



# KIKUYU

# Integrated Strategic Urban Development Plan

## A Sustainable Agro-Based Industrial and Residential Hub

### 2020 - 2030



Food and Agriculture  
Organization of the  
United Nations

# CERTIFICATION

This Plan has been prepared and published as per the requirements of the Physical and Land Use Act of 2019.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

**PLAN. PAUL CHEGE**

**Registered Physical Planner**

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

**HANNAH N. MARANGA**

**County Director of Physical and Land Use Planning**

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

**SALOME WAINAINA**

**County Executive Committee Member-Land, Housing and Physical Planning, Municipal Administration & Urban Development**

# APPROVAL

This Plan has been approved as per requirements of the Physical and Land Use Planning (Local Physical & Land Use Development Plan), Regulations, 2021 Sec 13, Urban Areas & Cities Act, 2011 (Revised 2019) and County Governments Act No. 17 of 2012.

Hansard No . \_\_\_\_\_

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

**JOHN MUTIE**

Clerk to the County Assembly

Approved Development Plan No .

**6**

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## PREFACE



I am glad to introduce Kikuyu Integrated Strategic Urban Development Plan (ISUDP) 2020-2030, which is a road map on development of Urban Area. This is the first comprehensive spatial plan for Kikuyu, and it has been prepared at a time when the County is grappling with the challenges of rapid urbanization. The recent past has seen a deterioration in the quality of our urban areas due to uncontrolled development and increasing congestion. This Integrated Strategic Development Plan gives us the tools to rectify the situation, and establish a system that will give the County the powers that it needs to direct development to the most appropriate locations and improve service delivery. Most importantly it provides a guidance into how we can make Kikuyu a more attractive and efficient town.

I am happy to note that this Plan has been prepared in a participatory manner considering the contributions of various stakeholders whose role in the implementation of the proposals as detailed in this Plan is fundamental.

Kiambu is the 3rd most urbanized County after Nairobi and Mombasa and has witnessed rapid urbanization in the last few decades with people moving in to settle, set up businesses and other development activities. Kikuyu Urban Area has witnessed rapid population growth and increased economic activities over the last ten years since the onset of the devolved government. However, most of the urbanization is happening in the peri-urban areas where barely little planning takes place. These are areas that are also characterized by piecemeal and disjointed subdivision coupled with a haphazard conversion of agricultural land that consistently distorts urban planning processes. In addition, due to an absence of a local ISUDP to guide and manage this sprawl, the Urban Area is suffering from uncoordinated growth, land-use conflicts, inadequate basic infrastructure facilities and services, poor housing, and loss of rich agricultural land, amongst other challenges.

In order to cope with this scenario, the County therefore is expected to commit resources to guide and manage urbanization and growth in a more efficient manner. The increased population needs to be accommodated in a suitable environment, with ease of movement, adequate physical and social infrastructure, and employment opportunities. This Plan is prepared within Kenya's global commitments for sustainable development, and existing policy and legal framework which includes inter-alia, Kenya's Vision 2030, Constitution of Kenya (2010), County Governments Act (2012), Urban Areas and Cities Act (2011), the Physical and Land Use Planning Act, 2019, and other applicable statutes which form the

legislative framework within which the County will be able to implement this ISUDP. It, therefore, gives the County the necessary tools to address current development challenges.

The Plan has taken into cognizance the many opportunities and resource potentials that the Kikuyu Urban Area has and needs to exploit when addressing its development needs while ensuring that resources are sustainably utilized. Implementation of the Plan will therefore enable the County to not only improve service delivery but also direct development to the most appropriate locations. Sectoral programmes and projects form key components of the Plan, whose objective is to ensure integration and coordination of development priorities.

Institutionalizing the County Planning Unit (CPU) as provided under Clause 105 of the County Government Act (2012), will ensure consistency across the entire planning and implementation cycles. In the end, sectoral strategies will be implemented within a spatial framework and, in turn, reflect the socio-economic analysis across the entire Urban Area. The Plan has also identified several action areas and quick-win projects, which are to be implemented within the first year of the project cycle, hence ensuring fast-tracking of the implementation of the identified priorities and set the pace for realization of the medium and long-term projects.

My administration acknowledges with appreciation the support of the World Bank in the preparation of this Plan. I commend the National Government through the Ministry of Transport, Infrastructure, Public Works, Housing and Urban Development; Directorate of Nairobi Metropolitan Development for providing technical and supervisory roles leading to the completion of this Plan. I also appreciate the efforts of other stakeholders, including professional bodies; resident associations; the business community; community-based organizations; and the *wananchi*, for their engagement and valuable inputs during various stages of the preparation of the plan. My government pledges to ensure during implementation of this Plan, the involvement of and collaboration with all stakeholders to achieve its full realization. It is hoped that the implementation of the Plan will produce positive changes and improvements in our peoples' lives.

I welcome all to support this noble course in realizing the vision of this Plan, and hereby commit myself to ensure funding for its implementation.



**H.E. Dr. Kimani Wamatangi**  
Governor, Kiambu County

## FOREWORD



Kikuyu Integrated Strategic Urban Development Plan (ISUDP) is a ten-year geographical information-based database system plan that will guide the spatial development of Kikuyu Urban Area from 2024 to 2034. This development blueprint is a statutory requirement, as outlined in Section 111 of the County Governments Act, 2012(CGA).

Section 36 (1) of Urban Areas and Cities Act (UACA) further states that an ISUDP shall be basis for development control; preparation of environmental management plans; preparation of valuation rolls for property taxation; provision of physical and social infrastructure and transportation; preparation of annual strategic plans for an urban area; disaster preparedness and response; and overall delivery of service including provision of water, electricity, health, telecommunications and solid waste management.

The ISUDP is a tool for efficiently controlling and managing the use of space over the next ten years in a sustainable manner. The Plan will serve as a base for all future physical development plans within the urban area. The Plan also aims to help coordinate implementation of sectoral projects and programs, especially to reduce wastage of scarce resources and to avoid the duplication of efforts.

This ISUDP forms part of the Nairobi Municipal Services Improvement Programme (NaMSIP) which is a World Bank funded project. The Kikuyu Integrated Strategic Urban Development Plan reflects the desired spatial form for Kikuyu and the preferred land use zoning within the 2020-2030 plan period.

The desired patterns of land use have been synchronized to other existing regional, national and other county plans. Indeed, the plan reflects the objectives and aspirations of the County as outlined in the County Integrated Development Plan (CIDP) for the said period.

The ISUDP provides strategies for conservation, use and management of natural resources. In addition, the spatial structure of the population, existing infrastructure, economic activities and human settlements have been mapped.

Similarly, the challenges and opportunities for tapping into these resources have been identified. I also take note that the Plan has identified areas where priority strategic intervention and funding is required. Equally important, the Plan has considered the rights of all special groups within the County within the constitutional requirements for participatory planning and development.

The preparation of this Integrated Strategic Urban Development Plan was carried out through a participatory process as per the requirements of the County Governments Act 2012 as well as the Physical and Land Use Planning Act, 2019. The process involved representation from the general public, the County Government and National Government stakeholders as well as with consultation with special interest groups.

I believe that this Plan will be an important pillar in stimulating agricultural production, infrastructural investment and social-economic development in Kikuyu towards the desired Vision. I am further confident that this plan will become an important guide for investments for the County. I therefore take this opportunity to appeal to the people of Kikuyu to participate in the implementation of this Plan as part of the County transformation agenda towards improved livelihoods.



**SALOME WAINAINA**

**County Executive Committee Member-Land, Housing and Physical Planning, Municipal Administration & Urban Development**

## ACKNOWLEDGEMENTS



The preparation of the Kikuyu ISUDP is a milestone in the Physical Planning Department, and I would like to express my gratitude to everyone who was instrumental in making this assignment a success. Thanks to His Excellency the Governor of Kiambu, Hon. Dr. Kimani Wamatangi for his support in the preparation and approval of this Plan. My gratitude also goes to the Kiambu County Assembly for their leadership in overseeing and adopting this Plan which will guide the planning and development of Kikuyu Urban Area.

I would like to acknowledge efforts of staff of the Ministry of Transport, infrastructure, Housing, Urban Development and Public Works (MoTIHUD & PW), the State Department for Housing and Urban Development and the Nairobi Metropolitan Services Improvement Project- NaMSIP (under the Department of Metropolitan Development) for supervising, and supporting the entire preparation of this Plan. Special thanks go to the NaMSIP Project Coordinator, Engineer Benjamin Njenga, Planner Ann Mugo (Project Supervisor), as well as Planner Esther Muthoni, Planner Mutisya Mutua, Engineer Anthony Moire, Alex Maroko, Kevin Onjiko Kevin Gitau, Michael Ibabu, Mercy Kirema and Kelvin Ruto.

I also wish to acknowledge the team from Kiambu County's Physical Planning Department who include Martin Kang'iri( Chief Officer); Hannah Maranga (County Director Physical and Land Use Planning), Jane Mwaniki(Director Urban Development), Nicholas Waweru (Deputy Director Urban Development), Deputy Directors Physical and Land Use Planning:- Dennis Abuya and Salome Ng'igi, Assistant Directors Physical and Land Use Planning:- Charles Mugambi, James Ndung'u and Daniel Murage, Eric Matata (Assistant Director Municipal Administration), Physical Planners:- Christine Kamau, Charles Mwangi, Judith Nyamongo, Rehema Nyabuga, Stephen Njiraini, Wallace Mochu, Peter Mwenga, Eston Kibutu, George Maina, Hilda Mwai, Christine Njeru, Beth Njoroge, Alex Waweru, Rachael Gachara, Onesmus Ng'ang'a, Evelyn Kanana, Martin Kung'u; Sharon Gitahi, Francis Ndugo, Alex Gitau, and Daniel Waweru; Cartographer Lucy Muiruri, Surveyors Jennifer Mueni, Hellen Gathiani and Carlos Gikonyo and Deborah Biwott.

The County Government of Kiambu is grateful to VisionRI and Urban Lines Consultants led by Arch./Plan. Requito Bellosillo (Team Leader), Plan. Paul G. Chege (Deputy Team Leader, Cluster Planning Team members which include Plan. Alice Menya, Plan. David Gatimu, Ephraim Njogu, Mark Nyamu, Mr. Jitender Pal Singh Economist/Business Analyst, and Joan Watetu who worked together with Kiambu's Department of Planning to prepare this Plan. The Plan's preparation was supported by thematic experts including; Dr Joseph K. Kurauka and Evelyn Amile (Environmentalists); Dr Luke Obala and Abigail Gacheru (Land

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We also express profound gratitude to the Food and Agriculture Organization of the United Nations (FAO) and the European Union (EU) for generous financial and technical support. Special Thanks to Mr. Josphat Kariuki for mobilizing and coordinating support from the Digital Land Governance Programme (DLGP).

Finally, I wish to thank the people of Kikuyu for sharing their proposals during the county-level stakeholders' workshops. It was their contributions that shaped this Integrated Strategic Urban Development Plan (ISUDP).



**HANNAH N. MARANGA**

**County Director of Physical and Land Use Planning**

## EXECUTIVE SUMMARY

The Kikuyu Integrated Strategic Urban Development Plan (K-ISUDP) has been prepared as part of the Nairobi Metropolitan Services Improvement Project (NaMSIP). The plan was prepared within the framework of Kenya Constitution 2010, County Government Act 2012, Urban Areas and Cities Act 2011 and the Physical and Land Use Planning Act 2019, among others. The plan is guided by Kenya Vision 2030, National Spatial Plan 2015-2045, National Land Use Policy 2018, and the National Land Policy 2009. The plan has been prepared by a consortium of VisionRI and Urban Lines Consultant.

Kikuyu is one of the indigenous towns that grew from the settlement of the colonialist missionaries. The presence of a Railway Station played a key role in the growth of the town. Kikuyu Urban Area has an area of approximately 17,149.35 hectares. The purpose of the plan is to define the vision and spatial structure of development of Kikuyu over the next 10 years. The plan has been prepared as a broader initiative for improving the welfare of the people through addressing key urban development issues such as: infrastructure provision, resolving land use conflicts, promoting efficiency in movement and public health, amongst others. This is achieved by creating more convenient, efficient, sustainable and attractive places for present and future generations.

The key objectives of the Plan are to: clarify the boundaries of the planning area to facilitate effective development control; analyse demographic changes and its impact on service provision; identify development constraints, potentials and challenges of the planning area (social, economic, infrastructure and environmental profiling) and provide strategies to address them; identify environmental issues and propose strategies for effective environmental management including, amongst others, climate change adaptation and disaster risk reduction and management measures; allocate sufficient space for various land uses, including recreation and open spaces, to ensure efficient function and convenience of users and accommodate future growth. The Plan conforms with and is informed by national aspirations, physical planning statutes and strategic directions provided by Vision 2030 and the National Spatial Plan (NSP).

The ISUDP was prepared in a participatory process bringing together all actors, including the local community, Kiambu County Government, and NaMSIP. The planning process began with the notice of intention to plan, inception workshops, reconnaissance survey, delimitation of planning boundaries and base map preparations. The planning team used both secondary and primary data for the planning process. Consultative meetings and workshops with all stakeholders were held for purposes of visioning, validation of situational analysis, presentation of draft plans and validation of the same. Two approaches were adopted (integrated and strategic) in the Plan's preparation: The integrated approach included metropolitan-wide studies that contextualised the planning area's environmental setting, transportation linkages and functional role in the Nairobi Metropolitan Region (NMR), in particular, and Kenya, in general. The second was strategic approach was applied to several aspects of the Plan. First was in determining the functional role of the planning area within the NMR and the key requirements to ensure the realisation of this. The strategic approach was also characterised by determining key interventions that would yield the most benefits such

as by putting forward transit-oriented development proposals to improve the efficiency of land use as well as the viability of transportation systems.

The Plan identified the main constraints to sustainable development in the Urban Area to include inefficient land use planning and implementation mainly as a result of the weak institutional framework, and mismanagement of available natural resources as well as rural-urban disconnection. This has resulted in uncontrolled growth within the planning area. To address these development challenges, the Plan provides for a balanced and controlled development across the entire Urban Area. The Plan also identified that the Urban Area requires huge investments in social facilities such as schools, health, and recreation, amongst others. However, due to a shortage of public land, there is a need for the County to apply planning and innovative approaches to ensure the availability of land for these facilities. It was also established that the planning area is an important agriculture, trade and residential hub, and lies along a key transport corridor A102 Naivasha -Nakuru Highway, and a destination for Southern and Northern By -Pass. The planning area's strategic location provides opportunities for improving the agricultural sector through increased production, land productivity and value addition strategies including modernising farming, investment in high value crops, and developing infrastructure to support agro-industries, as well as residential hub for the greater NMR Region.

Guided by the planning area's social, physical and economic analysis, a vision for the area; "A Sustainable Agro-Based Industrial and Residential Hub", was developed during the envisioning workshop.

The vision enabled the development of various strategies namely: Economic Activities Strategies: Which the main goal is to achieve a vibrant, resilient, highly productive and diverse economy to unlock the potential of Kikuyu. Through Agriculture, Jua Kali, small scale trade, Industry. Also ensure the reduction of disparities between the core (urban nodes) and the periphery (rural areas) through functional and physical rural urban area linkages. The economic regeneration strategy uses agricultural development as the basis upon which the planning area is to grow. The plan identifies protection of key agricultural lands, enhancement of agricultural production, and value addition targeting agricultural produce. To this end, the plan proposes the setting up of agro-industrial zones and various processing industries for fruits, vegetables, and dairy.

Transportation strategies support achievement of the vision through identification of key rural roads for opening up and upgrading so as to enhance linkages and facilitated access to markets. Provision of transit-oriented development centred on important transit hubs like bus terminals and railway stations by creating compact, walkable, pedestrian-oriented, mixed-use communities; To ensure ease in movement hence reduced travel time; To decongest the roads especially within Kikuyu CBD; To optimise the railway line traversing Kikuyu CBD for mass transit; To promote an efficient public transport system for Kikuyu; and To promote active transport.

The Environmental Strategy will focus on conservation of riparian zones and areas of steep slopes by restricting development in such areas, embracing conservation agriculture and farm forestry on slopes beyond 25%. Climate Change: Improve the ability of people and communities to cope with climate change impacts such as floods and drought; Increase crop productivity through improved irrigation; and Disaster

Reduction Strategies: To promote linkages between disaster risk management and sustainable development for the reduction of vulnerability to hazards and disasters; To mobilise resources, including the establishment of specific funds for disaster risk reduction strategies and programmes; and To promote mass sensitisation and awareness creation on disaster management.

Residential Development Strategies: Encourage private sector investments in affordable housing through public-private participation arrangements; Promote research on the development of low-cost housing materials and construction techniques and many more.

Finally, a Capital Investment Plan has been prepared to address short, medium- and long-term capital investments. A robust monitoring and evaluation process has also been proposed to ensure the intended objectives of this Plan are met.

The Integrated Strategic Urban Development Plan (K-ISUDP) is structured in Nineteen Chapters.

Chapter one which presents the background covers the purpose of the plan, planning challenges in the planning area, objectives, scope, deliverables of the plan, and the organizational structure that presents the plan

Chapter two presents planning context which describes the National, Regional and Local context, the policy and legal framework guiding the K-ISUDP process. It provides linkages to other relevant plans i.e., CIP and previous planning interventions in the planning area and explains the methodology and approach employed in preparing the K-ISUDP.

Chapter three discusses the physiographic characteristics of Kikuyu with focus on terrain, slope, geology, soils, hydrology, vegetation, and how they affect development:

Chapter four discusses the population and demographic characteristics of the planning area; focusing on population size and structure, population projections, morbidity and mortality, poverty levels as well as employment data for the planning area.

Chapter five analyses the land uses in the planning area, land tenure details, land administration arrangements as well as land suitability analysis for the planning area.

Chapter six analyses the environment with focus on key natural resources found in the planning area, as well as environmentally fragile areas within the area. The chapter also looks at environmental challenges related to waste management, as well as climate change.

Chapter seven analyses housing and human settlements within the planning area, with focus on settlement patterns for rural and urban areas, housing typologies, housing demand, as well as housing materials used with the planning area.

Chapter eight analyses the physical infrastructure systems within the planning area, with focus on transportation infrastructure, water and sanitation supply infrastructure, waste management infrastructure, energy as well as communication infrastructure within the planning area.

Chapter nine analyses the social infrastructure, looking at education facilities (primary, secondary and tertiary), health facilities, recreation, administrative, as well as religious facilities.

Chapter ten analyses the economic characteristics of the planning area, looking at key economic drivers (agriculture, industries, trade and commerce, mining, among others)

Chapter eleven analyses the governance and administrative framework that is relevant for the implementation of this plan, and what is required for effective implementation of the plan.

Chapter twelve synthesizes all the issues discussed with the aim of laying the framework for the plan formulation process.

Chapter thirteen analyses the different scenarios for achieving the vision of the plan, looking at nil intervention scenario against scenarios for economic development, green growth as well as integrated approach to development.

Chapter Fourteen presents the spatial development propels in the form of a structure plan, presenting the different land use options recommended for attainment of the vision. It also presents the zoning plans to guide the spatial development proposals outlined in the structure plan. It also presents action plans within the structure plan.

Chapter fifteen and Sixteen highlights the different strategies for achieving the preferred scenario.

Chapter seventeen presents the implementation plan, outlining the actions, the actors and the time frames for implementing the different strategies. It also presents a capital investment plan outlining the cost implications for implementing the plan.

Chapter Eighteen presents the Monitoring, Evaluation and Reporting, outlining the projects, targets, indicators, actors and time frame.

# CONTENTS

CERTIFICATION .....	i
APPROVAL .....	ii
PREFACE .....	iii
FOREWORD .....	v
ACKNOWLEDGEMENTS.....	vii
Executive Summary.....	ix
List of Tables.....	xx
List of Figures .....	xxii
List of Maps.....	xxiv
Abbreviations and Acronyms .....	xxv
<b>1 Introduction .....</b>	<b>2</b>
1.1 Background.....	2
1.2 ISUDP Concept.....	2
1.3 Purpose of the Plan.....	3
1.4 Specific Planning Challenges.....	3
1.5 Objectives of the Plan .....	3
1.6 Goals of the Plan .....	4
1.6.1 Geographical Scope .....	4
1.6.2 Scope of Planning Tasks .....	4
1.7 Outputs/Deliverables of the Plan .....	5
1.8 Vision and Mission of the Plan .....	5
1.9 Methodology.....	6
1.9.1 Preparatory.....	6
1.9.2 Sensitisation .....	7
1.9.3 Data Collection .....	7
1.9.4 Plan Formulation .....	8
1.9.5 Plan Approval.....	9
<b>2 Planning Context .....</b>	<b>10</b>
2.1 Historical Development of The Town.....	10
2.2 Geographic Location and Size .....	10
2.3 Administrative Units .....	10
2.4 Legislative Context.....	14
2.4.1 2.4.1 National Laws .....	14
2.4.2 County Laws.....	19
2.4.3 Other Related Legislation .....	20
2.5 Policy Context.....	22
2.5.1 Global Policies.....	22
2.5.2 National Policies .....	23

2.5.3	2.5.3 Other relevant policies.....	24
2.5.4	Institutional Planning Framework.....	25
2.5.5	2.5.5 Cross-Cutting Stakeholders.....	27
2.6	Planning Policy Linkages.....	31
2.6.1	National Spatial Plan.....	31
2.7	Regional Policies.....	32
2.7.1	Nairobi Metro 2030.....	32
2.7.2	Spatial Planning Concept for NMR.....	32
2.8	County Policies.....	35
2.8.1	2.8.1 Kiambu County Spatial Plan,.....	35
2.8.2	Kiambu County Integrated Development Plan, 2023-2027.....	36
2.8.3	Kikuyu Development Plan, 1974.....	37
2.9	Cluster Potential.....	37
<b>3</b>	<b>Physiographic Characteristics.....</b>	<b>42</b>
3.1	Overview.....	42
3.2	Base map.....	42
3.3	Topography and Landforms.....	42
3.4	Geology & Soils.....	42
3.5	Drainage and Hydrology.....	45
3.6	Flora and Fauna.....	45
3.6.1	Flora.....	45
3.6.2	Fauna.....	45
3.7	Climatic Conditions.....	48
3.7.1	Rainfall.....	48
3.7.2	Average Winds.....	48
3.7.3	Evaporation.....	48
3.7.4	Relative Humidity.....	49
3.7.5	Temperature.....	49
3.8	Air Quality.....	49
3.9	Noise Levels.....	50
3.10	Key Planning Issues.....	50
<b>4</b>	<b>Environment, Climate Change and Disaster Risk Reduction.....</b>	<b>52</b>
4.1	Overview.....	52
4.2	Natural Environment, Climate Change and Disaster Reduction.....	52
4.2.1	Land.....	52
4.2.2	Water Resource.....	52
4.2.3	Forests and Vegetation.....	52
4.2.4	Environmentally Sensitive Areas.....	52
4.2.5	Greenery and open spaces.....	53

4.2.6	Adaptation to Climate Change .....	55
4.3	Disaster Incidents.....	55
4.3.1	Disaster Risk Reduction and Management .....	55
4.3.2	Analysis of Disaster Risk Reduction (DRR).....	56
4.3.3	Emerging Environmental Issues .....	57
4.3.4	Key Planning Issues .....	58
<b>5</b>	<b>Population and Demography .....</b>	<b>58</b>
5.1	Population Size .....	58
5.1.1	Population Distribution and Density .....	58
5.1.2	Population structure .....	59
5.1.3	Population Projections .....	62
5.2	Demography.....	63
5.2.1	Fertility and Birth Rates .....	63
5.2.2	Fertility rate .....	64
5.2.3	Migration Trends .....	64
5.2.4	Death rate .....	65
5.2.5	Life expectancy .....	65
5.2.6	Age-sex ratio .....	65
5.3	Social Analysis.....	65
5.3.1	Culture and Heritage .....	66
5.3.2	5.3.2 Religion.....	66
5.3.3	5.3.3 Marginalized and the Minority Groups.....	66
5.4	Key Planning Issues .....	66
<b>6</b>	<b>Land Analysis .....</b>	<b>67</b>
6.1	Overview.....	67
6.2	Land Ownership and Tenure System .....	67
6.3	Land Administration and Management.....	67
6.3.1	Land Administration and Management Challenges.....	70
6.4	Land Use Patterns and Trend Analysis .....	71
6.4.1	The existing land use pattern and inventory .....	73
6.5	Land Availability and Suitability.....	74
6.6	Land Values/Market .....	77
6.7	Key Planning Highlights .....	77
<b>7</b>	<b>Urban Development and Human Settlements .....</b>	<b>78</b>
7.1	Overview of Urbanisation .....	78
7.1.1	Overall Structure of the Planning Area.....	78
7.2	Hierarchy of Existing Urban Centres and their Functions .....	78
7.3	Nodes and Corridors.....	79
7.3.1	Activity Nodes .....	79

7.3.2	Cross Spines .....	79
7.4	Urban-Rural Linkages .....	79
7.5	Formal Settlements .....	79
7.6	Informal Settlements .....	79
7.6.1	7.6.1 Muthiga Informal Settlement .....	81
7.6.2	7.6.2 Kiamburi Informal Settlement .....	81
7.7	7.7 Housing .....	81
7.7.1	7.7.1 Introduction.....	81
7.7.2	7.7.2 Building Materials & Construction Sub-sector.....	81
7.7.3	Housing Tenure and Typology .....	84
7.7.4	Housing Stock and Projections.....	86
7.8	Key Planning Issues .....	86
<b>8</b>	<b>Physical Infrastructure.....</b>	<b>87</b>
8.1	Overview.....	87
8.2	Transportation .....	87
8.2.1	Regional and National Interconnectivity .....	87
8.2.2	Interconnectivity and Intra-Connectivity .....	87
8.2.3	Trip Generation.....	92
8.2.4	Modal Split.....	92
8.2.5	Means of Transport .....	92
8.2.6	Travel Demand.....	95
8.2.7	Parking.....	96
8.2.8	Planned and On-going Projects.....	96
8.2.9	Railway Development .....	98
8.3	Water .....	99
8.3.1	Main Sources of Water .....	99
8.3.2	Water Supply and Coverage .....	102
8.3.3	Demand and Volumes Produced.....	102
8.4	Waste Management .....	102
8.4.1	Solid Waste Management .....	102
8.4.2	Liquid Waste Management .....	104
8.5	Storm Water Management.....	106
8.5.1	Storm Water Drainage Systems .....	106
8.6	Energy Infrastructure .....	106
8.6.1	Sources of Energy .....	107
8.7	Information and Communications Technology (ICT) .....	108
8.8	Key Planning Issues .....	108
<b>9</b>	<b>Social Infrastructure.....</b>	<b>109</b>
9.1	Education Facilities .....	109

9.1.1	Early Childhood Development Education (ECDE) Facilities .....	111
9.1.2	9.1.2 Primary School Facilities.....	112
9.1.3	Public Secondary Schools.....	112
9.1.4	Adult Education Centres.....	113
9.1.5	Universities, Colleges and Research Institutions .....	113
9.2	Health Facilities .....	114
9.2.1	Projections and Needs .....	114
9.3	Social Facilities and Amenities.....	117
9.3.1	Urban Safety.....	117
9.3.2	Community Amenities.....	117
9.3.3	Religious Facilities .....	120
9.3.4	Fire Stations.....	120
9.3.5	Cemeteries.....	121
9.4	Key Planning Issues .....	121
<b>10</b>	<b>Economic Analysis .....</b>	<b>122</b>
10.1	Overview.....	122
10.2	Local Economy .....	122
10.3	Agriculture .....	123
10.3.1	Types of Agricultural activities .....	125
10.3.2	Food Security .....	126
10.4	Commerce.....	128
10.4.1	Cooperative Societies.....	128
10.4.2	Small and Medium Enterprises (SMEs) .....	128
10.5	Industry .....	128
10.5.1	Availability of Raw Materials .....	129
10.5.2	Support Services.....	129
10.6	Tourism and Hospitality.....	130
10.7	10.7 Mining Activities.....	131
10.8	10.8 Key Planning Issues .....	131
<b>11</b>	<b>Governance and STAKEHOLDER Participation .....</b>	<b>133</b>
11.1	Introduction.....	133
11.2	Institutional and Governance Framework.....	133
11.2.1	National Government.....	133
11.2.2	County Government.....	134
11.2.3	Municipal Board.....	135
11.3	Legal framework.....	135
11.4	Mechanisms of Citizen Participation.....	136
11.4.1	Citizen engagement as per the County Governments Act 2012.....	136
11.4.2	Citizen Forums as per the Urban Areas and Cities Act (UACA) 2011.....	137

11.4.3	Residents and Neighbourhood Associations .....	138
11.5	Stakeholders Profiling .....	138
11.6	Key Planning Issues .....	140
<b>12</b>	<b>Synthesis Of Planning Issues.....</b>	<b>141</b>
12.1	Overview.....	141
12.2	Strategic Development Directions .....	141
12.3	Summary of Key Planning Issues .....	144
12.4	1 Development Challenges and Opportunities.....	146
12.4.1	Development Challenges and Gaps.....	146
12.4.2	12.4.2 Opportunity Map Analysis.....	146
<b>13</b>	<b>Scenario Building and Conceptual Framework .....</b>	<b>152</b>
13.1	Vision, Mission and Goal.....	152
13.2	Alternative Development Models.....	152
13.2.1	Nil Scenario.....	152
13.2.2	Multi Nodal T.O.D Model .....	153
13.2.3	Core-Periphery Model.....	154
13.2.4	Evaluation of Alternative Models .....	155
13.2.5	Preferred Model .....	157
<b>14</b>	<b>Physical Development Plan .....</b>	<b>162</b>
14.1	Land Use Plan.....	162
14.1.1	Land Requirements .....	162
14.2	Delineation of CBD.....	164
14.3	Land Use Zoning.....	164
14.3.1	14.3.1 Detailed Land Use Zoning.....	164
14.4	Action Plans.....	200
14.4.1	14.4.1 Kikuyu CBD Core Action Plan .....	200
14.4.2	14.4.2 Kikuyu CBD Situation Analysis .....	200
14.4.3	Planned and On-Going Projects by NaMSIP in Kikuyu CBD .....	202
14.4.4	Challenges being anticipated from the above-mentioned projects .....	208
14.4.5	Planning Interventions to Decongest Kikuyu CBD .....	208
14.4.6	Project Impacts .....	212
<b>15</b>	<b>Sectoral Strategies and Measures.....</b>	<b>222</b>
15.1	Detailed Residential Development Strategy.....	222
15.1.1	Housing and Informal Settlements Upgrading .....	222
15.2	Detailed Transportation Strategies.....	222
15.2.1	Multi-modal Transport Strategies.....	222
15.3	Detailed Environmental Strategies .....	233
15.3.1	Natural Resources and Environment.....	233
15.3.2	Climate Change Strategies .....	234

15.3.3	Disaster Risk Reduction Strategies .....	235
15.4	Detailed Social Facilities Strategies .....	238
15.4.1	Social Infrastructure.....	238
15.5	Detailed Physical Infrastructure Strategies.....	239
15.5.1	Physical Infrastructure Strategies .....	239
15.6	Detailed Economic Activities Strategies.....	240
15.6.1	Economy.....	240
15.6.2	Urban and Rural Land Development.....	241
15.7	Detailed Revenue Enhancement Strategy .....	242
<b>16</b>	<b>Integration of Strategic Environmental and Social Assessment.....</b>	<b>245</b>
<b>17</b>	<b>Plan Implementation and Capital Investment .....</b>	<b>253</b>
17.1	Introduction.....	253
17.2	Role of the County Planning Unit (CPU).....	253
17.3	Plan Implementation at Decentralised Units .....	253
17.4	Priority Programmes Framework .....	254
17.4.1	Core Pillars of Framework.....	254
17.4.2	17.4.2 Institutional and Human Resource Capacity Building.....	257
17.4.3	17.4.3 Human Resource Framework .....	257
17.4.4	Public/Community Participation Framework .....	260
17.5	Quick Win Projects .....	260
17.6	The Priority Sectoral Programmes and Projects .....	262
17.7	Proposed Capital Investment Financing.....	281
<b>18</b>	<b>Monitoring, Evaluation and Reporting.....</b>	<b>282</b>
18.1	Procedure for Monitoring and Evaluation.....	282
18.2	Existing M&E Situation.....	283
18.3	Suggested M&E Proposals .....	283
18.4	Institutionalisation of M & E .....	285
	<b>Conclusions .....</b>	<b>286</b>
	<b>References.....</b>	<b>288</b>
	Appendices 1.1: Notice of Intention to Plan .....	292
	Appendices 1.2: Notice of Completion.....	292
	Appendix 1.3: Gazette Notice .....	293

## LIST OF TABLES

Table 1-1: Wards & Sub-locations covered by the Kikuyu ISUDP .....	4
Table 2-1: Administrative and Political Units .....	14
Table 2-2: Additional legal provisions .....	20
Table 2-3: Other Sectorial Laws.....	21
Table 2-4: Other Relevant Policies .....	24
Table 2-5: Roles and responsibilities .....	27
Table 2-6: Key Sectoral Agencies .....	28
Table 2-7: Relevant National Spatial Plan Strategies.....	31
Table 2-8: Economic targets for Urban Centres .....	33
Table 2-9: Proposed Settlement Hierarchy for NMR, 2030.....	34
Table 2-10: Relevant Strategies in Kiambu County Spatial Plan .....	35
Table 2-11: Relevant CIDP Strategies.....	36
Table 2-12: Assessment for adopting Cluster-based Planning Strategy.....	39
Table 3-1: Key planning issues on physiographic characteristics.....	50
Table 4-1: SWOT Analysis of Disaster Management and Resilience .....	56
Table 4-2: Key planning issues on the Environment, Climate Change, and Disaster Risks.....	58
Table 5-1: Historical Growth of Population.....	58
Table 5-2: Population Density by Ward .....	59
Table 5-3: Population Structure of Kikuyu in 2019 .....	62
Table 5-4: Projected Population, 2019 to 2034 .....	63
Table 5-5: Demography .....	63
Table 5-6: Crude Birth Rate and Total Fertility Rate, Kiambu County.....	64
Table 5-7: Key planning issues on population and demography .....	66
Table 6-1: Land Administration and Management Actors.....	68
Table 6-2: Land Use Inventory .....	73
Table 6-3: key planning issues on land administration and management .....	77
Table 7-1: Hierarchy of existing centres .....	78
Table 7-2: Sources of Selected Building Materials.....	82

Table 7-3: Distribution by Mode of Tenure-ship.....	84
Table 7-4: Distribution of Rented/Provided Households.....	85
Table 7-5: Distribution of Owned Households by Mode of Acquisition .....	85
Table 7-6: Housing Stock and Projections into 2034 .....	86
Table 7-7: Key Planning Issues on Housing.....	86
Table 8-1: Main roads in Kikuyu .....	89
Table 8-2: Transport mode shares under three scenarios .....	95
Table 8-3: On-going and proposed projects of the Department of Roads, Public Works and Utilities .....	97
Table 8-4: Population growth and the amount of solid waste generated .....	104
Table 8-5: Wastewater projections Kikuyu Urban Area .....	105
Table 8-6: Key planning issues on physical infrastructure.....	108
Table 9-1: Nursery Schools Projections .....	111
Table 9-2: Primary Schools Projections.....	112
Table 9-3: Secondary Schools Projections.....	112
Table 9-4: TVETs in Kikuyu Urban Area.....	113
Table 9-5: Summary of Health Facilities.....	114
Table 9-6: Projection on Number of Health Facilities .....	117
Table 9-7: Police Station Requirements .....	117
Table 9-8: Projection on Recreational Needs.....	120
Table 9-9: Projections and needs of firefighting stations .....	120
Table 9-10: Key planning issues on social infrastructure.....	121
Table 10-1: Distribution of agricultural land by type of farming.....	125
Table 10-2: Distribution of Households Rearing Livestock and Fish .....	125
Table 10-3: Distribution of Types of Crops Grown by Households (in Tonnes).....	126
Table 10-4: Number of Cooperative Societies by Type and Membership Size.....	128
Table 10-5: Key planning issues on the Local Economy .....	131
Table 11-1: Stakeholders Profiling .....	138
Table 11-2: Stakeholders Concerns .....	139
Table 11-3: key planning issues on governance and Stakeholders Participation.....	140
Table 13-1: Evaluation of Alternative models.....	156

Table 14-1: Kikuyu Land Use Distribution.....	163
Table 14-19: Objectives proposed to mitigate the existing spatial challenges in Kikuyu. ....	200
Table 14-20: Project Impacts.....	212
Table 15-1: Transport Implementation Guidelines - Designing safe and accessible roads for everyone ..	225
Table 16-1: Summary of impacts, mitigation measures and interventions .....	246
Table 17-2: Quick Win Projects and Strategies .....	260
Table 17-3: Proposed Budget for CBD and Ondiri Swamp .....	262
Table 17-4: Implementation Schedule for priority programmes and projects in Kikuyu.....	263
Table 18-1: Physical Planning Indicators/Outcomes .....	284

## LIST OF FIGURES

Figure 2-1: Institutional linkages between National and County Government stakeholders .....	26
Figure 2-2: Kikuyu Sub County Administrative Structure .....	30
Figure 3-1: Average Rainfall in Kikuyu.....	48
Figure 3-2: Temperature range in Kikuyu .....	49
Figure 5-1: Kikuyu's Population Structure .....	60
Figure 6-1: Section of Kikuyu CBD Source: Field Survey 2024 .....	72
Figure 6-2: Expanding the Urban Corridor in Dagoretti - Thogoto Road Source: Field Survey 2024.....	73
Figure 7-1: Roof Materials in Kikuyu Urban Area .....	82
Figure 7-2: Wall Materials in Kikuyu Urban Area.....	83
Figure 7-3: Type of Floor Material .....	84
Figure 8-1: State of some roads .....	90
Figure 8-2: Chart showing modal in Kikuyu town .....	92
Figure 8-3: Footpaths in Kikuyu.....	93
Figure 8-4: Images showing public transport in Kikuyu .....	94
Figure 8-5: Old Uganda Kikuyu Railway line .....	95
Figure 8-6: Proposed Rail Network from Nairobi to Limuru .....	100
Figure 8-7: Proposed Transport Network for NMR, 2030 .....	101
Figure 8-9: Source of Lighting Energy .....	107
Figure 8-10: Types of Fuel used for Cooking.....	108
Figure 9-1: Education Facilities Source: Based on KNBS, 2019 Census Report.....	110
Figure 9-2: Highest Level of Education Completed Source: Based on KNBS, 2019 Census Report.....	110
Figure 9-3: School Enrolment Status .....	110
Figure 9-4: School Attendance Status .....	111

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Figure 10-1: Occupation Distribution Analysis.....	123
Figure 11-1: County Government Administrative Structure.....	134
Figure 11-2: Kiambu County Government Organisation Structure.....	135
Figure 12-1: Problem tree analysis, Kikuyu Urban Area .....	147
Figure 14-1: Hierarchy of Growth Nodes in Kikuyu.....	162
Figure 14-2: Location & Context of Kikuyu Township.....	204
Figure 14-3: Existing CBD Land Uses .....	205
Figure 14-4: Challenges along Posta Road .....	206
Figure 14-5: Circulation plan for Public Service Vehicles .....	213
Figure 14-6: Pedestrianised streets.....	214
Figure 14-7: Traffic Management Plan.....	215
Figure 14-8: Cross-section for Posta Road Redevelopment.....	216
Figure 14-9: Revitalisation of Railway Station .....	217
Figure 14-10: Integration of Parking Silos with Rail and Export handling facilities.....	218
Figure 14-11: Densified and Mixed-Use Developments .....	219
Figure 14-12: Location of proposed open spaces.....	220
Figure 14-13: Kikuyu CBD Action Area Plan.....	221
Figure 17-1: Framework for Plan Preparation and Implementation.....	255
Figure 17-2: County Services & Processes .....	256
Figure 17-3: Priority Program & Projects Framework.....	257
Figure 17-4: Human Resource Framework for Kiambu County's Housing Lands Ministry.....	258
Figure 17-5: Human Resource Framework for Kiambu County's Housing Lands Ministry.....	259

## LIST OF MAPS

Map 2-1: Location of the Planning Area in the National Context.....	11
Map 2-2: Location of Planning Area in Regional Context.....	12
Map 2-3: Location of Planning Area in the Local Context.....	13
Map 2-4: Administrative Boundaries in Kikuyu Urban Area .....	17
Map 2-5: Sub-Locations of Kikuyu Urban Area .....	18
Map 2-6: Kikuyu Development Plan of 1974.....	38
Map 3-1: Kikuyu Urban Area Base Map.....	43
Map 3-2: Kikuyu Urban Area Soil Map .....	44
Map 3-3: Hydrology and Elevation Map .....	46
Map 3-4: Vegetation Map .....	47
Map 3-5: Contour Map .....	51
Map 5-1: Kikuyu Population Density Map.....	61
Map 6-1: Existing Land Use Pattern.....	75
Map 6-2: Slope Map .....	76
Map 7-1: Hierarchy of Existing Centres .....	80
Map 8-1: Regional Connectivity.....	88
Map 8-2: Transport network in Kikuyu .....	91
Map 9-1: Location of Primary Schools.....	115
Map 9-2: Location of Secondary Schools.....	116
Map 9-3: Health Facilities Map in the Planning Area .....	119
Map 10-1: Agricultural Activities .....	124
Map 12-1: Constraints Map .....	148
Map 12-2: Opportunities Map .....	150
Map 13-1: Nil Scenario .....	158
Map 13-2: Alternative 1: Multi-Nodal TOD Model .....	159
Map 13-3: Core Periphery Model.....	160
Map 13-4: Integrated Model .....	161
Map 14-1: Proposed Land Use Structure Plan.....	165
Map 15-1: Proposed right-of-way and classification.....	224

## ABBREVIATIONS AND ACRONYMS

<b>CBD</b>	<b>Central Business District</b>
<b>CIDP</b>	County Integrated Development Plan
<b>CoK</b>	Constitution of Kenya 2010
<b>CSP</b>	County Spatial Plan
<b>CTWG</b>	County Technical Working Group
<b>DoNMED</b>	Directorate of Nairobi Metropolitan Development
<b>ECDE</b>	Early Childhood Development Education
<b>EPZ</b>	Export Processing Zone
<b>FGD</b>	Focus Group Discussion
<b>GIS</b>	Geographic Information System
<b>GoK</b>	Government of Kenya
<b>ICT</b>	Information and Communications Technology
<b>ISUDP</b>	Integrated Strategic Urban Development Plan
<b>KNBS</b>	Kenya National Bureau of Statistics
<b>KPLC</b>	Kenya Power and Lighting Company
<b>Kshs.</b>	Kenyan Shilling
<b>KWCL</b>	Kiambu Water & Sewerage Company Ltd
<b>MoTIHUD&amp;PW</b>	Ministry of Transport, Infrastructure, Housing, Urban Development and Public Works
<b>NaMSIP</b>	Nairobi Metropolitan Service Improvement Project
<b>NEMA</b>	National Environment Management Act
<b>NLC</b>	National Land Commission
<b>NMR</b>	Nairobi Metropolitan Region
<b>NMT</b>	Non-motorised Transport
<b>PCEA</b>	Presbyterian Church of East Africa
<b>ROW</b>	Right-of-Way
<b>SMEs</b>	Small and medium-sized enterprises
<b>SPC</b>	Spatial Planning Concept
<b>STI</b>	Science, Technology & Innovation
<b>SWOT</b>	Strengths-Weaknesses-Opportunities-Threats
<b>TOD</b>	Transit-Oriented Development
<b>ToR</b>	Terms of Reference
<b>UACA</b>	Urban Areas and Cities Act
<b>WHO</b>	World Health Organisation
<b>WRMA</b>	Water Resources Management Act
<b>WRA</b>	Water Resources Authority



REPUBLIC OF KENYA



COUNTY GOVERNMENT OF KIAMBU

## Part I

# Introduction and Planning Context

# 1 INTRODUCTION

## 1.1 Background

The preparation of the Kikuyu Integrated Strategic Development Plan (ISUDP) 2020-2030 hereafter referred to as the Plan is part of Component 1: Institutional Reform and Planning of the Nairobi Metropolitan Service Improvement Project (NaMSIP) which is a broader initiative that addresses key urban development issues such as infrastructure and governance capabilities in the metropolitan area. This Project was implemented by the Directorate of Nairobi Metropolitan Development (DoNMED), with the support of the World Bank. The consulting firm VisionRI Connexion Service Private Limited of India supported by Urban Lines Consultants Ltd, Kenya was commissioned to provide technical consultancy services for the Project.

## 1.2 ISUDP Concept

The ISUDP concept is anchored on looking “at urban development from a perspective that integrates physical, economic, social, cultural, and environmental as well as institutional aspects in urban planning”. It also seeks “to align urban development planning with the on-going socio-economic and political reforms and transformation in the county” and employs a “strategic planning approach that is more flexible and development-oriented that is desirable to catalyse the government’s own economic recovery strategy for wealth and employment creation” as defined in the Term of Reference (ToR).

The strategic planning approach mentioned above, in turn, involves the identification of “*priority programmes and projects that can transform the project towns into vibrant well-planned satellite towns of Nairobi that tap on the advantages of their proximity to the capital city*”. It is focused on identifying means to improve living and working environments, generate more employment opportunities, enhance local government revenues, create efficient transport systems, exploit opportunities for industrial growth and urban linkages, and imbue towns with unique urban form and character through innovative urban design.

The key planning principles that underlie Plan preparation are also provided in the ToR as follows:

- Consultative/participatory process – allows for public participation and ownership of plans as the basis for shared responsibility for implementation;
- Strategic process which requires a focused approach, and a systematic search for the most appropriate and effective solution, keeping in mind given municipal resources, and overall policy guidelines and principles;
- An integrated approach, which requires thinking and acting holistically across conventional sectorial boundaries. Functional integration with the purpose of improving availability and accessibility; reducing travel and transport needs; and improving convenience for those with fewer resources. Integration as a tool for promoting sustainability;
- The Plan should provide equal access to services and facilities; provide for functional, socio-economic, cultural, and ethnic interaction; provide for economic development and employment; facilitate institutional cooperation and encourage community participation;

- Create a balance between natural and physical environments, viable economic systems and greater integration, equity, and responsibility; and
- Promote gender mainstreaming to incorporate the needs and aspiration of men and women.

### 1.3 Purpose of the Plan

The purpose of this Plan includes:

- Articulating the aims of the National and County government for the area together with strategies, policies and general proposals which are intended to achieve those aims;
- Providing a framework for detailed development policies and proposals for the planning area;
- Indicating action areas for immediate development or re-development; and
- Providing a coordinated basis upon which various implementing agencies can develop their individual programmes of work for which they have executive responsibility, for example, housing, transportation, water supply, electricity supply, sewerage development, etc.

### 1.4 Specific Planning Challenges

The key planning challenges facing Kikuyu Sub County are outlined below:

- Inefficient land use planning and implementation;
- Overexploitation of resources leading to excessive pressure on limited available resources;
- Slow economic growth within the rural areas such as Nachu which is characterised by inaccessible roads;
- Massive subdivision of land because of the growing population, which has led to the conversion of agricultural lands into residential land uses;
- Inadequate social and physical infrastructure;
- Encroachment into road reserves resulting in traffic congestion and accidents along the roads;
- Poor drainage systems, which lead to flooding during the rainy seasons;
- Poor solid and liquid waste disposal because of lack of proper planning resulting in poor sanitation; and
- Inadequate health facilities having a few understaffed health centres within the planning area.

### 1.5 Objectives of the Plan

Following the ToR, the objectives of the Plan are:

- Determine the boundaries of the planning area considering projected requirements for urban land within the plan period;
- Analyse demographic changes in the last ten years and those expected over the life of the plan, and how these relate to economic changes, welfare and administrative shifts;
- Identify development constraints, potentials and challenges of the planning area (social, economic, infrastructure and environmental profiling) and propose strategies to address them;

- Identify environmental issues and propose strategies for effective environmental management including, amongst others, climate change adaptation and disaster risk reduction and management measures;
- Allocate sufficient space for various land uses, including recreation and open spaces, to ensure efficient function and convenience of users and accommodate future growth;
- Uphold innovative civic and urban design that enhances the character and form of the planning area;
- Provide a basis for development control and investment decisions; and
- Develop a plan implementation and monitoring framework.

## 1.6 Goals of the Plan

### 1.6.1 Geographical Scope

The geographical scope of the Plan includes a wider territory considering the urban sprawl that has occurred from the original central business district (CBD). The planning area covers most of Kikuyu Urban Area and includes the wards and sub-locations shown in the table below.

**Table 1-1: Wards & Sub-locations covered by the Kikuyu ISUDP**

Ward	Sub-location
Karai	Gitiba
	Gikambura
	Karai
Kikuyu	Kikuyu
	Thogoto
Kinoo	Kinoo
Nachu	Kari
	Lusigetti
	Nachu
	Rengutti
Sigona	Sigona
	Kerwa

Source: KNBS, 2009 Population Census Reports

### 1.6.2 Scope of Planning Tasks

In accordance with the ToR, the preparation of this Plan involved the following tasks:

- Delineation of the boundaries of the planning area;
- Preparing an elaborate base map showing the existing spatial structure of the planning area to include planning boundaries, existing road network, landmarks, major natural features, and topography;

- Carrying out a contextual analysis of the planning area and its environs;
- Undertaking a land-use and socio-economic study and survey of the planning area, accommodating all the changes that have occurred over time and projecting future changes, and comparing how these changes compare in the metro region and in the county;
- Undertaking an assessment of transport, infrastructure and utility needs, housing, and community services. This will include mapping of the transport, infrastructure, and utility network of the planning area;
- Detailed study on the redevelopment of the central business districts (CBD);
- Identifying suitable land for residential, industrial, education, recreational, public purposes, commercial, public utilities, transportation and other uses applicable to the planning area;
- Analysing administration and institutional requirements in planning and development;
- Projecting land use, infrastructure and services required over the plan period;
- Preparing a detailed short term, 10-year Land Use Plan for the planning area;
- Preparing detailed 10-year Sectorial Development Plans in support of the land use plan for the planning area;
- Preparing individual implementation plans to include proposed requisite resource and institutional frameworks; and
- Preparing zoning plans for Kikuyu with requisite development densities and guidelines.

## 1.7 Outputs/Deliverables of the Plan

The outputs of this Plan include:

- Spatial plan covering the entire Kikuyu Urban Area
- Action area plans;
- Detailed transportation strategy;
- Detailed environmental strategy;
- Detailed housing strategy;
- Detailed social facilities strategy;
- Detailed local economy strategy;
- Detailed investment strategy;
- Financing and revenue enhancement strategy; and
- Digitized plan for the Sub-County.

## 1.8 Vision and Mission of the Plan

A participatory approach in the formulation in the shared vision for the Kikuyu Urban Area and mission statement of the County Government was informed by views of various stakeholders who were involved in the ISUDP preparation process. The community vision for the Kikuyu Urban Area is to **“To make Kikuyu a sustainable agro-based industrial and residential Sub-County.”**

The mission of this County Government towards the realisation of this Plan is **“To transform Kikuyu into an economically vibrant, liveable Kikuyu Urban Area with high standards of living and ensure optimal utilisation of available resources.”**

## 1.9 Methodology

### 1.9.1 Preparatory

The Plan’s preparation was guided by a Planning Model that ensured that the inter-relationship of factors attendant to the planning area’s development were adequately considered and that the identified development strategies could be realistically implemented.

Based on the Model, the Plan was framed within the Kikuyu’s Planning Context, which considered affecting legislation and policies, economic and urban development contexts, and transportation linkages, amongst others. The contextual analysis considered related plans and programmes at the National, Regional and County levels and their impacts on strategy formulation.

The Plan was framed upon the Planning Area’s Situation Analysis, which entails the review and analyses of the current state and anticipated requirements of its various development sectors such as Demography, Economic, Land Use, Urban Design, Transport, Social, Physical Infrastructure, and Governance.

The Planning Context and Situation Analysis were pulled together to form the basis for the pivotal point in Plan preparation which is the crafting of the planning area’s Integrated Development Analysis comprising a cross-cutting assessment of development challenges and potentials, collective Development Vision, Mission Statement, Goals and Objectives along with their physical translation – the Spatial Framework Plan. The latter provided the overall policy direction, which guided development initiatives for Kikuyu within the planning period.

The Spatial Framework Plan was then localised into specific geographical dimensions through the Land Use Plan. At this level, the precise locations of various urban types of developments are provided along with the location of environmental protection areas, if any. The Land Use Plan will mainly be implemented through a Zoning Plan, which will ensure that development applications will be in line with the intents of the Spatial Framework and Land Use Plan in terms of the type of use, and magnitude of the proposed development, amongst others.

The Land Use Plan is supported by Sectoral Development Plans to comprise programmes and projects for broad sectors such as Social, Economic, Transport, Physical Infrastructure, Environment and Urban Governance. The Sectoral Development Plans shall be implemented in two streams, i.e., through policies and regulations and a local development investment programme.

A monitoring and evaluation mechanism has been provided to enable plan implementers to ascertain if outputs and outcomes are within the Plan’s objectives and targets.

### 1.9.2 Sensitisation

Sensitisation of key stakeholders was carried out through publication of a Notice of Intention to Plan. This was done in collaboration with the Director of Metropolitan Planning & Environment (DoNMED), Director of Physical Planning (Land) and the County. This was followed by stakeholders' engagements through direct interviews and focused groups discussions (FGD) which led to stakeholders' workshops where broad ranges of participants were involved in validating the situational analysis and formulation of the shared vision and goals.

### 1.9.3 Data Collection

In order to capture all the data required for planning in such a complex and diverse situation, a variety of methods were used. First, there were surveys to capture household characteristics, economic activities and so on to plan for. Second, focus group discussions especially in the slums (but also in the towns and corridors) to capture information on expectations/fears, sacred places/heritage sites, infrastructure needs, social problems and so on to plan for were conducted. Third, key informant interviews with key actors were conducted to capture data on the status of social infrastructure, population patterns and respective needs and infrastructure needs, amongst others. Fourth, data collection endeavoured to the extent possible to seek access to all existing secondary data on population size, density and trends, economic activities, access to social infrastructure and so on. The data capture tools used include interview schedules, focus group discussion guides, and key informant interview guides.

- i. **Secondary data:** Secondary data were collected through desk studies from past reports and publications in the Project area. This was carried out before field visits were made with the objective of clearly identifying data gaps to be collected from the towns. Reports such as publications, topo-cadastral maps and land-use plans were reviewed to give clear insights into the planning area. It also included reviews of existing plans, policies, and statutes. Some of the documents reviewed are Kenya Vision 2030 and its two Medium Term Plans; County Integrated development plans for Kiambu County; the Nairobi Integrated Urban Development Masterplan (NIUPLAN), 2014-2030; Nairobi Metro Vision 2030 Strategy; the Kenya Power and Lighting Company Master Plan; and the Konza City Master Plan.
- ii. **Primary data:** Field studies were carried out to fill any information gaps which were identified during the desk study. This involved collecting information on existing conditions to assess the adequacy and functioning of existing facilities. The field studies also assisted in verifying data collected from secondary sources, identification of planning issues, potential problem areas, and existing and future development potentials of the project areas. Some of the key techniques used to collect various types of data included:
  - **Conducting comprehensive stakeholders' forums:** Included stakeholders forums to establish the key development challenges including on transport, access to amenities and community facilities and the challenges involved, amongst others.

- **Observations** were undertaken to provide information on traffic volumes by the day, hour, direction, and type of vehicle amongst other physical conditions affecting development.
- **Conducting Origin-Destination (O-D)** studies to determine the nature of traffic and the present volume of freight and passenger movements. The O-D studies were also used to establish the current traffic flow pattern, and to use the data to forecast future patterns. Other information obtained included the number of trips into, within, and through a connection; and time of day, mode of travel and number of occupants in a vehicle during a trip; current travel patterns; areas that generate the most traffic; and adequacy of transport facilities; and flow rates and road safety; and people's perception of the transport system.
- **Inventory and condition surveys:** These involved determining the surface type of the roads (e.g., paved or gravel), surface condition (e.g., good, or fair), classification (e.g., Class A) and lengths. It also involved determining the condition of other utilities such as water, drainage, and sewer systems.
- **Key informant interviews:** These were used to collect historical as well as current infrastructural information. They included officials from Kenya Urban Roads Authority, Kenya National Highways Authority, Kenya Roads Board, Ministry of Lands, Housing and Urban Development, County Director of Physical Planning, Ministry of Energy and Petroleum, Ministry of Transport and Infrastructure, and Kenya Railway Corporation.
- **Map preparation** was carried out using surveying and geographic information system (GIS) software and saved into distributable formats easily understood outside the surveying and GIS professions. Field validation was carried out using a hand-held global positioning system (GPS) receiver pre-set to the national grid system. Gaps found in the supplied maps were filled using handheld GPS equipment or current high-resolution imagery covering. Spatial Data acquired in hardcopy format were scanned, geo-referenced and digitised into vector maps on the same coordinate system as the base map. Datasets that were acquired in hardcopy format included Registry Index Maps (RIM) showing the land subdivision, administrative maps, existing and proposed road networks, fibre optic cable network, power distribution network, etc.

#### 1.9.4 *Plan Formulation*

The formulation of the Plan was based on thematic studies which involved the in-depth carrying of various studies and data collection. The output included a detailed analysis of secondary and primary data and identification of critical issues for planning. These key findings of the thematic studies were presented to key stakeholders for validation. Based on the validated situational analysis, a draft plan and development proposals were prepared. Findings and conclusion of studies were modelled and presented in a spatial

context showing desired outcomes, alternatives, strategies, and programmes. The output was presented to the stakeholder forum for comments. This was followed by the formulation of alternative development proposals and selection of preferred alternative using the Goals Achievement Matrix (GAM) to inform land management and investment decisions. A stakeholder meeting focussing on the presentations of the draft plan proposal and preferred models was then organised to gain consensus on preferred plans and strategies for approval.

#### *1.9.5 Plan Approval*

The approval of this Plan will be in line with provisions of Section 50 of the Physical and Land Use Planning Act 2019. This entails the presentation of the Plan to the County Assembly for approval and onward gazettelement by the County Executive Committee Member in charge of Physical Planning and Land Use. The output will be a gazetted Plan for implementation.

## 2 PLANNING CONTEXT

### 2.1 Historical Development of The Town

Kikuyu is one of the indigenous towns that grew from the settlement of the colonialist missionaries. The presence of a Railway Station played a key role in the growth of the town. Some of the area residents to date still refer to the town as 'giceceni', a term coined from the word Station meaning the Railway Station, which reached the town in 1899. The town has British colonial history links, like the Right Reverend Musa Gitau (Swahili for Moses Gitau), an African believer during colonial times. He lived and worked in the town as a reverend and in his honour, two schools were named after him.

During the British colonial era, the town was known as Fort Smith named after a famous officer Eric Smith in 1891 of Imperial British East African Company (IBEAC), in whose watch it was strengthened. It had identified a place at the border between the Kikuyu and Maasai tribes that was ideal for supplying the Uganda road with farm produce from Kikuyu farmers. From the early days of Swahili and Arab traders, the fortified village was a supermarket. Caravans stopped over to trade with the Kikuyu near the fort. The planning area was mainly pastoralist land up to 1976 when the whites subdivided some of the lands to those in Nachu and Lusigetti. In 1992, a further subdivision was carried out and those within and outside Nachu had parcels assigned to the local community. There was a parcel that had been set aside to plant castor, but the plan was never implemented.

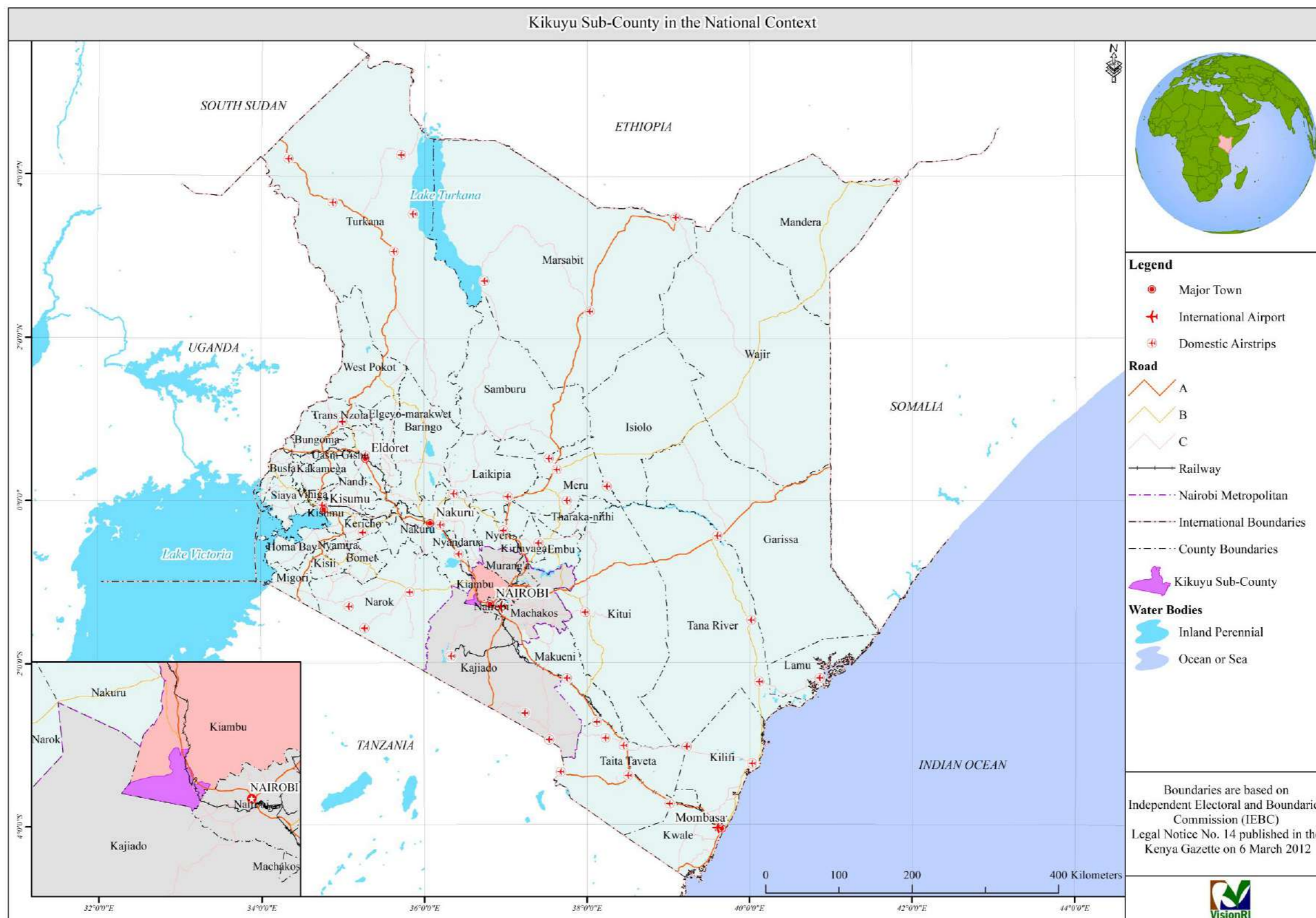
### 2.2 Geographic Location and Size

Kikuyu Urban Area is located at the southwestern part of Kiambu County. The Urban Area borders Gatimu sub-location to the north, which is within Limuru Central Ward of Limuru Urban Area. To the east, the planning area is bordered by Kabete Urban Area specifically the sub-locations of Muguga, Gitaru, Kanyariri and Uthiru. To the south lies Kibiko sub-location (part of Kajiado West Sub-County) and Kerarapon (part of Kajiado North Sub-County) in Kajiado County. Nairobi City defines the planning area's south-western boundary. The planning area's traditional urban centre is located about 20km northwest of Nairobi city. It is located at the lower eastern slopes of the Aberdare range with Kikuyu Town having an elevation of about 1,700m above sea level. It has a total land area of approximately 17,149.35 hectares, which comprises the entire Kikuyu Urban Area.

The mapped location of the planning area in relation to the national/ regional and local contexts are shown in Map 1-1, Map 1-2, and Map 1-3. The map of the entire planning area is, in turn, presented in Map 1-4.

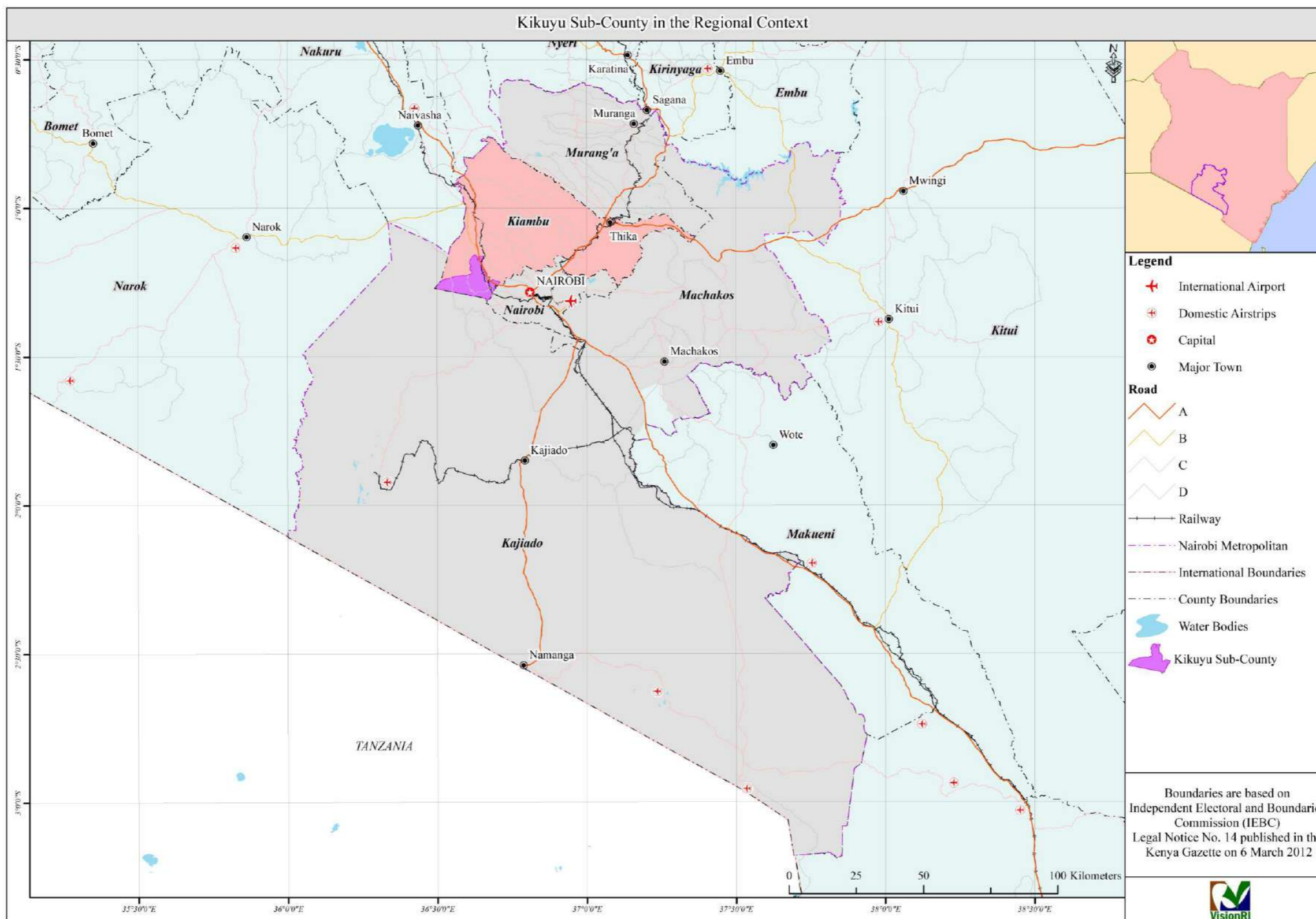
### 2.3 Administrative Units

The Kikuyu Urban Area ISUDP covers five wards, which include Kikuyu town, Karai, Kinoo, Nachu and Sigona wards, whose respective land areas are presented in Table 2-1 and Map 1-5.



