: **Yoel Seigel, David Gatimu, Mary Chege, Evelyne Otieno and Cyrus Mbisi**
Project Manager: **Marco Kamiya**
Project Technical Advisor: **Yoel Seigel**
Project Coordination: **Hazel Kuria**
Editor: **Cathryn Johnson**
Design and Layout: **Euclide Inyumbira**
Donor: **Cities Alliance**
Partner: **County Government of Kajiado**

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Executive **Summary**

1. Urbanization in Kenya

Kenya's estimated urban population comprises 28% (14 million) of the total population and will reach 44 million people by 2050. This will be approximately 46% of the country's total population. The challenge of managing urban development in Kenya is divided into the following categories:

- **Inadequacy of Infrastructure and services**

- Most cities and towns are fast growing without matching investments in infrastructure, which keeps increasing the infrastructure deficit.
- Existing utility providers are overwhelmed, in terms of financial and technical capacity.
- Weak municipal management that lacks mechanisms to finance infrastructure, apart from ordinary budgets.

- **Inadequate Affordable Housing**

- The majority of urban low-income residents rely on sub-standard rental housing produced in the informal markets.
- Inadequacy of infrastructure increases costs of delivering housing; hence, making formal housing unaffordable to many.
- Distorted land markets and absence of effective urban planning makes housing development highly speculative as developers are not guided by specific development regulations.

- **Unplanned developments and Urban Form Challenges**

- Lack of approved urban development plans.
- Lack of reliable development control system and urban design guidelines results in an undesirable urban form and makes regulation of land development unpredictable.
- Street width can vary within the same stretch of street.
- Inconsistencies in building setbacks/ building lines.
- Walls constructed in a non-uniform manner.
- Congestion.
- Poor connectivity.
- High retrofitting costs for networked infrastructure such as water, electricity etc., which is part of the transition from rural to urban settlement.

- **Environmental challenges**

The disconnect between development control and infrastructure development has resulted in a declining environmental quality.

- Flooding due to absence of a storm water management system, and natural drains obstructed by constructions.
- Land use conflict between farming/ food security and real estate is also an environmental concern.

- Kajiado County is part of the Nairobi Metro region and has fast

- **Municipal Management Challenges**

- Most towns lack established municipal management structures.

- Without proper municipal structures, municipal finance and budgeting is inefficient.

- **Other urban challenges include**

- Municipal management – the challenges in establishing municipal structures in post-2010 (promulgation of the current constitution of Kenya).

- Poor planning procedures and enforcement which lead to development superseding planning.

- Use of septic tanks that later infiltrate water tables, thus polluting sources of water.

- Market value of land as a force for transforming agricultural land into real estate ventures.

- Huge infrastructure and service backlogs- especially water and sanitation.

- Urban housing problems - especially the scarcity of affordable, decent, low-cost housing.

- Urban planning challenges - proliferation of unplanned developments, declining environmental quality, poor living conditions in informal settlements etc.

- Youth bulge and unemployment.

- Urban poverty and widening socio-economic inequalities.

- The critical role of the Informal economy.

2. Challenges of Urbanisation in Kajiado County – Assets and Obstacles

Kajiado County covers an approximate area of 21,900 square kilometres and is within the larger Nairobi Metropolitan Region bordering Nairobi, Machakos, Makueni, Narok, Taita Taveta, Nakuru, Kiambu counties and also bordering Tanzania. The County is experiencing a high population growth rate of 5.5% per annum.

The county government is finalising formulation of the "Kajiado County Spatial Plan 2018-2028". Essentially, this type of plan is geared towards guiding county spatial development, subsequent sectoral development plans, and as the basis for formulating County Integrated Development Plans (CIDPs). However, this project established that, like many of the other counties, Kajiado has previously formulated CIDPs without a CSP (County Spatial Plan).

The county has some of the fastest growing urban centres in Kenya, a factor mainly attributed to the location of these urban centres within the wider Nairobi urban region. For example, the draft Nairobi Metro Spatial plan of 2011, shows that the population of the towns of Ngong and Kitengela increased at a rate of over 15% between 1999 and 2009, with the population of Ngong projected to reach 400,000 people, by 2030.

As a result, Kajiado County is facing challenges of rapid growth of towns characterised by urban sprawl and the inability to match development with complementary infrastructure.

Already, the County has one of the largest backlogs in infrastructure provision anywhere in the country (see section 6.3). Notably, the County and indeed major towns face the urgent challenge of providing sewerage and sanitation, water supply, energy, and development of a road network.

Additionally, there are policy gaps limiting resource mobilisation that need to be addressed, including providing for market-based policy options and the related legal regulations. The department is able to employ various tools such as zoning plans, urban integrated development plans, land use regulations and enforcement of physical planning laws, for managing urban development. To this end, the County is in the final stages of completing the Draft Kajiado Spatial Plan and the Draft Kitengela ISUDP, 2019 as framework documents for ensuring orderly and planned development in the county.

This is supported by land subdivision guidelines and zoning regulations already developed for the county. The county has completed validation of plots within town centres as a necessary step towards updating of the relevant development plans. Moreover, the automated development control system developed in partnership with IFC and Architectural Association of Kenya is nearing completion and will go a long way towards improving development control processes and procedures.

The new Planning Law of Kenya also grants the counties new authorities for instituting infrastructure development fees.

However, the Department and County are stifled by inadequate resources and the capacity to fully discharge their mandate.

Kitengela Town: Fast growing but lacking Urban Management Mechanisms The team undertook a detailed study of one of the fastest growing and largest urban centres of Kajiado County. This is Kitengela town, which is also one of the major satellite towns of Nairobi. The town is adjacent to the Export Processing Zone in Athi-River to the South East, and Nairobi National Park to the North West.

During the 1980s and throughout the 1990s, the towns of Athi River and Kitengela grew rapidly as industrial towns due to the location of an Export Processing Zone in the area. Kitengela has since undergone great transformation from a sub-division of group ranches to a thriving real estate destination for investors and home buyers/developers. Between 1999 and 2009, Kitengela's population grew from 9,327 to 58,167 people, at a rate of 20%, according to 2009 Kenya census data. The current (2020 projection) population of Kitengela is estimated to be 117,795 people (See Draft Nairobi Metro Plan, 2011).

The spatial pattern of the town's growth has largely been influenced by the Namanga-Nairobi road. This road has influenced a linear development pattern of the town, mainly attracting commercial and mixed-use developments. The inner parts of the town have developed through land sub-divisions that have created a large supply of plots for residential developments. The intense subdivisions and continued construction of low-rise single-family residences have contributed to rapid sprawl of the town. Land values in the town have sharply increased in recent years, although highly speculative.

According to the HassConsult Ltd. Land Price Index for the second quarter of 2019,

Kitengela was the metro town with the highest quarterly increase in land price – an increase of more than 8.2%. Investment in land, mainly of external capital, is a major driver of the town's real estate. The report further indicated that the average value of an acre in Kitengela is Ksh.12 million (US$120,000). Agriculture is also an important economic sector for Kitengela town.

The town's agricultural production is anchored to horticultural produce and livestock. But the agricultural sector is being increasingly threatened by land fragmentation and inefficient land development in the town. Small parcels of land (50x100 feet) can now be found as far as 10 kilometres away from Kitengela's town centre.

Despite Kitingela's growing real estate, it is a poorly planned town, with a major infrastructure and service deficit, and lacks an efficient development regulation system. This lack of a proper development management system has undermined leverage of land-based financing of infrastructure in the town, which is worsened by the absence of a dedicated municipal management for the town.

However, there are opportunities. For instance, during the survey, the county was in the process of formulating a development plan for the town and establishing municipal boards for its major urban centres. Successful outcomes of this can result in institutionalisation of a development management system and establishment of a functional municipal management for the town.

In terms of infrastructure and services, Kitengela residents and developers mainly rely on small-scale private service providers and are sometimes compelled to develop their own infrastructure, such as improving the paving of roads. Water supply is mainly from private boreholes, and sewerage is mainly managed through septic tanks, cess pits and biodigesters. But these systems are becoming increasingly inadequate for the fast-growing town. Importantly, the current reliance on private services presents an opportunity to leverage private sector capital to reduce the town's infrastructure and service deficit. Hence, the town's need for a development management system, anchored on the municipal structure.

3. Mechanisms for Managing Urban Development

3.1. A New Strategy for Development

As described earlier, Kenya overall and the counties in the greater Nairobi Metropolitan area extending westward are undergoing rapid urbanisation. Managing urbanisation requires a fundamentally different strategy of managing development than previously accepted in Kenya. This is all the more critical when linked to the process of devolution. Although relatively ineffective, prior to devolution, the national government had the primary responsibility for land use planning and control. Now the counties have primary responsibility and authority. However, there are still no clear mechanisms, policies, nor organisational capacities to fulfil this function.

Until recently, development outside of Nairobi was fundamentally rural and peri-urban. This has meant that development was based upon a plot-by-plot strategy of growth. Households could gain access to a plot of land, build a home and for the most part were self-sufficient with regard to water, sewage, and waste. In a rural setting, even in concentrations of small villages, this a sustainable form of settlement. The scope of human activity, for the most part, could be balanced with the natural processes of environmental regeneration. Similarly, there is limited infringement of one family upon the "space" of other families.

Therefore, until recently, the need for shared infrastructure (other than key transportation links) was limited.

The need for managing development arises now primarily because of the concentration of people in a small urban area. Previously policies mitigated against urbanisation and encouraged continued settlement in rural communities. However, the reality of population growth and the quest for means of livelihood and the desire for a higher standard of living and services stimulate urbanisation. The challenge now is how to channel and transform urbanisation into a dynamic for enriched growth, preventing the many ills that often characterise mass movement into cities unprepared to handle this influx.

This entails going from a tacit strategy of plot-by-plot development to a strategy of municipal-wide planning and infrastructure provision. This is one of the mandates of county government, following enactment of the Kenya Constitution of 2010.

3.2. Legal Anchors and Processes - Spatial Planning and Infrastructure Development

Under the new Planning Law of Kenya, County Governments have greater authority and mechanisms to manage urban development.

a. Granting Planning Permission with Conditions (PLUPA c.62(2)(a)

There are often conditions attached to planning permission that need further details to be submitted and approved by the county government at certain stages of the development. There are three main types of condition to enhance the quality of the development based on relevance to both planning and to the specific development:

- Pre-commencement conditions: These conditions need to be formally fulfilled prior to construction and or development starting on site;
- Performance conditions: These conditions are normally progressive and largely capital intensive, such as infrastructure and building materials, and require secondary processes to be discharged; and
- Pre-occupation conditions: These conditions need to be formally fulfilled prior to the development being occupied or put into use.

b. Infrastructure Development as a Performance Condition

The planning obligations condition is a powerful approach to hinge on the realistically designated necessary infrastructure. Under the provisions of the local physical and land use plan, an analysis of infrastructural needs should be based on time specifics and local market dynamics.

The availability and adequacy of infrastructure as a prerequisite in the development control process is further delineated in the Third Schedule to the Physical and Land Use Development Act. Of the eight development control processes and procedures enumerated in this Schedule, the county government will need to have due regard to the availability and adequacy of the infrastructure as far as permissions for Change of User, Extension of Users, Extension of Lease, sub-division scheme and amalgamation proposals and building plans are concerned. With particular regard to sub-division schemes and amalgamation plans, the county government will also have to consider the linkage and indication of classified roads in addition to the availability and adequacy of the infrastructure.

Finally, the adequacy of infrastructure will need to be addressed in every local physical and land use development plan in accordance with Section 5 of the Second Schedule to the Act. In particular, each of these plans should include an analysis of, among other issues, Housing and Infrastructure as well as Transportation and Communication.[1]

Conditions can cover cumulative and multiple matters which call for comprehensive guidance for their application. For purposes of efficiency and effectiveness, a model based on sieving tiers that categorise the magnitude of the proposed development and the levels of assessment during the planning and development-permitting process is essential.

3.3. Public Engagement as Mandated in the Constitution

One of the critical factors in Managing Urban Development is promoting public understanding of the importance of planning and ensuring adequate infrastructure in urban centres.

- Need to know and understand what the county government provides (e.g. facilities available for SWM, Industrial parks, public spaces, wastewater management facilities, schools, hospitals etc.)
- Involvement of all stakeholders in the planning process.
- Need for the public to understand the planning and infrastructure regulations and their significance.
- Residents to pay for what they know is value for money. Most residents would comply with payment of development fee if they were getting value for their money.

3.4. Municipal Management

The Constitution of Kenya mandates county governments to undertake municipal management. Except for Nairobi and Mombasa, which are 'city counties', the rest of the county governments comprise urban and rural settlements of varying sizes.

A decentralised system is envisioned at the county level, where county governments are supposed to establish decentralised units, among which are administrative structures for urban centres. Part VI of the County Governments Act provides the legal backing for this.

One of the major still unresolved challenges that face county governments is the generation of revenues needed by municipal boards and town committees. This is both a question of the revenue source and which governing body has the right to tax the residents. It also raises the question of tax duplication. There is a need for:

- A clear framework for the revenue/ money for the county government and municipalities.
- A clear process for the transfer of functions from county government departments to the municipalities.
- Clarification of the towns that are being considered to become municipalities.
- Preparation of spatial plans for urban centres.
- Establishing the municipal boards under the Department of Land, Housing and Physical planning.

1 Paragraph (e) Housing and Infrastructure Analysis, and Paragraph (f) Transportation and Communication Analysis under Section 5, Second Schedule.

Although the law delineates a number of functions, there is still a great lack of clarity regarding the overlapping and at times conflicting functions and authorities, especially regarding provision of sanitation, infrastructure maintenance and development. Furthermore, there is no clarification regarding the division of responsibility and allocation of revenue generation.

4. A County Market Management Authority

Public markets fill a unique niche that delivers both economic and social benefits, however this is not being fully realised due to problems like congestion, solid and liquid waste management problems, underexploited revenue potential, insufficiency of essential physical infrastructure, inadequate utilities like water and electricity, and security. This situation is limiting business activities in the markets and poses a public health hazard.

Since the Kitengela Market development has been funded from other sources and subsequent to a court decision to undertake the project, which was only reached during the summer months, this action area was changed to undertaking an assessment and recommendations for a countywide market management platform/authority.

The initiative is aimed at supporting the County government of Kajiado in improving development, management, and maintenance of the markets in the county. The overall goal is to increase the markets' economic productivity.

This will involve formulation of a management framework for improving the services that the county government provides for its markets - provision of physical infrastructure, waste management and other utilities. The management authority will serve as the mechanism for implementing the County's market development strategy. It will also provide a preliminary leveraging of the high value land of markets owned by the county and the economic potential from the scope of trading to structure ventures that include the private sector.

The outcome will also serve to strengthen the rural urban linkages.

CHAPTER
01

INTRODUCTION

1.1. Purpose and Objectives of the Report

This component includes a diagnostic assessment of access to and delivery of public goods and services in the urban areas of the county and the primary municipality. The choice of public services and goods was determined with the counties and validated at the kick-off workshop, informed by the IEER and multi-stakeholder consultations. This diagnostic process provides a situation analysis and mapping of the county's urban growth patterns and challenges. It also provides an analysis of the agricultural economy and the factors influencing the value chain. The LAR has resulted in a clearly documented evidence base.

The LAR maps the infrastructure necessary to support urban growth and to promote equitable access to the county's resources/ public goods. The analysis examines in depth the geographic access (wards or zones) and conditions of urbanisation. This assessment report addresses key issues and new mechanisms that can inform policy formulation.

1.2. Main Findings and Conclusions of IEER

TThis stage of work and preparation of the LAR are based upon the findings of the IEER. It is important to review the main insights and the decision to focus the JWP on two main issues: Managing Urbanisation and improving the value added of agriculture through up grading county markets.

This report will help to set clear standards for the level of services and functioning of the County Government necessary to manage urban development and strengthen the marketing services in the county.

1.2.1. First Insights

From this overview, a number of important insights and conclusions evolve.

- The county's geographic location affords it many opportunities.
- The population has a strong economic base compared to Kenya in general.
- There are many disparities between the population groups regarding: Income, Housing, Health, Education, Sanitation.
- The County's Urban population is rapidly growing.
- The County Government departments have well-articulated strategic objectives.
- The County Government is faced with a combination of logistical, legal, and organisational constraints.

According to the CIDP 2013-17 the major development challenges are: inadequate water supply; poor physical infrastructure; high illiteracy level; low level of diversification; inadequate marketing channels; poor coordination of development activities and lack of access to health services.

1.2.2. Workshop Highlights

During the Kick-off Workshop, participants were informed about the Joint Work Program. Five priority action areas were identified, and the participants were asked to assign a value between 1 to 5, for each priority action area. The resultant action areas were scored as follows:

Preliminary priority action areas	Leverage resources	National Priority	Potential funding/ investment	Doable & Timely	Improve equity	Improve OSR	Flagship project	Sustainable
Agriculture: Farming and Processing	5	Yes	5	5	5	5	Yes	5
Water irrigation & Natural resources	5	Yes	5	5	5	1	No	3
Education and Training	5	Yes	5	5	5	1	Yes	3
Health and Sanitation	5	Yes	5	5	5	1	Yes	3
Trade & Marketing	5	Yes	5	5	5	5	No	5
Sports, Youth, Gender and Social Protection	?	Yes	?	5		?	yes	?

1.2.3. The workshop concluded with outlining the next steps for action:

- A visit by a team from UN-Habitat for a scoping mission to collect more data that will serve to guide UN-Habitat cooperation with the county, including the JWP. This will result in the signing of an MOU based upon agreed upon Concept Notes.
- Additional data will be gathered to better understand the challenges and potential related to leveraging agriculture as a key component for economic development and to better understand the process of urban development and the opportunity of planning for the future.
- Based upon this data collection step, UN-Habitat in consultation with the County Government, will prepare concept notes to guide Project Formulation and the Local Assessment Report.
- The finding of the analysis of workshop will be presented to the County Government before end of year 2018.
- All the deliberations will be reviewed and integrated into one catalytic action by UN-Habitat.
- The county will provide all the necessary support to enable implementation of the projects.
- In the spring, the second workshop will be held, focusing on the formulation and preliminary assessment - feasibility of the projects in the two priority areas.

1.2.4. Primary Focal points for action

In analysing the workshop, groups and other documents in detail two operational project areas emerged:

1. **Managing and controlling the rapid urban growth: land use, infrastructure and revenue enhancement and over all integration of the other components related to the emerging urban centres.**

2. **Upgrading the "Kitengela" retail market is a critical need, especially for enabling the growth of the livestock trade and marketing of other agricultural products**

Urban Development and Infrastructure Management

Kajiado has a high rate of urbanisation with the largest towns being those in close proximity to Nairobi, i.e. Ngong, Kitengela [-Isinya], Rongai and Kajiado town. In the last 8 years, the urban population has grown by over 50%. At the current rate of growth, the urban population of the county will soon reach half a million people.

Although the pace of urbanisation in Kajiado County is rapid, only 39% of the county population has access to piped water, of which only 19% is piped into dwellings, with 1.3% and 23.7% using toilets that flush to a piped sewer system and septic tank, respectively. 68% of the households use electricity -from the mains connection- as the main source energy for lighting, but only 0.2% of these households use that electricity for cooking (Kenya National Bureau of Statistics, 2018)[2]. Only 12% have waste disposal.

Therefore, a comprehensive approach will not only enable adequate infrastructure to be ensured for future growth, but can also enable the transformation of solid and liquid wastes into agricultural resources for irrigation and fertilisation.

Integrated Program of Action

In order to meet the development requirements of the growing population and ensure proper standards, County governments need a clear, integrated, urban development program of statutory and financial mechanisms for infrastructure development, land use regulations, and sources of revenue generation,

Developing an urban development management programme will require a number of operational steps:

- Undertaking an urban development assessment:
  - Expected urban growth rates: analysis of urban development trends and demographic projections.
  - Influence of externalities: neighbouring counties, national government policies, and major development projects.
  - Projections for housing and business growth.
  - Linkage and interrelation with the "peri-urban" surroundings.
  - Undertake a pre-feasibility study of development fees potential.

2 Kenya National Bureau of Statistics (2018). Kenya Integrated Household Budget Survey: Basic Report.

  - Analysis of Land sub-division trends, processes, and their implications for land-use and land development.
  - Analysis of prevailing approaches to infrastructure delivery (the actors, costs and approaches, challenges and opportunities).
- Reviewing environmental and health standards for water and sewage treatment that are to be met as a precondition for building permits.
- Identify and consider the different levels of treatment systems: household level; neighbourhood level; and centralised regional treatment systems.
- Planning and building permit procedures
  - Review of current procedures
  - Review of existing spatial plan regulations
- Assess existing or planned institutional capacities for managing infrastructure development
  - National legislation
  - County legislation: finance bills/acts
  - County development platforms: development funds, county development company, specialised departments

In parallel, it is necessary to address the issue of governance - the division of responsibilities and revenue generation between county functions and authority and those of the municipal/urban area government.

1.2.5. Improving productivity of Kitengela Retail Market in Kajiado County

The County Government of Kajiado is in the process of identifying an appropriate strategy and approach for optimising the potential of Kitengela town market. However, the County Government is also facing financial and technical constraints which limit its ability to leverage the market.

Public markets fill a unique niche that delivers both economic and social benefits; however, these may not be fully realised due to challenges, as in the case of the Kitengela town market. Kitengela market is facing problems like congestion, solid and liquid waste management problems, underexploited revenue potential, insufficiency of essential physical infrastructure, inadequate utilities like water and electricity, and security. This situation is limiting business activities at the market and poses a public health hazard.

The initiative is aimed at supporting the County Government of Kajiado for improving services at the market, which will facilitate an increase in the market's economic productivity.

This will involve development of a business case for improving the services that the county government provides at the market - provision of physical infrastructure, waste management and other utilities. The development strategy will focus on leveraging the land value of the market owned by the county and the economic potential from the scope of trading to structure a venture that includes the private sector.

The outcome will also serve to strengthen the rural urban linkages through this and other markets.

Since the Kitengela Market development has been funded from other sources and subsequent to a court decision to undertake the project, which was only reached during the summer months, this action area was changed to undertaking an assessment and recommendations for a countywide market management platform/authority.

IEER Force Field Analysis

In reviewing the institutional and operational strengths and weakness, the following analysis emerged:

Weaknesses and Constraints limiting the ability of the counties generally in Kenya to promote equitable local economic development and access to public goods:

- Limitations on the authority to levy taxes and fees
- Deficit financing requires approval by Parliament
- High dependence on National Government Revenue Transfers
- Population size criteria for the city and municipal status
- County Legislation is still anchored in National Acts
- Weak County Enforcement Mechanisms

Strengths and resources for leveraging the ability of counties generally in Kenya to promote equitable local economic development and access to public goods:

- National Policy encouraging increasing Own Revenue Sources
- County Authority to provide a wide range of services
- County Authority to establish subsidiary companies (for development/sanitation/energy)
- County Authority to enter into partnerships with the private sector
- County Legislation can be tailored to the local context
- National Government revenue sharing
- National Government development programs
- Citizen participation is mandated
- Planning and land use regulation rests with the County (including permits and registration)
- County Authority to require engineering (infrastructure) service fee
- County Owned Land and Public Spaces
- The County is already initiating the creation of the legal, financial, and organisational mechanisms for equitable economic development
- High professional level of skills
- Political leadership works in coordination with professional staff
- Strong agricultural economic base

Residents in Kajiado

CHAPTER
02

URBANISATION IN KENYA

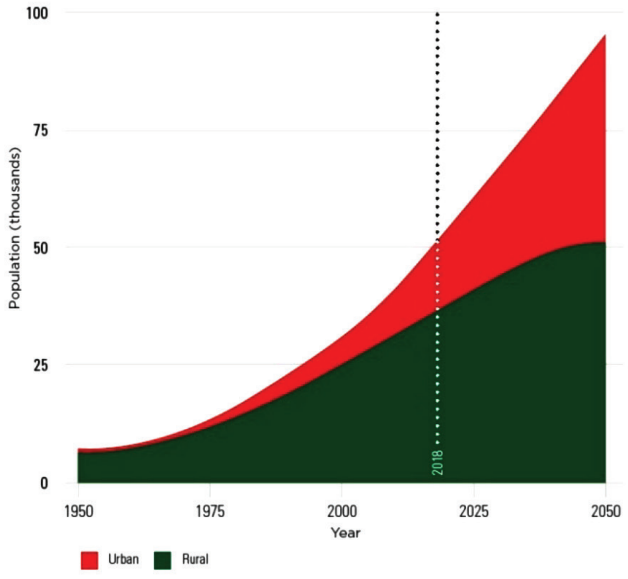
2.1. Introduction

Kenya's urban population is estimated to comprise 28% (14 million) of the total population and will reach 44 million people by 2050. This will be approximately 46% of the country's total population (UN Population Division, 2018[3]).

However, the geography of this urbanisation is uneven, with most of the urban centres located along the Northern Corridor. The northern parts of Kenya are the least urbanised, with Nairobi Metro Region being the largest urban region in the country. Kajiado County is part of the Nairobi Metro region and has some of the fastest growing satellite towns.

The distribution of urban centres nationally is mainly dominated by secondary cities, medium-sized and small towns. Only a few counties have large urban centres of population size of more than 200,000 people. Such counties include Kisumu, Uasin Gishu, Kiambu and Nakuru. Kajiado County's urbanisation is increasingly resulting in large satellite cities in Nairobi Metro. The 2019 census will provide the latest data on urbanisation levels in Kenya.

Kenya Urbanisation Projections



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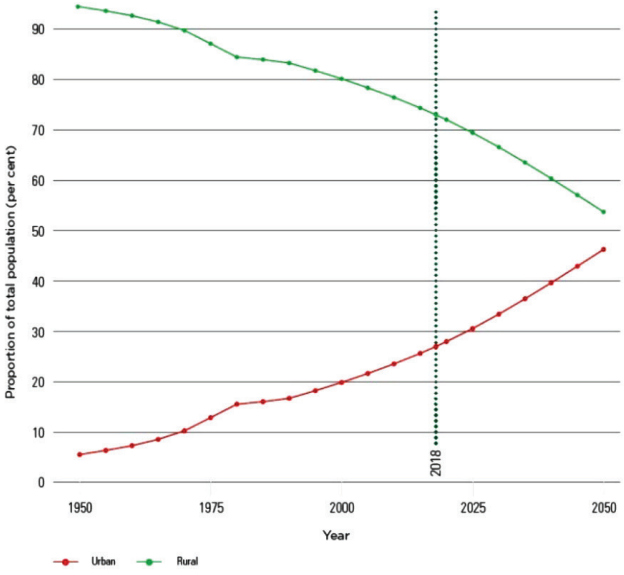

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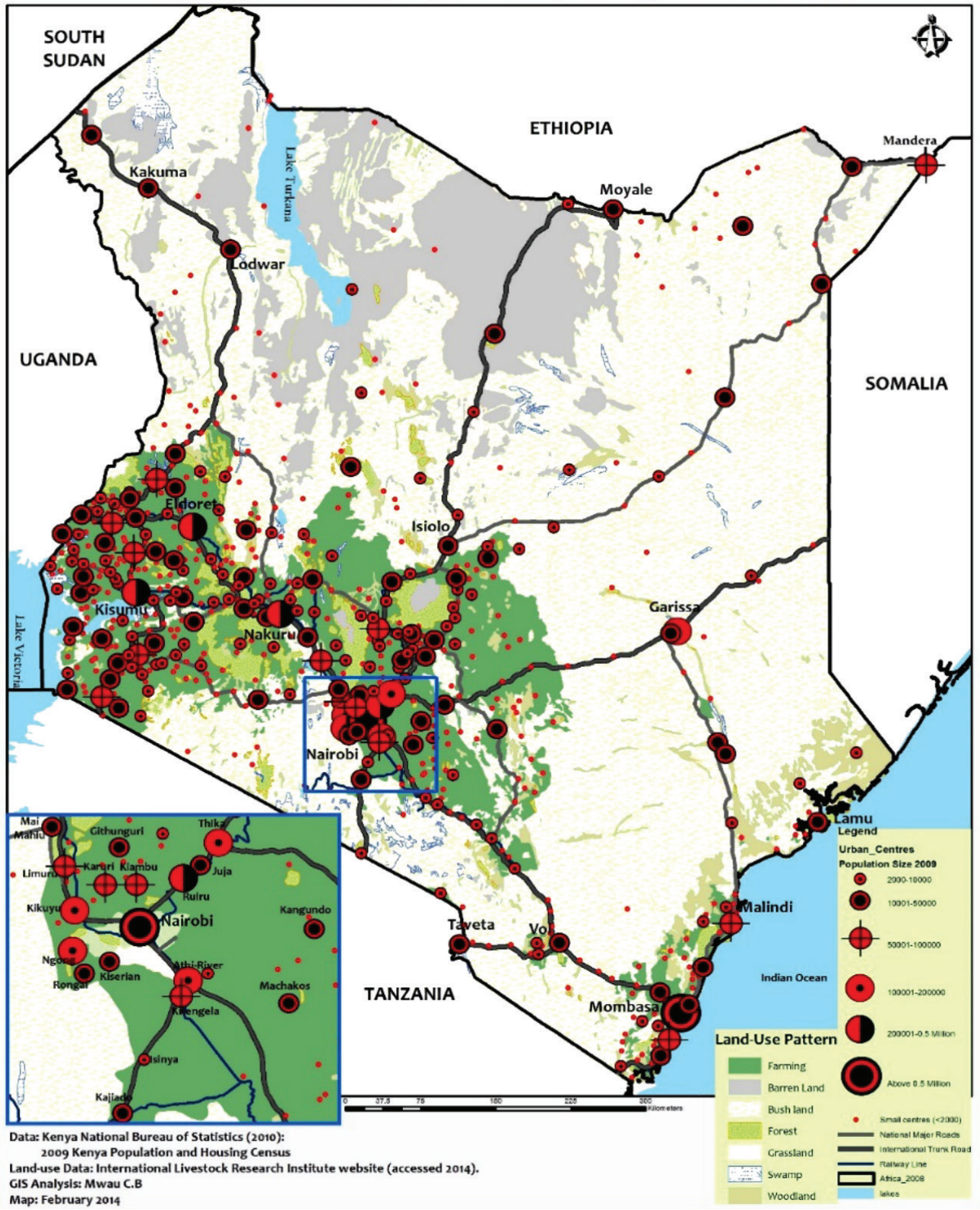
3 UN Population Division (2018).