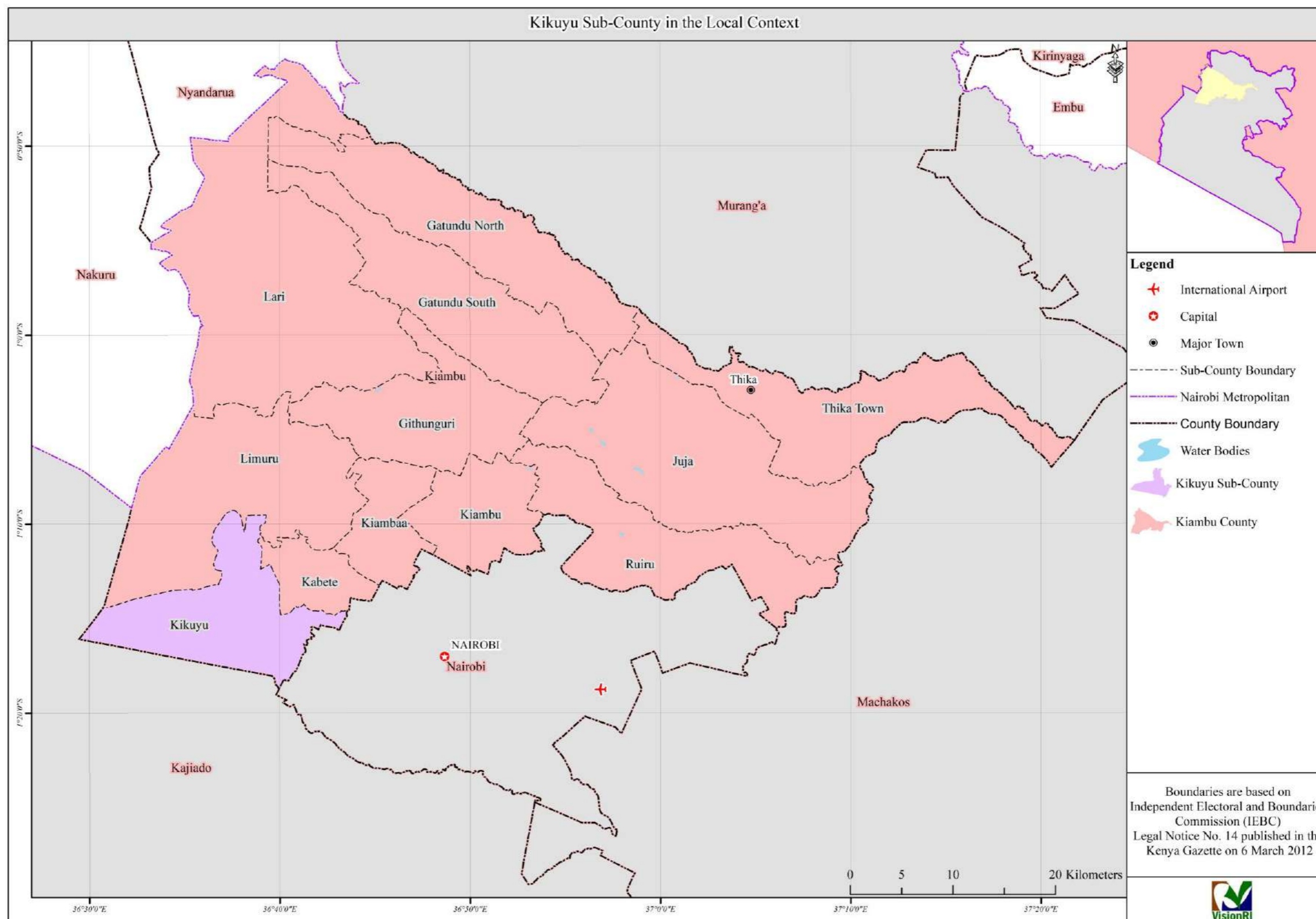
Map 2-1: Location of the Planning Area in the National Context

Source: VisionRI



Map 2-2: Location of Planning Area in Regional Context

Source: VisionRI



Map 2-3: Location of Planning Area in the Local Context

Source: VisionRI

**Table 2-1: Administrative and Political Units**

Ward/ Sub-location		Area in hectares		Share in %
		Ward	Sub-location	
Karai		2,330.35		13.59%
	Gitiba		1084	
	Gikambura		1192	
	Karai		54	
Kikuyu		2,104		12%
	Kikuyu		1415	
	Thogoto		689	
Kinoo	Kinoo	628	628	3.66%
Nachu		963		56.18%
	Kari		1312	
	Lusigetti		1139	
	Nachu		6201	
	Rengutti		982	
Sigona		2,453		14.30%
	Sigona		670	
	Kerwa	-	1783	
Total		17,149.35	17,149.35	100%

Source: KNBS 2009 Population Census Reports

## 2.4 Legislative Context

### 2.4.1 2.4.1 National Laws

- i. **Constitution 2010:** The Constitution of Kenya, 2010 provides the overarching legislation that guided the preparation of this Plan. Through the objects of a devolved system of government, the Constitution places planning functions both at the national and county levels. Pursuant to the Fourth Schedule of the Constitution, the National Government is mandated to formulate the general principles of land use planning and the coordination of planning by the Counties. The latter is also in charge of planning and development control within their jurisdictions.

Further to the above, the preparation of the Kikuyu ISUDP has been guided by the spirit of participation of the people, human dignity, equity, social justice, inclusiveness, equality, human rights, non-discrimination and protection of the marginalised with the overall goal of attainment of sustainable development pursuant to Article 10 of the Constitution.

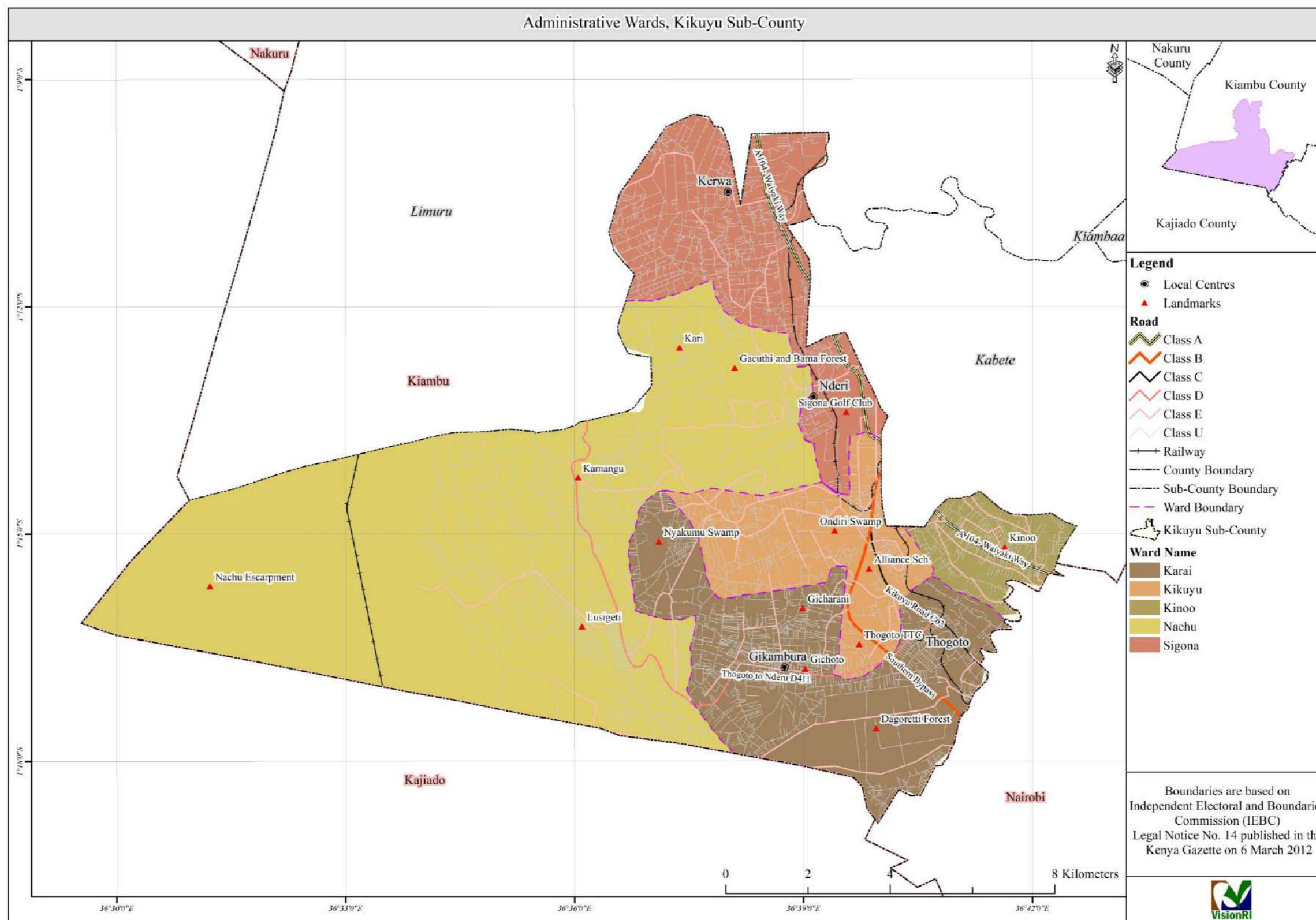
With regards to the objectives of Article 60, the Plan has observed and achieved various principles such as:

- Security of land rights;
  - Sustainable and productive management of land resources;
  - Sound conservation and protection of ecologically sensitive areas such as forests, swamps and wetlands;
  - Under Article 66, the Plan has been developed by the County Government of Kiambu (established under Article 176) in a bid to support the overall mandate of regulating the use of any land, or any interest in or right over any land, in the interest of defence, public safety, public order, public morality, public health, or land use planning; and
  - Lastly, the overall implementation of this Plan will be overseen and monitored by the National Land Commission (NLC) established under Article 67. Other functions to be performed by NLC with regards to the implementation of this Plan include amongst others:
    - To manage public land on behalf of County Government of Kiambu;
    - To conduct research related to land and the use of natural resources, and make recommendations to appropriate authorities; and
    - To initiate investigations, on its initiative or a complaint, into present or historical land injustices, and recommend appropriate redress and well as to encourage the application of traditional dispute resolution mechanisms in land conflicts within the County.
- ii. **County Governments Act 2012:** The County Governments Act 2012 mandates County Governments to prepare county plans which include “cities and urban areas plans,” amongst others. The said Act provides that the “county planning framework shall integrate economic, physical, social, environmental and spatial planning” (Article 104(2)).
- iii. **Urban Areas and Cities Act 2011:** The Urban Areas and Cities Act 2011 provides that Town Committees should “formulate and implement an integrated development plan” (Article 20(2-c)) as well as “control land use, land subdivision, land development and zoning... within the framework of the spatial and master plans for the (town) as may be delegated by the County Government (Article 20(2-d)).” The integrated development plan “shall bind, guide and inform all planning development and decisions and ensure comprehensive inclusion of all functions” (Article 36(2)).
- iv. **Physical and Land Use Planning Act, 2019:** This Act regulates physical planning activities in Kenya. It empowers County Governments to regulate development within their areas of jurisdiction. Further, it empowers the Director of Physical Planning to prepare various types of physical and land use development plans. In addition, the Director formulates National, Regional and Local Physical development policies, guidelines, and strategies. Under Article 20, the County Director of Physical and Land Use Planning’s responsibilities include; advising the County Government on physical and land use planning matters that impact the County;

formulating County physical and land use planning policies, guidelines and standards; preparation of County physical and land use development plans; and preparation of local physical and land use development plans.

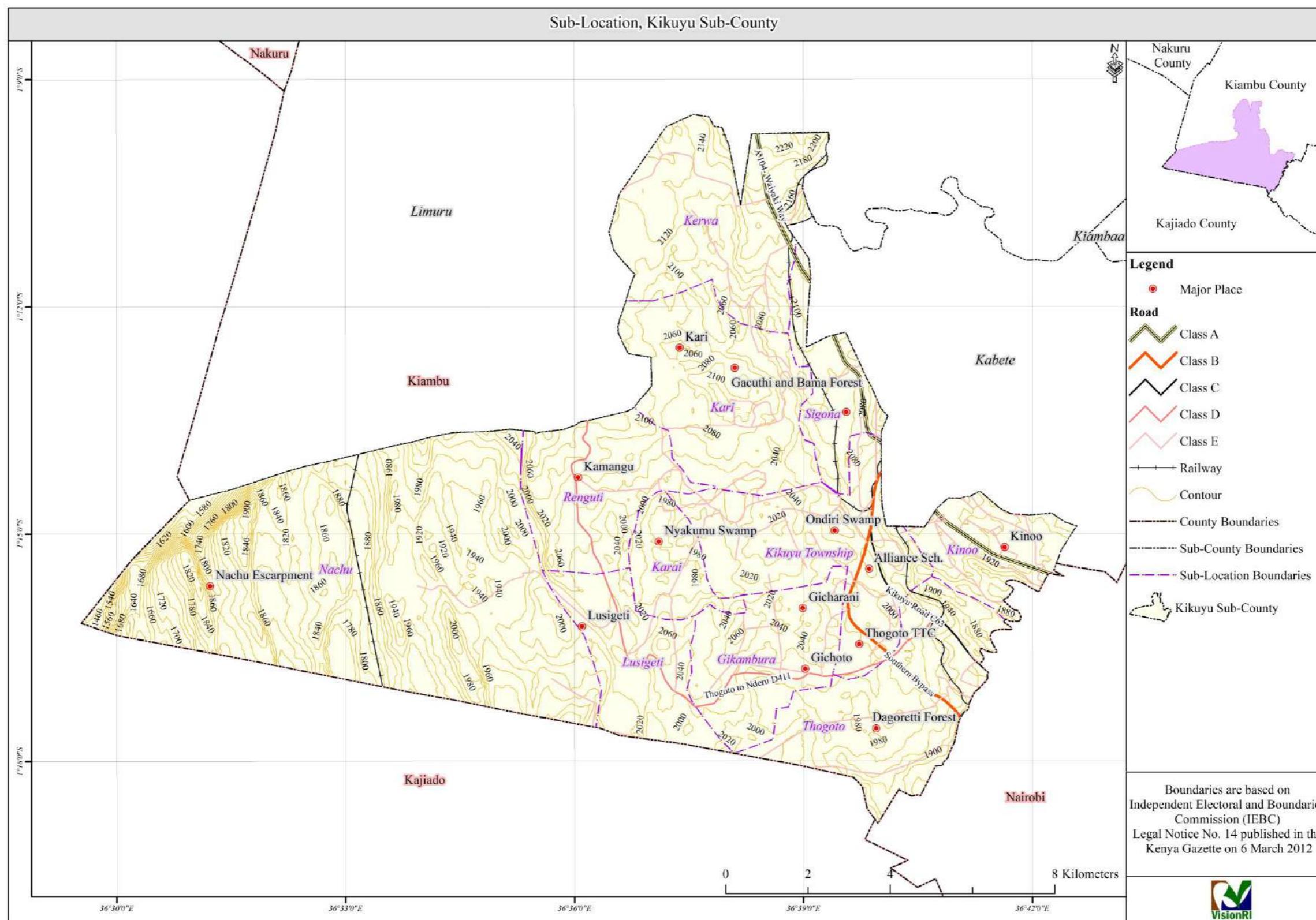
The Director also participates in the preparation of inter-county physical and land use development plans and carries out research on matters relating to physical, and land use development planning at the County level. In addition, the Director makes recommendations to the County Government on the establishment of planning units as may be necessary.

The Act also stipulates the responsibility of the Director's office in maintaining the County land information system to guide physical and use planning; communicate decisions of the County Government on development applications, and issue development permissions and other development control instruments under this Act with the approval of the County Executive Committee Member.



Map 2-4: Administrative Boundaries in Kikuyu Urban Area

Source: VisionRI



Map 2-5: Sub-Locations of Kikuyu Urban Area

Source: VisionRI

Article 36 mandates each County to develop a 10-year physical and land use development plan. The plan should be in conformity with the National Physical and Land Use Development Plan and any relevant Inter-County Physical and Land Use Development Plan.

According to Article 37, the Plan should provide an overall physical and land use development framework for the County; guide rural development and settlement; provide a basis for infrastructure and services delivery and direct the uses and management of natural resources. In addition, the Plan should enhance environmental protection and conservation; identify the proper zones for industrial, commercial, residential and social developments; improve transport and communication networks and linkages, and promote the safeguarding of national security amongst other purposes that may be determined by the planning authority.

This Act lends guidance to the development of the contents of structure plans, development plans, advisory plans, zoning plans, subdivision plans amongst other plans. The Act also stipulates the plan preparation and approval processes.

Article 56 empowers the Kiambu County Government to prohibit or to control the use and development of land and buildings in the interests of proper and orderly development of its area and to consider and approve all development applications and grant all development permissions.

- v. **Environment Management and Co-ordination (Amendment) Act of 2015:** Environmentally, this Plan seeks to ensure every person has a clean and healthy environment and has the duty to safeguard and enhance the environment pursuant to Section 3 of Environment Management and Co-ordination (Amendment) Act of 2015. The entitlement to a clean and healthy environment in the Plan has included access by any person to various public elements or segments of the environment for recreational, educational, health, spiritual and cultural purposes. Other regulations that stem from EMCA (Amendment) Act of 2015. Which have been considered during the preparation of this Plan include: Environmental (Impact Assessment and Audit) Regulations, 2003, Air Quality Regulations, 2013 (Legal Notice No. 34), Waste Management Regulations, 2006 (Legal Notice 121), Water Quality Regulations, 2006 (Legal Notice No. 120), Controlled Substances Regulations, 2007 (Legal Notice No.73), Wetlands, Riverbanks, Lake Shore and Sea Shore Management Regulations, 2009 (Legal Notice No. 19) and Noise and Excessive Vibration Pollution (Control) Regulations, 2009 (Legal Notice No. 25).

#### 2.4.2 *County Laws*

- i. **The Kiambu County Community and Neighbourhood Associations Engagement Act, 2016:** This Act gives statutory recognition to community and neighbourhood associations and effect to their initiatives in complementing county government service delivery; to enable structured co-operation between the County Government, residents and businesses; to facilitate the

activities of the associations and organizations; and to give further effect to Articles 10 and 174 of the Constitution as regards the principle of participation of the citizens and for connected purposes.

- ii. **The Kiambu County Valuation and Rating Act, 2016:** This Act is meant to affect the implementation of Article 209 (3) (a) of the Constitution of Kenya, that involves valuation and rating of land and for connected purposes. The purpose of this Act is to provide a framework for valuing and rating land in order to: ensure efficiency, accountability and transparency in the administration of valuation of land for rating; promote economic development; ensure equity and fairness in land valuation and rating system; and ensure compliance with payment of rates related to land. The Act has established the Directorate of Valuation and Rating whose functions include undertaking valuation; preparing the draft valuation and supplementary valuation rolls; administering the draft valuation rolls; preparing the schedule of rates; as well as advising the Executive Committee Member on the appropriate methods of rating, amongst other functions.

#### 2.4.3 Other Related Legislation

Other laws involved are presented in Table 2-2 below.

**Table 2-2: Additional legal provisions**

Law	Purpose
The Land Laws Amendment Act, No 28, 2016	To amend the laws relating to land in order to align them with the Constitution, to give effect to Articles 68(c)(i) and 67(2)(e) of the Constitution, to provide for procedures on evictions from land, and connected purposes.
The Kenya Roads Act, 2017	To provide for the classification, management, construction and maintenance of public roads; to establish the Kenya National Highways Authority, Kenya National Urban Roads Authority and Kenya National Secondary Roads Authority; and to provide for their functions and powers; and for connected purposes.
The Government Lands Act, Cap 280	An Act of Parliament to make further and better provision for regulating the leasing and other disposal of Government lands, and for other purposes.
The Registration of Titles Act, Cap 281	An Act of Parliament to provide for the transfer of land by registration of titles.
The Land Titles Act, Cap 282	To make provision for the removal of doubts that have arisen in regard to titles to land and to establish a Land Registration Court.

Law	Purpose
The Registered Land Act, Cap 300	To make further and better provision for the registration of title to land, and for the regulation of dealings in the land so registered, and for purposes connected therewith.
The Wayleaves Act, Cap 292	Relating to wayleaves, and the processes involved in creating and management.
The Dairy Industry Act, Cap 336	To provide for the improvement and control of the dairy industry and its products.
The Land Acquisition Act, Cap 295	To make provision for the compulsory acquisition of land for the public benefit.
The Land Act, 2012	To give effect to Article 68 of the Constitution, to revise, consolidate and rationalise land laws; to provide for the sustainable administration and management of land and land-based resources, and for connected purposes.
The Land Registration Act, 2012	To revise, consolidate and rationalise the registration of titles to land, to give effect to the principles and objects of devolved government in land registration, and for connected purposes.
The National Land Commission Act, 2012	To make further provision as to the functions and powers of the National Land Commission, qualifications, and procedures for appointments to the Commission; to give effect to the objects and principles of devolved government in land management and administration and for connected purposes.
The Special Economic Zones Act, 2015	To provide for the establishment of special economic zones; the promotion and facilitation of global and local investors; the development and management of enabling environment for such investments, and for connected purposes.

Source: VisionRI

The other sectoral laws considered in this Plan are summarised in Table 2-3.

**Table 2-3: Other Sectorial Laws**

Law	Relevance
Agriculture, Fisheries and Food Authority Act, (2013)	Provides the confines within which to make proposals on agriculture promotion and conservation of soils and fertility for sustainable agriculture and optimisation of land use.

Law	Relevance
Water Act (2002)	Provide guidelines on plan proposals touching on management, conservation, use and control of water resources, water supply, and sewerage services.
Land Act, 2012	Provides for sustainable administration and management of land and land-based resources nationally.
National Land Commission Act, 2012	Provides for County Land Management Boards which are critical in processing Development applications and allocation of public land as well as NLC that will monitor and have oversight responsibilities over land use planning throughout the country.

Source: VisionRI

## 2.5 Policy Context

### 2.5.1 Global Policies

- i. **Sustainable Development Goals:** The World Agenda for Sustainable Development come into effect after the expiring of the millennium development goals. It includes Sustainable Development Goals (SDG) which represent the world's blueprint to achieve a better and more sustainable future for all. The SDGs address common global challenges such as poverty, inequality, climate change, affordable housing, environmental degradation, peace, and justice, amongst others. The SDGs were ratified by all the members' states and government under the United Nations umbrella.

The preparation of ISUDP aims at achieving the relevant SDGs such as eradication of poverty, promoting clean water and sanitation, enhancing the use of affordable and clean energy, promoting sustainable cities, promoting peace, and industrial growth.

- ii. **New Urban Agenda 2017:** The New Urban Agenda 2017 is a common global vision to promote sustainable urbanisation. It is estimated that by the year 2050, the world urban population will have doubled making urbanisation as major issues in the 21<sup>st</sup> century. To tackle the challenges of urbanisation, the New Urban Agenda aims at promoting safe and sustainable cities for all.

The guiding principles of the New Urban Agenda to achieve sustainable urban development include:

- iii. **Urban equity and eradicating poverty:**
  - Sustainable and inclusive urban prosperity and opportunities for all; and
  - To foster ecological and resilient cities and human settlements.

The ISUDP endeavours to meet the vision of the Urban Agenda 2017 by ensuing sustainable urbanisation within Kikuyu Urban Area.

- iv. **Africa Union Agenda 2015:** This Agenda, published in 2015, promotes unity amongst African states with the aspirations to achieve a prosperous Africa based on inclusive growth and sustainable development, an integrated and politically united continent, good governance, democracy and respect for human rights and the rule of law, a peaceful and secure Africa, a continent with strong cultural identity, people-driven development, and a strong united and influential global player. The Kikuyu Plan is aligned with these aspirations.

#### 2.5.2 National Policies

- i. **Kenya Vision 2030:** As the country's development blueprint covering the period 2008-2030, Kenya Vision 2030 aims to achieve a "globally competitive and prosperous country with a high quality of life by 2030". In support of this vision (economic pillar), the Kikuyu Plan seeks to increase the level of value addition of local agriculture products such as tea, cereals, seedlings, cheese, ghee, yoghurt, milk, feeds, and horticulture products. Value addition of agricultural produce shall increase the farmers' earnings and therefore enhance their livelihoods. In addition, manufacturing for the East and Central African regional market shall be made possible through export production approach thus increasing the country's foreign exchange earnings. Moreover, Vision 2030 strategy puts forward proposals in with the promotion of ICT, gender balance and catering for persons with disabilities. All these aspects have been observed in the Plan through provisions for all the socio-economic groups and the people with disabilities both through access to economic activities and social rights.
- ii. **National Environment Policy, 2013:** With regards to the provisions of the National Environment Policy, 2013, the Plan recognises the importance of the link between development and sustainable environment by:
- Addressing environmental degradation issues and challenges facing the Sub-County. Notable drivers of environmental degradation are high rates of population growth, inappropriate technology, unsustainable consumption and production patterns, and increased incidences of poverty and climate change;
  - Providing a framework for an integrated approach to planning and sustainable management of Kenya's environment and natural resources;
  - Ensuring sustainable management of the environment and natural resources, such as unique terrestrial and aquatic ecosystems, for both county and national economic growth and improved livelihoods; and
  - Promoting and enhancing cooperation, collaboration, synergy, partnerships and participation in the protection, conservation, sustainable management of the environment and natural resources.

- iii. **Sessional Paper No. 3 of 2009 on National Land Policy:** Sessional Paper No. 3 of 2009 on National Land Policy provides an overall framework and define the key measures required to address amongst others, the critical issues on land, land use planning, environmental degradation, conflicts and unplanned proliferation of informal urban settlements, outdated legal framework, institutional framework and information management. In tandem with the provisions of this policy, this Plan promotes and encourages a multi-sectoral approach to land use, provision of social, economic and other incentives and put in place an enabling environment for investment, agriculture, livestock development and the exploitation of natural resources.
- iv. **Sessional Paper No. 1 of 2017 on National Land Use Policy:** This policy emphasises the importance of land as a resource for the economic life of a majority of people in Kenya. The way people handle and use land resource is decisive for their social and economic well-being as well as for the sustained quality of land resources. In tandem with this policy, this Plan sought to strike a balance between satisfying the human livelihood needs and sustainable use of resources for posterity. This has been taken into consideration in the Plan through:
- Anchoring the Sub-County’s land development initiatives that will respond positively to market demands;
  - Environmental management and sustainable production initiatives in the utilisation of land resources;
  - Coordination and integration of institutional linkages in planning at sectoral and cross-sectoral levels to foster collaboration and decision making amongst different land users; and
  - Optimum utilisation of land resources to meet governance, social-economic, political, and cultural obligations of the people of the county and Kenya at large.

### 2.5.3 2.5.3 Other relevant policies

Other relevant policies that this Plan has considered and integrated are summarised in Table 2-4.

**Table 2-4: Other Relevant Policies**

Law	Relevance
Housing Policy Sessional Paper No. 3 of 2004	That comprehensive land-use planning as a major component of housing in facilitating provisions of adequate shelter and a healthy living environment, at an affordable cost to all socio-economic groups in Kenya in order to foster sustainable human settlements.
National Information & Communications Technology (ICT) policy, 2016	Seeks to improve the livelihoods of Kenyans by ensuring the availability of accessible, efficient, reliable and affordable ICT services.

Law	Relevance
National Climate Change Response Strategy, 2010	Seeks to strengthen and focus nationwide actions towards climate change adaptation and greenhouse gas (GHG) emission mitigation.
Integrated National Transport Policy Sessional Paper No. 2 of 2012	Aims to develop a world-class integrated transport system that is responsive to the needs of people and industry since the Government recognises the transport sector as one of the critical enablers in achieving Vision 2030.
Sessional Paper No. 2 of 2009 on Forest Policy	Requires County Governments to establish and maintain arboreta, mini-forests or mini-recreational parks within their areas of jurisdiction and during the construction of housing estates by the public and private investors.
Energy Policy, 2012	Seeks to ensure adequate, quality, cost-effective, and affordable supply of energy to meet development needs while protecting and conserving the environment.
Public Health Policy, 1994	Focuses on the essential priority packages based on the burden of disease and the required support systems to deliver service amongst major players in the health sector include the government represented by the Ministry of Health, County Government, private sector and non-government organisations (NGO).

Source: VisionRI

#### 2.5.4 Institutional Planning Framework

##### Core Planning Mandate

Institutional mandates for planning in Kenya are examined in relation to urban planning at various scales. Schedule Four of the Constitution of Kenya (2010) distributes planning functions across a two-tier government: national and county governments with provisions for coordination across the two levels. Planning roles and responsibilities at both the national and county governments are governed by the Constitution of Kenya 2010 under Chapter 5: Land and Environment, particularly Article 66. The Fourth Schedule Part 1 (21) and (32) forms the foundation of national government planning mandates while Part 2 (8) of the schedule forms the foundation of county governments planning mandates. At the county level, planning mandates are also governed by the County Governments Act, 2012 Part XI: County Planning (Section 102-115) and Urban Areas and Cities Act, 2011 Part V: Integrated Development Planning (Section 36-42). The Physical and Land Use Planning Act 2019, governs the planning framework under Schedules 1, 2, 3 and 5 (matters to be considered in spatial planning); Part V (framework control for development control) and Section 16, 17 and 24 (purpose and content of spatial plans). Intergovernmental Relations Act No.2 of 2012 forms a basis in planning mandates under Part III: Transfer and delegation of powers, functions, and Competencies (Section 24-29) and Part IV: Dispute Resolution Mechanisms (Section 30-36). Moreover, statutory instruments (Physical and Land Use Planning Act 2019) serves as a tool for development control. Table 2-5 shows allocation of planning mandates from the aforementioned powers.

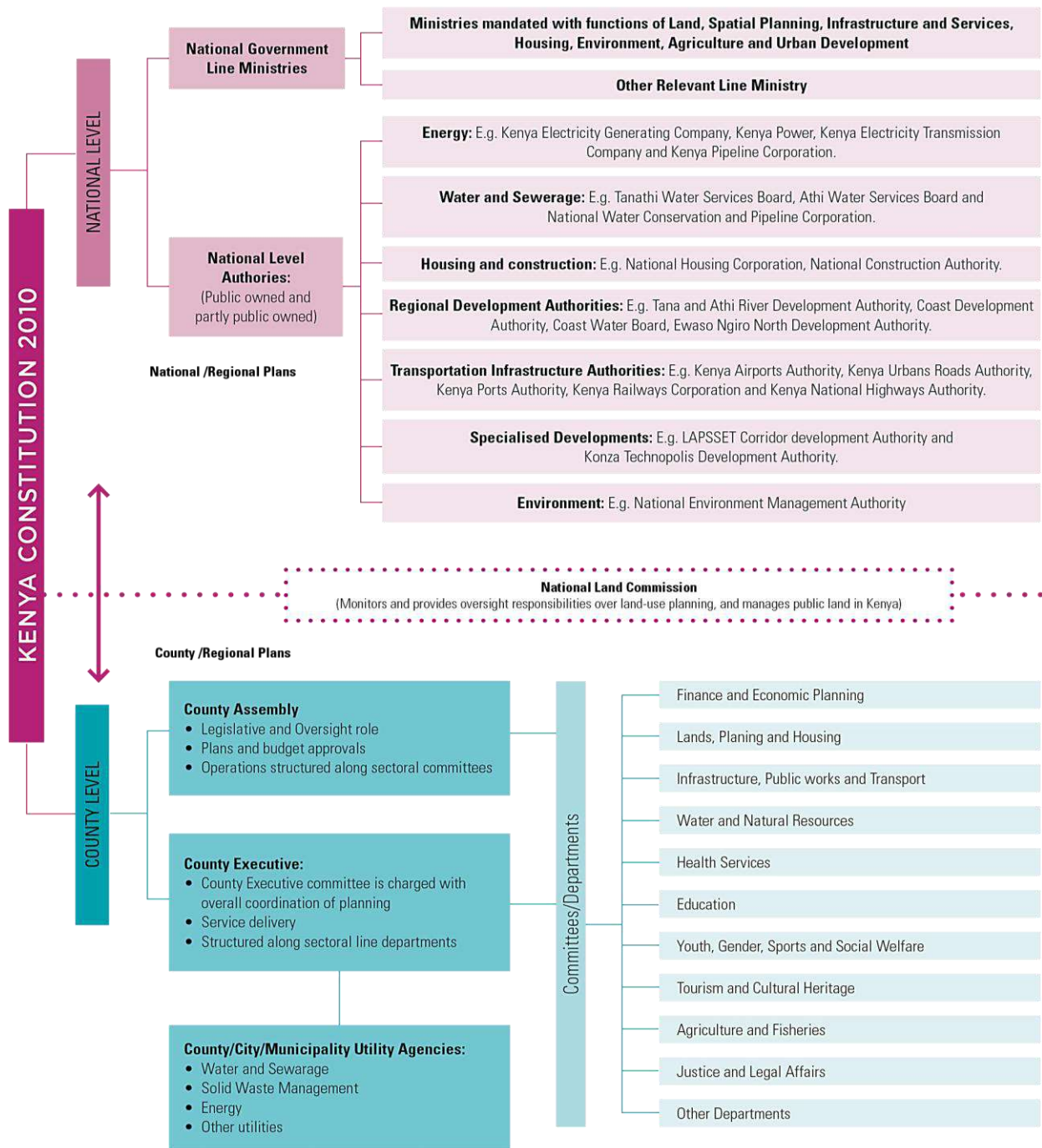


Figure 2-1: Institutional linkages between National and County Government stakeholders

Source: Urban Planning for City Leaders Handbook

Table 2-5: Roles and responsibilities

Level of Government	Roles and Responsibilities
National Government	<ul style="list-style-type: none"> <li>• Formulating general principles, policies, standards, and guidelines of land planning;</li> <li>• Preparation and approval of the National Physical Development Plan, National Policies, i.e., land use;</li> <li>• Planning at international boundaries within Kenya borders amongst Tanzania, Uganda, Somalia, South Sudan, and Ethiopia;</li> <li>• Coordination of Regional Spatial Plans/Inter-County Spatial Plans;</li> <li>• Capacity building and technical support to counties; and</li> <li>• Planning research at the national level.</li> </ul>
County Government	<ul style="list-style-type: none"> <li>• Preparation, approval and implementation of County Spatial Development Plans, Local Physical Development Plans, County Integrated Development Plans, Integrated Strategic Urban Development Plans, Sectoral Plans, and development control and enforcement;</li> <li>• Formulating country-specific policies;</li> <li>• Implementing national policies, standards, and guidelines; and</li> <li>• Planning Research at the county level.</li> </ul>
County Assembly	Approval of plans

Source: VisionRI

#### 2.5.5 2.5.5 Cross-Cutting Stakeholders

Key stakeholders usually include government agencies; civil societies that include civil society organisations themselves, residents' associations, community-based organisations, non-governmental organisations and the community at large; the private sector; developers and property owners (donor agencies or development partners) and local businesses, inter alia. Stakeholders should be spatially mapped to ensure that there is even representation across the planning area. Public participation whether in form of public consultation and decision-making is to entailed leaders and stakeholders.

Likewise, the public shall be engaged in budget and policy formulation, planning and social service delivery priority setting. These are vested from the powers provided by the Constitution of Kenya, 2010 (Articles 174, 201 and 232); County Governments Act, 2012 (Section 47, 91, 99-100); Public Finance Management Act, 2012 (Section 125, 128, 131 and 137) and Urban Areas and Cities Act, 2011 (Section 21 and 22).

Table 2-6: Key Sectoral Agencies

Institutions/Organisations	Roles and Responsibilities
National Treasury	Responsible for managing Kenya's national government finances.
Ministry of Lands and Physical Planning	Charged with the following functions: national lands policy and management; physical planning; land transactions; survey and mapping; land adjudication; settlement matters; rural settlement planning, i.e., eco-village; land reclamation; land registration; national spatial infrastructure; land and property valuation services administration; administration of public land as designated by the constitution; and land information systems.
Ministry of Transport, Infrastructure, Housing & Urban Development	The Ministry consists of the following five State Departments: State Department for Transport; State Department for Infrastructure; State Department for Housing and Urban Development; State Department for Maritime and Shipping Affairs; and State Department for Public Works. These departments have various roles and responsibilities. For example, the State Department for Housing and Urban Development is responsible for amongst others housing policy management; development and management of affordable housing; management of building and construction standards and codes; shelter and slum upgrading; and urban planning and development.
Ministry of Environment & Natural Resources	The main functions of the ministry include environment and natural resources policy formulation and review; sustainable management of mineral resources and environmental conservation; continual development of a geodatabase for integrated natural resources and environmental management systems; promoting environmental management activities; and enforcing compliance with regulations and guidelines, amongst others.
National Land Commission (NLC)	Established under Article 67 of the Constitution of Kenya, 2010. Responsible for amongst others managing public land on behalf of the National and County Governments; recommending a national land policy to the national government; advising the national government on comprehensive programmes for the registration of title in the land throughout Kenya; and monitoring and oversight responsibilities over land use planning throughout the country.
National Environment Management Authority (NEMA)	Established by the Environment Management and Coordination Act, No. 8 of 1999. Key agency in charge of the coordination of environmental management activities; ensure compliance with environmental guidelines; and advise the government on legislative measures concerning environment management.
Kenya National Highways Authority (KeNHA)	State corporation established under the Kenya Roads Act 2007 under section 3, 4 and 5 with the responsibility for the management, development, rehabilitation and maintenance of international trunk roads linking centres of international importance and crossing international boundaries or terminating at international ports.
Kenya Urban Roads Authority (KURA)	State Corporation established by the Kenya Roads Act 2007 under Section 9, 10, 11 and 12 with the core mandate of management, development, rehabilitation, and maintenance of National urban trunk roads.

Institutions/Organisations	Roles and Responsibilities
Kenya Forest Service (KFS)	Established under the Forest Act of 2005. Mandated to conserve, develop and sustainably manage forest resources for Kenya social-economic development.
Water Resources Authority (WRA)	Established under the Water Act, 2002. State Corporation under the Ministry of Water and Irrigation mandated in nation-wide water resources management.
Council of Governors of Kenya (CoG)	Established under Section 19 of the Intergovernmental Relations Act (2012) with the mandate to provide a mechanism for consultation amongst Counties County Governments, share information on the performance of the counties in the execution of their functions, facilitate capacity building for governors and consider reports from other intergovernmental forums on national and county interests amongst other functions.
County Governments Entities	<ul style="list-style-type: none"> <li>• Constitutes of County Assembly and County Executive Committee with responsibilities outlined under Constitution 2010 Part 2 (Fourth Schedule, Article 185 (2), 186 (1) and 187 (2);</li> <li>• The responsibilities of the County Assembly include exercising the powers of enacting laws at the county level; acting as an oversight on the County Executive; and approval of plans and policies for smooth operation and management of resources and county institutions; and</li> <li>• The County Executive is charged with the responsibility of exercising executive power at the county level, implementing laws for the administration of the county as well as carrying out other executive functions of the county.</li> </ul>
Kenya Investment Authority (KenInvest or KIA)	A statutory body established in 2004 through an Act of Parliament (Investment Promotion Act No. 6 of 2004). Mandated in promoting investments in Kenya. Responsible for facilitating the implementation of new investment projects, providing After Care services for new and existing investments, as well as organising investment promotion activities both locally and internationally.
Micro and Small Enterprise Authority (MSEA)	A state corporation established under the Micro and Small Enterprise Act No. 55 of 2012. The Act was developed through a stakeholder's consultation process. Tasked in financing, training, infrastructure development and policy development.
Kenya Industrial Estate Ltd (KIE)	Established as a limited liability company (Companies Act, Cap 486) of the laws of Kenya to address indigenization of businesses, capital formation, regional dispersion of wealth, exploitation of local resources, undertake special government projects and offer business advisory services.

Source: VisionRI

The Kikuyu Sub County Administrative Structure is illustrated in Figure 2-2 below:

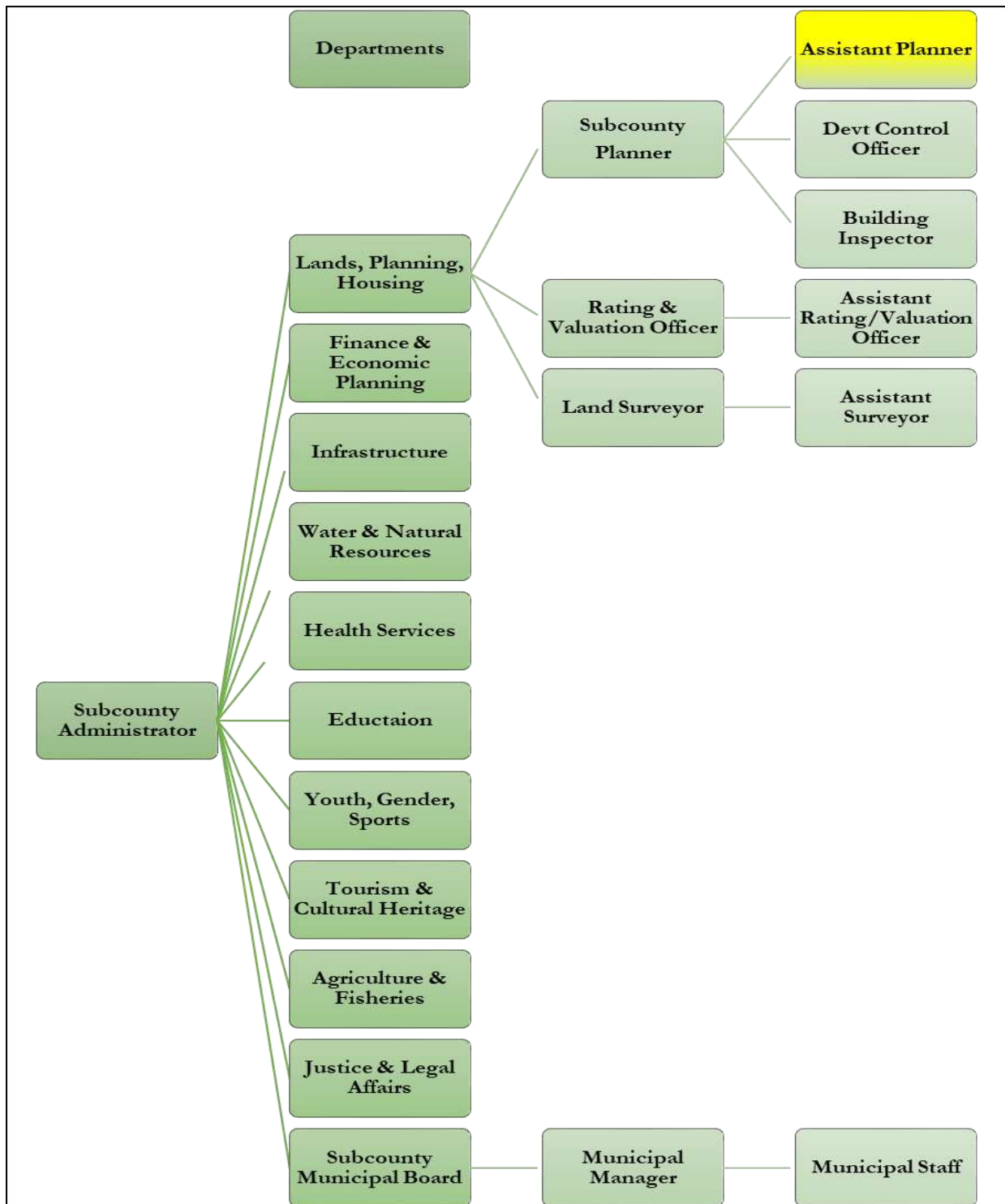


Figure 2-2: Kikuyu Sub County Administrative Structure

Source: VisionRI

## 2.6 Planning Policy Linkages

### 2.6.1 National Spatial Plan

The National Spatial Plan (NSP) 2015-2045, is an integrated plan that strives to achieve balanced and sustainable national development. The NSP anchors its framework on Vision 2030 and provides comprehensive strategies and policy guidelines to deal with issues of rural and urban development. The NSOP also focusses on issues of modernising agriculture, infrastructure, energy production, mining, and industry, as well as sustainable human settlements.

The specific objectives of the NSP include:

- Creating a spatial planning context that enhances economic efficiency and strengthens Kenya's global competitiveness;
- Optimising utilisation of land and natural resources for sustainable development;
- Creating a liveable and functional human settlement in both urban and rural areas; and
- Securing the natural environment for a high quality of life.

Establishing an integrated national transportation network and infrastructure system. Based on the characteristics of the planning area, the key strategies outlined in the NSP that have been integrated into this ISUDP are as presented in Table 2-7.

**Table 2-7: Relevant National Spatial Plan Strategies**

Objective	Strategies
Promoting regional balance	<ul style="list-style-type: none"> <li>• Promoting industrialisation and value addition;</li> <li>• Encouraging equitable exploitation and sound management of mineral resources;</li> <li>• Promoting investment in tourism including eco-tourism aspects;</li> <li>• Developing appropriate transport and infrastructural facilities and services;</li> <li>• Promoting rural industrialisation;</li> <li>• Promoting commercial and large-scale livestock production practices; and</li> <li>• Promoting urban containment to reduce the effects of urban sprawl into rich agricultural land.</li> </ul>
Urbanisation Strategies	<ul style="list-style-type: none"> <li>• Strengthening urban-rural linkages through the provision of integrated physical infrastructure;</li> <li>• Creating an enabling environment for commercial and industrial developers;</li> <li>• Providing alternative areas for the development of urban centres by the provision of services and infrastructure; and</li> </ul>

Objective	Strategies
	<ul style="list-style-type: none"> <li>Promoting the development of centres as per their potentials and population.</li> </ul>
Environmental Conservation and Protection	<ul style="list-style-type: none"> <li>Intense forest cover through afforestation and reforestation;</li> <li>Controlling water abstraction;</li> <li>Putting flood mitigation measures in place; and</li> <li>Ensuring optimal utilisation of available natural resources.</li> </ul>
Transport infrastructure	<ul style="list-style-type: none"> <li>Creating an integrated road transport corridor;</li> <li>Preserving and securing adequate land for future transport infrastructure development;</li> <li>Encouraging the use of green transport; and</li> <li>Creating linkages between agricultural, tourist and urban centres as well as rural areas.</li> </ul>

Source: VisionRI

## 2.7 Regional Policies

### 2.7.1 Nairobi Metro 2030

Nairobi Metro 2030 provides the policy direction for the development of the metropolis to support Kenya Vision 2030. The Plan has been guided by these policies particularly in the course of determining the Sub-County's overall development goals and the various strategies to achieve them. Nairobi Metro 2030 envisions the Nairobi Metropolitan Region (NMR) to become a "world-class African metropolis" characterised by world-class working environment, living environment, business environment and governance. Following are the key results:

- Building an internationally competitive and inclusive economy for prosperity;
- Deploying world-class infrastructure and utilities for the region; enhancing mobility and connectivity through effective transportation;
- Enhancing the quality of life in the region; delivering a unique image and identity through effective place branding; and
- Ensuring a safe and secure region and build world-class governance systems.

### 2.7.2 Spatial Planning Concept for NMR

The Spatial Planning Concept (SPC) for NMR provides the physical direction for the region's development in support of Kenya Vision 2030 and Nairobi Metro 2030. It provides a holistic "conceptual framework" that defines the future spatial growth of the NMR and thus provides a guide in the preparation of local development plans. The SPC promotes a land-use system intended to ensure the development of an "environmentally sustainable region" that will build an internationally competitive and inclusive economy for prosperity; deploy world-class infrastructure and utilities for the region; optimise mobility and accessibility through effective transportation; enhance the quality of life and inclusiveness in the region;

deliver a unique image and identity through effective place branding; ensure a safe and secure Nairobi Metropolitan Region; and employ World-Class Metropolitan Governance Systems. Key parameters that are provided in the SPC for NMR that guided the development of the Plan, envisions Kikuyu's economic function being an "Agro-based Industrial Town" and its role in the proposed settlement hierarchy for NMR, 2030 of being a "Growth Centre."

**Table 2-8: Economic targets for Urban Centres**

<b>Spatial Units</b>	<b>Envisaged Function</b>
Ruiru	Trading Town
Thika	Industrial Town
Limuru	Agro-based Industrial Town
Kiambu	Administrative-cum-Agro based Industrial Town
Juja	Service Town
<b>Kikuyu</b>	<b>Agro-based Industrial Town</b>
Karuri	Agro-based Industrial Town
Githunguri	Agro-based Industrial-cum-Administrative Town
Gatundu	Administrative Town
Machakos	Administrative-cum-IT Industrial Town
Mavoko	Industrial Town
Kangundo/Tala	Trading Town
Kathiani	Service Town
Ngong	Industrial Town
Kitengela	Service Town
Ongata Rongai	Service Town
Kiserian	Service Town
Namanga	Trading Town
Isinya	Service Town
Kajiado	Administrative-cum-Service Town
Loitoktok	Administrative Town
Sultan Hamud	Transit Town
Magadi	Industrial Town

Source: Spatial Planning Concept for NMR

Table 2-9: Proposed Settlement Hierarchy for NMR, 2030

Level	Settlement Hierarchy	Settlements	Characteristics
I	Regional Complex	Nairobi- Ngong-Ongata Rongai-Ruiru Complex	<ul style="list-style-type: none"> <li>• Highest administrative functions;</li> <li>• Specialised &amp; world-class facilities; and</li> <li>• Tertiary activities.</li> </ul>
II	Sub-Regional Centre	Thika, <b>Kikuyu</b> , Kiambu, Machakos, Tala/Kangundo, Kajiado	<ul style="list-style-type: none"> <li>• Administrative function/County headquarters;</li> <li>• Higher-level infrastructure;</li> <li>• Secondary &amp; tertiary activities; and</li> <li>• Strong industrial base.</li> </ul>
IIA	Priority Town	New Towns	<ul style="list-style-type: none"> <li>• Planned to decongest Nairobi &amp; developments in the surrounding regions;</li> <li>• Designed with specialised facilities on the basis of world-class norms; and</li> <li>• To be planned as special packages and special focus for development.</li> </ul>
III	Growth Centre	Limuru, Karuri, Juja, Mavoko, Kitengela, Loitoktok	<ul style="list-style-type: none"> <li>• Intermediary towns;</li> <li>• An important role in promoting rural development and in achieving a balanced distribution of the urban population; and</li> <li>• Provide functional linkages between the smaller towns and Sub-Regional Centre.</li> </ul>
IV	Market Centre	Gatundu, Githunguri, Kathiani, Kiserian, Namanga, Isinya, Bissil, Sultan Hamud Magadi	<ul style="list-style-type: none"> <li>• Small towns having linkages with immediate rural hinterlands; and</li> <li>• Is the higher-order village having a central location and potential for development within its catchment area with relatively better services and facilities in terms of education, health, communication, accessibility and has the capacity to serve a group of basic villages.</li> </ul>
V	Central Village Centre	To be identified as part of sub-regional plans	<ul style="list-style-type: none"> <li>• Would cater to the rural hinterland as the agro-service centre in the collection and distribution of agricultural goods and services with processing, marketing, warehousing and storage facilities.</li> </ul>
VI	Basic Village	All villages	

Source: Spatial Planning Concept for NMR

## 2.8 County Policies

### 2.8.1 2.8.1 *Kiambu County Spatial Plan,*

The Kiambu County Spatial Plan has its strategic focus on land use planning, multi-modal transportation planning, informal settlements as well as zonal planning. Other elements that have been focused on include environmental protection, heritage conservation and physical and social infrastructure management planning. The CSP, views Kiambu as a rapidly urbanising County with rapid outward growth from its core. The County Spatial Plan is inextricably linked to the County Integrated Development Plan (CIDP) having a key focus on optimal utilisation of resources and ensuring infrastructural development in the region. The planning area will have its plans and programmes mainly pegged on Kiambu CSP and Kiambu CIDP. This will act as the base for the articulation and formation of action area plans and zoning plans for the Plan. Table 2-10 illustrates programmes and strategies in Kiambu County Spatial Plan.

**Table 2-10: Relevant Strategies in Kiambu County Spatial Plan**

Sectors	Strategies
Agriculture and Rural Development	<ul style="list-style-type: none"> <li>• Promotion of agriculture, livestock and fisheries development;</li> <li>• Ensuring proper access to infrastructure and utilities;</li> <li>• Ensuring the promotion or marketing of agricultural, livestock and fisheries products;</li> <li>• Ensuring quality control on-farm inputs;</li> <li>• Ensuring proper access to available and affordable credit; and</li> <li>• Enhancing effective institutional and legal framework.</li> </ul>
Urbanisation	<ul style="list-style-type: none"> <li>• To enhance the creation of employment opportunities in rural centres;</li> <li>• To promote the development of strategic growth centres;</li> <li>• To densification of residential areas to avoid urban sprawl;</li> <li>• To provide adequate sewer and solid waste disposal infrastructure in urban centres; and</li> <li>• To promote efficient linkages and connectivity within and between urban centres.</li> </ul>
Industrialisation	<ul style="list-style-type: none"> <li>• To provide an enabling environment for industrial growth;</li> <li>• To promote innovative technologies;</li> <li>• To revive collapsed industries and promote the establishment of Jua Kali and other light industries; and</li> <li>• To strengthen and promote community-based financial institutions.</li> </ul>
Tourism and Environmental Conservation	<ul style="list-style-type: none"> <li>• Ensuring conservation and sustainable use of the environment and natural resources;</li> </ul>

Sectors	Strategies
	<ul style="list-style-type: none"> <li>Supporting protection and sustainable management of water resources;</li> <li>Promoting the conservation of natural heritage and indigenous cultural sites;</li> <li>Coordinating infrastructure planning and development; and</li> <li>Promoting tourism investment opportunities in the region</li> </ul>

Source: Kiambu CSP

### 2.8.2 Kiambu County Integrated Development Plan, 2023-2027

Kiambu CIDP 2023-2027 has five main pillars that are meant to steer development in the County. These pillars are security, employment, education, health, and urban planning. The Kikuyu ISUDP has integrated relevant strategies as provided in the Kiambu CIDP 2013-2017, with a key focus on projects that have already been planned for or are ongoing. Some of the programmes and projects in Kiambu CIDP relevant for this ISUDP are summarised in Table 2-11.

**Table 2-11: Relevant CIDP Strategies**

Sectors	Strategies
Agriculture and Rural Development	<ul style="list-style-type: none"> <li>Ensuring small-scale holder horticulture and promotion unit programme (Small-scale Holder Horticulture and Promotion Unit Programme or SHEP-UP);</li> <li>Promoting livestock production and curbing parasites and diseases;</li> <li>Laying out proper physical infrastructure in agricultural zones linking them properly to the markets;</li> <li>Improving livelihoods of the community adjoining forests while providing alternative income sources; and</li> <li>Improving forest cover for biodiversity and water catchments.</li> </ul>
Energy, Infrastructure and IT	<ul style="list-style-type: none"> <li>Supporting ICT infrastructure development hence ensuring efficiency inaccessibility;</li> <li>Creating incentives for service providers to deploy services in rural and underserved areas; and</li> <li>Ensuring proper physical infrastructure layout to ensure proper connectivity between land uses enhancing mobility and accessibility.</li> </ul>
Environment Conservation and Water	<ul style="list-style-type: none"> <li>Reclaiming the riparian reserve and maintaining them through planting vegetation cover;</li> <li>Providing adequate potable water within the County;</li> <li>Ensuring proper solid and liquid waste disposal mechanisms; and</li> <li>Increasing the forest cover in the county mainly through afforestation and reforestation.</li> </ul>

Community facilities	<ul style="list-style-type: none"> <li>• Ensuring proper distribution of educational facilities within the County;</li> <li>• Improving sanitation in schools at all levels; and</li> <li>• Improving health services in the hospitals by equipping the health centres, increasing the number of staff as well as the number of health centres.</li> </ul>
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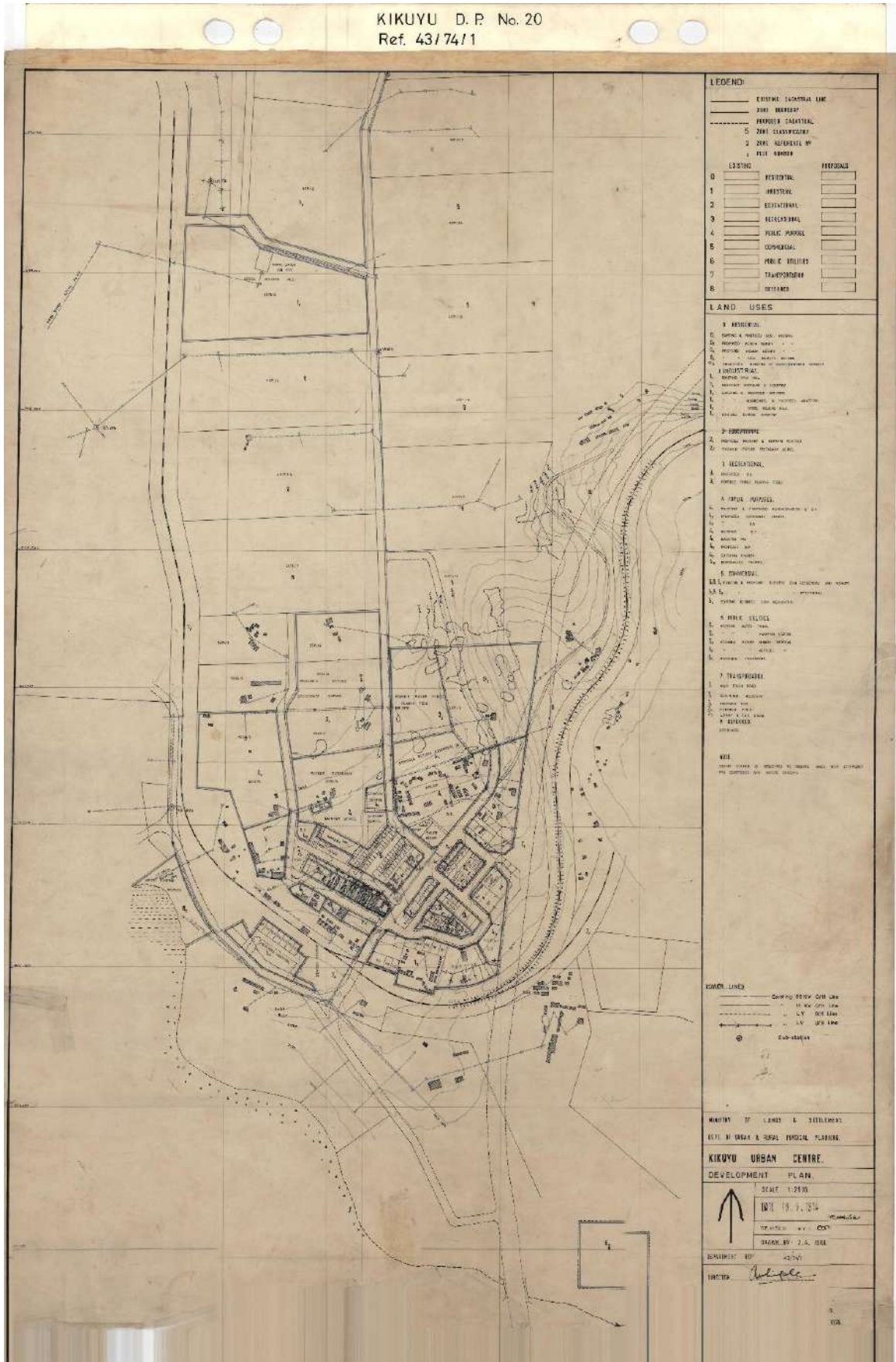
Source: Kiambu CIDP, 2024

### 2.8.3 Kikuyu Development Plan, 1974

The only previous planning intervention in the planning area is the Development Plan of 1974.

## 2.9 Cluster Potential

While pointing out to the lack of an integrated approach to development in the NMR, SPC for NMR suggests that the region should consider using the cluster development strategy as an economic tool for enhancing competitiveness. Considering this, the likelihood of and potential for adoption of cluster development strategy was assessed. This assessment found that the defined four clusters in Consultant's terms of reference have got some economic logic.



Map 2-6: Kikuyu Development Plan of 1974

The key industry verticals within each of the four clusters fit in with the economic priorities of the NMR and fulfil specific economic roles essential to the growth and development of the entire region. The identified key economic planks in each town and urban corridor within the four clusters may be linked to one or more of the NMR Missions under Vision 2030 as described previously. The clusters therefore collectively complete the NMR economy and would serve as key economic drivers of the capital city and the metropolitan region.

In addition, the economic activities, and features of the four clusters complement instead of competing with one another. One cluster's development into an education hub, for instance, would support the economic growth of another region by providing high-skilled industrial and tertiary workforce, thus boosting productivity as well as the economic output of the latter. Similarly, 'dormitory clusters' which have seen a high real estate growth, provide residences and commercial services to hundreds of thousands of workforces employed in the Central Business District of Nairobi as well as in other urban centres of the NMR. The economic spillovers from one cluster too, if absorbed optimally, will have a major impact on the growth and development of others. The need to identify, develop and nurture such economic complementarities and externalities has been highlighted in this strategic report and is recommended to be considered key in all NMR level strategic planning and policy design.

Table 2-12 illustrates the assessment for adopting a cluster-based planning strategy.

**Table 2-12: Assessment for adopting Cluster-based Planning Strategy**

Cluster No.	Town/ Corridor	Existing Economic Activities	Identified Economic Planks	Economic Clustering Potential
One	Juja	Agriculture, Quarrying, Small-Scale Businesses, Manufacturing Industry.	Education, Real Estate.	Education Real Estate Transport Hub.
	Ruiru	Small and Medium-Scale Businesses, Agriculture, Industry including Jua Kali.	Education, Real Estate.	
	Nairobi-Thika	Education, Transport, Real Estate.	Education, Real Estate, Agro-business, Transport/Freight Services.	
Two	Kiambaa	Agriculture, Small and Medium-Scale Businesses- Jua Kali, Transport Services, Real Estate.	Agriculture, Eco-Tourism, Real Estate	Farming Agro Industry Manufacturing.
	Kikuyu	Agriculture, Fish Farming, Small and Medium-Scale Businesses, Transport	Farming, Agro-Industry.	

		Services, Real Estate, Industry.		
	Limuru	Agriculture, Manufacturing, Small and Medium-Scale Businesses, Transport Services.	Farming, Agro-Industry, Manufacturing.	
Three	Kitengela	Services, Real Estate, Agriculture, Transport Services, Tourism.	Real Estate, Industrial, Tourism.	Real Estate Tourism Services.
	Ngong-	Services, Agriculture, Transport, Hospitality, Small-Scale Industry.	Real Estate, Tourism.	
	Ongata Rongai and Kiserian	Services, Agriculture, Transport, Industry.	Real Estate, Services.	
Four	Mavoko	Services, Manufacturing, Transport.	Industry, Logistics and Transportation	Administrative Hub Industry Logistics and Transportation IT Education and Services.
	Nairobi-Malili	IT Services, Commercial, Transport Services.	Real Estate, Logistics and Transportation, IT Education and Services.	

Source: Spatial Planning Concept for NMR



REPUBLIC OF KENYA



COUNTY GOVERNMENT OF KIAMBU

## Part II

# Situational Analysis

## 3 PHYSIOGRAPHIC CHARACTERISTICS

### 3.1 Overview

Kikuyu Urban Area is located at the southwestern portion of Kiambu County. The planning area is bordered to the north by Gatimu Sub-location, which is within Limuru Central Ward of Limuru Sub-County. To the east, the planning area is bordered by Kabete Kikuyu Urban Area specifically the sub-locations of Muguga, Gitaru, Kanyariri and Uthiru. To the south lies Kibiko Sub-location (part of Kajiado West Sub-County) and Kerarapon (part of Kajiado North Sub-County) in Kajiado County. Nairobi City defines the planning area's South-Western boundary. The planning area's traditional urban centre, Kikuyu Town, is located about 20km northwest of Nairobi city. It is located at the lower eastern slopes of the Aberdare range with Kikuyu Town having an elevation of about 1,700m above sea level. It has a total land area of approximately 17,149.35 hectares, which comprises the entire Kikuyu Urban Area.

### 3.2 Base map

The base map of the entire planning area is, presented in Map 3-1.

### 3.3 Topography and Landforms

The planning area lies within the Kikuyu Highlands and has rich, well-drained volcanic loam soils that support crop farming. It lies in relatively higher elevation at an altitude of about 1,700m above sea level. The planning area is generally characterised by gentle to steep slopes and valleys. The central and southern portions of the planning area are forested. Muguga Forest is found at the Kari-Sigona area while Dagoretti Forest is located at the Gitiba area.

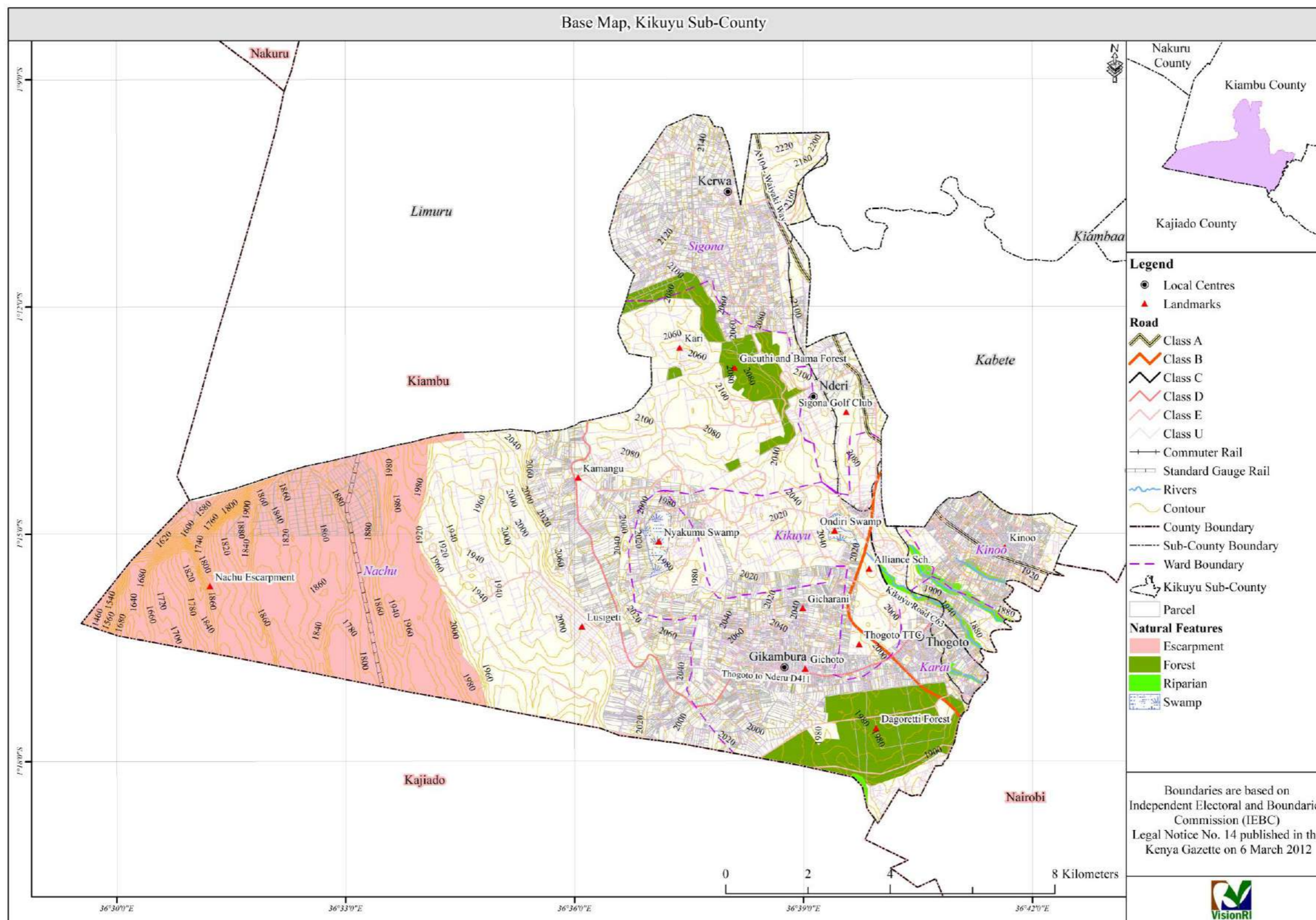
### 3.4 Geology & Soils

The planning area is characterised by volcanic rocks underlain by Kapiti phenolite, below which lies the basement system. Volcanic rocks are characterised by good water capacity, which is associated with adequate water recharge. The soils comprise of welded tuffs and sediments, which are mainly underlain by Kerichwa Valley Series. Varied zones within the planning area are underlain by Nairobi Trachytes which overly Nairobi Phonolites. Nairobi phonolites layers underlain by Mbagathi Trachytes interbedded with the Athi tuffs and Lake Beds of the Upper Athi Series.

Soil pollution is a key environmental challenge within the planning area. This is mainly because of the use of fertilisers and chemicals in farmlands and plantations, which has led to soil poisoning hence interruptions of the natural and productive soils. The addition of artificial fertilisers interferes with soil nutrients and soil structure. Soil pollution affects underground water when chemicals leach, and surface water is affected when run-off is experienced during rainfall<sup>1</sup>.

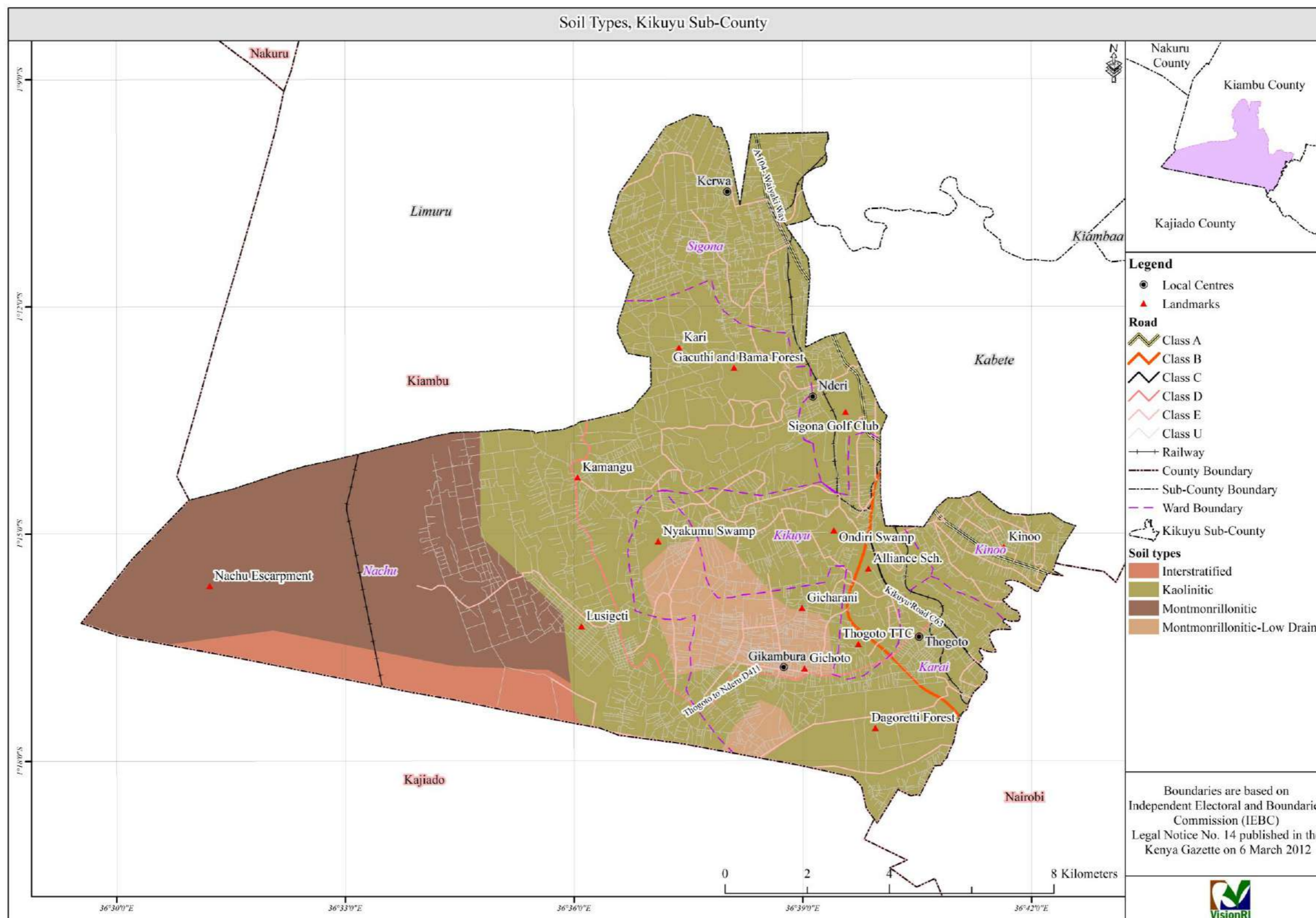
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<sup>1</sup> DeKimpe & Morel, 2000



Map 3-1: Kikuyu Urban Area Base Map

Source: VisionRI



Map 3-2: Kikuyu Urban Area Soil Map

Source: Survey of Kenya (SoK)

### 3.5 Drainage and Hydrology

Kikuyu Urban Area's drainage comprises of both surface and sub-surface water accounting for 90% water potential. The Kikuyu Urban Area is within the Nairobi River sub-catchment which occupies the southern part of the county with major rivers in Kikuyu being Mbagathi and Nyangara, Nairobi, Githaturu and Mweteta rivers. Kikuyu is a net groundwater recharge zone. The main source of groundwater is Nyakumu and Ondiri swamps with the latter being the source of Nairobi River. The swamp is located about 200 metres from Kikuyu Town. Ondiri wetland is a swamp with bog-like characteristics. It covers an area of approximately 30 ha, is 2 to 3 metres deep with a perimeter of about 3.3 km. in total, the groundwater contribution to water demand in Kikuyu is about 13,855 m<sup>3</sup>/day.

### 3.6 Flora and Fauna

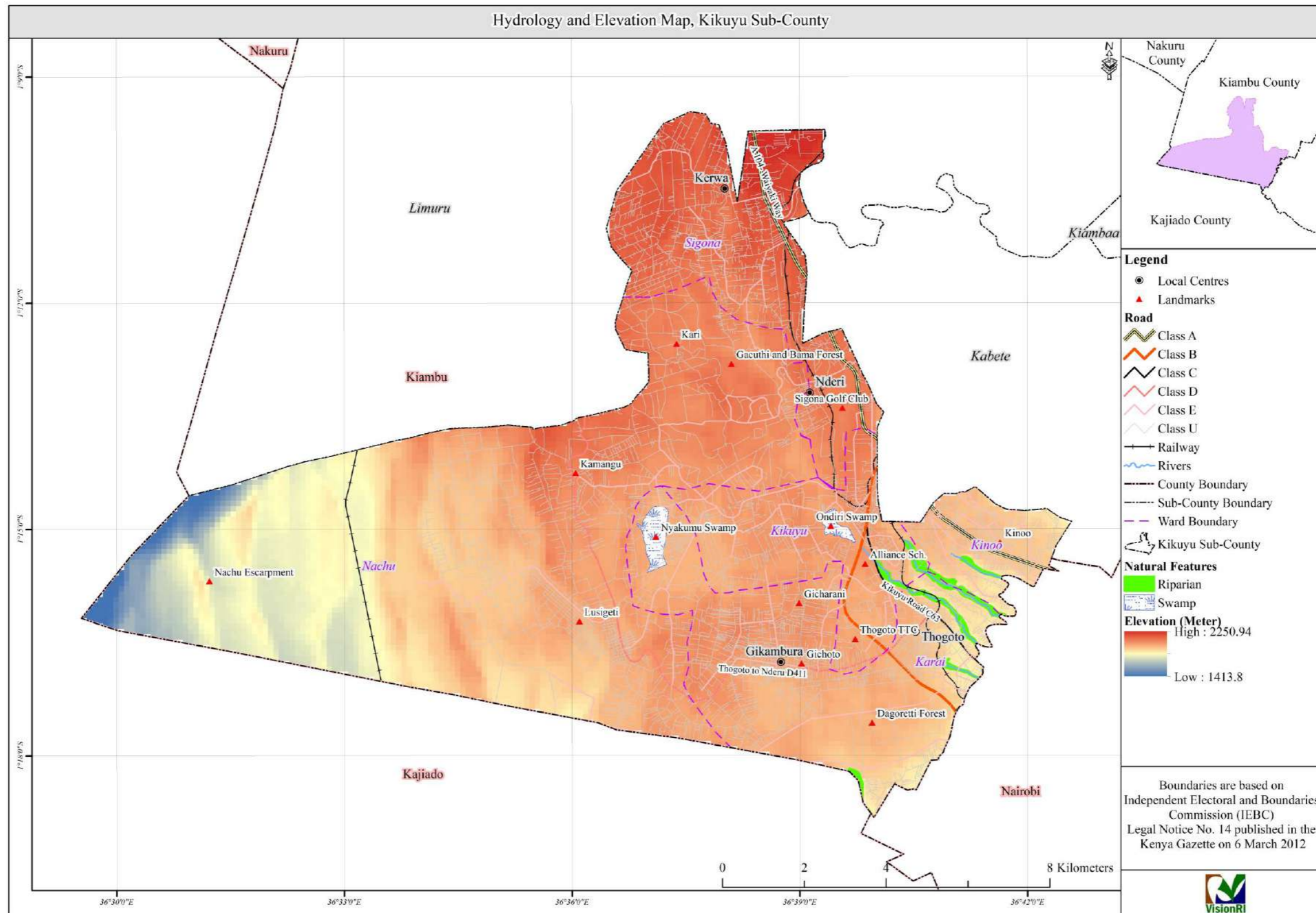
#### 3.6.1 Flora

Kikuyu is characterised by a variety of vegetation cover. Tree species reported to be dominant are as follows: *Azadirachta indica*, *Calliandra calothyrsus*, *Senna siamea*, *Casuarina equisetifolia*, *Croton megalocarpus* (Mukinduri), *Prunus africana* (Muiri), *Cupressus lusitanica*, *Eucalyptus* species, *Ficus* species, *Grevillea robusta*, *Mangifera indica*, *Moringa oleifera*, *Senna siamea*, *Sesbania sesban*, *Terminalia brownie*, *Schefflera actinophylla*, and *Spathodea camulana*, amongst others. Muguga and Dagoretti forests are the two protected areas in Kikuyu. Muguga Forest is located in the Kari-Sigona area and hosts the Kenya Forest Reservation Institute and Kenya Agricultural Research Institute while Dagoretti Forest is located in Gitiba. Dagoretti Forest actually joins with Embakasi Forest located south of the planning area. Muguga forest reserve covers over 225.3 ha of both indigenous and exotic tree species and supports over 40,000 persons in neighbouring villages of Kerwa, Nderi, Kikuyu, Thigio, and Karai-Ndeiya.

#### 3.6.2 Fauna

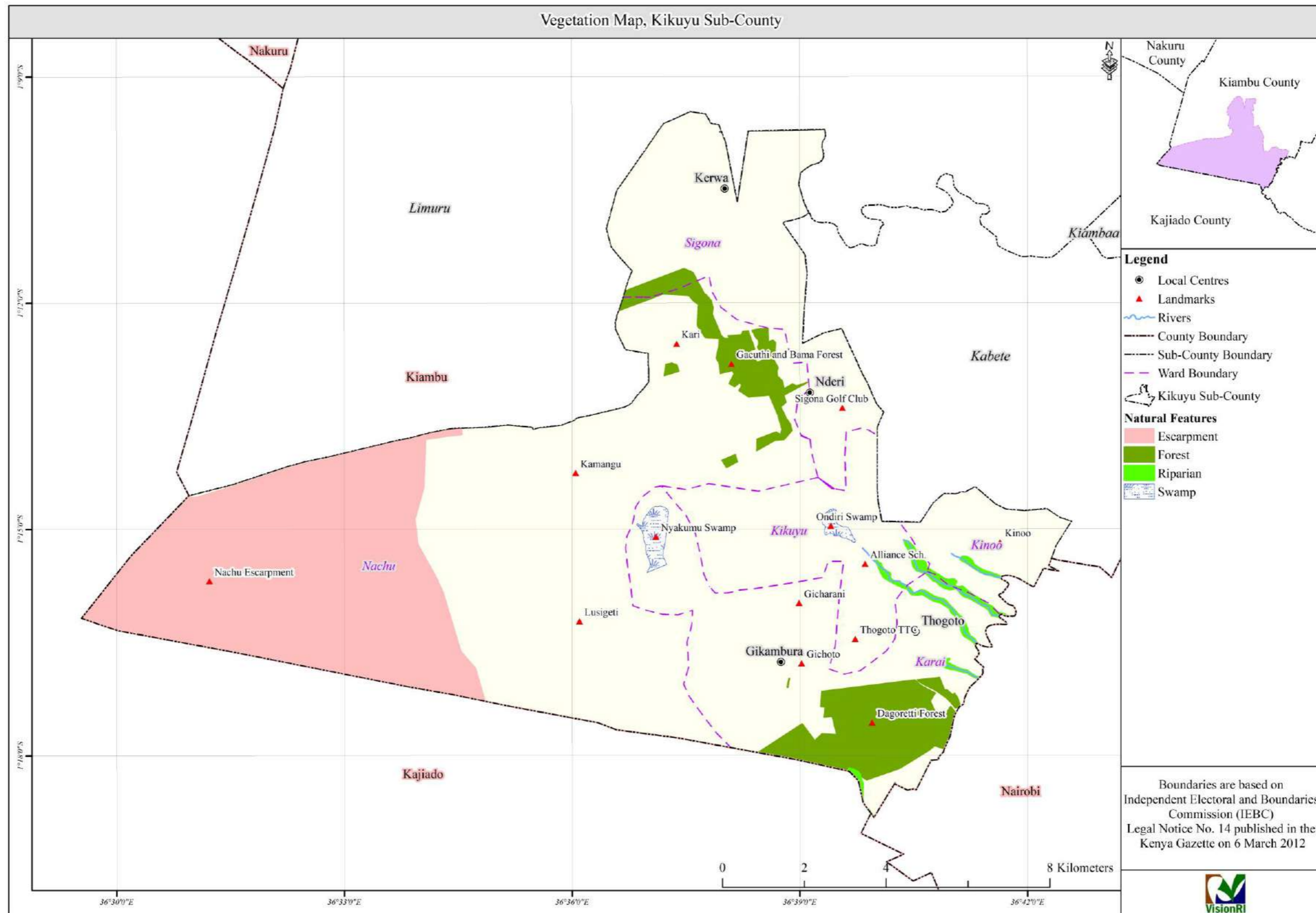
Kikuyu is situated within a predominantly agricultural area; whereby human activities have altered the natural habitat of wildlife over the years. However, there are main forests which include Dagoretti, Gacuthi and Bama and Muguga which are habitats to a variety of birds and other small mammals, reptiles, insects. These have scenic trails of natural and planted forests and being located about 30 kilometres from Nairobi offers the visitors a refreshing day in the outdoors. The following were observed during the Social and Environmental Social Assessment (SESA) field visit:

- There is an upsurge in catchment degradation in the planning areas through the clearing of vegetation which may lead to loss of economically significant flora and degradation of environmentally important areas;
- Over the years, habitat alteration may include fragmentation of forests and wildlife habitat through bush clearing, disruption of watercourses, the establishment of non-native invasive plant species, creation of barriers to wildlife movement and visual and auditory disturbance due to the presence of machinery, construction workers, associated equipment and development operations;
- Environmental degradation due to change of land use from agricultural to a built environment was identified as a concern by the stakeholders; and



Map 3-3: Hydrology and Elevation Map

Source: SRTM Data



Map 3-4: Vegetation Map

Source: Ministry of Environment and Forestry

- There would be visual and auditory disturbance due to the presence of machinery, construction workers, and associated equipment during construction works. This could lead to loss and fragmentation of wildlife habitats. Natural forests which act as habitat for wildlife are likely to be encroached into to pave way for proposed developments. Changes that may alter the existing natural conditions are known to impact negatively on wildlife.

## 3.7 Climatic Conditions

### 3.7.1 Rainfall

The rainfall is bimodal, with long rains occurring in April and May and short rains during the months of October and November. The average annual rainfall is 1,500 mm. The long rains within the planning area lie between mid-March and May followed by cold season while the short rains occur between mid-October and November. This rainfall pattern is optimal for settlement and development. The average rainfall is shown in Figure 3-1.

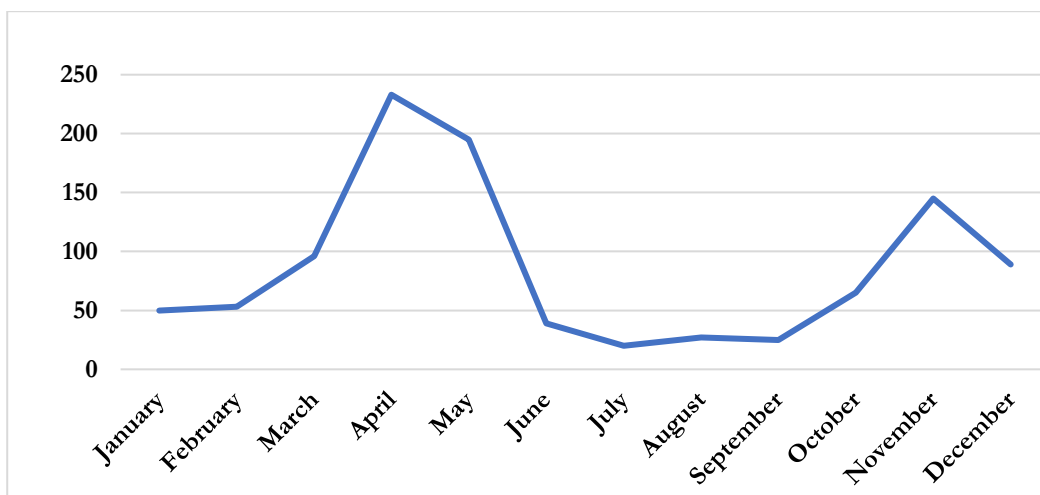


Figure 3-1: Average Rainfall in Kikuyu

Source: Kenya Meteorological Department (kmddl.meteo.go.ke)

### 3.7.2 Average Winds

The planning area has wind speeds ranging from 6.4 miles per hour to 10.4 miles per hour. This implies that the average speed of wind within the planning area lies at 8.4 miles per hour. The highest wind velocities are experienced between September and April. The potential for wind power generation has not been analysed for this area.

### 3.7.3 Evaporation

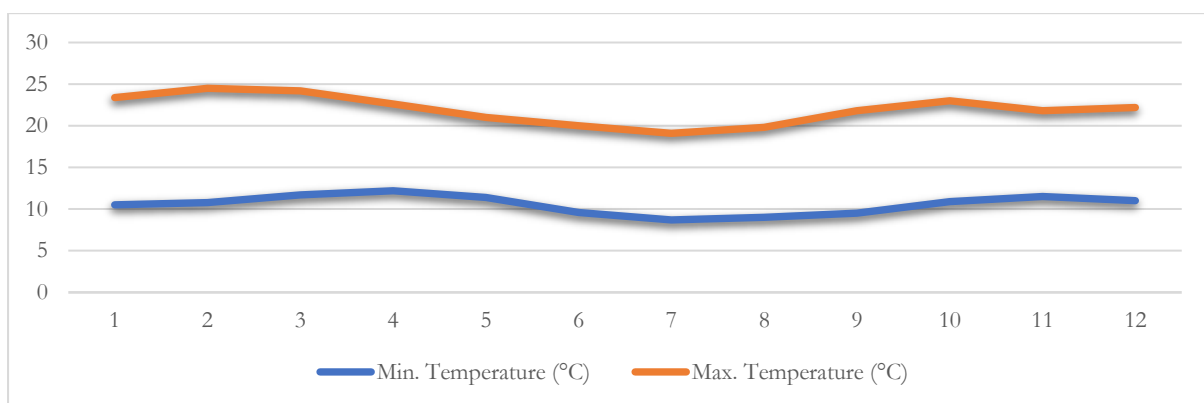
Evaporation rates in Kiambu County range from 1500 to 2000 mm per year (Dagg and Woodhead, 1970).

### 3.7.4 Relative Humidity

The relative humidity is defined as the amount of water vapour present in the air, which is usually expressed as a percentage of the amount needed for saturation at the same temperature. The average humidity of Kikuyu Urban Area lies at 42 per cent.

### 3.7.5 Temperature

The area has a mean annual temperature of 26°C, which ranges between 20.4°C in the upper highlands to 34°C in the midlands of Karai in Kikuyu division. Low temperatures are experienced in July and August while January, February and March are the hottest months. Temperature ranges in the planning area are indicated in Figure 3-2. This average temperature is sufficient for solar power generation.



**Figure 3-2: Temperature range in Kikuyu**

Source: Kenya Meteorological Department ([kmddl.meteo.go.ke](http://kmddl.meteo.go.ke))

## 3.8 Air Quality

Air quality in Kikuyu is generally within acceptable standards. Air pollution is due to increased motor vehicle traffic and emission from processing factories located in Kikuyu town, and dust from quarries. The term air emissions or air pollution describes the phenomenon of health hazardous gases and particles, which are put into the air or emitted by various sources. The sources within the planning area could be mobile (e.g., cars, trucks, buses) or stationary (e.g., power plants such as electric generators, factories, refineries etc.), as well as indoor (e.g. some building materials mainly asbestos and cleaning solvents). The components of the emission include carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO<sub>2</sub>), ozone (O<sub>3</sub>), particulate matter (PM), and sulphur dioxide (SO<sub>2</sub>).

Air pollution is also caused by emissions from lighting sources. The major lighting source within the planning area is paraffin that consists of greenhouse gases, such as Carbon IV oxide, which pose risks not only to the locality but to the globe (Kiambu County Integrated Development Plan, 2013-2017). The emission parameters that should be regularly monitored are as follows: Sulphur dioxide (SO<sub>2</sub>), carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO) and nitrogen dioxide (NO<sub>2</sub>). An environmental concern regarding the exposure of people to air pollutants at higher concentrations and longer durations is the potential of developing health complications. It is, therefore, imperative that Air Emission Pollution levels are constantly monitored by the

relevant institutions (NEMA and County Government) and the necessary mitigations put in place, should they be found to be above permissible levels.

### 3.9 Noise Levels

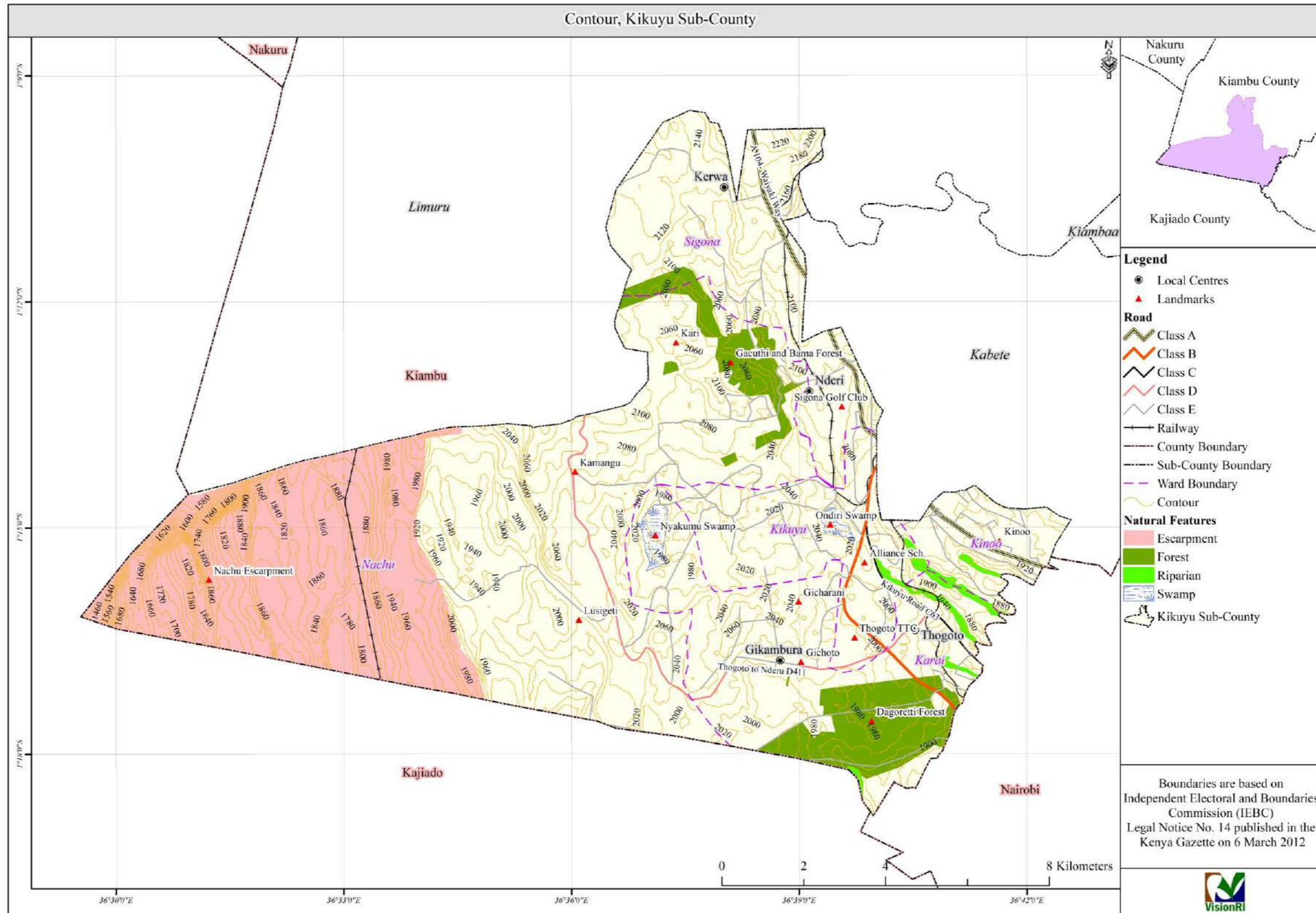
According to NEMA regulations on Noise and Excessive Vibration Pollution (Control) Regulations, 2009, noise means any undesirable sound that is intrinsically objectionable or that may cause adverse effects on human health or the environment. Noise pollution means the emission of uncontrolled noise that is likely to cause danger to human health or damage to the environment. Noise pollution in the planning area emanates from; automobiles such as public vehicles (matatus), lorries, excavators, and trains; and large scale posho mills, amongst others. Noise is also seen to emanate from bars and other entertainment joints that play loud music. The other sources of noise can be classified to include Radio, TV, other sound-amplifying devices, parties and social events, hawkers, peddlers, touts, street preachers, machinery, and noise from construction and demolition.

### 3.10 Key Planning Issues

**Table 3-1: Key planning issues on physiographic characteristics**

Key Highlights	Opportunities
Planning area lies within the Kikuyu Highlands and has rich, well-drained volcanic loam soils.	Good soil for crop farming.
The planning area is characterised by volcanic rocks underlain by Kapiti phenolate.	Adequate water recharge.
Soil erosion prevalent in the planning area.	
Location of Ondiri Swamp, Nyakumu swamp and Kikuyu springs in the planning area.	Conservation of the wetlands and use for tourist attraction.

Source: VisionRI



**Map 3-5: Contour Map**

Source: Derived from SRTM Data

## 4 ENVIRONMENT, CLIMATE CHANGE AND DISASTER RISK REDUCTION

### 4.1 Overview

Kikuyu Urban Area is located within the lower midland topographical zone of Kiambu County. The soils in the area are dissected and easily eroded. Kikuyu is known for its steep slopes and escarpment in Nachu, which are unsuitable for cultivation.

### 4.2 Natural Environment, Climate Change and Disaster Reduction

#### 4.2.1 Land

A bigger area of Kikuyu Urban Area has very fertile land suitable for various agricultural activities, apart from the escarpment in Nachu. The land is the primary natural resource supporting agriculture as a major economic driver for the Sub-County. The area practices both commercial and subsistence agriculture, growing major crops including maize, Irish potatoes and beans.

#### 4.2.2 Water Resource

The main surface water bodies in Kikuyu Urban Area are rivers like Mbagathi and Nyangara, Nairobi, Githaturu and Mweteta rivers. Groundwater is from Nyakumu swamp in Karai ward, Ondiri swamp and Kikuyu springs in Kikuyu ward.

#### 4.2.3 Forests and Vegetation

The Urban Area has both natural/indigenous forests and planted forests. There are three natural forests in Kikuyu Urban Area including Dagoretti, Muguga, Gacuthi and Bama forests.

#### 4.2.4 Environmentally Sensitive Areas

Environmentally sensitive areas include all areas that require special protection due to their natural characteristics, landscape form, historical value as well as wildlife component. Policies and strategies are often well laid out to ensure adequate protection of environmentally sensitive areas in varied zones. Urban growth should be planned and guided to safeguard the environment. This calls for the protection of environmentally sensitive locations such as the Nyakumu swamp in Karai, Ondiri swamp and Kikuyu springs in Kikuyu as well as Dagoretti, Muguga, Gacuthi and Bama forests. Surface water bodies in the area like Nyongara, Mbagathi, Nairobi, Githaturu and Mweteta Rivers are also prone to pollution due to lack of sewer infrastructure that leads to the discharge of wastewater into the rivers.

The riparian reserves should entail a 30m buffer on both sides of the rivers. The buffer zones should be provided to create physical distances between environmentally sensitive areas and high-density urban developments. This could be achieved by modelling the planning area to have high-density areas within the growth nodes, which graduate into lesser densities towards environmentally sensitive areas. It is also important to establish “urban limits” such that urban sprawl will not fully overrun the remaining open

agricultural areas thus losing valuable urban open space. Urban growth should, as much as practicable, be confined to strategic and suitable locations.

#### 4.2.5 *Greenery and open spaces*

Green open spaces are important elements of the built environment. Such spaces provide a breakaway space for recreation/leisure and help to sequester the carbon for a cleaner atmosphere. The planning area is near Nairobi and there are chances that many of the people who live there and require sports and recreation facilities may be using those in Nairobi. Play and picnic for the family are becoming common practice for the modern family in Kenya's urban areas. For this to happen there is a need for public parks that are clean, secure and spacious. These spaces will be the backbone of social life in urban areas in the coming years and should be included in urban and regional plans.

Kikuyu Town has a very small park located in the town centre that can hardly host more 100 people, thus defeating its use as a park. There are no playgrounds around the planning area. However, there are notable large open spaces, such as Ondiri swamp abutting the CBD, one park/open space at the heart of the CBD, and pocket opens spaces found in the low-density residential development zones surrounding the CBD.

#### **CLIMATE CHANGE;**

Climate Change is a long-term shift in temperatures and weather patterns occasioned by human activities and lack of holistic planning. Kikuyu Urban Area has Nachu as a Semi-Arid area. Some areas in the ASAL region include Gikambura, Ruthigiti, Kamangu, Kianjagi, Migumoini, Kanyayo, Ng'amba, Renguti, Karabuta, Gatune, Rwanyaga, Nachu, Nguirobi, Gitutha, Nduthi, Kiriri, Kiawanda, Thigio, Githarane, Mung'etho, Nderu, Mirithu, Tiekunu, Kiandutu and Githunguchu.

The climate in Nachu is characterized by little rainfall throughout the year, high temperatures ranges and Sparse Vegetation cover. There are Several boreholes sunk to curb the water shortage within the area but the water has very high fluoride levels. However, the boreholes do not satisfy the water needs in the area, and therefore need to have long term solution to this including piping water from swamps and dams including Ondiri swamp.

The extreme climatic conditions have affected crop growth and subsequent yields as well as livestock productivity with eventual contribution to food insecurity and scarcity. soil erosion especially in the escarpments has caused land degradation

#### **Effects of Climate Change**

This includes; Drought, Flooding, Temperature

#### **RESILIENCE ADAPTATION MEASURES;**

**Water Management:** This includes Water Recycling, Use of Grey water, Improved Storm and runoff water, Alternative source of water and Expand storage facilities.

## Food Security

Support Urban and Peri-urban agriculture by;

- Improved farming methods that reduce erosion
- Reforestation and afforestation programs
- Sensitisation of the public on tree planting
- Water storage during rainy seasons
- Policies on the type of trees to plant

## Housing: Improved through;

- Quality; affordable; located housing in environments which are not fragile
- Green zones, consider wind corridors,
- Rezoning some of the areas that can mitigate the issues
- Improve building standards
- Need for funding of adaptation measures and strategies
- Public Private Partnerships, Grants,

## Mitigation Strategies for Disasters and Climate Change Adaptation;

- Use of Solar/renewable energy to tap the solar energy
- E-mobility/Walkable neighbourhoods/ to address carbon emissions through compact and mixed use developments to reduce car ownership and usage
- Retrofit buildings to make them adaptable with weather changes
- Rain harvesting during rainy seasons and smart agriculture
- Identification and mapping ecosystems prone to climate related disasters
- Incorporate climate adaptation strategies during preparation of physical and land use development plans
- Loss of Biodiversity can be mitigated through identification and mapping of areas at high risk of biodiversity loss, prepare special area plan for biodiversity management and designate sites for biodiversity research reserves/ farms
- Flooding mitigation through prohibiting development on areas prone to flooding and water sheds, develop appropriate flood management plans for river basins, designate sites for water collector tunnels, water recharge basins, dams, water pan and construction of flood protection structures such as dykes, canals and identify and map flood prone areas
- Environmental degradation mitigation through identification and map environmental degradation areas conduct an Environmental Social Impact Assessment.
- Soil erosion should be mitigated through identification and map areas prone to soil erosion, encourage greening, afforestation and agroforestry.
- Resource conflicts should be mitigated through prepare a land use plan for sustainable use of the resource, provide buffer zones between different uses, integrate participatory planning approaches in preparation of plans and management of resources, promote alternative livelihoods, sensitization

on sustainable use of resources.

- On Fire outbreaks; there is need to get mitigation measures through Identify and map fire prone areas, develop appropriate fire management plans, introduce fire breaks, designate sites for fire stations, water hydrants, fire engine routes, evacuation sites and routes and other appropriate fire management related facilities.
- Deforestation should be mitigated through identification and delineation of forest boundaries, prohibit developments in forest areas except for the purpose of eco-tourism, research and physical infrastructural developments, provide buffer zones around forests, encourage agroforestry and conservation of forests.

#### 4.2.6 *Adaptation to Climate Change*

Climate is the average weather condition of a given location observed over a period (at least 30 years). Climate plays an important role in many socio-economic and environment activities since it determines the space-time distribution of the world's resources. About 90 per cent of all-natural disasters worldwide are climate-related, and about 10 per cent of the disasters often emanate from geological, biological and technological/anthropogenic activities.

The transformation of many parts of Kikuyu from agricultural to built-up zones has led to low water seepage during rainy seasons due to concrete surfaces resulting in floods. In cases where heavy downpour occurs, if the situation is not curbed, flooding may lead to loss of property and deaths.

Kikuyu is characterised by relatively steep topography. The encroachment of developments into riparian reserves may lead to landslide risks that cause the destruction of both life and property.

The effects of climate change include but are not limited to the following:

- Unpredictable weather patterns, including rainfall;
- Flooding and displacement of people from flood-prone areas;
- Droughts;
- Short rainy seasons and prolonged dry spells during rainy seasons;
- Drying up of rivers and lakes;
- Water scarcity; and
- Declining flora and fauna, and declining rare natural species.

## 4.3 Disaster Incidents

### 4.3.1 *Disaster Risk Reduction and Management*

Disasters disrupt people's livelihoods, destroy infrastructure, divert planned use of resources, interrupt economic activities and retard development. Disaster management is a planned, deliberate, organised, directed, and visualised effort to mitigate, prepare for, respond to, and recover from a disaster or emergency or its effect.

Disaster preparedness involves an integrated combination of planning, personnel training, drills, acquisition of equipment, and standard certification. Disaster responsive strategic plans provide mechanisms and systems for setting priorities, integrating and linking required stakeholders in line with their functions, and ensuring that communications and other systems are available and integrated in support of a full spectrum of incident management requirements.

According to Kiambu CIDP 2023-2027, disaster management and special programmes is under the Department of Administration and Public Service. The core functions of this unit are:

- To improve disaster preparedness and management services;
- To enhance safety;
- To increase resilience; and
- To build a more sustainable society.

In Kikuyu Urban Area, the main disasters were categorised into two major types:

**Natural disasters:**

- Floods – experienced along river lines and when stormwater drains get blocked during heavy rains;
- Droughts and famine – around Nachu on the west of the Kikuyu Urban Area
- Landslides – on steep and hilly areas such as Karai; and
- Windstorms – blowing off roofs from schools in Nachu area.

**Man-made disasters:**

- Fires – these have been reported in institutions, commercial areas and in homes;
- Road accidents – along major highways and roads in urban and peri-urban areas;
- Drugs and substance abuse – mostly alcohol and drug abuse amongst the youth; and
- Collapse of buildings – owing to poor construction practices.

*4.3.2 Analysis of Disaster Risk Reduction (DRR)*

Based on Kiambu’s County Annual Development Plan 2024/25, the Table 4-1 below shows a SWOT analysis of DRR management in Kikuyu Urban Area.

**Table 4-1: SWOT Analysis of Disaster Management and Resilience**

<b>Strengths</b>	<b>Weakness</b>
<ul style="list-style-type: none"> <li>• Existence of the Disaster Management Committee and emergency funds;</li> <li>• Good road networks;</li> <li>• Presence of good health facilities; and</li> <li>• Existence of traffic rules and regulations.</li> </ul>	<ul style="list-style-type: none"> <li>• Poor road maintenance;</li> <li>• Poor enforcement of traffic rules and regulations;</li> <li>• Poor disaster management skills; and</li> <li>• Lack of disaster warning signs.</li> </ul>
<ul style="list-style-type: none"> <li>• Presence of programmes and funding agencies on disaster management; and</li> </ul>	<ul style="list-style-type: none"> <li>• Increased population;</li> <li>• Unpredictable weather;</li> </ul>

- Draft Disaster Management Policy.

- Global warming and climate change; and
- Quarrying.

Source: VisionRI

#### 4.3.3 *Emerging Environmental Issues*

Urban consumption of energy helps create heat islands that can change local weather patterns and weather. The heat island phenomenon is created because cities radiate heat back into the atmosphere at a rate of 15 per cent to 30 per cent less than rural areas. The effect of urban heat island in Kikuyu is an aspect that needs to be considered.

Urban areas affect not only the weather patterns but also the runoff patterns of water. Urban areas generally generate more rain, but they reduce the infiltration of water and lower the water tables. This means that runoff occurs more rapidly with greater peak flows. The aspect of increasing coverage of paved surfaces needs to be reconsidered so as not to increase runoff in the urban area.

GIS can be used most effectively for environmental data analysis and planning. It allows better viewing and understanding of physical features and their relationships that influence environmental conditions. Factors, such as the steepness of slopes, and type of vegetation, can be viewed and overlaid to determine various environmental parameters and impact analysis.

Digital information can be overlaid on photographs to provide environmental data analysts with more familiar views of landscapes and associated data. GIS can provide a quick, comparative view of hazards (highly prone areas) and risks (areas of high risk which may occur) and areas to be safeguarded.

On completion of data analysis, GIS can help in effective planning and managing environmental hazards and risks. In order to plan and monitor the environmental problems, the assessment of hazards and risks becomes the foundation for planning decisions and mitigation activities. GIS supports activities in environmental assessment, monitoring, and mitigation and can also be used for generating environmental models. GIS can aid in hazard mitigation and future planning, air pollution and control, disaster management, forest fires management, managing natural resources, wastewater management, oil spills and its remedial actions, etc.

Table 4-2: Key planning issues on the Environment, Climate Change, and Disaster Risks

Key Highlights	Opportunities
<ul style="list-style-type: none"> <li>Endangered natural resources. The Kikuyu Urban Area has important natural resources such as Ondiri Swamp and Nachu escarpment, whose potentials have been underestimated and under-exploited;</li> <li>Encroachment of human activities on riparian reserves, forests, and open spaces;</li> <li>Rivers are prone to pollution due to lack of sewer infrastructure that leads to the discharge of wastewater into them; and</li> <li>Loss of biodiversity – flora and fauna – due to human activities.</li> </ul>	<ul style="list-style-type: none"> <li>Tap natural resources to tap into the tourism industry which can promote the local economy;</li> <li>Sustainable exploitation of natural resources such as building stones and sand;</li> <li>Protection of riparian reserves through the creation of buffer zones;</li> <li>Provision of a public sewer system in the planning area; and</li> <li>Conservation and protection of forests and other environmentally sensitive areas.</li> </ul>

Source: VisionRI

## 5 POPULATION AND DEMOGRAPHY

### 5.1 Population Size

#### 5.1.1 Population Distribution and Density

According to the Kenya Population and Housing Census 2019, the population of Kikuyu Urban Area was 187,122. This represented a 49.2% growth from the 2009 population of 125,402<sup>2</sup>. Kikuyu's growth is expected to steadily increase owing to the improvements in transportation systems and upcoming urban nodes in the hinterlands e.g. Lusigetti, and Gikambura. Kikuyu sits at an extremely strategic location, served by the main A109, the Southern By-pass, the Commuter Rail line and the 17km dual carriage Western By-Pass. This will also encourage demand for land along Gitaru Road, creating the required impetus for population growth, albeit at a slowed pace compared to Ruiru and Juja Sub-Counties.

Table 5-1: Historical Growth of Population

Wards	2009	2019
Karai	20,420	23,661
Sigona	26,823	52,259

<sup>2</sup> 125,402 is the accounted Ward population based on the data provided in the 2009 KNBS KPHC Report Volume 1B

Wards	2009	2019
Nachu/Lusigetti	18,655	22,917
Kikuyu Township	32,422	39,585
Kinoo	27,082	48,700
Total	125,402	187,122

Source: KNBS Kenya Population & Housing Census 2019

The population densities of the various wards in the planning area are shown in the Table 5-2.

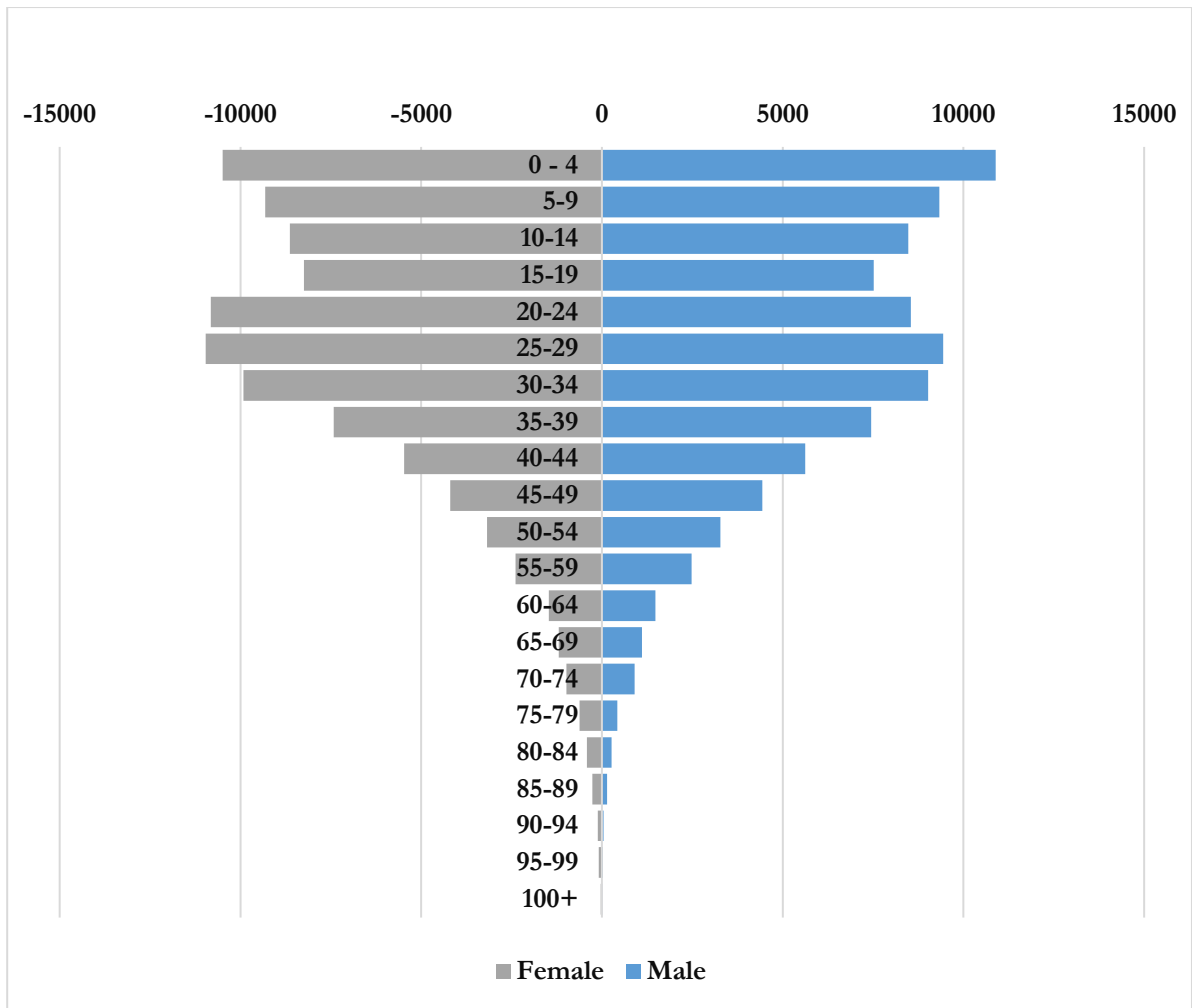
**Table 5-2: Population Density by Ward**

Wards	Area Sq. Km	Density Persons per Sq. Km	Total
Karai	16.8	1408	23,661
Lussigetti	21	795	16,704
Nachu	59.3	105	6,213
Kerwa	31.2	693	21,635
Kikuyu	20.4	8644	176,334
Thogoto	17	1802	30,624
Kinoo	7.2	6807	48,700

Source: Based on KNBS, 2019 Census Report

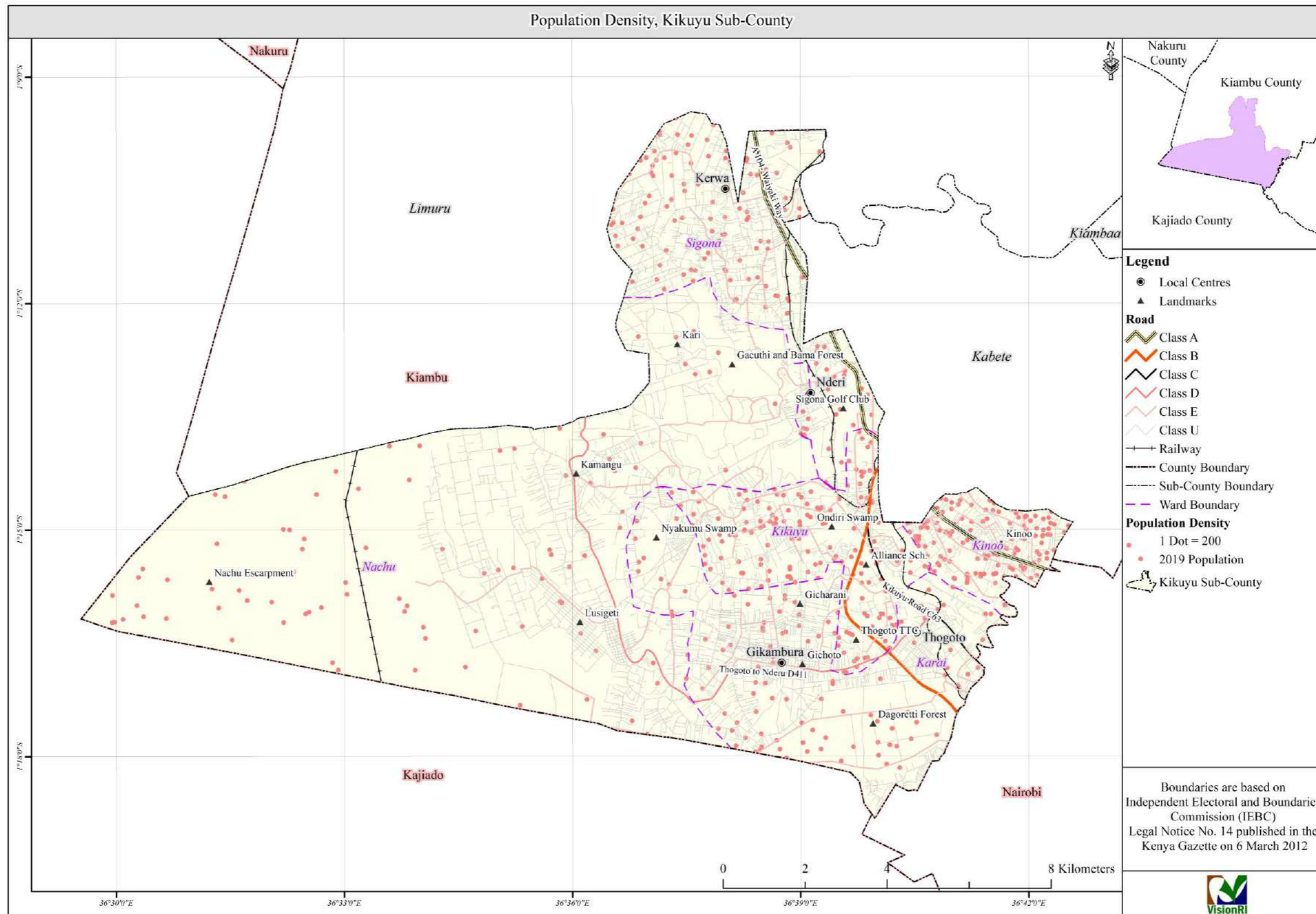
### 5.1.2 Population structure

According to the Kenya Population and Housing census 2019, the average household size in Kikuyu was 3.7. The household size of 1 - 2 persons per household was 22%, 3 - 4 persons was 26%, 4-5 persons was 29%, and above 7 persons per household was 23%. In terms of structure, the population of the planning area is generally youthful.



**Figure 5-1: Kikuyu's Population Structure**

Source: Based on the 2019 Kenya Population and Housing Census Report



Map 5-1: Kikuyu Population Density Map

Source: 2019 Kenya Population and Housing Census Report

**Table 5-3: Population Structure of Kikuyu in 2019**

Age	Male	Female
Kikuyu	90,919	96,198
0 - 4	10,893	10,494
5-9	9,332	9,311
10-14	8,476	8,629
15-19	7,520	8,241
20-24	8,548	10,816
25-29	9,443	10,962
30-34	9,028	9,913
35-39	7,445	7,423
40-44	5,624	5,472
45-49	4,434	4,193
50-54	3,282	3,181
55-59	2,482	2,385
60-64	1,480	1,472
65-69	1,112	1,194
70-74	903	984
75-79	424	616
80-84	265	413
85-89	144	265
90-94	44	111
95-99	32	86
100+	8	35

NB: The 5-person difference in the population has been factored in as Intersex in the 2019 Kenya Population and Housing Census Report

### 5.1.3 Population Projections

The planning area's population is expected to grow from 187,122 in 2019 to 267 304 by the end of the planning period in 2034 at a steady annual growth rate of 2.49% as shown in the Table 5-4. The population projections are based on the inter-censal population growth recorded between 2009 and 2019, as guided by the data provided by KNBS reports.

**Table 5-4: Projected Population, 2019 to 2034**

Wards	2019	2034
Karai	23,661	33 780
Sigona	52,259	74 652
Nachu/Lusigetti	22,917	32 737
Kikuyu Township	39,585	56 547
Kinoo	48,700	69 568
<b>Total</b>	<b>187,122</b>	<b>267 304</b>

Source: Based on KNBS, 2019 Census Report

## 5.2 Demography

The main driver for Kikuyu's growth is attributed to its proximity to Nairobi, the presence of good transportation links and vibrant growth nodes. Although it is viewed as a dormitory region, Kikuyu provides affordable land for residential development, creating a huge demand for commercial and residential land use investment.

### 5.2.1 Fertility and Birth Rates

Fertility is defined by the total number of live births a woman can have during her productive years. It is influenced by factors including the age of sexual debut, access to education, social practices including FGM, teen pregnancy, health factors and access to contraceptives. Contextually, Kiambu County has one of the lowest fertility rates in the country at 2.7 compared to a national figure of 3.9 per woman. In 2019, the County's age-specific fertility rate for girls aged between 15 – 49 years was at 47 births per 1000 girls which is half the national rate of 96. Kiambu County has the lowest fertility rates in the County. Cascaded at Kikuyu Urban Area level, these statistical rates influence the fertility rates of Kikuyu and continue to have a bearing on its future growth. Table 5-5 represents important demographics.

**Table 5-5: Demography**

Particulars	Status
Total fertility	2.7
Mortality rate = infant mortality rate (per 1000 live births)	33.9
Mortality rate = under-five mortality rate (per 1000 live births)	72
Life expectancy = 63.55 Years	63.55
kikuyu's Age-sex ratio (Male to Female)	1:1.04
Children below 1 year = KIKUYU	21,387

Source: KNBS 2009 Population Census<sup>3</sup>

### 5.2.2 Fertility rate

This is described as the total number of live births a woman has during her productive years, which is between 15 - 49 years or 12 - 49 years for international and Kenyan standards, respectively. According to (KNBS, 2012), the national Total Fertility Rate (TFR) was at 6.7 children in 1989 and 4.8 children in 2009. This drop was largely contributed by the use of contraceptives and late marriages. In the case of our planning area, we see the population increases at a rate of 2% - 2.2% people per annum. This means that the population has been growing at a very slow pace. Much as the women have been very fertile, population growth and fertility rate have significantly dropped. The positive impact of the drop is that there will be a steady urbanisation rate in the future, while the most dominant-negative effect is that the population will be comprised of an increased number of older people than the youth, thus decreasing the human labour as a source of production. Table 5-6 shows the Crude Birth Rate and Total Fertility Rate of Kiambu County.

**Table 5-6: Crude Birth Rate and Total Fertility Rate, Kiambu County**

	1989- 1999	1999- 2009	1989- 2009	Adjusted 2009
Crude Birth Rate	32.7	30.4	-2.4	38.7
Total Fertility Rate	3.4	3.2	- 0.2	3.2

Source: Based on KNBS, 2009 Census Report

### 5.2.3 Migration Trends

Kikuyu Urban Area has experienced rapid urbanisation because of the close proximity to Nairobi, the capital city of Kenya. Urban growth has been driven by demand for residences following the rent-seeking behaviour of the property market. The relatively cheaper cost of development in Kikuyu Urban Area as compared to Nairobi city, supplemented by convenient road access, has made the former an attractive area for the construction of owner-occupied housing or rental units. In turn, this has made Kikuyu a dormitory town serving Nairobi City.

The major factors leading to population growth in Kikuyu are:

- Good infrastructure such as roads and rail linking Kikuyu to other towns like Nairobi, Limuru, Kabete and Kiambu. This is evidenced by increased migration of people to new areas opened up by the new roads built by the government. Completion of the southern bypass in the planning area led to the massive immigration of people in buying land within the planning area;

<sup>3</sup> The 2019 population census report on demographic characteristics like fertility, death and birth rates has not been published.

- Availability of affordable residential housing in areas such as Kinoo, Muthiga, Kikuyu town Thogoto and Gikambura. The relative location of the Kikuyu Urban Area to Nairobi city has made it an attractive location for residential and industrial developments;
- Affordable land in the opened-up areas of Nachu, Karai and Kamangu due to the improved Dagoretti-Mutarakwa road. These areas are witnessing rapid subdivision of land into small plots for residential development;
- Government resettlement programme in Nachu which led to people moving into the area in search of affordable land; and
- Conversion of agricultural land into residential and commercial uses due to low returns in agriculture. This has led to Kikuyu becoming a dormitory town of Nairobi.

#### 5.2.4 *Death rate*

There are several concepts related to death rate such as; age-specific death rate, child mortality, crude death rate, infant mortality, maternal mortality death and under 5 mortality rates. These rates are vividly observed as the population transitions from one age group to another from conception. The most common death rates are under 5 mortality and infant mortality rates. The maternal mortality ratio is the number of women who die during pregnancy and childbearing. The highest death rate in the planning area, as well as any population, is the crude death rate. The crude death rate is described as the annual number of deaths occurring per a thousand mid-year population. As the population transitions from one age group to another, the number of deaths is recorded. It is evidently seen in the age-sex pyramid that the bars fluctuate in length. This indicates that a high number of people died as they transitioned to the; 30- 34, 35-39 and 40-44 age groups.

#### 5.2.5 *Life expectancy*

This is the average number of years a person is expected to live. According to the World Health Organisation (Kelley, 2016), the average life expectancy was 52.81 years in 1999; while in 2019 the average life expectancy was at 57.80 years. The current statistics show that the average population can live up to an average of 63.4 years. In the current century, women are expected to live up to an average of 65.8 years while the men live up to an average of 61.1 years. The increase in life expectancy is attributed to an improvement in people's health. Quality health care has been provided to the people by the government as well as the private sector and the people generally take healthy food in Kikuyu Urban Area.

#### 5.2.6 *Age-sex ratio*

The sex ratio is the ratio of males to females in a population. In Kikuyu Urban Area, the age-sex ratio of the male to the female population as per the 2019 census is 1:0.98. This shows that the female population of Kikuyu Urban Area is slightly more than the male population. This difference is expected to grow gradually if the life expectancy of the female population continues to be higher than the males in the future.

## 5.3 Social Analysis

### 5.3.1 Culture and Heritage

Heritage sites and artefacts vary from one place to another. This helps people to relate the present to the past and future meaningfully. In Kikuyu Urban Area, there are two main heritage sites – Thogoto Forest at the source of Mbagathi River and the big mugumo (*ficus natalensis* or *ficus thonningii*) tree of Thogoto. The source of the Mbagathi River in Thogoto Forest is considered sacred and it was reported that the Mungiki sect adherents use the site for baptism and initiation to the sect. Old Kikuyu men also consider the big mugumo tree in Thogoto as sacred and whenever they have serious community matters to discuss, they do it there while drinking local brew and eating goat meat.

The underground caves dug by Indian coolies when constructing the Kenya-Uganda railway are also considered heritage sites. These caves are found just below the town under the railway facing Magana farm. Other sites include the graves of two explorers who were killed by lions in the 19<sup>th</sup> Century at Kanyariri, a few metres from where Fort Smith was situated; the Ondiri swamp which is a stone's throw from the town's CBD and Presbyterian Church of East Africa (PCEA) Church of the Torch, the first building in Thogoto. The other cultural and heritage sites are Watson Memorial Chapel and Mensa Kikuyu.

### 5.3.2 Religion

The main religion practised in Kikuyu is Christianity and the town is home to renowned PCEA Church of the Torch built-in 1932. Other major denominations include Catholics, Anglicans, evangelical and Pentecostal churches, and there are a few mosques in the Sub-County.

### 5.3.3 Marginalized and the Minority Groups

According to a study by the National Gender and Equality Commission, the minorities in Kiambu County include Asians, Somalis, Maasai, Kisii, Kamba, Europeans. However, the report noted that these communities were not marginalised as they are involved in political and other socio-economic issues. However, at a lower scale, the marginalised and minority groups in Kikuyu include the physically challenged, the poor in the informal settlements, and the street families. However, the marginalisation may also include inadequate socio-economic and political inclusion, low literacy and poverty. These kinds of marginalisation are the key factors that the plan needs to consider in ensuring access to basic services by the rural and urban poor.

## 5.4 Key Planning Issues

Table 5-7: Key planning issues on population and demography

Key Issues	Opportunities
High youthful population.	Youthful and educated population; Source of labour; and Need for social infrastructures like schools, hospitals, housing and recreational facilities to cater to the youth and young families.

Diverse population mix residing in the Sub-County.	Significant cultural and social potential.
High literacy levels.	Good human resource base.
Presence of minorities.	Plan for access to basic services by all.

Source: VisionRI

## 6 LAND ANALYSIS

### 6.1 Overview

This section analyses land ownership, land tenure systems, land administration, land use patterns, land availability and suitability, and land values in Kikuyu Urban Area.

### 6.2 Land Ownership and Tenure System

There are three types of land categories in Kenya as outlined in Article 61 of Kenya Constitution 2010 and the National Land Policy. They include private land which is held by an individual under freehold tenure system or leasehold system or any other land described as private by any other Act; public land which is held by the government or state organ; and community land which is held by a community on the basis of ethnicity, culture or other similar interests.

The land tenure system in Kikuyu Urban Area is mostly freehold. The leasehold land tenure is found in the town, in market centres, and other government institutions. During the field survey, it was established that the plots in the market centres have expired leases which need to be renewed to ensure the security of tenure and encourage investment.

Public land mainly consists of national and county government land such as forests, schools, hospitals, administration offices, recreational places like stadiums, playfield. However, there is a need to gazette the wetlands like Ondiri, Nyakumu and Riu swamps as protected areas to prevent them from encroachment and destruction.

### 6.3 Land Administration and Management

Land administration and management in Kikuyu Urban Area are handled by both the National and County Government. An efficient land administration and management system ensures ease in land transactions hence enhancing the security of tenure and supporting land taxation and valuation.

The National Land Commission (NLC) is charged with the mandate of managing all public land in the country. This include:

- Maintain a register of all public land in the county;
- Processing of applications of allocation, extension and renewal of leases;
- Inspection of public land allotment for adherence to planning requirements; and
- Encourage the use of alternative and traditional dispute resolution mechanism in land dispute amongst others.

The Ministry of Lands and Physical Planning is charged with the responsibility of:

- Land registration and issuance of titles;
- Oversee the performance of Land Control Boards;
- Valuation;
- Surveying;
- Maintain the land register; and
- Review applications of change of user and extension of use, amongst others.

The County Government is in charge of the following:

- Process development applications related to change of use, renewal and extension of uses, subdivisions;
- Valuation and rating of the land in the County; and
- Surveying County land.

Table 6-1 outlines the key actors in land administration and management at the National and County levels.

**Table 6-1: Land Administration and Management Actors**

	Key Actors	Roles	Guiding Legislation
National Government	National Land Commission	Amongst other functions of the National Land Commission, the main ones are: <ul style="list-style-type: none"> <li>• Manage public land on behalf of the National and County Governments;</li> <li>• Monitor and have oversight responsibilities over land use planning in the country; and</li> <li>• Alienate public land.</li> </ul>	Kenya Constitution 2010 Article 67 National Land Commission Act of 2012.
	National Director of Physical Planning	According to the Physical and Land Use Planning Act 2019, the Director has the following functions: <ul style="list-style-type: none"> <li>• Advise government on strategic physical and land use planning matters;</li> <li>• Formulate policies, guidelines and standards; and</li> <li>• Capacity building and technical support on county planning staff.</li> </ul>	Physical and Land Use Planning Act of 2019.
	Director of Survey	<ul style="list-style-type: none"> <li>• Establish and maintain a national geodetic control network to facilitate other surveys and research;</li> </ul>	Survey Act

		<ul style="list-style-type: none"> <li>• Produce and maintain plans of property boundaries in support of land registration;</li> <li>• Produce and continuously update national topographical basic maps;</li> <li>• Maintain national and international boundaries; and</li> <li>• Prepare and publish the National Atlas of Kenya, as documentation of National Heritage and promotion of the Nation's identity.</li> </ul>	
	Director of Land Administration	<p>The functions of the office include the following:</p> <ul style="list-style-type: none"> <li>• Establish and manage land control boards;</li> <li>• Process and approve development applications e.g. issuance of consents to charge, lease or transfer, etc.;</li> <li>• Process ownership documents such as titles/grants for both public and community;</li> <li>• Set apart land for public use;</li> <li>• Custody and maintenance of land records; and</li> <li>• Document public land and preservation of fragile ecosystems e.g. wetlands and water catchment areas for purposes of conservation.</li> </ul>	Land Act of 2016 Land Registration Act of 2012.
	Principal Land Registrar/Chief Land Registrar	<ul style="list-style-type: none"> <li>• Registers land titles, leases.</li> </ul>	Land Registration Act of 2012 Community Land Regulations of 2017.
County Level	County Executive Committee Members of Land	<ul style="list-style-type: none"> <li>• Oversees the entire County Land Management and Administration team.</li> </ul>	County Governments Act of 2012. Urban Areas and Cities Act.
	County Director of Physical Planning	<ul style="list-style-type: none"> <li>• Develop sustainable strategies for urban and rural development and management;</li> <li>• Formulate, implement and review various policies in the Department;</li> </ul>	

		<ul style="list-style-type: none"> <li>Promote and facilitate the development of decent housing; and</li> <li>Achieve timely delivery of planning decisions on private sector and community development initiatives.</li> </ul>	
	County Director of Survey	<ul style="list-style-type: none"> <li>Carry out surveys on public land;</li> <li>Develop a Geographic Information System and Land Information System database for spatial data management; and</li> <li>Provide efficient land and property management for effective county land documentation and land taxation.</li> </ul>	County Governments Act of 2012. Survey Act, 1961 (Revised 2012).
	Land Control Board	<ul style="list-style-type: none"> <li>Approve or reject subdivision requests on agricultural land;</li> <li>Approve transactions such as sale, transfer or mortgage of shares in private companies or cooperative societies that own agricultural land; and</li> <li>Issue consent to carry out transactions on majorly agricultural land (freehold land).</li> </ul>	Land Control Act Cap 302 (Revised 2017).
Other Key players	Registered Physical Planners	<ul style="list-style-type: none"> <li>Development approval applications to the County; and</li> <li>Advise county on new innovations in the land and planning sector.</li> </ul>	Urban Areas and Cities Act, 2011 Physical and Land Use Planning Act, 2019. Physical Planners Registration Act, 1996. Land Act, 2012 (Amended 2016) Water Act, 2002.
	Registered Land Surveyors	<ul style="list-style-type: none"> <li>Boundary confirmation;</li> <li>Beaconing of approved subdivision and amalgamation scheme;</li> <li>Amendment of RIMs; and</li> <li>Preparation of deed plans.</li> </ul>	Survey Act, 1961 (Revised 2012).

Source: VisionRI

### 6.3.1 Land Administration and Management Challenges

The Land Registry at the County is where all land transactions are recorded. However, the registry is still operating on analogue platforms, which make access to land information difficult. Evidentially, there are

gaps in management and administration legislation. These have affected smooth land transactions. As a result, below are some of the challenges faced in land administration in the Sub-County:

- Poor coordination and communication between different actors such as Land Control Boards and the County; Director of Survey and the County; District Land Officer and the County; National Land Commission, County Government and the District Land Officer. This eventually leads to delays in the delivery of services related to land;
- Overlap of mandate between various land actors;
- The existing land register is still analogue. This makes it difficult to access information related to land and monitor land transactions;
- The Land Control Board play a critical role in land administration and management yet it lacks professional and technical representative well versed on matters relating to land use planning and standards requirements;
- Once an application is submitted, it is normally subjected to a number of stops/departments which leads to unnecessary delays;
- The complex nature of the processes of land administration involving land transactions;
- The lengthy process of amalgamation, subdivision; change of user etc., leading to many people avoiding the process resulting into unplanned development;
- Poor governance creating a negative attitude to delivering services in the sector and opening up avenues for misinformation in the public domain;
- Misunderstanding of the mandate of the Land Control Board by the public – for example, once a party obtains consent to subdivide land, and all fairness has been observed, they do not proceed to the respective County Government Department to seek approval of that particular transaction. This leads to the uncontrolled subdivision of land and loss of revenue;
- Rate charging on agricultural land as caused a lot of resentment from the public; and
- Land-use planning has been a preserve of urban areas, hence negating rural and agricultural land resulting in subdivision and land uses, which lead loss of vital agricultural, forest and land uses.

## 6.4 Land Use Patterns and Trend Analysis

The general land use pattern in Kikuyu is characterised by a pronounced CBD at Kikuyu Town. The CBD is located near the intersection of three major roads, namely Nairobi-Nakuru Highway, Kikuyu Road and Southern by-pass. There is also a railway line traversing Kikuyu town.

Major spines radiating from the town include Kikuyu-Kamangu-Ngamba road, Kikuyu-Sigona road, Kikuyu-Gikambura road and Kikuyu Thogoto road. These roads have an influence on the land encouraging linear urban growth along them.

Land use patterns along the corridors are predominantly commercial and residential. The intensity of these developments fades as one moves away from the corridors. Medium-rise residential developments characterise the interior portions of these urban corridors.

The edges of the planning area are characterised by agricultural areas with a mix of low-density residential land uses. Muguga and Dagoretti forests act as buffers restricting urban sprawl into the hinterlands of Kikuyu Urban Area while urban sprawl is experienced in areas where there are no such buffers such as Nairobi-Nakuru Highway and Dagoretti road.

There is an educational hub located at the southern central portion of the planning area situated between Kikuyu Road and the Southern Bypass Road. The hub hosts University of Nairobi's Kikuyu Campus, Alliance Boys and Girls High Schools, and the Presbyterian University of East Africa. The area is also the site of the PCEA Kikuyu Hospital and Kikuyu Orthopaedic Hospital.

Kikuyu Urban Area is also experiencing incongruous developments manifested by the following:

- Industrial and residential land use conflict in Kikuyu town causing environmental conflicts;
- Uncontrolled urban growth in Thogoto and Gikambura areas exerting pressure on the environment;
- Threats to the existing forests and wetlands due to human activities; and
- Congestion in areas like Kinoo exerting pressure on land use planning and development.

The figures below show the existing development patterns within the CBD and along Dagoretti Road.



**Figure 6-1: Section of Kikuyu CBD**

Source: Field Survey 2024



Figure 6-2: Expanding the Urban Corridor in Dagoretti - Thogoto Road

Source: Field Survey 2024

#### 6.4.1 The existing land use pattern and inventory

Map 6-1 shows the existing land use pattern while Table 6-2 shows the inventory of each land use category.

Agriculture is the dominant at 46.86% followed by the escarpment at 20.8% and residential taking up 12.53%.

The current land use inventory is as indicated in Table 6-2.

Table 6-2: Land Use Inventory

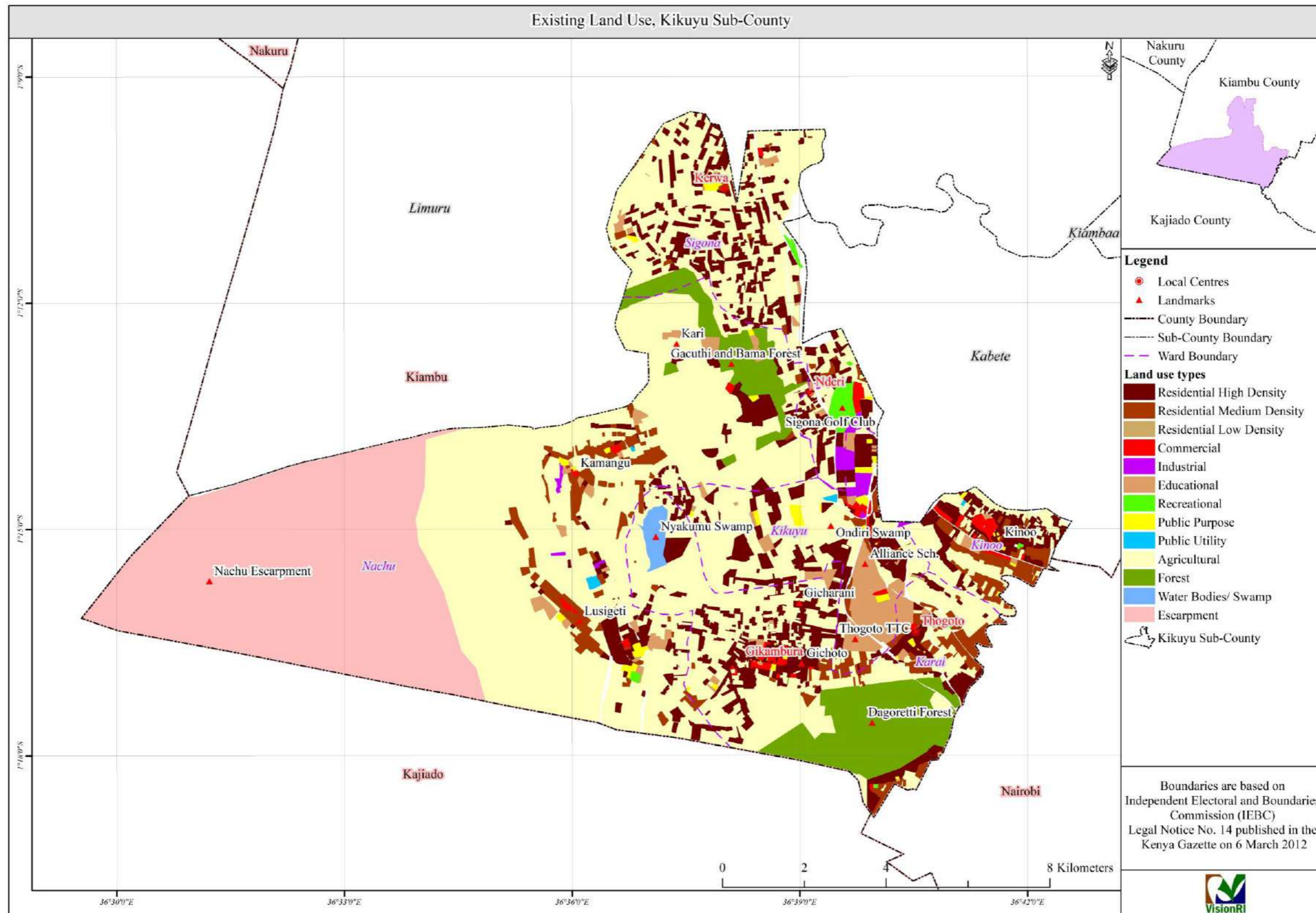
	User	Area in Hectares (Ha)	Percentages (%)
Residential	High	2149.52	12.53%
	Medium		
	Residential cum commercial		
	<b>Sub-Total</b>	<b>2,149.52</b>	<b>12.53%</b>
Industrial		73.31	0.43%
Educational		477.73	2.79%
Recreational		69.27	0.40%
Public Purpose		752.27	4.39%
Commercial		71.77	0.42%
Public Utility		3.54	0.02%
Transportation		763.12	4.45%
Conservation Areas	Escarpment	3588.68	20.93%
	Forest	1003.95	5.85%
	Riparian	25.72	0.15%

	User	Area in Hectares (Ha)	Percentages (%)
	Water bodies	134.02	0.78%
	<b>Sub-Total</b>	<b>4752.37</b>	<b>27.71%</b>
Agriculture		8,036.45	46.86%
Mixed-Use		0.00	0.00%
	<b>Grand Total</b>	<b>17,149.35</b>	<b>100%</b>

Source: VisionRI

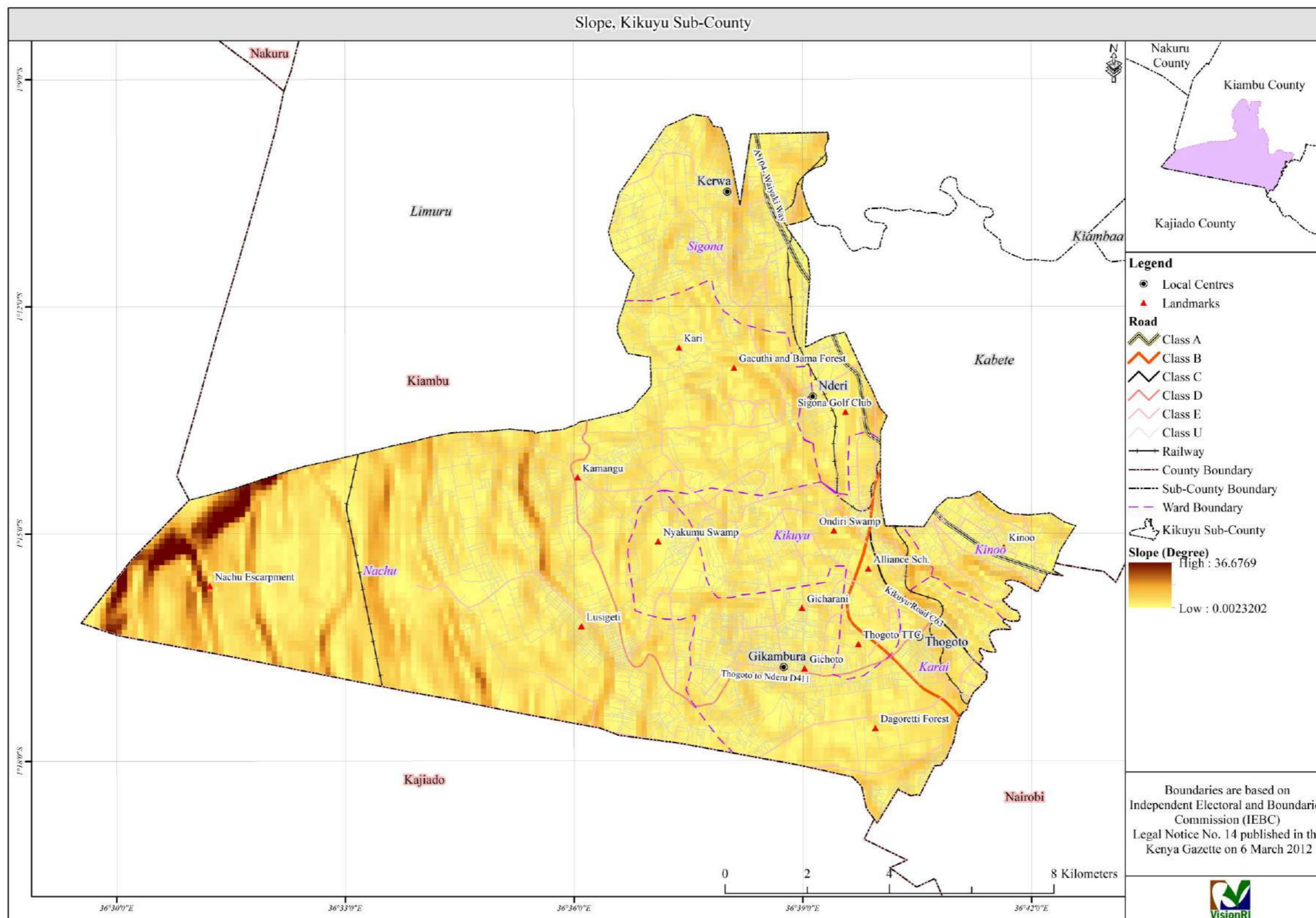
## 6.5 Land Availability and Suitability

The slope analysis of the planning area demonstrates that the areas of Kinoo, Thogoto, Gikambura, Nderi, Kikuyu town, Kamangu, Lusigetti have a slope of less than 5 per cent. These areas are suitable for human settlement and development. On the other hand, Nachu area has a slope of between 16-25 per cent. Some of these areas are relatively suitable for human settlement. Areas around the escarpment have slopes of over 25 per cent making them steep and unsuitable for human settlement and development. Map 6-2 illustrates the land suitability of the planning area.