Distribution of Urban Centres in Kenya



Data: Kenya National Bureau of Statistics (2010):
2009 Kenya Population and Housing Census
Land-use Data: International Livestock Research Institute website (accessed 2014).
GIS Analysis: Mwau C.B
Map: February 2014

The Challenges and Opportunities of Urbanisation

Urbanisation means:

- More people in a concentrated space
- More economic activity
- Increased land values
- Reduced carrying capacity by nature to balance human activity
- More need for cooperative mechanisms for sustainable living

Urbanisation requires sophisticated mechanisms for governance:

- Increased planning capacity
- More and better quality services
- Construction and maintenance of infrastructures
- New legal and financial mechanisms
- New management and development platforms
- Computerised data management

2.2. Urban Development in Kenya

Kenya's urbanisation presents opportunities and challenges in equal measure. Urban centres have contributed to the country's socio-economic development, but not at the required scale. Interpretation of government statistics (Kenya National Bureau of Statistics, 2019)[4], indicates a strong correlation between higher urbanisation levels and a county's contribution to the national Gross Domestic Product (GDP).

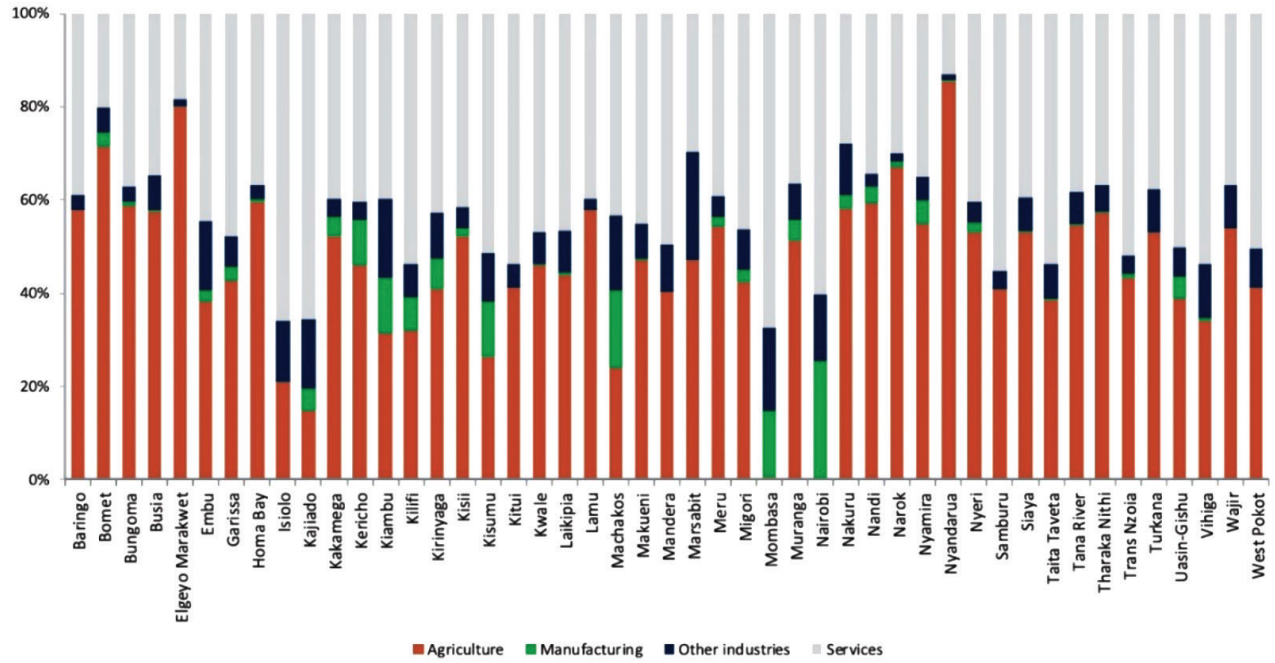
Nairobi leads with a 21.7% contribution, followed by Nakuru (6.1%), Kiambu (5.5%), Mombasa (4.7%) and Machakos (3.2%). Kajiado and Nyandarua counties contribute 1.5 % and 1%, respectively, to the national GDP. In terms of sectors, Agriculture, mainly a rural-based economy, is the leading contributor to the national GDP and across most of the counties.

However, cities and towns cannot effectively plan and manage the needs of their increasing populations, such as provision of adequate infrastructure and services, affordable housing and sustainable livelihood opportunities. Indeed, the socio-economic benefits are unevenly distributed, creating high urban inequalities, marginalisation and social polarisation.

"Counties with huge agricultural potential include Nakuru, Nyandarua, Kiambu, Elgeyo Marakwet, Meru, Narok, and Bomet. However, agriculture activity is low in Kajiado, Isiolo, Machakos, and Kisumu. Industrial activities (manufacturing activities in particular) are mainly concentrated in urban counties, namely: Nairobi, Kiambu, Mombasa, Machakos, Kisumu, Nakuru, and Kajiado." KNBS (2019:9)

4 Kenya National Bureau of Statistics (2019). Gross County Product 2019.

Proportion of Economic Activities by Broad Sectors



Source: KNBS (2019)

2.3. Nairobi Metropolitan Area

Several towns in Kajiado County constitute what can be termed as the wider Nairobi urban region, Nairobi Metropolitan. This is the largest urban region in Kenya, comprising the City of Nairobi and satellite towns in Kajiado, Kiambu and Machakos counties.

The combined population of Nairobi Metropolitan was reported as 6.65 million, based on the 2009 census data (See Draft Nairobi Metro Spatial Plan 2011).

Urbanisation in Kajiado in the Context of the Nairobi Metro Region

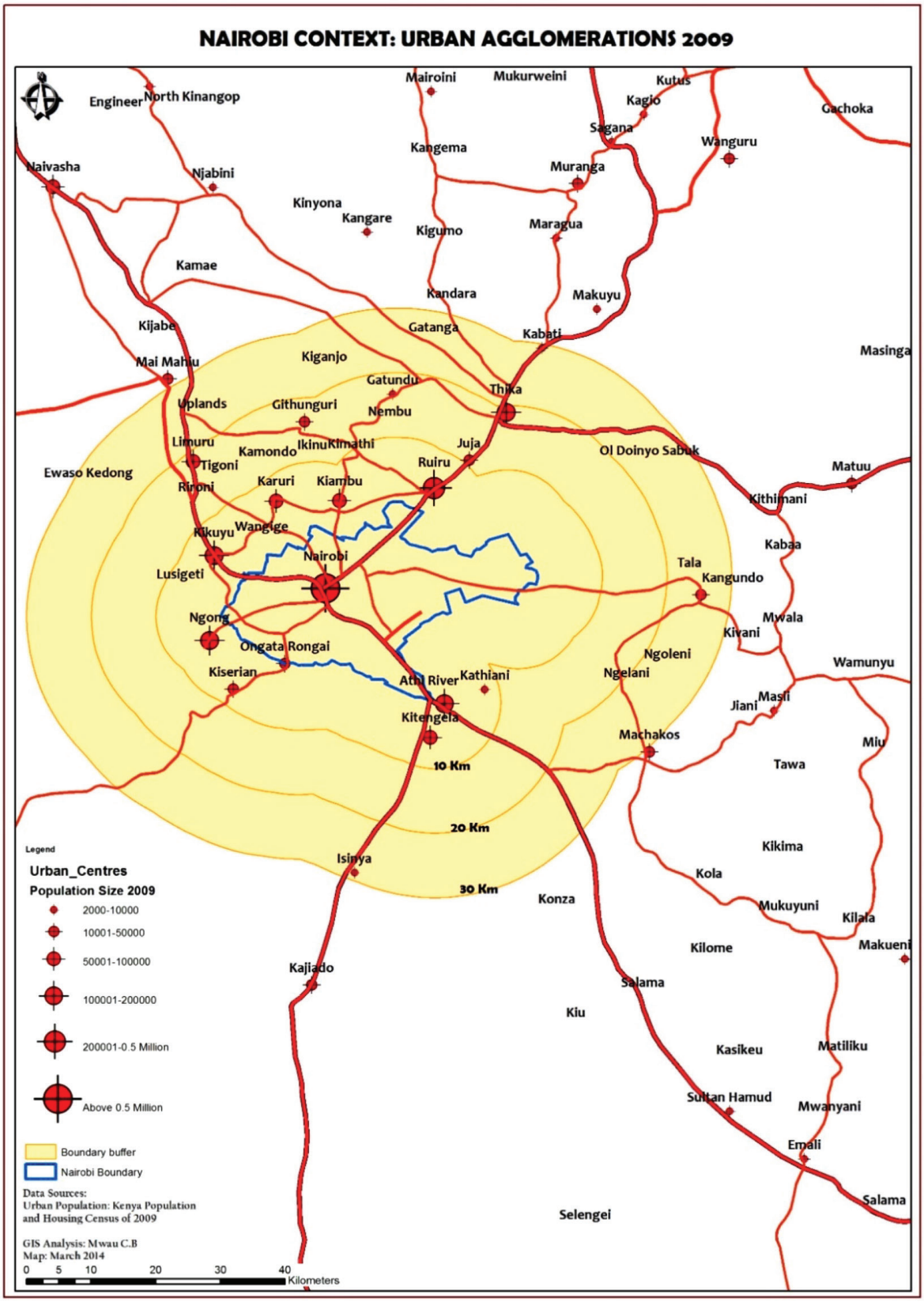
- Satellite towns in Kajiado are among the fastest growing in Kenya
- Land use implications (rapid change of land use- from pastoral agriculture to urban real estate)
- Urban growth management – challenges of unplanned developments, leveraging the urban advantage (e.g. economic development)

2.4. Key Urban Development Issues in Kenya

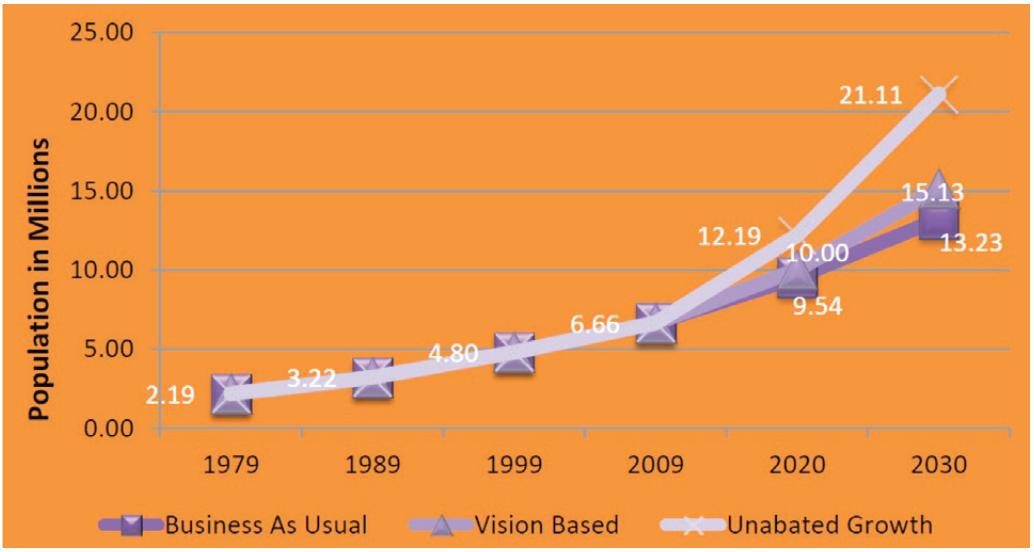
In summary, the following are key urbanisation issues that need to be addressed, both at national and county levels:

- Huge infrastructure and service backlogs- especially water and sanitation.

Map of Nairobi and its Satellite Towns



Urban Population of Nairobi Metro Region



Source: Draft Nairobi Metro Spatial Plan 2011 p 6.11

- Urban housing problems -especially the scarcity of affordable, decent, low-cost housing.
- Urban planning challenges - proliferation of unplanned developments, declining environmental quality, poor living conditions in informal settlements, etc.
- Youth bulge and unemployment.
- Urban poverty and widening socio-economic inequalities.
- Informal economy.
- Ineffective or lack of urban planning.
- Land governance challenges- inefficient land administration, poor land use management, etc.
- Rural-urban migrations, and the urban/rural linkages.
- Urban Food Security.
- Municipal financing-the opportunities and challenges.
- Municipal management – the challenges in establishing municipal structures in post-2010 (promulgation of the current constitution of Kenya).

CHAPTER
03

URBANISATION IN KAJIADO COUNTY

Urbanisation and Development

DDevelopment in the context of urbanisation brings about several dimensions – local and global – that define dynamics of planning, governance and urban management; all the dimensions can be related to demographic dynamics and the quality of life of urban dwellers.

The first and most obvious dimension is capacity of urban services (physical and social infrastructure); diversity in terms of inequality, fragmentation and deprivation leading to social unrest and poverty; security as an inevitable variable in the absence of regulated social order; authority in terms of political participation and distribution of powers for collective decision making; and most critical, financial resources in the form of revenues for infrastructural development and to sustain governance systems.

Because land use is so closely bound up with urban change, this translates to abstract principles of sustainability and into operational policies; it is in this creative exercise of balancing all the different elements that contribute to quality of life that the two interdependent twin functions of Plan Making and Development Control are born.

The achievement of the objectives of these functions requires the resilience and vitality of financing mechanism sectors. Figure 1 illustrates the pathway of transformation in urban services delivery; each stage requires addressing these crosscutting issues and funding options to create affirmative change.

Urban Services	**Planning Intervention**		**Development Control**		**Financing Mechanisms**	
	Land Use	Physical	Development Permits	Physical Implementation	Public	Private
• Roads & Transport Services • Water Supply • Sewerage Reticulation • Storm Water Drainage • Solid Waste Management	• Residential • Commerce & Trade • Social Amenities • Open Spaces & Recreation	• Bulk (Public) Engineering Services • Internal (Private) Engineering Services • Affordable Housing • Social Housing • Private Housing • Public Social Amenities	• Planning Application • Compliance with Development Plans & Policy • Compliance with Environmental Considerations	• Detailed designs • Budgeting/ Costing • Work Plans • Contracting • Quality Assurance • Delivery/ Commissioning	• National Treasury (Horizontal & Vertical Share) • Fuel Levy • Multi- & Bi-Lateral Partners • Annuity Programs • Concessions	• Development Fees (administered through Revolving Fund) • Private Sector Debt (Capital Markets, Bonds, Syndicated and Term Loans), • Private Sector Equity (PPP, Joint Ventures, Leasing, concessions) • Planning Gain

Figure 1: Logical Operational Linkages for Urban Services Delivery

The county governments apply these instruments using logical operational linkages to match the spatial, technical, financial and institutional aspects of urban infrastructure investment.

3.1. Introduction

Kajiado County covers an approximate area of 21,900 square kilometres and is within the larger Nairobi Metropolitan Region bordering Nairobi, Machakos, Makueni, Narok, Taita Taveta, Nakuru, Kiambu counties and also bordering Tanzania. The County is experiencing a high population growth rate of 5.5% per annum.

The county government is finalizing formulation of the "Kajiado County Spatial Plan 2018-2028". Essentially, this type of plan is geared towards guiding county spatial development, subsequent sectoral development plans, and as the basis for formulating County Integrated Development Plans (CIDPs). However, this project established that, like many of the other counties, Kajiado has previously formulated CIDPs without a CSP.

3.2. Population

Kajiado County has a combination of a child rich and a transitional population structure. Overall, 42% of the population is aged between 0-14 with Kajiado Central constituency at 50%; Kajiado West constituency at 48%; and Kajiado South constituency at 49%, having the highest proportion of children.

The county also has a high proportion of the working age (15-64) population especially in Kajiado North constituency at 66% and Kajiado East constituency at 60. This may be explained by the growth of Ngong and Ongata Rongai Wards in Kajiado North as well as Kitengela Ward in Kajiado East that have attracted large numbers of migrants from rural areas" (See Exploring Inequalities report-KNBS SID).

Urban Areas and Cities Act, 2011 (Revised 2015)

The Urban Areas and Cities Act provides for the classification of urban areas and cities (Part II, Section 4), the criteria of establishing urban areas as well as the principle of governance and management (Part III, Section 11). Additionally, the Act states that every city and municipality established under this Act shall operate within the framework of integrated development planning (Part V).

This section outlines the policies that determine the parameters under which County Spatial Plans are prepared.

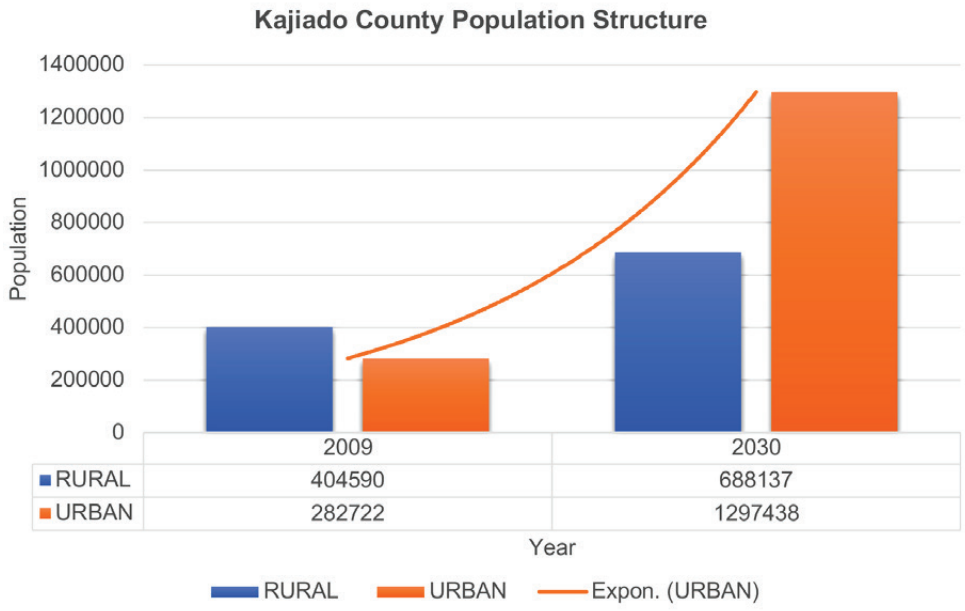
Kenya Vision 2030

Vision 2030 aims to transform Kenya into a newly industrialising, middle-income country providing a high quality of life to its citizens by the year 2030. It is founded on three pillars, namely economic, social and political. The Economic pillar aims to increase annual GDP through six key growth drivers; tourism, increasing value addition in agriculture; improving industrial production and service sector, including wholesale and retail trade sectors, manufacturing for the regional market, financial services, and Business Process Offshoring. The Social pillar seeks to build a just and cohesive society with social equity. It also promotes a clean and secure environment and facilitates the provision of social infrastructure including schools, health facilities, water as well as sanitation. The Political pillar aims to achieve a democratic political system founded on issue-based politics that respects the rule of law and transparency.

The county spatial plan will outline how the objectives of the Vision can be achieved through development strategies within the county of Kajiado.

It is envisaged that the Urban Areas and Cities Act, 2011 (revised in 2015) and National Urban Development Policy, 2016 will provide a framework for the counties to establish their own systems of urban management. This will help the urban centres in Kajiado to realize sustainable urban development as articulated in the New Urban Agenda, Sustainable Development Goal 11 among other international and national agreements.

Rural-Urban Population Change



Data Source: Kajiado County: Draft County Spatial Plan

Population and Population Density Projections per Sub-County

Year	Kajiado North		Kajiado Central		Kajiado East		Kajiado West		Kajiado South	
	Pop.	Den	Pop.	Den	Pop.	Den	Pop.	Den	Pop.	Den
2009	202,651	1,369	102,978	24	137,254	53	106,933	14	137,496	21
2010	213,797	1,444	108,642	25	144,803	56	112,814	15	145,058	22
2015	279,424	1,888	141,990	33	189,252	73	147,444	19	189,585	29
2018	328,111	2,217	166,731	39	222,227	86	173,135	23	222,619	34
2020	365,196	2,467	185,576	43	247,344	96	192,703	25	247,780	38
2025	477,296	3,224	242,540	57	323,269	125	251,855	33	323,839	49
2028	560,461	3,786	284,801	66	379,596	147	295,739	39	380,265	58
2030	623,807	4,214	316,990	74	422,500	163	329,165	43	423,245	65

Source: KNBS 2009, Adapted from Draft County Spatial Plan

The county's growing population, especially in urban areas, continues to increase pressure on land resources. This has negatively affected the livestock economic sector and the wild-life ecosystem that links with the Nairobi National Park, due to rapid and unplanned land fragmentations. Many of these land fragmentations have been linked to the subdivision of group ranches into small, individually owned land holding (Boone et al, 2005)[5].

5 Boone, R.B.; BurnSilver, S.V.; Thornton, P.K.; Worden, J.S.; Galvin, K.A.. 2005. Quantifying declines in livestock due to land subdivision. Rangeland Ecology and Management. 58(5): 523-532.

3.3. Urban Centres

The county has among the fastest growing urban centres in Kenya, a factor mainly attributed to the location of these urban centres within the wider Nairobi urban region. For example, the draft Nairobi Metro Spatial plan of 2011, shows that the population of the towns of Ngong and Kitengela increased at a rate of over 15% between 1999 and 2009, with the population of Ngong projected to reach 400,000 people, by 2030.

Urban Population Projections for Select Towns

Town	2009 Population (Census)	2030 (Projections)
Ngong	107,188	412,279
Kitengela	58,167	223,729
Ong'ata Rongai	40,178	154,537
Kajiado	18,281	70,314
Kiserian	18,096	69,603
Loitoktok	11,064	42,556
Namanga	9,066	34,871
Isinya	8,670	33,348
Sultan Hamud	6,636	25,524
Ilbissil	5,376	20,678

Data Source: KNBS Census Data (2009) and Draft Nairobi Metro Spatial plan of 2011 (2030 Projections)

Availability of land combined with speculative property markets are among the major factors contributing to rapid urban expansion in Kajiado.

3.3.1. Change in Land Prices in Kajiado County

	Land prices in ksh/acre ('000')and percent annual change						
Physical location	1980 Average Price/acre	1990 Average Price/acre	1980-90 annual % price increase	2000 Average Price/acre	1990-2000 annual % price increase	2010 Average Price/acre	2000-2010 annual % price increase
Urban	10	200	190	1,000	40	15,000	140
Rural	3	10	23	100	90	600	50

Source: Morara et al, 2014

3.3.2. Emerging Issues - Impact of Poor Planning and Land use Management on Urbanisation

"Kajiado County, set in a mainly pastoral region, is slowly seeing real estate development, educational institutions, tree plantations and irrigated farms taking over the land where wildlife and countless herds of cattle previously roamed in most of the county" (HassConsult Ltd, 2018 p 66)[6].

The growth dynamics and urbanisation in Kajiado County draw attention to several issues, which will be more fully analysed in section 4, mainly:

- County land use planning and management
- Urban planning and urban growth management of satellite towns

6 HassConsult Ltd (2018). County Land Price Report. Nairobi, HassCounsult Ltd

- Basic services provision- priority on Water Supply, Sewerage, Solid Waste Management
- Environmental management & Natural Resources and human-wildlife conflicts
- Rural-urban linkages- revisiting rural planning
- Transportation Infrastructure and land use
- Affordable Housing- The increasing establishment of industries-creating a high demand for low-cost housing
- Municipal Administration & Governance
- Disruption of Pastoral Livestock Keeping
- Exploiting opportunities for LED

3.4. Urbanisation and Land Use

The tables below clearly illustrate the rapid urban growth of the County. In 2004 the built area covered 1,227 Ha; in 2010 this had already grown to 7,470 Ha. Kajiado North sub-county grew from approximately 20,000 people in 2009 to 365,000 in 2020.

Category	Area
Arable Land	3,468.4 km2
Non-Arable Land	18,432.5 km2
Water Mass	116 km2
Total Area	21,900.9 km2
Population (2014 projections)	810,918
Poverty Incidence	38 %
County Headquarters	Kajiado
Main Economic Sectors	Agriculture (Livestock & Crop Farming) Mining Industries Real Estate

Extent of Land use Change in Kajiado

Class Name	1984 Area (Ha)	1984 % area cover	1984-2004 % change	2004 Area (Ha)	2004 % area cover	2004-2010 % change	2010 Area (Ha)	2010 % area cover	1984-2010 % change
Rocky area	18203.96	11.16	-35.34	11771.28	7.21	-25.24	8799.6	5.39	-51.66
Bare ground	36040.1	22.09	-5.24	34150.8	20.92	-30.68	23674.7	14.51	-34.31
Range Land	104740	64.18	-9.74	94540.1	57.93	-24.02	71828.1	44.02	-31.42
Riverine and woodlots	507.25	0.31	820.29	4668.21	2.86	232.57	15525.1	9.51	2960.62
Crop land	3187.28	1.95	427.07	16799.2	10.29	113.36	35842.6	21.96	1024.55
Built-Up	457.80	0.28	168.09	1227.32	0.75	508.65	7470.04	4.58	1531.72
Water Body	50.34	0.03	-40.79	29.80	0.018	56.15	46.54	0.029	-7.55

Source: Morara et al, 2014[7]

7 Morara, M. MacOpiyo, L. Kogi-Makau, W. (2014). Land use, land cover change in urban pastoral interface. A case of Kajiado County, Kenya. Journal of Geography and Regional Planning. Vol.7 (9), pp 192-202

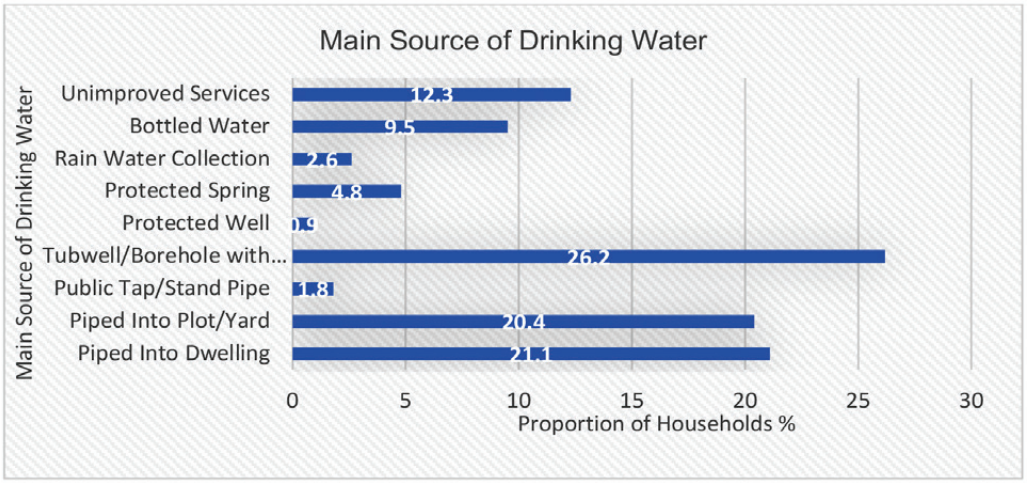
3.5. Infrastructure Overview

The constitution of Kenya requires county governments to develop infrastructure and provide basic services to their population. In doing so, the county may opt to work with other counties as provided by the County Governments Act. While counties have increased access to basic services, there is still a significant deficit in both rural and urban settlements. Kajiado County is no exception, as discussed in the ensuing sub-sections of this report.

3.5.1. Access to Drinking Water

The county has a relatively high number of households (12.3% or 54,366) relying on unimproved services and bottled water. The assumption from this assessment is that the proportion that rely on bottled water is mainly found in the towns. Based on that assumption, from a total of 442,000 households (KNBS, 2018), the number relying on bottled water is thus 41,990 households. As noted, most of the towns in the county lack reticulated (piped) water network. For instance, in Kitengela town, most of the water supply is through micro-grids operated by private vendors and relying on borehole water.