Map 6-1: Existing Land Use Pattern

Source: VisionRI



Map 6-2: Slope Map

Source: Derived from SRTM Data

## 6.6 Land Values/Market

The completion of the southern bypass has raised prices of plots and the cost of renting business premises and houses in the planning area. Real estate and industrial activities in the planning area have started to pick up, with land prices shooting up at a rapid rate. This has been characterised by real estate developers showing interest in tapping the potential of the planning area resulting in an increase in the number of rental properties under construction. There is also an increasing interest from commercial investors who have begun constructing factories and commercial buildings in the area. In essence, three years ago, a quarter of an acre was going for between Kshs.1 Million and Kshs.1.2 Million but now fetches about Kshs. 6 million and over. Nonetheless, a rather interesting phenomenon is being witnessed where some of the people who had bought land earlier are now selling again after they discovered that it is not that rosy. This is because at some point the Southern bypass is passing above the plots limiting their accessibility. Similarly, in areas where developers have already bought large chunks of land, some residents have been forced off their land by the lack of privacy and chosen to relocate. Therefore, while many choose to capitalise on the gains of increasing land prices, others – especially those near the Southern bypass – are opting to wait. This is because the residents have become aware of the potential of the land near the bypass. This has made them refuse to sell to developers in the hopes of getting a higher price once the bypass is complete. Others have embarked on subdividing and selling the land in small portions, some of which are uneconomical.

## 6.7 Key Planning Highlights

Table 6-3: key planning issues on land administration and management

Key Highlights	Opportunities
Land titling in market centres and Ndacha areas.	Improve the security of tenure leading to economic development and investments.
Urban sprawl and corridor development	Enhance development control; and Enhance core-periphery to decongest Kikuyu town.
Residential and commercial land uses exerting pressure on fragile ecosystems like forests and wetlands.	Gazettement of these as conservation areas; and Promote compatible land uses.
Land subdivision and development without approved planning schemes; and Incongruous developments due to lack of development control.	Organising community-planning clinics to create awareness to the public on the importance of planning and sustainable land uses.
Dominancy of freehold land vis a viz requirements for public facilities and amenities	Adherence to planning requirements like surrender and reservation of public land upon subdivision; and Acquisition of land for public use.

Source: VisionRI

## 7 URBAN DEVELOPMENT AND HUMAN SETTLEMENTS

### 7.1 Overview of Urbanisation

Kikuyu Town has its origins from the railway station, which is located at its western side, just above Ondiri swamp. The town hall is only three blocks away from the railway station. Kikuyu is wedged between the railway line and the Southern bypass road at its eastern side. Natural features such as Ondiri swamp and agricultural land surround the town. Due to the increasing urban population, Kikuyu town is growing into the neighbouring areas. Due to the proximity to Nairobi, the abutting areas of Kinoo, Rungiri and Muthiga are undergoing rapid urbanisation to accommodate the demand for housing to people seeking affordable housing from Nairobi.

#### 7.1.1 Overall Structure of the Planning Area

The urban structure of the planning area is that of a cross which follows a northwest-southeast axis. The Nairobi-Nakuru Highway defines the planning area's northwest axis while the Southern Bypass road represents the southwest axis. Kikuyu Town is nearly at the centre of these two axes. Aside from Kikuyu Town, most urban growth may be found in the southeastern section of the planning area. Developments follow a linearly sprawling fashion following the direction of Nairobi-Nakuru Highway. Dagoretti Forest constrains urban growth at the southern end of the planning area. To the north-west, urban growth is constrained by Muguga Forest while Ondiri swamp and the railway constraints the town's growth to the south. The planning area is witnessing leapfrog growth beyond Kikuyu Town with urbanization structure following the development corridors. Other growth nodes include Kinoo Thogoto, Gikambura, Lusigetti, Kamangu, Nderu, and Kerwa.

### 7.2 Hierarchy of Existing Urban Centres and their Functions

Kikuyu Town is the dominant urban centre and has been declared a Urban Area. The conferment of the Urban Area as gazetted covers Kikuyu and Kabete Sub-Counties. The Kikuyu town delineation, which is yet to be done, meets the population threshold for a Urban Area. The lower level market centres are also yet to be conferred town status. They include Kinoo, Thogoto, Dagoretti, Kamangu, Lusigetti, and Gikambura. These markets are experiencing rapid development and require special attention in terms of planning since they are the next frontier of urbanisation in the Sub-County. Other centres include Nderi, Kerwa, Nduma, Karinde, Riu, Nderi and Kanyanjara. The Table 7-1 outlines the hierarchy of the existing centres in Kikuyu Urban Area.

**Table 7-1: Hierarchy of existing centres**

Urban centres	Market centres	Local centres
Kikuyu town	Kinoo	Nderi
	Thogoto	Kerwa
	Dagoretti	Nduma
	Kamangu	Karinde

Urban centres	Market centres	Local centres
	Lusigetti	Riunderi
	Gikambura	Kanyanjara

Source: VisionRI

## 7.3 Nodes and Corridors

### 7.3.1 Activity Nodes

Kikuyu Town is the only distinct mixed-use activity node in the planning area. Considered as the planning area's central business district (CBD), the town is laid out in rectangular grid fashion, with longitudinal roads laid out on a northeast-southwest axis. The main street is called Post Office Road whose entry is at its junction with the Southern Bypass Road and ends at the railroad tracks. This road is flanked on both sides by three street blocks. The predominant land use is commercial, and the CBD has a highly compact, dense, and robust character. There are many 4 to 5 storey buildings that were built in close proximity to each other. Significant landmarks include the Town Hall, Railway Station, Law Courts Building, shopping centre, Equity Bank, and the bus park, amongst others. The streetscape is vehicle oriented. There are no pedestrian sidewalks, cycling tracks, street furniture, and other features that make for a pedestrian-friendly urban area. Roads in the CBD are surfaced with murrum and have narrow rights-of-way of about five to six metres only. Parking, especially at the interior portion of town, is an issue as many vehicles were observed to park along road rights-of-way.

### 7.3.2 Cross Spines

The planning area's cross spines include Nairobi-Nakuru Highway and Southern Bypass roads. These are high-speed transport corridors with rights-of-way widths of at least 60 metres. These spines have provided a strong definition of the planning area's settlement pattern.

## 7.4 Urban-Rural Linkages

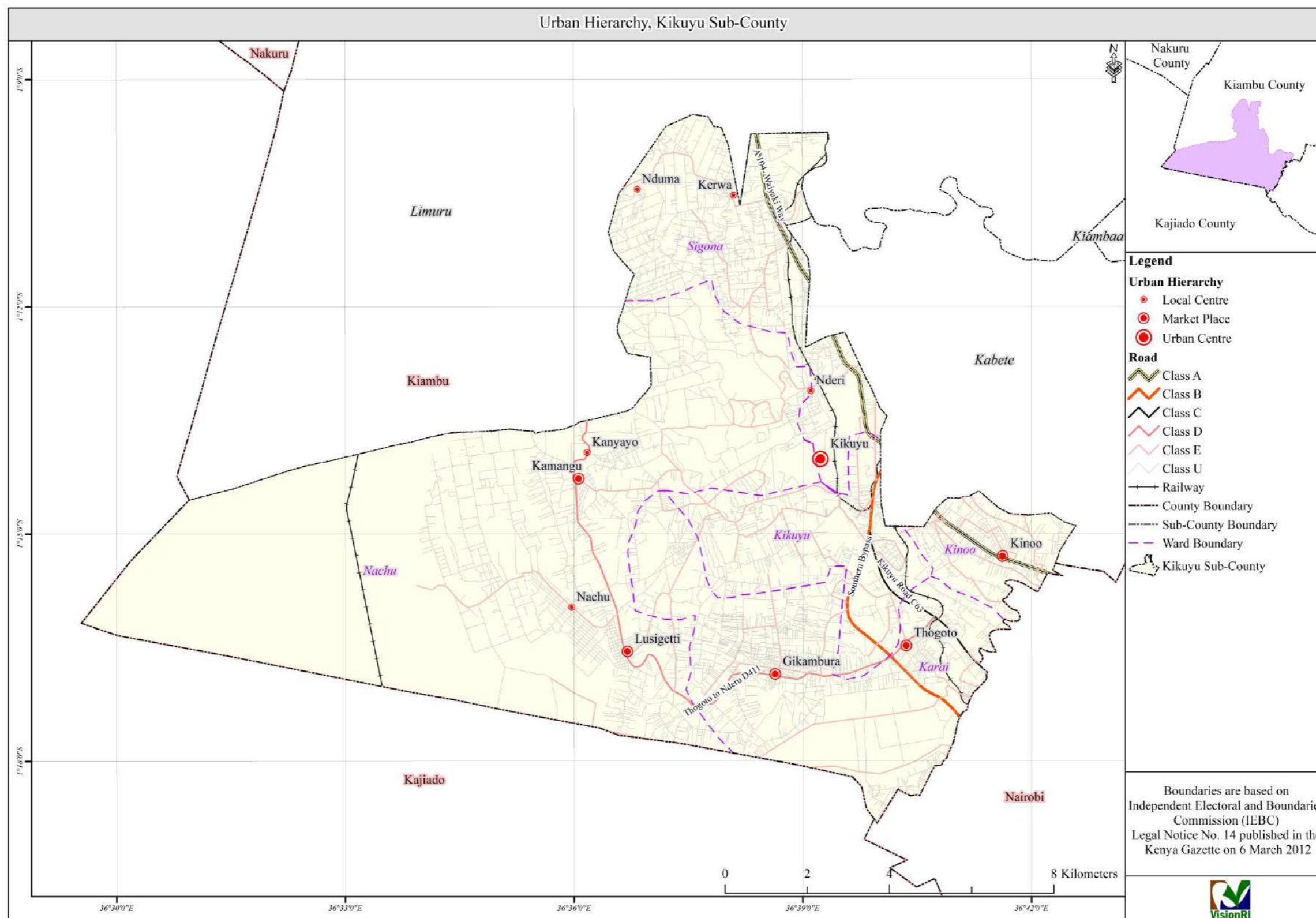
The urban-rural linkages for Kikuyu Urban Area are three main spines that link Kikuyu urban centre to the rural hinterlands. They are Kikuyu - Karai road, Kikuyu - Nderi Road, and the Kikuyu-Gikambura road.

## 7.5 Formal Settlements

Kikuyu Town has a generally linear manner along the cross spines. Planned settlements were developed using a grid pattern such as those in Sigona, Muthiga, KARI, Link-Road, Kinoo, Thogoto and Gikambura. Other settlements include Ondiri Rumwe, Kamangu, Gicharani, Kerwa, Karai Rurie, Thamada (Ika Ithano) and Muguga Jet Scheme. Most interior roads are earth-paved and without drainage systems. These also lack pedestrian sidewalks, street furniture, street lighting and other features that make pedestrian-friendly urban areas.

## 7.6 Informal Settlements

The main informal settlements are Muthiga and Kiamburi.



Map 7-1: Hierarchy of Existing Centres

Source: Field Survey, VisionRI

### 7.6.1 7.6.1 Muthiga Informal Settlement

The informal settlement started in 1967 on eight acres of land with poor quality housing. This is a squatter settlement located on private land. The settlement is in dire need of basic infrastructure provisions like water, sanitation, and waste management. There is also a need to improve the housing conditions and resolving the issue of tenure. Other facilities like health and education are lacking.

### 7.6.2 7.6.2 Kiamburi Informal Settlement

The settlement is located at the junction of Southern Bypass and Dagoretti road near the border with Nairobi. It sits on four acres of land and was started in 1950. The current estimated population is about 2,500 people. The main construction materials for the walls and roofs of houses are corrugated iron sheets and earth, respectively. The average room size is about 10 feet by 10 feet with a monthly rent of Kshs. 500. The residents earn their livelihood from running small enterprises and providing manual labour in neighbouring areas. The majority of the people in the settlement are Kikuyu but there are other communities including Luo, Kamba and Luyha.

The settlement lacks educational facilities except for a private nursery school. Pupils from the settlement have to travel to go to Mugutuini and Thirime Primary Schools. There is also no public health centre in the settlement and thus residents rely on private health centres or travel to neighbouring areas to seek medical attention. Common ailments include malaria, tuberculosis, HIV/AIDS, pneumonia, typhoid, and ENT infections.

In addition, the residents face poor stormwater drainage, lack of wastewater systems, and poor roads. Children are in danger of domestic violence; child labour and trafficking; drug abuse; and dropping out of school. On the other hand, women face domestic violence; assault and rape; forced prostitution; and early marriage.

## 7.7 7.7 Housing

### 7.7.1 7.7.1 Introduction

The housing situation in the planning area especially in Kikuyu Town and along the highways where residential housing for tenants comprises of apartments. However, in the rural areas of the planning area, there are poor housing units for the rural poor. Even for the good houses including those inside the Kikuyu Campus of the University of Nairobi are characterised by inadequate sewerage systems. The construction sector in Kikuyu is booming mainly because of its proximity to Nairobi. Housing units including apartments for sale are constructed frequently.

### 7.7.2 7.7.2 Building Materials & Construction Sub-sector

The main building materials used for walls, quarry stones, are obtained from the neighbouring Sub-Counties of Ruiru and Juja as well as from Narok and Nakuru Counties. Timber is more expensive and is obtained from within the Kikuyu Urban Area as well as from neighbouring counties and other countries such as Uganda and the DRC Congo for hardwood. The sources of building materials are shown in Table 7.2.

Table 7-2: Sources of Selected Building Materials

Material	Source	Remarks
Quarry stones	Nakuru, Narok, Kajiado and Machakos Counties.	30 – 60 kilometres away.
Sand	Nakuru, Narok, Kajiado and Machakos Counties.	30 – 60 kilometres away.
Timber	With Kikuyu Urban Area and Kiambu County; Meru, Uganda, and DRC Congo.	Hardwood is usually imported but softwood locally available.
Steel	Nairobi	Distributed through local hardware shops.
Galvanised iron sheet	Nairobi	Distributed to local hardware shops.

Source: Discussions with Key Informants, 2015

In Kikuyu Urban Area, corrugated iron sheets are used as roof material in 76% of households. Concrete is used by 17.5% while tiles are used by 2.2%. Other roofing materials used within the planning area include; asbestos, mud, makuti and grass. These represent 4.3% of all roofing materials used in the planning area.

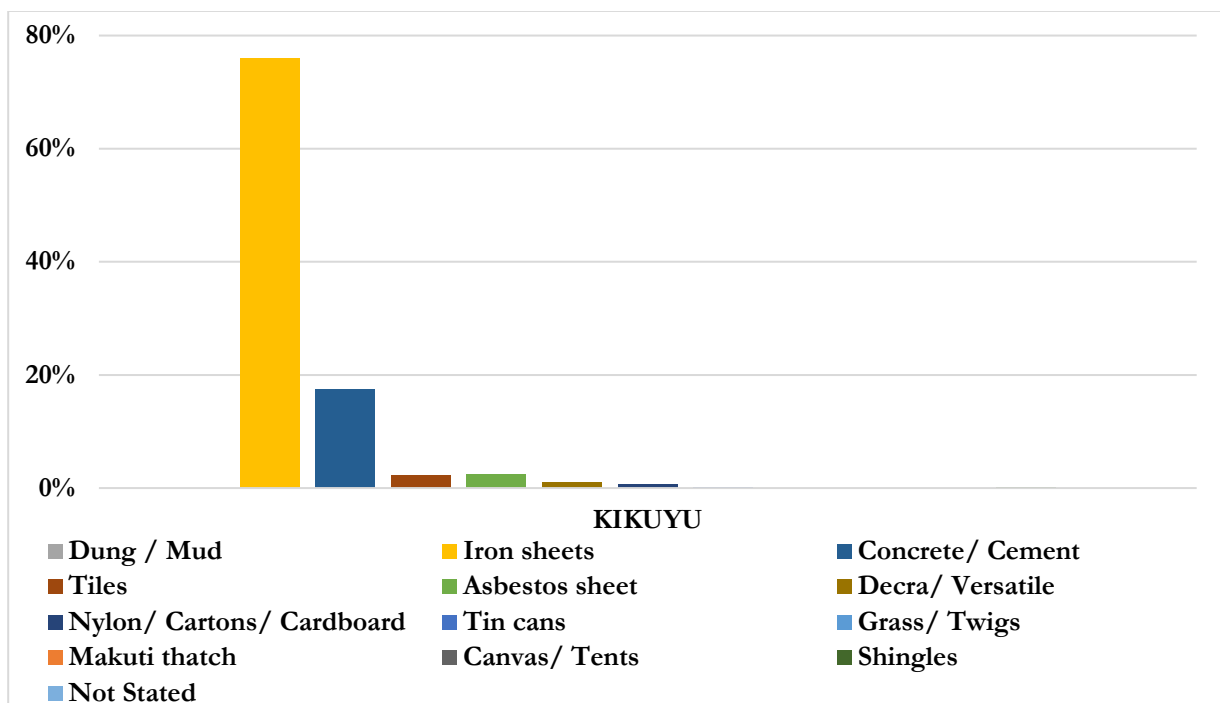


Figure 7-1: Roof Materials in Kikuyu Urban Area

Source: Based on KNBS 2009, Census Report

Iron sheets are the most common wall material in Kikuyu Urban Area with a frequency of 41.8% for all households. This is mainly because Kikuyu Urban Area has a large rural extent. Stone as wall material is used by 25.2% of households. Houses in the planning area with concrete as the wall material entail 24.1%, wood as 2.8% while those with timber entail 2.1% and bricks at 1.6%. Other wall materials such as mud, offcuts, covered adobe and cane are used by 2.4% of all households.

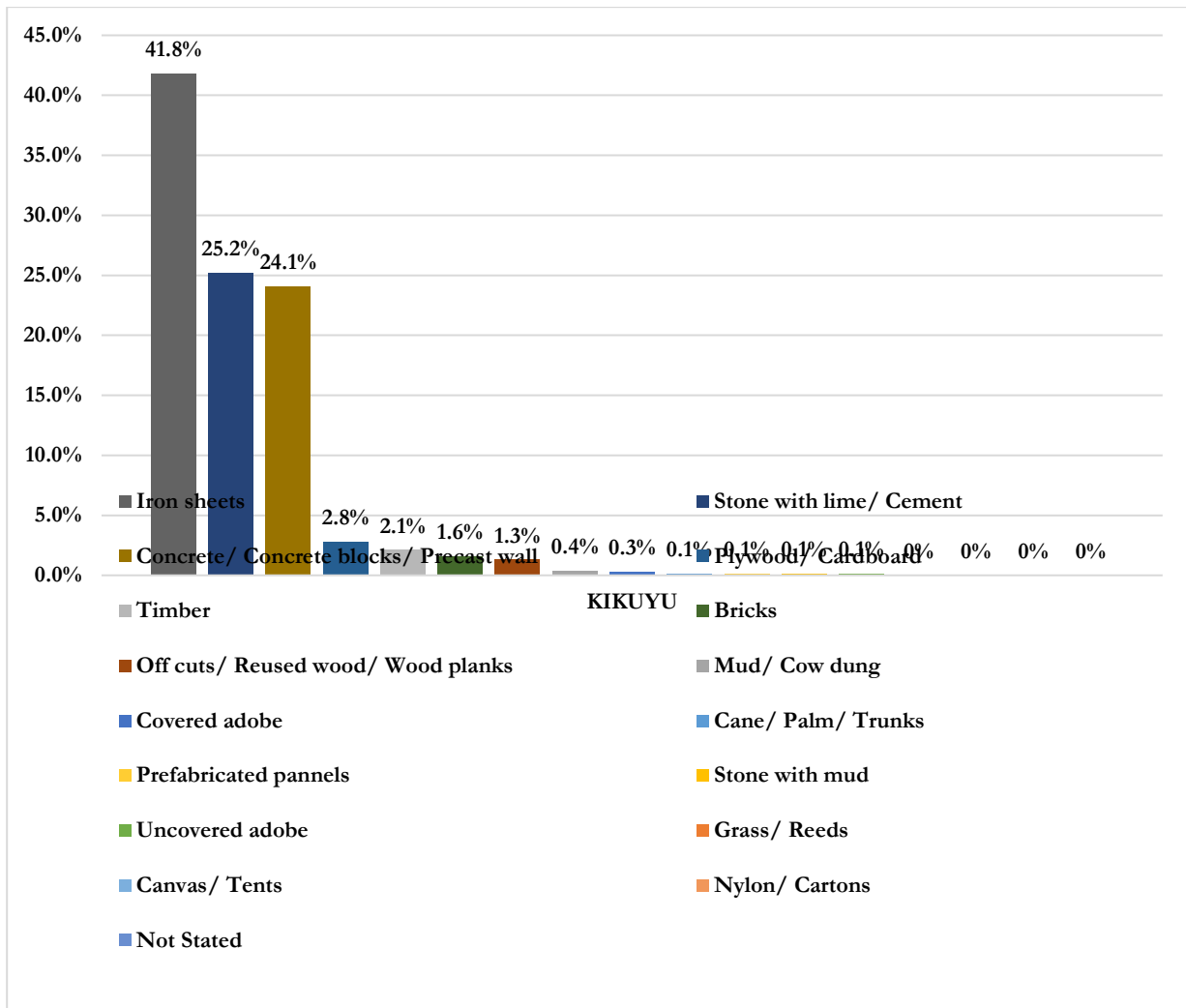


Figure 7-2: Wall Materials in Kikuyu Urban Area

Source: Based on KNBS 2019, Census Report.

Within the planning area, cement is the main floor material with a frequency of 64.4%. Earth is used by 26.4% of the houses in the planning area as floor material. Other houses in the planning area using parquet or polished wood as floor material entail 6.9% while those having tiles, wall to wall carpet, wood planks, palm/bamboo and dung as the floor material entail 2.3%.

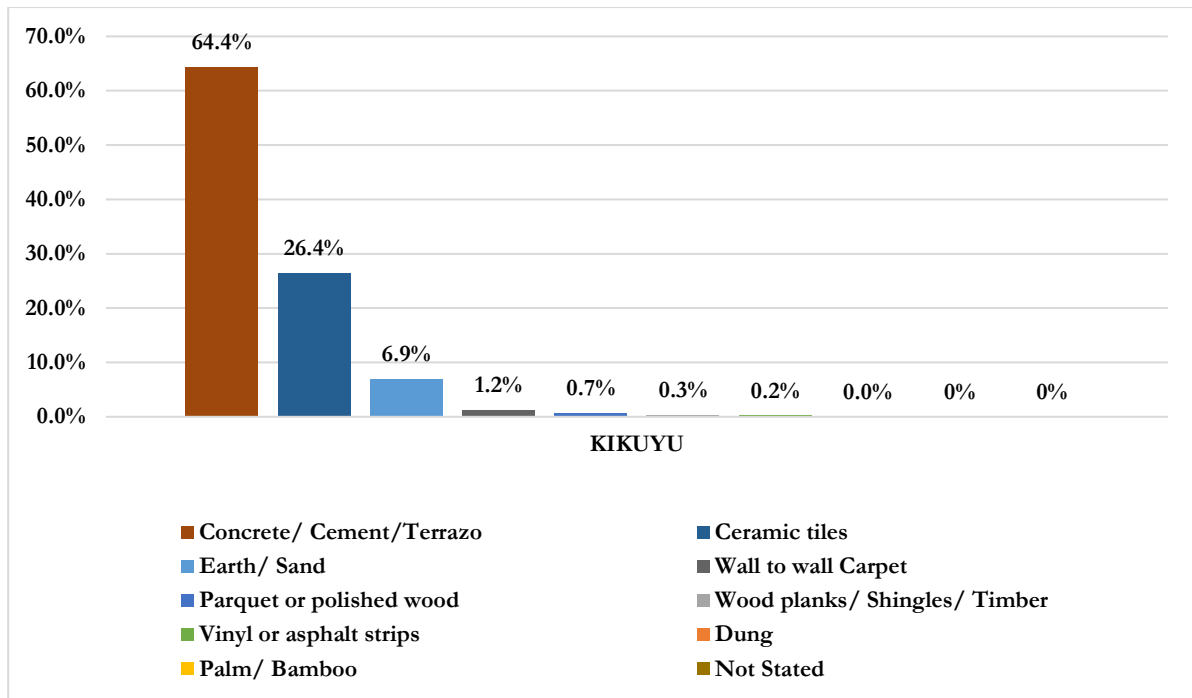


Figure 7-3: Type of Floor Material

Source: Based on KNBS 2019, Census Report

### 7.7.3 Housing Tenure and Typology

#### Tenure Ownership

The total housing stock in Kikuyu Urban Area as per the 2019 Census was recorded at 60,686 houses. Of these, 60% of the households live in rented houses whereas the rest live in owned houses representing 40 per cent as shown in Table 7-3 below.

Table 7-3: Distribution by Mode of Tenure-ship

Total	Tenure Status (Conventional Households)					
	Owned		Rented/ Provided		Not Stated	
	No.	%	No.	%	No.	%
60686	24005	39.6	36606	60.4	8	0

Source: Based on KNBS 2019, Census Report

#### Rental Housing

According to the 2019 census report, of the 36,606-housing stock, 92.6% are provided by individual investors, companies accounting for 4.7% while the County and National governments, parastatals' and Faith-Based Organisations (FBOs) provide the remaining 2.7% as shown in Table 7.4 below. This analysis shows that the private sector and specifically individual developers are the leading providers of housing in

the Sub-County. There is, therefore, needed to create a conducive environment to encourage more investment from this category.

**Table 7-4: Distribution of Rented/Provided Households**

No.	Mode of Tenure ship											
	Govt.		County Govt.		Parastatal		Private Company		Individual		FBO	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
36,606	430	1.2	50	0.1	631	1.7	1243	4.7	33893	92.6	359	1

Source: Based on KNBS 2019, Census Report

### **Mode of Housing Acquisition**

Table 7-5 below shows that the total 24,005 households who own their houses, 88.9% were individually constructed, 2.3% purchased ready-made houses while 8.8% inherited their houses.

**Table 7-5: Distribution of Owned Households by Mode of Acquisition**

Owned	Mode of Acquisition					
	Purchased		Constructed		Inherited	
	No.	%	No.	%	No.	%
24,005	552	2.3	21,332	88.9	2,121	8.8

Source: Based on KNBS 2019, Census Report

### **Typology of Housing**

#### **Urban Areas**

In the urban areas such as Kikuyu Town, Thogoto, Gikambura and Kinoo, the main housing typologies are apartments and single dwelling houses with permanent walls, corrugated iron sheets and tiled roofs and the floor finish varying from tiles, cement and woodblocks. However, in low-income areas, some houses are made up of semi-permanent materials like timber and iron sheets.

#### **Rural Areas**

Most of the housing in the rural areas are a mix of permanent, semi-permanent single-family units. However, some of the rural housing is of poor quality and semi-permanent made up of light gauge corrugated iron sheet roof, timber or mud and wattle walls, and burnt bricks. Some have screed floors while others have earthen floors.

#### **Neighbourhood Residential Units**

There is an emerging trend of neighbourhood residential developments by either individuals or private developers. The main characteristics include the need to have similar typology, controlled development, shared facilities, enhanced security, maintenance of amenities, among others. Some of the notable neighbourhoods in Kikuyu include Kidfarmaco and Link Road Neighbourhood Association next to KEFRI.

With the increasing demand for secure housing, Kikuyu is likely to experience more of the neighbourhood residential development units coming up.

#### 7.7.4 Housing Stock and Projections

The housing stock is derived from the 2009 and 2019 Population and Housing Census Report Volume 2 that indicates that about 35% of the households in Kikuyu had permanent houses. Therefore, the stock as of 2009 at just 35% of the demand and projections into 2030 are as shown in Table 7-6. The housing stock as of 2009 represents a 65% deficit given the population levels at that time. Subsequent projections are based on the total required housing units given the projected population and number of households.

**Table 7-6: Housing Stock and Projections into 2034**

Items	2019	2034
Projected Population	187,122	267 304
No. of Households	60,686	124,649

Source: Based on the 2009 and 2019 Population and Housing Census Report Vol. II, and Population Projections

## 7.8 Key Planning Issues

**Table 7-7: Key Planning Issues on Housing**

Key Highlights	Opportunities
Affordable housing	<ul style="list-style-type: none"> <li>• Implementation of the Big 4 Agenda;</li> <li>• Private sector investment on affordable housing;</li> <li>• Provide incentives to the private sector and individuals; and</li> <li>• Expansion of infrastructure to support housing.</li> </ul>
Informal settlements	<ul style="list-style-type: none"> <li>• Upgrading of informal settlements through the security of tenure; and</li> <li>• Provide basic infrastructure.</li> </ul>
Corridor development along major roads	<ul style="list-style-type: none"> <li>• Transit-Oriented Development to manage corridor development; and</li> <li>• Corridor planning interventions.</li> </ul>

Source: VisionRI

## 8 PHYSICAL INFRASTRUCTURE

### 8.1 Overview

Physical infrastructure focuses on the transportation system of the planning area, water supply and distribution, solid and liquid waste management, stormwater management, energy infrastructure, and the general ICT system.

### 8.2 Transportation

#### 8.2.1 *Regional and National Interconnectivity*

Kikuyu Urban Area enjoys good connectivity in terms of regional and national linkages via road and rail. The Kikuyu Urban Area is also served by Jomo Kenyatta International Airport which is about 35 kilometres and about 1-hour drive away.

The major roads that traverse through Kikuyu are National trunk road A104 Nairobi-Nakuru Highway which is the gateway to Uganda through Malaba border in Kenya. This road also connects Kikuyu with neighbouring counties of Nakuru, Nairobi, Narok and beyond. The newly constructed Southern Bypass connects Kikuyu to Mombasa Road and Kajiado County. Kikuyu is also connected to Kajiado via the Suswa-Ngong' Road.

Commuter railway services provide additional transportation linkages to Nairobi, especially in the morning and evening peak hours.

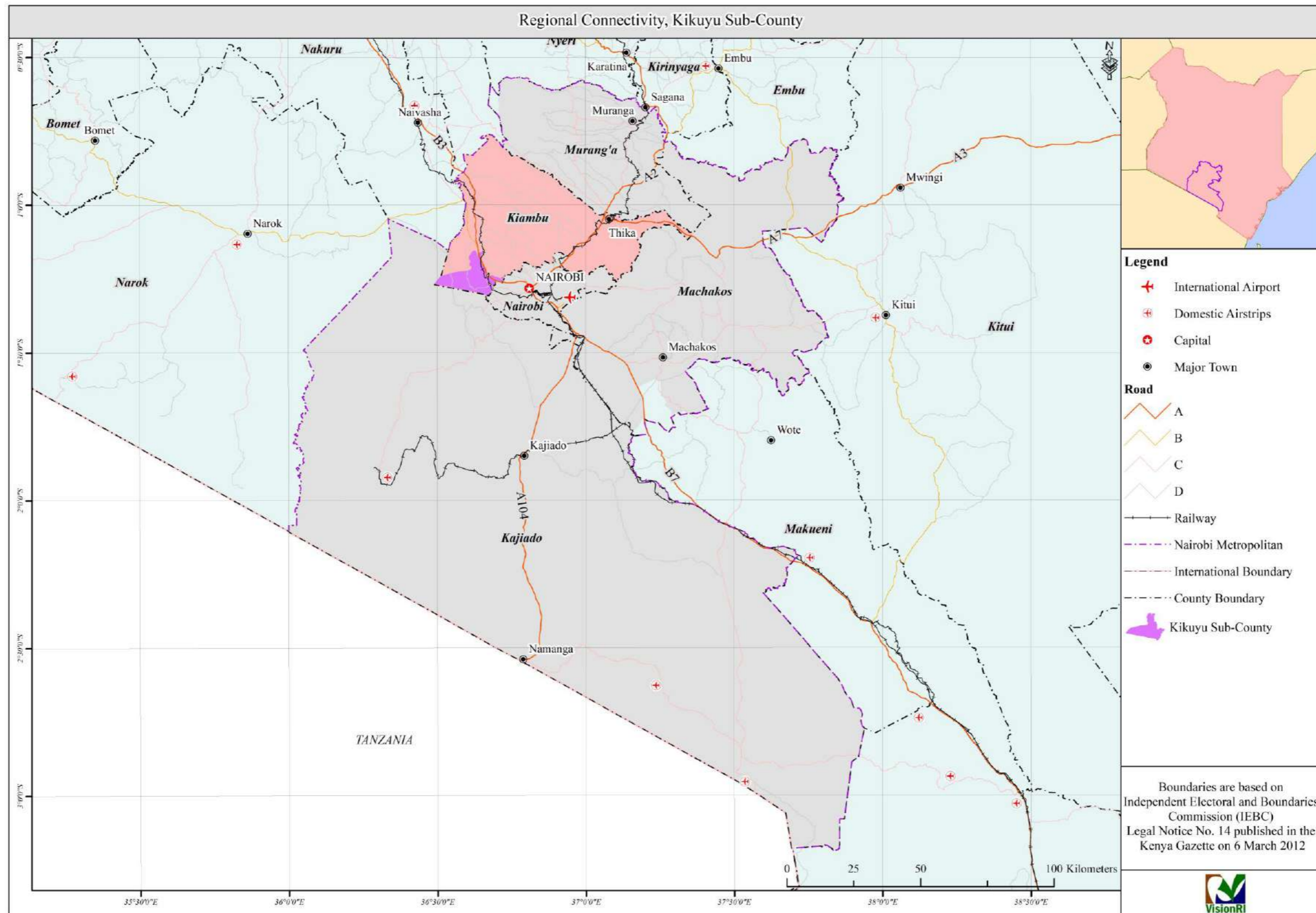
The Standard Gauge Railway passes through Kikuyu and there is a station on the Nachu ward which will serve Kikuyu and neighbouring areas.

#### 8.2.2 *Interconnectivity and Intra-Connectivity*

The Kikuyu Urban Area is also linked with the neighbouring sub-counties of Limuru, Kiambaa, Kabete, Ngong' and beyond through roads the roads mentioned in the above section and other roads like the Western Bypass, Dagoretti road.

Most feeder roads in Kikuyu are under rehabilitation to bitumen standards. Outside Kikuyu Town, most roads are narrow and in poor condition and become impassable during rainy seasons. Such roads include Ondiri-Kerwa road, Kerwa-Thigio road, and Muhuri road, amongst others.

Other intra-county roads of lower hierarchy roads that connect different neighbourhoods within Kikuyu include Kerwa road, Dagoreti, and Gicharani roads, amongst others. Table 8-1 lists the main roads that are within Kikuyu.



Map 8-1: Regional Connectivity

Source: Kenya National Highways Authority (KeNHA)

Table 8-1: Main roads in Kikuyu

Road Name	Link	Length within the planning area (km)	Surface Type	Condition	Average Daily Traffic Volumes (Both directions)	
Dagoretti-Gitiva Road	Dagoretti Road to Gitiva	7	Gravel	Poor	-	-
Muhuri Road	Dagoretti Road to Waiyaki Way	5.3	Paved	Poor	-	-
Thogoto-Gikambura Road	Dagoretti Road to Mutwarakwa	25	Paved	Fair	-	-
Gicharani Road	Thogoto Road to Gicharani	5	Gravel	Fair	-	-
Gikambura Road	Thogoto Road to Gikambura.	5	Paved	Fair	-	-
Mai-i-hii-Gikambura Road	Thogoto Road to the Green Garden Schools	6	Gravel	Fair	-	-
Hospital Road	Thogoto Road to Dagoretti road	3	Paved	Good	-	-
Dagoretti Road	Dagoretti to Kikuyu	10	Paved	Fair	2,188	7,189
Ondiri Road	Dagoretti Road to Ondiri via Southern Bypass	7.3	Road Under Construction		-	-
Waiyaki Way	87 to Limuru	11.4	Paved	Fair	7,265	16,756
Kerwa Road	Waiyaki Way to Kerwa Road	8	Gravel	Poor	-	-
Nderi Road	Kikuyu to Nderi	7	Paved	Good	-	-
Posta Road	Bypass to Kikuyu Town	0.9	Paved	Fair	5,757	4,869
Market Road	Posta Road to Market	1	Under Construction		-	-
DEO Road	Posta Road to District Education Officer Office	2	Gravel	Poor	-	-

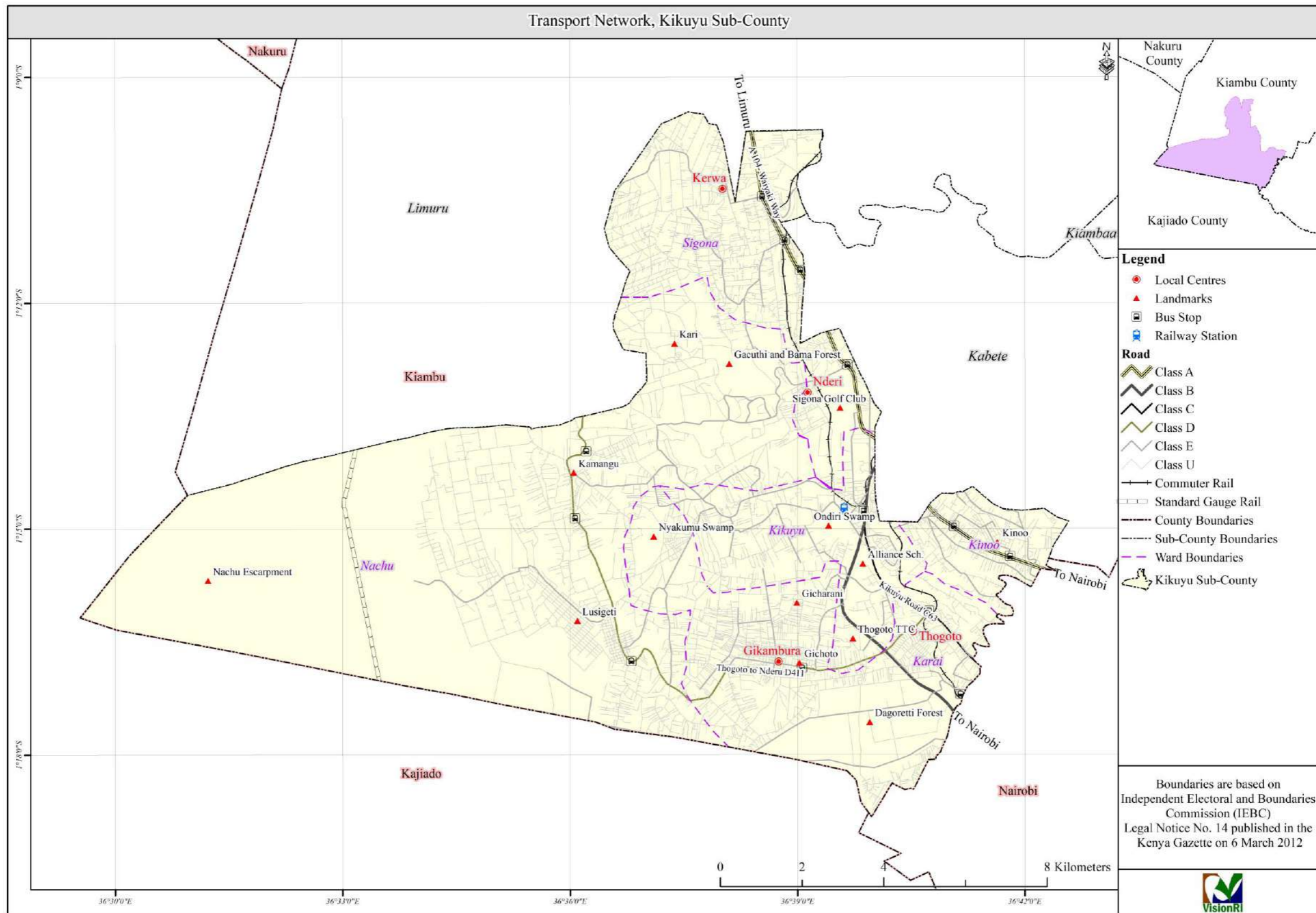
Southern Bypass	Section 1: Waiyaki Way to Bus Park.	1.3	Paved	Good	7,157	6,544
	Section 2: Bus Park to Thogoto	33.7	Paved	Good		
Gitaru Wangige		5.2	Paved	Poor	-	-
Ndumboine Road	Waiyaki Way to Ndumboini	5	Paved	Fair	-	-
Magana Road	Waiyaki Way to Magana	2	Gravel	Poor	-	-
Kinoo-Gaitumbi Road	Kinoo to Gaitumbi	8	Gravel	Poor	-	-
87-Kanyariri	87 to Kanyariri	10	Paved	Poor	-	-
Dagoretti-Karen Road	Dagoretti Road to Karen	5	Paved	Fair	-	-

Source: Department of Roads Kiambu County



Figure 8-1: State of some roads

Source: Field Survey, 2024



Map 8-2: Transport network in Kikuyu

Source: Department of Roads Kiambu County

### 8.2.3 Trip Generation

Kikuyu Town is a convergence of routes within Kiambu and Nairobi counties are the main sources of external traffic. Many trips within the town originate from three key areas, which are the neighbouring residential areas such as Gitaru, Thogoto, Nachu, Kerwa, Ndeiya, etc. Being an institutional town hosting Thogoto Teachers College and the Presbyterian University of East Africa, most traffic is generated from these institutions well as aforementioned residential areas.

### 8.2.4 Modal Split

According to IDS (2016), the modal split for Ruiru is as follows: Walking 37%, matatu 36%, motorcycle 17%, cycle 7%, car 2%, 1% other (railway). This modal split will be used as representative typical trends in towns across Kiambu County, i.e. Juja, Kikuyu, Limuru, and Kikuyu.

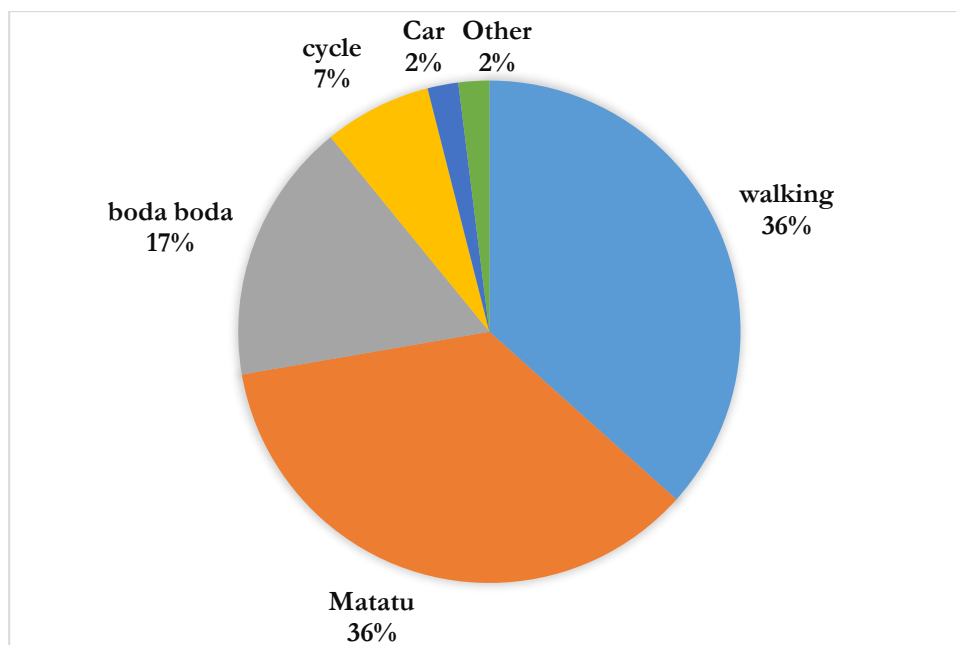


Figure 8-2: Chart showing modal in Kikuyu town

Source: VisionRI

### 8.2.5 Means of Transport

- i. **Non- Motorised Transport (NMT):** As indicated above, 42% of trips in Kikuyu are made by walking and cycling. Unfortunately, the demand does not meet the infrastructural provision as most streets lack NMT facilities. Where NMT facilities exist, they are in poor quality due to poor maintenance and are often encroached by vendors and parked cars. This results in a high number of pedestrians walking on the carriageway conflicting with moving cars. Additionally, there are few safe pedestrian crossings in Kikuyu. In some parts along Think Road (A20), they have provided a footbridge. Though usable, the footbridge is not comfortable for pregnant women, elderly and persons carrying heavy luggage. Inadequate pedestrian crossings expose

pedestrians to high risks of accidents making it unsafe especially for school-going children. A cycle track is completely absent in Kikuyu. This explains the lower number of cyclists in the region. Further, there are no designated safe and secure cycle parking in Kikuyu CBD. This makes it hard to secure bicycles in town.



**Figure 8-3: Footpaths in Kikuyu**

**Source: Department of Roads Kiambu County**

- ii. **Public Transport:** After walking, public transport is the second most commonly used mode in Kikuyu. Public transport is largely provided by privately owned minibuses and buses known as matatus. Within Kikuyu Urban Area, the National Transport Safety Authority (NTSA) has registered over 160 matatu savings and credit cooperative organisations (SACCOs) with approximately 1448 vehicles, with the majority being 14-seater matatus. The matatus ply routes within Kiambu County as well as the neighbouring counties of Nairobi, Nakuru and Murang' a. Kikuyu has one main bus park located in Kikuyu Town with a capacity of 100 matatus that is congested and lack adequate facilities such as public toilets, customer information, waste bins, etc.

Figure 8-4: Images showing public transport in Kikuyu



Source: Field Survey 2024

The matatus are demand-driven and this is seen in fierce competition for the customers. At the terminal, the matatu only departs when all the seats are full. This inconveniences majority of passengers who wait for public transport in the intermediary stages. Fares are not regulated and often some increase by some percentage during peak hours.

- iii. **Boda bodas:** According to the County Government of Kiambu, there are approximately 500 boda bodas operating in Kikuyu Urban Area. The number could increase due to high demand of passengers as well as the high unemployment rate in the country.

Motorcycle boda bodas operate from 'stands' within the Kikuyu CBD, in residential areas, trading centres, at commercial centres and the passenger service stops along main and minor roads. The stands are manned by informal stage managers. The operators typically pay a stage fee ranging from Kshs. 250-350 per month. There are two types of operating structure which are dependent on a 'stand': compete for clients or queue and go in turns. The boda-bodas are organised in Saccos and are largely regulated by NTSA. The prices are not fixed and are dependent on the distance covered and operator. There is slow use of technology such as Uber boda bodas, Safe Boda, Bolt, etc. in the area.

- iv. **Taxis:** Taxis provide door-to-door services without intermediate stops. They serve short trips within town centres and improve last-mile connectivity to public transport. The taxi operators have adopted modern technology of taxi services such as Uber, Little Cab and Taxify. They are mainly registered and regulated in Saccos under the County Government.
- v. **Rail Transport:** The Mombasa – Nairobi – Kampala railway line passes through the planning area. The line is rarely used for commuter passenger transportation to-and-from Nairobi during

peak hours and inter-city freight transportation. The Nairobi Commuter Rail Development Master Plan proposes a commuter rail network, which will be developed to provide rail-based mass transit services between Nairobi Central Railway Station and the planning area. When this is implemented, it will provide alternative means of transport to Nairobi. Figure 8-4 illustrates the old Uganda Kikuyu Railway line.



**Figure 8-5: Old Uganda Kikuyu Railway line**

### 8.2.6 Travel Demand

Without significant improvements in public transport and walking and cycling networks to cater to the growing travel demand, the general trend of increasing car ownership is bound to continue. According to the master plan for Nairobi, the city experiences a 5% annual growth in car ownership<sup>4</sup>. Considering that Kiambu County is a dormitory for Nairobi city, we can assume that the trend in Kiambu is similar to Nairobi County. Using the modal split of as representative of the typical trends in towns across Kiambu together with population and car growth forecasts, a simple modal share prediction to glean potential impacts of shifting transport investment priorities to more sustainable modes can be made, as shown in the chart below.

**Table 8-2: Transport mode shares under three scenarios**

Mode	2016	2030: Status quo	2034: Sustainable
Walk	37%	30%	40%

<sup>4</sup> JICA 2014, Integrated urban development masterplan for Nairobi City County <https://www.jica.go.jp/english/news/field/2015/c8h0vm0000966zqy-att/c8h0vm0000966zvu.pdf>

Cycle	7%	6%	10%
Public transport (Matatus + city Bus + BRT)	36%	33%	40%
Motorcycle	17%	23%	5%
Private car	2%	7%	3%
Other/Probox taxi	1%	<1%	2%
Total	100%	100%	100%

Source: VisionRI

Under the sustainable mode, the scenario is made with an assumption that the proposed bus rapid transit (BRT) in Nairobi as well as investment in NMT facilities will be implemented by 2030 increasing the ridership of public transport, walking and cycling hence reducing the ridership in the use of private cars.

#### 8.2.7 Parking

Parking in Kikuyu is largely unregulated. Most streets in the Kikuyu Urban Area lack any physical definition of spaces for different street uses, such as pedestrian movement, vending and parking. Since parking rules are not defined, enforcement is arbitrary, and many vehicles elude parking fees. Parking management has centred on raising revenue for the local authority while keeping fees low in an attempt to make the town centre attractive for visitors. Less attention has been paid to the potential role of parking in managing travel demand.

Currently, the County Government charges Kshs. 100 per day for on-street parking-far too low to have a sizable impact on commuter behaviour. Consequently, the town centre experiences localised shortages with some of the most visible parking facilities being full despite the overall availability of parking space.

#### 8.2.8 Planned and On-going Projects

Kikuyu is one of the areas where the proposed Regional Orbital (road and rail) in the NMR will pass through. According to the SPC for NMR, the Regional Orbital will inter-connect the regional urban centres and promote direct accessibility and flow amongst them without the necessity to pass through Nairobi city. Both passenger and goods movement, in equal proportion, would take place along the orbital. Kikuyu will be connected to Karuri, Karen and Ongata Rongai via the C63 and C58 roads. It is proposed that the Regional Orbital should have a road reserve of at least 110m to accommodate green areas, dual carriageway roads, and two railway lines.

The planning area will be connected to Nairobi CBD via the A104 and the Southern bypass roads, and the railway line. The A104 is due for expansion from the Nairobi CBD to Rironi, past Kikuyu, and will incorporate a BRT lane up to Kangemi. Like in other NMR towns, a nodal terminal should be developed in Kikuyu for efficient movement of both passenger and freight, since it is at the intersection of the Regional Orbital and a Radial Road. The terminal would be multi-use complexes with commercial, office and other uses. The terminal would provide the interface between the intra-town traffic and the regional transport system. In

the long term, heavy trucks should be diverted to the D411 road from Thogoto through Kamangu to B3 road. This will help in reducing congestion and keep away heavy trucks from the town centre. The Table 8-3 outlines the ongoing and proposed projects in Kikuyu Urban Area by the Department of Roads, Transport, Public Works and Utilities.

**Table 8-3: On-going and proposed projects of the Department of Roads, Transport, Public Works and Utilities**

Wards	On-going and proposed projects	Costs (Ksh.)
	<b>Mechanical Transport Fund Program</b>	
Sigona	1) Abdullah-Kahiga rd(1km)	20,739,070.60
	2)Kanyanjara rd(3km)	
Kinoo	1) Gaitumbi-Genesis Rd(2.0km)	
	2) Kihumo-Itukarwa Rd(1.2km)	
	3) Kihumo Rd (0.8km)	
Nachu	1) Lussegetti-Thiranga Rd(0.7km)	
	2) Thiranga-Kiahiti Rd(1.3km)	
	3) Thiranga-Ndacha Rd(2.0km)	
Karai	1)Rurie-Nderi Shopping Centre Rd(0.5km)	
	2) Nderi-Njaga Rd(1.6km)	
	3) Kanyanjara-Nderi Rd(1.9km)	
Kikuyu	1)Thogoto - Approved rd(1.7km)	
	2) Kia Wamagira rd(0.7km)	
	3) Baraneki-Shauri Yako Rd(0.5km)	
	4) Baneki-Muhuri rd(1.1km)	
	<b>RMLF (Fuel Levy)</b>	
Karai	Gichuhiro - Matangini Road	4,148,450.00
Kinoo	Orthodox Road	4,282,604.00
Nachu	Karafuta-Ndiguini (Kianjiru) Road	4,158,205.60
Kikuyu	Thogoto Access Roads Rd	4,267,640.00
Sigona	Ika Tano-Ken Academy -Gitau Road	4,240,670.00
	<b>CGK Funded Access Road</b>	
Kinoo	Muthiga-Gaitumbi-Hamsa-Harvesters Church Road	3,969,404.00
Karai	Matangini Riu Nderi Road	3,912,332.00
Sigona	Thamanda Mechanic Access Roads	3,890,234.00
Kikuyu	Kidfarmco - Riverside Access Roads Rd	3,861,640.00
Nachu	Kigathi Kianjagi Road	5,867,848.40
	Kamangu Ndiguini Road	7,266,750.40

Source: Department of Roads, Transport, Public Works and Utilities

### 8.2.9 Railway Development

NaMSIP is currently upgrading and modernising the rail stations within the NMR. The Kikuyu station is projected to handle between 2,000 and 5,000 passengers per hour by the year 2030. Some of the improvements being undertaken at this station in readiness for this include:

- Provision of parking areas on each side of the station<sup>5</sup>. Approximately 217 vehicles will be accommodated. This is to allow for the actualisation of the park and ride concept where people leave their vehicles, board the trains, proceed to their destinations and come back in the evening to pick their vehicles;
- Creation of passenger interchanges with buses and matatus to allow integration with road transport. To this end, there are plans to expand the matatus terminus to allow more vehicles docking in for this anticipated passenger traffic. Kikuyu is beyond the coverage of the BRT coverage<sup>6</sup>;
- Improvement of the access road and improvement of pedestrian access, and controlled area including ticketing booth, automatic point and paid toilets; and
- The Thogoto station is anticipated to handle below 2,000 passengers per hour by the year 2030. Thogoto is a major education hub with several education facilities (University of Nairobi – Kikuyu Campus, Presbyterian University of East Africa and Alliance schools. Some of the facilities to be included in the proposals to modernise this station include; Minor Park and ride facilities and overall modernisation of the station.

Some of the projects being undertaken in all stations include the following:

- Platform and waiting area;
- Ticketing booth;
- Turnstile rack;
- Automatic selling points;
- Administrative office;
- Paid toilets;
- Police office;
- Security gate;
- Enclosure and lighting;
- Pedestrian walkway;
- Access roads;

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<sup>5</sup> Interdisciplinary Land-Use and Transport Metropolitan Analysis within the Nairobi Metropolitan Region, 2015 (EGIS)

<sup>6</sup> Component A, Final Report Development of Commuter Rail Master Plan for Nairobi Metropolitan Region, 2018 (Dar)

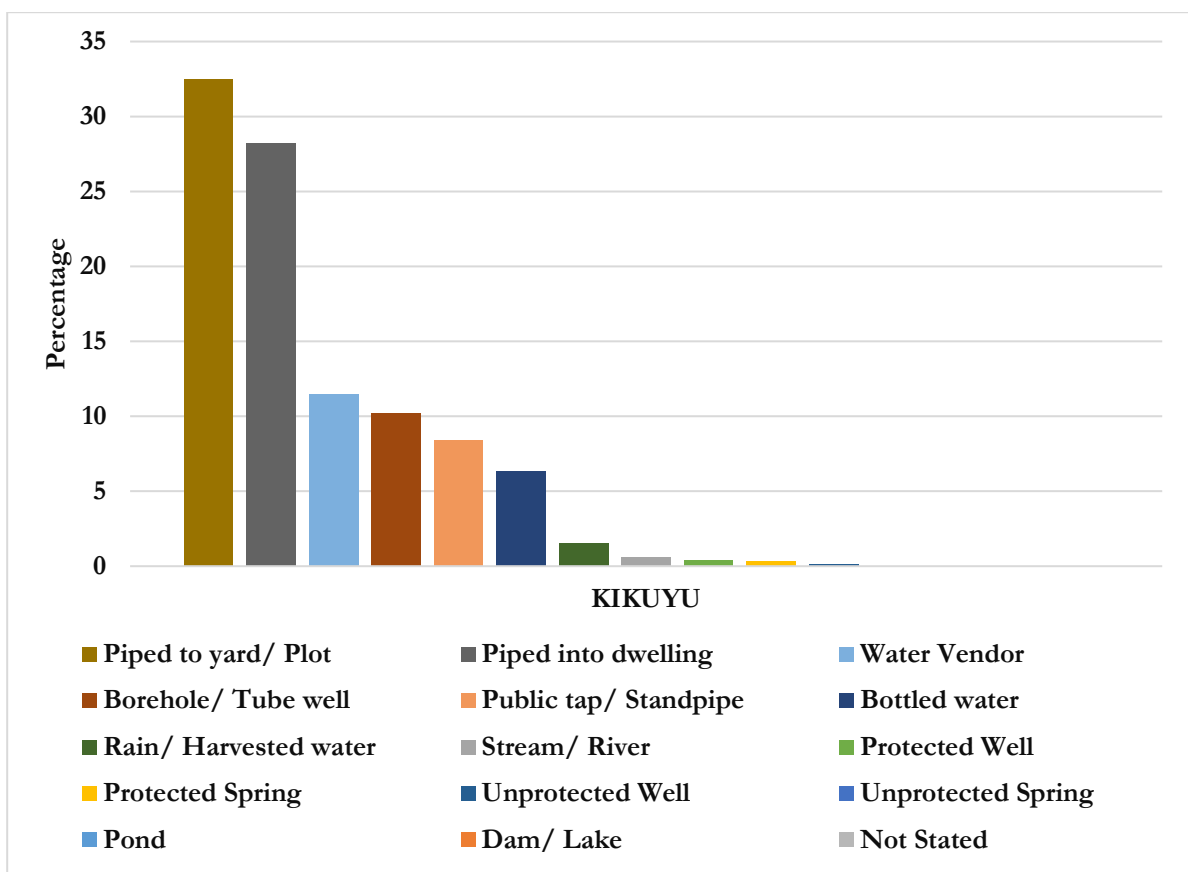
- Parking area,
- Landscaping; and
- Utilities and access facilities.

When these proposals are implemented, the planning area will be well-connected to the A104 international transport corridor, Nairobi and the other towns in the NMR and will enable it to serve as the proposed Sub-regional Centre, promoting industrial development as shown below.

## 8.3 Water

### 8.3.1 Main Sources of Water

The main sources of overall domestic and drinking water in the planning area are piped to the yard at 32.5% and piped into the dwelling at 28%. Water vendors contribute to 11.5% of the water supply while borehole and public taps supply 10.2% and 8.4% respectively. Bottled water is consumed at 6.3% while rain harvesting brings in 1.5%. This implies that most residents in Kikuyu have not put infrastructure for rainwater harvesting given the small percentage it contributes.



Source: Based on KNBS, 2019 Census Report

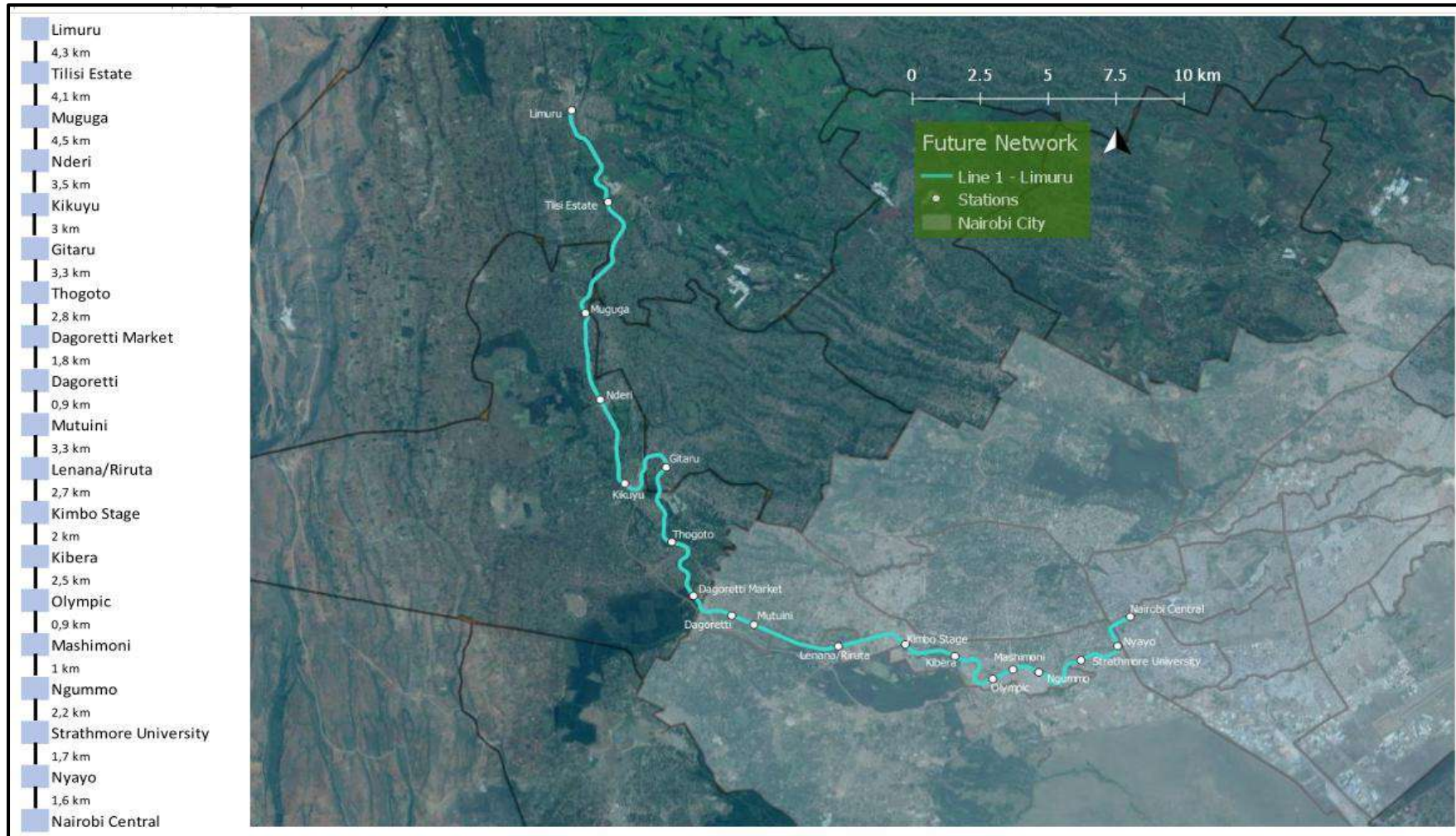


Figure 8-6: Proposed Rail Network from Nairobi to Limuru

Source: VisionRI

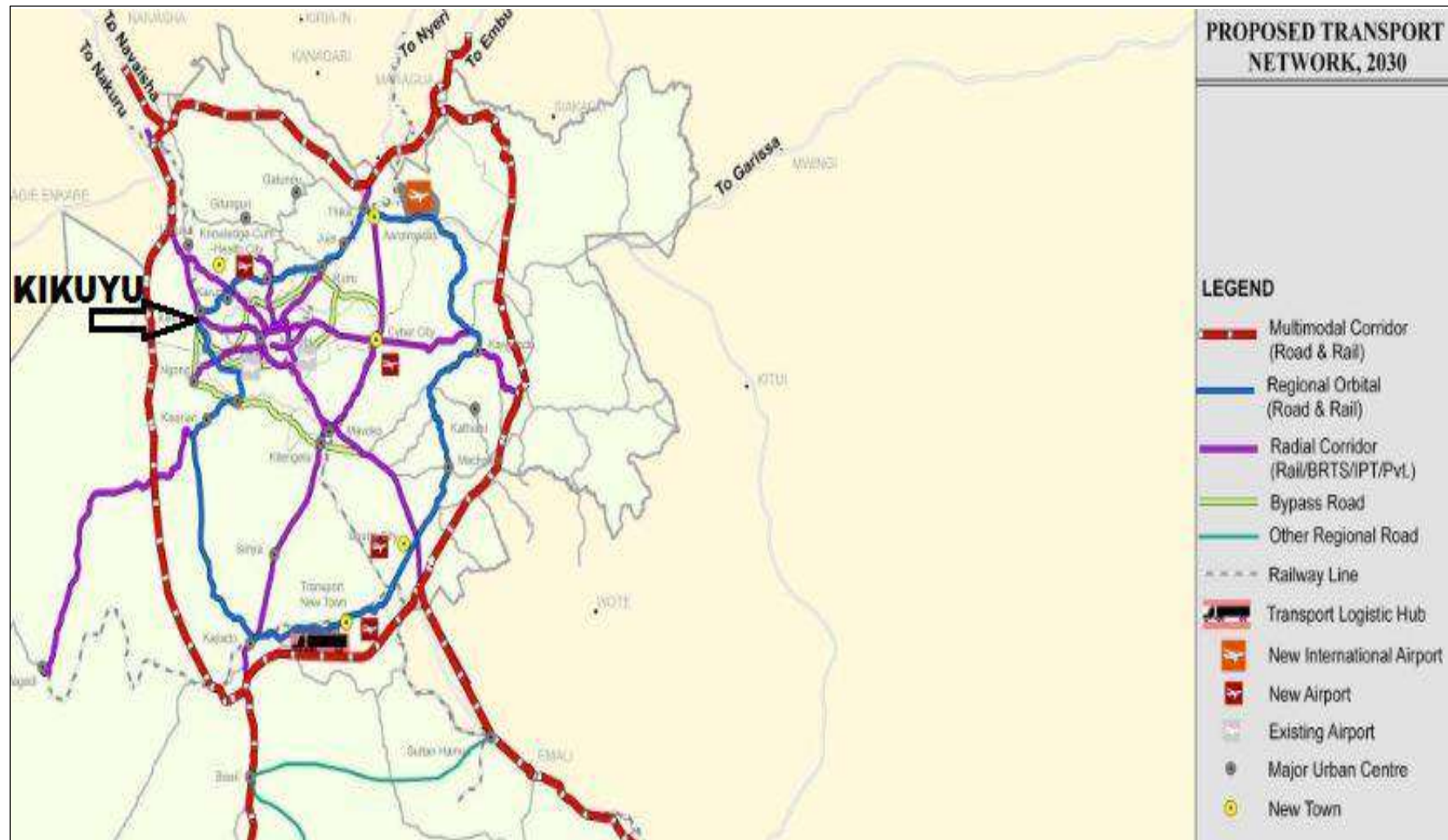


Figure 8-7: Proposed Transport Network for NMR, 2030

Source: Spatial Planning Concept for NMR

### 8.3.2 Water Supply and Coverage

The main water service providers are Kikuyu Water and Sanitation Company, Sigona Water Company, and self-help water providers.

Kikuthi water project supplies borehole water in Kikuyu Town. However, its original intention was to take the Kikuyu springs from the community in order to increase water supply in Kikuyu because the project has enough resources and manpower.

### 8.3.3 Demand and Volumes Produced

Kikuyu Urban Area is a net groundwater recharge zone. Groundwater contribution to water demand in Kikuyu is about 13,855 m<sup>3</sup>/day. Discharge takes place at the eastern and southern fringes through base flow in rivers, which originate from the area, the Kikuyu springs, and Ondiri Swamp<sup>7</sup>.

There is no sewer system in Kikuyu Urban Area. The most commonly used sanitation infrastructure includes pit latrines, open defecation, septic tanks, and soak pits. These affect the quality of water and as a result, there have been cases of typhoid. The year 2035 water demand for Kikuyu Urban Area is estimated at 55,526 m<sup>3</sup>/day. The total production capacity of the present sources is 4,202 m<sup>3</sup>/day. The proposed future sources to augment the present sources and meet the ultimate water demand for Kikuyu Urban Area are: (a) Additional Groundwater Sources – Stage I to supply 9,000m<sup>3</sup>); (b) Kamiti 1 Dam (16.4Mm<sup>3</sup>/day) to supply 16,416m<sup>3</sup>/day; (c) Additional Groundwater Sources – Stage II to supply 9,000 m<sup>3</sup>/day; and (d) Ndarugu 3 Dam to supply 20,736m<sup>3</sup>/day.

Groundwater is locally available, and the first stage was implemented before the year 2015 to meet the present water supply deficit and the fast-increasing water demand for Kikuyu Urban Area. Kamiti 1 Dam has been selected because it is the only feasible potential surface water source that can meet the demand centre by gravity.

## 8.4 Waste Management

### 8.4.1 Solid Waste Management

- **Types and Volumes of waste produced:** The types of solid waste in the Kikuyu Urban Area includes domestic, commercial, municipal, institutional, industrial, and agricultural. The County Government of Kiambu is responsible for the collection and disposal of solid waste in the planning area under its Department of Water, Environment and Natural Resources. The main modes of solid waste disposal in the County include landfills, dumpsites, incinerators, recycling

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<sup>7</sup> Feasibility Study and Master Plan for Developing New Water Sources for Nairobi and Satellite Towns – Master Plan Report

and bio-decomposers. According to the Kiambu County Spatial Plan, collection and disposal of waste at urban centres stands at 75%.

With an average number of household persons of five, an average waste generation ranging from 0.53 to 0.65 kg/person/day, and a population of 187,122 as at 2019 census, the total waste generated in the planning area is 109.7 tonnes per day. Thus, 82.3 tonnes of waste is collected per day. The waste generated is expected to increase as the planning area continues experiencing urbanisation.

- **Sources of Waste:** Solid wastes in Kikuyu are a by-product of a broad spectrum of domestic, industrial, service and manufacturing and transportation industries. The areas around shopping centres and markets are more affected. Waste food products and polythene bags are disposed of in the open. There are pungent smells around these areas and polythene bags can be spotted hanging on trees which spoils the aesthetics of these areas. Mismanagement of these wastes typically has resulted in pollution of the natural environment and may pose a substantial danger to public health and welfare.
- **Distribution of Waste Management Infrastructure:** The Kikuyu Urban Area is zoned into major trading centres that include Kikuyu Town, Dagoretti market, Kinoo market, Regen, Sigona, Gikambura, Lusigetti, Kamangu, Wangige market, Uthiru and Gitaru.

The Kikuyu Urban Area is serviced by one Environmental Officer, 22 support staff, one garbage truck, one backhoe and one chaff cutter. There are seven skip bins in the Kikuyu Urban Area placed as follows: Kikuyu market – two skip bins, Dagoretti market – two skip bins, Regen – one skip bin, and Wangige – two skip bins. Additional bins are in the process of procurement which will serve other markets with high generation of solid wastes. There is one skip loader that is availed from the County director's office on need basis. There are four registered private waste collectors in the Kikuyu Urban Area mainly servicing the residential areas.

The County has a dumpsite in Thika for waste disposal. The waste disposal is faced by long haulage distance (approximately 65 km away) and the heavy traffic encountered. The Kikuyu Urban Area is allocated a tipper with a capacity of 14 tonnes and a side loader with a capacity of seven tonnes. The tipper has daily collection schedules for Kikuyu Urban Area.

- **Disposal Mechanism:** Waste disposal is a major environmental challenge in Kikuyu. The common methods practised include open dumping, open burning, incineration of medical waste, informal waste picking. Of these methods, open dumping is the main mode of disposal in Kikuyu. Solid waste is disposed at the Kikuyu Dumpsite (Kiambu County-owned and operated) which is already full and located in a water catchment area near Ngobi forest posing a great risk to underground water reservoirs. The County Government would like to collect and dispose of this waste in a sustainable manner, but they lack the capacity since the amount

of waste being produced is increasing on a yearly basis. The County Government is looking for private investors to collaborate in waste management. The problem on the solid waste in Kikuyu Urban Area needs to be addressed locally through efficient waste collection and segregation, and development of a landfill.

Expansion of the service area collection is needed to eliminate the dumping of wastes along open spaces and riverbanks. Waste segregation, recycling and reuse are part of the programme to reduce the volume of collection and/or maximise the life span of the proposed landfill.

- **Solid Waste Projections:** According to a JICA report, it is estimated that the rate of generation of solid waste is 0.53 to 0.65 kg per person per day (JICA 2010). Using an average of 0.6kg/person/day, it is estimated that the tonnage of waste per day to be generated in Kikuyu Urban Area by the year 2022 will be 129,834 tonnes. The Table 8-4 shows a comparison of population increase against the expected increase in amounts of waste generated in the Sub-County.

**Table 8-4: Population growth and the amount of solid waste generated**

	Years		
	2019	2025	2034
Population	187,122	286,768	267 304
Waste generated (tonnes)	121,629	138,593	154,524

Source: Kiambu County Government

#### 8.4.2 Liquid Waste Management

The planning area lacks a proper liquid waste management infrastructure evidenced by the absence of proper sewer infrastructure. This leads to the discharge of wastewater into rivers and subsequent pollution of water bodies.

Ninety per cent of the residents use pit latrines while the rest 10% in Muthiga, Kinoo, Kikuyu Town and other areas along Nakuru Highway use septic tanks. Some of the wastewater discharge pipes from various facilities are oftentimes connected alongside pipes supplying clean water that is being managed by the Kikuyu Water Company (KIWACO).

Water pollution is a key challenge for households who cannot afford to buy potable water for drinking and other domestic uses. The main causes of water pollution within the planning area include:

- Open sewers and poor drainage system that overflow into rivers during mild floods;
- Use of riparian areas as dumpsites;

- Use of chemical fertilisers in agricultural areas; improper disposal of industrial waste such as, amongst others, lubricating agents, lead-acid batteries and metal alloys, and waste from quarries; and
- Soil erosion through anthropogenic activities such as livestock keeping.

To mitigate wastewater disposal challenges, the County Government of Kiambu engaged the services of technical experts to design a sewer system to serve the Kikuyu Urban Area.

- **Sources and Volumes of Waste produced:** The three main sources of liquid waste in Kikuyu Urban Area are residential, commercial, and agro-industries. Stormwater is also a source of liquid waste. Liquid waste from domestic sources can be classified as black water, which contains excreta, and greywater, which does not.
- **Disposal mechanisms and management:** Despite the rapid population and development growth of Kikuyu Town, it does not have a centralised sewerage system. Majority of the properties within the town are served by pit latrines, soakage pits and septic tanks. The soakage pits and septic tanks often overflow, and raw sewage is disposed into the drainage channels which ultimately end up into the permeable subsoil posing pollution threats to the soil and water resources.

Used household greywater is discharged on the roads, most commercial and high and middle-income residential areas use septic tanks and soak pits, while low-income residential areas use pit latrines. This trend has led to pollution of water bodies, during the rainy season since most residents' pump wastewater to the roadside from whence it is washed to the river. To curb this problem, there is a need to provide a sewer system, which will serve Kikuyu town and other areas like Muthiga, Kinoo, Gikambura, Thogoto, Gitaru, and Dagoretti.

Table 8-5 below indicates the wastewater projections in Kikuyu Urban Area.

**Table 8-5: Wastewater projections Kikuyu Urban Area**

	Year		
	2019	2025	2034
Population	187,122	286,768	267 304
Quantity of wastewater in litres	1,122,732	1,279,326	1,426,380
Assumptions:			
<ul style="list-style-type: none"> <li>• 1 person uses a minimum of 7.5 litres a day; and</li> <li>• About 80% of the water used results in wastewater.</li> </ul>			

Source: VisionRI

## Emerging Waste Management Issues

- **Lacks requisite sanitation facilities:** Kikuyu Urban Area lacks the requisite sanitation facilities for both solid and liquid waste management. This poses a serious public health threat for the growing population of the Sub-County.
- **Rampant municipal solid waste open dumping:** The management of solid waste is worsened by unsustainable practices that cause environmental contamination and the spread of diseases. In particular, open dumping in uncontrolled sites, open burning of waste fractions, and the mismanagement of the leachate produced in final disposal sites are the main issues in the planning area. The situation is worsened in Kikuyu with additional problems of increasing population, traffic, and air and water pollution. Uncontrolled disposal in open spaces near water bodies is widespread issues in these contexts, which corresponds to public health issues.
- **Municipal solid waste burning:** The open dumping of waste is not the only environmental burden due to waste mismanagement. The burning of waste without any precaution also generates contaminants and aggravates health risks to the population. Uncontrolled burning, generation of methane gas, and low-temperature burning are major factors in the formation of dioxins in dumping sites.
- **Construction waste disposal mechanisms:** The main issue due to construction waste is the final disposal site. To avoid this impact, the volume of waste dumped in landfills should be reduced, imposing safe operating practices. In particular, 4Rs (reduce, reuse, recycle and recover) policies should be implemented, with hazardous or toxic materials that being the primary targets.
- **From waste disposal to resource recovery:** A lesson learned from developed countries is that in order to address the root causes, the focus should not be limited only on end-of-pipe waste management. There is a need to consider upstream issues and efforts on waste prevention and recovery should be encouraged.

## 8.5 Storm Water Management

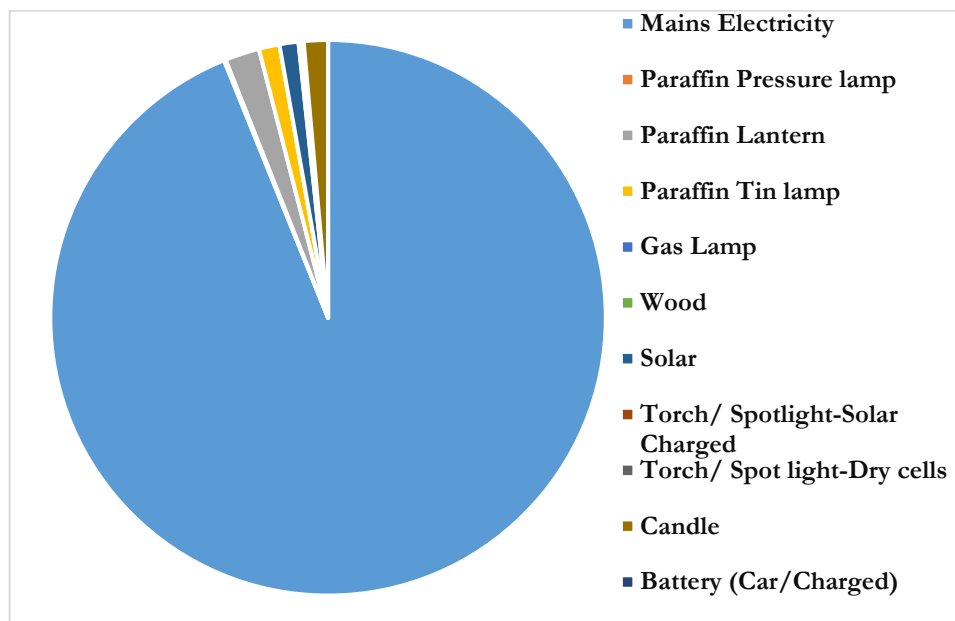
### 8.5.1 Storm Water Drainage Systems

There is an existing common drainage system, which drains the area. Proposed developments in Kikuyu should be designed to provide for internal drains to collect the surface run-off and safely dispose of these to the area drainage system. Poor integration of stormwater drains adjacent to the roads will cause flooding of the roads which may lead to a number of accidents and fatalities. Planning and developing good road designs will ensure that flooding, especially during the long rainy seasons, is mitigated.

## 8.6 Energy Infrastructure

### 8.6.1 Sources of Energy

The main sources of energy in Kikuyu include electricity, kerosene, charcoal and firewood. Electricity is supplied by Kenya Power and Lighting Company (KPLC) and approximately 90% of the houses in the planning area are within the gridline and have been connected. The KPLC has a power station (66/11KV) that services the planning area. According to the 2019 KNBS Census Report, electricity is the main source of lighting being used by 93.7% of the inhabitants. Lantern as a source of lighting is used by 2% of the residents while tin lamps are used by 1.2% of the inhabitants in the planning area as shown in Figure 8-9 below.



**Figure 8-8: Source of Lighting Energy**

Source: Based on KNBS, 2019 Census Report

The 2019 KNBS Census Report indicates that gas is the main cooking fuel used by Kikuyu residents at 61%, followed by firewood at 18%, Charcoal 12% and paraffin 8%. Electricity and biogas are at 0.7% and 0.4% respectively. The pie chart below illustrates the types of cooking fuel used in Kikuyu Urban Area.

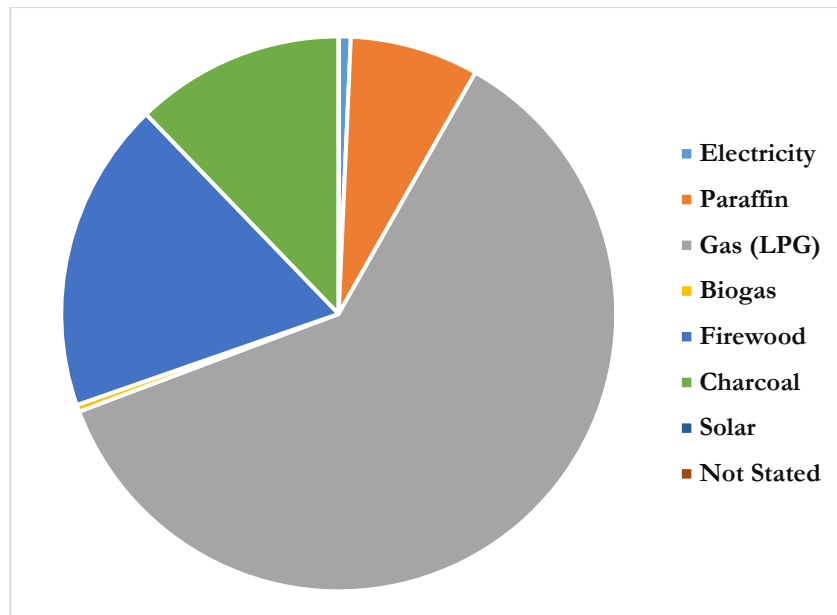


Figure 8-9: Types of Fuel used for Cooking

Source: Based on KNBS, 2019 Census Report

## 8.7 Information and Communications Technology (ICT)

All mobile phone service providers are in Kikuyu, including Safaricom, Airtel, Orange, Equitel and Yu. The signal receptions of all networks are best within the town while Safaricom's signal reception is poor in areas such as Gikambura and Kid Famaco. Mobile Banking is also used in the area and this includes the transfer of money via Mpesa.

Internet use is evident in the numerous cybercafés, local internet service providers, and computer learning schools. Mobile internet is also widely used. In addition, fibre optic cables have been laid in all parts of the town.

## 8.8 Key Planning Issues

Table 8-6: Key planning issues on physical infrastructure

Key Highlights	Opportunities
<b>Waste collection</b>	
<ul style="list-style-type: none"> <li>High cost of water treatment and connection;</li> <li>Water catchment degradation; and</li> <li>Inadequate water due to seepage from water pans especially in Nachu;</li> </ul>	<ul style="list-style-type: none"> <li>Financing opportunities from donors;</li> <li>Capacity building on water and sanitation;</li> <li>Increased revenue collection;</li> <li>Irrigation schemes to help improve yields;</li> <li>Agricultural experts are educating the farmers on how to prepare and use biogas;</li> </ul>

<ul style="list-style-type: none"> <li>• Streetlights in the town are inadequate, and because most of these have been vandalised;</li> <li>• Most people use charcoal for cooking implying that more trees have to be cut down every day to provide charcoal;</li> <li>• Frequent power blackouts and surges;</li> <li>• Disruption of fibre optic cable and other ICT infrastructure during road maintenance and/or upgrading; and</li> <li>• Constrained sewerage systems.</li> </ul>	<ul style="list-style-type: none"> <li>• Several learning institutions and health centres are using solar energy;</li> <li>• Firewood stove project by United Nations Environment Programme (UNEP) under implementation which encourages to use wood and solar for lighting;</li> <li>• Increased private sector investments in ICT;</li> <li>• County Government programme to develop an ICT centre; and</li> <li>• County Government involvement in the expansion of the sewerage system.</li> </ul>
Storm drainage	
Poorly designed storm drainage system.	Re-design storm drainage system.

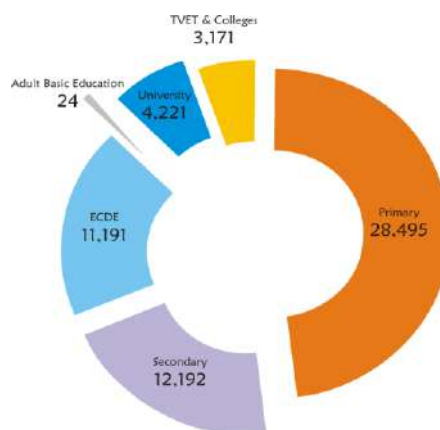
Source: VisionRI

## 9 SOCIAL INFRASTRUCTURE

### 9.1 Education Facilities

According to the 2019 Kenya Population and Housing Census, Kikuyu had 59,294 pupils and students at varying levels of education institutions. The largest proportion of these is in primary school.

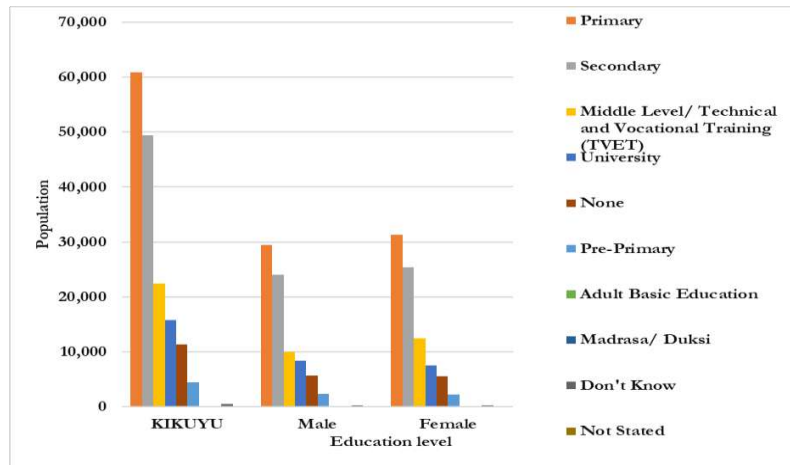
The Kikuyu Urban Area has a literacy rate of slightly above 95% and over 60% of the population has achieved a secondary school education. The teacher to pupil ratio is 1:40 for Early Childhood Development Education (ECDE); 1:38 for primary schools; and 1:25 for secondary schools. It has a 92.5% completion rate although there is a lot that needs to be done to maintain and even enhance this. Overall, 34.4% are in an education institution, 47.7% have left school or educational institution and there is a 13.4% dropout rate. Kikuyu is the home of the Alliance High School, the citadel of secondary education in Kiambu County.



**Figure 9-1: Education Facilities**

Source: Based on KNBS, 2019 Census Report

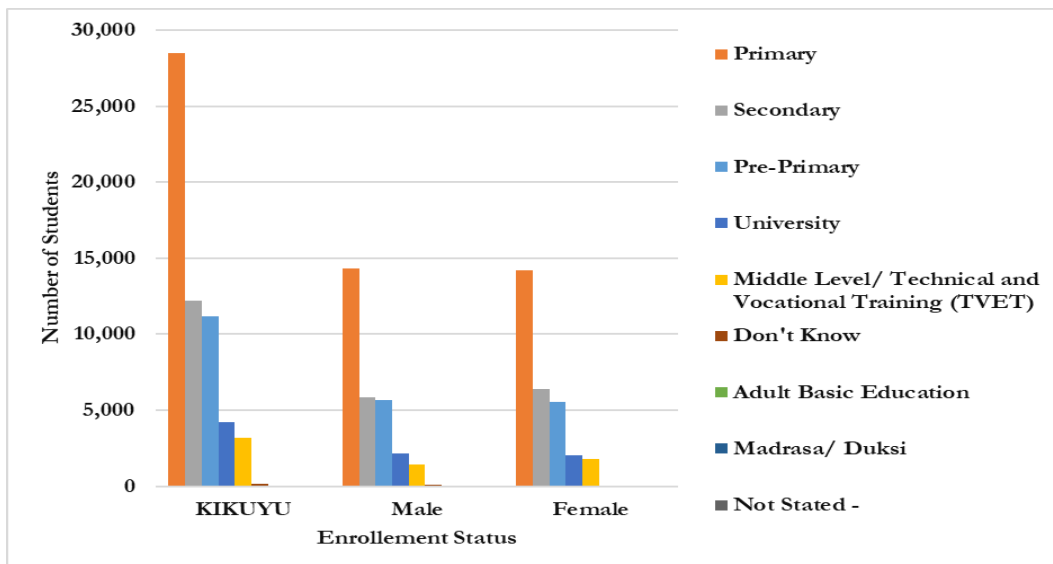
The number of female students who have the highest level of education is higher compared to male students, cutting across all levels of learning. The highest education level status in Kikuyu Urban Area is shown in the chart below.



**Figure 9-2: Highest Level of Education Completed**

Source: Based on KNBS, 2019 Census Report

School enrolment for Kikuyu Urban Area shows that primary school is the highest, followed by secondary, pre-primary, Universities, Technical-Vocational Education and Training (TVET), with adult basic education and madrasa being the lowest. The chart below illustrates the enrolment status.



**Figure 9-3: School Enrolment Status**

Source: Based on KNBS, 2019 Census Report

Approximately 47.7% of students left school/learning institutions after completion, with 13.1% of students leaving school before completing in Kikuyu Urban Area and 4.1% have never been to school at all. The school attendance status is shown in the chart below:

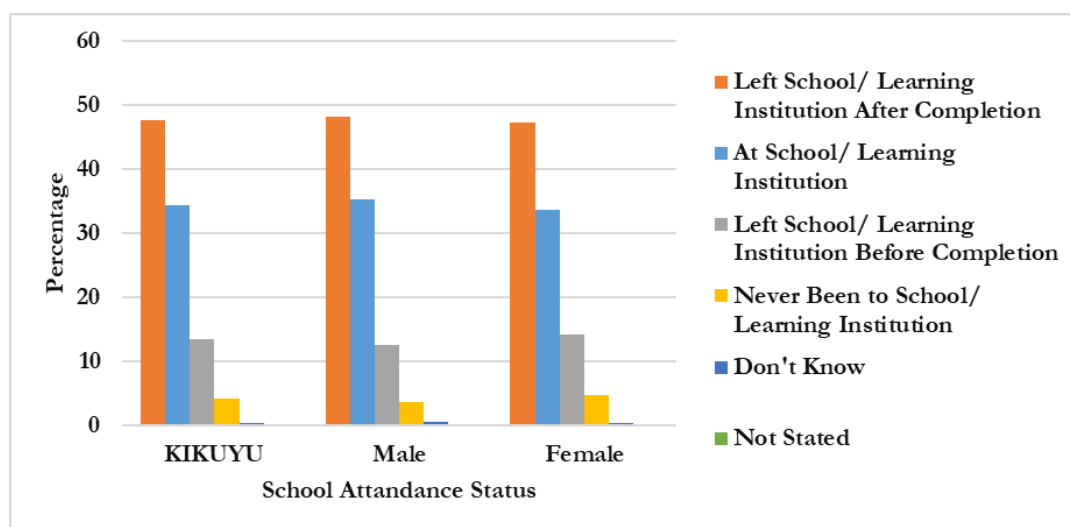


Figure 9-4: School Attendance Status

Source: Based on KNBS, 2019 Census Report

#### 9.1.1 Early Childhood Development Education (ECDE) Facilities

In Kikuyu, there are 57 public ECDE centres with a total enrolment of 11,191 children, which accounts for 5,670 boys and 5,521 girls. Most of these public ECDEs are located in public primary schools. This poses a challenge to many children accessing them mainly because of the distance covered, with the children being younger and requiring much more attention than those in primary schools. This has propelled the growth of private ECDEs in the Sub-County. Currently, there are 203 private ECDE centres.

Government regulations imply the application of public ECDEs at public primary schools. With the growth of the population, there is a need to review the increase of ECDEs in order to meet the growing demand in Kikuyu. Table 9-1 presents the projected number of ECDEs that will be required by the end of the planning period.

Table 9-1: Nursery Schools Projections

ECDE	Years				
	2009	2019	2022	2025	2034
Population projections	125,402	187,122	267,183	316,762	267 304
Total schools required	37	69	107	127	155
Land size (ha)	9.25	17.25	26.72	31.68	38.64
Assumption: 1 nursery school = catchment population of 2500 and requires 0.25 ha of land					

Source: Projections based on the KNBS KPHC 2019 Report Volume 4

### 9.1.2 9.1.2 Primary School Facilities

There are currently 43 primary schools and the projected requirements by 2034 as per the Physical Planning Handbook (2007) are 97. However, private primary schools dominate the planning area by providing 62.8% of education facilities. There is a shortfall of 54 public primary schools, especially in the underserved areas of Nachu, Kerwa and highly populated areas such as Kinoo.

The amount of land required to cover the shortfall is 314 hectares. There is a need to explore other options like high rise since land is scarce. The Table 9-2 illustrates the Sub-County's projections by the end of the planning period.

**Table 9-2: Primary Schools Projections**

Kikuyu - primary schools	Years				
	2,009	2019	2022	2025	2034
Population projections	125,402	187,122	267,183	316,762	267 304
Total schools	23	43	67	79	97
Land size (ha)	75	140	217	257	314
Assumption: 1 primary school = catchment population of 4000 and requires 3.25 ha of land					

Source: Projections based on the KNBS KPHC 2019 Report Volume 4

### 9.1.3 Public Secondary Schools

Kikuyu Urban Area has 31 public secondary schools with a total enrolment of 14,240 students which include 7,066 boys and 7,174 girls. The gender parity in the Kikuyu Urban Area is thus almost equal. In addition, there are 28 private secondary schools in the Kikuyu Urban Area with a total enrolment of 3,786 students with 1,531 boys and 2,255 girls. About 26% of secondary school students in Kikuyu Urban Area attend private secondary schools, that is more than a quarter of the secondary school student population.

By 2034 there is a need for additional 17 schools based on Physical Planning Handbook (2007) projections to adequately serve the population.

The private sector accounts for 47% of secondary schools in the Kikuyu Urban Area. The County Government needs to ensure the provision of affordable secondary education by investing in more public schools.

Table 9-3 below indicates secondary schools' projections in the planning area.

**Table 9-3: Secondary Schools Projections**

Kikuyu - secondary schools	Years				
	2,009	2019	2022	2025	2034
Population projections	125,402	187,122	267,183	316,762	267 304

Total schools	11	31	33	40	48
Land size (ha)	76	149	230	273	333
Assumption: 1 secondary school = catchment population of 8,000 and requires 6.9 ha of land					

Source: Projections based on the KNBS KPHC 2019 Report Volume 4

#### 9.1.4 Adult Education Centres

Kikuyu has 23 adult learning centres with a total enrolment of 300 amongst them, 93 men and 207 women. Under the prevailing good enrolment levels and high completion rate in the Sub-County, it is envisaged that the number of adult education facilities will drastically reduce, while literacy levels will increase.

#### 9.1.5 Universities, Colleges and Research Institutions

Kikuyu hosts The University of Nairobi's College of Education and External Studies. There is also the Presbyterian University of Eastern Africa owned by the Presbyterian Church of East Africa (PCEA) Church. Other institutions include Thogoto Teacher Training College, Muguga and Nachu Vocational and Technical Training Centres. Kikuyu hosts numerous government research institutions such as Kenya Forest Research Institute (KEFRI), Kenya Agricultural and Livestock Research Organisation (KALRO) and Kenya Plant Health Inspectorate Service (KEPHIS).

Due to the high population growth and the need for technical training, more investments are needed in technical training institutions. Table 9-4 captures the colleges and TVETs in Kikuyu Urban Area that offer different training programmes.

**Table 9-4: TVETs in Kikuyu Urban Area**

College	Category	Ownership
Muguga Vocational Training Centre	Vocational Training	Public
Thogoto Teachers Training College	Teaching	Public
Premier Professional Institute	Business	Private
Garrison Teachers Training College	Teaching	Private
The Royal Institute of Business	Business	Private
Lio School of Hairdressing and Beauty	Hairdressing	Private
Arknet Computer College, Kikuyu	Computer	Private
Lio School of Computer Studies	Computer	Private
Esmart College	Accounts	Private
Viteec Training Institute	Accounts, Hospitality, IT	Private
Kikuyu college	Business	Private
Toprank Computer Training Centre	Computer	Private
Kikuyu Commercial College	Business	Private
Kikuyu College of Accountancy and IT	Accounts	Private

Source: Kenya plex and County Director of Education/Department of Education, Gender, Culture and Social Services

## 9.2 Health Facilities

The Fourth Schedule, Part 2, of the Constitution of Kenya, 2010 mandates the County Government to provide health care services. These include management of public hospitals, ambulance services, promotion of primary health care, licensing and control of undertakings that sell food to the public, veterinary services (which excludes regulation of the profession), cemeteries, funeral parlours and crematoria. These services are well provided for in the Kikuyu Urban Area, through the County Department of Health Services. Health care facilities in Kikuyu comprises of hospitals, health centres, dispensaries, private clinics and nursing homes. Lusigetti Level 4 hospital is managed by the County Government. PCEA Kikuyu Hospital is the main privately-owned healthcare facility owned by the Church. The facilities are staffed by nurses, clinical officers, pharmaceutical, technologists, drivers, public health officers, medical technologists, and nutritionists, amongst others. On average, residents of Kikuyu travel about 5 kilometres to a health facility. There is also a need to upgrade and provide more public health facilities in the area.

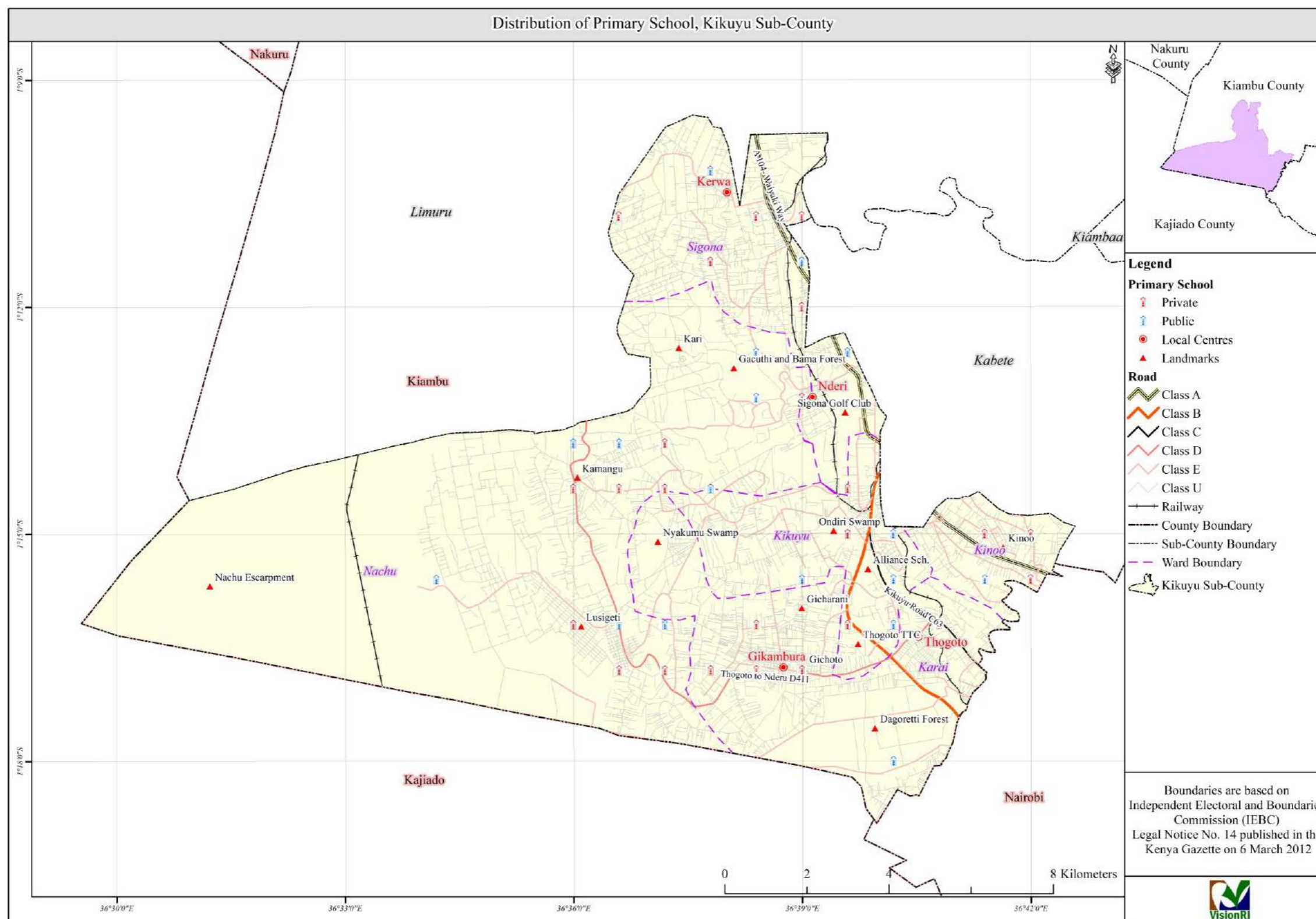
**Table 9-5: Summary of Health Facilities**

Facility Level	Status
Lusigetti Level 4	Public
Nachu dispensary	Public
Karai-Muslim dispensary	Public
PCEA Kikuyu Mission hospital	Private
Gikambura Health Centre II	Public

Source: Department of Health Services

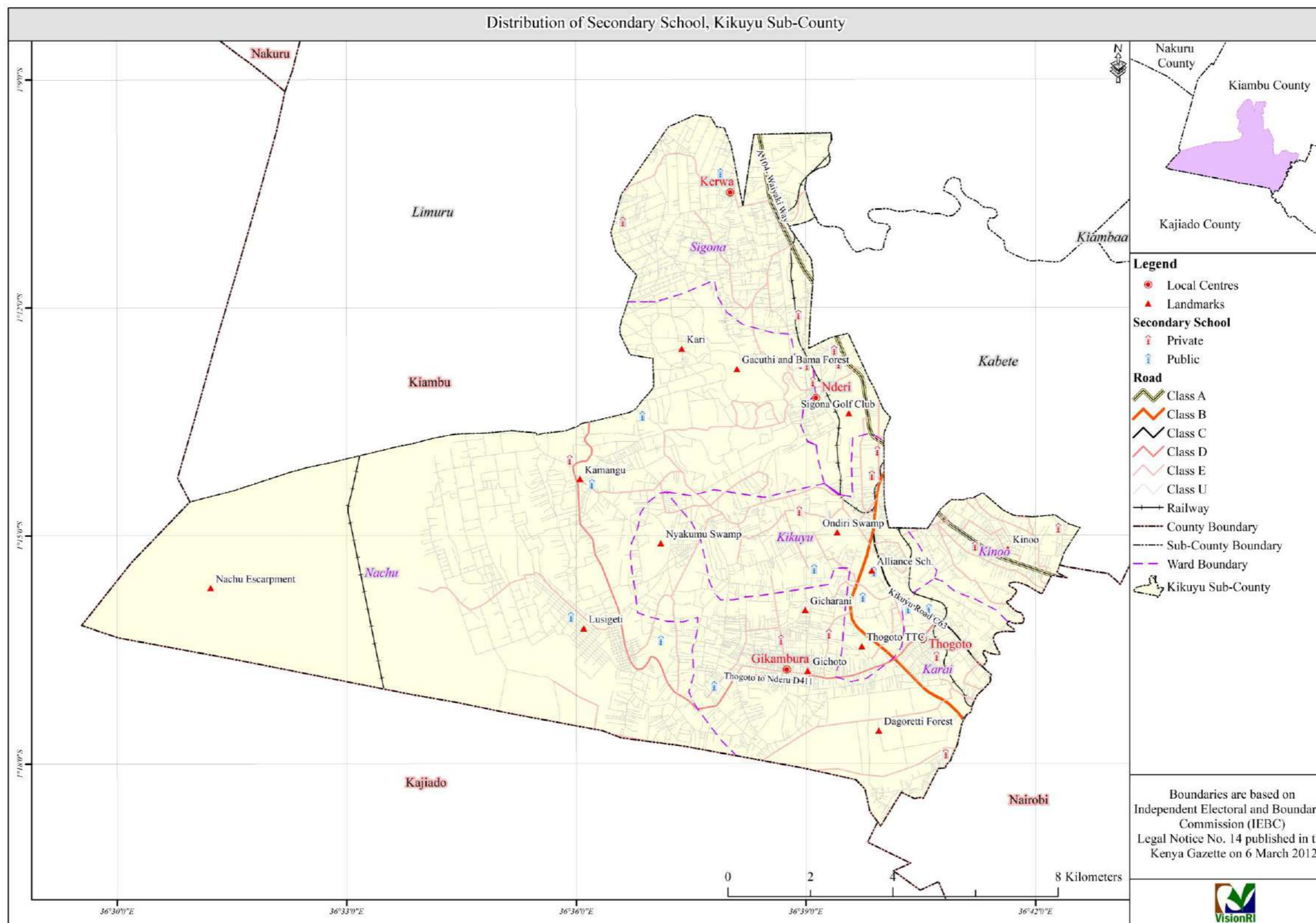
### 9.2.1 Projections and Needs

The Kenya Health Policy 2014-2030 requires that residents travel no more than 5 km to a health facility. The planning area largely falls short especially in Kikuyu Ward where there is no public health facility. The WHO standards state that one physician is needed for every 1000 persons. The projected population in 2030 will be 267 304 which implies that there will be a need of at least 386 physicians.



Map 9-1: Location of Primary Schools

Source: VisionRI



Map 9-2: Location of Secondary Schools

Source: VisionRI

Currently, there are 36 health professionals in the planning area implying a deficit of 350 health professionals by 2030. If one has to assess the planning area against the WHO (World Health Report, 2010) standard of 34.5 skilled health professionals per 10,000 populations, the planning area fares very well and surpasses WHO requirements in that front as there is a total 36 health professionals translating to about one professional per 3,484 populations. According to the Physical Planning Handbook, one hospital should serve a catchment population of 5000 people and should occupy at least 2 ha. The land should be adequate to allow future expansion.

**Table 9-6: Projection on Number of Health Facilities**

Year	2009	2019	2022	2025	2034
Population projections	125,402	187,122	220,008	268,385	267 304
Total Hospitals	18	33	44	54	66
Land Size (Ha)	36	66	88	108	132

Source: VisionRI

## 9.3 Social Facilities and Amenities

### 9.3.1 Urban Safety

The United Nations provides that one police post is supposed to serve 4,500 people. A single police post should cover a minimum of 0.1 ha while a police station in a township should cover 3 ha. The police-to-citizen ratio is 1:450 (Africa Check, 2017). Each township within the planning area should have a police station. The planning area should have 80 well-distributed police posts as indicated by the projections for the year 2034. Table 9-7 shows the police post requirements for the planning area.

**Table 9-7: Police Station Requirements**

Year	2009	2019	2022	2025	2034
Total Population	125,402	187,122	220,008	268,385	267 304
Number	20	37	48	59	80
Land (Ha.)	2	3.7	4.8	5.9	7.2
Assumption 1 police post per 4,500 people covering 0.1Ha					

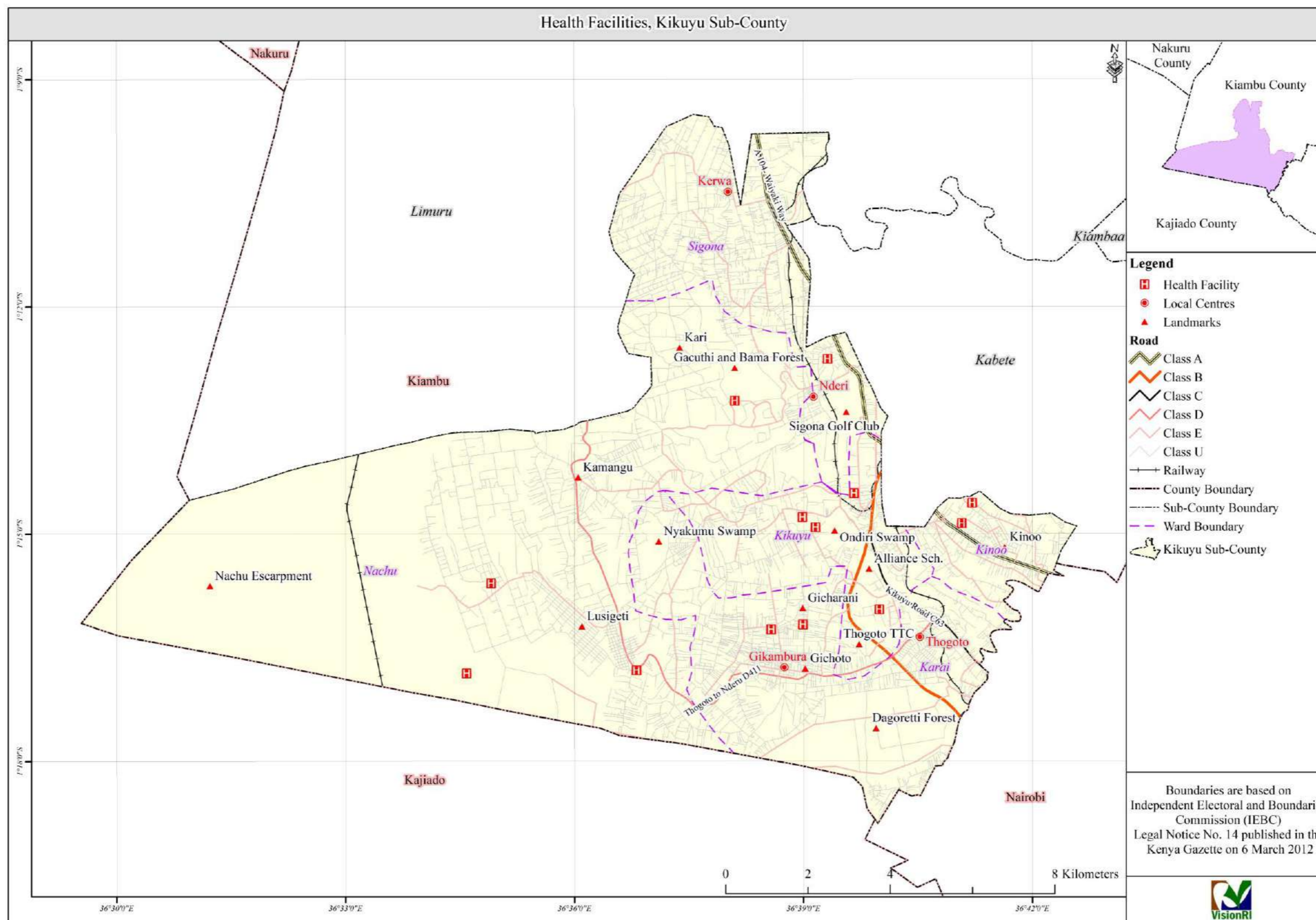
Source: VisionRI

### 9.3.2 Community Amenities

#### Recreation, Public Parks & Playgrounds

Kikuyu Urban Area has conference facilities provided by hotels such as Wida Highway Motel, Kikuyu County Club, Kilimo Grand Resort, and Sigona Golf Club, amongst others.

Gikambura Kikuyu Stadium which has been rehabilitated by the County Government provides sporting activities such as football, athletics, tournaments, cycling and martial arts for the residents' and schools' sports activities. Other recreational services such as picnics and camping are offered in Dagoretti, Gacuthi and Bama forests. Kikuyu Town has a small park that is usually in use as crusade site. According to standards set by the United Nations, at least 1.5 ha of open space is required for every 5,000-catchment population. Table 9-8 shows the land requirement for recreational facilities (public parks and playgrounds) in the planning area.



Map 9-3: Health Facilities Map in the Planning Area

Source: VisionRI

**Table 9-8: Projection on Recreational Needs**

Year	2009	2019	2022	2025	2034
Total Population	125402	187,122	220008	268385	267 304
Number of facilities	18	33	44	54	66
Land (Ha.)	27	49.5	66	81	99
Assumption 1.5Ha per 5000 catchment population					

Source: VisionRI

### 9.3.3 Religious Facilities

Religion is very strong in rural and urban Kenya alike. In Kikuyu Urban Area, there is a lot of religious activity. The Presbyterian Church of East Africa (PCEA) runs a university and a hospital in the outskirts of Kikuyu Town, the Catholic Church, Seventh-day Adventist Church, the Anglican Church and many others have many churches in the planning area. The number of Christian denominations and adherents continues to grow. This calls for more land and services including parking space, water and sewerage, security and regulation to the church facilities in the planning area. The establishment of religious facilities should be such that it allows for future expansion. A minimum of 0.1 hectares' space provision is adequate<sup>8</sup>.

### 9.3.4 Fire Stations

There is one operational fire station located in Kikuyu town with 10 firefighters, a fire engine, a rescue van and one rapid intervention vehicle.

According to Physical Planning Handbook, 2007 a population of 50,000-100,000 is supposed to be served by 1 fire station and a fire engine and at least 30 staff members. This means as per the current population Kikuyu Urban Area should have at two fire stations to adequately serve the area.

Table 9-9 shows the number of fire stations required as per projection and the size of land they will cover based on the lower limit of 50,000 people.

**Table 9-9: Projections and needs of firefighting stations**

Year	2009	2019	2022	2025	2034
Total Population	125,402	187,122	220,008	268,385	267 304
Number	2	3	4	5	7
Land (Ha.)	0.4	0.8	1.6	2.0	2.4
Assumption 0.4Ha per 50,000-100,000 catchment Population					

<sup>8</sup> Physical Planning Handbook, 2007

Source: VisionRI

### 9.3.5 Cemeteries

Kikuyu Urban Area has one ambulance based at Lusigetti hospital. There are also others in privately-owned health care facilities. According to the Department of Health Services, there are eight cemeteries in the Sub-County. Some of these are namely Nyayo cemetery in Lusigetti, Nachu Mbomboini. The public cemeteries are not well maintained and become inaccessible during the rainy seasons.

## 9.4 Key Planning Issues

Table 9-10: Key planning issues on social infrastructure

Key Highlights	Opportunities
<ul style="list-style-type: none"> <li>• 62% of primary education is offered by the private sector;</li> <li>• Inadequate public land for new schools;</li> <li>• Inadequate ECDEs and classes for pupils with special needs;</li> <li>• Uneven distribution of public health facilities</li> <li>• Long distances covered by residents to reach health facilities;</li> <li>• Inadequate public parks, sports, and social halls in the planning area;</li> <li>• Poorly maintained and inadequate burial sites; and</li> <li>• Cultural practices to bury in private and ancestral lands.</li> </ul>	<ul style="list-style-type: none"> <li>• County and national government increased budget allocation to support basic education;</li> <li>• Optimise the existing land through the construction of high-rise facilities;</li> <li>• County Government support to increase budgetary allocation for health services;</li> <li>• Increased funding and support from the private sector and both the National and County Governments;</li> <li>• Apply Public Health Act on burial requirements; and</li> <li>• Acquisition of more land.</li> </ul>

Source: VisionRI

## 10 ECONOMIC ANALYSIS

### 10.1 Overview

Kikuyu has been defined in the SPC for NMR as an “Agro-based Industrial Town”. Furthermore, the SPC for NMR envisions Kikuyu as an “Intermediary town” with key administrative functions and higher-level infrastructure. The planning area is characterised by a strong industrial base and booming secondary and tertiary sector activities, which can make it to efficiently function as headquarter of Kiambu County. The planning area is key in promoting rural development in the region and in achieving a balanced distribution of the urban population. The planning area is under pressure from economic growth and development perspective.

As per the SPC for NMR, at least 37% of economic activities are classified as small and medium enterprises. Within the town, most people are engaged in running small-scale retail shops. Supermarkets such as Satellite, EastMatt and Selfridge have also created employment. Petrol stations (Kenol, Kobil and Shell) and a number of Banks (co-operative, Equity, Barclays, KCB, Jamii Bora, Kenya Women Finance Trust (KWFT) and K-Unity) have created a rise in demand and supply of tertiary (service) labour. Kikuyu Town can currently be seen as a commercial hub because more than half of the population is engaged in business activities like retail shops, supermarkets, petrol stations, banks, transportation business and jua kali.

There are many potential prospects for the growth of the economy and businesses in Kikuyu, particularly in the agriculture and industrial sectors. The growth in opportunities can be attributed to several catalysing factors, some of them discussed below:

### 10.2 Local Economy

Kikuyu has gradually developed into an industrial area over time having several factories ranging from the metallic to the medical sector but maintains a high agricultural component in the local economy. Many institutions have developed in Kikuyu, including a major eye unit hospital, a Christian university, and many primary and secondary schools.

As per the SPC for NMR, 32.15% of Kikuyu residents are employed. While 16,574 are formally employed, 61,665 are employed in the informal sector. While the current formal to informal sector employment ratio is estimated at 1:4.54, it is projected to reach 1:2.50 by 2030. Qualifying as an agro-industrial town, 36.85% of the employed residents are employed in agriculture, while another 50.35% are in the service (tertiary) sector. The remaining employed people work in the transportation, manufacturing, and construction sectors.

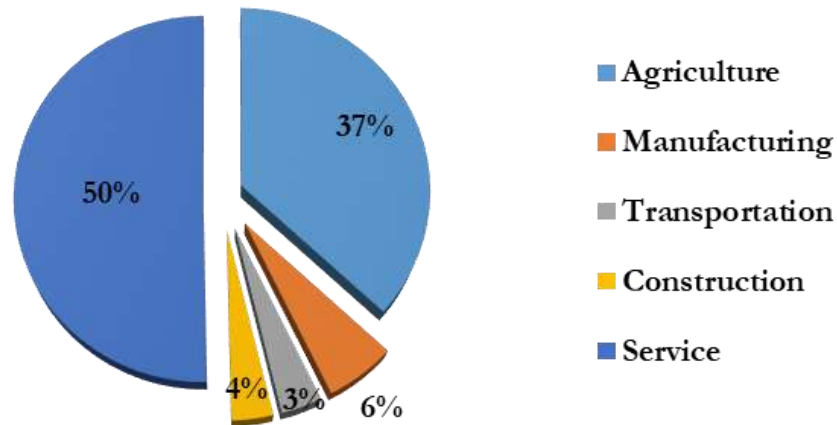


Figure 10-1: Occupation Distribution Analysis

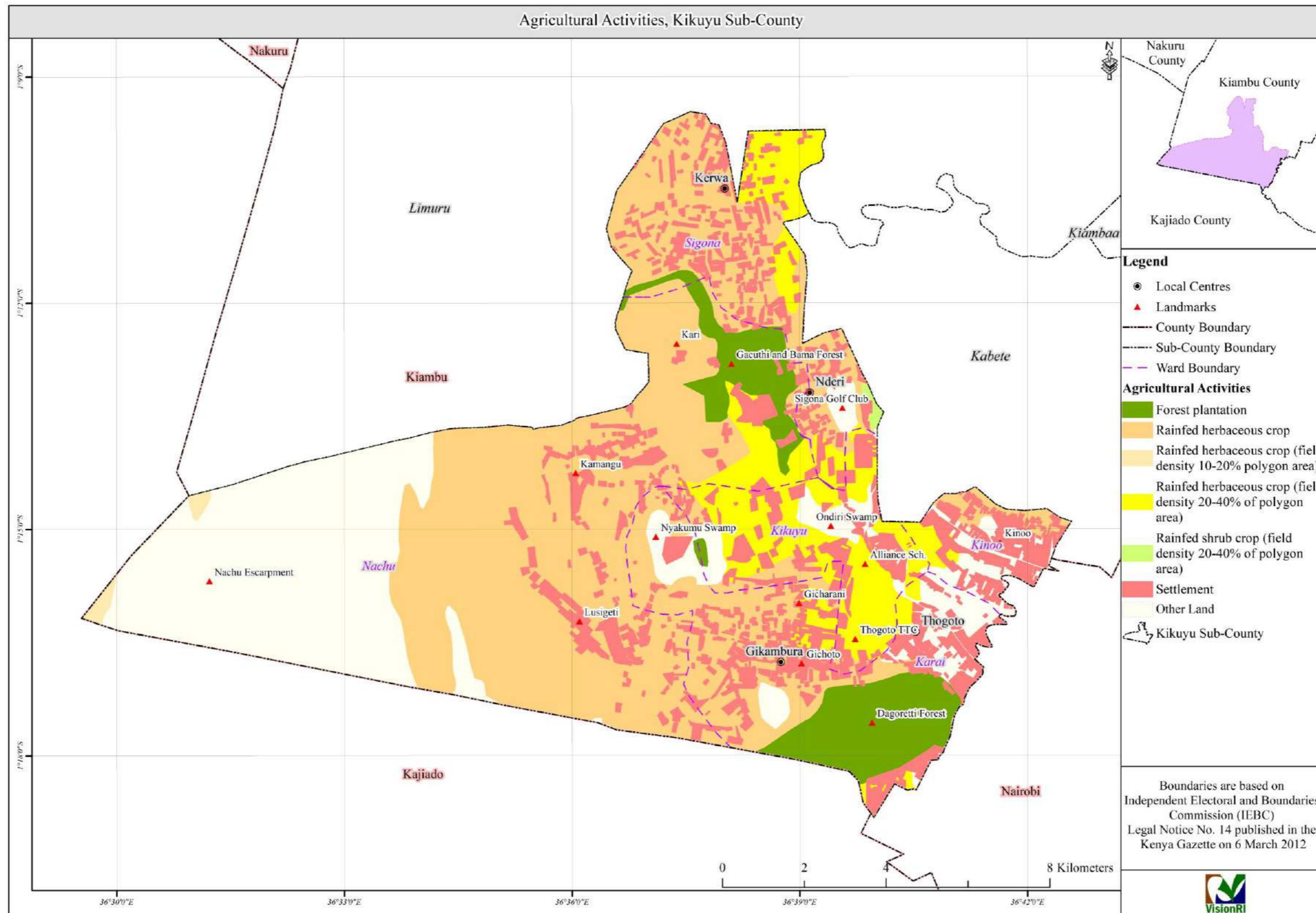
Source: Spatial Planning Concept for Nairobi Metropolitan Region, Govt. of the Republic of Kenya, 2012

The main forms of livelihood in Kikuyu Urban Area are discussed below:

- **Industries:** There are a number of industries in Kikuyu that have created employment in the area. Some of these industries are Steel Rolling Industry, Poly-pipes and Blue Nile.
- **Transportation:** In the planning area, at least 3% of the inhabitants engage in transportation as an occupation. This entails employment in the motorcycle, matatu and lorry businesses. While motorcycles transport people, matatus transport people as well as goods to and from Kikuyu. Lorries are hired for the transportation of heavy goods such as cement, timber and construction stones.
- **Real Estate:** Construction is picking up with plot owners building real estates and commercial apartments. There are those who have constructed their own homes and those who have constructed rental residential apartments. People living in these rental residential apartments are those working or doing business in Kikuyu Urban Area, and those employed in Nairobi but using Kikuyu as a 'dormitory town'.

### 10.3 Agriculture

As per the SPC for NMR, at least 50% of the inhabitants engage in agricultural activities. This is mainly attributed to the Sub-County's geology and rich soil texture. There is much livestock and crop farming in Kikuyu Urban Area. Crop farming entails growth of vegetables, maize, beans and other food crops. Inhabitants within the planning area also practice poultry farming and dairy farming. Agriculture is expected to continue supporting the economy of Kikuyu. Kikuyu Urban Area is generally an arable agricultural area. However, a large proportion of the land remains for subsistence agriculture due to diminishing land sizes. In Karai and Nachu area on the lower sections of the Sub-County, drier crop farming is practised which is not reliable due to erratic rainfall patterns. Most of the farmers grow maize and beans.



Map 10-1: Agricultural Activities

Source: VisionRI

**Table 10-1: Distribution of agricultural land by type of farming**

Type of Farming	Agricultural Land
Area of Agricultural Land (Hectares)	5,439
Area of Subsistence	4,545
Area of Commercial	809
Not Stated	85

Source: Based on KNBS, 2019 Census Report

**10.3.1 Types of Agricultural activities**

- **Livestock:** Livestock rearing is practised at the household level. Some of the domestic animals kept in the Kikuyu Urban Area include exotic cattle (dairy, beef), indigenous cattle, sheep, goats, donkeys, pigs, chicken (indigenous, layers, broilers), and rabbits.
- **Fish farming:** Fish farming is practised at the individual household level and usually consumed within the Sub-County. The total number of ponds is 156. The two main types of fish within the Kikuyu Urban Area include tilapia and catfish. The fish market consists of a major fish shop in Kikuyu Town and the rest are sold by hawkers. Most fishes are sold at the pond sites. The total fish production in a year is approximately 2 tonnes.

**Table 10-2: Distribution of Households Rearing Livestock and Fish**

Activities Rearing Livestock and Fish	Households
Farming	17,693
Exotic Cattle Dairy	3,771
Exotic Cattle Beef	479
Indigenous Cattle	575
Sheep	2,447
Goats	1,869
Donkeys	957
Pigs	1,336
Indigenous Chicken	8,393
Exotic Chicken Layers	1,066
Exotic Chicken Broilers	321
Beehives	141
Rabbits	416
Fishponds	25
Fish Cages	1

Source: Based on KNBS, 2019 Census Report

- **Crop Farming:** The average farm size within the planning area is 0.2 hectares. The key crops produced include maize, beans, Irish potatoes, and various cash crops described in Table 10-3.

**Table 10-3: Distribution of Types of Crops Grown by Households (in Tonnes)**

Crops Grown	Households
Farming	17,693
Maize	13,449
Potatoes	12,438
Beans	12,733
Cassava	338
Sweet Potatoes	782
Bananas	3174
Cabbage	2,178
Tomatoes	1,259
Onions	2,421
Kale	8,210
Sugarcane	1,054

Source: Based on KNBS, 2019 Census Report

On the upper regions of Kikuyu, where the land and climate favours agriculture, the main agricultural activities include:

- Small scale dairy farming – mainly zero grazing for the domestic and commercial market;
- Poultry farming – for example, Muguku farm, a leading producer of chicken and eggs;
- Greenhouse agriculture – a favourite in regions affected by reduced rainfall and climate changes; and
- Flower farms – such as the Magana Flowers, that produces for the export market in the European Union and China.

### 10.3.2 Food Security

Below are advantages that collectively make Kikuyu an attractive hub for agricultural activities, which could lead to the development of the planning area as an agro-business hub.

- **Factor Endowments:** The planning area has arable and fertile land, good climate, and existing pool of farmers and other important resources. Frequent rainfall favours agricultural activities such as crop growing, commercial farming and dairy farming. In addition, an abundance of water from the river for irrigation supports the farming of water-intensive crops.
- **Demand for Food:** In low and middle-income countries, the demand for food is driven by rapid population growth and high-income elasticity. The NMR is a high growth area characterised by

a huge influx of people, businesses and services. Market demand for processed, packaged and value-added food will also rise as incomes rise in the metropolitan region. Kikuyu can exploit these opportunities to cover a substantial portion of this market with a strategically planned production and marketing of its agricultural products.

- **Availability of land for expansion:** The planning area has adequate land for expansion of farming activities and building of warehouses, cold-storage plants, packaging plants, and other establishments. The establishment of an elaborate supply chain management of products may provide a key comparative advantage to Kikuyu in its development as an agro-based town.
- **Agricultural Support Infrastructure:** Improved road networks within the planning area will ensure proper connectivity between farms, markets and industries. This ensures an efficient flow of farm produce. There are also educational institutions within the planning area focusing on agriculture. These facilities should be utilised in capacity building amongst the locals. This will result in increased farm produce hence increases profits.

Given the above advantages, there are expected to be substantial backward and forward linkages due to the development of Kikuyu into an agricultural hub. In addition to the macroeconomic channels through prices for non-tradable agriculture and the foreign exchange for tradable agriculture, growth of agriculture can enhance growth in other sectors through consumption and production links. When agricultural incomes are spent on domestically produced non-tradable goods and services, it stimulates demand for domestic industry and services.

Production links proceed forward by fostering growth in agro-processing and food marketing and backward through demand for intermediate inputs and services. The availability of resources, favourable investment climate and the right set of public policies and government strategies are pre-requisites in allowing a supply response from the non-agricultural sector in order to realise these links.

It is essential that agricultural growth does not lead to environmental degradation, nor does it challenge the ecosystem of the planning area. The negative externalities of expanding agricultural activities could range from the depletion of groundwater, soil erosion, greenhouse gas emissions, and the decline of biodiversity and degradation of natural resources. Techniques such as crop rotation, green manure, compost, and biological pest control may be employed to get hold of these externalities. This will keep ecological balance despite the increased pressure on land in the future, thus leading to sustainable economic development.

Based on inputs from stakeholders during various Focused Group Discussions, one-on-one interactions and comments on preliminary draft reports and Consultant's analysis, strategic development of the planning area as an industrial hub is being analysed. Growth of agricultural products in Kikuyu Urban Area can help thrive industries, which are dependent on these products, such as warehousing, packaging, transportation and export of food and cash crops. Export and sale of crops and high-value agricultural products in Kikuyu are very modest till date. The sector-specific and generic comparative advantages that Kikuyu enjoys will support its transformation into an agro-based industrial hub.

## 10.4 Commerce

### 10.4.1 Cooperative Societies

The cooperative movement is the bedrock of the Kenyan economy helping pool resources and provide micro-credit at affordable interest rates. The cooperative movement outlook in Kikuyu is presented in Table 10-4.

**Table 10-4: Number of Cooperative Societies by Type and Membership Size**

Type of Cooperative	Number	Membership
Coffee Societies	1	85
Dairy Cooperatives	4	4,434
Urban SACCO Societies	15	1,503
Housing Cooperatives	4	252
Rural SACCO Societies	17	11,000
Transport SACCO Societies	9	1,000
<b>Total</b>	<b>50</b>	<b>18,274</b>

Source: Kikuyu Urban Area Cooperative Development report, 2015

### 10.4.2 Small and Medium Enterprises (SMEs)

Kikuyu Town hosts a myriad of formal and informal SMEs ranging from retail shops, and outlets offering financial services. Other commercial activities include supermarkets, petrol stations, banks, transportation business and jua kali. There are also hawkers and small-scale business operation who form the bulk of the economic activities. These are involved in the selling of food produce, clothing and other merchandise.

Some of the challenges facing these categories include a poor operating environment with lack of space, high rents, uncompetitive business environment, and lack of access to affordable credit.

## 10.5 Industry

Kikuyu Town is known for the manufacturing of steel and pipes. Some of the industries include Coninx, Palak, Kikuyu Rolling Mills, and Kikuyu Pipes. The growth of these industries was mainly influenced by the railway line and proximity to Nairobi.

There is already an existing basic supply-side market of agro-industrial goods in Kikuyu, providing a base for the expansion of similar activities. As the industry grows, economies of scale will be realised, costs will decline, and production will become more profitable.

With the Standard Gauge Railway Station and old railway line, Kikuyu has potential for industrial growth especially in areas like Nachu.

### 10.5.1 Availability of Raw Materials

As discussed earlier in this chapter, Kikuyu produces a number of food and cash crops, the enhanced output of such crops may feed into agro-based industries as raw material.

### 10.5.2 Support Services

Support services like storage, warehousing, banking, housing, and a few hotels are in place for investors to function in the planning area with comfort. Professional service firms are also present and who may support the growth of industries and the flow of investments in Kikuyu's agri-business sector. For some developing countries, the rise in imports of agricultural products by developed countries has constituted an opportunity to upgrade and diversify their agriculture and agro-industry, thus stimulating growth. Fresh agricultural produce in Kikuyu should be made more intensive in knowledge and services; it can have more value-added than some processed industrial goods. Significant trade in fresh fruits and vegetables is a relatively new phenomenon linked to innovations in post-harvest systems and animal traceability, in logistics and marketing.

Besides packaging and export of fresh agricultural produce like fruits and vegetables, manufacturing plants for agro-based products like tomato sauce, fruit juice, fruit pulp, pickles, soft-drink concentrate, alcohol, potato chips, packaged sweet corn and others can be developed in Kikuyu. The industry should try to create differentiated goods to create a long-lasting market for itself and make higher profits in the long run. Research suggests that successful countries build on their comparative advantage in primary commodities through investing in innovation to increase value-added. Kikuyu should add value to its farm-output.

The County Government needs to play the lead role in the development of agro-based industries in the planning area. Public investments in research and development, post-harvest infrastructure, and overseas market research need to be made. Tax incentives for fruit exporters, acquisition of state-of-the-art knowledge in horticulture, and the development of research institutes focused on developing crop varieties adapted to local conditions could be some first steps taken. By substantially reducing both risk and initial investment requirements, the public sector's support would lay the basis for private sector participation. As the interest of private investors starts building up, small credits may be provided to groups of medium to large producers; they may also be trained in agricultural extension and technology transfer.

Investments in logistics infrastructure for perishable exports and in quality and food safety assurance systems will be instrumental in the planning area's growth into an export-hub. Road/rail/air accessibility to and from Kikuyu, as well as a large sub-regional wholesale market, should also be planned. Substantial investments in supply control and traceability systems, upgrading of packinghouse facilities (such as improved water and sanitation and advanced cold treatment and storage systems), staff training and environmental testing will have to be undertaken by the private sector in the fresh produce industry, allowing them to service the demand for premium-quality products such as salads and other semi-prepared vegetable products, particularly for export to the European Union.

Apart from developing an agro-based industry, Kikuyu can also provide value-addition to other goods imported into and exported from the country. Kikuyu is situated on the road to Uganda, the Rift Valley and central Africa. Proximity to a major road network should have a positive impact on the organisation of manufacturing activity, and lead to the growth of new manufacturing plants, through industry-level sorting and efficient resource allocation. The planning area could have an important industrial role on transformation and value-addition to goods imported through Mombasa port, such as processing, packaging, storage and transportation, as well as those produced in other regions and exported from Nairobi. This would provide Kikuyu with a higher-grade industrial potential, eventually leading to higher economic growth and development. A realistic strategy for sustainable industrial development could be based on finding opportunities for upgrading within the primary and natural resource-based sectors. The potential for generating spill-overs to other sectors and sustaining growth, as well as for poverty reduction, is probably greater in agriculture than in other sectors. While Kikuyu may not be able to compete in the production of sophisticated manufactures in the near future, it can probably compete in the production of some dynamic agricultural products and processed agricultural goods.

**Production Yields:** It would be expected that the arability of Kikuyu would favour better yields from agriculture. However, this has not been the case owing to climate changes, characterised by reduced rainfall and unpredictable weather patterns. Thus, there has been a gross reduction in the amount of produce coming from rain-fed agriculture practices. Farmers have resorted to practising alternative agriculture with using greenhouses, zero-grazings for dairy animals and irrigation from the limited water sources in the region.

**Market Dynamics:** Most of the produce from subsistence agriculture is targeted to the local market. However, the influx of cheaper import products has created a regional imbalance in regional supply and demand patterns. Conversely, farmers involved in greenhouse agriculture focus on markets beyond the region in neighbouring towns and cities and for the export market. Floriculture is mainly for the export market.

**Value Addition:** Kikuyu does not have an exhaustive value chain for the locally produced agricultural products. There are however some cottage products that have resulted in the local sourcing of raw materials. These include milk processed to yoghurt, ghee and cheese; vegetables processed to crisps and dry greens; meat products.

## 10.6 Tourism and Hospitality

Kikuyu does not have major tourist attraction sites. However, some of the notable areas of attraction include PCEA Church of the Torch, The Escarpment, Gacuthi and Bama, Dagoretti forests for a picnic. Some of the main recreational areas include Sigona Golf Club, located in Sigona ward, which is used for both golf and swimming activities. Notable hotels include Kilimo Grand Resort, Wida Highway Motel, Levilla and Victorian House, amongst others. Though Kikuyu has huge potential for the hospitality industry due to its location within the Metropolitan region, this has not been fully exploited.

## 10.7 10.7 Mining Activities

The main mining activities carried out in Kikuyu is quarrying and extraction of building materials like building stones, gravel, and hardcore along the escarpment. These mining activities are leading to destruction since the extraction is done in disregard of the environment. Other negative effects include soil erosion, dust and loss of vegetation and beautiful landscape. Kikuyu also has potential for diatomite mining in Nachu area which can be exploited for economic benefit.