Sources of Drinking Water in Kajiado County

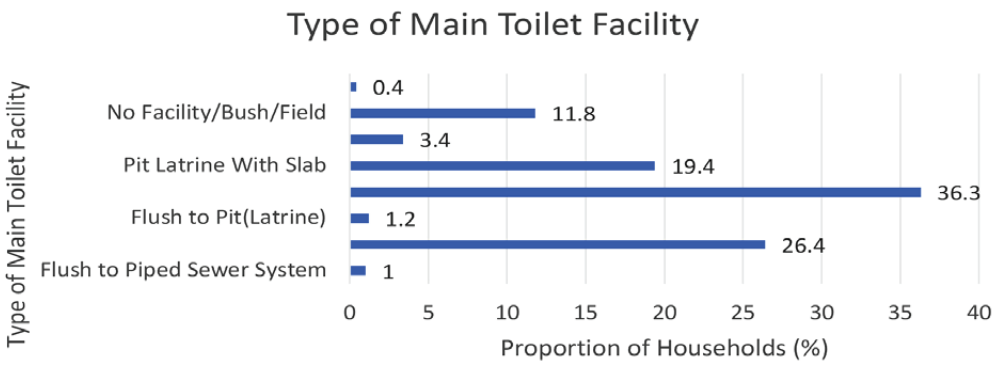


Source: KNBS (2018)[8]

3.5.2. Sanitation Services

The county also faced a significant deficit in the provision of improved sanitation services. As indicated in Figure X, about 12% of the county population has no facility at all and uses open defecation.

8 KNBS (2018). Kenya Integrated Household Budget Survey 2015/16: Basic Report. Nairobi, Kenya National Bureau of Statistics


Type of Main Toilet Facility
Type of Main Toilet Facility
No Facility/Bush/Field
Pit Latrine With Slab
Flush to Pit(Latrine)
Flush to Piped Sewer System
0.4
11.8
3.4
19.4
36.3
1.2
26.4
1
0
5
10
15
20
25
30
35
40
Proportion of Households (%)

CHAPTER
04

CASE STUDY OF KITENGELA TOWN

In order to understand in a more concrete manner the process of urbanisation in Kajiado County the professional team carried out detailed field studies in Kitengela, one of the largest urban centres. Different zones were identified and analysed. (LOCAL AREAS SAMPLED: Kiangombe B, New Valley, Commercial Zone, commercial zone 1.) These case studies provide an in-depth description of the character of the zones, in the Town, the infrastructure, housing, land use, and demography

Presented here are excerpts from the field study, the example of the CBD Zone.

4.1. Methodology

The methodology used for field data generation can be categorised into 2 phases:

1. Preparatory Phase
2. Investigative/data generation phase:

PHASE 1: Preparatory Phase:

- Preparation of a preliminary base map which entailed using satellite image and demarcation of clusters mainly guided by structuring elements within the town.
- Data needs assessment to identify the correct information that would be required and develop a data acquisition, storage and analysis strategy.
- Identification of Key informants.
- Development of cluster profiling form and Key informant guides.
- Obtaining research consent, research permits and conducting courtesy call visits to planning and administrative authorities within the area.

PHASE 2: Investigative/Data generation Phase:

A. Cluster profiling:

Open source software/tools were used to gather/collect qualitative, quantitative information for spatial data and cluster/zone profiling. Tools and strategies used during data collection include:

Tool/Application	Description
Microsoft Excel for Android	Using a pre-loaded Excel data collection profile form, the strategy used entailed random interviews with residents within the zone, observation and real-time completion of the excel profile form using a phone/tablet.
Dropbox Application	This application was installed for real-time data back-up. Once an Excel form was filled, it was captioned using the zone name and local area sampled and stored in the Dropbox application. Mobile data was used to synchronize the file so that it could be accessed later using a PC or other device.
MAPinr Application	The primary importance of this application during this phase was to help in geo-tagging and captioning photos in every cluster.
Google Earth for Android	Pre-installed Google Earth for Android application was used to load KML/KMZ layers of the demarcated zones so as to help the data collection team in geo-positioning and avoid field overlaps and duplication of information.

B. Key informant interviews:

Interviews were conducted orally using developed interview guides. Information was recorded using voice recorders and/or provided notebooks

C. Data cleaning and organisation:

After a day's field data gathering, collected data was cleaned and photos captioned before grouping them into folders for sharing with the rest of the team.

D. Data analysis and Report Writing

KITENGELA TOWN

4.2 Overview

Kitengela Town is predominantly a residential hub and one of the main satellite towns in Nairobi Metropolitan area that also includes Juja, Machakos, Kiambu and Ngong Towns. The town straddles the Export Processing Zone in Athi-River to the South East and Nairobi National Park to the North West.

4.2.1 Historical development background

Kitengela is a town located in Kajiado County, 30 Kilometres south of Nairobi City. During the 1980s and throughout the 1990s the towns of Athi River and Kitengela grew rapidly as industrial towns due to the existence of Export Processing Zones within the area.

The area has undergone great transformation from a group ranch in 1988 to an agricultural town in 1990 to a robust town with plenty of urban features. The subdivisions and sales of the land encouraged a steady, continued development of the area.

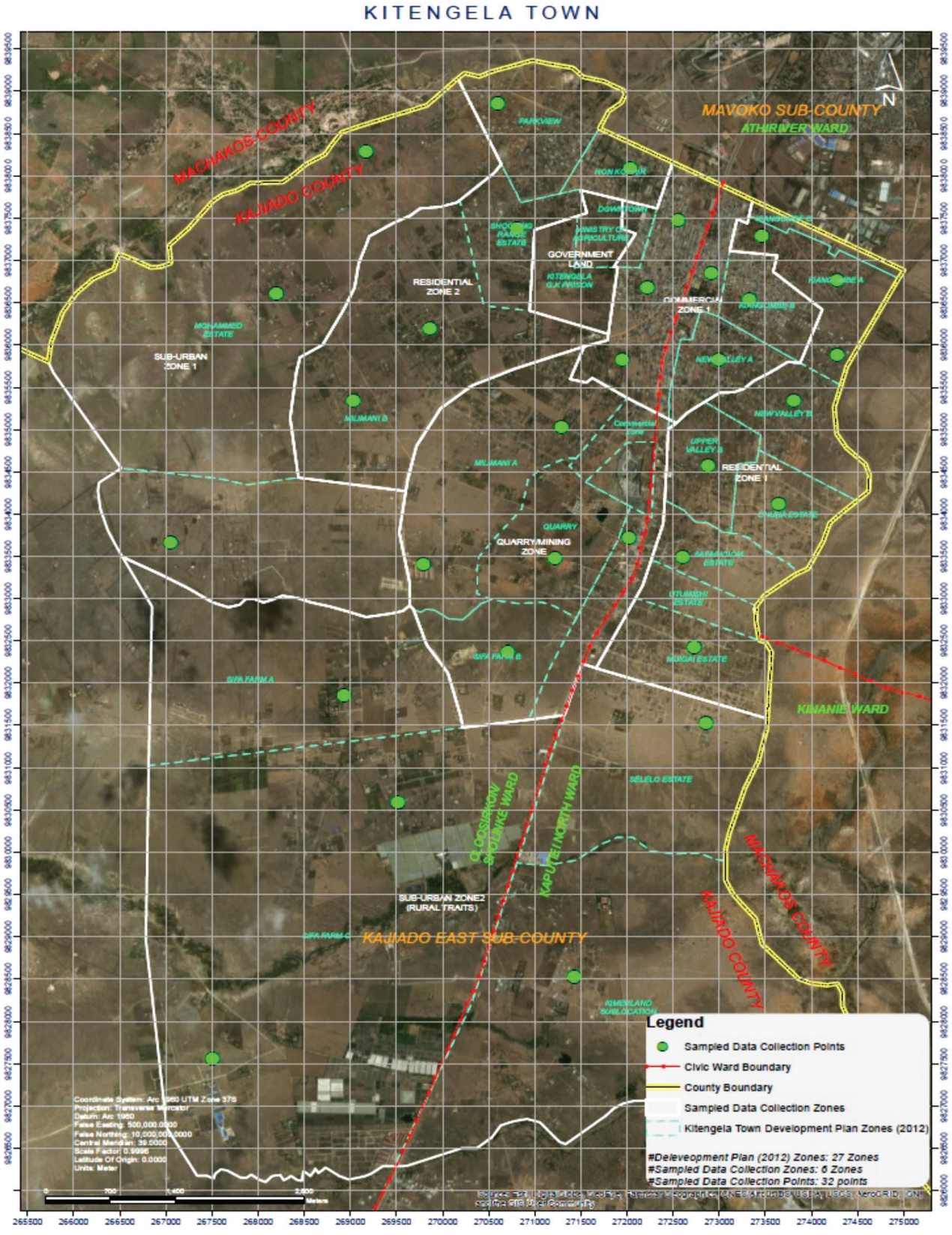
Kitengela's proximity to Nairobi City attracted more industrialists, massive real estate development, and settlers, a phenomenon that influenced its elevation to be part of the Nairobi Metropolitan Area.

The general land use pattern within the Town is characterised by an intensely developed CBD, and elongated urban corridor along the main Highway and sparse sprawl of gated communities in the interior areas. Fundamentally, urban growth is driven by proximity to Nairobi City. Kitengela has consequently evolved to be more residential than industrial.

New buildings consisting of maisonettes, bungalows, and apartments occupy most parts of the town. However, all these developments have evolved amid constrained physical and social infrastructure within the town. Outside of the CBD, there is a sparse and haphazard pattern of development; without good roads, reliable water supply and drainage, as well as sewerage systems.

Indeed, the rapid market-driven growth of the town is the key reason why there is no clear rational pattern of urban growth in Kitengela beyond the ribbon-type developments along the Nairobi-Namanga Road.

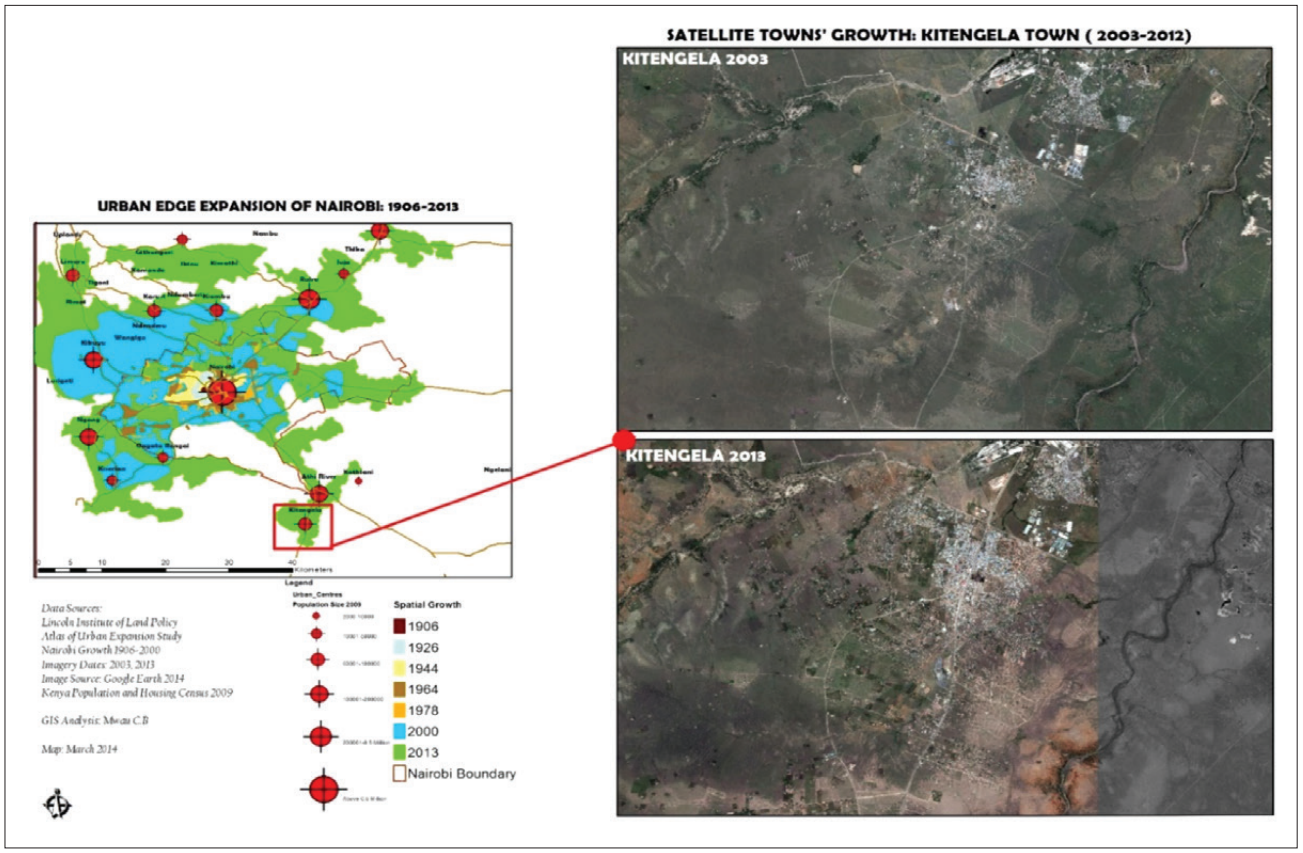
The current (2020 projection) population of Kitengela is estimated to be 117,795 people (See Draft Nairobi Metro Plan, 2011). Between 1999 and 2009, Kitengela's population grew from 9,327 to 58,167 people, at a rate of 20%, according to census data.


KITENGELA TOWN
MAVOKO SUB-COUNTY
ATHI RIVER WARD
MACHAKOS COUNTY
KAJIADO COUNTY
PARKVIEW
NON KOMPHI
DOWNTOWN
SHOOTING RANGE ESTATE
NIMAS TRY C AGRICULTURE
GOVERNMENT LAND
KITENGELA G.K PRISON
RESIDENTIAL ZONE 2
COMMERCIAL ZONE 1
KIANGOMBE A
KIANGOMBE B
MOHAMMED ESTATE
SUB-URBAN ZONE 1
NEW VALLEY A
NEW VALLEY B
MILIMANI B
Commercial zone
UPPER VALLEY B
MILIMANI A
RESIDENTIAL ZONE 1
QUARRY
QUARRY/MINING ZONE
SAFARICOM ESTATE
UTUMISHI ESTATE
MUGAI ESTATE
SIPA FARM B
SIPA FARM A
KINANIE WARD
SELELO ESTATE
OLOOSIRKON SHOLINKE WARD
KAPUTEI NORTH WARD
SUB-URBAN ZONE2 (RURAL TRAITS)
SIPA FARM C
KAJIADO EAST SUB-COUNTY
KIMELELAND SUBLOCATION
Legend
Sampled Data Collection Points
Civic Ward Boundary
County Boundary
Sampled Data Collection Zones
Kitengela Town Development Plan Zones (2012)
#Deleveopment Plan (2012) Zones: 27 Zones
#Sampled Data Collection Zones: 6 Zones
#Sampled Data Collection Points: 32 points
Coordinate System: Arc 1960 UTM Zone 37S
Projection: Transverse Mercator
Datum: Arc 1960
False Easting: 500,000.0000
False Northing: 10,000,000.0000
Central Meridian: 39.0000
Scale Factor: 0.9996
Latitude Of Origin: 0.0000
Units: Meter
0 700 1,400 2,800 Meters
N

4.2.2. Urban Growth Trends Influencing Kitengela

Linear development along major roads is a defining characteristic of Kajiado's urbanisation. This is mainly observed in the urban form of major towns: Ngong, Kiserian and Kitengela. The study established that inappropriate land subdivisions, combined with poor urban planning decisions have contributed to this pattern of growth. In Kitengela, the Nairobi-Namanga road is the main structuring element of the linear development pattern. Developments on both sides of the road, combined with commercial uses have created a highly active corridor, but that presents significant challenges to transport management.

Urban Sprawl between 2003 and 2013



Linear development along Nairobi-Namanga Road ©Baraka Mwau

While land development is consolidating along the Namanga-Nairobi Road, the peripheral areas are increasingly changing through low-rise residential developments, creating urban sprawl.

4.3. Kitengela Economic Structure

4.3.1. Kitengela Public Market

During the time of conducting this study, the county government had embarked on the modernisation of the public market. Designs analysed by this study reveal that a multi-story building infrastructure will be built for the existing and new traders-due to increased spaces.

Key Issues with Street and Market Vendors

- The town lacks a proper mechanism to accommodate the increasing number of street traders - with many of them currently occupying the service lanes on both sides of the Namanga-Nairobi road.
- Street vendors suffer disproportionately, compared to formal business premises, in terms of access to the inadequate utilities available in the town, e.g. water and sanitation.

Namanga-Nairobi Road Forms a Commercial Corridor ©Baraka Mwau

4.3.2. Real Estate Sector

A Newly Built Apartment Block ©Baraka Mwau

Currently, real estate is perhaps, the single most important economic driver of Kitengela Town.

Leveraging Regional Opportunities in Real Estate

Kitengela is emerging as an attractive destination for developers and homeowners - both home buyers and those who opt for self-construction. This has inserted the town among the leading satellite towns in the Nairobi region in terms of real estate. Land values in the town have sharply increased in recent years, although in a highly speculative manner.

According to HassConsult Ltd Land Price Index for the second quarter of 2019[9], Kitengela was the metro town with the highest quarterly increase in land price – an increase of more than 8.2%. Investments in land, mainly by external capital, is a major driver of the town's real estate. The report further indicated that the average value of an acre in Kitengela is Ksh.12 million (US$120,000).

9 HassConsult Ltd (2019). The Hass Property Index: Land Price Index Quarter Two Report 2019.

Table: Sample of Market Price of Land

Nairobi Satellite Town Land Index	Quarter % Change	Annual % Change	Change From 2007	Average Value Per Acre (KShs)	25 Percentile	75 Percentile
Athi River	2.8 %	6.0 %	10.32 FOLD	13,200,000	5,000,000	20,000,000
Juja	4.0 %	10.0 %	16.00 FOLD	13,900,000	5,200,000	18,000,000
Kiambu	1.9 %	-1.4 %	7.36 FOLD	42,200,000	22,000,000	52,000,000
Kiserian	5.0 %	5.0 %	7.54 FOLD	7,500,000	3,500,000	9,600,000
Kitengela	8.2 %	7.6 %	7.82 FOLD	12,000,000	6,400,000	15,200,000
Limuru	2.4 %	1.1 %	11.64 FOLD	22,100,000	12,000,000	32,400,000
Mlolongo	4.5 %	12.0 %	5.64 FOLD	27,200,000	11,200,000	40,000,000
Ngong	1.4 %	5.6 %	6.86 FOLD	21,100,000	8,800,000	30,000,000
Ongata Rongai	1.4 %	4.1 %	9.08 FOLD	21,300,000	8,000,000	28,000,000
Ruaka	2.2 %	3.3 %	8.05 FOLD	89,500,000	64,000,000	113,900,000
Ruiru	4.7 %	4.5 %	10.58 FOLD	24,900,000	11,200,000	32,000,000
Syokimau	4.8 %	9.0 %	7.28 FOLD	22,200,000	14,400,000	28,000,000
Thika	1.7 %	1.7 %	9.15 FOLD	18,800,000	7,600,000	24,700,000
Tigoni	1.1 %	0.8 %	9.25 FOLD	23,000,000	16,300,000	28,000,000

*Price Values rounded to nearest Kshs. 100,000

However, the town functions largely as a dormitory for Nairobi, with daytime population usually low, due to the temporary morning (peak hours) migrations to Nairobi for work.

> ***In Milimani and Kyuna areas, a 1-bedroom rents for Ksh 15,000; a 2-bedroom from Ksh 20,000 and for 3- bedroom bungalows the monthly rent ranges from Ksh 25,000-35,000. For maisonettes they differ and could rent for ksh, 40,000 ksh 50,000 and ksh 80,000.***
>
> (KII with Property Developer and Land Broker).

Hotel and Hospitality Sector- Kitengela attracts visitors from Nairobi, especially on weekends

> ***"it really differs in the Kitengela area, for example, in the Milimani area, one can rent a one bedroom for Ksh 15,000; a 2-bedroom rents for Ksh 20,000 and a 3-bedroom bungalow rents for ksh 25,000-35,000. These prices also apply to Kyuna. For maisonettes they differ and rent for ksh, 40,000 ksh 50,000 and ksh 80,000.It is a big range."***-
>
> KJD_KIT_ KII_7 - Property developer/ Land broker.

Land Values in Kitengela Town

> ***"There is also Muigai estate, Utumishi, Safaricom and Kyuna. I think the land prices there, bare land for development is a minimum of 1/8 acre but in Milimani there are also 1/4 acre lots. 1/8 acre costs about Ksh 1.5m-ksh2.5m and 1/4 acre costs about ksh5.5m- ksh7m."***
>
> KJD_KIT_ KII_7

Land Sale Advert in Kitengela © Stephen Mutungi

Educational Institutions and their Impacts on Real Estate Development

The land endowment of Kitengela and its surrounding area have attracted educational institutions to setup facilities in the area. High Schools, and tertiary institutions (colleges and university campuses)

- Demand for housing in the area - student population and workers.
- Pressure on local infrastructure.
- These institutions act as pull factors for migrants and attract residential developments in the area.

Optimising the Real Estate Opportunity

- Increasing land values - opportunity for enhanced municipal revenue.
- Poorly developed infrastructure is the main challenge facing the real estate sector.
- Affordable housing opportunities - several firms have identified Kitengela area as a potential site for low-cost affordable housing. Such firms include Jamii Bora and Urbanis Africa Ltd.

ZONE	LOCAL AREA NAME	SAMPLED AREAS	LAND SIZES	LAND PRICES (Kshs)
RESIDENTIAL ZONE 1	Kiangombe C	Lat: -1.47315395, Long: 36.96912725	0.045 Ha	4m on Allotment Letter 6m on Title deed
	Muigai Estate	Lat: -1.51445163 Long: 36.9545034	0.045Ha	2m
	Utumishi Estate	Lat: -1.51220204, Long: 36.95894256	0.045Ha	2m
	Chuna Estate		0.045Ha	3m
	Safaricom Estate	Lat: -1.50682775 Long: 36.95938177	0.045Ha	2m
	Upper Valley		0.045Ha	2m
	New Valley		0.045Ha	2m
	Yukos Estate	Lat: -1.48903838, Long: 36.96087744	0.045Ha	2.5m
	Kiangombe A	Lat: -1.47432871; Long: 36.97088443	0.4 Ha	12 Million
	Kiangombe A	Lat: -1.48160815; Long: 36.97028663	0.05 Ha	2 Million
	Kiangombe A	Lat: -1.495795; Long: 36.971279	1 Acres	8-10 Million
	Kiangombe B (Kitengela Heights)		0.09Ha	5.5m
RESIDENTIAL ZONE 2	Shooting Range estate	Lat: -1.47309396, Long: 36.93846289	0.09Ha	2m
	Park View Estate	Lat: -1.46692691, Long: 36.93951499.	0.09Ha	2m
	Nonkopir	Lat: -1.46692691, Long: 36.93951499.	0.045Ha	3m
	Milimani B		0.09Ha	3.5m
SUB_URBAN ZONE 2	Kimmerland	Lat: -1.53669702, Long: 36.94378238	0.045 Ha	
	Kimmerland Sublocation	Lat: -1.54595668 Long: 36.94243994	0.045 Ha	1 -1.6 Million next to Highway. Prices reduce up to 500,000/- for similar size of land deeper into the area from highway (about 5km).
	Soleleo Estate	Lat: -1.53132783 Long: 36.94463432.	1 acre	15m
	New world land Estate	Lat: -1.54413311, Long: 36.93870194.	1 acre	15m
	Royal Finesse Estate	Lat. -1.53375302 Long: 36.94247179	0.045Ha	4 Br on 0.045Ha Ksh. 19m
CBD ZONE	CBD- Around ST Monica Catholic Church	Lat: -1.47974095 Long: 36.96107123	0.4 Ha	20 Million
	CBD –Old Naivas- Red Heron Building and Milimani A (CBD Part)		0.045Ha	7m
	Cbd- Deliverance Road	Lat:-1.48182567; Long: 36.95835382	0.25 Ha	10 Million
QUARRYING AND MINING ZONE	Sifa Farm- Acacia 3km form Namanga Road		0.045Ha	1.7m

4.3.3. Industrial Sector

Industries are emerging in Kitengela, especially along the Kitengela-Isinya stretch of the Namanga-Nairobi Road.

Leveraging Regional Opportunities in Industrial Development

Bordering Kitengela Town is the Athi River Export Processing Zone (EPZ) which has had an impact on the rapid urbanisation in the wider Athi River-Kitengela Area.

Availability of land is one of the main attractions for industries in Kitengela

4.3.4. Financial Firms

The town has attracted several banks which have set-up branches. The banks are mainly located along the main road, the Namanga-Kajiado Road.

In addition, there are several micro-finance banks, and Kenya's popular mobile money is all over the town - as observed by the many agents of Mpesa and Airtel Money.

This financial infrastructure contributes to an enabling business environment.

4.4. Agriculture and Urban-Rural Linkages

Livestock keeping is the main economic activity undertaken across the county, mainly by the native Maasai community. This economy stretches to neighbouring counties, - especially Narok and Makueni.

Agriculture is also an important economic sector for Kitengela town. The town's agricultural production is anchored to horticultural produce and livestock. There are several greenhouse structures within the town. The proximity of the Export Processing Zone (EPZ) in Athi River, as well as the area's urban population provide a ready market for agricultural produce.

According to the town's zoning ordinance, Sifa Farm C and Kwa Saitoti Area are agricultural areas. However, while agriculture remains the main land use, there are residential developments coming-up in the areas, including gated-community developments. The real estate market threatens to reduce the land under agricultural production. Importantly, the town's lack of a spatial development framework, but continued reliance on a zoning ordinance to guide urban development, lowers certainty in development patterns.

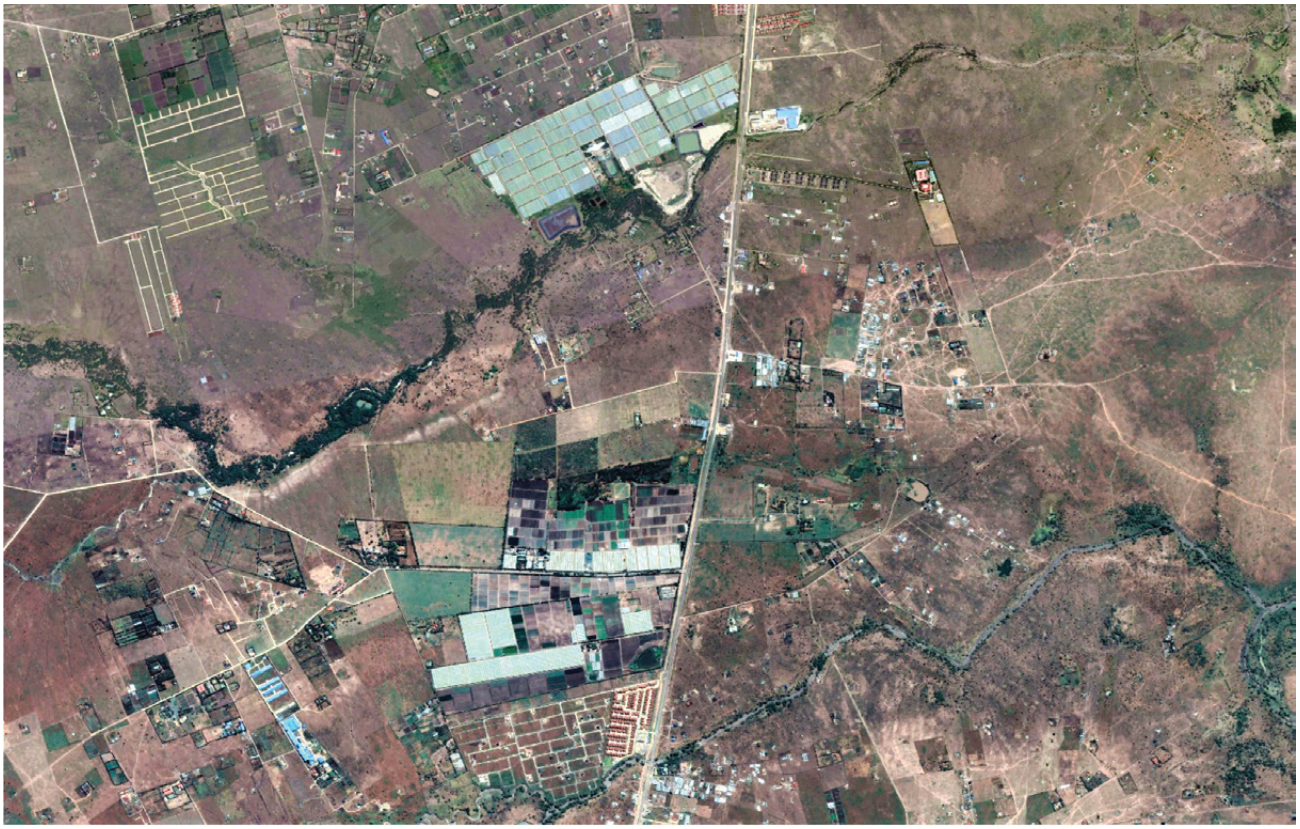
In the coming years, Kitengela's agricultural sector will greatly depend on how the county approaches urban planning and land use management in Kitengela town. It should also be noted that real estate development are one of the leading investment options in the Nairobi region; hence, it has the potential to displace less-economically valuable agricultural land, thus reducing available land for crops and livestock. At the same time, food security is a major concern for the growing urban population; hence, the need to retain this vital land use. In that competitive environment (between land uses), in order to retain agricultural land uses, the county must tie land use planning with other incentives for investors venturing into agriculture.

4.5. Urban Planning and Development trends

Pre-2010

Before the preparation of the Kitengela Zoning Plan 2012, various development control agencies used different development control tools to guide and control development within the town. They include the Physical

Mix of Residential Developments and Agricultural Developments in Sifa Farm-C Area



Source: Google Earth

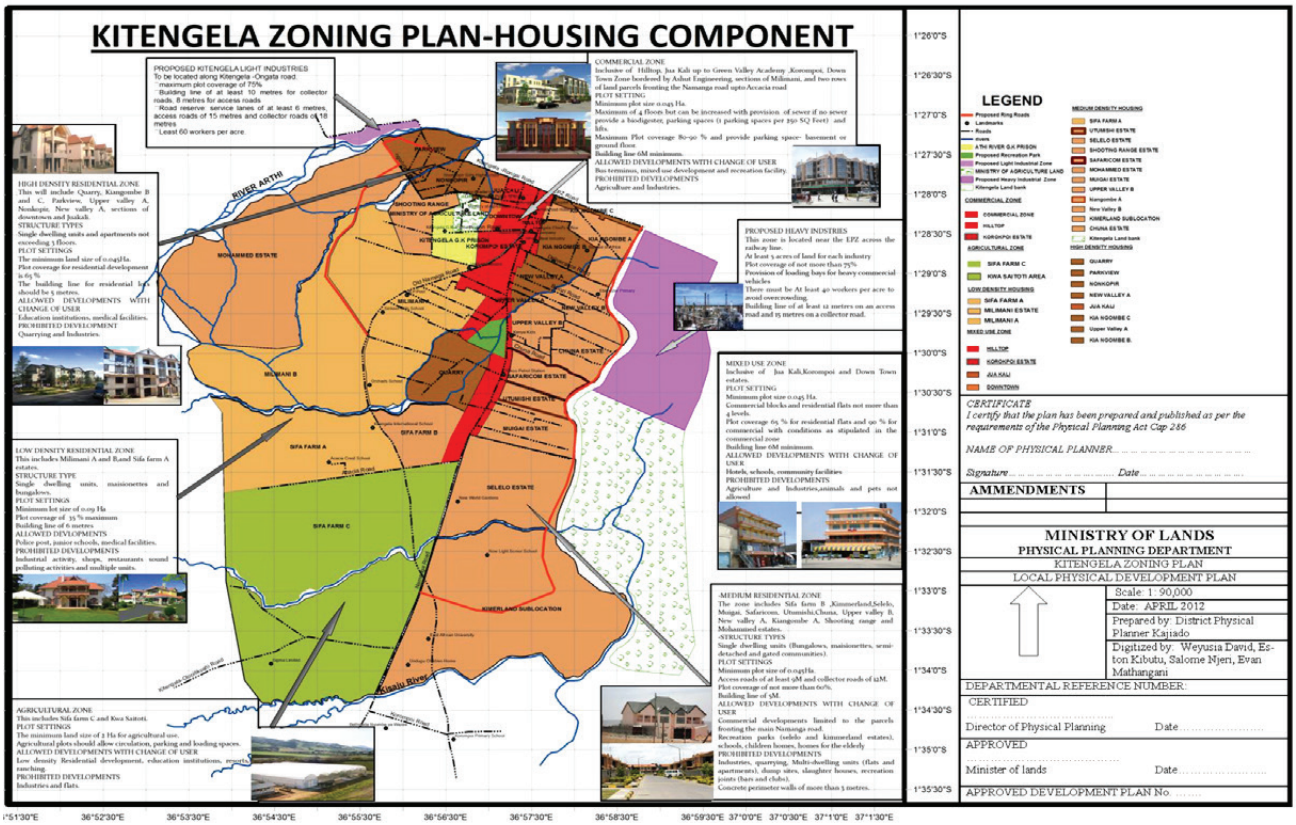
Planning Act of 1996 and the Environmental Management and Coordination Act of 1999 (EMCA). These regulations provided for the preparation of development plans, and the planning, as well as development, of regulation standards to inform the development control process. Other non-statutory tools used in development control are: gazetted rules and regulations, like the physical planning handbook, local authorities planning and building regulation, physical development plans such as the Kitengela/Isinya/Kipeto Integrated Development Plan of 2010.

Post 2010

Post 2010, the Kitengela Zoning Plan (2012) formed the main development control tool for Kitengela Town. It is a zoning plan that supersedes other development control tools with regard to ensuring orderly and sustainable development. Therefore, it is the main development control tool guiding physical development within Kitengela Town. Other development control tools act as complements to the zoning plan.

The plan particularly indicates 17 zones with specific land use for each zone, preferred minimum plot sizes, and types of development, plot settings, and permissible as well as prohibited developments. The land use Zones include: Kimmerland, Selelo, Muigai, Upper valley, New Valley, Commercial Zoe, Shooting range, Korompoi, Downtown, Juakali, Parkview, Mahammed, Milimani, Sifa farm, Kwa Saitoti, Noonkopir, and Kiangombe.

Kitengela Zoning Plan, 2012



CIDPs

The devolved system allocated to the County governments various duties including the planning of towns and municipalities within their jurisdiction. The County government of Kajiado has produced two CIDPS namely (2013-2017) and (2018-2022). The Kajiado CIDP 2013-2017 was launched with a vision of "A prosperous, globally competitive County, offering quality of life".

It highlighted key development challenges related to urban planning including: inadequate water supply; poor physical infrastructure, and poor coordination of development activities. The plan recommended prioritisation of key sectors such as urban development, land use, energy and infrastructure, and environmental protection.

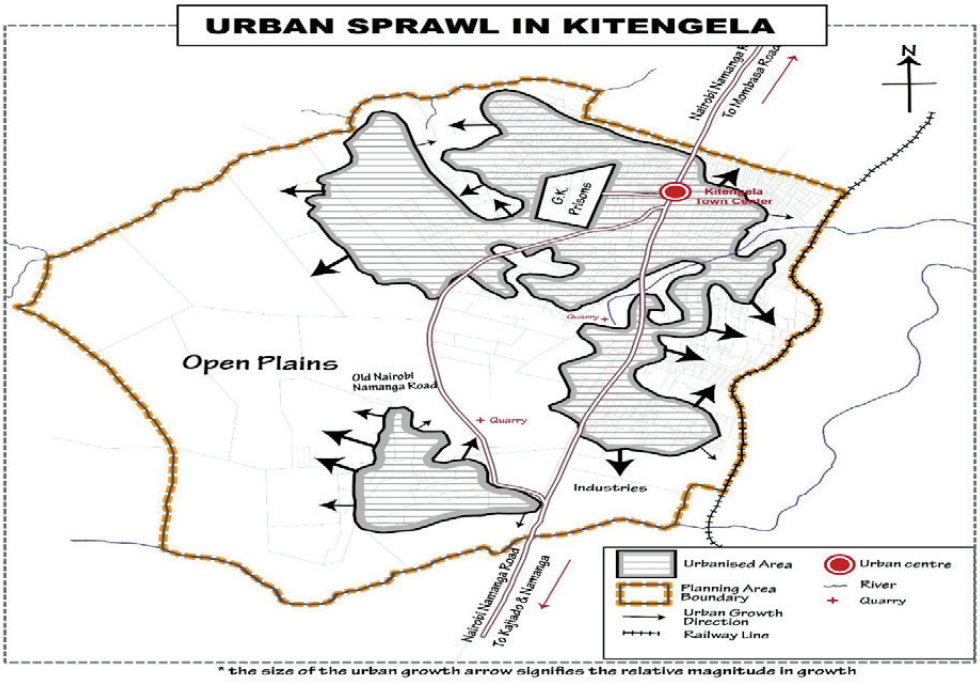
Kitengela Draft ISUDP 2019

The Kitengela draft Integrated Sustainable Urban Development Plan (ISUDP) is probably the only attempt at comprehensive urban planning of Kitengela Town. It notes that the town has developed more as a service, real estate, agriculture, transport service, and tourism town. However, it has identified more with real estate, industrial and tourism activities and has the potential of being a real estate, tourism, and service town.

Multiple Nuclei Model

The ISUDP notes that Development in Kitengela seems to follow the multi-nuclei zonation model with different nodal points appearing to emerge. Each of these zones is located on key transportation nodes and in strategic residential zones. The current central business district of Kitengela town forms one of the nuclei.

Draft Kitengela ISUDP, 2019



Urban Growth Trends and Patterns

The distinct urban centre in the municipality is Kitengela Town, which is a robust trading and business centre, with an array of mid-rise residential and commercial buildings. The central business district (CBD) is immediately surrounded by an "inner residential area" which is currently rather more developed compared to outlying residential areas. Noonkopir, the site of the old town, may also be considered as a secondary node. It has its own village level commercial area surrounded by older residential developments.

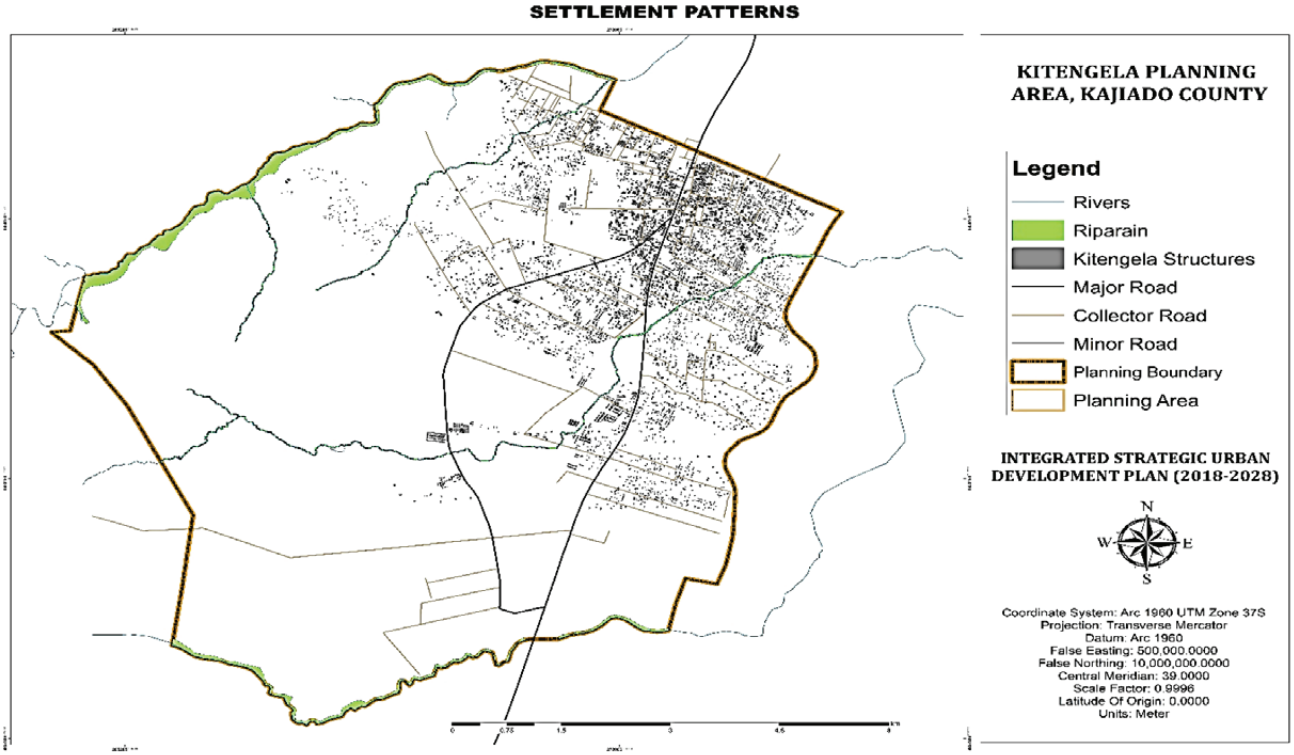
Spatial Population Distribution

The current spatial form of Kitengela town is characterised by its population density and distribution. Population density is influenced mainly by the availability of land, presence of a Class A road and the existing industries. The area around Kitengela CBD and along Namanga road is densely nucleated, highly populated and has a green character, with many developments as shown in the figure below. It is the current built-up area. The scattered settlements are in the sparsely nucleated region with a large portion still under agriculture.

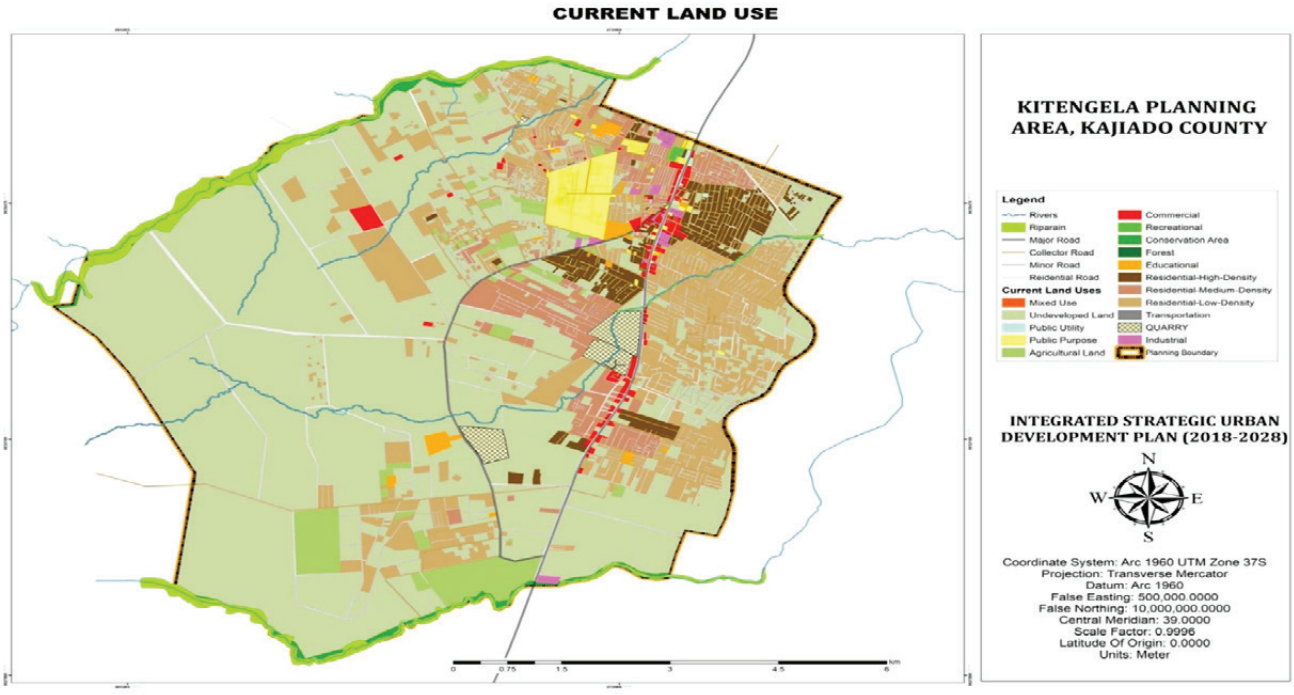
Future growth trajectory

A good transportation network, green character and protection of sensitive areas have been considered by ISUDP in its proposed spatial structure of Kitengela municipality. Activity nodes are proposed through striking a balance between the physical, social, economic and ecological character of the planning area. The existing land uses are proposed to be in harmony and with clear interrelationship between various activities under the proposed uses. The proposed land uses are expected to be fundamentally linked to an improved and efficient transport system that will be able to cater for future demand. It has been considered most suitable to have

Draft Kitengela ISUDP, 2019



Draft Kitengela ISUDP, 2019



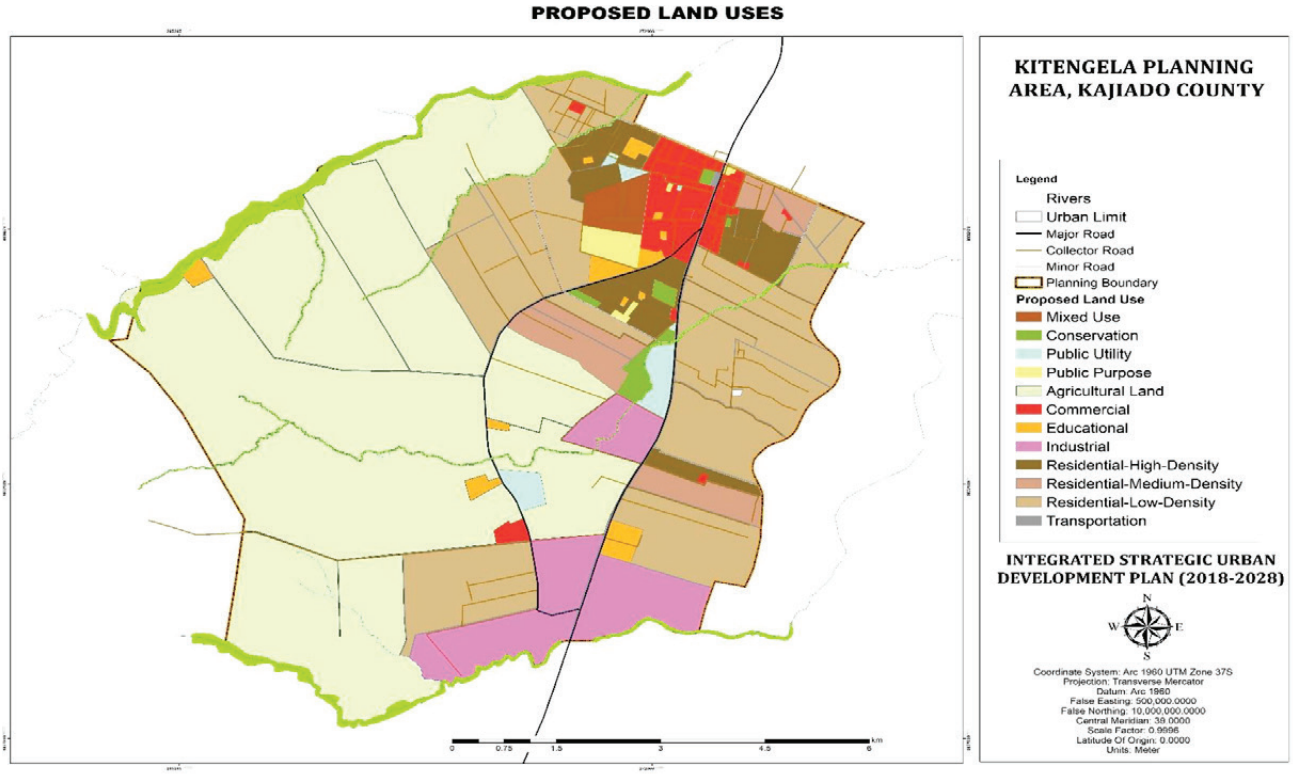
a polycentric model with multiple activities within multiple nodes to minimise the number of trips and trip length brought about by a mono-centric model.

The ISUDP provides the prospects of Kitengela urban design improvement including:

- Improving the CBD and secondary nodes,
- Minimising roadside friction along major arteries,
- Developing network of shopping centres, and
- Requiring private residential developers to provide basic infrastructure.

A significant challenge lies ahead, with precedence already established for higher density developments in low-rise areas. This implies that infrastructure planning and design must be alive to the fact that densities will increase.

Draft Kitengela ISUDP, 2019



A mix of high-rise and low-rise developments

Land Subdivisions and Urban Expansion

Expanding urban footprints through low-density developments are shaping a vast zone of urban sprawl. Except for the town centre, where a compact form of land development is taking place, the rest of Kitengela is characterised by low-rise/low-density developments and fragmented small-gated communities.

Small parcels of land (50x100 feet) are found as far as 10 kilometres away from Kitengela town centre. These are parcels subdivided and sold in the speculative land market. The parcels are not provided with any infrastructure. However, with provision of basic infrastructure, these parcels will be developed, which will eventually result in costly infrastructure investments.

Planning by Subdivision Schemes and Its Implications

In the peripheral areas of Kitengela, large tracts of land appear as grasslands and undeveloped, yet most of the land is subdivisions of small plots, awaiting development. Pockets of land development can be traced in sections of these areas, with evident challenges of mobility as streets are not yet developed.

Spatial analysis combined with local area profiling reveals that the continued approval of subdivision schemes in the absence of spatial development framework (urban plan) for the town has resulted in poor connectivity due to a less permeable street layout, which is assembled through aggregation of individual parcel subdivisions that do not conform to a standard code of design.

Victory Gardens as an Example of Largescale Subdivision Scheme in Kitengela

Source: Optiven Ltd (2019: https://www.optiven.co.ke/images/subdivisionmaps2017/VICTORY.pdf)

4.6. Pastoral Livestock Farming System and Urban Expansion of Kitengela

Rapid and unplanned urban expansion is significantly impacting Kajiado's pastoral livestock farming system. The county's largest towns: Kitengela-Isinya, Ngong-Kiserian and Ongata Rongai.

- Commercial Developments along Namanga-Nairobi Road
- Increasing Construction Activities and Environmental Challenges, e.g. Air pollution
- Increasing Infrastructure and Service Backlogs with Heightened Construction Activities

Trends and Factors Influencing Urban Growth

Impact of Spatial Dimension of Infrastructure - A trend where slight improvement in infrastructure triggers construction activities.

Character of Built Environment and Its Implications:

- Low-Rise Residential Developments
- High-Rise Residential Developments

Town Level Planning

There is a draft plan for Kitengela, the "Integrated Strategic Urban Development Plan". In the absence of a spatial plan, urban development management has been ad-hoc and informed by a zoning guide. This has significant limitations:

- Rapid and unplanned conversion of agricultural land (livestock keeping) to urban real estate. The speculative land markets in Kitengela (Nairobi region) fuel these rapid and often

poorly designed land subdivisions and changes of use.

- Lack of strategic focus - urban growth management is a major challenge.

To inform decision-making, the county relies on a zoning ordinance. The town is categorised into six broad land uses:

Kitengela Zoning

- Agricultural zone (Sifa Farm C, Kwa Saitoti Area)
- Commercial zone (Commercial Zone, Hilltop, Korokpol Estate)
- Low-density housing zone (Sifa Farm A, Milimani Estate, Milimani A)
- Mixed use zone (Hilltop, Korokpol Estate, Jua Kali, Down Town). The ordinance describes mixed use zone as "commercial blocks and residential flats of not more than 4 levels... plot coverage 65% for residential flats and 90% for commercial".
- Medium density housing zone (Sifa Farm A, Utumishi Estate, Selelo Estate, Shooting Range Estate, Safaricom Estate, Mohamed Estate, Muigai Estate, Upper Valley B, Kiang'ombe A, New Valley B, Kimerland Sublocation, Chuna Estate, Kitengela Land Bank). The ordinance describes the permitted developments as "single dwelling units (bungalows, maisonettes, semi-detached and gated communities)". The ordinance prohibits developments of multi-dwelling units, such as flats and apartments.
- High density housing zone (Quarry, Parkview, Nonkopir, New Valley A, Jua Kali, kwa Ng'ombe C, Upper Valley A, Kiang'ombe B). These are areas where "single dwelling units and apartments not exceeding 3 floors "are allowable, on minimum plot size, 0.045Ha.

4.7. CBD Commercial Zone Analysis

GENERAL OVERVIEW/ CHARACTER:

STUDY INDICATORS

- Planning attempts
- Type of settlement
- Legal status of the area
- Description of area topography
- Infrastructure

4.7.1. STUDY FINDINGS

This section is characterised by high densities of commercial and mixed used buildings. Average floor range is between 4-6 floors. Most buildings' plot coverage in this zone range between 80-95%. There was notable some especially those fronting the main highway that were built from beacon to beacon.

From observation, the area portrays evidence of planning, such as buildings' common orientation of the frontage. The building lines are observed. The road reserves are also observed, especially along the main collector streets and access roads from the first to the third rows of either side of Namanga road.

Around the CBD zone, Namanga road is very busy with a lot of traffic generation activities and land uses such as: offices, petrol stations, retail & wholesale premises, hotels & eateries, entertainment places, shopping malls; PSV terminus for taxis, tuktuks (rickshaws) &

matatus; markets for groceries & retail produces among others. There are a number of hawkers (both mobile and stationary) adding to the high traffic within the CBD zone. This literally defines the character of the CBD zone from EPZ road junction to about 2KM along Namanga Highway, spanning approximately 300m on either side of the highway.

Due to a linear town structure setup, this has resulted in high-rise developments closer to the main highway and density reduces as one moves deeper within Kitengela from the highway. The average land size within CBD measures around 0.05 HA.

Worth mentioning, within this zone, the Noonkopir Local area on the west side of the CBD presents an interesting character. Within this area, we find the first residential estates (Dominated by terraced houses and a few blocks of tenements & apartments).

The demarcation of the Noonkopir area was not very clear during the field research (would require verification) but from interaction with local residents it is believed to be the area immediately to the west of Namanga highway from the EPZ junction to access road of Noonkopir Secondary Girls School to the far west; then bordered by Saitoti access road to the south.

This area contains most the government and public facilities, such as Juakali light industry area, Kitengela County Hospital, Kitengela Police Station, Public schools, Open air Market, PSV bus terminus, among others. In comparison with other sections of the CBD, it is within this zone that we have the widest access road reserves within the residential areas, ranging between 12-18 metres.

It was noted that the observed organisation of buildings and land uses within Kitengela CBD is the result of draft zoning guidelines that have been used to enforce development control by Local Planning authorities, since around 2012. However, there are still outbreaks of informality which evidence the need for implemented development guidelines, as well as technical personnel to help in enforcement, not only in the CDB, but in the entire Kitengela Urban area. Land ownership is mainly private, with the majority of landowners having title deeds as land ownership documents. The daytime population is higher, since the area contains most of Kitengela's public places, places of work and other aforementioned traffic generating land uses. Monthly rent for commercial spaces ranges from 5,000/- to 1,000/- per square metre. Rental charges increase as one moves closer to Namanga highway within the CBD.

Like the entire Kitengela town, the topography of the area is gently sloping from the highway to the East and West of the town. Generally, there is very little vegetation within the CBD. The small amount available is mostly ornamental species planted in vessels or on remaining land portions along the road reserves by business premises. The residential area, especially the few single-family homes and institutions, are coping with low vegetation cover by embracing/using live fences.

4.7.2. Demography:

STUDY INDICATORS

- Multiple vs single family housing typologies
- Demographic trends and development in the area
- Main factors having an impact upon demographic changes

FIELD FINDINGS:

The study established that the majority of the buildings within this zone are of commercial and mixed use (commercial-cum-residential) land uses. The existing residential form of

occupancy consists of multiple vs single family typologies. Single family housing typologies in this area include maisonettes and bungalows, while those of multiple families mainly consist of blocks of apartments (East of the town) and terraced housing (West of the town). Areas with multiple family setups are densely populated unlike those with single family setups. Some of the factors contributing to this include; health, employment and affordable housing.

Due to a high development rate consisting of commercial, offices and working areas within this zone, it has significantly affected population trends. During the day population is high within the CBD area, as people come to places of work or access various services which are concentrated within this zone. Through various interviews, it was established that, similarly, the population at night during weekends is higher due to agglomeration of various forms of entertainment and eateries in this zone and along Namanga road. It was observed that the old developments are also transitioning to buildings of more than 4 floors, which provides evidence of increasing population.

4.7.3. Land and Land Use

STUDY INDICATORS

- Main type of Land ownership
- Main land use
- Average land sizes
- Prospective land prices

STUDY FINDINGS

Residents and business operators within the CBD have both private title deeds and leasehold land ownership documentation. The main land uses within the area are commercial (the first three rows from the highway), residential and mixed (commercial-cum-residential). The minimum land size in the area is 0.05 Ha. As one moves away from the town the land size increases.

4.7.4. Roads

STUDY INDICATORS

- Condition description: (type, condition, storm drains available and their condition)
- Range of road reserve widths

Section of Namanga road and commercial buildings in front of the commercial zone.

STUDY FINDINGS

Within the CBD, only the Kitengela Namanga road is tarmacked. The immediate service lanes from the highway are also tarmacked. There are also several access roads within the CBD that have been paved using cabro pavements, but only for a few metres. Most of the roads within the area are all weathered, dusty murram roads.