## 10.8 10.8 Key Planning Issues

Table 10-5: Key planning issues on the Local Economy

Key Highlights	Opportunities
<ul style="list-style-type: none"> <li>Land subdivisions greatly impacting on the yield of agricultural produce;</li> <li>Climate change is affecting the agricultural potential of Kikuyu;</li> <li>Reduced water resources – exacerbated by the increased population of the area and demand for domestic water superseding that required for agriculture; and</li> <li>Price fluctuations – affected by agricultural imports into the local market e.g. the price of import eggs is cheaper than locally produced ones.</li> </ul>	<ul style="list-style-type: none"> <li>Application of planning standards to protect agricultural lands;</li> <li>Diversification of agricultural practices;</li> <li>Use of irrigation, greenhouses and drought-resistant crops;</li> <li>Promote value addition and marketing strategies; and.</li> <li>Agro-based industries.</li> </ul>
<ul style="list-style-type: none"> <li>The town is congested and characterised by vertical construction. The outskirts of the town are mainly composed of urban agriculture and residential land use.</li> </ul>	<ul style="list-style-type: none"> <li><b>Availability of space for expansion</b> in the outskirts will favour the construction of more establishments such as manufacturing units, industries, farmlands, houses and apartments. The land, as opposed to neighbouring towns, is relatively cheaper. This has led to an influx of construction activities, businesses, people and economic growth.</li> </ul>
<ul style="list-style-type: none"> <li>Kikuyu’s annual population growth rate of 4.13%, is due to substantive migration to the planning area as well as the high birth rate.</li> </ul>	<ul style="list-style-type: none"> <li><b>Population Growth:</b> As the population grows rapidly, demand for goods and services will increase leading to the growth of markets, residential space, and services are likely to boost, thus creating market opportunities for the goods and services.</li> </ul>

<ul style="list-style-type: none"> <li>The infrastructural development plans by the County Government are expected to provide support services to the growth of business activities in the planning area.</li> </ul>	<ul style="list-style-type: none"> <li><b>Infrastructural Development:</b> The planning area's proximity to Nairobi city will be instrumental in its economic growth. The Southern bypass that connects Mombasa road to Nairobi-Naivasha Highway at Gitaru via Kikuyu favours the growth of economic activities in the area.</li> </ul>
<ul style="list-style-type: none"> <li>Planning in the NMR will lead to high-density development around key mass transit stations, enhancing the economic and financial viability of businesses and commercial activities in the region.</li> </ul>	<ul style="list-style-type: none"> <li><b>Transit-Oriented Development (TOD):</b> High allocation of resources for infrastructural development of the planning area by the County Government would lead to high standard business infrastructure.</li> </ul>
<ul style="list-style-type: none"> <li>The planning area is characterised by good banking services and a well-developed network of commercial, transport and other services. This could attract huge investments and foreign direct investments (FDI) in the planning area.</li> </ul>	<ul style="list-style-type: none"> <li><b>Investment Attractiveness:</b> The town is located about 20 km northwest of Nairobi, the capital of Kenya. The planning area houses ministerial department offices like Agriculture, Immigrations and Registration of Persons, Health, Lands and Gender amongst others as well as a railway station on the Mombasa-Malaba Railway Line. All these factors are likely to boost investors' confidence and investment favourability in the planning area.</li> </ul>
<ul style="list-style-type: none"> <li>The uncompetitive and harsh business environment for hawkers and small-scale traders.</li> </ul>	<ul style="list-style-type: none"> <li>Social inclusion in business planning by including hawkers and other small-scale business operators to cushion them from uncompetitive business environments.</li> </ul>

Source: VisionRI

# 11 GOVERNANCE AND STAKEHOLDER PARTICIPATION

## 11.1 Introduction

The County Government's administrative structure comprises of the County Assembly and County Executive Committee, headed by the Governor and Deputy Governor. The respective County Service Boards together with their Administrations, spearhead development projects in the Sub-County, ward and village levels. Kikuyu Urban Area consists of five wards, namely Karai, Nachu, Sigona, Kikuyu and Kinoo.

## 11.2 Institutional and Governance Framework

Plan preparation and implementation are under the following institutional and governance framework.

### 11.2.1 National Government

The National Government is providing the overall guiding legislative and policy framework to County Governments. It disburses an overall 35% of the national budget to the Counties. These funds support the implementation of development programmes and plans like the ISUDP. Also, through Ministries, Departments and Agencies (MDAs) the National Government undertakes construction of major projects such as international, national and regional roads, major water and sewerage projects, energy and housing programmes and other major investments in the Counties.

Through NaMSIP, the Urban Development Department (UDD) under the MoTIHUD is engaged in strengthening urban services and infrastructure. The process of preparing this Plan for Kikuyu is ongoing alongside other infrastructure projects such as the construction of markets and public transport terminus under NaMSIP programme. Other programmes such as Kenya Informal Settlement Project (KISIP) funded by the World Bank is undertaking informal settlements improvements, infrastructure, and housing and urban development to improve services in urban areas that lie in the NMR.

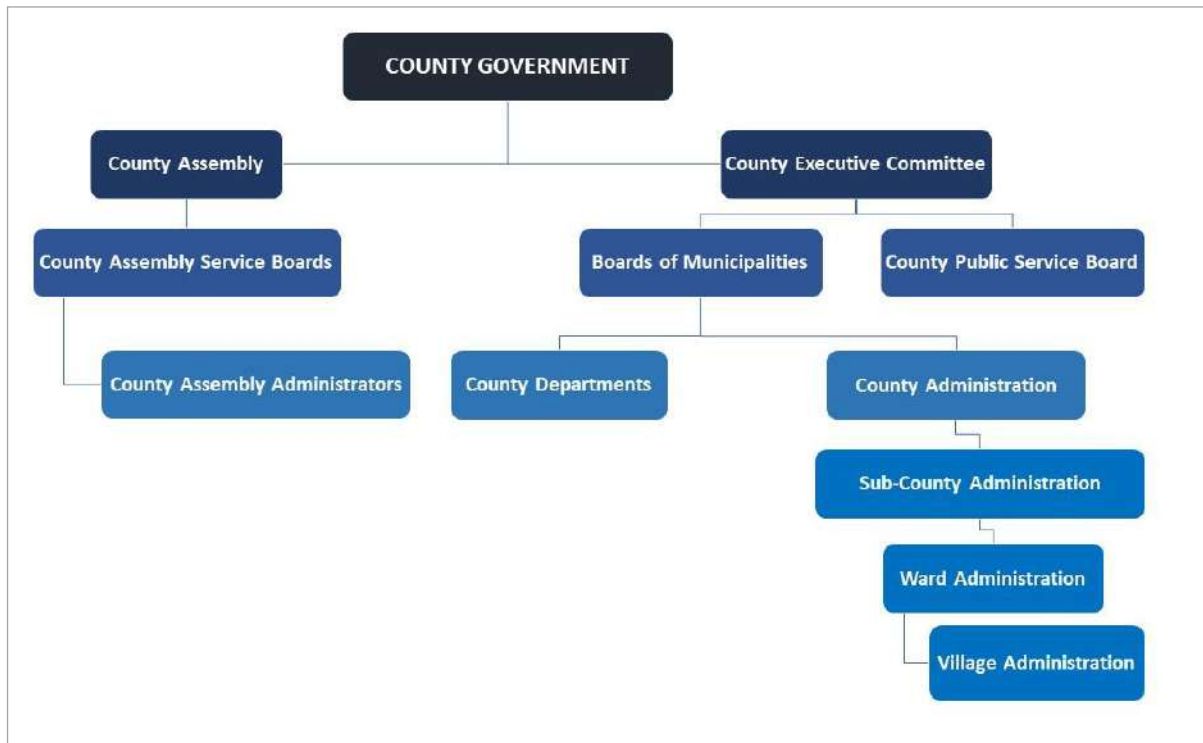
The spatial extent of the NMR covers Kikuyu and as such the planning area will benefit from these projects. The collaboration with the National Government will ensure improvement in services and utilities by strengthening the current and future entities responsible for service delivery including the central ministry, Kiambu County Government and other national agencies' like Nairobi Metro Transport Authority (NAMATA), Kenya Railways, KURA, KeRRA in planning and provision of transport and other services.

Through the Minister of Lands and Physical Planning, National Government's Physical Planning Department will provide capacity building, coordination of strategic plans and integrating the Kikuyu ISUDP with the National Spatial Plan (NSP).

UDD will provide the institutional capacity by supporting the urban agenda in terms of s capacity building for municipalities which this Plan is aimed at addressing.

### 11.2.2 County Government

The governance and institutional structure is core to the success of this Plan. The County, through its executive and legislative arms, will play important roles in implementation. While the County assembly will legislate, allocate budget and play an oversight role, the executive will support in matters of governance through coordination of stakeholders engagement and inclusivity.



**Figure 11-1: County Government Administrative Structure**

**Source: VisionRI**

The Sub-County's development projects are deliberated and agreed upon by all stakeholders – government, organisations and residents– prior to implementation, ensuring that all urban issues are addressed. Stakeholder participation in county development ensures inclusivity, transparency and accountability.

Kikuyu Urban Area comprises of various departments namely:

- Health Services;
- Finance, Economic Planning and ICT;
- Agriculture, Crop Production, Irrigation and Marketing;
- Education, Youth, Sports, Gender and Social Services;
- Livestock and Fisheries;
- Trade, Tourism, Co-operative and Enterprise Development;
- Roads, Transport, Public Works and Utilities;
- Environment Energy and Natural Resources;

- Housing, Physical Planning and Urban Development; and
- Public Service and Communication.

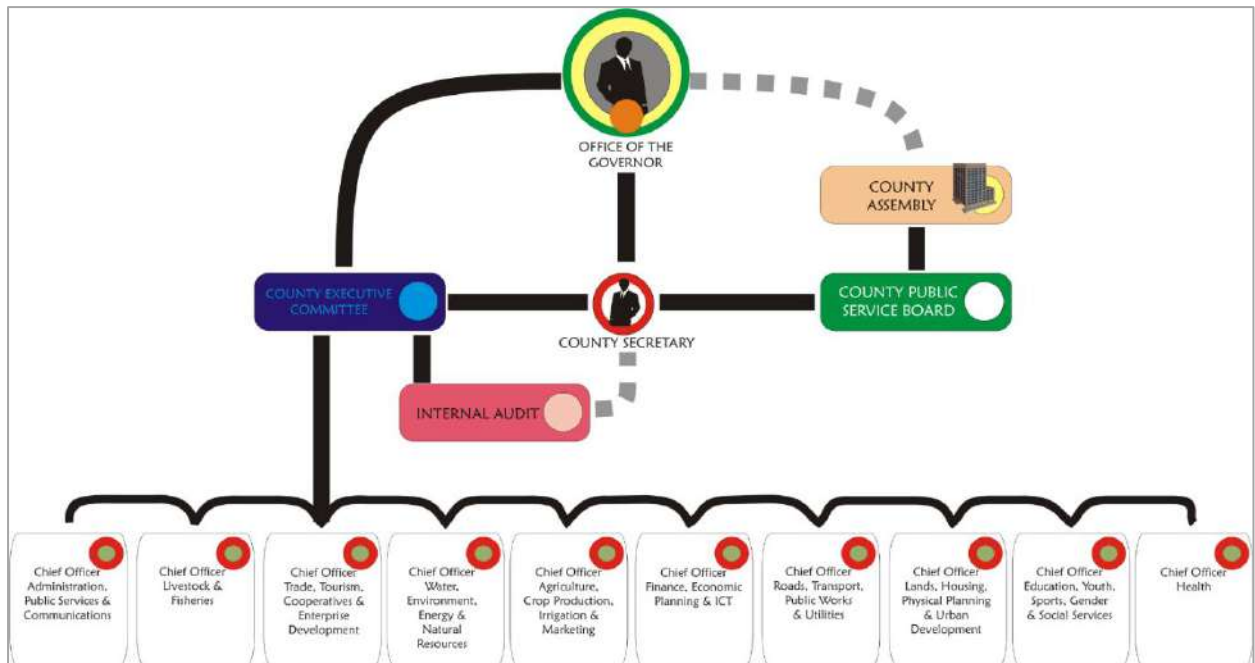


Figure 11-2: Kiambu County Government Organisation Structure

Source: Kiambu County Integrated Development Plan, 2018-2022

### 11.2.3 Municipal Board

Subject to the provisions of the Urban Areas and Cities Act, No. 13 of 2011 (Amendment) 2019, Municipal Boards are mandated to oversee affairs of the Urban Area. The Kikuyu Municipal Board was established in 2018. Its functions include but not limited to, formulating and implementing an integrated development plan, control land use, land subdivision, land development and zoning. This Board draws its executive mandate from the County Executive Committee and as such can impose fees, charges as may be authorised by the County Government for service delivery in the Urban Area and make by-laws.

Since establishment, the Board has been involved in citizen engagement during the preparation of the investment plans that guide management and development in the Urban Area. The Municipal Annual Urban Investment Plan and Budget FY 2019/2020 outlines the various projects the Urban Area deems most important. These projects were agreed upon after deliberation of the submissions made by the citizen fora and members of the county assembly. In summary, the investment priorities identified for the FY 2019/2020 in Kikuyu are infrastructural in nature; improvement of roads to bitumen standards, Solar PV street lighting and provision of drainage. Subsequent provisions in Part III-20 of the Urban Areas and Cities Act, No. 13 of 2011 (Amendment) 2019, require that in the case of a town the functions of the board should be performed by a committee.

## 11.3 Legal framework

The Constitution of Kenya (2010) distributes planning functions across a two-tier government: national and county governments with provisions for coordination across the two levels. Planning roles and responsibilities at both the national and county governments are governed by the Constitution of Kenya 2010 under Chapter 5: Land and Environment, particularly Article 66. The Fourth Schedule Part 1 (21) and (32) forms the foundation of national government planning mandates while Part 2 (8) of the schedule forms the foundation of county governments planning mandates.

The County Governments Act 2012 prescribes the powers, functions and responsibilities of the county governments for the delivery of services and associated purposes.

The Kiambu County Integrated Development Plan (CIDP) 2023-2027 describes the goals and objectives; implementation plan, strategies and impacts; monitoring and evaluation procedures for the County. The CIDP in association with the County Governments Act 2012, ensures that the County Government plans and implements urban development projects and programmes in the county. All projects, programmes and county budgetary cycles are affixed to the CIDP.

The Kiambu County Citizen Petition and Participation Act 2015 prescribes conditions for public participation in the administration and management of the county for its development and associated purposes.

## **11.4 Mechanisms of Citizen Participation**

Both the County Governments Act 2012 and Urban Areas and Cities Act 2011, provide mechanisms of public engagement in governance and participation in the affairs of the county and urban areas respectively.

### *11.4.1 Citizen engagement as per the County Governments Act 2012*

The County Governments Act 2012 Section 115 prescribes the following mechanisms of public participation:

- Information communication technology-based platforms;
- Townhall meetings;
- Budget preparation and validation fora;
- Notice boards: announcing jobs, appointments, procurement, wards and other important announcements of public interest;
- Development project sites;
- Avenues for the participation of peoples' representatives including but not limited to members of the national assembly and senate; and/or
- Establishment of citizen fora at the county and decentralised units.

In respect to the above mechanisms, the county planning authority invites the public to review the plan through the following ways:

- Planning clinics within the Kikuyu Urban Area wards and villages, facilitated by their representatives. The participants are given an opportunity to comment on the proposed county developments and programmes. Comments are noted and considered by the county planning authority;
- Development applications, for example, change of land use notifications through print media and on-site advertisements. Anyone with objections is invited to avail their comments to the county planning authority; and
- Meetings with Kikuyu Urban Area associations in the following categories:
  - Neighbourhood;
  - Professional – health, built and urban environments, economic and finance etc.;
  - Sectoral – industries, business communities, agriculture, health, hospitality etc.;
  - Education and Research Institutions; and
  - Non-Governmental Organisations (NGOs) and Community Based Organisations (CBOs)
    - religious centres; and
- Use of communication technology through the County's websites, television and radio channels, social media and daily newspapers.

Public participation through the above mechanisms ensures inclusivity of the minority and marginalised groups, people with disabilities, youth and women, in accordance with the County Governments Act 2012 Section 97.

#### *11.4.2 Citizen Forums as per the Urban Areas and Cities Act (UACA) 2011.*

Public participation (citizen fora) in cities, municipal and towns affairs is provided in the Third Schedule of UACA (2011). The residents are expected to engage in the following manner:

- Deliberate and make proposals to the relevant bodies or institutions on:
  - The provision of services;
  - Proposed issues for inclusion in County policies and legislation;
  - Proposed National policies and legislation;
  - The proposed annual budget estimates of the County and National Government;
  - The proposed development plans of the County and National Government; and
  - Any other matter of concern to the citizens.
- Engage in plans and strategies preparation on various levels and units of government on matters concerning the citizens;
- Monitor activities of elected and appointed officials of the urban areas and cities, including members of the board; and

- Receive representations, including feedback on issues raised by the county citizens, from elected and appointed officials.

By adopting the above practices, urban authorities can tap into the social capital a create a positive impact on service delivery, business climate, poverty reduction, accountability and transparency. Participatory democracy promotes inclusivity and ownership of ideas and plans.

#### 11.4.3 Residents and Neighbourhood Associations

The Kiambu Community and Neighbourhood Associations Engagement Act 2016 gives local communities a statutory role in complementing County Government's service delivery. Further, the Kiambu County Citizen Petition and Participation Act 2015, prescribes conditions for public participation in the administration and management of the County for its development and associated purposes.

Neighbourhood associations are emerging as major stakeholders on matters of participation and governance. Some of the notable neighbourhood associations in Kikuyu include Link Road and Kidfarmaco associations. They are actively involved in matters of planning and development control which are relevant to the successful implementation of this Plan.

Kenya Alliance of Residents Association (KARA) is actively involved in promoting awareness of Kiambu County Participation and Engagement Act 2016, in order to strengthen collaboration between the Resident Associations and the County Government on service delivery.

## 11.5 Stakeholders Profiling

Many stakeholders have been engaged in the preparation of this Plan. The Table 11-1 represents a sample of stakeholders involved in the formulation of the Plan. These stakeholders will also play a major role in the implementation of this Plan.

**Table 11-1: Stakeholders Profiling**

National & County Government	Other Stakeholders
Ministry of Lands and Physical Planning (MoLPP)	Business community
Ministry of Transport, Infrastructure, Housing, Urban Development and Public Works (MOTIHU&PW)	Informal businesses
National Land Commission (NLC)	Residential and Neighbourhood Associations
National Environment Management Authority (NEMA)	Non-Government Organisations

National & County Government	Other Stakeholders
Office of the County Commissioner	Professionals from the private sector
Urban, Rural Roads and Highways Authorities	Community- Based Organisations
Deputy County Commissioner	Religious Institutions
Kikuyu Urban Area Departments	Local Community
Kikuyu Urban Area Administrator	Farmers
Area Member of Parliament	Traditional & cultural centres
Utility Service providers (Water & Sanitation, Electricity)	Minority and marginalised groups
Ward Administrator	Youth
MCA's	Women
Area Chiefs	
Municipal Boards	

Source: VisionRI

From the multiple rounds of stakeholder engagements done in the planning area, the following were the key concerns that they identified.

**Table 11-2: Stakeholders Concerns**

Thematic Issues	Concerns
Stakeholder participation	<ul style="list-style-type: none"> <li>• Inadequate participation by youth, elderly and the marginalised groups;</li> <li>• Unsuitable mode of mobilisation through media lacking properly targeted outreach to the residents;</li> <li>• Lack of legal awareness on citizens right to participate in planning and projects prioritisation; and</li> <li>• Meetings are conducted using legal, financial and technical language alienating the active participation of members.</li> </ul>
Gender and equity	<ul style="list-style-type: none"> <li>• Lack of desegregated forums targeting different genders and groups; and</li> <li>• Most of the proposed projects are male-dominated (e.g. physical infrastructure) and political and overlook soft issues like health.</li> </ul>
Minority and marginalised	<ul style="list-style-type: none"> <li>• Most of the people invited for the meetings are opinion and community leaders, overlooking minorities and the marginalised; and</li> <li>• Skewed development along voting lines and during annual budgetary forums.</li> </ul>

Urban safety and security	<ul style="list-style-type: none"> <li>• Though Kikuyu town has benefited with the security lights, the peri-urban areas are not covered;</li> <li>• Crime reporting;</li> <li>• Lack of gender reporting desks ;</li> <li>• The nyumba Kumi foras are male-led and male-dominated; and</li> <li>• There is a need to map out crime hotspots areas to enhance surveillance.</li> </ul>
Efficiency in service delivery	<ul style="list-style-type: none"> <li>• Lack of service charters;</li> <li>• Slow response to disaster, repair and maintenance issues; and</li> <li>• Tariffs.</li> </ul>
Transparency and accountability	<ul style="list-style-type: none"> <li>• Increasing financial burden through multiple licenses;</li> <li>• Inadequate consultation on fees and taxes – rates on freehold land, single business permits – professionals; and</li> <li>• Lack of simplified communication to enable common Mwananchi to understand and participate.</li> </ul>

Source: VisionRI

## 11.6 Key Planning Issues

Table 11-3: key planning issues on governance and Stakeholders Participation

Key Highlights	Opportunities
Weak citizens participation especially the youth, minorities and marginalised groups	Existing laws and County policy provide mechanisms of engagement to ensure equitable participation.
Gender and equity	Use of well documented available innovative approaches and participatory tools for inclusive engagement.
Inadequate personnel in the Kikuyu Urban Area offices to enforce development control	The County to hire relevant and qualified personnel for efficient implementation of projects.
Skewed project identification participation meetings	Use of best practices and tools to inform project selection.

Source: VisionRI

## 12 SYNTHESIS OF PLANNING ISSUES

### 12.1 Overview

This chapter provides an identification of the key sectoral challenges facing Kikuyu Urban Area that are addressed by the plan as well as its potentials that could serve as platforms of growth. These challenges and potentials are then synthesised to identify the planning area's cross-cutting strengths and opportunities that may be capitalised upon to sustain its development over the planning period. The weaknesses and possible threats to such sustainable development are also identified. The chapter also encompasses strategic development directions as well as evaluation of spatial development models to come up with the preferred development model.

### 12.2 Strategic Development Directions

- **Significance of Kikuyu in Metropolitan Region:** Kikuyu Urban Area is situated 20 km from Nairobi city. Due to its proximity to the city, it acts as a dormitory town to Nairobi. The major urban areas within the Kikuyu Urban Area that are linked to Nairobi are Kikuyu, Kinoo and Thogoto.
- **Growth Nodes:** Growth nodes can be largely viewed as focal centres that ensure socio-economic balance for its population and has a direct impact on the development of surrounding centres and vice-versa. The growth nodes within the Kikuyu Urban Area include Kikuyu, Kinoo and Thogoto. The lower-order goods and service centres include Gikambura, Nderi, Kamangu, Kanyayo, Rengutti, Lusigetti and Nachu.

Kikuyu town is characterised by strategic transportation networks, which include the Southern bypass, Kikuyu road and Nairobi-Nakuru Highway. The urban centre is characterised by mixed land use, which includes public purpose land use dominated by administrative offices, commercial land use, residential land uses, and industrial land use.

Kinoo is located to the southeast of Kikuyu and is approximately 14 km from Nairobi Capital City. It is situated along the Nairobi-Nakuru highway and mainly consists of residential land use. The centre also has educational facilities as well as low order goods and services stops to serve the residents within the centre.

Thogoto urban centre is situated to the south-western side of Kikuyu and is located between Kikuyu road, Southern bypass and Dagoretti Road. The town is characterised by educational and public purpose land uses. The key educational facilities within the centre include Alliance Boys and Girls High School, and UON Kikuyu Campus, amongst others. Some of the key hospitals include Kikuyu Hospital Eye Unit and PCEA Kikuyu Mission Hospital.

Planning for these centres will be oriented towards steering developments to ensure that the planning area becomes a sustainable agro-industrial and residential centre. This will be done

by planning for compact centres with mixed land use within the nodes to control development and leaving the hinterlands for agricultural use.

Improving the urban environment will strengthen the nodes to become viable centres. Along with encouraging mixed-use developments, the urban design shall be considered in the formulation of the Kikuyu Plan. The development of these growth nodes will also include expansion of roads paving the way for the improvement of drainage and sewerage systems, pedestrian sidewalks and amenities, public landscaping, and street lighting within the way leaves. An iconic landmark, signifying entry to the Kikuyu CBD, may be constructed at the bus park where it will be highly visible as one enters and exits the Kikuyu CBD.

- **Protect environmentally sensitive areas:** Environmentally sensitive areas include those that require special protection due to its natural characteristics, landscape form, historical value as well as wildlife component. Policies and strategies shall be laid out to ensure the adequate protection of these areas. This calls for the protection of environmentally sensitive locations such as the Nyakumu swamp in Karai, Ondiri swamp and Kikuyu springs in Kikuyu as well as Dagoretti and KARI forests.

The riparian reserves should be provided with a 30 m buffer on both sides of the rivers. The buffer zones will create physical distances between environmentally sensitive areas and high-density urban developments.

The planning area shall have high-density growth nodes, which graduate into lesser densities towards environmentally sensitive areas. It is also important to establish “urban limits” such that urban sprawl will not fully overrun the remaining open agricultural areas thus losing valuable urban open space. Urban growth should, as much as practicable, be confined to strategic and suitable locations.

- **Enhancement of comparative advantage of ecological zones:** The planning area is endowed with Kikuyu springs which extend over an area of 161 square kilometres, from Bathi springs to the north to just beyond Nyakumu Swamp. The main Kikuyu Springs ground recharge rock is in Limuru. The groundwater infiltrates way down into the Karura and Kabete areas, which form the second of the two main aquifers. The springs are a vital source of water for Nairobi city.

Nachu ward is characterised by the hot and dry climate which is favourable for the growth of sunflower and castor. The ward is also endowed with escarpments, which if properly planned for can be used as a tourist attraction site.

The Kikuyu Urban Area also has Ondiri wetland, a swamp with bog-like characteristics. It is an important source of water for farming activities, horticulture and livestock rearing as well as the being the source of Nairobi River. This huge environmental asset adjoins Kikuyu Town at the border of the Southern Bypass Road. However, there are already encroachments to the

swamp as it is affected by market-driven urban growth and abstraction of water for irrigation purposes.

- **Transit-Oriented Development (TOD):** This is a form of development that maximises the amount of commercial, residential and recreational space within walking distance of public transport. This aims at promoting sustainable urban growth by increasing public transport ridership by reducing private car usage. The key transport intersection nodes include Kikuyu, Kinoo and Thogoto. Kikuyu urban centre has strategic transport linkages which include the Southern bypass, Nairobi-Uganda railway, Kikuyu road as well as Dagoretti-Karen road. Thogoto urban centre is served by the southern bypass, Kikuyu-Ondiri road and Dagoretti-Karen road. Kinoo urban centre is traversed by Nairobi- Nakuru highway.

Planning for compact centres will ensure controlled development within the nodes and preservation of the agricultural lands. The existing Nairobi-Uganda railway line that is underutilised should be revived. The urban centres should have intensive mixed-use development to ensure that there is ease in accessing public purpose facilities such as schools and health centres. Planning shall consider TOD modalities such as encouraging mixed-use high-density developments, ample landscaped public open spaces, enhanced motorised and non-motorised transportation as well as adequate parking facilities.

- **Control of urban sprawl:** Urban sprawl is viewed as the uncontrolled spreading of urban development especially on undeveloped lands neighbouring a city/urban centre. This may cause pressure on available resources, physical and social infrastructure facilities. Within Kikuyu Urban Area, the uncontrolled growth of settlements will cause conversion of valuable agricultural land, strain the government in providing the requisite public infrastructure and services, linear sprawl that threatens to cause traffic congestion along the major roads, and widespread land speculation and idling of erstwhile productive lands, amongst others. It is therefore important to control urban sprawl through proper land use planning and ensuring timely implementation of the approved plans.
- **Conservation of agricultural land:** Kikuyu has factors and comparative advantages to make it a hub of agricultural activities that could lead to the development of an agro-industrial hub. These advantages could be exploited to meet the huge demand for food, to include processed, packaged and value-added food, from NMR and other countries. These include the following: frequent rainfall and abundance of water from the river for irrigation; availability of land for expansion of farming activities and building of warehouses, cold storage plants, packaging plants and other establishments for the elaborate supply chain of products; and presence of agricultural supporting infrastructure such as improved road networks as well agriculture-oriented educational institutions. The proposed land-use plan should be implemented as a measure of conserving agricultural fields.

## 12.3 Summary of Key Planning Issues

- **Planning Context:** Kikuyu is strategically located within the Nairobi Metropolitan Region with good connectivity of key transportation networks to other areas within Kiambu County and neighbouring counties. This makes the planning area an ideal location for investments.

The planning area exists within a jurisdiction with a pool of existing legal and policy framework to enable implementation of this Plan.

- **Physiographic Features:** Kikuyu Urban Area lies within the Kikuyu highlands and has good soils for crop farming. The soils are also well-drained hence making the area less prone to flooding. However, some areas of Kikuyu are prone to soil erosion. The Kikuyu Urban Area also has natural features like Ondiri, Nyakumu swamps and the escarpment.
- **Population and Demography:** Kikuyu Urban Area like other sub-counties in Kiambu is also experiencing a population boom. The population has grown from 125,402 to 187,122 marking a growth of 49%. Majority of this population is young families and youths.

In addition, the Kikuyu Urban Area has a youthful population with high literacy levels thereby creating a pool of skills for uptake by the labour market. On the other hand, this is a population in need of employment, social facilities and infrastructure which has been addressed by the government.

- **Land:** Land use pattern in the Kikuyu Urban Area is largely influenced by transportation corridors. This is creating a ribbon pattern of development. These developments are mostly characterised by incongruous land uses, such as the siting of industries near residential areas, due to lack of development control and lack of compliance. This has triggered complains from the residents due to the fumes and noise produced by the industries. There is also a need to enforce planning standards when subdivisions are being carried out.

Land administration in the Kikuyu Urban Area is still run on manual platforms reducing efficiency during processing.

There is limited public land to provide public facilities like schools, playgrounds, etc.

- **Environment:** The planning area has several endangered natural resources such as Ondiri swamp and Nachu escarpment. The County needs to tap into the tourism industry using these features for economic benefit.
- **Physical Infrastructure:** The Kikuyu Urban Area enjoys a rich network of transportation corridors connecting it to nearby sub-counties and counties through road and rail. However, the feeder roads that connect to these roads are in poor condition. This encourages ribbon developments as residents only prefer to live along well-maintained roads.

The road system is vehicle oriented as many roads do not have pedestrian sidewalks and cycle paths. The planning area suffers from lack of sewer, poor storm drainage and street lighting, especially in the peri-urban areas.

- **Human settlements and housing:** Human settlements in the Kikuyu Urban Area have taken a linear pattern along major road corridors which poses challenges of transportation planning and development.

The real estate sector has largely driven by private developers accounting for more than 96% of the housing stock while there is limited or no public sector investment. Real estate development is happening in areas lacking support infrastructures like roads, water and sewer facilities.

- **Social Infrastructure:** The private sector is a key player in the provision of social facilities like schools and health facilities. The private sector accounts for 62% of all the primary schools in the planning area. To ensure that education remains affordable, there is a need to increase budgetary allocation in order to build more public facilities.

The distribution of social facilities is not equitable. Some highly dense areas do not have enough schools forcing pupils and students to walk for long distances to access schools.

The area also lacks public parks, stadiums, and social halls for recreation and community activities.

- **Economic Analysis:** The Kikuyu Urban Area boasts of an existing base of industrial activities which are mostly manufacturing. Major industries include Coninx, Palak, and Kikuyu Pipes, amongst others. These industries offer employment. However, there are existing land-use conflicts as these industries are located next to residential areas triggering complaints from residents due to air and noise pollution.

The Kikuyu Urban Area also accommodates many small and medium-sized enterprises ranging from commercial services, furniture and cottages and *jua-kali* industries.

Agriculture activities in the drier parts of Kikuyu like Nachu ward are hindered by erratic weather. On the other hand, in peri-urban areas are being affected by urbanisation leading to the conversion of rich agricultural areas to urban use.

The Kikuyu Urban Area also has potential for mining activities of diatomite and extraction of building materials along the escarpment. However, it is a delicate balance of extracting the minerals against the need to conserve the escarpment.

## 12.41 Development Challenges and Opportunities

### 12.4.1 *Development Challenges and Gaps*

The main challenge to sustainable development in Kikuyu Urban Area is inefficient land use planning and implementation. This has resulted in uncontrolled growth within the planning area. Inefficient land use planning and implementation are mainly because of a weak institutional framework, mismanagement of available natural resources as well as rural-urban disconnection.

The Kikuyu Urban Area has a growth rate of 4.13%, with the population expected to grow from 125,402 in 2009 to 267 304 in 2034. The relatively high growth rate in the planning area is mainly attributed to rural-urban migration as well as rapid urbanisation trends. This has led to over-exploitation of resources leading to excessive pressure on limited available resources. Overexploitation of available but limited resources is also caused by lack of proper planning. For example, Ondiri swamp in Kikuyu is being encroached upon by farming activities. This has led to siltation in the swamp thus reducing its water volume. Encroachment into the swamp has also resulted in water pollution mainly from the inorganic fertilisers used in the farms. In Nachu ward, there is the availability of stones and soils for construction, which has not yet been tapped.

There is also a manifestation of slow economic growth within the rural areas such as Nachu which has inaccessible roads. There is evidence of a massive subdivision of land because of the growing population, which has led to the conversion of agricultural lands into residential land uses. The Kikuyu Urban Area is characterised by inadequate social and physical infrastructure. There is also evidence of encroachment into the road reserves resulting in traffic congestion and accidents along the roads. The area is also characterised by poor drainage systems, which lead to seasonal flooding during the rainy seasons.

There is also poor solid and liquid waste disposal because of lack of proper planning resulting in poor sanitation. Kikuyu has inadequate health facilities and the few health centres within the planning area are understaffed. The residents have to seek alternative means from private health centres, which is costlier. Figure 12-1 summarises all the causes of weak land-use planning and plan implementation and their effects, while Map 12-1 illustrates some of these challenges within each ward in the Sub-County.

### 12.4.2 *Opportunity Map Analysis*

The planning area is characterised by a good human resource base. This is generally due to high numbers of learned individuals in the population.

Kikuyu Urban Area has an advantage of its location due to proximity to Nairobi City, Nairobi-Nakuru highway and Southern By-pass, making it a dormitory town of Nairobi City. This has led to massive real estate developments which have had a direct impact on economic dynamics.

Agriculture is a dominant land use with high-value farming such as horticulture which supports the economy in the area. There is a need to protect the future of agriculture by promoting cluster compact development as envisaged in this Plan.

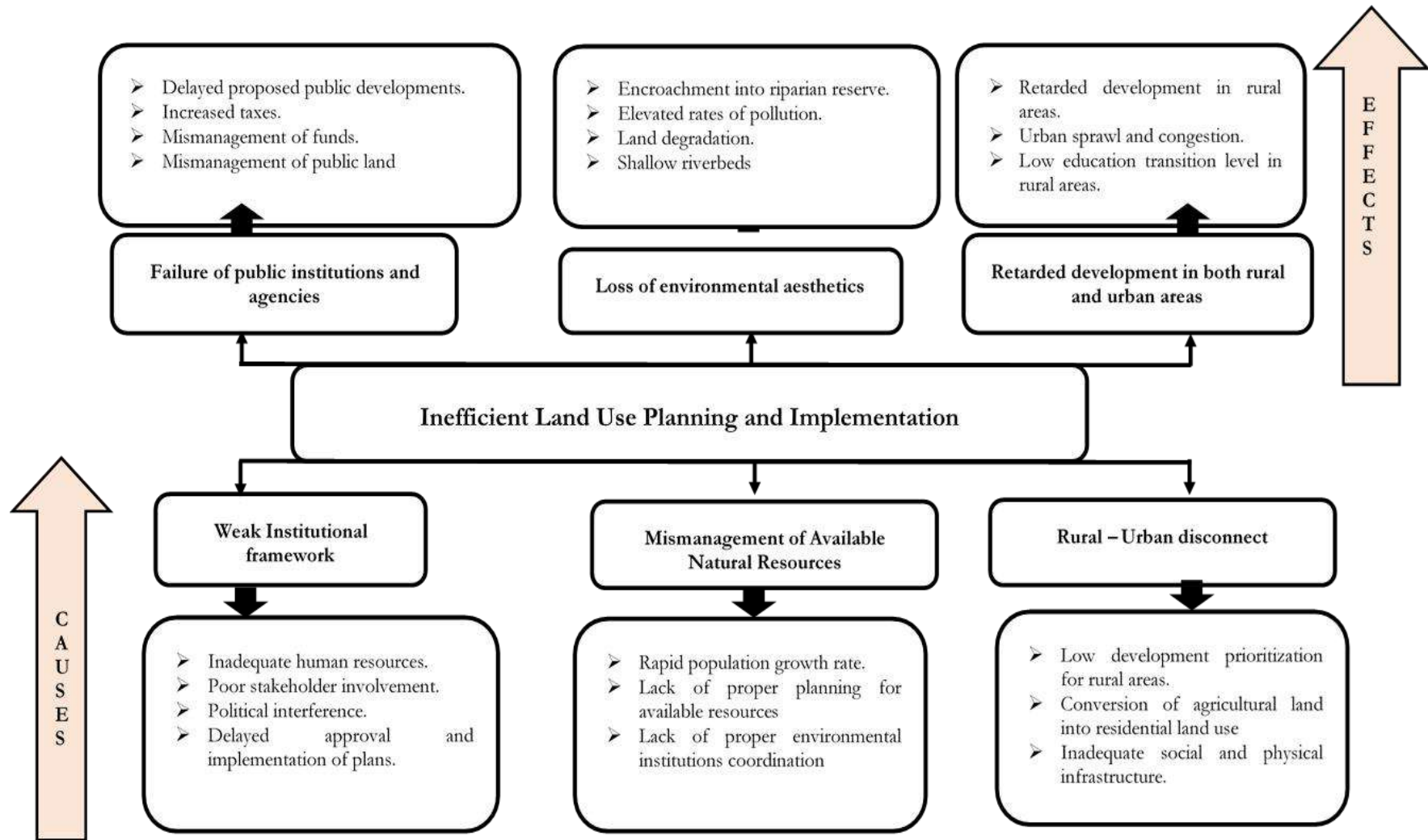
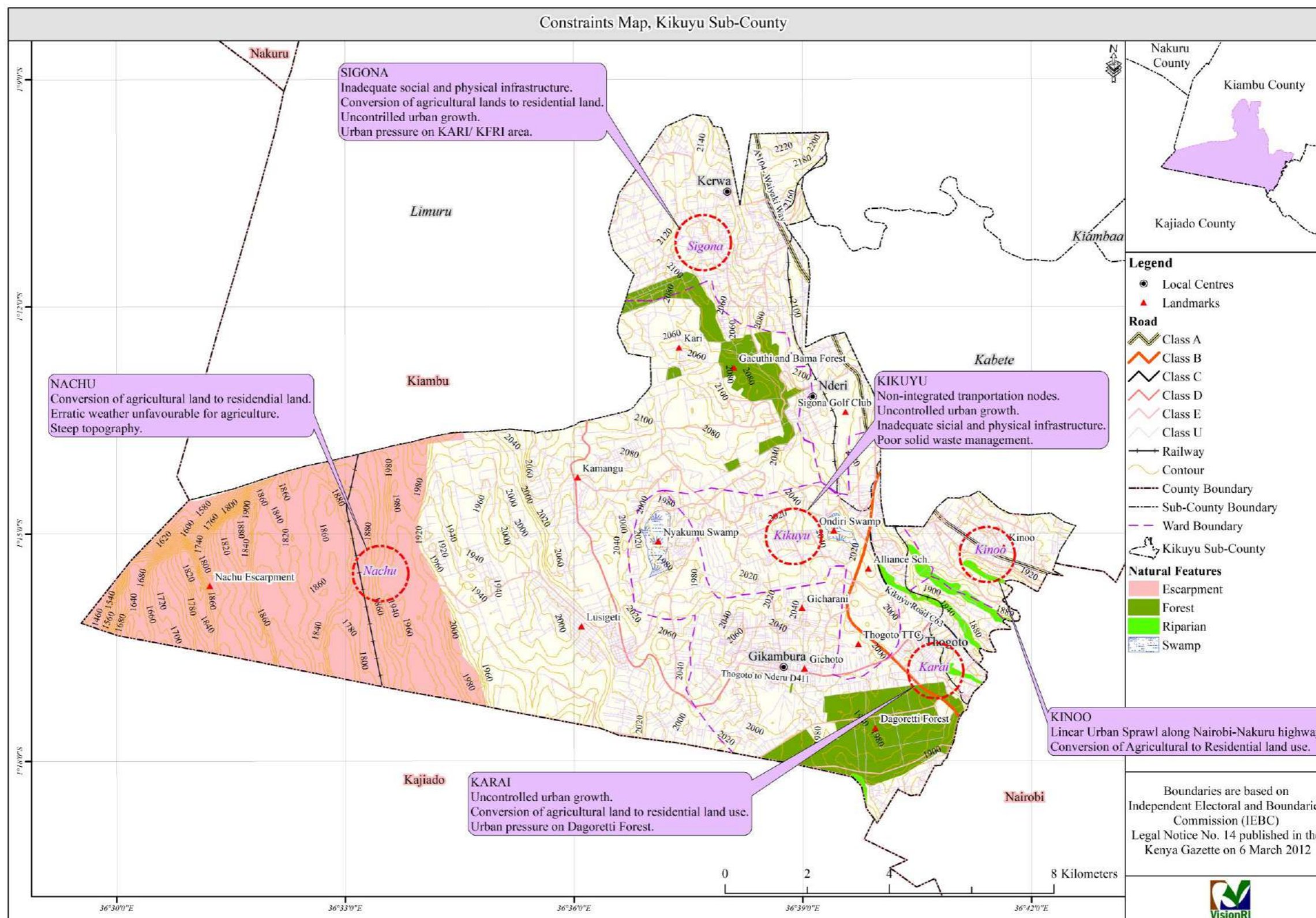


Figure 12-1: Problem tree analysis, Kikuyu Urban Area

Source: VisionRI



Map 12-1: Constraints Map

Source: VisionRI

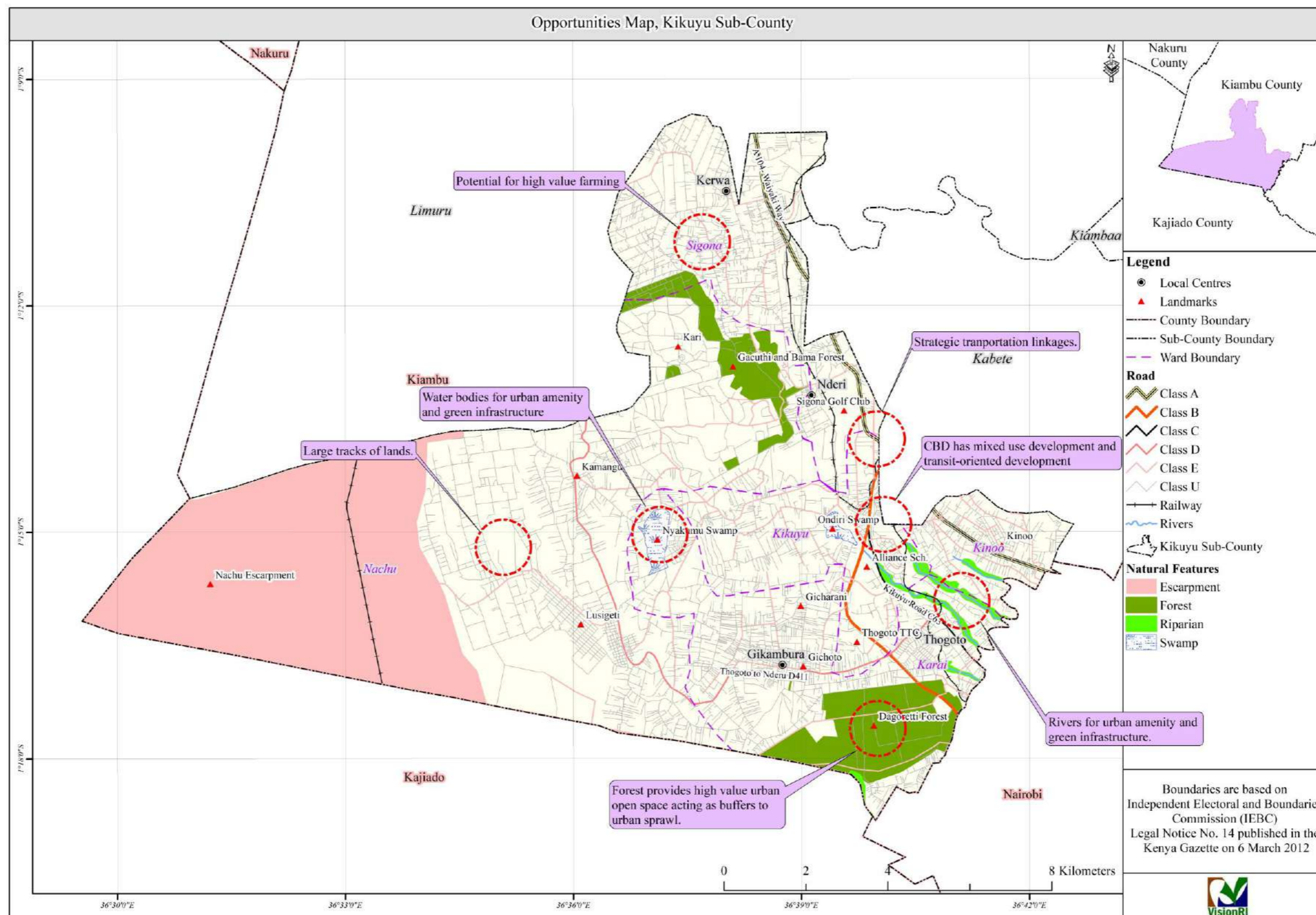
The drier part of the Kikuyu Urban Area mainly, Nachu is characterised by medium-sized parcels of lands which can be used for drought-resistant crops. This would lead to increased production yields in both livestock and crop sectors in the planning area. The planning area is mainly an agricultural node. A strengthening agricultural production would imply an improvement in the livelihoods of inhabitants resulting in the area's economic growth. There is potential to provide value-adding industries for agriculture produce.

The Kikuyu Urban Area is characterised by strategic transportation linkages, which ensures proper connectivity to neighbouring towns. This includes the Nairobi-Nakuru highway, Southern bypass, Kikuyu railway line, Dagoretti-Karen Road as well as the SGR. It is, therefore, a key transportation corridor. This provides the potential of developing Kikuyu into a multimodal transport hub characterised by green corridors. This would lead to the development of nodes such as Kikuyu Town, Kinoo, Thogoto, Gikambura as well as Sigona since they are located along the main transportation corridors. As the nodes grow, there will be infrastructure developments, economic growth as well as improvement of livelihoods.

The Dagoretti and KARI forests act as buffers, hence controlling urban sprawl. The forests also provide high value urban open space. The swamps and the rivers provide zones for recreational parks within the riparian buffers.

The Kikuyu Urban Area is also designated as a Level II Sub-regional Centre in NMR. The sub-regional growth centres are envisaged in the SPC to be characterised as having; administrative functions, higher-level infrastructure, and secondary and tertiary activities as well as a strong industrial base.

Map 12-2 below shows the spatial representation of the opportunities in the planning area.



Map 12-2: Opportunities Map

Source: VisionRI



REPUBLIC OF KENYA



COUNTY GOVERNMENT OF KIAMBU

## Part III

# Plan Formulation

# 13 SCENARIO BUILDING AND CONCEPTUAL FRAMEWORK

## 13.1 Vision, Mission and Goal

**The vision of the Plan:** To make Kikuyu a sustainable agro-based industrial and residential Sub-County.

**Mission:** To transform Kikuyu into a vibrant, economically developed and liveable place having high standards of living while ensuring optimal utilisation of available resources.

**Goals:** The goals of the Plan include:

- Ensuring agricultural land preservation by promoting compact mixed land use development within the built-up areas;
- Ensuring adequate and efficient transport system within the Kikuyu Urban Area
- Ensuring delivery of quality, sustainable, accessible and affordable social services and infrastructure;
- Ensuring sound environmental management system for sustainable development;
- Promoting proper rural-urban linkages so as to ensure growth and development of the rural areas; and
- Facilitating adequate and effective public participation.

## 13.2 Alternative Development Models

### 13.2.1 Nil Scenario

This development scenario is characterised by the continuation of current development trends and practices with minimal planning interventions. Some of the impacts will include inequitable distribution of social infrastructure, overexploitation of limited available resources, urban sprawl, inadequate physical infrastructure, intensive land subdivision and encroachment into the riparian reserve. These are discussed below.

- **Inequitable distribution of social infrastructure:** For instance, there are currently 57 ECDEs, implying a deficit of 10 ECDEs according to the Physical Planning Handbook. If no intervention is taken to curb the situation, by 2030, there will be a deficit of 73 ECDEs. Currently, there are 57 primary schools and 32 secondary schools. The demand by 2030 is 81 primary schools and 40 secondary schools. If more schools are not set up there will be a deficit of 24 primary schools and nine secondary schools. The planning area has four health facilities against the projected 33 facilities by 2030. If no intervention is taken, there will be continued disparity and inadequate health service delivery.

- **Exploitation of limited available resources:** Population within the planning area is rapidly growing. The lack of a planning tool to ensure optimal utilisation of resources will lead to overexploitation of available resources.
- **Urban sprawl:** The planning area is fast urbanising making and its town centres are rapidly uncontrollably expanding and encroaching into agricultural fields. There has been the emergence of informal settlements within the planning area. This includes Muthiga and Kiamburi informal centres. Under this scenario, the informal centres will keep on expanding and the situation will keep worsening. With nil intervention, agricultural yields will continuously decrease because of encroachment into the agricultural parcels.
- **Inadequate physical infrastructure:** The planning area is characterised by inadequate physical infrastructure. The road networks are laid out, but the standards are relatively poor, and traffic congestion is experienced during peak hours. There is inadequacy in wastewater drainage channels and water connections. This implies that the residents lack adequate potable water.
- **Intensive land subdivision:** The planning area's rapid population growth has resulted in the subdivision of land parcels. Failure to have a plan will lead to further uncontrolled subdivision within the planning area, which will greatly affect its agricultural productivity.
- **Encroachment into riparian reserves:** The set 30m riparian reserve standard is not observed within the planning area because of encroachment. Thus, the water levels in the rivers will keep on dropping due to siltation and the rivers will eventually dry up.

### 13.2.2 *Multi Nodal T.O.D Model*

This is a type of urban development that maximises compatible mixed land uses within walking distance of public transport. The key principles that guide a multi-nodal TOD model include compact mixed-use development within a radius of 400m to 800m from the central transit stop; quality public transport that is affordable and convenient; promoting NMT usage; adequate provision of social and physical infrastructure; compatible mixed land use densification within walkable distance; and provision of residential facilities and public spaces this will ensure collective identity as well as promoting proper community interaction.

In the planning area, this model would involve increasing development density mainly in the transport intersection zones which are classified as key centres and lower order goods and services centres. The key focal centres include; Kikuyu, Kinoo, Gikambura and Thogoto. The lower-order goods and service centres include Nderu, Lusigetti, Kanyayo, Kamangu and Nachu. Kikuyu Town is characterised by mixed land uses, which entails commercial land use, residential land uses, industrial land use as well as public purpose land use dominated by administrative offices. In the model, Kikuyu Town is a primary node for intensification of commercial, industrial, administrative functions as well as residential land uses.

Below are the advantages and disadvantages of the model:

### Advantages of the Model

- The model is associated with high accessibility since the nodes and developments are along the transport routes;
- The model ensures controlled development because of the compact mixed land uses, which are compatible;
- The model is characterised by maximisation of NMT and public transport since it endeavours to ensure walkability as a result of promoting a healthy lifestyle;
- The model promotes environmental conservation through buffering of the environmentally sensitive areas; and
- Controlled development ensures the preservation of agricultural land.

### Disadvantages of the Model

- If the model is not planned well, it may lead to future traffic congestion due to encroachment into road reserve;
- The model is associated with impaired mobility since the access route is the main corridor that is used to connect different centres. The model might lead to linear sprawl along the corridors if not well planned; and
- The model is associated with an increase in land prices due to land speculation especially for the areas within and bordering the compact mixed land use zones. This is mainly due to their good connectivity and provision of adequate social and physical infrastructure.

#### 13.2.3 Core-Periphery Model

The core-periphery model concentrates economic and administrative functions in one zone while leaving out the other zones for agricultural and residential uses. The model is divided into the core region, the transition zone which is the semi-periphery zone, and the resource frontier which is the periphery zone. The model seeks to structure urban growth by designating a core urban centre, namely Kikuyu Town having concentrated development while the periphery is left for agricultural development.

The core will encompass Kikuyu, Thogoto and Kinoo, which will be characterised by densification of compact - mixed land use (commercial, administrative, residential, and agro-industries); high-density residential units within the compact centres; low-density residential in the outliers of the centre; and adequate social and physical and social infrastructure.

The semi-periphery will include Nderi and Gikambura. This will be characterised by small-scale agriculture, residential land use and low order goods and services centres, high-density residential land use within the compact centres, and low-density residential in the outliers of the centre.

The periphery will include Lusigetti, Nachu, Kamangu and Kanyayo. This will be characterised by agricultural, industries and tourism zones as well as residential land use and low order goods and services centres, high-density residential land use within the compact centres, and low-density residential in the outliers of the centre.

### **Advantages of Core-Periphery Model**

The model will ensure improved urban-rural linkage. The model focuses on ensuring proper transportation linkages between the core urban centres (Kikuyu, Kinoo, and Thogoto) and low order goods and services centres to ensure economic growth as well as the development of the rural areas.

The model entails compact centres that ensure controlled development and provision of adequate social and physical infrastructure.

Environmental conservation is a key element of the model since compact development curbs urban sprawl hence ensuring zero encroachment to the environmentally sensitive areas. The model will also control encroachments by farming activities into Ondiri and Nyakumu swamps through buffering of the wetlands.

The model ensures the creation of employment from the agro-based industries and the agricultural farmlands within the periphery and the semi-periphery zones. This will in turn steer development of the rural areas in the periphery area. This includes all the low order goods and service centres such as Nachu, Lusigetti, Renguti, Kanyayo, Kamangu, Nderi, and Gikambura.

This model leads to the preservation of agricultural lands especially in the periphery and the semi-periphery zones. This will lead to increased agricultural productivity within the planning area. This included towns such as Nachu, Lusigetti, Renguti, Kanyayo, Kamangu and Nderi as well as Gikambura. This is mainly because the low order centres are characterised by compact development as a result of controlled development. The zoning guidelines are also key in indicating the minimum acreage and the land uses for specified areas.

### **Disadvantages of Core-Periphery Model**

If not well planned, there could be a massive movement of people from the periphery to the core in search of employment opportunities. This could result into polarisation effect making the centres within the core zone (Kikuyu, Kinoo, Thogoto) more dominant while they continuously grow as the low order goods and services centres in the periphery lag behind development-wise.

#### *13.2.4 Evaluation of Alternative Models*

Evaluation of the alternative models (multi-nodal TOD and the core-periphery) was done by evaluating the benefits and drawbacks of each model. The goals-achievement matrix (GAM) was utilised where stakeholders evaluated the alternative models with the guidance of the Consultants. Social, economic, and environmental factors considered for each alternative. The development concepts and visions were used as

the reference for evaluation. The aspects of evaluation included environmental issues, land compatibility, transportation, economic activity opportunities, community facilities, sanitation, waste, and wastewater management.

The Table 13-1 indicates the evaluation of the models to identify the preferred model. The multi-nodal TOD model and Core Periphery model scores 2.04 and 1.54, respectively.

**Table 13-1: Evaluation of Alternative models**

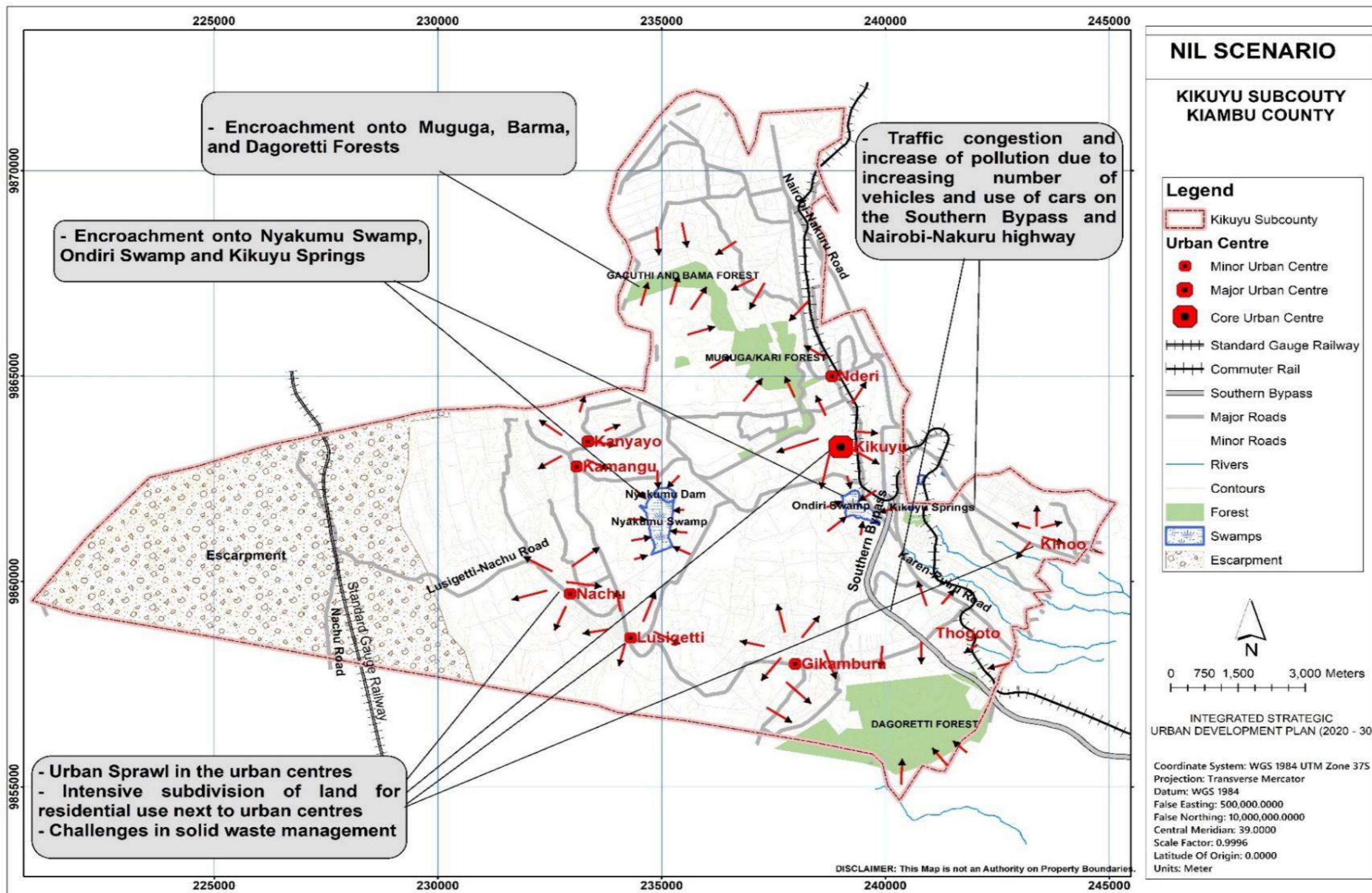
Goals		Assigned Weight	Alternative Development Models			
			Alternative 1		Alternative 2	
			Multi Nodal TOD Model	Sub-Total	Core Periphery Model	Sub-Total
1	To put in place a sound environmental management system for sustainable development.	0.17	1.25	0.21	3	0.5
2	To ensure delivery of quality, sustainable, accessible and affordable social services and infrastructure.	0.17	2.25	0.38	0.75	0.12
3	To promote the local economy through the provision of environmentally sustainable infrastructure for the promotion of investment and entrepreneurship.	0.17	2.25	0.38	1	0.17
4	To provide, efficient and reliable connectivity to all areas through a better road and railway system.	0.17	1.75	0.29	2	0.33
5	Adequate and efficient transport system.	0.17	2	0.33	1.5	0.25
6	Public participation to ensure proper policy implementation and zero tolerance to corruption.	0.17	2.75	0.46	1	0.17
Total Score		1.00		2.04		1.54
Rank			1		2	

Source: VisionRI

### 13.2.5 Preferred Model

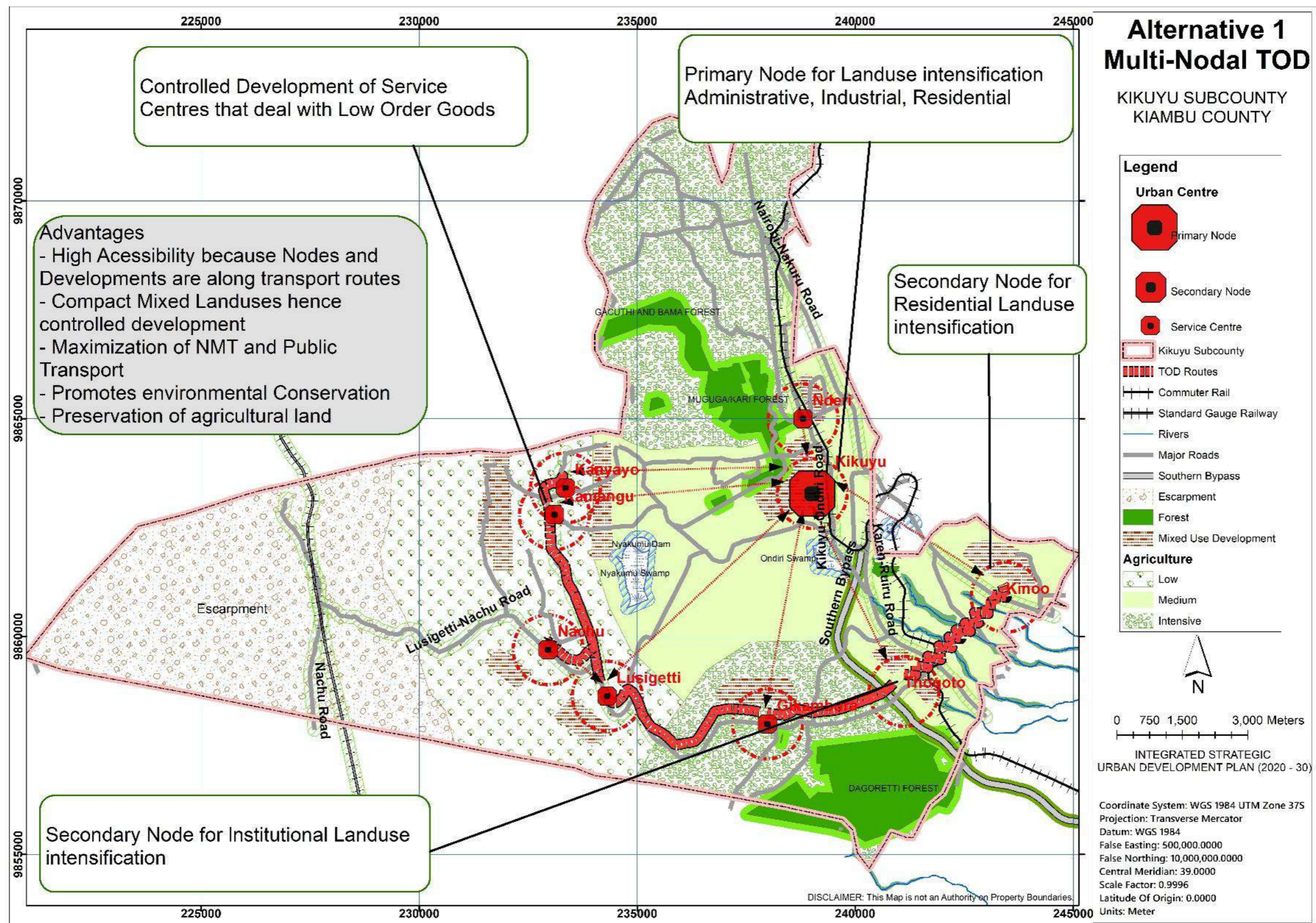
After evaluation of the Multi Nodal TOD and Core Periphery Models, the preferred model was attained through a combination of the two alternatives, comprising the characteristics of both alternatives, hence the Integrated Model. The Integrated Model will promote compact development, lead to preservation of agricultural lands, improve the quality of life of Kikuyu Urban Area residents, enhance environmental conservation, lead to upgraded connectivity of the Sub-County, enriched productivity leading to economic growth, creation of employment for both skilled and unskilled labour, and improved rural-urban linkages.

However, in the case of poor planning, the Integrated Model will lead to a massive movement of population from the periphery to the core urban areas.



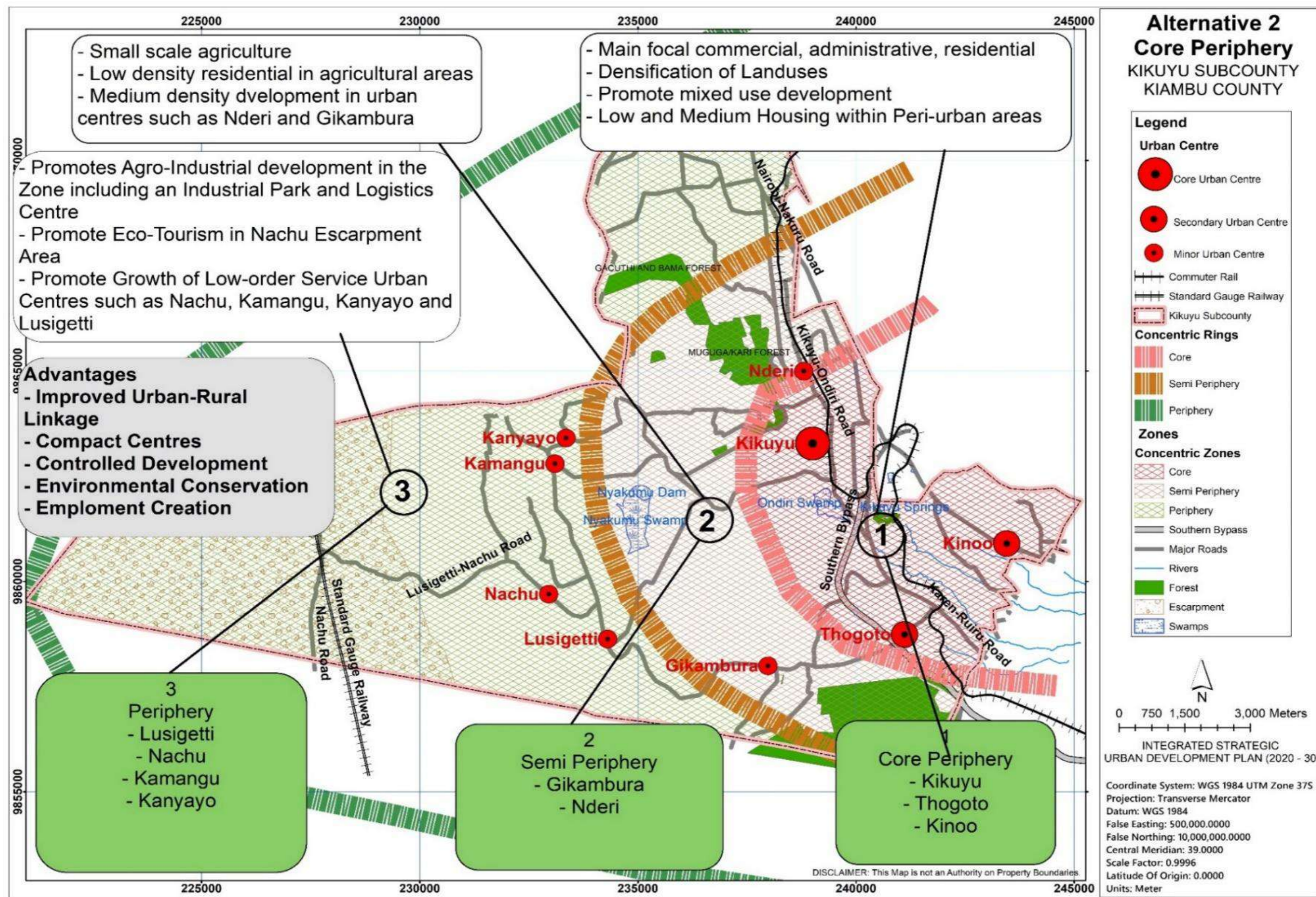
Map 13-1: Nil Scenario

Source: VisionRI



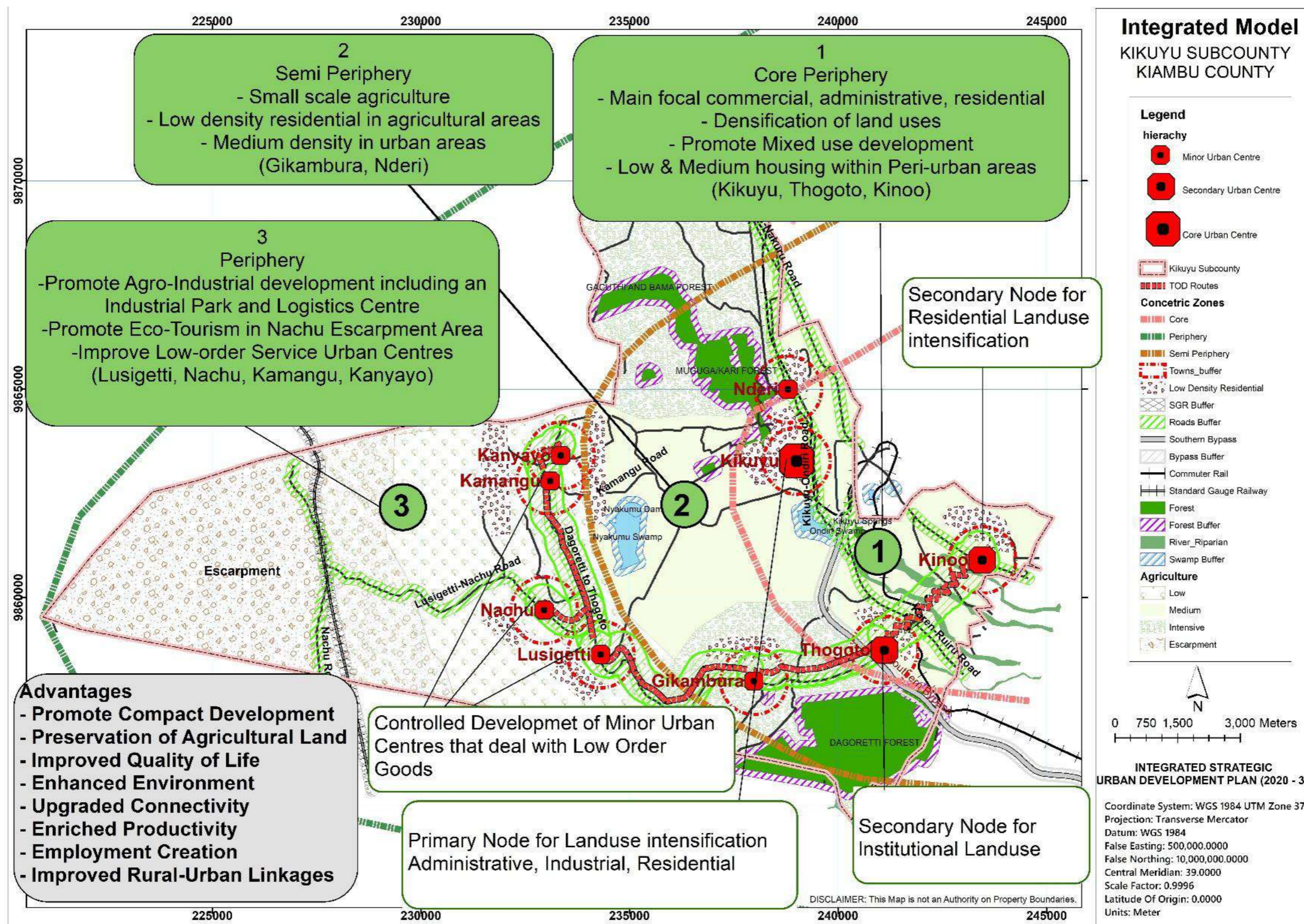
Map 13-2: Alternative 1: Multi-Nodal TOD Model

Source: VisionRI



Map 13-3: Core Periphery Model

Source: VisionRI



Map 13-4: Integrated Model

Source: VisionRI

## 14 PHYSICAL DEVELOPMENT PLAN

### 14.1 Land Use Plan

#### 14.1.1 Land Requirements

Land use is mainly determined by the economic, institutional and physical structures and can broadly be classified into built-up areas, agricultural and conservation areas. The proposed land-use plan ensures sustainable and equitable distribution of resources while observing the conservation of ecologically sensitive areas. The land use structure plan ensures interlinked compact and mixed land use centres with green transportation networks, protection of sensitive ecological areas and adequate provision of social infrastructure.

Within the planning area, the land use plan proposes intense developments mainly in the transport intersection zones, which are classified as main urban centres and lower order goods and services centres. The main urban centres include Kikuyu, Kinoo and Thogoto. These centres are classified to lie within the core. The main urban centres will entail compact mixed land uses, which will promote walkability as well as ease in access to social infrastructure and community facilities. Figure 14-1 indicates the hierarchy of the growth nodes in Kikuyu Urban Area.

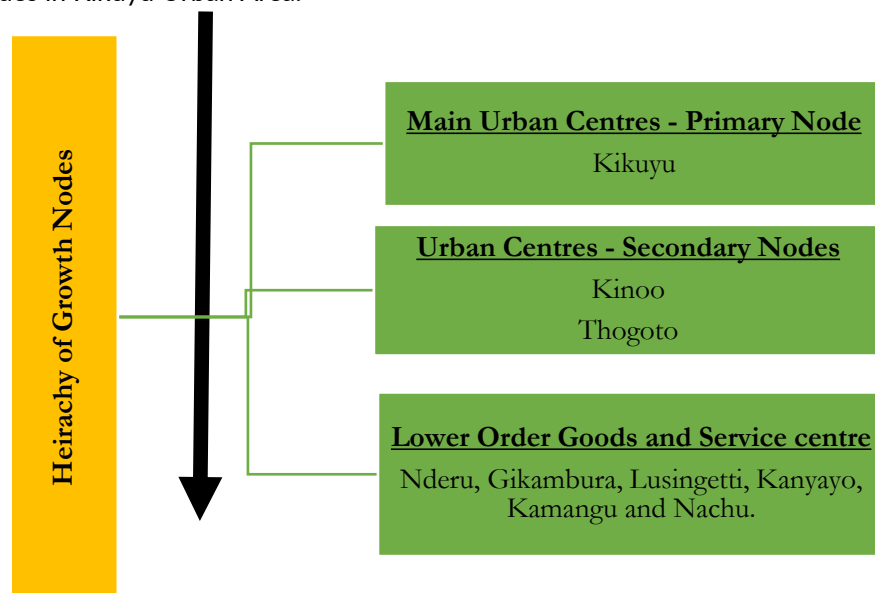


Figure 14-1: Hierarchy of Growth Nodes in Kikuyu

Source: VisionRI

Kikuyu Town is the major urban centre within the planning area. The town has relatively adequate transportation linkages since it has a Southern bypass, Kikuyu road and Nairobi-Nakuru Highway crossing through the centre. The Nairobi-Uganda railway line crosses through the town and has a station in Kikuyu town. This results in integrated transportation modes within the Sub-County. Kikuyu is a primary node for intensification of commercial, industrial, administrative functions as well as residential land uses.

Kinoo is a key urban centre located within the Kikuyu Urban Area along Nairobi-Nakuru highway mainly consisting of residential land use. The centre is situated to the south-eastern side of Kikuyu approximately 14km from Nairobi City. Kinoo urban centre also houses educational facilities such as Muthiga Academy, Uthiru Genesis as well as low order goods and services stops to serve the residents within the centre. The Plan designates Kinoo to be a secondary node targeted for intensified residential land use characterised by high-density residential land use within the compact centre.

Thogoto is characterised by educational and public purpose land uses. The key educational facilities within the centre include Alliance Boys and Girls High School, U.O.N Kikuyu Campus, and the Presbyterian University of East Africa, amongst others. Some of the key hospitals include Kikuyu Hospital Eye Unit and P.C.E.A Kikuyu Mission hospital. Thogoto is also designated to be a secondary node and targeted to have intensified institutional functions.

The lower-order goods and service centres include Nderu, Gikambura, Lusigetti, Kanyayo, Kamangu and Nachu. These centres are characterised by kiosks, small market centres as well as boda boda sheds. These areas are zoned for intensive mixed-use development to ensure that there is ease in accessing public purpose facilities, educational facilities as well as recreational facilities.

**Table 14-1: Kikuyu Land Use Distribution**

No	User	Existing		Proposed	
		Area in Hectares (Ha)	Percentages (%)	Area in Hectares (Ha)	Percentages (%)
0	Residential				
	Residential - High	2149.52	12.53%	1,856.43	10.82%
	Residential - Medium			286.91	1.67%
	Residential cum commercial			18.01	0.11%
	Total	2,149.52	12.53%	2,161.35	12.60%
1	Industrial	16.22	0.09%	75.53	0.44%
2	Educational	337.02	1.97%	337.02	1.97%
3	Recreational	69.27	0.40%	111.73	0.65%
4	Public Purpose	752.27	4.39%	737.86	4.30%
5	Commercial	71.77	0.42%	26.74	0.16%
6	Public Utility	3.54	0.02%	31.23	0.18%
7	Transportation	961.32	5.61%	1,170.44	6.82%
8	Conservation Areas				
	Escarpment	3588.68	20.93%	3588.68	20.93%
	Forest	1003.95	5.85%	1003.95	5.85%

	Riparian	25.72	0.15%	71.7	0.42%
	Water bodies	134.02	0.78%	134.02	0.78%
	Total	4752.37	27.71%	4798.35	27.98%
9	Agriculture	8,036.45	46.86%	7,676.96	44.76%
10	Mixed-Use	0	0.00%	22.52	0.13%
Total		17,149.75	100%	17,149.72	100%

Source: VisionRI

## 14.2 Delineation of CBD

The CBD is expected to grow northwards towards Sigona Golf Club. This is because the town's growth is constricted by the southern bypass and railway which are located to the east, west and south.

The CBD is still expected to remain largely commercial with supporting public facilities.

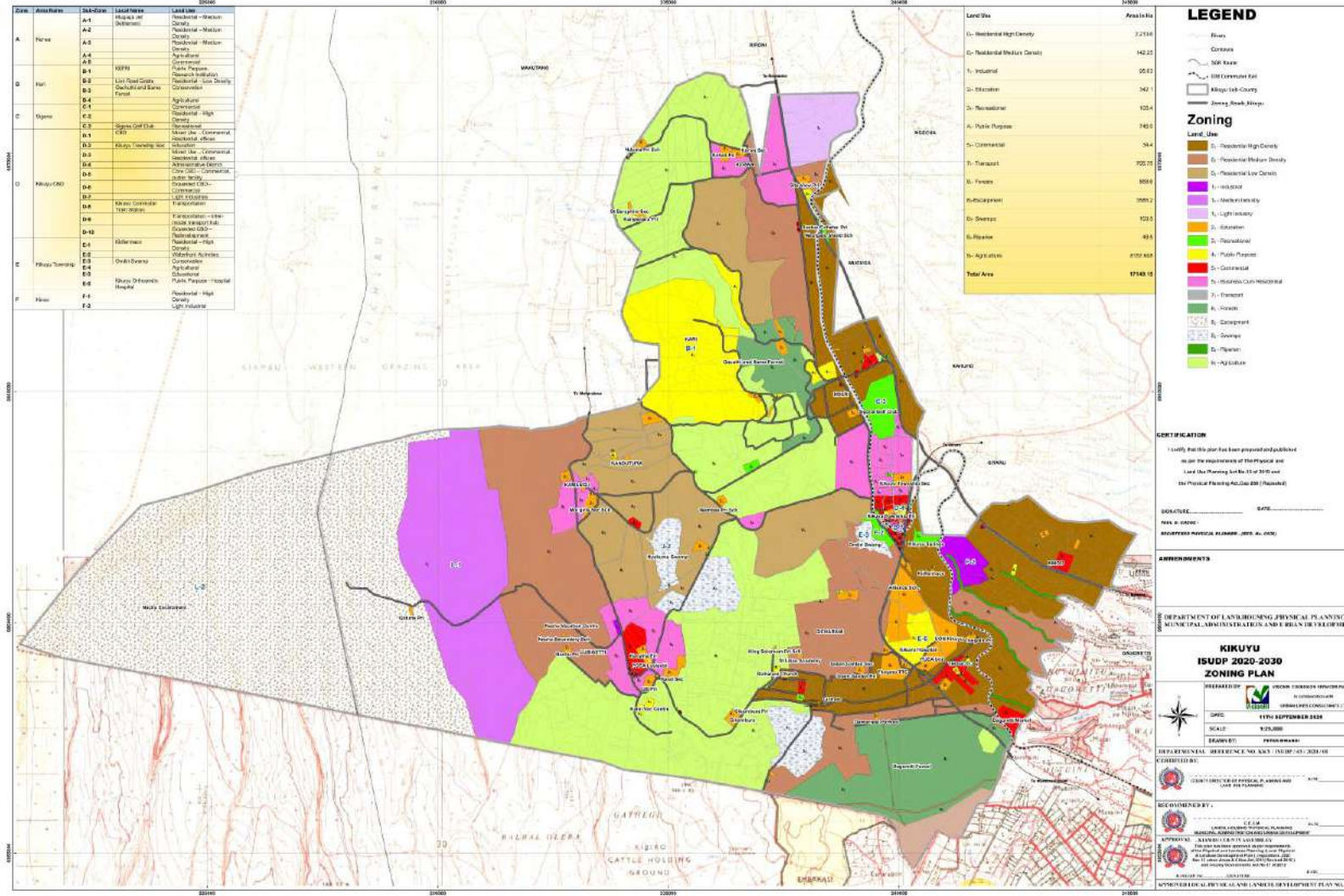
## 14.3 Land Use Zoning

### 14.3.1 14.3.1 Detailed Land Use Zoning

The basic purpose and function of zoning is to delineate residential, commercial, industrial, recreational, agricultural, transport, public purpose and public utility land use in the Sub-County. Zoning has been done to control the physical development of the land and the types of uses that each individual space shall be put to use and thereby ensuring proper planning of Kikuyu to achieve the desired built urban environment.

Map 14-1: Proposed Land Use Structure Plan

# KIKUYU INTEGRATED STRATEGIC URBAN DEVELOPMENT PLAN 2020-2030



	Zone No.	Location	Permitted Use	Minimum Plot size (Ha)	Ground Coverage (%)		Plot Ratio (PR)		No. of Floors	Building line (Metres)	Setbacks (Metres)				Minimum road width (Metres)	Special conditions/Notes
					S	U	S	U			Front	Side	Rear			
RESIDENTIAL L  (0)	HIGH DENSITY															
	KKY5 <sub>2</sub>	Kikuyu Extended CBD	<p><b>Permitted:</b> Highrise serviced apartments; Hostels; residential hotels, guest house commercial; offices; public facilities</p> <p><b>Conditional:</b> Light and Medium industry; colleges;</p>	<p>All plots of 0.045 Ha-0.06Ha</p> <p>All plots of 0.07Ha and 0.1Ha</p>	70	60	5.6	4.8	G+7	3	3	1.2	2.4	9	<p>Single-room units developments shall not permitted</p> <p>For plots of 0.2ha and above, the proposal shall provide for social amenities e.g. recreational; shopping; green areas; kindergarten; security; power; circulation &amp; other utilities according to needs assessment</p> <p>A service lane of 6m to be provided/surrendered for plots fronting 18m road and above.</p> <p>Pent house shall not be more than</p>	

	Zone No.	Location	Permitted Use	Minimum Plot size (Ha)	Ground Coverage (%)		Plot Ratio (PR)		No. of Floors	Building line (Metres)	Setbacks (Metres)			Minimum road width (Metres)	Special conditions/Notes
					S	U	S	U			Front	Side	Rear		
			churches; schools  <b>Prohibited:</b> heavy Industries											30% of the typical floor plan  Parking spaces/slots shall be provided as follows: 1 slot for every two-bedroom unit; 1 slot for two (2) one-bedroom units; 1.5 slot for three-bedroom dwelling unit.  Minimum Subdivision Level is 0.045Ha	
				All plots of 0.11Ha and Above	70	60	7	6	G+9	6	4.5	1.2	2.4		
	KKYO <sub>2</sub>	Kidfamarco				60	5.6	4.8	G+7	3	3	1.2	2.4	9	

Zone No.	Location	Permitted Use	Minimum Plot size (Ha)	Ground Coverage (%)		Plot Ratio (PR)		No. of Floors	Building line (Metres)	Setbacks (Metres)			Minimum road width (Metres)	Special conditions/Notes
				S	U	S	U			Front;	Side;	Rear		
KKYO <sub>5</sub>	Kinoo	<b>Permitted:</b> Highrise apartments; studios; bedsitters; Hostels; event gardens; Parks; residential hotels  <b>Conditional:</b> Light industries; colleges; churches; schools  <b>Prohibited:</b> Heavy industry and medium industry	All plots of 0.045Ha - 0.1Ha	7									The skyline is capped at 8(Ground plus 7) except for Karambaini (Ground plus 1)  A service lane of 6m to be provided/surrendered for plots fronting 18m road and above.  Pent house shall not be more than 30% of the typical floor plan  Parking spaces/slots shall be provided as follows: 1 slot for every two-bedroom unit; 1 slot for two (2) one-bedroom units; 1.5	
	Dagoretti			0										
	Thogoto		Above 0.11Ha	70	60	6.3	5.4	G+8	4.5	3	1.2	2.4		
	Gikambura													

Zone No.	Location	Permitted Use	Minimum Plot size (Ha)	Ground Coverage (%)		Plot Ratio (PR)		No. of Floors	Building line (Metres)	Setbacks (Metres)			Minimum road width (Metres)	Special conditions/Notes
				S	U	S	U			Front	Side	Rear		
	Sigona		All plots from 0.045Ha and above	65	60	3.9	3.6	G+5	3	3	1.2	2.4	slot for three-bedroom dwelling unit.  Parcels of 0.1ha and above to provide minimum 4.5 front setback  Minimum Subdivision Level is 0.045Ha	
	Zambezi													
	Muguga													
<b>MEDIUM DENSITY</b>														
KKY0 <sub>3</sub>	Kerwa	<b>Permitted:</b> Single family houses; townhouses; semi-detached; duplexes	0.045	50	40	1	0.8	G+1	6	4.5	1.2	3	9	One Single-Dwelling only per plot.  For comprehensive developments on areas with minimum subdivision of 0.2Ha, each unit to
	MaiHii													
	Gicharani													
	Kangiria													

	Zone No.	Location	Permitted Use	Minimum Plot size (Ha)	Ground Coverage (%)		Plot Ratio (PR)		No. of Floors	Building line (Metres)	Setbacks (Metres)			Minimum road width (Metres)	Special conditions/Notes
					S	U	S	U			Front;	Side;	Rear		
		Nderi	<b>Conditional:</b> Convenient shops; club house; gym; nature trails; low level clinics/health centres; event gardens; schools; church	0.1										be on plot size of 1000sm per dwelling together with auxiliary amenities, for those on min. subdivision of 0.045 Ha, each unit to occupy minimum 375 square metres  Typology: Maisonettes & Bungalows; townhouses  One (1) DSQ shall be allowed. Not more than 15% GC of ground floor plinth of the main house.  Attic house shall not be more than 30% of the typical floor plan	
		Ndiguini													
		Kamangu													
		Nachu													
		Lusigeti													
		Muhuri road Rungiri Ondiri (0.1Ha- Min Subdivision)													

	Zone No.	Location	Permitted Use	Minimum Plot size (Ha)	Ground Coverage (%)		Plot Ratio (PR)		No. of Floors	Building line (Metres)	Setbacks (Metres)			Minimum road width (Metres)	Special conditions/Notes
					S	U	S	U			Front;	Side;	Rear		
														<p>Provide for min 10% greenery/tree cover. Provide at least one fruit tree</p> <p>Provide for alternative green energy use e.g. solar, wind power</p> <p>Provide for recycling of wastewater through adoption of new technology</p> <p>Designated refuse collection points</p> <p>Provide for parking -2 private vehicles</p>	

Zone No.	Location	Permitted Use	Minimum Plot size (Ha)	Ground Coverage (%)		Plot Ratio (PR)		No. of Floors	Building line (Metres)	Setbacks (Metres)			Minimum road width (Metres)	Special conditions/Notes
				S	U	S	U			Front;	Side;	Rear		
<b>LOW DENSITY</b>														
KKYO <sub>4</sub>	Ondiri	<b>Permitted:</b> Single family houses; townhouses on minimum land subdivision  <b>Conditional:</b> Convenient shops; club house; gym; nature trails; low level clinics/health centres; event gardens; schools; church	0.1	5	40	1	0.8	G+1	9	6	1.2	3	12	One Single-Dwelling only per plot.  Typology: Maisonettes & Bungalows  One DSQ shall be allowed. Not more than 15% GC of ground floor plinth of the main house.  Provide for min 10% greenery/tree cover At least one fruit tree  Provide for alternative green
	Karai													
	Kamangu - kikuyu road													
	Kandutura													
	Renguti													

Zone No.	Location	Permitted Use	Minimum Plot size (Ha)	Ground Coverage (%)		Plot Ratio (PR)		No. of Floors	Building line (Metres)	Setbacks (Metres)			Minimum road width (Metres)	Special conditions/Notes
				S	U	S	U			Front	Side	Rear		
														energy use e.g. solar, wind power  Provide for recycling of wastewater through adoption of new technology  Provide for parking -2 private vehicles
<b>MIXED USE</b>														
KKY5 <sub>3</sub>	Kamangu	Highrise apartments; studios; bedsitters;	Plots above 0.11Ha	70	60	5.6	4.8	G+7	3	3	1.2	2.4	9	To have at least two land uses.
	Kerwa	Hostels; event gardens; Parks; residential hotels;			60	4.2	3.6	G+5						

	Zone No.	Location	Permitted Use	Minimum Plot size (Ha)	Ground Coverage (%)		Plot Ratio (PR)		No. of Floors	Building line (Metres)	Setbacks Front; Side; Rear (Metres)			Minimum road width (Metres)	Special conditions/Notes
					S	U	S	U							
		Lusigeti	commercial; offices; public facilities  <b>Conditional:</b> Light & medium industry; colleges; churches; schools; cottage industry  <b>Prohibited:</b> Heavy industry	Plots of 0.045 Ha - 0.1Ha	70									Commercial to occupy lower-level floors  Provide for parking as follows: 1 slot for every two-bedroom unit; 1 slot for two (2) one-bedroom units; 1.5 slot for three-bedroom dwelling unit.	
INDUSTRIAL	HEAVY INDUSTRIAL														

	Zone No.	Location	Permitted Use	Minimum Plot size (Ha)	Ground Coverage (%)		Plot Ratio (PR)		No. of Floors	Building line (Metres)	Setbacks (Metres)			Minimum road width (Metres)	Special conditions/Notes
					S	U	S	U			Front;	Side;	Rear		
(1)	KKY1 <sub>2</sub>	Nachu	<b>Permitted:</b> Heavy processing; manufacturing ; quarrying; vehicle assembly plant; power generation; recycling plant; Distillery; concreting; bulk storage of hazardous substances; slaughterhouses; oil & natural gas processing; technological engineering	2HA	35	30	0.7	0.6	G+2	9	12	6	6	15	Clear indication of entry and exit  Loading docks to be located to the rear of the building  Loading area to be screened from residential users  No outdoor storage

Zone No.	Location	Permitted Use	Minimum Plot size (Ha)	Ground Coverage (%)		Plot Ratio (PR)		No. of Floors	Building line (Metres)	Setbacks (Metres)			Minimum road width (Metres)	Special conditions/Notes
				S	U	S	U			Front	Side	Rear		
<b>MEDIUM INDUSTRIAL</b>														
KKY1 <sub>3</sub>	Kerwa	<b>Permitted:</b> Agro-based millers; meat & milk processing plants; Brewery; Bakery; Bottling & canning; Food & Beverage; Coffee roaster; Honey processing  Light Industry is also allowed	0.4	5	50	1.2	0.9	G+2	9	12	6	6	12	Clear indication of entry and exit  Loading docks to be located to the rear of the building  Loading area to be screened from residential users  No outdoor storage  Provide 3m buffer all round
	Kinoo													

Zone No.	Location	Permitted Use	Minimum Plot size (Ha)	Ground Coverage (%)		Plot Ratio (PR)		No. of Floors	Building line (Metres)	Setbacks (Metres)			Minimum road width (Metres)	Special conditions/Notes	
				S	U	S	U			Front	Side	Rear			
<b>LIGHT INDUSTRIAL</b>															
	Along transit routes	P S S	<b>Permitted:</b> Parking; garages; warehouses; go-downs; indoor storage; workshops; jua-kali; petrol service & filling stations; cottage industries;	0.2	40	30	1.6	1.2	G+3	12	6	3	3	15	Ancillary services allowed, minimart, ATMs, Chemist  All Petroleum and Gas Products to align with EPPRA, Road Agencies Standards, Regulations and Recommendations
	Within CBD		industries; carwash; minor automotive repair shops	0.1	40	30	1.6	1.2	G+3	9	6	3	3	15	To comply with ERC requirements.
	Within CBD			0.045	35	30	1	1	G+2	9	3	3	3	12	

Zone No.	Location		Permitted Use	Minimum Plot size (Ha)	Ground Coverage (%)		Plot Ratio (PR)		No. of Floors	Building line (Metres)	Setbacks (Metres)			Minimum road width (Metres)	Special conditions/Notes	
					S	U	S	U			Front	Side	Rear			
		Along Transit Routes	P F S		0.045	35	30	1	1	G+2	9	3	3	3	12	Office block & service-related stations allowed. Not allowed-residential, public purpose, institutions, bars  Plot orientation a determinant-30m for PFS & 50m for PSS
		Along transit corridors/CBD		Electrical Vehicle Charging (EVC)	0.25	35	30	1.4	1.2	G+3	9	6	3	3	15	To comply with ERC requirements

Zone No.	Location	Permitted Use	Minimum Plot size (Ha)	Ground Coverage (%)		Plot Ratio (PR)		No. of Floors	Building line (Metres)	Setbacks (Metres)			Minimum road width (Metres)	Special conditions/Notes
				S	U	S	U			Front	Side	Rear		
	Along transit corridors/CBD	Gas Station	0.2	35	30	1.4	1.2	G+3	9	6	3	3	15	All Petroleum and Gas Products to align with EPPRA, Road Agencies Standards, Regulations and Recommendations
	Along transit corridors/CBD	Hybrid 1 (Fuel +EVC)	0.4	35	30	1.4	1.2	G+3	9	9	3	3	15	Fire safety considerations
	Along transit corridors/CBD	Hybrid 2 (Fuel +Gas)	0.4	35	30	1.4	1.2	G+3	9	9	3	3	15	Provide 3.0m buffer all round.
	Along transit corridors/CBD	Storage/Packaging Go-downs	0.1	50	40	1.5	1.2	G+2	6	6	3	3	12	All Petroleum and Gas Products to align with EPPRA, Road Agencies Standards, Regulations and Recommendations

	Zone No.	Location	Permitted Use	Minimum Plot size (Ha)	Ground Coverage (%)		Plot Ratio (PR)		No. of Floors	Building line (Metres)	Setbacks (Metres)			Minimum road width (Metres)	Special conditions/Notes
					S	U	S	U			Front;	Side;	Rear		
EDUCATIONAL (2)															
		Daycare (Below 3 Yrs)	Single	0.1	50	40	1	1	1Storey	6	4.5	1.2	3	9	
		Pre-Primary (Playground, PP1; PP2)	Single	0.1	40	30	1	1	G+2	6	4.5	2	3	9	
			Double	0.2	40	50	1	1	G+2	6	4.5	2	3	9	
			Triple	0.4	40	30	1	1	G+2	6	4.5	2	3	9	
	Primary School	Single	0.8	40	30	2	1.5	G+4	6	4.5	2	3	9	Other facilities that take up the remaining land are	

Zone No.	Location	Permitted Use	Minimum Plot size (Ha)	Ground Coverage (%)		Plot Ratio (PR)		No. of Floors	Building line (Metres)	Setbacks (Metres)			Minimum road width (Metres)	Special conditions/Notes
				S	U	S	U			Front	Side	Rear		
		Double	0.6	40	30	2	1.5	G+4	6	4.5	2	3	9	Soccer field (medium); Netball; Athletic track (cricket);
		Triple	2.4	40	30	2	1.5	G+4	6	4.5	2	3	9	Swimming; Hockey field; Gymnasium; Tennis court, Circulation and other supporting infrastructure
	Junior Secondary School	Single	0.4	40	30	2	1.5	G+4	6	4.5	2	3	9	
		Double	0.8	40	30	2	1.5	G+4	6	4.5	2	3	9	
		Triple	1.6	40	30	2	1.5	G+4	6	4.5	2	3	9	
		Single	0.8	40	30	2	1.5	G+4	6	4.5	2	3	9	For boarding schools, additional land requirement

Zone No.	Location	Permitted Use	Minimum Plot size (Ha)	Ground Coverage (%)		Plot Ratio (PR)		No. of Floors	Building line (Metres)	Setbacks (Metres)			Minimum road width (Metres)	Special conditions/Notes
				S	U	S	U			Front;	Side;	Rear		
	Senior Secondary School	Double	1.6	40	30	2	1.5	G+4	6	4.5	2	3	9	of 50% of the minimum land requirement
		Triple	2.4	40	30	2	1.5	G+4	9	4.5	2	3	9	
		Quadruple	3.0	40	30	2	1.5	G+4	9	4.5	2	3	12	
	Youth Polytechnic/ TVETS	0.3	40	30	2	1.5	G+4	6	4.5	2	3	9		
College		2	40	30	3.2	2.4	G+7	6	4.5	2	3	12		
University		20	40	30	3.2	2.4	G+7	10	4.5	2	3	15		

	Zone No.	Location	Permitted Use	Minimum Plot size (Ha)	Ground Coverage (%)		Plot Ratio (PR)		No. of Floors	Building line (Metres)	Setbacks (Metres)			Minimum road width (Metres)	Special conditions/Notes
					S	U	S	U			Front;	Side;	Rear		
RECREATIONAL  (3)		Stadium		2	30	20	1.2	0.8	G+3	9	9	6	6	18	Preserve and incorporate natural elements
		Playground		0.2	20	10	0.4	0.2	G+1	6	9	6	6	9	Provide shaded areas (e.g., trees, pergolas, or gazebos)
		Recreational Garden		0.4	20	10	0.8	0.4	G+3	6	9	6	6	12	Use safe materials and equipment, especially in playgrounds (e.g., soft surfaces, rounded edges, and non-toxic materials)
		Park		0.4	20	10	0.8	0.4	G+3	6	9	6	6	12	
		Private Zoo		4	20	10	0.6	0.3	G+2	9	9	6	6	12	
		Amusement Park		0.2	30	20	0.9	0.6	G+2	9	9	6	6	12	
		Amphitheatre		0.2	40	30	2	1.5	G+4	6	9	1.2	3	9	

	Zone No.	Location	Permitted Use	Minimum Plot size (Ha)	Ground Coverage (%)		Plot Ratio (PR)		No. of Floors	Building line (Metres)	Setbacks (Metres)			Minimum road width (Metres)	Special conditions/Notes
					S	U	S	U			Front;	Side;	Rear		
		Botanical Garden		0.4	10	10	0.3	0.3	G+2	6	9	1.2	3	9	Adequate parking and access to public transportation
		Driving Range		0.4	15	10	0.45	0.3	G+2	6	9	1.2	3	9	
		Campground		0.8	10	5	0.3	0.15	G+2	6	9	1.2	3	9	
		Shooting Range		2	15	10	0.6	0.6	G+3	6	9	1.2	4.5	9	
		Exhibition Ground		2	20	10	0.8	0.4	G+3	6	9	1.2	4.5	9	
		Golf Course/Mini Golf		10	15	10	0.6	0.4	G+3	9	9	2	3	15	

	Zone No.	Location	Permitted Use	Minimum Plot size (Ha)	Ground Coverage (%)		Plot Ratio (PR)		No. of Floors	Building line (Metres)	Setbacks (Metres)			Minimum road width (Metres)	Special conditions/Notes
					S	U	S	U			Front	Side	Rear		
<b>PUBLIC PURPOSE</b>  (4)		Level 6 - National Referral & Teaching Hospitals		20	40	30	8.4	8.4	G+14	15	15	5	10	25	Preserve and incorporate natural elements  Provide shaded areas (e.g., trees, pergolas, or gazebos)
		Level 5 - County Referral Hospitals		8	40	30	4.4	4.4	G+9	9	9	5	5	18	Adequate parking and access to public transportation
		Level 4 - Hospitals		1.6	40	30	2.4	2.4	G+7	6	9	3	5	15	
		Level 3 - Health Centres with Maternity wing		1	40	30	4.4	4.4	G+7	6	6	2.5	5	12	

Zone No.	Location	Permitted Use	Minimum Plot size (Ha)	Ground Coverage (%)		Plot Ratio (PR)		No. of Floors	Building line (Metres)	Setbacks (Metres)			Minimum road width (Metres)	Special conditions/Notes
				S	U	S	U			Front	Side	Rear		
	Level 2 - Dispensaries & clinics		0.1	40	30	2	2	G+3	6	6	2.5	3	9	
	Specialized clinics with inpatient wing e.g. palliative care		0.2	40	30	4.4	4.4	G+7	4.5	6	2.5	5	12	
	Level 1 - Community facilities/Health clubs/Rehab centres		0.1	40	30	1.5	1.5	G+3	4.5	3	2.5	3	9	
<b>Other Public Purpose Facilities</b>														

Zone No.	Location	Permitted Use	Minimum Plot size (Ha)	Ground Coverage (%)		Plot Ratio (PR)		No. of Floors	Building line (Metres)	Setbacks (Metres)			Minimum road width (Metres)	Special conditions/Notes
				S	U	S	U			Front	Side	Rear		
	Police Station		1.2	40	30	3.2	2.4	G+7	9	9	6	6	12	
	Police Post		0.1	50	40	2	1.6	G+3	6	6	2.5	2.5	9	
	Patrol Base		0.045	50	40	2	1	G+3	6	6	2.5	2.5	9	
	High Court		1.2	50	40	4	3.2	G+7	9	9	6	6	15	
	Magistrate Court		0.4	50	40	2	1.6	G+3	6	6	6	6	9	
	Prisons		16	40	30	2	1.5	G+4	20	20	20	20	15	
	Religious Institutions		0.1	50	40	2	1.6	G+3	4.5	4.5	2.5	2.5	9	

Zone No.	Location	Permitted Use	Minimum Plot size (Ha)	Ground Coverage (%)		Plot Ratio (PR)		No. of Floors	Building line (Metres)	Setbacks (Metres)			Minimum road width (Metres)	Special conditions/Notes
				S	U	S	U			Front	Side	Rear		
	Cultural Centre		0.2	40	40	1.6	1.6	G+3	6	6	6	6	9	
	Fire Station		0.4	40	30	3.2	2.4	G+7	6	6	2.5	4.5	12	
	Library		0.1	50	40	4	3.2	G+7	6	6	2.5	4.5	9	
	Museum		0.8	30	20	2.4	1.6	G+7	6	6	1.2	3	12	
	Home for the Elderly		0.2	40	30	1.6	1.2	G+3	6	9	6	6	9	
	Funeral Homes/crematorium		0.2	30	20	1.2	0.8	G+3	6	9	6	6	9	
	Social Hall		0.1	40	30	2	1.5	G+4	6	9	6	6	9	

	Zone No.	Location	Permitted Use	Minimum Plot size (Ha)	Ground Coverage (%)		Plot Ratio (PR)		No. of Floors	Building line (Metres)	Setbacks (Metres)			Minimum road width (Metres)	Special conditions/Notes
					S	U	S	U			Front;	Side;	Rear		
		Youth Centre		0.2	50	40	2.5	2	G+4	6	6	1.2	3	9	
		Private Clbs & Lodges		0.2	50	40	2.5	2	G+4	6	6	1.2	3	9	
		Cemetery		1	20	10	0.2	0.1	G	6	9	6	6	9	
		Children's Home		0.2	50	40	2.5	2	G+4	6	9	6	6	9	
		Innovation Hub		0.045	60	50	3	2.5	G+4	4.5	9	6	6	9	
		Abattoirs		1	40	30	1.6	1.2	G+3	6	9	6	6	9	
		Slaughter slab		0.2	40	30	1.2	0.9	G+2	6	9	6	6	9	

	Zone No.	Location	Permitted Use	Minimum Plot size (Ha)	Ground Coverage (%)		Plot Ratio (PR)		No. of Floors	Building line (Metres)	Setbacks (Metres)			Minimum road width (Metres)	Special conditions/Notes
					S	U	S	U			Front	Side	Rear		
		Administration Offices		0.4	60	50	3	2.5	G+4	6	9	6	6	9	
COMMERCIAL (5)															
	KKY51-	KIKUYU CBD	Shopping mall	0.8	60	50	3.6	3	G+5	9	9	6	6	15	Double volume in heights 1 parking lot per 100sm Additional parking in basement or top floor Shall create space for recreational amenities e.g. kids playing area Lift & ramp Min frontage 30m (plot orientation-width)

Zone No.	Location	Permitted Use	Minimum Plot size (Ha)	Ground Coverage (%)		Plot Ratio (PR)		No. of Floors	Building line (Metres)	Setbacks (Metres)			Minimum road width (Metres)	Special conditions/Notes
				S	U	S	U			Front	Side	Rear		
														Acceleration & deceleration lanes 6m
		Mini mart/Bakery	0.1	70	60	5.6	4.8	G+7	9	6	2.4	1.2	12	1 parking lot per 100sm
		Supermarkets	0.4	60	50	2.5	2.5	G+4	9	9	3	3	12	Maximum 5 floors Loading & offloading zone Mechanical ventilation for the building Lift & ramp Min frontage 30m (plot orientation-width) Acceleration & deceleration lanes 6m

Zone No.	Location	Permitted Use	Minimum Plot size (Ha)	Ground Coverage (%)		Plot Ratio (PR)		No. of Floors	Building line (Metres)	Setbacks (Metres)			Minimum road width (Metres)	Special conditions/Notes
				S	U	S	U			Front;	Side;	Rear		
													1 parking lot per 100sm	
		Hotels	0.2	70	60	4	3.2	G+10	9	4.5	2.4	1.2	12	Must have support facilities  1 parking lot per 100sm
		Motels	0.4	40	30	3.2	2.4	G+7	9	4.5	1.2	3	12	
		Hostles	0.2	70	60	7	6	G+9	6	4.5	1.2	3	12	
		Open Air Markets	0.2	40	30	1.2	0.9	G+2	3	3	2.4	1.2	12	
		Modern Storey Markets	0.4	50	40	3	2.4	G+5	3	3	1.2	3	15	
		Office Blocks, Retail Shops.	All plots of 0.045ha - 0.07Ha	70	60	5.6	4.8	G+7	3	3	2.4	1.2	12	

Zone No.	Location	Permitted Use	Minimum Plot size (Ha)	Ground Coverage (%)		Plot Ratio (PR)		No. of Floors	Building line (Metres)	Setbacks (Metres)			Minimum road width (Metres)	Special conditions/Notes
				S	U	S	U			Front	Side	Rear		
		<b>Conditional:</b> Serviced apartment; Light industry; colleges; churches; schools	All plots of 0.071Ha - 0.1Ha	60	60	5.4	5.4	G+8	3	3	2.4	1.2	12	
			All plots of 0.11Ha and above	60	60	6	6	G+9	4.5	4.5	2.4	1.2	12	
KKY5 <sub>4</sub>	COMMERCIAL NODES	Shopping mall	0.4	70	60	2.1	1.8	G+2	6	3	1.2	3	12	
		Supermarket/ Wholesale	0.1	70	60	4.2	3.6	G+5	6	3	1.2	3	12	
	Lusigetti	Open Air Market	0.1	70	60	2.1	1.8	G+2	3	3	1.2	3	12	
	Kinoo Dagoretti	Modern Storey Market	0.2	60	50	3.6	3	G+5	6	3	1.2	3	12	

	Zone No.	Location	Permitted Use	Minimum Plot size (Ha)	Ground Coverage (%)		Plot Ratio (PR)		No. of Floors	Building line (Metres)	Setbacks Front; Side; Rear (Metres)			Minimum road width (Metres)	Special conditions/Notes
					S	U	S	U							
			Serviced Apartments, Hostels, Office Blocks, BCR, public facilities, Banks, ICT	All plots of 0.045Ha & above	70	60	5.6	5.4	G+7	3	3	1.2	3	12	
<b>PUBLIC UTILITIES (6)</b>	PUBLIC UTILITIES (6)														
			Power Sub-Station	0.1	20	10	0.8	0.4	G+3	6	9	6	6	12	Wayleave approvals-property owners' consent, NLC, WRA, 3m Buffer all round Fire Safety
			Data Centres	0.4	60	50	2.4	2	G+3	6	9	6	6	12	
			Telecommunication facility	0.2	60	50	3	2.5	G+4	6	9	6	6	12	

Zone No.	Location	Permitted Use	Minimum Plot size (Ha)	Ground Coverage (%)		Plot Ratio (PR)		No. of Floors	Building line (Metres)	Setbacks (Metres)			Minimum road width (Metres)	Special conditions/Notes
				S	U	S	U			Front	Side	Rear		
		BTS Communication masts	0.045	80	60	2.4	1.8	G+2	4.5	9	6	6	9	
		Solid Waste Transfer Stations	0.4	30	20	1.8	1.2	G+5	6	12	6	6	12	
		Solid waste recycling centers	0.2	40	30	1.6	1.2	G+3	6	9	6	6	12	
		Scrap/Junk Yard	0.2	40	30	1.6	1.2	G+3	6	9	6	6	12	
		Waste Treatment Plant	0.2	20	10	0.8	0.4	G+3	6	12	6	6	12	
		Water Towers	0.045	30	20	0.9	0.6	G+2	4.5	12	6	6	12	

	Zone No.	Location	Permitted Use	Minimum Plot size (Ha)	Ground Coverage (%)		Plot Ratio (PR)		No. of Floors	Building line (Metres)	Setbacks (Metres)			Minimum road width (Metres)	Special conditions/Notes
					S	U	S	U			Front	Side	Rear		
			Water Hydrants	0.045	50	40	0.5	0.4	G	4.5	12	6	6	9	
TRANSPORTATION  (7)															
			Weighbridge	0.2	20	10	0.8	0.4	G+3	9	9	6	6	15	Focus on user-friendly design and amenities
			Parking Silo	0.2	80	60	6.4	4.8	G+7	9	9	6	6	12	Incorporate smart systems (e.g.,
			Bus Parks/Stage	1.6	30	20	1.2	0.8	G+3	6	9	6	6	15	automated ticketing, real-time monitoring).
			Boda-Boda sheds	0.045	60	50	2.4	2	G+3	3	6	1.2	3	12	Use eco-friendly materials, energy-efficient lighting,
		BRT Stations	1.6	30	20	1.2	0.8	G+3	9	9	6	6	15		

	Zone No.	Location	Permitted Use	Minimum Plot size (Ha)	Ground Coverage (%)		Plot Ratio (PR)		No. of Floors	Building line (Metres)	Setbacks Front; Side; Rear (Metres)			Minimum road width (Metres)	Special conditions/Notes
					S	U	S	U							
			Parking lot for bicycles	0.045	60	50	2.4	2	G+3	3	6	1.2	3	12	and renewable energy sources.
			Railway Station	1.6	30	20	0.9	0.6	G+2	6	9	6	6	15	
			Parking Yard For Trucks	1.2	30	20	0.9	0.6	G+2	6	9	6	6	18	
			Airstrip	10	30	20	1.2	0.8	G+3	12	9	6	6	18	
CONSERVATION  (8)															
	KKY8 <sub>1</sub>	Dagoreti forest	-	-	-	-	-	-		-		-	-	-	Not to be Developed
		Ondiri swamp	-	-	-	-	-	-		-		-	-	-	

	Zone No.	Location	Permitted Use	Minimum Plot size (Ha)	Ground Coverage (%)		Plot Ratio (PR)		No. of Floors	Building line (Metres)	Setbacks Front; Side; Rear (Metres)	Minimum road width (Metres)	Special conditions/Notes
					S	U	S	U					
		Nyakumu Swamp, KARI	-	-	-	-	-	-	-	-	-	-	
AGRICULTURAL  (9)													
	KKY91-		Small scale  <b>Permitted:</b> All agricultural uses; farm houses; storage for produce; animal pens; forestry; urban agriculture; housing for workers; low density residential developments; water pans, dams; cottage and agro-industries	0.2	-	-	-	-		-	-	-	Farm houses & housing for workers allowed at max 5% of land size  Value addition e.g. agro-processing industries permitted  Controlled transition to low density residential development with commensurate public utilities evenly distributed

	Zone No.	Location	Permitted Use	Minimum Plot size (Ha)	Ground Coverage (%)		Plot Ratio (PR)		No. of Floors	Building line (Metres)	Setbacks Front; Side; Rear (Metres)	Minimum road width (Metres)	Special conditions/Notes
					S	U	S	U					
			<b>Conditional:</b> Public facilities; shopping zones;										

Source: VisionR

## 14.4 Action Plans

### 14.4.1 14.4.1 Kikuyu CBD Core Action Plan

Kikuyu Town is the traditional CBD of Kikuyu Urban Area. The town is wedged between the railway line and the Southern bypass Road at its eastern side. It is also defined by two axes: Nairobi-Nakuru Highway on the northwest axis while the Southern Bypass Road represents the southwest axis. The town has its origins from the railway station, which is located at its western side, just above Ondiri swamp.

### 14.4.2 14.4.2 Kikuyu CBD Situation Analysis

The CBD is the only distinct mixed-use activity node in the Kikuyu Urban Area with the predominant land use being commercial housing over 95% of commercial activities in Kikuyu. The CBD is laid out in rectangular grid fashion, with longitudinal roads laid out on a northeast-southwest axis. The CBD has a highly compact, dense and robust character. There are many 4 to 5 storey buildings that were built in close proximity to each other.

Significant landmarks include the Town Hall, Railway Station, and Law Courts Building, shopping centre, Equity Bank and the bus park, amongst others. The main street is called Post Office Road whose entry is at its junction with the Southern Bypass Road and ends at the railroad tracks. This road is flanked on both sides by 3 street blocks.

There are notable large Open Spaces, such as Ondiri swamp abutting the CBD, one park/open space at the heart of the CBD and pocket opens spaces found in the low-density residential development zones surrounding the CBD.

Table 14-20 highlights objectives and viable design interventions proposed to mitigate the existing spatial challenges in the Kikuyu CBD action area plans.

Table 14-2: Objectives and viable design interventions proposed to mitigate the existing spatial challenges in Kikuyu.

Existing challenges	Objectives	Design strategies
<b>Transportation</b>		
<ul style="list-style-type: none"> <li>• The streetscape is vehicle-oriented and not pedestrians friendly;</li> <li>• Space contestations between motorised and non-motorised road users cause congestion;</li> <li>• Encroachment and spillover of trade activities e.g., hawkers onto the streets;</li> <li>• Spillover activities of bus park activities onto the streets. The existing bus park is unable to accommodate all the public service vehicles and taxis;</li> <li>• Undesignated and limited parking spots within the CBD leading to haphazard parking; and</li> <li>• The railway line has also created an enclave separating the town from the Ondiri side.</li> </ul>	<ul style="list-style-type: none"> <li>• Decongestion of the CBD can be improved by the renovation of the existing roads and proposed ring roads that will provide alternative linkages; and</li> <li>• Create pedestrian-friendly streets with adequate sidewalks, cycle paths and street furniture that will encourage walkability.</li> </ul>	<ul style="list-style-type: none"> <li>• New bus terminus;</li> <li>• Proposed NMT facilities;</li> <li>• Redevelopment of Post Office Road (30m);</li> <li>• Pedestrianisation of adjacent roads;</li> <li>• Roads upgrade;</li> <li>• Modernisation of the railway station; and</li> <li>• Development of multi-storey parking within the CBD.</li> </ul>
<b>Local Economy</b>		
<ul style="list-style-type: none"> <li>• The high demand for commercial space in the market has led to congestion and commotion along the designated access routes; and</li> <li>• Fragmented infrastructural development.</li> </ul>	<ul style="list-style-type: none"> <li>• Creation of compact and densified CBD. This will create employment opportunities within Kikuyu where people can live in and work from;</li> <li>• Encourage the provision of services within walkable distances of not more than one-kilometre radius; and</li> <li>• Encourage commercial businesses to create active frontages to attract road users.</li> </ul>	<ul style="list-style-type: none"> <li>• Newmarket;</li> <li>• Redevelopment of the old market; and</li> <li>• Densification of the CBD.</li> </ul>
<b>Green Open Spaces</b>		

Existing challenges	Objectives	Design strategies
<ul style="list-style-type: none"> <li>The town lacks well planned and designed open social spaces that are fundamental for the everyday associations of the individuals of the community.</li> </ul>	<ul style="list-style-type: none"> <li>Provide public spaces for recreation purposes;</li> <li>Environmental purification by acting as carbon sinks to rid the air of carbon emitted by vehicles, as well as residential, commercial and industrial activities;</li> <li>Enhancing town aesthetics through landscaping along streets, public waterways and along building verandas; and</li> <li>Stress management and population health management among the urban population by providing places of new experiences and relaxation.</li> </ul>	<ul style="list-style-type: none"> <li>Provision of Green open spaces within the CBD that provide a breakaway space for recreation and help to sequester the carbon for a cleaner atmosphere; and</li> <li>Tree-lined streets are important to greening and improving the aesthetics of the CBD.</li> </ul>

Source: VisionRI

Figure 12-2 shows the location & Context of Kikuyu Township, illustrating its strategic position and transportation links as described. Figure 12-3 represents the current land uses, while Figure 14-4 illustrates the current challenges and the proposed interventions along Posta Road in Kikuyu Town.

#### 14.4.3 Planned and On-Going Projects by NaMSIP in Kikuyu CBD

NaMSIP is currently undertaking several projects in Kikuyu:

- i. **Modernisation of the railway station in Kikuyu:** NaMSIP is in the final phase of modernising the commuter rail services on the rail that runs from Nairobi Central Park to Limuru. Among the improvements being undertaken are:
  - Park and ride facilities to allow potential passengers to park their vehicles and board the train to and from Nairobi;
  - Ticketing stations;
  - Bus interchange station for dropping passengers; and
  - Construction of a grade-separated crossing level for train and vehicles to Ondiri side.

- Other facilities include waiting area, turnstile rack, administrative office, paid toilets, police office, security gate, enclosure and lighting, pedestrian walkway, access roads, parking area, landscaping, utilities and access facilities<sup>9</sup>.

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<sup>9</sup> Interdisciplinary Land-Use and Transport Metropolitan Analysis within the Nairobi Metropolitan Region (ILUT)

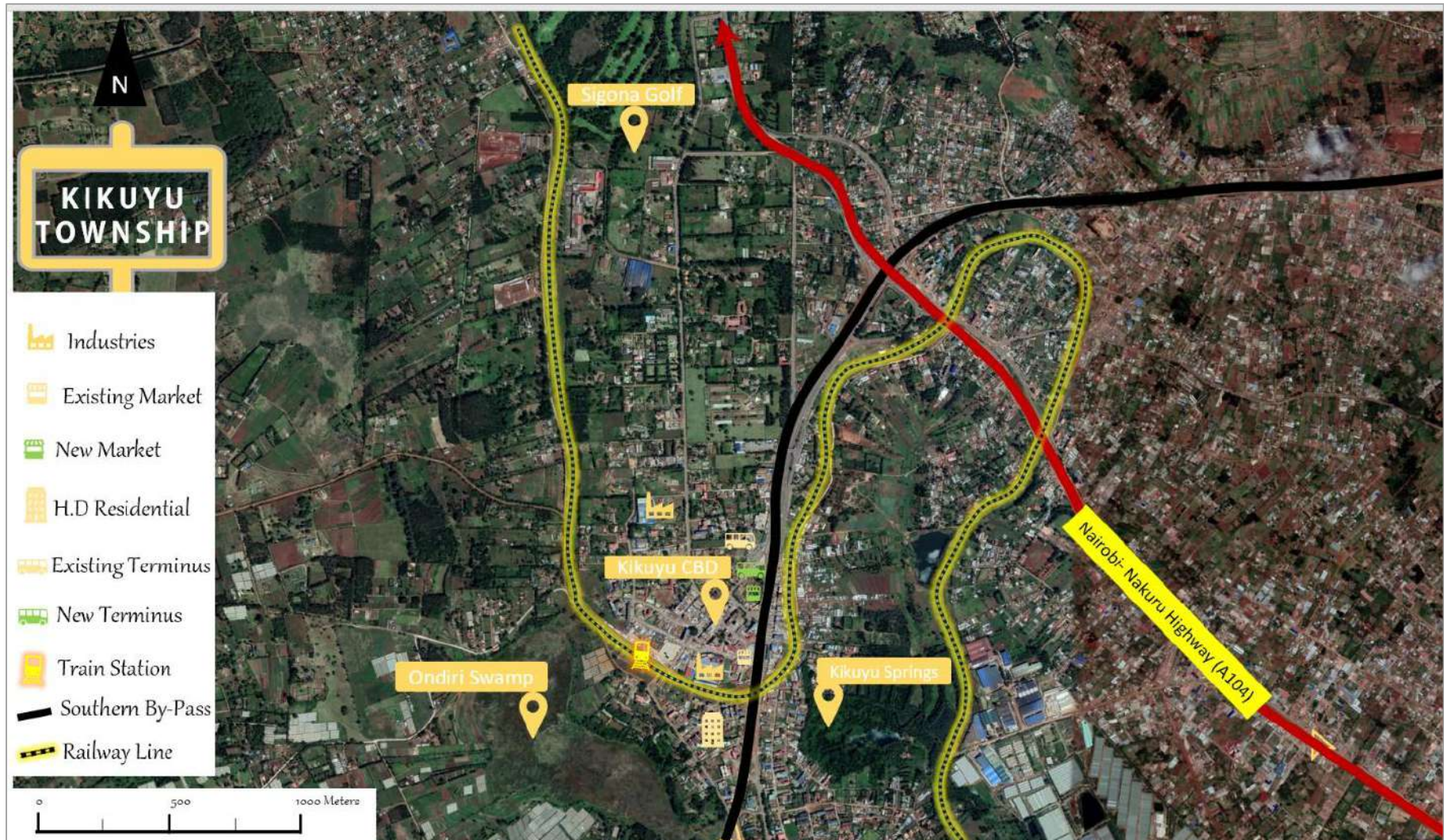


Figure 14-2: Location & Context of Kikuyu Township

Source: VisionRI

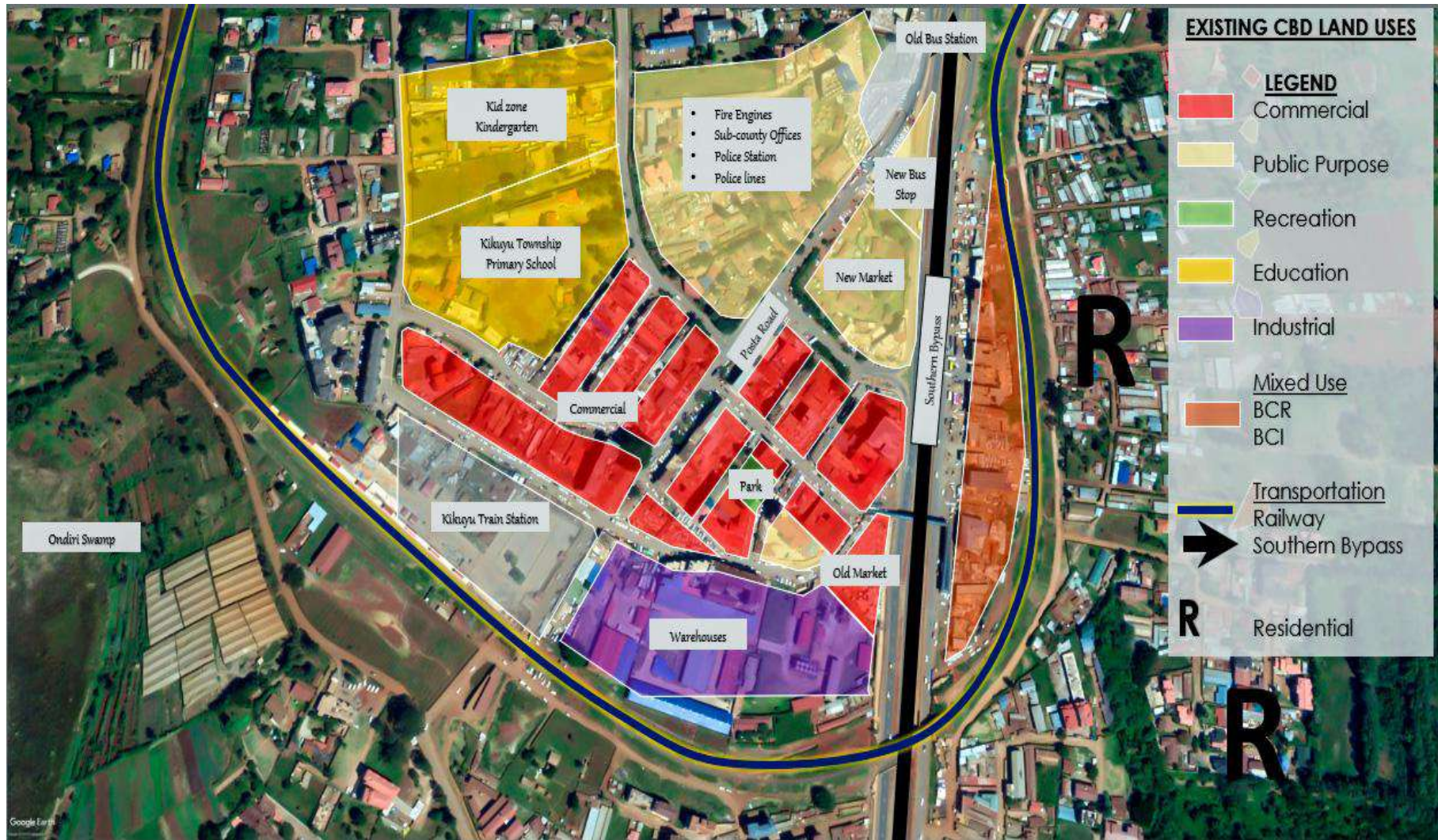


Figure 14-3: Existing CBD Land Uses

Source: VisionRI



Figure 14-4: Challenges along Posta Road

Source: VisionRI Graphics

Upon completion, the Kikuyu Station is expected to handle between 2,000 and 5,000 passengers per hour. This is according to an ESIA report<sup>10</sup> commissioned on this project. Some of the benefits that will be realised from this project include:

- Creation of employment opportunities;
- Increase of economic activity in the area;
- Improved connectivity into and out of Kikuyu Town; and
- Ease of congestion in the Nairobi CBD and reduced travel time.

- ii. **Construction of a new three-storey market:** NaMSIP together with World Bank undertook the construction of the multi-storey market which was set to house 700 stalls. This is one of the 15 markets within the NMR that the agency is upgrading. The project seeks to provide enabling physical spaces for organised markets, market linkages for products, enhancing access while improving livelihoods especially for the urban poor who will be vending.

For Kikuyu, the new market is designed to accommodate existing and future vendors. Other considerations included in the design are spacious stalls, adequate and basement parking, water supply and reticulation and sanitary facilities. The market will also be properly ventilated and secure.

An Environmental and Social Impact Assessment (ESIA) report<sup>11</sup> commissioned to inform the project identified potential positive and negative impacts. The report further proposes remedial actions to remedy the negative impacts. Some of the positive impacts the new market is expected to bring forth include the following:

- The presence of the market is expected to create employment both directly and indirectly to many people;
- The market will be a source of revenue to the government through the collection of levies and cess;
- The market will also spur economic growth in the town; and
- The traders in the market will have the security of tenure and will have shelter against adverse weather condition.

However, like any other project, there are some anticipated negative impacts which include the following:

- Existing vegetation will be cleared to pave way for the construction of the market. This will lead to the loss of vegetation. To remedy this, the contractor is expected to carry

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<sup>10</sup> Environmental and Social Impact Assessment Project Report (Esia) for the Proposed Construction Of Kikuyu Railway Station

<sup>11</sup> Environmental and Social Impact Assessment of The Proposed New Kikuyu Market, Kiambu County

out landscaping works on the site by planting additional trees, flowers and other aesthetic plants;

- During construction, the air quality is expected to be degraded due to dust. However, the application of prevention measures such as soil dampening through the sprinkling of water will keep the dust at bay;
- The water resources in the area are expected to be affected during construction and operationalisation of the new market. The ESIA report proposes that the contractor installs water storage tanks and other water-saving technologies;
- Noise and vibration during the construction phase. To manage noise, construction activities should only be carried out during the day and avoid unnecessary noise pollutants e.g., hooting;
- The market will generate considerable solid and liquid waste. The project proposes coordination between the proponent of the project, Kiambu County Government and private waste collectors towards waste management on a regular basis; and
- Traffic congestion: The contractor is expected to come up with a traffic management plan showing main access and exits.

- iii. **Construction of an additional bus terminus:** There is a proposal to construct a new bus terminus adjacent to the new market to supplement the old one, which is directly opposite. The old terminus is unable to accommodate all the public service vehicles plying routes to or from Kikuyu. The additional terminus is expected to accommodate 120 buses.

#### *14.4.4 Challenges being anticipated from the above-mentioned projects*

Congestion in the CBD is expected to increase with the new developments coming up unless appropriate interventions are to be implemented. Over 7,000 buyers are anticipated to visit the market every day on average. The train station is also likely to be a key attraction with the planned improvements to make it user friendly. These developments are likely to trigger an increased influx of vehicular and pedestrian traffic causing the following:

- i. Increased demand for parking spaces.
- ii. Increased waste generation in the town.
- iii. Space contestation between vehicles and pedestrians.

The town is ill-prepared for the above-mentioned eventualities due to the narrow roads, inadequate parking slots and inadequate pedestrian-friendly streets. The proposed planning interventions to decongest the CBD are discussed in the next section.

#### *14.4.5 Planning Interventions to Decongest Kikuyu CBD*

- i. **Synthesis & Proposals:** As the town continues to grow and rapidly urbanise, there is the need to rectify the constraints presenting themselves in the CBD and the town at large. This action plan, therefore, makes proposals geared towards ensuring the functionality and efficiency of

the Kikuyu CBD. Provision of walkways/footpaths, cyclist integration, sustainable parking and multimodal transport system will ensure that traffic is eased within the CBD. This will help decongest the CBD, reduce travel time, and increase accrued profits. Sustainable environment management will ensure proper solid and liquid waste management as well as protection of environmentally sensitive areas. Below are the objectives of the Kikuyu CBD action plan:

- To ensure proper connectivity and circulation;
- To provide a strategy for environmental management and conservation; and
- To provide strategies for sustainable infill densification.

ii. **TOD as an approach to decongest the CBD:** The TOD model is seen as a viable and appropriate solution to ease congestion in Kikuyu CBD. This model encourages the creation of compact, walkable, and pedestrian-oriented neighbourhoods defined by compatible mixed-use land uses with reduced dependence on cars for mobility. The model can be used to manage the town and reduce congestion. The components of TOD include:

- Development of an efficient public transport system. In the case of Kikuyu, the existing railway line can be integrated with the matatu transport to discourage private vehicles in the town. If efforts were made to ensure that the public transport system is safe, cheap, and efficient, it would encourage people to leave their vehicles at home at use this option;
- Creation of compact and densified CBD. This will create employment opportunities within Kikuyu where people can work from hence reducing the need to leave the place to look for employment opportunities elsewhere. Densification in the CBD can be achieved by permitting developers to increase plot ratios, which will encourage high-rise buildings of between 7 and 10 floors. Denser cities are said to be more sustainable, easy to service and helps to free land that can be used for other uses<sup>12</sup>. Densification also controls urban sprawl;
- Create complementary, compatible mixed land uses to allow people to live and work within the area and minimise movement outwards. Compatible land uses may include commercial, public purpose, and residential;
- Create pedestrian-friendly streets with adequate sidewalks, cycle paths and street furniture. This will encourage walking and people will feel safe using the streets;
- Incorporate public spaces e.g., open spaces within the CBD. This will create places for relaxation and recreation;
- Encourage the provision of services within walkable distances of not more than the one-kilometre radius; and
- Encourage commercial businesses to create active frontages to attract road users.

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<sup>12</sup> <https://www.designingbuildings.co.uk/wiki/Densification>

The proposed interventions to ensure the fulfilment of the objectives include:

- iii. **Improve circulation within the CBD:** Decongestion of the CBD can be achieved through improved circulation and rehabilitation of the existing roads. It will also involve widening of roads within the CBD. Circulation can be improved through the provision of more routes. This is arrived at by proposing important through-roads that are inexistent but need to be developed, expanding various road and surface improvement for both motorised and non-motorised traffic. Main proposals include the missing links between the Southern bypass and Post Office Road loop, pedestrian-only boardwalk over Ondiri swamp and a circuit track around it. The proposed circulation plan is shown below in Figure 14-5.

The proposed transport circulation plan within Kikuyu's CBD. will incorporate pedestrianised streets (Figure 14-6) as well as a proposed Kikuyu CBD development activity; and traffic calming measures as presented in the Traffic Management Plan (Figure 14-7). There is a proposal to rejuvenate of the operations of the Railway Station (Figure 14-8) and within the proposed redevelopment plan, integration of parking silos with complete with rail and export cargo handling facilities (Figure 14-9). This plan provides proposals for densification and mixed-use development segments within the CBD (Figure 14-11); and provision for open and green spaces (Figure 14-12). The overall proposed Action Area has been presented in Figure 14-13.

- iv. **Creation of pedestrian-friendly blocks and streets within the CBD. Introduce pedestrian sidewalks, street furniture:** The proposals take into cognisance the need to facilitate better and efficient mobility for all modes; pedestrian, vehicular, and transit. There is a great need to shorten the block sizes to ensure and facilitate walkability. This makes the distance travelled shorter, which encourages people to walk rather than use other modes.

Pedestrianisation of streets with adequate walkways and provision of crossing levels at appropriate areas is important in ensuring efficiency in the mobility of the town. The walkways/pedestrian paths need to be continuous with minimal breaks. The provision of street furniture such as parklet gardens, street lighting, and bus waiting areas, benches, trees bollards, and vendor zones are important elements to facilitate a good walking experience.

- v. **Construction of an integrated transport terminus next to the commuter railway station:** This will ease the congestion at the current public vehicle terminus and also link commuter railway station with bus/matatus transport system as shown in Figure 14-6 below.
- vi. **Traffic management strategy - Provision of interchange stations within the CBD:** There is provision for an interchange transit station for the bus and train transportation modes at the Kikuyu railway terminus. This intervention seeks to facilitate seamless linkages and reduction in traffic (vehicular and pedestrian) by cutting off unnecessary trips generated by the modes.

The circulation plan indicates that vehicles from Nairobi will use the new terminus, have a 5-10-minute waiting time, exit into the Southern bypass or proceed to the interchange station to drop or pick passengers then continue straight past the old terminus and back to Nairobi. For public service vehicle (PSV) traffic coming from Gikambura through the Southern bypass, they will slide right onto New Market/K-Unity Road then turn right to the old terminus have a 10-15min waiting time then proceed straight to the overpass roundabout and back to Gikambura and Thogoto areas or turns left and into the interchange station then to the old terminus then back to Gikambura. This will ensure the smooth flow of all types of traffic as well as attracting people to using PSVs for commutes and NMT facilities shorter distances. Effective mobility within Kikuyu CBD necessitates the redevelopment of Post Office Road (ROW=30m) into an urban street that will facilitate efficient mobility through provision of ample walkways, greenery, on-street parking, Cycle lanes, street lighting, a dual carriageway with the provision of turning lanes and bus shelters (Figure 14-7).

- vii. **The revitalisation of the old railway line:** The provision of an interchange station will help revitalise the old railway. This will in turn rejuvenate the economy and the industrial export function of Kikuyu. Kenya Railways and abutting landowners can put up exports handling facilities for packaging and value addition of product (Figure 14-9).
- viii. **Development of multi-storey parking within railway commuter station:** This will help reduce on-street parking thereby improving the mobility of vehicles. Parking spaces need to be organised to ensure proper use of available land and to alleviate congestion as motorist goes by looking for available parking spaces. The implementation of basement and silo parking spaces within the CBD will alleviate instances of congestion and invasion of walkways by parked vehicles. Such parking silos shall display the number of parking spaces available on a LED display board.
- ix. **Revitalisation Strategy:** Densification as stated previously, is a principle of efficient space use in urban areas. Therefore, in order to make the town more vibrant, developers need to utilise the vertical spatial space. The buildings can go up to 8-10-15 floors offering parking spaces on the lower floors. The government offices ought to be densified as well so that they may leave more green open spaces.  
Mixed-use is an important development principle that ensures that people can access services and goods within short and walkable distances. Such mixed-uses can incorporate commercial and residential buildings, public purpose and residential, some educational facilities with the commercial user as well as commercial and low impact industrial uses such as craft, printers, and bakeries, amongst others.
- x. **Provision of Open spaces:** Green open spaces are important elements of the built environment. Such spaces provide a breakaway space for recreation/leisure and help to sequester the carbon for a cleaner atmosphere. This plan proposes additional open spaces within the CBD as

indicated. Tree-lined streets are important to greening and improving the aesthetics of the CBD. Streets will be ornamented with plants, grounded treelines and other forms of green infrastructure on buildings.

#### 14.4.6 Project Impacts

The Table 14-21 shows some of the positive and negative impacts that may arise upon completion and implementation of the design proposals.