The rest of the smaller access roads and back lanes are earth roads, especially on the East side of the CBD towards Residential Zone. It was noted that during the rainy season, most of the roads are impassable due to flooding as a result of the lack of a storm water drainage system.

The earth roads are usually muddy and difficult to negotiate. The available storm drainage system is open and incomplete, since it is only available along the Namanga road. The access roads measure from 15m to 9m in width. However, there are some areas where back lanes measure less than 6m due to encroachment by informal business activities

4.7.5. Housing

STUDY INDICATORS

- Main type of housing
- Housing situation (of most residents)
- Primary housing characteristics
- Main housing materials used

FIELD FINDINGS

Main types of housing include multi dwelling flats/block of apartment, terraced housing and tenement blocks. Also available are a few aging townhouses which seem to be being phased out by the blocks of apartments & tenements. The housing situation for most residents within the CBD is that they reside in rented flats, consisting of both blocks of apartments and tenements. There is also terraced rental housing in this area around the Noonkopir locality. Through random interviews with the local residents, it was established that regardless of the typology, rental prices for residential areas range between Ksh. 3,000-4000 for single rooms, Ksh.5500 to 8000 for bedsitters, 8,000 to 15,000 for 1 bedroom, and 14000-25,000 for 2-bedroom houses. However, the study was not able to establish rental prices for units with more than 2-bedrooms. Commercial rent is established by price per square unit size. For instance, the cost of commercial space rental in this zone is between ksh 1,000-2,000 per square metre. Construction materials used include; Concrete bricks (for walls), tiles and cement (for floors) and corrugated iron sheets or flat cemented roofs (for roofing).

4.7.6. Water Supply

STUDY INDICATORS

- Water Situation (Technical state of the water supply infrastructure of the Private Operator Network or Public Distribution Network:
- Cost of connection to public utility network
- Cost of connection to private utility network
- Protected source or outlet: Main source of water in the area; Main source of drinking water in the area?
- Unprotected source or outlet: Main source of water in the area; Main source of drinking water in the area?
- Most important problems, as far as water supply is concerned
- Most important water re-sellers in the area
- Supply situation of the Water Service Provider (include tariffs/charges)

- Supply situation of Informal service provision (include tariffs/charges)
- Water treatment methods of households and methods of water storage

FIELD FINDINGS

Most of the buildings own individual boreholes, while most of the others source water from private borehole water operators, connected to their buildings through a reticulation system. Interviews with resident association key informants in this area revealed that the cost of connection to a private borehole ranges from 50,000 to 100,000 and it is then metered for monthly payment per unit.

This was confirmed by a similar question posed to residents within this zone. There is no standard monthly payment per unit of water, since it differs depending on the agreement between the property owner and the borehole operator. The cost of drilling a borehole varies depending on the depth. Through interaction with different people within the CBD we were able to establish that the standard fee for drilling a borehole in Kitengela ranges between Ksh 6,000-7,500 per metre.

This fee is exclusive of installation of water pump, storage tank and any required piping. The average water table drilling depth for sustainable water supply is from 200 to 250 metres. Borehole water is salty and, therefore, for it to be potable (good for drinking), installation of a water purification and treatment system/mechanization is required, especially by borehole operators and vendors who need to supply fresh water.

Water vendors buy water from the private borehole operators at low prices and later resell it to area residents without water at a higher price. Prices vary due to proximity to the source from: 10-30/- for salty water, or 30-50/- for fresh water. (for a 20 litre container).

However, it was established that there is a public water point in Noonkopir opposite Kitengela Police Station operated by the County Government that retails water at ksh. 3/- per 20 litre container. However, it only operates once a week (on Thursdays).

Some of the water treatment mechanisms being used include putting purifier taps within the houses, chlorination by use of 'water guard', and boiling. Bottled water is the main source of drinking water in the area. A typical family can spend between ksh. 300/- to 500/- a month only for drinking water.

4.7.7. Sanitation

STUDY INDICATORS

- Technical state of the sewerage infrastructure:
- Main types of Household sanitation facilities and sanitation practices in the area? (for residential buildings in the area)
- Usage of sanitation facility (shared, own facility or other usage)
- Most common materials used for the construction of pit latrines
- Methods and cost of emptying pit latrine/ septic tank- mention what usually happens to the contents of the pit/tank after emptying
- What do residents consider to be the main problem in so far as sanitation is concerned?

FIELD FINDINGS:

WCs connected to septic tanks are the commonly used sanitation/sewerage facilities within the area. Within this area, most of the units, such as business premises, tenements and terraced housing have a shared sanitation facility.

Other residential setups such as gated communities and apartments have individual WC sanitation facilities but shared septic tanks. Exhausters are used for emptying the septic tanks.

For the emptying service, they charge between Ksh 9,000 and 15,000. However, it was noted that for shared facilities, a septic tank can be emptied up to 3 times a month, showing how unsustainable the facility is.

The main problem with sanitation within the area is that the septic tanks fill up quickly, and the emptying cost as well as release of faecal waste onto the open roads due to the floods during the rainy season.

4.7.8. Other Study Indicators

STUDY INDICATORS:

- Main (public) health risks in this area
- How and where do households in this area dispose of their solid waste?
- Main sources of income of male residents
- Main sources of income of female residents

The main health risks within the area include: flooding during the rainy season, disposal of faecal waste during flooding periods; unprotected water supply methods, dusty roads and indiscriminate disposal of solid waste.

Households in this area dispose of their solid waste on open spaces within the plots assigned as waste disposal, especially for terraced houses. Single family homes within the CBD zone opt to burn their waste.

There are also privately managed, informal waste collectors, who help in the collection and

Exhauster truck among other modes of transport in Kitengela CBD

dumping of waste in town dumpsites located around the Noonkopir Local area.

The service charge ranges from between 200-500 Ksh per household. The main source of income for both male and female is from self-employment. Some of the jobs include: Boda, selling at food kiosks, water vendors, owning shops and contract jobs such as construction jobs, among others.

CHAPTER
05

EMERGING ISSUES - THE CHALLENGES OF URBANISATION IN KAJIADO COUNTY

5.1. Summary of Emerging Issues

- Strengthening local revenue base
- Environmental conservation
- Land development guided by spatial development framework- with mixed use developments to spur economic activities in the neighbourhoods
- Improving the business climate and leveraging private sector investments
- Infrastructure provision
- Improving transportation linkages within the town and connecting with the region

5.1.1. Unpredictability of Development Control

Developers and homeowners who initially built low-rise single-family buildings are now facing 'engulfment' by high-rise multi-family dwelling buildings (apartments). While densification is highly encouraged in certain contexts, in this case, it is unplanned and often has a negative impact on local areas.

In Kitengela, the study established that high-rise construction (densification) is unaccompanied by the required infrastructure. In these areas, water supply is dependent on unreliable boreholes, and, in the absence of networked sewers, the building relies on conservancy tanks (cesspools) that must be regularly emptied.

The scenario has left many homeowners in the low-rise buildings with limited options, other than following suit with densification or relocation for those unable to finance redevelopment of their plots. Thus, relocation in this case can be interpreted as involuntary, as the homeowners would have wished for a longer benefit of home ownership; hence, it is disruptive.

5.1.2. Urban Form Challenges

The development control process lacks reliable urban design guidelines. As a result, approved developments have not necessarily resulted in a desirable urban form. This study noticed that street width can vary within the same stretch of street, due to inconsistency in building setbacks/building lines, and walls that are erected in a non-uniform manner. If this scenario continues, it will reinforce related challenges such as congestion, poor connectivity, and retrofitting costs for networked infrastructure, such as water, electricity, etc.

Whereas the town's zoning ordinance does not envision residential developments that exceed 4 levels, currently there are numerous developments that exceed this limit. Part of these developments sit side-by-side with low-rise (1-2 levels) developments.

Missed Opportunities to institutionalise land-based financing of infrastructure

Notably, the failure to link development control processes with infrastructure financing has resulted in a growing infrastructure and service backlog in the town.

5.1.3. Environmental Challenges

The disconnect between development control and infrastructure development has resulted in a declining environmental quality. As the town grows fast in the absence of proper planning and or slow provision of infrastructure, there is also an increase in cases of flooding due to the absence of a storm water management system, and obstruction of natural drains by constructions.

Land use conflict between pastoral livestock keeping and real estate are also an environmental concern.

5.1.4. Record Keeping

The land and planning departments lack a well-structured system of record keeping. This assessment observed that records on approvals, transactions are not centralized, and are kept in analogue form. The reliance on a manual system of permit application is one of the factors undermining proper record keeping.

5.1.5. Coordination and Integration of Planning

In Kajiado, as in many other counties, coordination of planning administration is a major challenge. For instance, it was noted that the issue of approvals and permits is managed at the Land and physical planning department, while enforcement is undertaken in a different department. This has resulted in poor communication between approving agencies and enforcement agencies; hence, development management is starved of crucial data, such as compliance levels etc. Subsequently monitoring and evaluation of development management is difficult due to the scattered nature of data/information management.

5.2. Key Issues with Planning and Building Permit Approval Processes

- Revenue potential for infrastructure financing-Development fees?
- Use of fees charged
- Subdivision schemes and titling

CHAPTER
06

MANAGING URBAN DEVELOPMENT

Development control must be efficient and flexible to make it market friendly and favourable to economic growth. If these two are not appropriately addressed, they may further reduce the delivery of urban services and public investments and reduce the long-term growth potential of the County.

Development by a property owner must pursue the process of development or planning application and obtain a permit in accordance with planning policies. Planning decisions are often made subject to performance conditions. The most complex conditions may require detailed processes to achieve compliance. These include provision of:

- Physical infrastructure (roads and storm water drains, water supply and sanitations; power supply etc.)
- Social infrastructure (contribution to community needs)

More often, the pattern of local land use comes in the form of specific standards that are defined through planning, architectural and engineering requirements. These are also known as zoning regulations, ordinances or codes. These legally define three key parameters of development: permissible uses, extent of site development, and site layout and design.

The scope of control is confined to the approved policy; such as a process of 'predict and provide' in the relationship between demand and supply. Planning decisions are made 'subject to conditions' with attendant measures for enforcement.

6.1. Spatial Planning

6.1.1. The functions and structures of planning

Plan making as an activity is widely recognised as a legitimate and valued aspect of public policy, which covers a wide range of issues including adequate supply of land for housing, industrialisation, efficient transport infrastructure, best practice in building designs and urban space designs; all of these are applied to achieve economic growth, social cohesion, energy efficiency, in the interest of sustainability.

This is the process, which provides a visioning through public consultations to make policies and strategies, which, in turn, provide planning guidelines to regulate and manage what is developed where, and when.

In practice, the planning process frequently lags behind Urban Growth and extensive changes in land use. As with many aspects of devolution, planning at the county level rests upon national planning regulations. The enactment of the Physical and Land Use Planning Act in August 2019 with its renewed emphasis on implementation provides expanded authority to effective local planning consistent with national policy.

It is in the preparation and design of physical and land use instruments that socio-economic pressures have their greatest impact; planning proactively to help through enhancing physical and social capital. Three economic functions in planning includes:

- Design of physical and land use regulations and legal conditions that enable economically attractive development by the private sector;
- Identifying resources of a region/city and creating the physical-land and legal conditions that enable county government to provide the essential infrastructures and services necessary for development on an economically sustainable basis; and
- Ensuring equitable access to public resources/goods that promote a good quality of life through spatial planning.

Purpose and Performance of Planning

In legislation the stated purpose of planning is 'to regulate the development and use of land in the public interest'. Among other things, this process seeks to identify, articulate and satisfy the basic social needs of the population within the context of available natural, economic/ financial resources and technical knowledge.

As a public policymaking process, physical and land use plans must translate public demands into time-bound governance action through a series of stages: (a) agenda setting, (b) policy formulation, (c) legitimisation (legislation), (d) implementation, (e) evaluation and (f) maintenance/review/succession/termination.

The County Government Act (17 of 2012) has a dedicated section of County Planning (Part XI) and for urban planning and management, the Urban Areas and Cities Act (13 of 2011). In August 2019, the long-overdue Physical and Land Use Planning Act (PLUPA) was enacted to further align the administration and management of physical and land use planning in Kenya.

In this legislative framework, there is an increasing propensity on the part of government to reform Planning. Counties have been assigned the statutory duty with considerable widening of the scope and thread running through both plan-making and implementation of program/projects and service delivery by establishing structures and networks that influence strategies and investment.

Three interconnected Acts provide the principles, procedures and standards for the preparation and implementation of physical and land use development plans at the national, county, urban and city level. On Development Control, the Physical and Land Use Act provides the procedures and standards and the regulation of physical planning and land uses a framework for the co-ordination of physical and land use planning by county governments through elaborate 'plan-led systems'

In accordance with the wider concepts of planning under the Physical and Land Use Act, the shape and nature of this institutional hierarchy is a matter, not only for setting policy guidance, but also defining roles and responsibilities arising from the duty of securing consistency and continuity in the process of framing policies at all levels.

The County Planning Framework

The essence of devolution in the context of urbanisation is anchored on building strong institutions and systems to exercise the total planning doctrine of the integration of development plans and development control. The county planning functions are optimally integrated by the County Planning Unit (CPU) in both vertical and horizontal coordination of plan/policy making, plan/policy implementation coupled with sound financial and performance management.

The structure of the CPU links interrelated plans that break down distinct sectoral problems (how, why, and who roles) and developing criteria of balancing all the different elements of county development.

County Sectoral Plans

Under this public policy making process, each county department (Sector) is mandated by law to develop a ten-year County Sectoral Plan that aligns the financial and institutional resources to agreed sector policy objectives and programmes. They provide a basis for sector budgeting and performance management. In their administrative structures, county governments have an average of 10 departments.

County Spatial Plan (County Physical and Land Use Plan)

Subsequent to the series of County Sectoral Plans is the ten-year County Spatial Plan (County Physical and Land Use Plan) that seeks to accommodate these sectoral needs within a technical and spatial framework. The spatial plan determines the desired patterns of land use within the county and identifies areas where strategic intervention is required with clear statements of its linkages to the regional, national and the other county plans. The plan regulates where public and private land development and infrastructure investment should take place by considering any guidelines, regulations or laws as provided for under Article 67(2) (h) of the Constitution.

County Integrated Development Plan (CIDP)

County Integrated Development Plan (CIDP) identifies the institutional frameworks for the implementation and integration of plans with provisions for evaluation and monitoring.

The plan addresses the county's internal transformation needs, as informed by the strategies and programmes for any investment and development initiatives in the county, including infrastructure, physical, social, economic and institutional development. A CIDP should inform the county's budget, based on the annual development priorities and provide a basis to prepare identified action plans for the implementation of strategies, with clear input, output and outcome performance indicators.

City or Municipal Plans (Local Physical and Land Use Plans)

Towns in Kenya remain the dominant focal point of both public and private sector activities. The rise in population and the sheer numbers of urban residents gives perhaps the clearest indication of the challenge facing Kenya's urbanisation processes. Both the Physical and Land Use Planning Act and Urban Areas and Cities Act provide for the framework of the preparation of city or municipal (local) plans that are aligned to county plans. The city or municipal plan is the instrument for urban management, development facilitation and development control within the respective city or municipality, operating within the framework of integrated development planning.

According to the PLUPA guidelines for the preparation of the Local Physical and Land Use plans, a detailed analysis of infrastructure, housing, transportation and communication must be specified to ensure adequate coverage, operational performance, and the methods of determining development fees.

The challenge here is neither creating new models for local economic development, nor for county/municipal finance, but crafting county government institutions in a way that will enhance their ability to utilise and adapt successful models. This requires a comprehensive strategy of

action and organisational gearing up; a) upgrading planning capacities, b) engaging financial institutions, c) creating a dedicated development platform, d) establishing the county level legal anchors, and e) expanding the public mandate.

In its urban management function, a local plan seeks to ensure that the municipalities have a sound economic base which provides revenue to finance municipal board operations and pays for the provision of services to the public, while also ensuring that jobs are available to the county's labour force.

In the area of development facilitation and development control, the city or municipal plan provides for basic needs such as housing, transport/mobility, employment or livelihood jobs, education, and opportunities for recreation, and basic services, like water, electricity, clean air and health care. These needs are to be articulated under the principles of land use, zoning and building plans, development control and the location of various types of infrastructure.

6.1.2. Guidelines for Using County Spatial Plans to manage development

Planning Culture and Development Performance

The County Government Act provides for civic education to prepare the community for empowerment and enlightenment. Planning should genuinely empower local people to shape their surroundings and establish a positive vision for the future. This approach will promote a planning culture in Kenya's devolution trajectory in a market-friendly environment. This will ultimately respond to market signals such as land prices, housing affordability and set out a clear strategy for allocating sufficient land in a balance with community facilities and services to meet local needs.

Premised on the public interest theme, these time-bound plan-making processes must be activated, always kept current and relevant to the county's development needs. On account of their progression, the envisioned outcomes must be regularly audited and reviewed to eliminate uncertainties and performance risks in delivering outcomes.

Principles for Implementing Development Plans

Development or planning control (and now a recent emergence of the term 'development management') is a function of planning through which county governments strive to control market dynamics by regulating private investment decisions on land to achieve varied socio-economic objectives. There must be an integration of both plan-making processes and development management mechanisms to avert demand side land use and physical development pressure.

As part of county planning, development management is aimed at promoting and safeguarding public interests, eliminating negative externalities, improving the information base for decision-making and place shaping by redistributing public costs and benefits. In order to strengthen development management, changes have to be made within the county governance systems through full-cycle county planning compliance, capacity building in result based management, deployment and enhancement of technology, entrenchment of professional values and ethics and for successful development management (full cycle development control), observing the following principles:

Substance and Procedure

In the practice of development control, substance and procedure are inseparable. From political and governance systems, devolution places development control on the doorstep of county governments. The knotty questions about the extent to which the Municipal Boards can exercise development control functions will continue to generate argument, as long as the safeguards of substance, procedure and conformity between the county plans and strategic management of development are not fully addressed.

From the guidelines provided by the National Land Commission, the establishment of the County Planning Units (CPU) in the plan making process should also translate to development control procedures where all involved sectors evaluate all development applications and consider all likely significant factors and the effects on the environment and economic performance. Ideally, the head of the CPU is the County Director of Physical/ Land Use Planning; the idea here being that all sectoral strategies would operate within a spatial framework, and in turn, this would reflect the socio-economic analysis across the entire county.

Material Considerations

Material considerations must constitute genuine planning considerations; all the fundamental factors involved in land-use planning constitute material considerations. This includes such things as the number, size, layout, siting, design and external appearance of buildings and the proposed means of access, together with landscaping, impact on the neighbourhood and the availability of infrastructure. However, considerations will vary from circumstance to circumstance and from application to application, according to the nature of the building industry.

Regarding material considerations and quality control procedures, the nature of the building industry results in the involvement of many professionals; although each profession has its perspectives, their convergence must be related to the purpose of county planning, which is to regulate the development and use of land in the public interest.

Community Aspirations as Public Interest

It can be difficult to distinguish between public and private interests. As people – owners, occupiers and users - the main objective of development control is to resolve or minimise conflict in the public interest. The basic question is not whether owners and occupiers of neighbouring properties would experience financial or other loss from a particular development, but whether the proposal would unacceptably affect amenities and the existing use of land and buildings that ought to be protected in the public interest.

The importance of development management extends to promoting investment, conservation of heritage and safeguarding planning standards in the land market by ensuring compliance with the set standards. Examples abound of developers putting up buildings without due consideration of the safety and wellbeing of the occupants.

Environmental Assessment and Statements

At the most general level, the overriding issue is that of striking an acceptable balance between the needs of economic growth and the protection of the environment. This is the balance that needs to be treated with caution with consideration for the likely or significant

The Development Application Process

DEVELOPMENT CONTROL PROCESS

Planning

1. Subdivision/ Amalgamation of land
2. Change/Extension of Use of land
3. Extension/Renewal of Lease of land
4. Outdoor Advertising & Signage
5. Regularisation of Existing Developments

Engineering

1. Structural Engineering Designs & Supervision
2. Civil Engineering Designs, works & clearing

Architectural

1. New Buildings
2. Alterations and additions to existing buildings
3. Demolitions of Dwellings
4. Regularisation of Existing Developments

Process Stage		Activities	Tools/Reference Documents	Responsible	Statute	Output
PRE-APPLICATION	1 CLIENT/CONSULTANT ENGAGEMENT	1 (a) Client/Consultant Briefing 1 (b) Physical Site/Property Verification 1 (c) Broad enquiries on technical & policy, 1 (d) submission fees, procedural matters 1 (e) Compilation of Submission Bundle	1. County Spatial Plan 2. Municipal Urban Integrated Plan (Municipal Land Use Plans) (Municipal Builing & Zoning Plans) * All Applicable Reference Documents Available at 1. Sub County Offices 2. Municipal Office 3. County Website 4. NLIMS	Consultant 1) Planner 2) Architect 3) Engineer	PLUPA 58(5) 58(7&8) 59(1) 68 CGA Part IX Part X Part XI UACA 21 36	Compliant Quality submission
Pre-Approval Phase	2 INVOICING & REGISTRATION OF APPLICATION	2 (a) Receiving 2 (b) Registration 2 (c) Invoicing	a) Prescribed Application Forms b) Planners/Architects Engineers Annual Practice Cert c) Applications Booking Register d) County Finance Act (Development Levies)	Sub County Team 1. Sub County Admin 2. Sub County Planner 3. Town/Municipal Manager	PLUPA 58(1)	Revenue Efficient Workflow and Tracking
	3 SIEVING CIRCULATIO & EVALUATION	3 (a) Sieving & sorting by development magnitude 3 (b) Local vetting for Zoning Compliance 3 (c) Fastracking of simple developments 3 (d) Circulation for Detailed Sectorla Evalutaion 3 (e) Determination of Development Fees for major developments - Infrastructure planning & design	a) Spatial Plan b) Municipal Plan c) Planning Handbook d) Building Code c) County Finance Act e) WaRMa Guidelines f) Engineering Codes (g) Public Health ByLaws (i) Valuation Roll	County Technical Officers a) Planners b) Public Health Officers c) Engineers d) Revenue Officers e) Environment offocers f) Land Registrars g) Land Valuers	PLUPA 60(1) Third Schedule Sections 2-17	a) Comments b) Clearance c) Performance Conditions
	4 AGENDA COMPILATION & DETERMINATION OF DEVELOPMENT APPLICATIONS	4 (a) Agenda Itemisation 4 (b) Convening of Development Determination Commitee 4 (c) Items Deliberations & Resolutions	a) Agenda Listing Template b) Meeting Proceedings Guidelines b) Minutes of Resolution Meeting	Development Determination Committee (Line Directors/ Commenting Authorities, Professional Associations, Co-Opted Invitations)	PLUPA Part VII 90(b)(e)	Minutes of Proceedings & Resolutions
	5 COMMUNICATION OF DETERMINATION & APPEALS	5 (a) Reporting to CECM 5 (b) Reporting to Municipal Managers 5 (c) Signing & Stamping drawinga & Permits 5 (d) Dispatching Applications to consultants 5 (e) Receiving & Processing Appeals	(a) Minutes of proceedings Resolutions (b) All Refrence Documents used for evaluation	County Director Of Phyiscal & Land Use Planning	PLUPA 61(1) 6192) CGA 95 96	Development Permits
Post-Approval Phase	6 IMPLEMENTATION PLANNING	6 (a) Consultant/Client interpretation of Approval Conditions 6 (b) Securing Secondary Permits (EIA, NCA, Hoarding etc) 6 (c) Costing of the approved development 6 (d) Sourcing of Funding 6 (e) Bidding/Tendering Process 6 (f) Conract Awarding	(a) Funding Options References (b) Fund/Investment Sourcing References	(a) Developer (b) Relevant Built environment Professionals (County & Consultants) (c) Lending Institutions (d) Contractor (e) Insurance Underwriters (f) Legal/Judicial Officers (g) Enforcement Officers		(a) Secondary Permits (b) BQs (c) Development Funds (d) Implimentation Contracts (e) Inspection Reports/Certificates
	7 PROJECT EXECUTION	7 (a) Project Phasing 7 (b) Progressive Inspections & Reports 7 (c) Amendments or/and redisign 7 (d) Enforcement Notices for non-compliance 7 (e) Prosecution for non-comliance	(a) Approved Working Drawings (b) Quality Control References (c) Safety Procedures (d) Judicial Processes Reference Documents			
	8 PROJECT COMPLETION	8 (a) Final Testing/Inspection 8 (b) Handing Over/Commissioning	All Refrence Documents used for evaluation	Relevant Built environment Professionals (County & Consultants)		Completion/ Compliance/ Occupation/ Certificate

environmental effects by virtue of the nature, size or location of the proposed development. The purpose of environmental statements is to assess proposed development in relation to national and local planning policies and other relevant factors, such as the impacts of the proposed development on the environment and give the appearance of justice and fairness.

Socio-economic sustainability

There is a direct link between planning and local economic development; the role of local plans in providing for economic development has always been and remains significant. The approaches to managing physical growth at the local level are directly interrelated to problems and impediments to local economic development. Some doubts have been expressed regarding how a positive strategy can be expressed as a range and quantity of sites that meet the future needs of present and future employers. An example to dispel this line of thought, is the spatial relationship between the location of employment and the location of housing, which determines the productivity, wages and future levels of local prosperity.

The current devolution framework should be part of the vision and strategy to support existing business sectors and identify and plan for the new and emerging economic sectors and networks of knowledge and technology that have produced a rapid rise in the number of peoples working from or at home; plan positively for property market segments and the classification of priority areas (ranging from high-end business parks to SME/ incubator cluster sites) for the responsive location and flexible integration of land uses.

Linking Development Controls with Legislation and Regulations

The Role of Physical and Land Use Plans in Development Control

Without development control, in a laissez-faire market, the sheer complexity of urban growth would be chaotic. Societal values and norms shift progressively and, in the process, land uses, and building facets change considerably over time. Logically this requires a vast amount of intrinsic control or ordering.

The objectives of development control as outlined in section 55 of the Physical and Land Use Planning Act include, among others, the promotion of public participation in physical and land use planning, development decision-making and ensuring the proper execution and implementation of approved physical and development plans.

At the core of demonstrating key dimensions of plan-making processes in the county is the County Planning Unit (CPU), established under Section 105 of the County Governments Act. The CPU has the strategic role and duty of integrating and coordinating all county sectors and providing a degree of certainty and consistency across the entire planning and implementation cycles. Proper planning paves the way for zoning that facilitates conversion of land for different purposes and the coordinated implementation of housing, bulk and connective infrastructure, like transport, water and sanitation and social and other basic services that reach all residents. On the other hand, the negative impacts of poor planning and development control are evidenced in traffic congestion, pollution, slumification and crime, all of which harm economic growth.

In applying the principles stated earlier, development control therefore minimises these gaps to:

a) Ensure optimal land use;

b) Protect and conserve the environment; and

c) Promote public safety and health.

The fact that urban spaces have high concentrations of people, business enterprises, industrial processes and motor vehicles, can make them hazardous. However, compatible and optimal land uses coupled with efficient transportation give rise to opportunities, such as lowering the costs per household and per enterprise for the provision of infrastructure and services. In the absence of adequate development controls, the levels of informality breed types of susceptibility to different adverse events. The same development control principles attempt to moderate vulnerability to:

a) Ensure orderly physical and land use development;

b) Ensure orderly and planned building development, planning, design, construction, operation and maintenance; and

c) Promote and safeguard national security.

Within these all-embracing objectives are other ideas of controlling the urban sphere in its widest sense. One prevalent and critical idea is to ensure that essential infrastructure is provided at the right stage of development, but the free market in the Kenyan land sector has not been well safeguarded, resulting in a combination of supply- and demand-side approaches that are imbalanced, resulting in a patchwork of non-compliant and sometimes, life-threatening developments.

Applications for Development Permission

Spatial development decision-making is a function exercised by the county governments in accordance with approved physical and land use plans within their territorial jurisdiction to avert planning chaos and resolve conflicts. Decisions relating to a specific parcel of land must be made with reference to the whole spatial system. However, many people view the process of applying for and obtaining development permission as an unnecessarily slow, restrictive and costly process, further complicated by bureaucratic red-tape and pervasive enforcement.

While criticism abounds of the former local authorities with regard to past practices, the processing of development applications remains a critical arena for discussion and innovation. Under devolution governance, the shift from 'development control' to 'development management' should herald the appreciation of the multiple perspectives and competing ways that land is understood.

The Physical and Land Use Planning Act prohibits any person from carrying out development within a county without a development permission granted by the relevant county government. Any such unauthorised development is categorised as an offence that is punishable in accordance with the provisions of the Act. Furthermore, a person who undertakes a development without the requisite permission would be required to restore the land on which the development is taking place to its original condition, or as near to its original condition as possible, within ninety days of being directed to do so by the county government.[10]

The Act has also empowered the Cabinet secretary to make regulations to address a wide variety of issues including:

a) The forms to be used and fees to be charged. While these are yet to be

10 Section 57, Physical and Land Use Planning Act

promulgated, the repealed Physical Planning Act (CAP286) incorporated seven Forms as follows:

- Form PPA1: Application for Development Permission
- Form PPA 2: Notification of Approval/Refusal/Deferment of Development Permission
- Form PPA 3: Notice of Completion of Development Plan
- Form PPA 4: Submission for Approval of Modification/Revocation of National and Regional Plan
- Form PPA 5: Certificate of Compliance
- Form PPA 6: Notification of Intent to Subdivide
- Form PPA 7: Enforcement Notice

These forms will remain applicable until replaced by new forms issued by the Cabinet Secretary through regulations promulgated in accordance with section 90 of the Act.

There is a strict relationship between government institutions and the professionals in the built environment, whose roles and protocols need to be well understood in the plan preparation and development management processes. This is a critical aspect that the repealed act omitted to deal with.

The understanding of how different land use controls work and the reason for their creation is important in the urban space that is becoming increasingly complex. Other encompassing forms need to be created with clear protocols at all process levels. For example, in the repealed act, Forms PPA 1 and PPA 2 confined their content to planning parameters, land tenure, site conditions, totally disregarding that architectural and engineering applications also undergo a similar assessment process.

b) The norms, guidelines and standards for delivery of physical and land use planning services:

Good plans and policies cannot translate into positive results in an incorrectly formulated regulatory framework. In this approach, part of the reforms consist of simplifying the planning process and the planning systems through tailored guidelines that reach out to the community for specific purposes. This includes guidelines on how to get planning permission and how much it costs and should be clear and concise and easy to understand.

Similarly, all aspects of land development require technical standards for quality assurance in public health and the safety of people. The standards set out the minimum requirements and basic performance standards.

c) Procedure and process of handling applications for development permission:

This refers to the assessment of applications for development permission and the staged procedures that lead to a formal decision. As the application process would necessarily include various county government departments (such as planning, infrastructure, water and sanitation), there has to be, in each county, an efficient and transparent process that keeps up with the influx of applications.

The basic indicator of effectiveness in measuring the impact of development policies is the number of development applications that are compliant.

The effectiveness of scrutiny and determination of development applications remains important so long as greater emphasis is placed on the professionals on both sides (development consultants and government officers), the existence of clear end-to-end guidelines on pre-application discussions, as well as transparent and efficient systematic approval procedures that do not burden the development process. The existence of a stable, predictable, transparent and consistent environment serves to encourage external investment into the relevant county.

Material Considerations

The granting or refusal of planning permission is one of the most critical functions of county governments; in all stages of application scrutiny, the government must consider all relevant material considerations and observe rules of natural justice, reasonably and without bias. Most fundamentally, decisions must be made with regard to approved policies, plans and guidelines.

Planning Approval in Kajiado County

County Spatial Plan 2018-2028 (Draft)

In the County Spatial Plan, Kitengela town has been assigned the roles of a Commercial, industrial, and transport coordination hub.

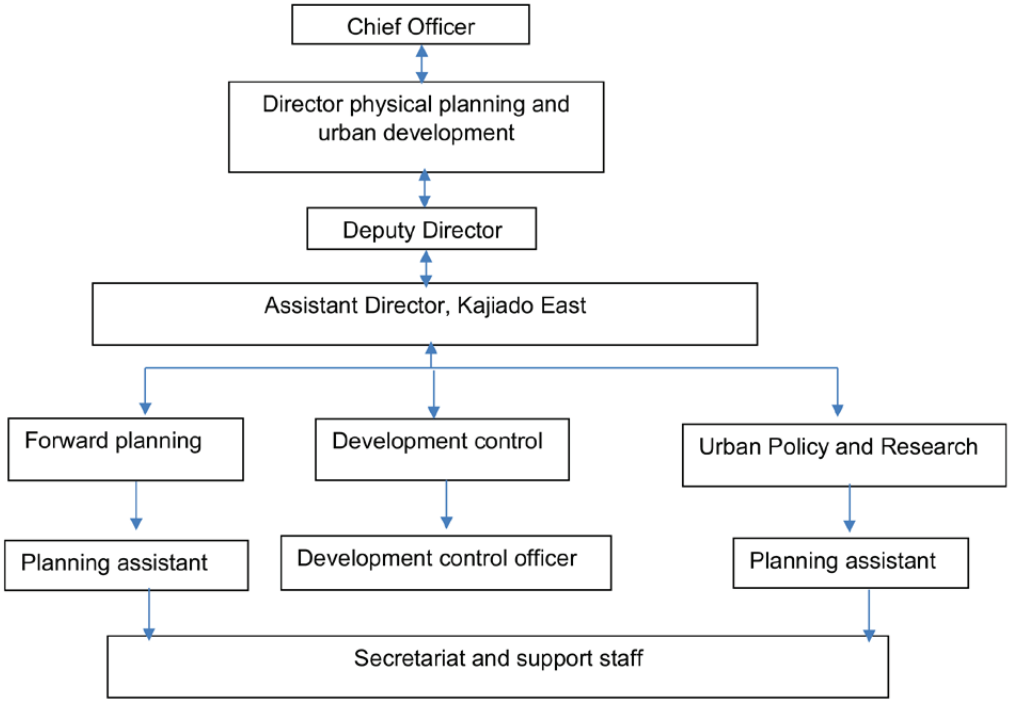
The County planning units ensure that that towns have approved plans and designate county departments, Cities urban area, sub-counties and wards as planning authorities of the county. These planning units have the following responsibilities:

- Coordinating integrated development planning within the County;
- Ensuring integrated planning within the County;
- Ensuring linkages between County plans and the national planning framework; and
- Ensuring meaningful engagement of citizens in the planning process.

The Ministry of Land, physical planning and urban development through the Chief Officer Office, currently has the mandate of implementing the CSP.

(1) Current situation

Organogram of the Department of Land, Physical Planning, and Urban Development in respect of Kitengela Town. However, the structure is not fully resourced with the necessary human capital and mainly relies on the County Headquarters in Kajiado Town for most of the services.



The Department of Urban Development

The department has a vision of "well planned and liveable urban areas"

To date its achievements are as follows:

- Creation of an urban development department to spearhead policy and guidance on urban development within the county.
- Preparation of an urban development policy strategy paper: a framework that will guide urban management and development in the county.
- Creation of municipalities: Ngong and Kajiado municipalities as entities to manage urban areas and provide requisite services.
- Completion of mapping of the municipal boundaries. This defines limits of urban activities and protects agricultural land adjoining urban areas.
- Employment of town managers: they are pivotal pillars for success in the implementation of urban projects.
- Creation of urban management Boards.

In spite of these achievements, the department still has challenges of rapid growth of towns that are yet to be provided with complementary infrastructure. Additionally, there are policy gaps and limited resources for the department, and the uncontrolled/ unregulated land subdivisions.

The Department of Physical Planning

The department ensures sustainable utilisation of land to secure livelihoods in the county through adoption of dynamic urban and rural planning strategies.

It employs tools such as zoning plans, urban integrated development plans, land use regulations and enforcement of physical planning laws.

Achievements

- County Spatial Plan.
- Automated development control system.
- The land subdivision guidelines and zoning regulations.
- Validation of plots within town centres in the county to enable updating of development plans.

The challenges under this department are administrative in nature and those related to financial resources.

COUNTY PLANNING APPROVAL PROCESS

Development Control and Fees

(1) Key planning approval stages

Stage	Action	Responsibility	Duration	Comments
1	Preparation of Application	Registered physical planner		
Landowner/ developer	1-3 days			
2	Submission of application	Registered planner, County LHPP Department	1-2 days	
3	Verification of Application	Sub-county planner, developer. KENHA and KURA (where necessary)	1-14 days	
4	Review of Application by County	County Officials	14- 28 days (Approval is granted every 2 weeks)	The review may take up to 90 days depending on the complexity of intended development or where issues arise.
5	Communication of Approval decision by County	County planning office	2-14 days	

(2) Subdivision

Requirements	Fees Charged:
1. Scheme plan 2. Survey Plan/Mutation Plan 3. Ownership document, i.e. title deed 4. Planning brief for extensive projects 5. Official current search 6. Rates clearance certificate (Where applicable)	Processing of sub-division survey-Kshs.1000 Approval of subdivision scheme per parcel-Kshs.2000

(3) Amalgamation

Requirements	Fees Charged
1. Ownership documents: title deed 2. Survey map 3. Official current search 4. Planning brief 5. Gazette Notice/Newspaper Advertisement 6. Rates clearance certificate (Where applicable)	Amalgamation of land per parcel-Kshs.5.000

(4) Change of Use/Extension of Use

Requirements	Fees Charged
1. Ownership documents: title deed 2. Survey map 3. Official current search 4. Planning brief 5. Gazette Notice/Newspaper Advertisement 6. Rates clearance certificate (Where applicable)	Change of user per sub-plot 1. Warehouse/workshop-Khs.50000 2. Industrial use-Kshs. 100000 3. Housing estate • 100 units 50000 • 150 - 200 units 200000 • Over 200 units 500000 Change of user of ordinary plot-Kshs 10000 per plot. Change of user - freehold to leasehold-Ksh. Per parcel 20,000

(5) Extension of Lease/Renewal of Lease

Requirements	Fees Charged
1. Ownership documents (title deed/lease certificate) 2. Survey map 3. Official current land search 4. Planning brief/report 5. Google/location map 6. Rates clearance certificate	Extension of lease-Kshs.25,000

Infrastructure development/provision

1. Key building permit approval stages

Stages	Actions	Responsibility	Duration	Comments
1	Preparation of Application	Landowner/developer Registered Physical Planner	(14 to 30 days)	
2	Submission of Application	Architect	(1 to 2 days)	
3	Verification of Application	County planner, surveyor, valuers, health department, fire department planners, engineers and directors	(1 to 14 days)	
4	Review of application by County	County Officials	(14 to 28 days)	Approval is granted every two weeks
5	Communication of Application decision	Engineer/ Architect	(1 to 5 days)	
6	Stamping	Architect/developer or Architect	(1 to 2 days)	
7	Preparation of application for structural drawings	Landowner/Developer		
8	Submission of structural drawings	Registered Architectural Engineer	(1 to 2 days)	
9	Verification of application		(1 to 2 days)	
10	Review and approval decision	Registered structural engineer, Landowner	(14 to 28 days)	
11	Building inspections (entire construction period)	County Inspector		
12	Issue of occupancy certificate	Sub-County Planner, architect, engineer, public health officer, fire officer, and director of physical planning.	(2 to 30 days)	

2. Building permits

Approval of Building/Architectural plans/Structural Plan Documents Required:	Fees Charged:
1. Copy of ownership documents 2. Copy of developer's KRA PIN 3. Current land search 4. PPA 1 5. Indemnity Form (Storey Buildings) 6. Copy of developer's ID 7. Architectural drawings (registered architect) - 5 Copies 8. Structural drawings (registered structural engineer) - 5 copies 9. Architect/Engineer registration certificates 10. Rates clearance receipt 11. Survey plan 12. PPA 2 (for planning approval where applicable)	• PPA1 form-Kshs.500 • Building plan application form – Kshs. 500 • Residential single storey per unit -Kshs.2000 • Residential Multi storey per unit - Kshs. 3000 • Commercial single storey per unit - Kshs.10000 • Commercial multi storey per unit -Kshs.10000 per floor • Structural drawings per sqm - Kshs.60 • Minimum charge per Plan approval -Kshs.4,000 • Renewal of approved building plans -Kshs.6,000 • Alteration of building plan - Kshs.6,000

3. Building inspection

Requirements	Fees Charged
1. Constructions permit (PPA 2 form) 2. Approved architectural drawings 3. Approved structural drawings 4. Certificate of completion 5. Inspection card 6. Site board 7. EIA (For projects near riparian reserves or likely to have an impact on the surrounding environment) 8. NEMA, KURA, KENHA, KFS and NCA licenses (big projects)	Building inspection fees (Per visit) – Kshs.2,000

4. Occupancy Certificate Application

Documents Required	Fees Charged
1. Approved architectural drawings 2. Approved structural drawings 3. Duly filled Inspection card 4. Site board 5. NEMA and NCA licenses (big projects)	• 1-2 floors 3,000.00 per floor • 3-4 floors 3,000.00 per floor

NB: Submission and circulation of applications can be done by either the consultant of landowner/developer.

KURA AND KNHA charges are not included.

NEMA is free.

Fees Charged for Planning and Building Permit Approvals

Type of Application	Fees Charged (Kshs)	
		Planning Approvals
Change of Use Application [Fees per sub-plot]	Warehouse/workshop	50,000
	Industrial Use	100,000
	Housing Estate - 100 units	50,000
	Housing Estate 150-200 units	200,000
	Housing Estate – Over 200 units	500,000
	Change of use of ordinary plot [per plot]	10,000
	Change of user - freehold to leasehold [per parcel]	20,000
	Extension of Lease	25,000
	Extension of use - freehold to leasehold	25,000
	Processing of sub-division survey	1,000
	Approval of subdivision scheme per parcel	2,000
	Amalgamation of land per parcel	5,000
		Building Permit Approvals
	PPA 1 Form	500
	Building plan application form	500
	Residential single storey [per unit]	2,000
	Residential Multi storey [per unit]	3,000
	Commercial single storey [per unit]	10,000
	Commercial multi storey per unit [per Floor]	10,000
	Structural drawings [per sqm]	60
	Minimum charge per Plan approval	4,000
	Renewal of approved building plans	6,000
	Alteration of building plan	6,000
	Building inspection fees (per visit)	2,000
	Occupancy Certificate 1-2 floors [per floor]	3,000
	Occupancy Certificate 3-4 floors [per floor]	3,000

Data Source: AAK BuildHub. http://buildhub.aak.or.ke/index

Some key informants complained that the above approval fees are too high. However, this was largely interpreted in the context of infrastructure constraints – where developers find little incentive to pursue approvals as they must still bear the full costs of basic infrastructure.

6.2. Financing Infrastructure and Development Levies

The physical and land use plans, which include public infrastructure investment proposals, are based on a 10year timeframe. The alignment of the 10 year sectoral plans with the physical and land use plans allows for prioritisation with milestone proposals for public (bulk) infrastructure investment which would influence and promote private sector development initiatives and further guide the imposition of development fees to support funding (internal and link to bulk).

The operating efficiency of land development systems as an actual tool of control is the link between the infrastructural needs analysis in the physical and land use plans and the supply side development economy. Private sector investment in intensification of land use has to compete in the marketplace by providing key infrastructure as an enhancement of both site and buildings; the infrastructure must be completed and brought into service before occupation. An investor must therefore deploy a financing model against the prospect of financial return.

6.2.1. Urban Infrastructure Needs in Kajiado County

This section is based upon the analysis of Kitengela and other towns in the County.

Infrastructure and Services

Infrastructure is a major determinant of property values in Kitengela. The town's underdeveloped infrastructure and inadequate services has pushed developers to own-solutions, although at relatively higher costs than if the services were provided strategically at a municipal level.

However, land development has outpaced infrastructure provision, with new developments emerging every day.

Water Supply Services

Among the greatest challenges confronting residents, businesses and property developers in Kitengela is the town's unreliable, yet costly water supply. Boreholes are the main source of water in Kitengela. However, many boreholes lack fresh water or contain water that is unsuitable for drinking, but some boreholes are used to supply water for purification, which is later sold as bottled water. "There are boreholes (operators) that purify water and package it in bottles for sale" (KII with a local Borehole Drilling Company). Consequently, for drinking water, residents primarily rely on bottled water. Indeed, during field work, bottled water refilling businesses are popular in the town centre. This makes water costs relatively very high in the town, as residents and business must rely on private water suppliers, many of which are not regulated.

Costs Related to Various Water Services

A spot check on the water refilling stations indicated that a 20 litre bottle costs an average of Ksh 400 (US$ 4), with a typical household (of 4 occupants) consuming an average of 3 bottles in a month, which translates into Ksh 1200 (US$12) only for drinking water. For non-drinking use, borehole water is mainly used, with pricing that comes in different packages. Household connections are typically metred, after paying a connection fee.

The connection fees vary and depend on location/distance from the source. For example, in Kimerland, Solelo and New World Estate, key informants indicated that connection fees range from Ksh.20,000 to Ksh. 30,000. 'Connection fees depend on how far the property is from the borehole, but you must pay a premium fee for the connection

Water tank tower operated by a private borehole water service provider ©Baraka Mwau

which ranges from Ksh 20,000- Ksh 40,000 and buy your own pipes and build your own infrastructure' (KII with Property Developer and Land Broker).

The slow replenishing aquifers are necessitating drilling depth exceeding 300 metres in sections of the town. According to a borehole driller, "initially we were doing 180 to 200 metres… we are now doing between 200 and 300 metres, with current costs of a standard equipped borehole averaging Ksh 2.5 million (US$ 25000) and there are cases of boreholes that cannot be replenished anymore (KII with a local Borehole Drilling Company).

The key informant further indicated that most of the high-rise (apartment) buildings come with their own boreholes, increasing pressure on the aquifers. However, developers have limited choices, as the town lacks a reliable bulk water supply or reticulated water network. Developers near the Export Processing Zone (EPZ) have relied on the bulk supply serving the economic zone, but currently that supply is unable to meet the demand; hence, escalating the water crisis facing Kitengela town.

Large business establishments (especially hospitality and service industry, e.g. hotels) and comprehensive development schemes incur even higher costs to access water. For instance, during an interview, a business operator remarked: "The business invested in a borehole two years ago for Ksh 2.5 million (US$25,000) which is a significant amount. When the pump fails, its replacement will cost between Ksh 150,000 (US$1500) and Ksh 300,000 (US$ 3,000) (deepening on capacity).

This is a lot of money, but the business cannot operate without a constant water supply" (KII with Hotel Operator in Kitengela). It means that water services constitute a major expenditure for businesses, just like households.

Water trucking is also common in the town, the vendors charge between Ksh 8,000 (US$80) and Ksh 15,000 (US$150) for 10,000 litres. Water truckers are basically resellers as most buy water from the boreholes.

Water Vendors © Sammy Muinde

Recent County Interventions

The public utility, Olkejuado Water and Sewerage Company is mandated to provide water and sewerage services in Kitengela, as well as Isinya, Kajiado and Bisil. The utility relies on borehole water and has a very limited capacity. Recently, the county department of Water and Irrigation completed a feasibility study for a "mega dam" in Kitengela (County Government of Kajiado, 2019), and the tender was published in June 2019 seeking bidders for "Proposed construction of Kitengela Water Supply Project" (County Government of Kajiado, 2019b).

The county drilled several boreholes in the town that have helped to lower the cost of water, per unit. Before, prices for 20 litres ranged from Ksh 30 (US$0.3) to Ksh 50 (US$0.5), but now it averages Ksh 5 (US$ 0.05) - if sourced from the public boreholes. However, supply of water remains highly inadequate and unreliable, which severely degrades the environmental score of the town's development.

The lack of a reliable water supply is part of the key challenges facing urban development in Kitengela. Yet, developers and property owners are willing to pay for better services. Indeed, a reticulated public network and strategic bulk water supply for the town has the potential to reduce costs related to water access. This will save developers and property owners significant amounts and will enable the county to manage urban development sustainably.

Key emerging issues from water services in Kitengela Town

- The town lacks a bulk water supply system, as well as a distribution network; hence, small scale service providers are the main utilities.
- A bulk water supply for the town will likely entail an inter-basin transfer of water, which implies that a broader strategy for securing water supply for Kitengela and other adjacent towns (e.g. Isinya as well as Athi River in Machakos County) is needed. This will require Kajiado County to work with neighbouring counties to address the water crisis facing towns in the region.
- Boreholes are the main source of water for the small-scale service providers, but this source is increasingly unreliable as land development and population increase.

- Most households rely on expensive bottled water for drinking water, resulting in relatively high expenditure on utilities.
- Lack of a water infrastructure financing framework has left the town unable to match water supply needs with land development and population increase.
- However, developers and property owners are currently paying relatively higher costs to access the limited water services.
- Without a sewer system, with reliance on septic tanks and pit latrines, the town's groundwater is under threat from pollutants.

Sewerage

Kitengela relies mainly on on-site (self-provided) sewerage infrastructure. Virtually, all developments have constructed an onsite wastewater management system, with the most common ones being septic tanks and cess pools (conservancy tanks), and bio-digesters. Pit latrines are the most common type of dry-sanitation methods.

According to a draft Nairobi Metro Spatial Plan, by 2020, Kitengela is estimated to have sewage generation capacity of 19.88 cubic meters. Without a public sewer network, the town's growth will soon overwhelm the current sewerage management mechanisms. For instance, as land development increases, the soil will be unable to bear the seepage from the septic tanks. Where hard rock is near the surface, the bio digester system is not viable. Indeed, this Plan established that truck exhauster services are already common in the town, as many property owners require frequent evacuation of septic tanks and cesspits.

Estimated Sewerage Capacity for towns in the metropolitan area[11].

Larger scale developments, such as hotels, gated communities and institutions, incur significant costs in management of sewerage. Gated community developments and large institutions (e.g. university campuses) were found to have a decentralized sewerage treatment facility.

Kaputei Low-Cost Housing Development

11 Draft Nairobi Metro Spatial plan of 2011- PP 10.36

Proposal for STP in each urban centres

	Phase 1		Phase 2	
Sewage Generated	**2020**		**2030**	
	Sewage Generation	STP Capacities Required	Sewage Generation	STP Capacities Required
Nairobi	474.87	-168.67	604.65	-298.45
Ruiru	65.77	-65.77	121.26	-121.26
Thika	40.44	-34.34	72.91	-66.81
Limuru	30.16	-29.16	54.37	-53.37
Kiambu	25.70	-23.30	46.33	-43.93
Juja	11.70	-11.70	21.09	-21.09
Kikuyu	67.69	-67.69	122.03	-122.03
Karuri	37.58	-37.58	67.74	-67.74
New Town	13.85	-13.85	25.57	-25.57
Machakos	47.91	-47.91	85.70	-85.70
New Town - Machakos	5.80	-5.80	11.60	-11.60
Mavoko	43.18	18.76	78.22	-16.27
Kangundo/Tala	69.14	-69.14	124.15	-124.15
New Town WD (MLD	0.00	0.00	0.00	0.00
New Town -Kangundo/Tala	5.80	-5.80	11.60	-11.60
Ngong	36.63	-36.63	62.62	-62.62
Kitengela	19.88	-19.88	33.98	-33.98
OngataRongai	13.73	-13.73	23.47	-23.47
Kiserian	6.18	-6.18	10.57	-10.57
Namanga	3.10	-3.10	5.30	-5.30
Isinya	2.96	-2.96	5.06	-5.06
Bissil	1.84	-1.84	3.14	-3.14
Kajiado	6.25	-6.25	10.68	-10.68
New Town	16.87	-16.87	30.35	-30.35
Magadi	0.84	-0.84	1.52	-1.52

Source: Prepared by CES(I) Pvt Ltd

While developers and property owners pay a premium for private exhauster services to empty cesspools and septic tanks, it was established that the destination for this untreated sewerage could be the rivers. This should be a major environmental concern for the rapidly growing town. Indeed, the rivers and streams that transverse Kitengela are part of the tributaries linking to the highly polluted Athi River (See NTV, 2019)[12]. The cost for exhauster truck services was reported to range from Ksh 8,000 (US$80) to Ksh 15,000 (US$150) per trip.

The cost of a septic tank varies. For instance, a septic tank serving a single-family house could range from Kshs 50,000 to 100,000, depending on factors such as soil type, contracting, etc.

Exhauster services charge depending on distance and volume. Analysing data from the various sections of the town, this cost ranges from Ksh 9,000 to 16,000 per trip.

Costs Associated with Self-Provision of Sewerage Infrastructure

A section of developers and property developers attempted to undertake a private sewer construction to be connected to the network serving the EPZ. They raised "kshs200,000 (US$ 2,000) for each building in order to raise ksh. 40 million (US$ 400,000). However, the project has since stalled after it was featured on media (television)" (KII, with Resident of Kitengela Heights).

The respondent indicated that negotiations between the county and the project (developers and property owners) fell short of a win-win situation; hence there were uncertainties regarding the implementation of the project. 'EPZ has been coordinating but advised the private developers to agree with Kajiado county government on a common ground, but that is yet to occur', asserted the respondent.

Although this study did not establish details regarding the above private sewer project, such as engineering designs and costing, this initiative, despite its take-off challenges, signifies the 'willingness to pay' for better infrastructure, by developers and property owners. This is a critical element for institutionalisation of a land-based/property-based financing mechanism for infrastructure provision in the town.

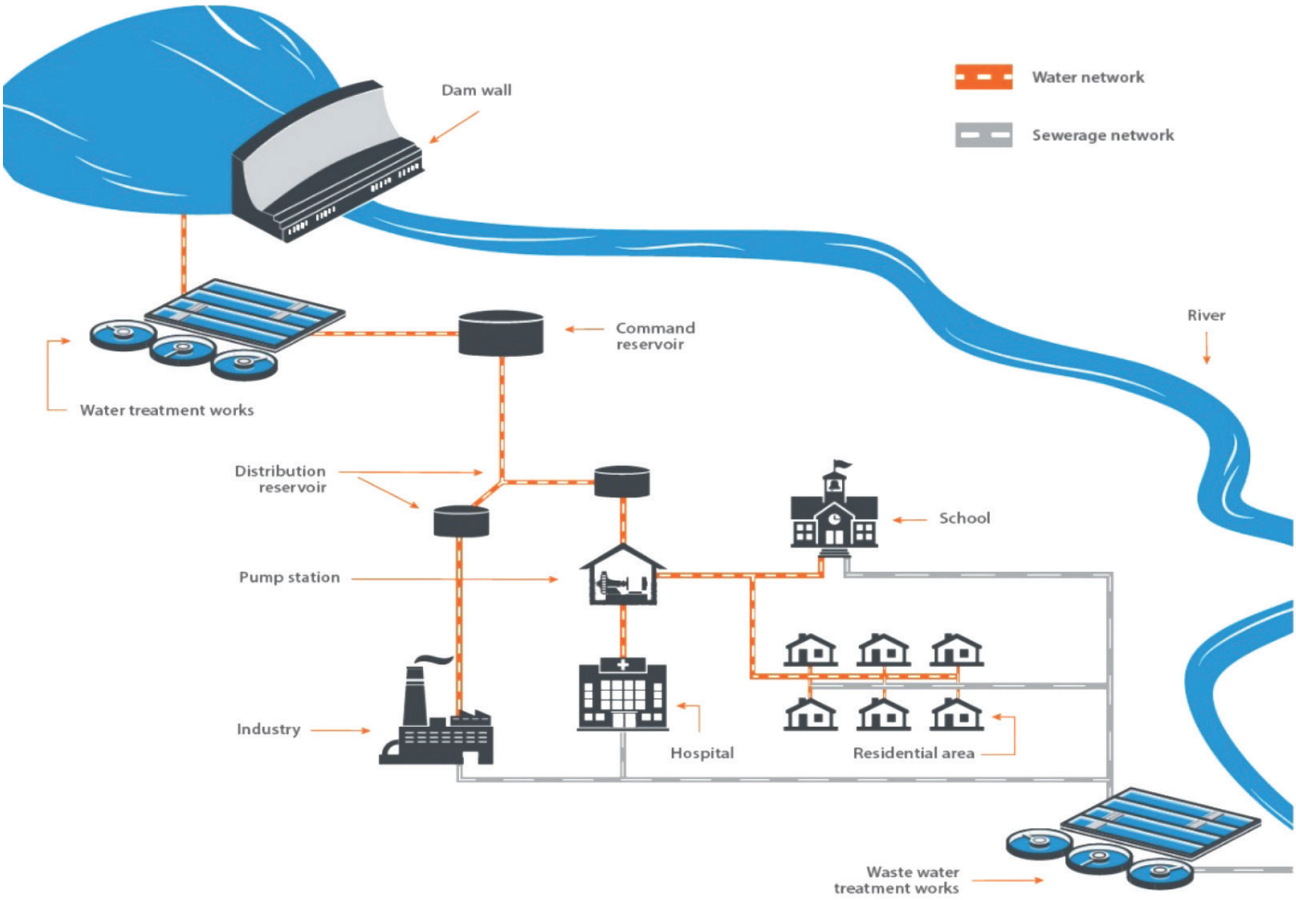
To effectively address the mounting infrastructure backlog in Kitengela, among the options the county has is to diversify ways of financing infrastructure; notably, to shift from conventional annual budgetary allocation to more guaranteed and long-term looking financing mechanisms, including establishing working partnerships with the private sector (developers and property owners) and local communities.

Key Emerging Issues from Sewerage Services

- The town lacks a public sewer network and relies on individual (developer/ property owner) provision.
- Septic tank is the most used sewerage technology and recently there is an increasing uptake of biodigester technology.
- The increasing densities and population will render septic tanks and biodigesters inappropriate technologies, at some point.
- Exhauster trucks provide maintenance services to septic tanks, biodigesters and cesspits.

12 NTV (2019). Toxic Flow. https://www.youtube.com/watch?v=xkgdGhqQVek

Schematic representationof a water and sewage network



Solid Waste Management

Current disposal methods and the issues

In sections of the town with Residents' Associations, e.g. Milimani and Chuna, there are organized garbage collection services. Private garbage collectors provide the services at a fee, which could vary from Ksh 200 to 500 per property per month. But there is a significant proportion of solid waste that is uncollected and disposed of by other means, such as burning, burying, as well as indiscriminate disposal or at undesignated sites such as rivers and storm drains. Part of the solid waste collected by organized services is disposed of at a dumpsite in Noonkopir. However, this is not a sanitary engineered site. Overall, most towns in Kajiado county lack an effective waste management system.

Key emerging issues-opportunities and challenges

- Organized private service providers serve only sections of the town. Residents and property owners using these services pay fees- mainly on a monthly basis.

- Sections of the town without organised solid waste collection services rely on disposal methods that pose environmental challenges, such as disposal in shallow pits, storm drains

and rivers, as well as burning which contributes to air pollution.

- Lack of sanitary engineered waste management for the town and other nearby towns. However, plans are underway to develop one through a collaboration between UN-Habitat and Kajiado County.

- Lack of a municipality-wide waste management system.

Mobility

Mobility in Kitengela is analysed from two perspectives: (1) the available infrastructure (2) modes of mobility.

Infrastructure- Roads are the most important infrastructure in Kitengela but they affect infrastructure in varied ways:

- Level of Service- unpaved roads present significant challenges for last mile connectivity in Kitengela. Stakeholders indicated that during the rainy season, some sections of the town are inaccessible by vehicles.

- Street connectivity- the uncoordinated subdivision schemes have resulted in minimal permeability of the street network, characterised by dead ends and roads that terminate abruptly.

On-going Interventions and the Opportunities for Scale-up

Property owners/developers in some sections of the town undertake collective improvement of roads. However, these improvements are mainly geared towards basic grading and maintenance to make public roads motorable, especially during the rainy season. The works rarely produce standard paved roads (e.g. tarmac or cabro standard-except at a compound level). According to a resident, the local community (property owners) had recently "hired a grader for Ksh8000 per hour,

Illustration of how land subdivision approaches have impacted local connectivity

purchased gravel for Kshs. 60,000 (US$ 600) and paid for 4 hours of flattening works; thus, totalling around Kshs. 100,000 (US$ 1,000) per 1 kilometre" (KII with Kitengela Heights Resident)'. Road paving materials are locally available, which can contribute to better value for money, where contracting and construction is efficient, including consideration of alternative (cost-effective) paving standards. To facilitate the uptake of a range of paving options for roads, there is a need for the county to formulate Asset Management Plans, which provide appropriate guidelines for Levels of Service (LoS) and Standards of Service (SoS) - for the range of basic infrastructure required in the county.

The paving by private developers is mainly murram-grading for access roads.

Private Initiatives to Improve Road Conditions

Implications for Urban Development Policy

- A broad analysis of the road network in the area estimates that a lot of roads need to be paved. These streets are of narrow widths.
- The county government is unlikely to be able to meet the full costs of that infrastructure in the foreseeable future. Instead, the county government, working with the stakeholders, will have to explore alternative financing for this infrastructure, as well as the other infrastructure.
- A land use plan is needed to ensure the town has a well-connected street network. This may necessitate creation of link roads, especially in areas where land subdivision schemes have resulted in 'dead-ends'.

Energy

The main sources of energy in Kajiado County are electricity, firewood, charcoal and petroleum products with less than 50% of the households connected to the grid. The county's low electricity connectivity, especially in the rural areas, negatively impacts industrial and commercial growth as well as service provision in educational facilities, health facilities, among others. As at 2017, there were more trading centres without electricity than those with access to electricity.

The County of Kajiado is rich in renewable energy sources with several wind and solar power sites identified and mapped by the Ministry of Energy. The Ministry's Power Sector Medium Term Plan, 2015-2020, identified three wind projects of over 160MW for implementation in the county, including Kipeto, Prunus and Oldanyat. With Kenya targeting over 70% of its energy generation from renewable energy resources, the Energy Act 2019 provides opportunities for the County

Government to leverage its renewable energy resources and grants county governments increased scope in participating in the power sector in the future.

6.2.2. Emerging Issues: Towards Improved Infrastructure and Service Delivery

- Potential for Greater Participation of the Private Sector
- Ascertaining Infrastructure Investments for bridging the gap
- A framework that considers investments required for:
  - Neighbourhood Improvements
  - Institutional Strengthening- enhancing capacities of mandated agencies/utilities
  - Planning Instruments- linking development fees in planning approvals-will require installing an e-system
  - Bulk Infrastructure

Water and Sanitation

The town lacks a public distribution network and reticulation for both water and sewer system. The town depends on borehole water from water private suppliers and individual home investment. The cost of drilling a borehole ranges between 7500/- to 8000/- per metre with an average sustainable level of water table ranging between 250-300 metres below the earth's surface. This cost only covers drilling services. Nonetheless, boreholes as the main water source are not safe for drinking and residents either opt to treat the water or purchase bottled drinking water from retailers. A typical family can spend an average of 300-500/- for drinking water annually. With regard to sanitation, the town depends on pit latrines and septic tanks. Commercial buildings empty their septic tanks 2-3 times a week, while residential blocks of apartments/tenements can empty them between 1-2 times a week. The exhauster services for faecal waste disposal in Kitengela range between 8000/- and 15,000/- per trip.

6.3. The Growing infrastructure Deficit

Given the current population, growth predictions show an increase of about 7,000 urban homes ever year. Even if only 50% are in dense urban areas, which require shared infrastructure, there will be an increasing need for financing basic infrastructure service.

The cost of providing the basic infrastructure is approximately USD 6,000 (600,000 Ksh) per apartment for a family of five people, (this does not include major access road development). Already the current level of expenditure is USD 2,000 to USD 3,000 for septic tanks. Construction costs per sqm are approximately USD450 for a multi storey building.

The construction of an 80-sqm apartment including development fee would cost USD 42,000. (USD 36,000 for construction + 6,000 development fee) This would only be USD 3,000 more than the current costs and is before land acquisition costs.

Until development levies become part of the routine of granting building permits, the deficit for the needed payment of infrastructure (based upon a generic cost of KSH 600,000 for infrastructure per apartment and 10,000 new urban apartments per year [minimum]) is approximately 6,000,000,000 KSH/yr = 16 million KSH/day.

This does not include the cost for Health, Education, and other critical services.

Furthermore, there is a backlog of approximately 100,000 existing urban households with inadequate infrastructure. Upgrading would require 60 Billion KSH.

Development Costs - examples

- Pit latrines vary in cost from 150 USD to 1,200 USD
- Sceptic Tank cost are approximately 3,000 USD
- A well/bore hole costs 500 to 1,500 USD
- A gravel access road to a property is a function of distance $1,000 per lane/km

Example: Kitengela Housing costs and burden of generic infrastructure costs.

Cost of a 500 sqm plot for housing in Kitengela is USD 10,000 to 30,000.

The cost of an 80sqm house including land and construction would be USD 50,000. The additional cost of 6,000 infrastructure development levy (USD 2,000 sewage + USD 4,000 other) would then be about 11%. Total cost USD 56,000.

Infrastructure Development Challenges – Field Interview Responses

Under what conditions would you see the county taking full or partial responsibility for providing infrastructure?

- It might take longer or might never happen, since most of the infrastructure here has stalled due to existing conflicts between the county government and the host communities. The establishment of a waste disposal centre stalled, as the residents near the targeted area resisted, while the water supply is managed by a community based organisation, which inherited the function from the national government of 1992 long before the county governments were created.
- In addition, most of the land here is privately owned and not all the owners are willing to sell.

6.4. Filling the Infrastructure Gap

6.4.1. The Legal Foundations for Applying Development Fees to Planning Procedures

County governments have the responsibility to undertake planning that links spatial plans with the overall urban design (or designated target area), including key infrastructure development ventures and with a financing structure (scope of funds, risk management, costs of financing/return on investment, timeframes). All of which must be anchored in National Legislation and County Government legislation, including the various regulations promulgated thereunder.

Now in Kenya, the new Physical and Land Use Planning Act, No. 2019 (PLUPA) legally mandates the authority to County Governments to institute development fees as part of the process of application for development permission. In keeping with section 63 of the PLUPA, county governments have the authority to incorporate a development fee that is to be paid (or some portion thereof) to the county government by developers (commercial or individual) as in integral part of the planning process and granting of building permits.[13] The development fee can, however, only be

13 Section 63(1) PLUPA provides that "A county executive committee member may levy a development fee against an applicant for development permission".

charged by the county government once it has published regulations determining the circumstances under which such levies shall be applied, the rates payable and the circumstances under which the development fees may be waived by the county government.

Based on comparative practices in other jurisdictions, it is envisaged that these development fees will go towards expansion and upgrading of central systems (when available within a reasonable cost and timeframe) or towards integrated neighbourhood treatment systems, (examples already exist in some form in Kenya). Payment of the levy will be a precondition for receiving a building permit.

In appropriate situations, the developer may receive a waiver for payment of the development fee. In lieu of payment, the developer would be required to construct the necessary infrastructure as determined by the county government in accordance with section 63(3) which provides that:

> ***"(3) Where a development fee has been waived in relation to an application for development permission, a county executive committee member may require that applicant to develop infrastructure in relation to the property in question for general use by the residents of the area where the property in question is located."***

The availability and adequacy of infrastructure is a prerequisite of the development control process and the authority to impose development fees is further delineated in the Third Schedule to the Act which addresses development control. Of the eight development control processes and procedures enumerated in this Schedule, the county government will have to have due regard for the availability and adequacy of the infrastructure as far as permissions for Change of User, Extension of Users, Extension of Lease, sub-division scheme and amalgamation proposals and building plans are concerned. With particular regard to sub-division schemes and amalgamation plans, the county government will also have to consider the linkage and indication of classified roads, in addition to the availability and adequacy of the infrastructure.

Finally, the adequacy of infrastructure will need to be addressed in every local physical and land use development plan in accordance with Section 5 of the Second Schedule to the Act. In particular, each plan of this kind should include an analysis of, among other issues, Housing and Infrastructure as well as Transportation and Communication.[14]

The following key issues should therefore be covered under a Housing and infrastructure analysis:

(i) Housing occupancy rates, accommodation density, housing requirements, type of residential areas and industrial locations.

(ii) Education.

(iii) Recreation areas and other public purpose land uses.

(iv) Power lines and rights of way.

(v) Water and sewerage networks.

(vi) Housing and infrastructure programmes.

On the Transportation and communication analysis, the following key issues will need to be addressed in the local physical and land use development plan:

(i) Road networks, footpaths, cycle ways, railway lines, depots, water ways, docks, etc.

(ii) Telephone lines.

14 Paragraph (e) Housing and Infrastructure Analysis, and Paragraph (f) Transportation and Communication Analysis under Section 5, Second Schedule.

Although this new national legislation provides the county governments with the authority to levy development fees, as mentioned above, each county must pass its own regulations and incorporate them into the planning and building permit granting process.

6.4.2. Infrastructure Funding Burden

Although largely premised on the notion that necessary infrastructure is the responsibility of the government, there should be a clear separation between the responsibility for bulk infrastructure and the responsibility of private sector infrastructure ventures to intensify land use. The bottom line is that this is an obligation of both public and private sectors.

The absence of instruments to coordinate and regulate this obligation in Kenya has had a negative (overload) effect on existing infrastructure and an infrastructural deficit in upcoming large-scale projects.

As stated above under the PLUPA, county governments have the powers to impose planning conditions and infrastructure obligations and to determine the circumstances under which a development fee is applicable to private sector-initiated developments. Development fees are a one-off capital charge to accommodate the impact of the new land use.

Granting Planning Permission with Conditions (PLUPA c.62(2)(a)

There are often conditions attached to planning permission that need further details to be submitted and approved by the county government at certain stages of the development.

There are three main types of condition to enhance the quality of the development based on relevance to both planning and the specific development:

a) Pre-commencement conditions: These conditions need to be formally fulfilled prior to construction and or development starting on site;

b) Performance conditions: These conditions are normally progressive and largely capital intensive and require secondary processes to be discharged; and

c) Pre-occupation conditions: These conditions need to be formally discharged prior to the development being occupied or put into use.

Infrastructure Development as Performance Condition

The planning obligations condition is a powerful approach to hinge onto the realistically designated necessary infrastructure. Under the provisions of the local physical and land use plan, an analysis of infrastructural needs should be based on time specifics and local market dynamics.

The availability and adequacy of infrastructure as a prerequisite of the development control process is further delineated in the Third Schedule to the Physical and Land Use Development Act. Of the eight development control processes and procedures enumerated in this Schedule, the County Government will have to have due regard for the availability and adequacy of the infrastructure as far as permissions for Change of User, Extension of Users, Extension of Lease, sub-division schemes and amalgamation proposals

and building plans are concerned. With particular regard to sub-division schemes and amalgamation plans, the county government will also have to consider the linkage and indication of classified roads, in addition to the availability and adequacy of the infrastructure.

Finally, the adequacy of infrastructure will need to be addressed in every local physical and land use development plan, in accordance with Section 5 of the Second Schedule to the Act. In particular, each such plan should include an analysis of, among other issues, Housing and Infrastructure as well as Transportation and Communication.[15]

Conditions can cover cumulative and multiple matters which call for comprehensive guidance for their application. For purposes of efficiency and effectiveness, a model based on sieving tiers that categorises the magnitude of the proposed development and the levels of assessment during the planning and development permitting process is essential. The table below provides a guideline as to how these categories of development applications can be sieved through in a systematic manner.

Tier 1	**All development Applications, namely:** • Change of use, extension of use, sub-divisions and amalgamations, processing of easements and rights of way; • Extension of lease term; • Siting of education institutions, base transmission stations, petrol stations, eco lodges, camp sites, power generation plants and factories; • Construction/building permits; • High impact advertisement and signage applications; • Low impact advertisements and signage, landscaping schemes.
Tier 2	**Development Applications that give rise to:** • Contribution of components of development charges (structural, civil, electrical, mechanical and ICT engineering services); • Discharge of performance conditions through Interim, partial and incremental certification; • Environmental and social impact; (environmental reports, traffic management reports, urban design drawing schemes); • Final discharge of land development completion or building pre-occupation certification; • Planning gain in lieu of infrastructural services contribution; • Being national, strategic or inter-county projects.
Tier 3	**Development Applications in fulfilment of pre-commencement and performance condition(s) granted in Tier 1 and Tier 2. These include, but are not limited to:** • Construction site board; • Hoarding of construction sites; and • Site safety and utility services.

However, these categories need to be applied with caution: each condition attached to a planning permission needs to be precise and justified.

15 Paragraph (e) Housing and Infrastructure Analysis, and Paragraph (f) Transportation and Communication Analysis under Section 5, Second Schedule.

Development Fees Calculation, Appraisal Criteria and Performance Measurement

The intention of development management is, above all, to promote the public good; managing local development helps secure long-term benefits of sustainable communities. The charging of development fees reflects the possible private benefit implicit in the planning permission process. The calculation formula is derived from a development parameter that reflects the overall cost with respect to the estimated impact of the development on external services.

The county planning appraisal criteria and performance measurement require regular reviews (5-year mid-term reviews for sectoral and spatial plans, and annual reviews for the CIDP) of the local infrastructure itself and the projected needs.

The approach serves the purpose of striking a balance between public and private interests and a fair administrative discretion in determining the development fees, standards and timelines for implementation. As indicated elsewhere in this report, it is imperative that the implementation of the development fees be guided by the benefits principle and treatment of all county residents in an equitable manner.

It is important to highlight that the development permission is not granted in perpetuity and applicants are obliged to commence with the implementation of their development project within three years of obtaining such development permission. The development permission may however be extended by a further year subject to the applicant demonstrating good cause for such extension.

Furthermore, developers are also liable for such fines or conditions as may be imposed by the county government when they fail to complete the building works within a period of five years.

6.4.3. New Scope of County Regulation of Infrastructure Provisions

The last eight years have been a truly regulatory era with emerging consensus about the pivotal role of counties in the planning processes. The surge in pressure for infrastructure development – both public and private – requires wider planning considerations with the application of innovative and more expansive mechanisms for infrastructure financing. Some of these mechanisms are already in place, such as county government own source revenues, county securities, public private partnerships, others, such as land-value capture or royalties will necessarily call for new laws, policies and regulations that will need to be developed, streamlined and operationalised to give effect to these new financing mechanisms.

While there could be some arguments regarding scope or potentially overlapping roles at national and county government agencies in the planning process, the critical details – such as the implementation of development fees – are in favour of an integration of spatial planning with economic planning using flexible interventions. The many key innovations in the Physical and Land Use Planning Act herald a new wave of interventions to be incorporated into the development planning system.

In reality, important as the introduction of development fees is, the first impetus in stirring reforms lies in progressive capacity enhancement through planning policy guidance notes that accommodate current development undercurrents in the devolved units. Further, a careful rolling out of processes, norms, standards and procedures that provide a clear roadmap to carry out the desired policy reforms, as well as future reforms, will be crucial.

The classification of infrastructure by sector and spatial disposition:

The physical and land use planning linkage with infrastructure can be promoted by a specific county infrastructure development policy that integrates land use planning with the environment and the different types of infrastructure within and between different sectors, to produce a fairer and more inclusive society.

Other matters deal with include traffic management and accessibility profiles for vehicles and pedestrians, including the minimum standards introduced for new developments under the classification listed in the table below.

Sector Classification	Spatial Disposition
Roads	Internal (within confines of private land)
Storm water Drainage	
Street Lighting	
Water Supply	External (trunk services serving multiple properties and land uses on public land)
Sewerage Reticulation	
Solid Waste	
Communications (Fibre Optics & BTS)	Link (interface linking internal services to external bulk services)

6.4.4. A County Mechanism for financing Infrastructure Development

Incorporating infrastructure development into the planning and urban management procedures requires long-term interim financing mechanisms with appropriate county level legislation, procedures, and enforcement.

- The issue of interim finance is most acute at the planning stage. A primary task for the county is to undertake a full infrastructure and planning and feasibility analysis. Such a full infrastructure plan needs to be based upon a county spatial plan and on a city/municipal development plan. The investment in the feasibility study is estimated at between USD 500-900,000.

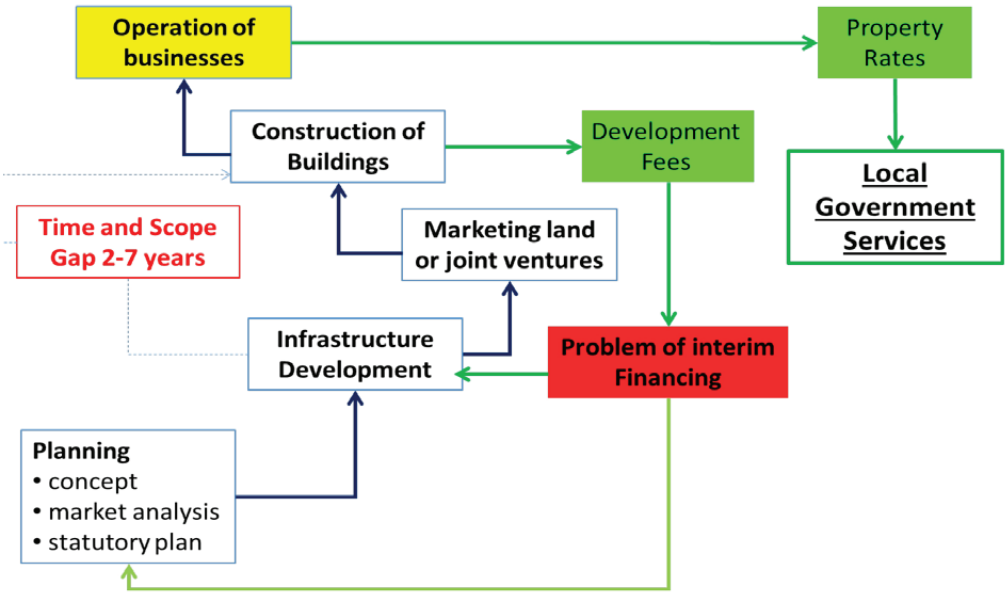
- The second stage is project implementation/construction. Based upon the infrastructure plan and a full feasibility analysis, the costs of putting in appropriate and sustainable infrastructure can be used to set the development levies for the different projects by location, scope and technology over time. Funds for implementation are in the millions of USD.

A critical challenge, above and beyond spatial planning and legal authority for instituting development fees, is the big time gap between the outlay of expenditures for planning and constructing infrastructure, that need to be in place in advance of residential and business projects, and the return of payment from development fees. (Fees are levied as a condition for receiving a building permit and paid in part or in full at that time). There can be a 2-7-year time gap, especially in the case of central water and sewage facilities. Thus, the county is faced with the need for significant interim financing.

The first wave of residents will enter homes, before there are sufficient funds from development fees to cover the full cost of major facilities. Thus, there needs to be public investment in infrastructure, often over a period of 20 years before costs can be recovered, as additional housing or business units are constructed. In part, this can be mitigated by a policy of interconnected decentralised units. This is best suited for water, energy, sewage, and organic waste treatment.

The second challenge is the relationship between the developers and the County Government. Using public financing (loans, bonds, or development budgets) is a well-accepted practice in developed nations

The Problem of Interim Financing



around the world. It is predicated upon the understanding, acceptance, and de-facto payment of development fees by the private sector as an integral part of projects. The political culture of payment of these fees is strong as are the sanctions for non-payment. By comparison, in Kenya, the collection of land-based taxes in general is very low and development fees are not even considered legitimate by many. As a result, county governments are reluctant to risk such development expenditures.

Furthermore, private sector developers are reluctant to pay the county governments development fees for infrastructure construction. They are fearful that the fees will be paid, but the funds will be "absorbed" into the regular budgets and the necessary infrastructure will not be constructed. Even assuming that the monies are utilised exclusively in targeted infrastructure, the concern is that the time frame of the developers (construction and occupancy), will not be adequately synchronised with the pace of infrastructure construction by the county government.

Overcoming the vicious cycle of public payment and non-repayment by the private sector or private sector payment and non-delivery of infrastructure services by the county government, is possible through the institutionalisation of two-part organisational structure.

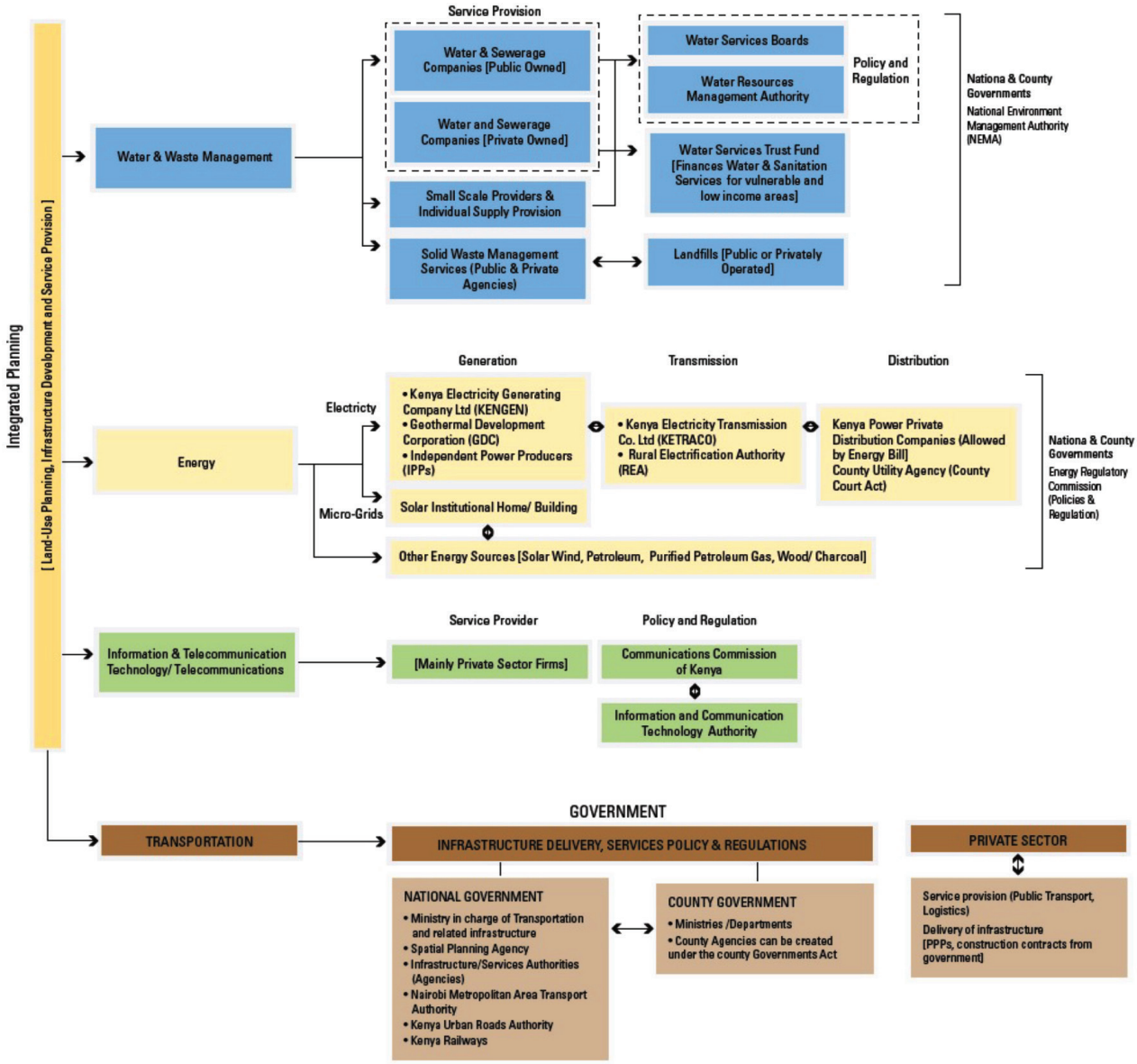
- Creating a dedicated Infrastructure Development Fund that ensures the use of development levy/fee payments only for the specific projects designated by the fee payment. This is to be outside the regular County Budget and is aimed at preventing the "absorption" of capital development revenues into the ongoing expenditures of the county government.

- The option of providing bank guarantees in lieu of full payment of development fees as a condition for a building permit. They would ensure full payment of development fees once the infrastructure is completed. This procedure can provide county governments with a secure source of funding which is a prerequisite for undertaking deficit financing of infrastructure projects.

This can provide the private sector with a mechanism to ensure that infrastructure fees are used exclusively for that purpose. With this mechanism, the county has no incentive to delay use of the funds. Although this does not completely guarantee synchronisation of public and private initiatives, it creates a financing mechanism that, on the one hand, enables county government to initiate infrastructure development proactively and, on the other hand, serves to control unmanaged urban sprawl. (Permits will not be given until adequate infrastructure is in place).

6.5. Institutional Arrangements for Infrastructure Provision

Institutional Arrangements for Provision of Infrastructure



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CHAPTER
07

A COUNTY MARKET MANAGEMENT AUTHORITY

7.1 Background

Market infrastructures, facilities and services are essential elements of the food supply and distribution system (FSDS). They must be properly planned, maintained, managed, and developed in order to accommodate the rapidly increasing amounts of food. There is a growing awareness of the need for the County Government of Kajiado to take on a proactive and coordinating role in the development of sustainable market infrastructure in the County. There is a need to provide essential amenities within the County Markets such as adequate water, electricity and toiletry services to ensure proper management of the markets.

Transparency and equity are key principles that are needed to guide access to market infrastructure by all traders intending to use the markets. Allocation of market space must be done in a free and fair manner that ensures that every applicant is satisfied with the outcome. The allocation of space in markets has been marred by unethical practices, which have resulted in a lot of dissatisfaction among the traders. The County needs to put in place measures that ensure access to and management of markets are corruption free.

There is political goodwill from both the County Executive Committee and County Assembly Sectoral Committee within the trade sector to ensure that market management fosters growth within the County.

This section is based primarily upon the "KAJIADO COUNTY MARKET AREA MANAGEMENT POLICY" prepared in 2018 by the Kajiado County Ministry of Trade, Culture, Tourism and Wildlife.

7.2 Market Management Challenges in Kajiado County

7.2. Lack of legal framework for market management

Markets need standardisation and enforcement in their operations for uniformity and rule of law to be enforced. At present, there are no tailored and comprehensive legal regulations for the management of markets.

The absence of clear county level regulation to ensure the discipline of traders within the market. There is a need to establish a legal framework for allocating and transferring of market space, management of markets, enforcement of market rules and guidelines on standards of setting up a market, Toilet management, dispute resolution and observance of public health to prevent food contamination and spread of diseases.

7.2.2 Budgetary Constraints

Setting up new markets and the management of existing markets is very expensive. There is a need for the County to institute new mechanisms for developing and maintaining markets throughout the county.

7.2.3 Absence of an assessment framework for the approval of Market Site Applications and Market Proposals

Currently there are no clear procedures and criteria for approving market applications. In addition, there is a need to explain to each market user the duty to maintain market sites.

7.2.4 High Environmental impact of markets on the environment and congestion of markets

Market activities have a great impact upon the environment, pollution from improper waste management and poor sanitation. There are also the problems of access and congestion. Market Operators are responsible for site accessibility, safety of crowd movements and compliance.

7.2.5 Absence of County health and safety practices to rectify hazards and problems affecting the market

There are no mechanisms to ensure that preparation, sale or provision of food comply with the provisions of Food Safety in Kenya. There is a need to ensure continuous inspection of the market by the respective authorities at any time to ensure public health and safety.

The County markets in Kajiado suffer greatly from low standards of hygiene. Moreover, there is no clear framework for disaster management and preparedness.

The County also struggles with traders conducting business in undesignated trading areas, allocation, transfer and sub-letting of market stalls without the department's consent.

7.2.6 Limited revenue Fees and user charges to adequately maintain the markets in Kajiado

Although the County of Kajiado has a schedule for market fees, there is a need for the County to expand its fees and charges to include site maintenance.

7.2.7 Poor Market infrastructure and amenities management system

The Markets in Kajiado suffer from very poor infrastructure. The lack of basic amenities – drinking water, drainage, sewage, flooring, roofing, and access are health hazards and contribute to a poor trading environment.

7.3 A Market Management Authority Field Assessment

The need for a market management authority is self-evident. The main question is the type of entity and the specific functions of this authority.

Poor Market infrastructure and amenities management system

7.3.1 The assessment

Issues to be assessed:

- Review of the scope and location of the County's markets: land area, number of vendors, state of infrastructure, specialisation, revenue generation, current management costs, including an in depth of sampling 1-2 markets in each sub-county.

- Identification of primary management issues as seen by the vendors and the county staff (based upon interviews and existing reports).
  - segmentation of uses
  - sanitation facilities
  - lighting and operational hours
  - business support service
  - emergency services
  - allocation of stalls
  - roads and access
- Analysis of the added value of a County Market Management Authority.

Sampling:

The assessment exercise sampled 7 markets based on location, level of activity and Sub County distribution. The markets assessed included, Kajiado Market based on its location within the county headquarters, other markets sampled were distributed per Sub County and level of activity in those areas. However, Kajiado Sub County was not sampled due to time constraints. The assumption was that the results of the four other sub counties would form a fair representation of the entire county.

Methodology

The assessment was conducted through the following:

- Face to face interviews with county staff in Kajiado, market masters, market committee officials and traders in the respective markets. This was the primary method of collecting the information related to the assessment.

- Review of documents obtained during the assessment to check on the cost of service delivery and the location of the markets.

- Site visits and observation to assess the existing situation in the markets.

7.3.2 Assessment Findings

The county has a total of 34 markets and our initial assessment revealed that, Kajiado County markets can be categorised into two broad categories:

Permanent markets: These operate daily from 6am to 6pm. Most of these daily markets are a mix of wholesale and retail users: these include Rongai, Bulbul, Matasia and Makaburini in Kajiado North Sub County, Kitengela, Isinya in Kajiado East Sub County, Oloitoktok, Kimana, Rombo, Ilasit in Kajiado South Sub County, Kajiado, Namanga, and forty six market in Kajiado Central and Kiserian, Ewaso, Ngong', Entasopia and Mosiro in Kajiado West.

Temporary Markets: These operate either once or twice a week and traders tend to move from one market to another depending on the market day. Some of these weekly markets are Sultan Hamud, Emali, Masimba, Simba cement, Ngatu in Kajiado East, Entarara in Kajiado South, Oldarpoi, Bissl, Mailtisa, Meto in Kajiado Central and Magadi, Shompole, Olkiramatian in Kajiado West

Primary findings

Management structure: The County Government under the Department of Trade is charged with responsibility for market management, however service provision is below the acceptable standards of a public trading area. There are gaps in the handling of solid waste within and around the markets, with waste everywhere and the refuse chambers overflowing.

Security is also being provided by the County, as well as other services like solid waste collection, and connectivity to water and lighting Revenue collection is undertaken by the department of finance. However, the services provided are inadequate and unsatisfactory for the majority of traders, which has led to traders forming associations (Market committees) to help them lobby for services from the County Government.

The Market Committee consists of traders who organize themselves, elect officials through a balloting process and invite the trade department representative (market masters) to preside over their elections. A few of the markets have developed by-laws that guide their operations and existence as well as establishing the terms and roles of office holders.

Conflict Management: Conflicts within markets are handled by the trade department represented by the market masters who are based in the markets, acting as the liaison officer and first contact in terms of market conflict resolution. If no solution is found at that level, then the market master engages the trade department to find an amicable solution to such conflicts.

Service provision: In most of the markets in Kajiado, the different departments provide services to the markets in isolation from the mother department that is trade, for instance, the solid waste collection is carried out by the environment department, revenue collection by finance, water supply by the department of water and so on. As a result, the trader association's chairperson can directly contact the chief officers of these departments with total disregard for the market master in charge of the daily operations of the market. This has created an authority vacuum, thereby leading to activities being carried out in the markets against the interests of the trade department and county in general. Such vacuums have been exploited by those who wield the greatest economic power, such as brokers, trader associations and local economic bigwigs, to the detriment of county government and genuine traders.

Solid Waste management: The production of waste in the market is a continuous process from opening to closing of the market. Most of the garbage is organic in nature, followed by an abundance of plastic bottles and wastepaper. Traders voluntarily clean their individual spaces and empty the garbage in a designated refuse area, where it is occasionally collected by the county government, depending upon the market; some market traders complained of the lack of waste collection in their markets, while others stated that the waste is collected once or twice in a week, depending on how much power the committee wields.

Hygiene and sanitation: All the markets assessed have toilets that are operational, however, under the management of groups or saccos, these groups are awarded the management of these facilities upon tendering, they then enter into an agreement with the county and pay the county a monthly fee of Kenya shillings 10,000. Users are charged a fee of between 10 to 20Kshs varying from market to market. This amount applies to traders, walk in customers and passers-by. Most of the traders have complained that it has become expensive to both pay the county for market fee and still pay the use of a toilet which should be a service offered to the traders by virtue of paying the market fee/ license.

Water: Water provision is a challenge in most markets assessed. In markets like Kiserian, water provision is through a private vendor who charges Kshs5 per 20-litre jerrycan, a similar case is seen in Kitengela and Rongai. The water in Kitengela that is purchased from the vendors is salty water from boreholes at a cost of Ksh 5 per jerrycan of 20 litres and fresh (drinking) water at Ksh 30 per jerrycan of 20 litres. The situation is similar in Rongai where traders buy their water from a private sanitation facility which gets its water from Oloolaiser Water Company at a cost of Ksh 5 per jerrycan of 20 litres if bought directly, and Ksh 20 per jerrycan of 20 litres if delivered to your stall/space.

Electricity: Some of the markets assessed had electricity connection with no power. We established that among the reasons these places did not have power was unpaid electricity bills. Places that had electricity were individual stalls where the owners pay through a token system.

Allocation of trading space: Allocation of trading space is done by the trade department in collaboration with the market committees, a census is carried out to establish the number of traders in that market and a secret ballot voting process is done. The ballot process is organised according to the produce e.g. cereals, second-hand clothes, vegetables, etc., this is to enable commodity zoning within the market. During this process, traders randomly pick numbers and are allocated spaces/ stalls corresponding to the numbers/codes picked. Depending on what the trader is selling, space allocated can be 8ft by 6ft or 4ft by 4 ft. This process is done at the very initial stages preceding the opening of a new market, any changes thereafter in ownership of stalls and traders is done through local arrangement with the stall owners and the market committee. This arrangement has been detrimental to the county, leading to inefficient service delivery due to disorganised markets and trade within these trading areas.

The county relies on Market committees for information on market beneficiaries and space allocation, which has, in the past, created conflict of interest between the genuine traders and the market committees who recommend their cronies for market space allocation.

Design of markets: The physical design of the markets has significantly contributed to the use and efficiency of these areas. It was established that where the design allows for easy access from the main road, the level of trader occupancy was high, whereas where the market was slightly inaccessible, the traders tend to relocate to road reserves. In Kajiado for example, stalls facing the main market

access with a direct view of passers-by were full occupied and operational as opposed to the stalls on the rear side of the market. The open-air market within the market complex was equally empty with most traders opting to trade in the adjacent open-air market in Idamat ward.

Localisation of ownership: One of the unique conflicts with the markets in Kajiado, especially those in metropolitan areas like Kitengela and Kajiado, has been the element of "ownership". Where the indigenous community have a sense of entitlement to market spaces/ stalls, they want the county government of Kajiado to allocate them the stalls even though most of them are not genuine traders; they later rent them out to existing traders who are termed "outsiders" for a fee. This means that "the outsiders" are forced to pay for renting and pay the county government at the same time, which becomes very expensive.

In some instances, traders reported preferential treatment and an open bias in favour of the indigenous people, some of whom do not reside within the area. This has rolled over to allocation of spaces within the market where locals who do not have business aspirations or know-how are given stalls and within no time, the stalls are left empty.

Conclusions from the Assessment in Kajiado County

The increase in the number of settlers in Kajiado County who seek to move away from housing pressure in Nairobi has quickly increased the number of urban areas in the county, and this has contributed to the growth of markets and market centres within the county.

Market management committees consisting of traders play a very important role in the management and organisation of county markets, limiting the influence and authority of the county government.

Lack of synergy between departments in the county has hindered efficient service delivery to the markets i.e. Department of the Environment and Department of Trade.

The county government does not consider the provision of ancillary services, like toilets and sanitation for traders, to be a key responsibility of the County.

The designs of the markets focused more on security in terms of high walls than ensuring visibility of the market by potential buyers, this has rendered the markets unattractive to traders who have opted to trade by the roadside.

Revenue is collected manually, promoting potential revenue leakages within the markets. Additionally, the revenue officers report to the finance department directly and not to the market master, hence a weakened supervision. Although market fees are one of the primary sources of revenue for the county government, they do not cover the operational expense of the markets. As a result, the county government always subsidizes them to ensure basic service provision.

Most of the markets did not have an identity, with most operating wholesale, semi-wholesale and retail activities. This creates unnecessary competition for small scale traders, for instance, in open air markets like Idalamat wholesalers can sell from their trucks in the same space with retailers.

CHAPTER
08

GOVERNANCE, FINANCE AND LEGAL FRAMEWORKS

8.1. County Budgeting and Urban Financing

(Source: County Internet Site)

Income and Expenditures

Recurrent Expenditure: The 2018/19 FY recurrent expenditure estimates amount to Kshs.5.3 billion, which is 65 percent of the total estimated budget.

Development Expenditure: The projected development expenditure for 2018/19 FY is Kshs.2.8 billion, a 35 percent allocation of the total expenditure.

Budget Estimates for FY 2018/19 FY

REVENUE	Kshs.	Percentage
Government Transfers	5,997,400,000	73%
Local Revenue	1,497,450,172	18%
Grants	725,844,868	9%
Total	**8,220,695,040.00**	**100%**
EXPENDITURE		
RECURRENT		
Personnel Emoluments	2,946,059,172.00	36%
Operation and Maintenance	2,424,985,133.00	29%
DEVELOPMENT	2,849,650,735.00	**35%**
TOTAL EXPENDITURE	**8,220,695,040.00**	**100%**

Some of the Risks in the 2018/19 FY

- The growing wage bill may threaten or limit development expenditure.
- Depressed local revenue will limit implementation of the full budget.
- The county should establish the level of pending bills and devise a way to handle them.
- The slow exchequer disbursement may affect the smooth absorption of the budget.

Local revenue

The aggregate annual local revenue target for the county in FY 2016/2017 was Ksh. 900 million.

By the end of the period, the county government had generated a total of Ksh. 557 million, which was 62% of the annual target. This was a reduction of 14%, compared to the Ksh 650 million collected in 2015/16 FY.

The county government budgeted annual local revenue for the FY 2017/2018 was Ksh. 900 million. As of 22 May 2018, the county government had collected a total of Ksh 602.4 million, which is 67% of the annual target. This was a 10.4% Increase compared to the Ksh 518.7 million collected in the same period of the previous financial year (2016/2017).

8.2. Municipal Management

The Constitution of Kenya mandates county governments to undertake municipal management. Except for Nairobi and Mombasa, which are 'City Counties', the rest of the County Government comprises urban and rural settlements of varying sizes.

A decentralised system is envisioned at the county level, where county governments are supposed to establish decentralised units, among which are administrative structures for urban centres. Part VI of the County

Governments Act provides the legal backing for this.

"The functions and provision of services of each county government shall be decentralised to—

a) The urban areas and cities within the county established in accordance with the Urban Areas and Cities Act (No. 13 of 2011);

b) The sub-counties equivalent to the constituencies within the county established under Article 89 of the Constitution;

c) The Wards within the county established under Article 89 of the Constitution and section 26;

d) Such number of village units in each county as may be determined by the county assembly of the respective county; and

e) Such other or further units as a county government may determine." (Republic of Kenya, 2012 p c43-31).

Subsequently, the Urban Areas and Cities Act (UACA) was enacted to facilitate the creation of municipal structures. "

8.2.1. Structure and Formation of Municipalities

Based on size of population and other criteria, UACA classify urban centres as shown by Classification of Urban Centres in Kenya by Size of Population

Category	Minimum Population
City	At least 250,000
Municipality	At least 50,000
Town	At least 10,000
Market Centre	At least 2,000

Source: Republic of Kenya (2019)[16]

From the above classification, Kitengela Town meets the minimum population threshold. As indicated earlier, the town's population is currently estimated at 117,795 people. In that case, the county should establish a municipality for the management of the town. At the time of conducting this study, the County had yet to establish a municipality for Kitengela.

Roles and Functions of Urban Boards/Town Committees

UACA [Article 20-1] stipulates the functions of a Municipal Board as follows:

"Subject to the provisions of this Act a board of a city or municipality shall —

(a) Oversee the affairs of the city or municipality;

(b) Develop and adopt policies, plans, strategies and programmes, and may set targets for delivery of services;

(c) Formulate and implement an integrated development plan;

(d) Control land use, land sub-division, land development and zoning by public and private sectors for any purpose, including industry, commerce, markets, shopping and other employment centres, residential areas, recreational areas, parks, entertainment, passenger transport, agriculture, and freight and transit stations within the framework of the spatial and master plans for the city or municipality as may be delegated by the county government;

(e) As may be delegated by the county government, promote and undertake infrastructural development and services within the city or municipality;

16 Republic of Kenya (2019). The Urban Areas and Cities (Amendment) Act, 2019

(f) Develop and manage schemes, including site development in collaboration with the relevant national and county agencies;

(g) Maintain a comprehensive database and information system of the administration and provide public access thereto upon payment of a nominal fee to be determined by the board;

(h) Administer and regulate its internal affairs;

(i) Implement applicable national and county legislation; enter into such contracts, partnerships or joint ventures as it may consider necessary for the discharge of its functions under this Act or other written law;

(k) Monitor and, where appropriate, regulate city and municipal services where those services are provided by service providers other than the board of the city or municipality;

(l) Prepare and submit its annual budget estimates to the relevant County Treasury for consideration and submission to the County Assembly for approval as part of the annual County Appropriation Bill;

(m) As may be delegated by the county government, collect rates, taxes levies, duties, fees and surcharges on fees;

(n) Settle and implement tariff, rates and tax and debt collection policies as delegated by the county government;

(o) Monitor the impact and effectiveness of any services, policies, programmes or plans;

(p) Establish, implement and monitor performance management systems;

(q) Promote a safe and healthy environment;

(r) Facilitate and regulate public transport; and

(s) Perform such other functions as may be delegated to it by the county government or as may be provided for by any written law."

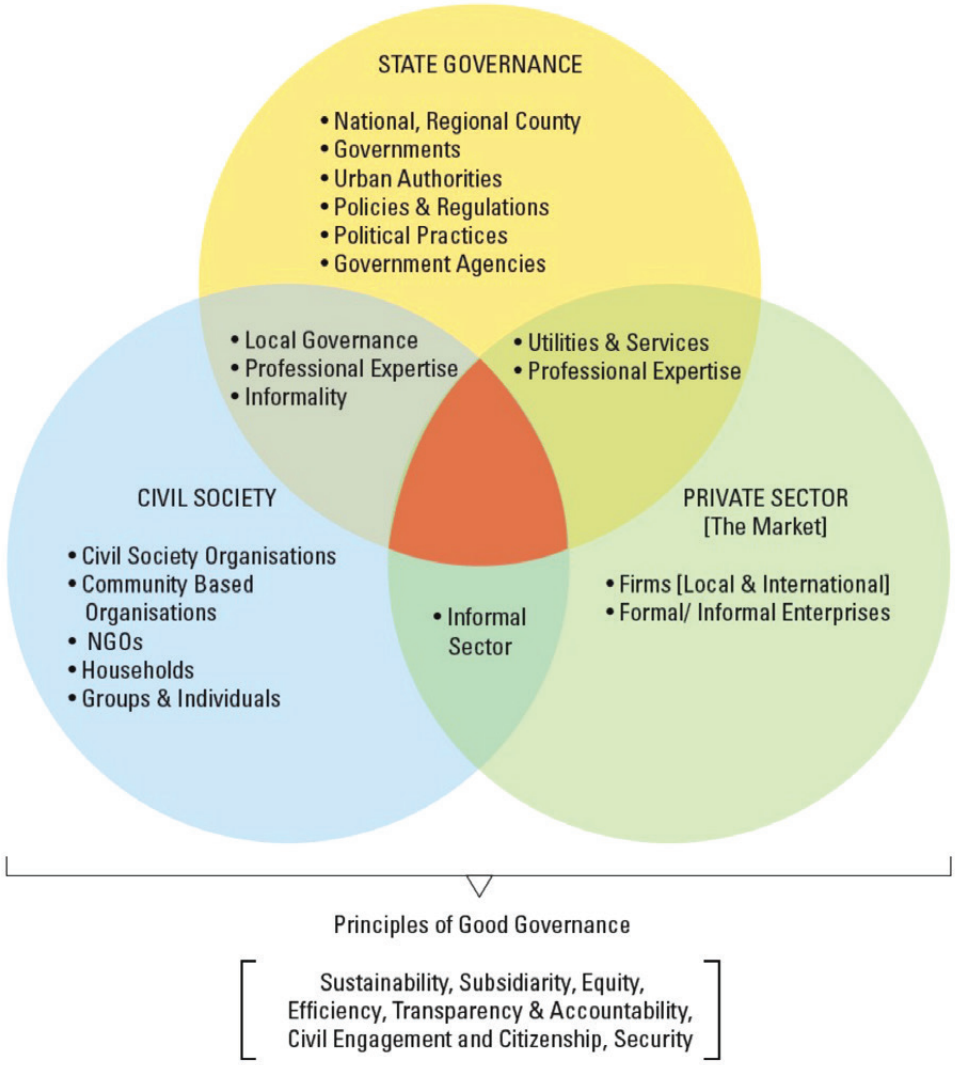
8.2.2. Current Status of Urban Boards/Town Committees

Two Municipal Boards are being established for Ngong and Kajiado Municipality. Kitengela is earmarked for upgrade to Municipal Status in the near future and therefore is still managed from Kajiado Town, the County Headquarters. The County is also completing the mapping of the municipal boundaries. This defines limits of urban activities and protects agricultural land adjoining urban areas.

8.2.3. Revenue Management in Urban Areas

One of the still unresolved challenges that faces county governments is the generation of revenues needed by municipal boards and town committees. This is both a question of the revenue source and which governing body has the right to tax the residents. It also raises the question of tax duplication. The proposal here should be viewed as one example of how the division of jurisdiction can be linked to revenue generation and the provision of services in specific geographic urban centres.

Urban Governance Network



Restructured land and Property Tax

Given that land/property based taxes, are almost universally the primary source of local government revenues around the world and given that the revenues generated generally in Kenya are currently about the equivalent of parking fees, this needs to be the primary focus for increased revenues.

Although not well designed for this task, the existing Ratings Act and Valuation Act do provide an opportunity for a more "creative" land/property tax, which is especially needed to ensure the provision of county services. It is therefore recommended that a program of land tax restructuring be based upon the following principles:

- Land/property tax is to be based both i) upon the value of the land and ii) upon property attached to (constructed on) the plot.
- The assessment for taxation will be based on two tiers i) the land valuation itself and ii) separately the value (added) of the improved property constructed upon it.

- The tax will be progressive – an increasing rate with increasing size and economic uses.
- There will be a discount rate based upon the location of the land and constructed property in relation to the proximity to CBD's/urban areas.
- Payments will be bi-monthly with a discount for full payment in advance.
- The charge will be made to the owner of the property but payable by the tenants.
- Each improved (constructed) property (even on the same "plot") will be assessed and billed separately.
- The categories of valuation of land and economic category of improved properties should be based on tax valuation zones. This would greatly simplify the procedure for keeping the valuation rolls up-to-date without the lengthy and expensive process of individual valuation of each property. (Such a change is in keeping with the existing ratings and valuation acts – see highlighted addendum).
- Implementation of this combination of taxes would optimally be based upon a digital mapping of all plots of land and constructed properties. (The cost would be recuperated almost immediately from the increased revenues).

Tax/Service Linkage – Tax Increment Financing (TIF)

Although in principle taxes (as different from fees) are not directly linked to specific services, however, the ability to increase significantly revenues in the County Governments in Kenya must be explicitly connected to an improvement in services.

This is particularly challenging given that the current level of services being provided is still not covered sufficiently by local revenues. Nonetheless, some portion of increased revenues coming from improved property tax needs to be channelled directly to improved services, especially in urban areas from which increased revenues are generated.

This form of taxation, by itself, although a good source of progressive revenues, would undoubtedly be met with a strong public outcry. Thus, despite the principle of taxes not being related to the provision of a specific service (in contrast to fees, which are a function of service provision), in this case there needs to be a clear transparent connection (though not a direct function as a fee) to improved services by location and population group.

Therefore, the mechanism most appropriate for introducing this type of taxation is Tax Increment Financing, TIF. In various cities around the world TIF programs have been successful in improving services and upgrading infrastructures. Tax increment financing was first developed as a tool in the 1970s (USA). Once a district is created, property taxes towards the general fund are frozen at a base year for a designated period of time.

As directed efforts from the public and private sector to redevelop the district increase the property values (or the newly instituted tax on improved properties), this incremental increase in tax revenue from the base level flows to a TIF designated fund to repay any initial revenue bonds and to finance any continuing projects within the district. This system of land/property taxation could be adapted to the County/Urban Municipalities revenue division. The county would continue to enjoy the revenues from the undeveloped land tax (which over time would increase as the urban centres develop) for the general budget and the municipalities could channel the revenues from the developed property tax into specific infrastructure improvements and service upgrade in the urban centres.

Operational Format

a) Undeveloped land values would be set by geographic zones or blocks based upon land values prorated at the market value per sq. metre for similar lands and their uses in a given location at a fixed rate of taxation (e.g. 1%). The mechanism being proposed here is fundamentally an outgrowth of the existing national valuation/ratings acts but is aimed at greatly simplifying the tax base valuation of the properties and the process of updating. The proposal is to create tax valuation zones or clusters of properties with similar value per square metre of land. This is based on part (a) of sec 4 of the Rating Act cap 267, zones/area rating is acceptable, it is an easier form in terms of administration, collection, updating payer's database, future valuation and harmonisation of the existing discrepancies that foster under collection.

   The tax levied on land would be the assessed value per sqm in that zone/ block (using the updated valuation roles as the base) multiplied by the fixed percent (1%-3%) multiplied by the area of the land (sqm). The landowner would pay undeveloped land tax (land value multiplied by e.g. 1%) (Assessed value for example at 20,000,000 KSH/acre = 5,000 KSH/sqm). Thus, the tax rate would be 50 KSH/sqm. For a 500-sqm plot in the highest land value town, the annual tax rate would be 25,000, which is about 2,000 KSH/month.

b) The tax levied on the constructed property would be the rate per sqm (as a function of its economic use) multiplied by the size of the building (occupied by that business) multiplied by the discount rate (100%, 90% 85% 80%) by geographic zone. For example, a 500 sqm supermarket in the CBD would pay 500sqm X 600KSH/sqm X 100% = 300,000 improved land/property tax per year = 25,000 KSH/month.

8.2.4. Challenges Facing Revenue Automation in the Counties

"Adoption by Counties of ICT systems is below par, and manual revenue collection is prevalent with its inherent risks of abuse and rent seeking.

(a) The fees payable for costs relating to system acquisition and licenses are exorbitant.

(b) Due to capacity constraints, there is no systematic and consistent use of the system - often, the system is abandoned immediately after roll out.

(c) Counties that have developed (or are developing) customised revenue management systems through private developers are not aligned to Standard Chart of Accounts (SCoA) resulting in conformity challenges.

(d) Some County Governments have developed segmented and silo-like revenue administration systems, which creates a problem of integration.

(e) Most Counties do not have Wide Area Network (WAN) which is necessary to connect all revenue collection points, including in sub-Counties. LAIFOMS, which some Counties are currently using, can only operate as a standalone system. The system is therefore not effective in a WAN setting."

Policy Recommendation for Counties - Kajiado included: "Establishment of autonomous County revenue authorities/corporation.
- Counties with potentially significant revenue, requiring only modestly complex administration (including, due to narrow concentration of the most important revenue streams, e.g. park entry fees). Annual expenses of such authorities/corporations should not exceed 2% of estimated revenue in each financial year."

CHAPTER
09

CONCLUSION AND RECOMMENDATIONS

9.1. Managing Urban Development

Kajiado is part of the rapid urbanisation of Kenya. It is located within the Nairobi Metropolitan area. Kajiado County is facing challenges of rapid growth of towns characterised by urban sprawl and the inability to match development with complementary infrastructure. Already, the County has one of the largest backlogs in infrastructure provision anywhere in the country. Notably, the County and indeed its major towns, face the urgent challenge of providing sewerage and sanitation, water supply, energy, and development of road networks.

Additionally, there are policy gaps limiting resource mobilisation that need to be addressed. The Planning Department is able to employ various tools such as zoning plans, urban integrated development plans, land use regulations and enforcement of physical planning laws. To this end, The County is in the final stages of preparing the Draft Kajiado Spatial Plan and the Draft Kitengela ISUDP, 2019 as framework documents for ensuring orderly and planned development in the county.

This is supported by land subdivision guidelines and zoning regulations already developed for the county. The county has completed validation of plots within town centres as a necessary step towards updating of the relevant development plans. Moreover, the automated development control system developed in partnership with IFC and Architectural Association of Kenya is nearing completion and will go a long way towards improving development control processes and procedures.

However, the Department and County are stifled by inadequate resources and capacity to fully discharge their mandate.

Furthermore, managing the forces of urbanisation requires a more comprehensive strategy of managing development than previously accepted in Kenya. This is all the more critical when linked to the process of devolution.

Until recently, development in Kenya was fundamentally viewed as rural. It was based upon a plot-by-plot strategy of growth. Each household gained access to a plot of land, built a home and for the most part was self-sufficient with regard to water, sewage, and waste. In a rural setting, even in concentrations of small villages, this can be a sustainable form of settlement. The scope of human activity, for the most part, can be balanced with the natural processes of environment regeneration. Similarly, there is limited infringement of one family upon the "space" of other families. Thus, the need for shared infrastructure (other than key transportation links) has been limited.

The need for managing development arises now only because of the concentration of people in a small urban area. This previously supported policies mitigating against urbanisation and encouraging continued settlement in rural communities. However, the reality of population growth and the desire for a higher standard of living and services promote a dynamic of urbanisation. The challenge now is how to channel and transform urbanisation into a dynamic for enriched growth, preventing the many ills that often characterise mass movement into cities unprepared to handle this influx.

This requires going from a tacit strategy of plot-by-plot development to a strategy of collective planning and infrastructure provision. It needs to be instituted in order to ensure proper management of the "carrying capacity" of lands that cannot absorb sewage and solid waste in urban centres without proper treatment – otherwise serious health and environmental deterioration will result. Now, as of August 2019, in Kenya this is the new mandate for county government. This entails:

- Strategic planning, spatial planning, and building permit processes
- Ensuring adequate provision and scope of infrastructure
- Enforcement of standards
- More cost-effective solutions for drinking water, sewage disposal, roads, drainage, and solid waste management
- Protection of agricultural land
- Ensuring the provision of ongoing services

This change needs to be instituted in order to ensure proper management of the "carrying capacity" of lands that cannot absorb sewage and solid waste in urban centres without proper treatment – otherwise serious health and environmental deterioration.

9.2. Formulating a Kajiado County Market Management Authority

The policy recommendations regarding the form of the "The Kajiado County Marketing Framework" will need to address:

- The functions of an integrated market management framework
- The different levels of county government both functionally and hierarchically
- The relationship between the traders, market committees, and the county
- The organisational framework

The Market Management Framework will be the primary mechanism for implementing the county's policies and objectives for managing its markets and promoting all activities necessary for their ongoing management, operation and maintenance.

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UNITED NATIONS HUMAN SETTLEMENTS PROGRAMME
P.O. Box 30030, Nairobi 00100, Kenya
unhabitat-info@un.org
www.unhabitat.org

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