**Table 14-3: Project Impacts**

Positive Impacts	Negative Impacts
<ul style="list-style-type: none"> <li>• Enhancing the centrality and attractiveness of Kikuyu urban centre, through the development of quality public spaces and streetscapes that reflect the physical and historical character of the neighbourhood promotes economic viability;</li> <li>• Densification of the CBD so as to optimise the use of land that will create more room for economic and social viability;</li> <li>• Designing open spaces for recreational such as parks will encourage healthier inner-city living;</li> <li>• Beneficiaries of these design projects will be the growing population in Kikuyu town as well as the business community;</li> <li>• Presence of the markets is expected to create employment both directly and indirectly and will be a source of revenue to the county government through the collection of taxes;</li> <li>• The traders in the market will have the security of tenure and will have shelter against adverse weather condition; and</li> <li>• Rehabilitation of Ondiri swamp will improve its capacity to provide numerous benefits to the local people. The swamp is a source of water for farming activities, horticulture and livestock rearing. In addition, the swamp is the source of the Nairobi River, which courses through the middle of the city of Nairobi.</li> </ul>	<ul style="list-style-type: none"> <li>• High rate of urbanisation is expected to lead to social and cultural convergence and increase demand for social amenities;</li> <li>• Increased pressure on land in the urban area will lead to urban sprawl extending to the rural areas;</li> <li>• Increased demand for parking spaces;</li> <li>• Increased waste generation in the town;</li> <li>• Space contestation between vehicles and pedestrians; and</li> <li>• Pollution in the CBD is expected to increase.</li> </ul>

Source: VisionRI

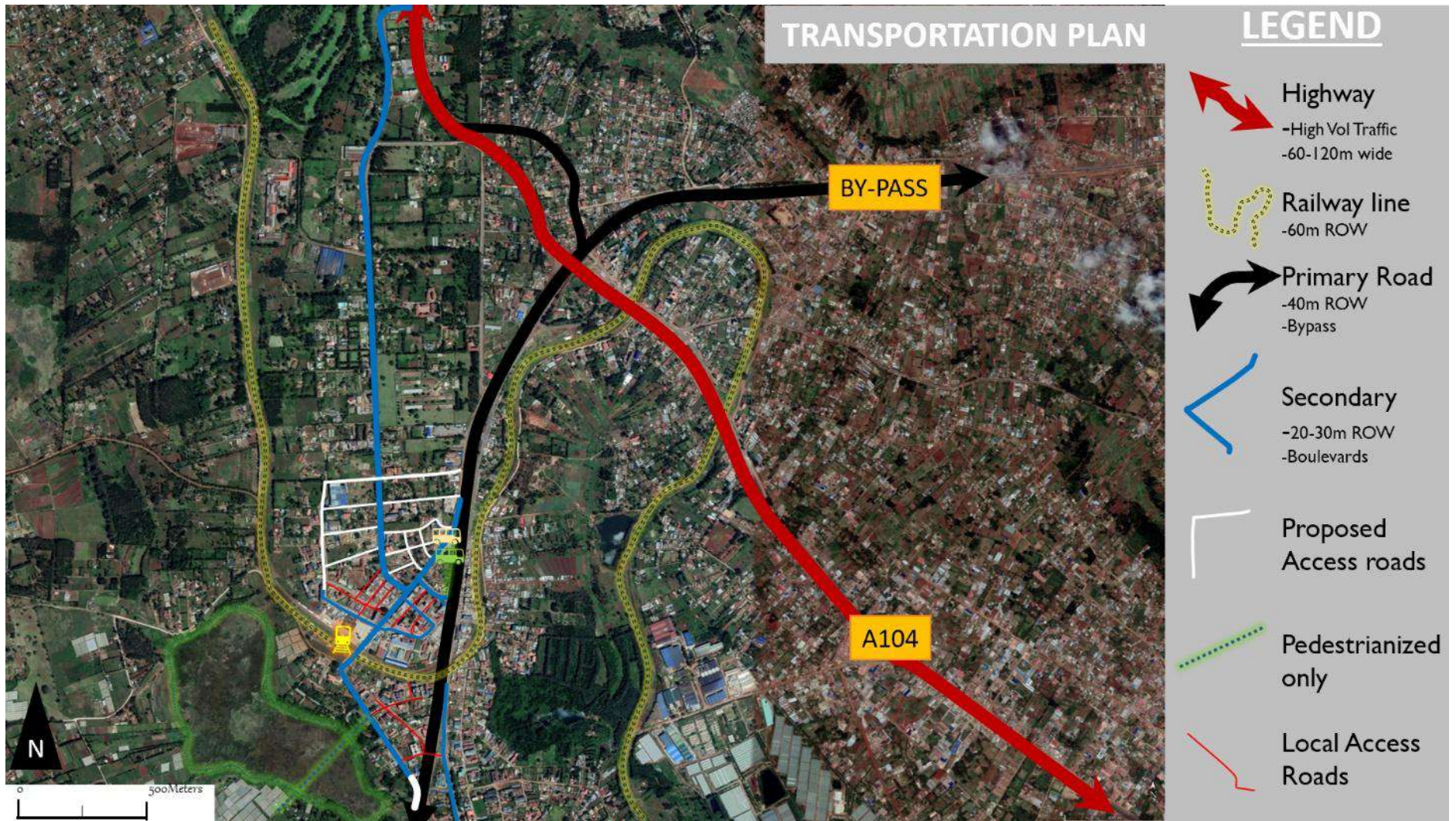


Figure 14-5: Circulation plan for Public Service Vehicles

Source: Adapted from Google Image 2019



Figure 14-6: Pedestrianised streets

Source: Adapted from Google Image 2019

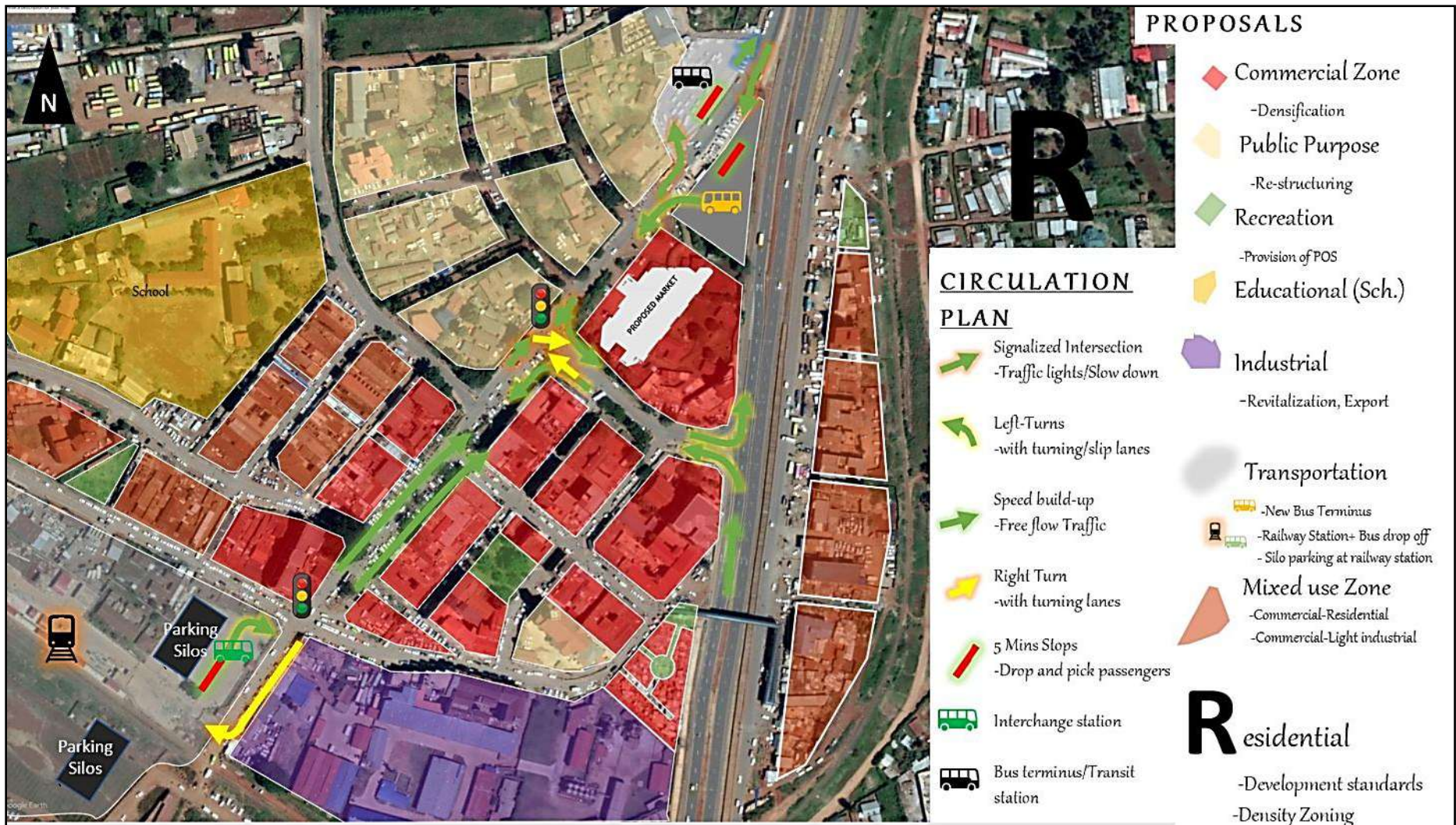


Figure 14-7: Traffic Management Plan

Source: VisionRI Graphics

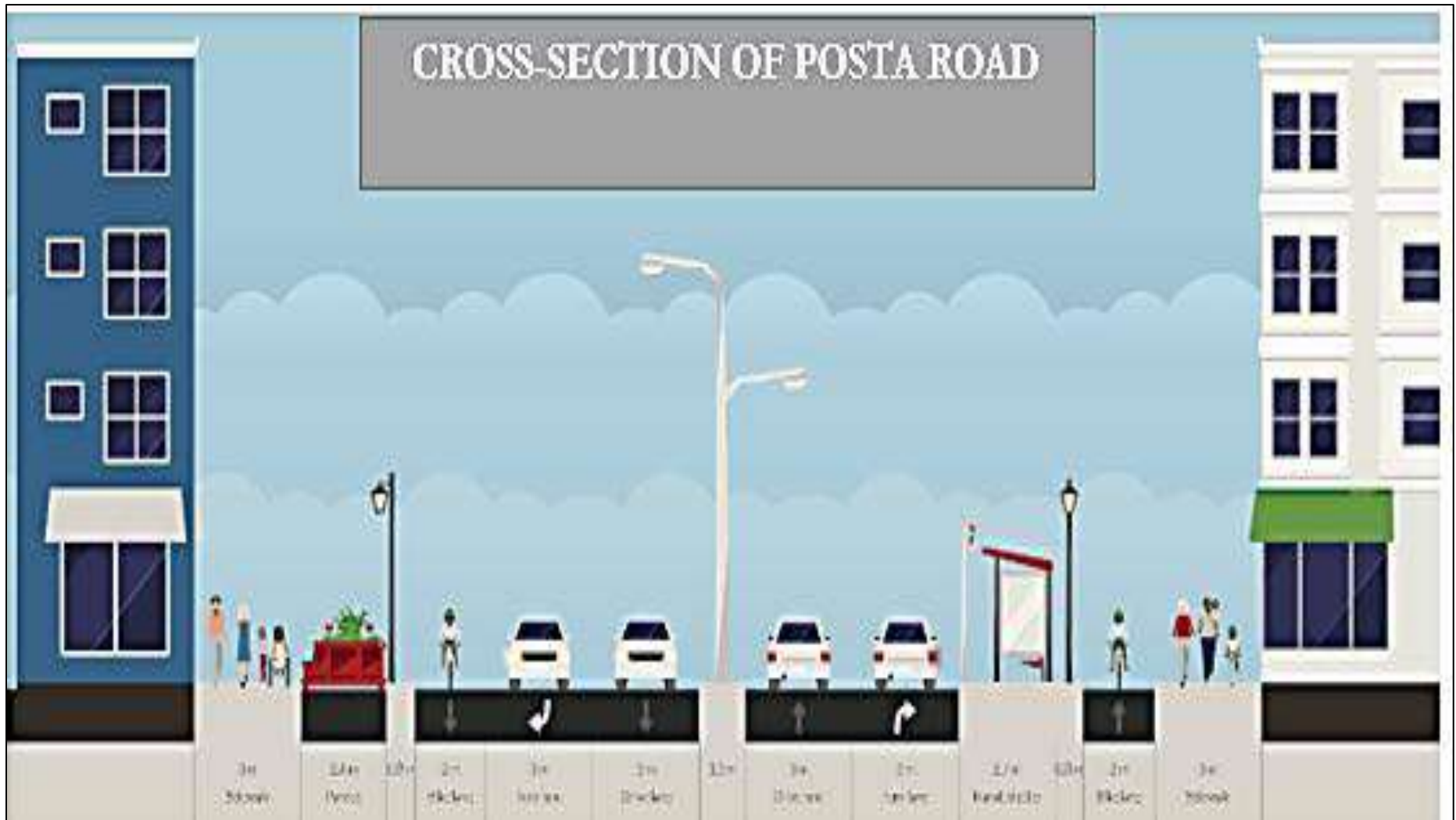


Figure 14-8: Cross-section for Posta Road Redevelopment

Source: VisionRI Graphics



Figure 14-9: Revitalisation of Railway Station

Source: VisionRI Graphics

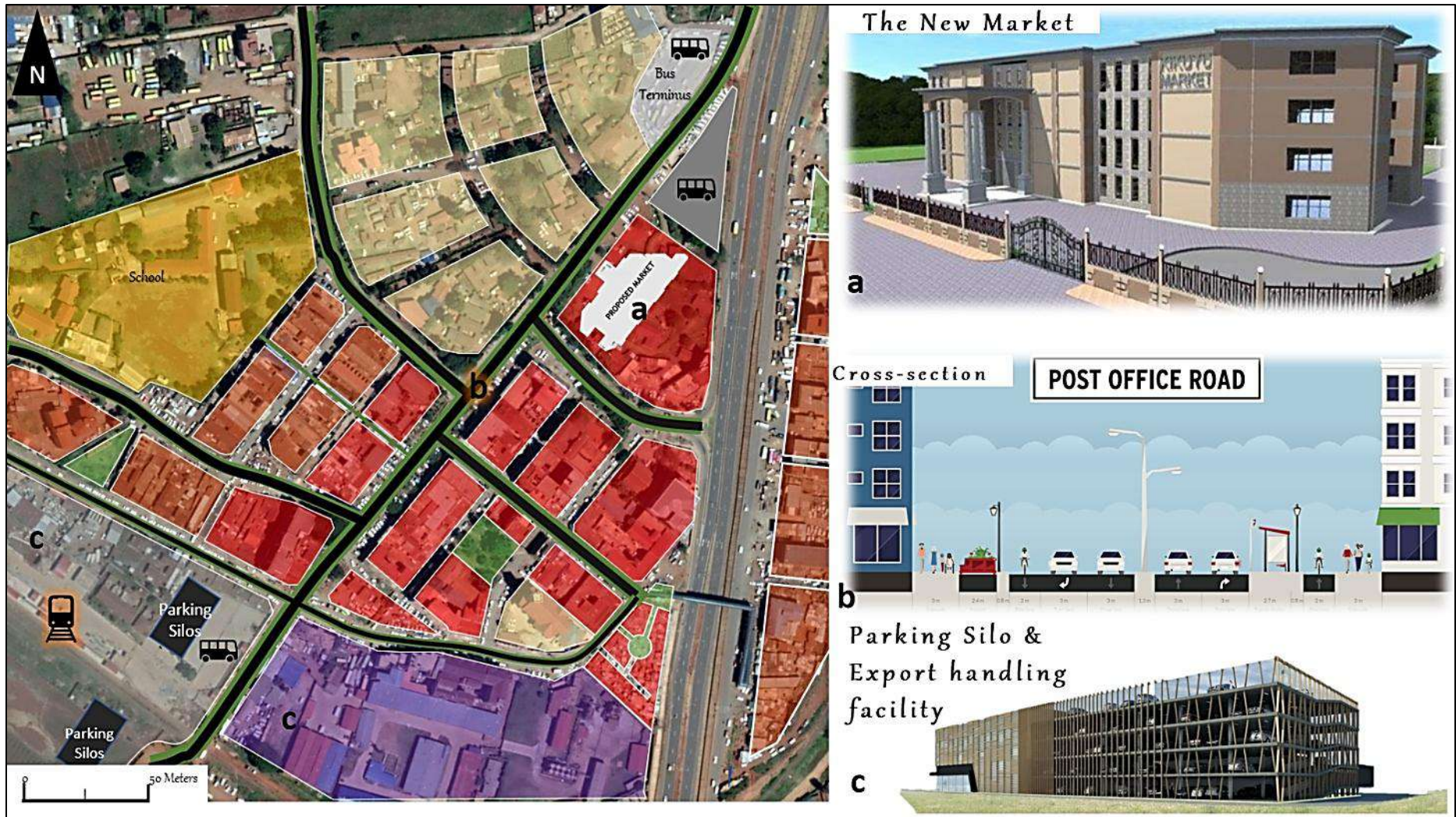


Figure 14-10: Integration of Parking Silos with Rail and Export handling facilities

Source: Author 2019



Figure 14-11: Densified and Mixed-Use Developments

Source: Authors, 2019



Figure 14-12: Location of proposed open spaces

Source: Author, adapted from Google Images, 2019



Figure 14-13: Kikuyu CBD Action Area Plan

Source: Author, adapted from Google Images, 2019

## 15 SECTORAL STRATEGIES AND MEASURES

### 15.1 Detailed Residential Development Strategy

#### 15.1.1 *Housing and Informal Settlements Upgrading*

**Goals:**

- To provide decent housing for all.

**Objectives:**

- To increase the supply of affordable housing; and
- To improve the living conditions in informal settlements.

**Strategies:**

- Encourage private sector investments in affordable housing through public-private participation arrangements;
- Promote research on the development of low-cost housing materials and construction techniques;
- Establish a land banking programme to increase the County Government's inventory of sites for affordable housing; and
- Subsidise on-site improvement of basic infrastructure and services such as roads, street lighting, clean water, drainage, waste management, etc. in informal settlements.

### 15.2 Detailed Transportation Strategies

#### 15.2.1 *Multi-modal Transport Strategies*

**Goal:**

- To ensure sustainable integration of all transportation modes within the Kikuyu Urban Area.

**Objectives:**

- To ensure ease in movement hence reduced travel time;
- To decongest the roads especially within Kikuyu CBD;
- To optimise the railway line traversing Kikuyu CBD for mass transit;
- To promote an efficient public transport system for Kikuyu; and
- To promote active transport.

**Strategies:**

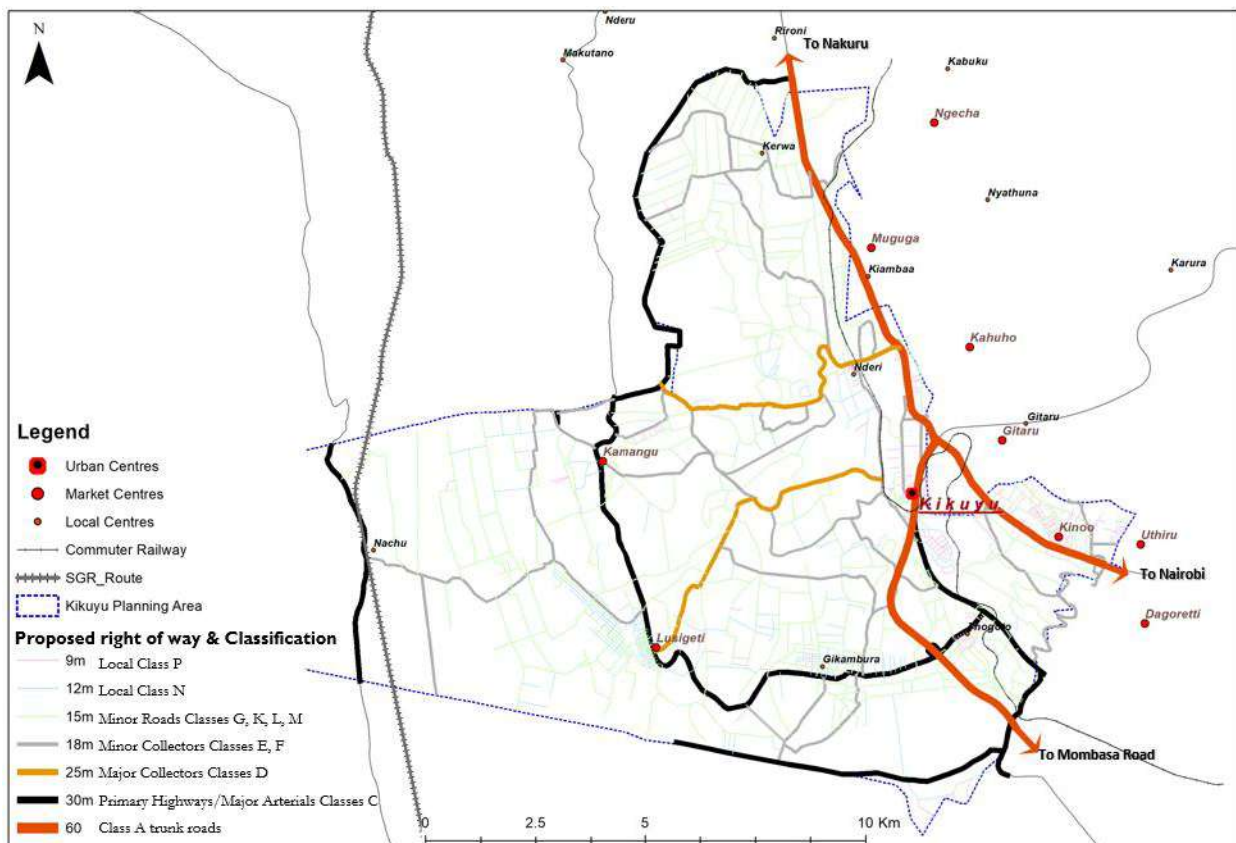
- Provision of transit-oriented development centred on important transit hubs like bus terminals and railway stations by creating compact, walkable, pedestrian-oriented, mixed-use communities;

- Increase the productivity and efficiency of existing transportation facilities through transportation system management practices;
- Promoting and increasing access to multimodal transportation modes within the planning area such as active transport (NMT, and dedicated walking and bike lanes), and mass transit;
- Establish road reserves complete with NMT, pedestrian pathways and appropriate stormwater drains;
- Establish transit stations like Traffic and Transit Management Centres (TTMC) along with parking facilities for private vehicles for park-and-ride along bus routes and concentrate housing near these stations to maximise accessibility, convenience, and employment opportunities;
- Provision of boda-boda sheds at strategic locations within the nodes/centres;
- Revive commuter rail transport and modernize the station at Kikuyu;
- Establishing dedicated bus routes;
- Prevent encroachment on road reserves through regular inventory survey, beaconing, engineering and enforcement;
- Reduction of conflict points through design strategies such as channelised intersections, roundabouts, signalised intersections, grade separation and protected lanes;
- Regular maintenance of roads;
- Improve signage on all roads;
- Provide wayfinding information at convenient points in the urban areas;
- Promote sustainable land uses along transport corridors;
- Discourage direct access of plots onto main arterial, sub-arterial and collector roads;
- Develop a transportation mobility plan for the entire Kikuyu Urban Area
- Open missing link roads in Kikuyu East;
- Enforcement of traffic management guidelines through retraining road users and enforce set traffic laws and regulations;
- Construction of parking bays and spaces;
- Expand to 9 metres all roads below through reclaiming encroached roads and negotiating setbacks;
- Enforcement of development control guidelines on all roads to reduce encroachment and to ensure subdivisions are providing adequate road reserves, permitting nothing below 9 m;
- Upgrade roads in Kikuyu to bitumen and gravel standards placing priority on roads that lead to important facilities e.g. hospitals, fire stations, industries, education facilities and into residential areas in case of emergencies;
- Upgrading and maintenance of feeder roads; and
- Streetlight key Kikuyu Urban Area roads and in all urban centres.

## Functional Classification of Roads

Functional classification groups streets according to the character of the service they are intended to provide. Higher function highways place more emphasis on mobility for through traffic, and lower function highways and roads place more emphasis on land access. B.C. highways are functionally classified into following groups:

- i. International trunk roads (A & S); typically, highways and expressways.
- ii. National trunk roads (B); Secondary Highways.
- iii. Primary Highways (C); Arterials. Class H urban.
- iv. Major Roads (typically arterials but may include). Class D, J-urban; principal bus routes.
- v. Minor Roads (typically collectors but may include some arterials) Classes E, F, G, K, L, M.
- vi. Special Purpose Roads.
- vii. Local Roads (typically Access roads for residential areas/farmland) Class N, and P.

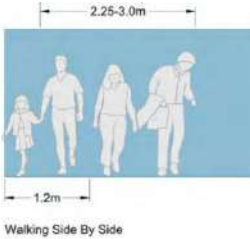



Map 15-1: Proposed right-of-way and classification


Source: VisionRI

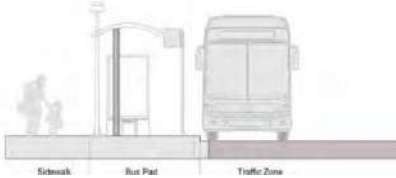
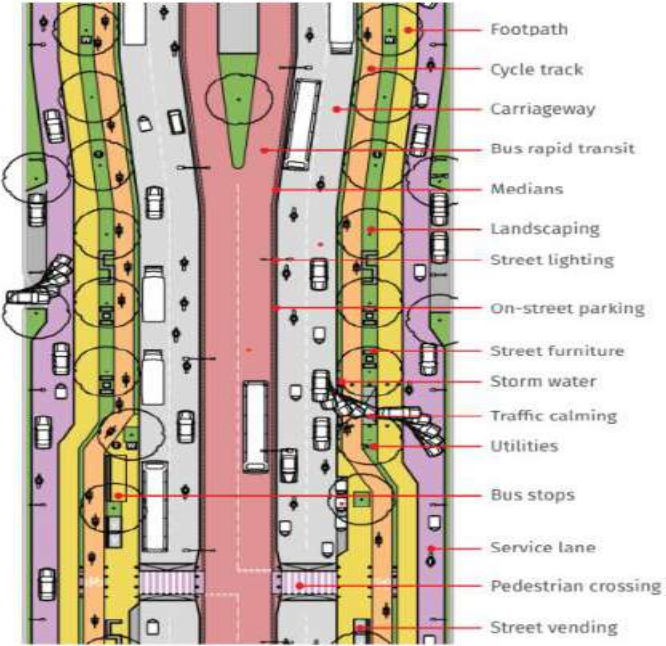
Table 15-1: Transport Implementation Guidelines - Designing safe and accessible roads for everyone

Parameter	Primary/Highway/ Arterial Roads (Classes A, S, B, C)	Major/Secondary/Collector Roads (Classes C, D, E, J)	Tertiary/Minor Roads Classes E, F, G, K, L, M)	Local/Access Roads (Class N, and P)
Design Speed	60-110kph	60-80kph	≤ 50kph	<30kph
Width of Traffic Lane	3.75m	3.5m	3.25m	3m
Shoulder Width	2.5m -3m	1.5m-2.5m	1m	0.5m
Width of Parking Lane	none	2.5m	2.5m	-
Streetlight requirements and spacing	Based on the applicable road/street Luminaires and spacing guidelines.			
Road Gradient	Minimum slope: 0.5% to facilitate drainage; Maximum slope: 10% for long stretches and 15% for stretches not exceeding 100 metres; and Cross slopes: 1 in 100 for paved roads and 1 in 50 for unpaved roads.			
Visibility at Junctions: Splay Angle and distance	30 degrees; >5m Truncation standards to be observed.	30 degrees; >4m Truncation standards to be observed.	45 degrees; >3m Truncation standards to be observed.	45 degrees: >2m Truncation standards to be observed.
Traffic Calming Strategies	Where applicable with consultations: speed humps/bumps; table-top crossings, raised crosswalks; median islands and bulb-outs/curb extensions, traffic circles, speed limits (designated areas e.g.: community areas, school zones, certain public facilities).			
Pedestrian walkways Sidewalk placement and crossings	Off-street pathway or enhanced separated sidewalk; overpass crossings.	Separated sidewalk or enhanced separated sidewalk; table-top crossings, raised crosswalks.	Separated or non-separated sidewalk: table-top crossings, raised crosswalks.	Shared space; marked crossings.

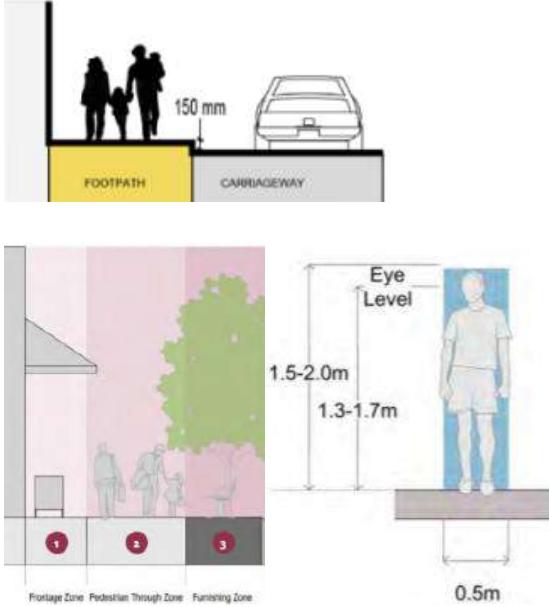
<p>Pedestrian walkways widths (Area of high pedestrian activity &gt;2.4m)</p>	<p>1.8m</p>	<p>2.4m</p>	<p>&gt;2.1m</p>	<p>1.8m</p>
<p>Maximum Longitudinal Grade</p>	<p>Preferably less &lt;5.0% else, &gt; 5.0% to 8.3% Landings should be provided with every 9.0 metres, &gt; 8.3% Alternative accommodations recommended (railings, rest areas, adding switchbacks, accessible ramps, circulating shuttle, ladder sidewalks, stairways, escalators, etc.)</p>			
<p>Pedestrian walkways Surface Materials</p> 	<p><b>Asphalt</b> (long stretch, rural areas, and parks); <b>Brick</b> (high pedestrian volumes; brick may not be a comfortable surface for people using mobility devices); <b>Decorative paving materials</b> (cobblestone, unit pavers, exposed aggregates, exposed glass) Decorative paving materials may be used to enhance the visual aesthetic; <b>Permeable pavement</b> (Permeable pavement can include permeable concrete or porous unit pavers). The pavement should be raised 150mm from the road.</p> <p><b>Note:</b> The Urban Area shall formulate a strategic approach to managing footpath obstructions; i.e by hawking activities, parking, advertising, improperly placed street furniture, dumping and surface degradation.</p> <p><b>Crossings:</b> Ensure clearly marked crossing and placement of curb ramps.</p>			
<p>Furnishing Zone</p> 	<p>0.9 metres is the absolute minimum required for streetlights and utility poles, street trees 1.2 metres minimum, Roads with transit stops require the desired width of 3.0 metres for passenger landing pads, benches, and bus shelters.</p>	<p>Basic (0.6m to 2.0m) Enhanced (3.0m to 5.0m)</p>		
<p><b>Road Hardware:</b> Road lighting, Traffic signals, pedestrian and cycling push buttons, traffic signage, utilities, fire hydrants, parking metres, and/or bollards, fences, or other barriers.</p> <p><b>Pedestrian Amenity:</b> Coloured and/or textured surface materials, benches, tables, and chairs, other seating amenities, waste receptacles, mailboxes and newspaper corrals, drinking fountains, bicycle parking, transit stops and shelters, wayfinding signage, public art (sculptures, murals, fountains, clocks, and other decorative features), Road banners, flags, and other graphics, Public washrooms/restrooms.</p>				
<p>Cycling Facilities</p>	<ul style="list-style-type: none"> <li>- Protected Bicycle Lanes; and</li> <li>- Bicycle pathways/highways.</li> </ul>	<ul style="list-style-type: none"> <li>- Protected Bicycle Lanes;</li> <li>- Painted and Buffered Bicycle Lanes; and</li> </ul>	<ul style="list-style-type: none"> <li>- Protected Bicycle Lanes;</li> <li>- Painted and Buffered Bicycle Lanes;</li> </ul>	<ul style="list-style-type: none"> <li>- Bicycle Accessible Shoulders; and</li> <li>- Shared Street.</li> </ul>

		<p>- Advisory Bicycle Lanes.</p>	<p>- Advisory Bicycle Lanes; - Bicycle Accessible Shoulders; and - Shared Street.</p>	
<p>Dedicated cycling lane width</p>	<p>2.5m Uni-directional</p>	<p>3m Bi-directional</p>	<p>Multi-use pathway (cyclist and pedestrians= 3 to 4m)</p>	
<p>Bicycle and Pedestrian Accessible Shoulders for rural areas</p>	<p>2.0m- 3.0m</p>	<p>2.0m - 3.0m</p>	<p>1.5m - 2.0 m</p>	<p>1.5m - 2.0 m</p>
<p>Bicycle and Pedestrian Accessible Shoulders for Urban areas</p>	<p>-</p>	<p>-</p>	<p>1.5 - 1.8 m</p>	<p>1.5 - 1.8 m</p>
<p>Cycling lane desired paving material</p>	<p>The preferred material for a bicycle pathway is asphalt; may add oxides to differentiate with traffic lanes. Rough surfaces are uncomfortable, smooth surfaces are comfortable.</p>			

<p>Cycle parking racks</p> 	<p>Offer short- and long-term bicycle parking areas/racks in urban areas; shopping centres, malls, markets, and other public spaces and facilities which must be convenient, accessible, safe/secure, functional, and supportive.</p>
<p>Drainage</p>	<p>Drainage and maintenance should be considered upfront in the design process to ensure that issues can be avoided. The gradient should not be less than 0.5%. This is to facilitate drainage in flat terrains.</p>
<p>Lighting</p>	<p>Roads and ways should be well lit at night especially at crossings, urban centres, institutions, bridges, major conflict spots, alleys, tunnels and underpasses, and intersections.</p>
<p>Signage and Wayfinding</p>	<p>A seamless, predictable, consistent, and easy-to-understand system of wayfinding, signage, and trip planning tools for vehicles, walking and cycling is important as well as to consider that many residents and visitors may not be familiar with certain locations. This should include but not limited to centres, local neighbourhoods, major attractions, local destinations, road names, traffic signs, information booths, fingerposts, monoliths, etc.</p>
<p><b>Other Guidelines</b></p>	
<p>Other Road Systems</p>	<p><b>Cul de Sacs:</b> - When a cul-de-sac is used in residential development it should be provided with a curved turning circle of sufficient width to facilitate easy access and the turning of not only cars but trucks and other heavy vehicles. The recommended minimum radius is 12 metres. The cul de sac should serve no more than 20 dwelling units and a maximum length of 120m.</p>
<p>Parking Management Strategy</p>	<p>Parking standards; (See building code), parking restrictions, parking pricing and parking supply and demand position.</p>
<p>Building Setbacks from Roads</p>	<p>See development control guidelines; ensure a building-street relationship through urban design.</p>
<p>Corridor Development</p>	<p>Strip development, or development that contributes to the growth of a linear of plots, must not be permitted to the front on or directly connect to a highway or major arterials; road classes (A, S, B and C). An exception may be considered on a highway route if development adjacent to the route has already occurred to the extent that this policy document can no longer be fully applied.</p>
<p><b>Public Mass Transport</b></p>	<p>- Public transport should be guided with the following principles: Stronger integration of transportation and land use, integrating fares and service, reliable, frequent service, protection</p>

 <p>A diagram showing a cross-section of a road. From left to right, it is labeled: Sidewalk, Bus Stop, and Traffic Zone. A person is shown walking on the sidewalk, a bus is at the stop, and a car is in the traffic zone.</p>	<p>from mixed traffic, safe, comfortable stations with passenger information and development of an Intelligent Transportation System for the Kikuyu Urban Area</p> <ul style="list-style-type: none"> <li>- Bus routes will be located not more than a 1km from an urban area and 2.5km from a rural area; and</li> <li>- In establishing bus schedules, the objective is to arrange for buses to arrive at known intervals, but they need to be consistent and regular.</li> </ul>
<p>Efficiency of public transport routes</p>  <p>A detailed cross-section diagram of a road with various infrastructure elements labeled on the right side. The labels include: Footpath, Cycle track, Carriageway, Bus rapid transit, Medians, Landscaping, Street lighting, On-street parking, Street furniture, Storm water, Traffic calming, Utilities, Bus stops, Service lane, Pedestrian crossing, and Street vending.</p>	<ul style="list-style-type: none"> <li>• Dedicated busways and priority; improves efficiency;</li> <li>• Bus stops will be permanent whenever practical, allowing the public to become familiar with stop locations.</li> <li>• Consider all modes, e.g., walking, cycling, trams, LRT, BRT, MRT;</li> <li>• Coordinate station access design with land development;</li> <li>• Address existing and future needs;</li> <li>• Integrate community design into station development;</li> <li>• Consider station access in route alignments; and</li> <li>• Universal design and universal access.             <ul style="list-style-type: none"> <li>- Roads must be at least 18 metres wide;</li> <li>- Provide a location for a change of bus direction with no backing;</li> <li>- Have adequate shoulders to allow the bus to pull off the roadway; and</li> <li>- Be kept clear of any obstructions that would prevent safe movement of buses.</li> </ul> </li> </ul>

<p>Travel Demand Strategy</p>	<ul style="list-style-type: none"> <li>- Increasing public transport modal shares, additional demand management interventions need to be implemented, i.e.:             <ul style="list-style-type: none"> <li>• Congestion Pricing - mobility management strategy to reduce traffic congestion.</li> </ul> </li> <li>- Restricted parking supply or imposing restriction of vehicles.</li> </ul>
<p>Pollution reduction and mitigation</p>	<ul style="list-style-type: none"> <li>- Improving transport options (walking, cycling, ridesharing, public transit, carsharing, etc.), more fuel-efficient vehicles tend to reduce energy consumption, pollution emissions and fuel cost; and</li> <li>- Streets to be lined with trees to enhance sequestration of pollutants.</li> </ul>

<p>Pedestrian facilities, people walking and using mobility devices</p> 	<p>General Design Guidance</p> <ul style="list-style-type: none"> <li>- Preferred 2m-3m;</li> <li>- Physical separation from other road users;</li> <li>- Firm, smooth, and even surfaces;</li> <li>- The Pedestrian Through Zone should be straight and unobstructed;</li> <li>- Enough pedestrian crossing opportunities;</li> <li>- Short distances between destinations;</li> <li>- Continuous and direct routes between destinations that reflect pedestrian desire lines;</li> <li>- Buildings that are oriented towards the road, creating an engaging environment;</li> <li>- Diverse land uses that create a varied and interesting walking experience;</li> <li>- Wayfinding that makes it easy to navigate between destinations;</li> <li>- Street trees and other vegetation;</li> <li>- Weather protection elements to provide refuge from the rain;</li> <li>- Adequate lighting for safety, security, and visibility;</li> <li>- Enough benches and rest areas;</li> <li>- Pedestrian amenities including landscaping, water fountains, washrooms, garbage and recycling receptacles, public art, and street furniture; and</li> <li>- Well-maintained pedestrian facilities in all seasons.</li> </ul>
<p>Maintenance</p>	<ul style="list-style-type: none"> <li>- Follows the road classification guidelines and related legislation;</li> <li>- Maintenance of private driveway access within the public right-of-way shall be the responsibility of the property owner and well as adjoining drainage improvements;</li> </ul>
<p>Providing Loading and unloading zones</p>	<ul style="list-style-type: none"> <li>- Loading zones shall be provided within the urban centres on main streets and back streets; and</li> <li>- Loading bays along roads may be provided in rural areas.</li> </ul>

## Recommendations:

- i. **Provide non-motorised transport:** Enhance and expand active transportation, aided mobility, walking, and cycling.

Based on both the current and projected modal split, the majority of Kikuyu residents will be walking. There is a need for making walking and cycling safe and attractive for all users including the elderly, children, and persons with disabilities. NMT provides basic mobility, affordable transport, access to public transport, as well as health and recreation benefits.

In order to achieve a walkable urban area in Kikuyu, complete street designs need to be articulated. Complete street designs ensure that all streets have dedicated spaces for non-motorised transport modes, designated cycle parking facilities, traffic calming with at-grade crossing facilities for pedestrians, well maintained NMT facilities with smooth surface conditions and with ramps at grade changes to enhance universal accessibility, provision of shade, street furniture and landscaping to enhance attractiveness and comfort of pedestrians and cyclists. The facility may also be provided by creating space for street vendors so that they may not lose their lively hood. All intersection needs to provide at grade pedestrian crossings to enhance the comfort and convenience of pedestrians especially the elderly and children. Where space allows, street furniture such as benches, trees, flowers/landscaping should be provided. The county government need to put strict measures to ensure that parking is prohibited in pedestrian facilities as well as street vending.

- ii. **Public transport:** Build a comprehensive regional rapid transit/bus network. Being the second most common mode of transport in Kikuyu, public transport needs major improvement in order to meet the need of the current commuters as well as the projected growth. The existing bus park needs to be expanded in order to accommodate the volume of buses and matatus. In other urban nodes in Kikuyu such as Thogoto, Nderi, Lusigeti, Kamangu, Nachu and Gikambura, land need to be acquired to build terminal facilities in order to reduce the current menace of operating along the road shoulders and other undesignated areas. Some of the key facilities that need to be incorporated in the new terminals include toilets encompassing those of the persons with disabilities and baby changing stations, ample passengers sitting area with shelter, luggage storage facilities, customer information on the route and fare. Bus stops or lay-bays must have shelters more so, provided at appropriate intervals and on need basis.
- iii. **Boda Boda:** Boda bodas play a key role for last-mile connectivity especially in areas where public transport is not readily available. The following are ways in which the sector will need to be improved in Kikuyu: 1) It shall be a mandatory requirement for all boda boda operators to join a registered Sacco for easier regulation. 2) The Kikuyu Urban Area administration should provide dedicated stands/stops for the operators, 3) Mandate all boda boda operators to take advantage of modern technologies e.g. Safe Bodas, Uber boda, etc. to avoid overcrowding in urban areas centre, regular training of safety and business development.

- iv. **Parking management:** Effective parking management is an essential tool to facilitate the efficient use of road space and to ensure the mobility of public transport, pedestrians, and cyclists. In addition, appropriate parking fees can act as a lever to manage the use of personal motor vehicles and ensure that personal motor vehicle users compensate the city for the use of valuable land on which they park their vehicles. Kikuyu Urban Area needs to define both on-street and off-street parking areas in order to prevent encroachment of parking into other areas including footpaths.

For a parking system to succeed, users need clarity on where they can and cannot park. This requires the physical definition of spaces for parking, protection of pedestrian spaces from encroachment through physical barriers such as bollards, signages and strict enforcement. Secondly, customer information is key to ensuring successful parking management. On-street parking, charges should vary by location, with higher fees levied in areas with high demand. This results in the high turnover of parking slots as it discourages motorist from unnecessary long parking. At locations where there is the demand for long term parking, the Kikuyu Urban Area administration can identify land for off-street parking with parking charges on a weekly or monthly basis. This increase in revenue generation by the governments. Higher parking fees encourage people to use sustainable modes of transports including walking, cycling and public transport. Finally, enforcement is key in ensuring that parking rules and regulation are maintained, and offenders are penalised.

## 15.3 Detailed Environmental Strategies

### 15.3.1 *Natural Resources and Environment*

#### **Goals:**

- To nurture sustainable environmental resources management in the Sub-County.

#### **Objectives:**

- To promote sustainable urban development compatible with natural resources;
- To promote conservation of natural resources within the Kikuyu Urban Area
- To encourage agroforestry in accordance with the Forest Policy, 2014;
- To promote proper waste management in the Kikuyu Urban Area
- To mainstream climate change in the Kikuyu Urban Area and
- To increase the coverage of open spaces in the Sub-County.

#### **Strategies:**

- Identify, protect and conserve natural resources;
- Undertake public education on environmental issues including preservation and conservation of natural resources;

- Prepare and implement an environmental management plan for the conservation of Ondiri and Nyakumu swamps;
- Prepare and implement an environmental management plan for the conservation of Kikuyu springs;
- Prepare and implement an environmental management plan for the conservation of Dagoretti, Muguga and Kari forests;
- Protect riparian reserves, the forest through the establishment of buffer zones and transforming them in green open spaces that are publicly accessible;
- Prepare and implement an environmental management plan for the conservation of surface water bodies in the area like Nyongara, Mbagathi, Nairobi, Githaturu and Mweteta rivers;
- Develop proper waste disposal and management plan and system. This includes expanding the solid and liquid waste management infrastructures to Muthiga, Kinoo, Gikambura, Thogoto, Gitaru, and Dagoreti urban areas;
- Advocate for the adoption of sound waste management practices and discourage the use of pit latrines in urban areas;
- Facilitate mainstreaming of climate change concerns into the County's planning, decision and budgetary processes and implementation of climate change-related programmes to reduce carbon emissions and enhance County's resilience against the impacts of climate change;
- To ensure compliance with all relevant environmental rules, regulations and statutes across the Kikuyu Urban Area
- Implement the proposals of increasing the open and green areas especially in the CBD;
- Compliance with NEMA regulations on noise and air quality; and
- Incorporation of other agencies like Kenya Wildlife Service (KWS) and Kenya Forest Services (KFS) in the conservation and wildlife protection measures.

### 15.3.2 *Climate Change Strategies*

**Goals:** Build resilience to climate change and its impacts through structural and non-structural measures.

**Objectives:**

- Improve the ability of people and communities to cope with climate change impacts such as floods and drought;
- Increase crop productivity through improved irrigation;
- Promote the diversification of livelihoods, particularly women and those from marginalised sectors, to strengthen their resilience to climate change;
- Build the capacity of institutions to respond to climate change; and
- Develop the necessary policy and regulatory framework for climate change adaptation.

**Strategies:**

- Enhance community awareness on the impacts of climate change and on how these may be mitigated;
- Improve floods and drought early warning systems through mobile technologies and promotion of people-centred systems;
- Improve water and flood control infrastructure including dams/dykes, drainage systems, and water storage;
- Implement the existing integrated flood management plans such as water storage, drainage networks, reforestation and rehabilitation of riparian areas, construction of dams, and land-use restrictions;
- Increase coverage of water harvesting and storage practices in houses as well as commercial and institutional establishments;
- Increase the acreage under irrigation in the Kikuyu Urban Area especially in Nachu area;
- Increase the production efficiency of irrigated fields through improved agricultural practices in Nachu area;
- Support the households, targeting women and those from the marginalised groups, to adopt and diversify adaptive enterprises/value chains for sustained livelihoods and nutrition security in the Kikuyu Urban Area
- Support small scale farmers to transit to specialised and market-oriented in priority value chains, including drought-tolerant values chains;
- Develop standards and regulations, including social and environmental safeguards, for sustainable forestry management;
- Reduce deforestation and forest degradation reduced through enhanced protection of forests, and community-based forest management;
- Develop alternative technologies to reduce demand for biomass (such as clean cooking and efficient charcoal production);
- Develop guidelines and standards for the establishment of green zones as required by the 2016 Forest Act;
- Mainstream climate change into environment audits, environmental impact assessments and strategic environmental assessments;
- Capacity development of the existing Water Resources Users Associations (WRUA), which are community-based organisations that are rights-based groups with female and male membership; and
- Build the capacity of County-level institutions for the efficient transfer and implementation of climate change adaptation strategies.

### 15.3.3 *Disaster Risk Reduction Strategies*

#### **Goals:**

- A safer, resilient and more sustainable Sub-County.

**Objectives:**

- To establish a policy/legal and institutional framework for the management of disasters in the Kikuyu Urban Area
- To ensure that institutions and activities for disaster risk management are co-ordinated, focused to foster participatory partnerships between the County Government and other stakeholders;
- To promote linkages between disaster risk management and sustainable development for the reduction of vulnerability to hazards and disasters;
- To mobilise resources, including the establishment of specific funds for disaster risk reduction strategies and programmes; and
- To promote mass sensitisation and awareness creation on disaster management.

**Strategies:****Natural disasters**

- **Drought**
  - Distribute drought-resistant and fast-growing seeds that will do well in dry harsh conditions;
  - Facilitate the preparation of community-based drought contingency plans that aid in drought preparedness in quick response; and
  - Establish a system on drought early warning dissemination of information to enable the stakeholders to collaborate on relief plans.
- **Floods**
  - Construct storm drainage systems of the quality standard;
  - Promote insurance coverage for lives, crops and properties lost as a result of floods;
  - Planned relocation from disaster-prone areas such as those that experience flooding;
  - Prohibit the construction of structures in floods prone areas such as riparian lands along rivers and wetlands; and
  - Strengthen coordination amongst disaster management units in various sectors to put measures to abate loss of life and property through floods areas such as riparian lands along rivers and wetlands.
- **Landslides**
  - Develop an inventory of the stability conditions of each slope so that they can be ranked according to their rockfall hazards;
  - Identification of high-risk landslide locations or landslide-prone areas, which need special attention especially during excavations, and at quarries;

- Establish and use early warning systems for detecting landslides owing to heavy precipitation;
- Use of technology to help observe precipitation thresholds in order to identify common symptoms of landslide initiation;
- Development of slope stabilisation measures, culvert improvements and landslide mitigation measures; and
- Build technical capacity imparted to officials in order to improve road construction and landscaping methods.

### **Man-made disasters**

- **Fires**

- Carry out a County disaster analysis survey and to information DRR plan;
- Establishment of firefighting departments/unit in each Kikuyu Urban Area
- Setting up a fund to procure more fire-fighting equipment; and
- Every manufacturing and public institutions to have first aid and fire extinguishers services.

- **Road accidents**

- Enforce traffic rules and regulations;
- Construction of footbridges where necessary;
- Repair and maintenance of poor roads/potholes;
- Put up bumps to avoid more accidents; and
- Put traffic warning signs on the road especially 'black spots'.

### **Community and institutional capacity building**

- **Building community resilience**

- Develop resilient livelihoods through the distribution of drought-resistant and fast-growing seeds that will do well in dry harsh conditions; and
- Prepare community-based disaster risk management plans.

- **Institutional strengthening**

- Prepare and implement DRR policy and strategy through undertaking multi-hazard risk assessments and mapping;
- Maintain a database of information and trends on disaster management in the Kikuyu Urban Area
- Strengthen institutional capacity on disaster risk management by building-up hardware such as the installation of fire hydrants and elevated water tanks, construction of fire station, and procurement of ambulances;

- Strict enforcement of regulations to ensure appropriate quarrying practices;
- Regular monitoring, collection, analysis and evaluation of information on the most frequent disasters in the Kikuyu Urban Area
- Coordinate all early warning system/information service providers in order to harmonise the information available on disaster management;
- Produce regular early warning disaster management bulletins and publications; and
- Strengthen early warning systems including community-level response mechanisms for hydro-meteorological hazards.

## 15.4 Detailed Social Facilities Strategies

### 15.4.1 Social Infrastructure

#### Goals:

- To have quality, accessible and affordable social infrastructure within Kikuyu.

#### Objectives:

- To provide adequate and accessible education and health facilities;
- To equip schools and health facilities in order to address the needs of the residents; and
- To provide adequate public parks and recreational facilities.

#### Strategies:

- **Education**
  - Encourage private sector investments in education.
  - Establish the required number of ECDE facilities, and primary and secondary schools to meet current and projected requirements;
  - Densify existing facilities to accommodate higher capacity such as constructing high-rise buildings;
  - Apply development control mechanisms on large parcels of land that are capable of accommodating large surrenders or reservation such as primary schools and secondary schools;
  - Entering into strategic partnerships with the private sector or provide incentives to private developers by providing concessions and thereafter ensuring inclusivity; and
  - Compulsory acquisition.
- **Health**
  - Encourage private sector investments in the health sector;
  - Establish the required number of health facilities to meet current and projected requirements; and

- Increase the number of physicians to meet current and projected requirements.
- **Urban safety**
  - Establish police posts at strategic locations; and
  - Establish the required number of fire stations plus personnel and equipment.
- **Community amenities**
  - Establish recreational facilities (public parks and playgrounds) to meet current and projected requirements.
- **Cemeteries/burial grounds**
  - Improve the accessibility of cemeteries and provide them with necessary facilities such as sheds and washrooms; and
  - Establish a public cemetery for Muslims.

## 15.5 Detailed Physical Infrastructure Strategies

### 15.5.1 *Physical Infrastructure Strategies*

#### **Goals:**

- Enhance quality and accessibility to physical infrastructure.

#### **Objectives:**

- To provide clean and affordable water and widen the net of those served;
- To improve the irrigation system;
- To ensure an adequate supply of electricity and increase the use of sustainable energy sources;
- To improve the wastewater management system;
- To upgrade the storm drainage system;
- To improve the solid waste management system; and
- To monitor air and noise levels.

#### **Strategies:**

- **Water resources, supply and irrigation**
  - Measures to ensure adequate water supplies for the envisioned developments by the proposed ISUDP need to be established in the project/site-specific ESMPs to ensure the conservation of water resources;
  - Management of construction wastewater, spill control mechanisms, and treatment of effluent will be required to ensure the protection of water resources;
  - Rehabilitate/protect water catchment areas;

- Undertake community awareness-raising on water conservation;
- Install piped water supply system in the Nachu area; and
- Upgrade the irrigation systems in the Sub-County.
  
- **Energy**
  - Establish a community-based system to safeguard installed streetlights;
  - Promote the use of bio-gas amongst farmers;
  - Promote the use of solar energy in residences and commercial and institutional establishments; and
  - Institute energy conservation measures in proposed developments while at the same time taking advantage of the renewable energy opportunities that the site and proposed developments provide, including solar energy and green buildings.
  
- **ICT**
  - Encourage increased private sector investments in ICT; and
  - Facilitate the coordination of agencies responsible for road maintenance and construction activities with the ICT service providers.
  
- **Wastewater**
  - Installation of public sewerage system; and
  - Undertake community awareness-raising on safe sanitation practices.
  
- **Storm drainage**
  - Upgrade the drainage systems in the Sub-County.
  
- **Solid waste management**
  - Raise the awareness of the population on appropriate solid waste management practices;
  - Promote the practice of the 4Rs (reduce, re-use, recycle, and recover);
  - Encourage the entry of private enterprises and NGOs to increase efficiency in garbage collection; and
  - Establish adequate waste management measures to mitigate dumping and disposal both on-site and off-site to prevent environmental pollution, interfering with aesthetics and lead to the creation of breeding grounds for vermin.

## 15.6 Detailed Economic Activities Strategies

### 15.6.1 Economy

#### Goals:

- To achieve a vibrant, resilient, highly productive and diverse economy to unlock the potential of Kikuyu.

**Objectives:**

- To facilitate economic growth within Kikuyu;
- To ensure food security;
- To create more employment opportunities; and
- To create an equitable and inclusive business environment

**Strategies:**

- **Agriculture**
  - Establish policies and regulations to protect important agricultural lands;
  - Improve agricultural support infrastructures such as farm-to-market roads and irrigation systems; and
  - Promote sustainable agriculture practices such as crop rotation, green manure, composting, and biological pest control.
- **Jua kali and small-scale traders**
  - Social inclusion in business planning by including hawkers and other small-scale business operators to cushion them from the uncompetitive business environment;
  - Training on business operations;
  - Affordable credit options;
  - Provide sheds and ambient operating environment; and
  - Participatory engagement to reduce harassment and exclusion.
- **Industry**
  - Promote agro-processing to provide value-added to agricultural products;
  - Increase public investments in research and development, post-harvest infrastructure, and overseas markets;
  - Undertake studies to provide tax incentives to preferred agro-industrial enterprises;
  - Encourage investments in logistics infrastructure; and
  - Study the feasibility of establishing a sub-regional wholesale market for agricultural and agro-industrial products.

**15.6.2 Urban and Rural Land Development****Goal:**

- To ensure the reduction of disparities between the core (urban nodes) and the periphery (rural areas).

**Objectives:**

- To promote economic stimulation in rural areas;
- To ensure proper interlinkages between urban and rural areas;
- To promote agriculture in the rural areas; and
- To strengthen the land administration and management system.

**Strategies:**

- Create more channels of mutual interaction between urban and rural areas. These may include functional and physical linkages;
- Control the level of urbanisation into rural areas. This will go a long way in preserving agricultural land that is under so much pressure from urbanisation;
- Undertake capacity building of the County staff and town boards to enhance their competencies in surveying, mapping, valuation, planning, and in implementing regulations and laws;
- Include a private registered physical planner in the Land Control Boards to provide professional support in land planning matters;
- Organise community-planning clinics to create awareness to the public on the importance of planning;
- Map out all land parcels in the Kikuyu Urban Area with their attributes clearly spelt out. The issues or attributes that will need to be highlighted include ownership details (including where there are disputes – details on the disputes), sizes, use and tenure amongst others. This will be useful in partly enhancing the revenue for the county and developing an appropriate response to land invasions in the Kikuyu Urban Area
- Come up with a one-stop-shop for all land transactions. This will reduce the number of departments/personnel handling an application hence hasten the process;
- Digitise land registries to enhance effectiveness, monitor land transactions and reduce the loss of revenue; and
- Land banking due to the scarcity of public land and increasing prices of land. The County Government in consultation with the national government shall consider acquiring land for future public projects. The land so acquired should be protected from allocation to private individuals by successive County and/or National Governments.

## 15.7 Detailed Revenue Enhancement Strategy

The Kikuyu ISUDP proposes several strategic measures to enhance and stabilise revenue collection at both the County and Kikuyu Urban Area level. These measures will help the County run sustainably. Below are the measures, the County can implement to increase internal revenue collection.

- Automation:** This means making it possible for the public to honour their financial obligations to the County via electronic means and online platforms. Examples include mobile applications, web-based applications and Unstructured Supplementary Service Data (USSD). Currently, Kiambu County has rolled out USSD code \*419# for parking, quarrying, markets, livestock and

CESS. The county has also made it possible to pay for building development application through the bank or their respective agents. The Physical Planning Department has also embraced automation through the introduction of electronic development application through Kiambu -E DAM. This has resulted in an increase in the number of development application done within the County. However, there is a need to expand this to other departments for example health. This will increase efficiency and minimise losses.

- ii. **Incentives:** Incentives are measures that governments can undertake to encourage members of the public to do in order to stimulate greater output. One area that Kiambu County has not fully exploited is the payment of land and property rates. The County can offer incentives to the public to encourage them to comply. Some of the incentives the County can effect include a waiver on penalties imposed on land rate defaulters to encourage them to pay up and discounts to those who comply before a specified period.
- iii. **Enforcement:** The County can enhance revenue collection by ensuring compliance. According to the Kiambu County Budget Review and Outlook Paper (2018), the lack of compliance in building plan approval and land rate payments was identified as a major reason for underperformance in revenue generation. To remedy this, the County can do the following: conducting regular and random checks; impose penalties on defaulters; increase the human and capital capacity for enforcement and outsource to the private sector to undertake the enforcement.
- iv. **Create public awareness:** A good number of the public are not properly sensitised on revenue matters within the County. Some are not aware of their financial obligations to the County Government. There is need to create awareness on the need to honour their financial obligations regularly and in time to the counties. Some of the ways the County can achieve this is by adopting an electronic system e.g. SMS to notify people on impending charges; advertise on media, public forums and churches on the existing revenue streams and financial obligations; and hold regular public forums/barazas to notify people of their fiscal obligations.
- v. **Royalty payments:** These are monies that counties get whenever the National Government or a permitted party exploits natural resources found within the respective county. Normally these are percentages of the net revenues collected upon sale of these resources.
- vi. **Better fiscal management:** This calls for prudent measures to manage the funds that have been collected. These measures can be rolled out at the point of collection, accounting, auditing and allocation to various expenditures. Some of these measures include analyse budgets and expenditure to check on affordability; ensure value for money for goods and services rendered; monitor spending habits by only spending allocated funds for intended and priority purposes; ensuring transparency and tight spending controls; avoiding unnecessary wastage on expenditure; regular and consistent auditing of financial records; reduce the handling of money

by officers by encouraging online payment; encourage compliance by those living or working in the counties to fulfil their financial obligations regularly and in time.

- vii. Introduction of Development levy:** These are fees, which can be imposed on those intending to put up developments. The charges may vary depending on the size, location and type of development. The funds collected can then be channelled to servicing upcoming developments and upgrading of the existing physical infrastructure including roads, sewer trunks, drainage channels and extension of water services.
- viii. Other sources:** Other sources include introducing charges on use of public cemeteries, county parks, and tourist sites. The funds collected can then be channelled to maintaining these facilities.

## 16 INTEGRATION OF STRATEGIC ENVIRONMENTAL AND SOCIAL ASSESSMENT

The preparation of this ISUDP was done together with a Strategic Environmental and Social Assessment (SESA). The purpose of SESA is to integrate environmental and social considerations into policies, plans, and programmes. It involves an evaluation of the environmental and social consequences of a proposed policy, plan or programme in order to ensure that they are fully included and appropriately addressed at the earliest appropriate stage of decision making in line with economic and social considerations. Section 57A of Environment Management and Coordination Act (EMCA) (amendments) 2015, all policies, plans, and programmes for implementation shall subject to Strategic Environmental Assessment.

In this light, this ISUDP has included a SESA on the potential impacts from the strategies, formulate alternatives, and develop mitigation strategies. SESA is complemented by an Environmental and Social Management Framework (ESMF), which establishes the principles, guidelines, and procedures for reducing, mitigating, and/or offsetting potential adverse environmental and social impacts, enhancing positive impacts and opportunities, and otherwise guiding potential investments towards compliance with relevant safeguards.

The SESA shall integrate social and environmental considerations into planning, leading to more sustainability of the expected outcomes of this Plan. Table 16-1 summarises the key social and environmental impacts on various projects identified in the plan.

Table 16-1: Summary of impacts, mitigation measures and interventions

No	Impacts	Sources of Impact	Suggested Mitigation Measures in the SESA	Interventions
1.	Impacts on air quality (emissions expected at construction sites)	<ul style="list-style-type: none"> <li>Industrial uses, chemicals, mineral extractives, improper waste management, automobiles, construction sites, etc.</li> </ul>	<ul style="list-style-type: none"> <li>SESA has indicated that the Environmental and Social Management Plan (ESMP) has provided adequate mitigation measures; and</li> <li>The ISUDP should ensure maintenance and enhancement of green zones to sequester carbon from emissions. Furthermore, the ISUDP can develop an air quality policy that binds developments within the planning area (such as the industrial sector) to control pollution and adhere to air quality regulations.</li> </ul>	<ul style="list-style-type: none"> <li>Continuous monitoring has been identified in the ISUDP implementation plan; and</li> <li>Preparation of Environmental and Social Impact Assessment (ESIA) to be carried out on specific projects.</li> </ul>
2	Noise and vibrations impact on activity sites	<ul style="list-style-type: none"> <li>Excavators, mixers, and delivery trucks.</li> </ul>	<ul style="list-style-type: none"> <li>Land-use planning should encourage the location of noisier activities (such as industrial and commercial uses) near main roads or peripheral areas, and the</li> </ul>	<ul style="list-style-type: none"> <li>The plan recommends the integration of Environmental Impact Assessment to be part of plan approval change of use</li> </ul>

			<p>residential, recreational, educational uses inwards in the more serene areas;</p> <ul style="list-style-type: none"> <li>• Establishment of buffer zones between different land uses will attenuate noise, further reducing the potential impacts; and</li> <li>• Adherence to noise ordinances such as the Environmental Management and Coordination (Noise and Excessive Vibration Pollution Control) Regulations, 2009 and employment of noise attenuation mechanisms for point sources will mitigate the impact.</li> </ul>	<p>approval to ensure compliance; and</p> <ul style="list-style-type: none"> <li>• There is a need for the county to do continuous monitoring to ensure compliance.</li> </ul>
3.	Impact on energy resources	<ul style="list-style-type: none"> <li>• The proposed development and project activities will result in higher demand for energy resources both during the execution of the planned developments and operation phases.</li> </ul>	<ul style="list-style-type: none"> <li>• Institute energy conservation measures in proposed developments while at the same time taking advantage of the renewable energy opportunities that the site and proposed developments provide, including solar energy, green buildings, etc.</li> </ul>	<ul style="list-style-type: none"> <li>• County to promote green and renewable energy;</li> <li>• Building plans to be approved subject to compliance to provision for solar energy; and</li> <li>• Promote green building technologies and designs.</li> </ul>

4.	Impact on soils and geology	<ul style="list-style-type: none"> <li>• Activities such as landscaping, excavation, quarrying, and carting away soil may lead to soil degradation from compaction and soil sealing leading to increased surface runoff and soil erosion; and</li> <li>• Spillage of materials (such as oils, fuel, grease, paints, solvents, curing compounds, adhesives, acids, soil stabilizers and binders etc.) may also lead to soil contamination while the importation of soil in landscaping and fill activities may lead to the introduction of invasive species/noxious weeds and pathogens such as bacteria, fungi and nematodes.</li> </ul>	<ul style="list-style-type: none"> <li>• It is considered that these impacts can be mitigated and should be adequately addressed in ESMPs developed. Impact on soils and geology is expected to be moderate<sup>2</sup>. This is because the planners have taken adequate measures to ensure re-vegetation and management of stormwater in all cleared sites, landscaped areas and farmlands.</li> </ul>	<ul style="list-style-type: none"> <li>• Compel miners and landscapers to ensure revegetation to reduce soil erosion;</li> <li>• The Plan has identified steep slopes as fragile areas and unsuitable for development activities. Care should also be taken in mining in such areas; and</li> <li>• Mining companies to submit compliance certificates to the County.</li> </ul>
5.	Impact on water resources	<ul style="list-style-type: none"> <li>• The development is likely to lead to increased demand on water resources; and</li> <li>• Generation and disposal of wastewater/ effluent from the proposed developments have the potential to cause ground/surface</li> </ul>	<ul style="list-style-type: none"> <li>• Include measures to ensure adequate water supplies for the envisioned developments by the proposed ISUDPs need to be established in the project/site-specific ESMPs to ensure the</li> </ul>	<ul style="list-style-type: none"> <li>• These proposals have been integrated into the water resource and supply strategies.</li> </ul>

		water pollution and health hazards to human and aquatic life.	conservation of water resources; and <ul style="list-style-type: none"> <li>• Management of construction wastewater, spill control mechanisms, and treatment of effluent will be required to ensure the protection of water resources.</li> </ul>	
6	Solid Waste Generation	<ul style="list-style-type: none"> <li>• All proposed developments and land uses will generate a substantial amount of solid and liquid waste. During development phase materials (soil, rocks, vegetation) packaging materials (e.g. paper, polythene, plastic and metallic packaging), reject materials (including damaged bricks, concrete and mortar, plastics), wastewater, used oil among others will be generated.</li> </ul>	<ul style="list-style-type: none"> <li>• Adequate waste management measures are required since dumping/careless disposal both on-site and off-site may cause environmental pollution, interfere with aesthetics and lead to the creation of breeding grounds for vermin.</li> </ul>	<ul style="list-style-type: none"> <li>• Solid waste management strategies have been incorporated into the Plan.</li> </ul>
7.	Impacts of flora	<ul style="list-style-type: none"> <li>• An upsurge in catchment degradation through the clearing of vegetation may lead to loss of economically significant flora and degradation of environmentally important areas;</li> </ul>	<ul style="list-style-type: none"> <li>• Some of the key management strategies include carrying out landscaping of different zones and maintaining the proposed green spaces as per the Plan; and</li> </ul>	<ul style="list-style-type: none"> <li>• This has been identified as a challenge in the situational analysis and provided for in the strategies.</li> </ul>

		<ul style="list-style-type: none"> <li>• Habitat alteration may include fragmentation of forested and other wildlife habitats through bush clearing, disruption of watercourses, the establishment of non-native invasive plant species, creation of barriers to wildlife movement and visual and auditory disturbance due to the presence of machinery, construction workers, associated equipment and development operations; and</li> <li>• Environmental degradation on change of land use from agricultural land to a built environment was identified as a concern by the stakeholders.</li> </ul>	<ul style="list-style-type: none"> <li>• The Plans should also ensure the protection of the riparian environment and establishment of a riparian reserve management plan. Based on the precautionary measures to be put in place, this impact is expected to be moderate.</li> </ul>	
8.	Impacts on fauna	<ul style="list-style-type: none"> <li>• There would be visual and auditory disturbance due to the presence of machinery, construction workers, and associated equipment. There is also the likely loss and fragmentation of wildlife habitats. Some of the natural forests which act as habitat for wildlife are likely</li> </ul>	<ul style="list-style-type: none"> <li>• A wildlife management plan can be developed in collaboration with the Kenya Wildlife Service (KWS) to determine the carrying capacity of the conservation area, translocations and/or introduction of any new wildlife species. Since the ISUDP has recommended</li> </ul>	<ul style="list-style-type: none"> <li>• Collaboration between the County Government, KWS, and KFS in management of areas with flora and fauna.</li> </ul>

		to be cleared to pave way for the proposed development. This will result in habitat loss and fragmentation. Changes that may alter the existing natural conditions are known to impact negatively on wildlife.	preservation of areas ecosystems, this impact will be moderate.	
9.	Impacts on the socio-economic environment	<ul style="list-style-type: none"> <li>• Weak inclusion of hawkers and small scale business operators in the local economy.</li> </ul>	<ul style="list-style-type: none"> <li>• Social inclusion in business planning by including hawkers and other small-scale business operators to cushion them from the uncompetitive business environment.</li> </ul>	<ul style="list-style-type: none"> <li>• The ISUDP has identified the need to engage with the business operators to increase their participation in the local economic activities.</li> </ul>

Source: Kiambu SESA Report 2020



REPUBLIC OF KENYA



COUNTY GOVERNMENT OF KIAMBU

## Part IV

# Implementation, Monitoring, Evaluation and Reporting

## 17 PLAN IMPLEMENTATION AND CAPITAL INVESTMENT

### 17.1 Introduction

The planning approach under devolved governance provides counties with the statutory duty with a considerably widened scope running through both plan-making and implementation. It establishes structures and networks that influence implementation and investment strategies.

The plan outlines the conforming functions of authorities in the County across all sectors. It provides opportunities for promoting and improving the economic, social and environmental well-being of the counties to the achievement of the sustainable development in Kenya.

Overall, spatial planning under County governance institutional context is a tool for coordinating spatial equity and integrating balanced redistribution of resources through an explicit and approved policy framework.

### 17.2 Role of the County Planning Unit (CPU)

The County Planning Unit (CPU) as provided in the County Government Act, 2012, clause 105 has the strategic role and duty of integrating and coordinating all County sectors and provide a degree of certainty and consistency across the entire planning and implementation cycles. However, this unit is rarely functional in most Counties. For the successful implementation of this Plan, this unit needs to be strengthened to play this useful role.

The CPU is headed by the County Director of Physical and Land Use Planning. This is to enable all sectors to be informed by the spatial framework as reflected in the ISUDPs amongst other spatial plans. Figure 17-1 provides a detailed representation of the role of the CPU from an institutional and governance framework in line with their power relations.

Under this Plan, the role of the CPU will include coordinating the implementation and monitoring. The CPU will ensure that the processes, mandates, and implementation and monitoring are well coordinated. In carrying out their role, the CPU will use the Results-Based Management (RBM) system, in order to compliance and timely delivery of the programmes and projects. The CPU will ensure that the proposed programme and project execution cycles are broken into 5-year County Integrated Development Plans (CIDPs) and further cascaded into Annual Action Plans, that feed into individual performance targets and deliverables.

### 17.3 Plan Implementation at Decentralised Units

Under Part VI Section 48 of the County Governments Act, 2012 on Decentralised Units, No.13 of 2011, each County Government shall be decentralised to urban areas and cities (City or Urban Area) established in accordance with the Urban Areas and Cities Act, 2011; sub-counties equivalent to the Constituencies and Wards within the county established under Article 89 of the Constitution of Kenya and Section 26; as well as villages as outlined in the County Governments Act. The objective of this is to transfer sovereign authority for decision-making, resource allocation and management to quasi-autonomous units.

The Executive and Legislative arms of the County Government have complementary roles in executing the recommendations in the County Plans. Some functions handled by the National Government are translated into the County planning and implementation framework through the County Inter-Governmental Forum provided for in Section 54 of the County Governments Act, that is chaired by the County Governor.

As the head of the County Government, the Governor occupies the pivotal role of executive authority through the County Executive Committee and as the symbol of political sovereignty in the County Assembly for the execution of County functions and oversight respectively. Both arms of the government must operate within established processes and deploy the tools of performance appraisal. The implementation mechanisms should be sufficiently flexible to adapt to rapid change without adverse impacts.

## 17.4 Priority Programmes Framework

### 17.4.1 Core Pillars of Framework

The CPU, as per the County Governments Act 105(2), should set into motion the translation of 'abstract concepts' to 'real development' through an implementation plan with clear outcomes, provisions for monitoring and evaluation and clear reporting mechanisms. Figure 17-1 illustrates the core pillar and the three branches that make up this fundamental plan implementation framework:

- The core pillar is the internal governance mechanism through capacity building that ensures better inter-and intra-sector engagement so that public, private and third sector service providers can work together for optimum solutions;
- Premised to the core pillar are three branches defining the aligned programmes that address the different needs of different people and places informed by the plan; and
- Each branch has specific projects and services that ensure public investment is made at the relevant places and services where most needed.

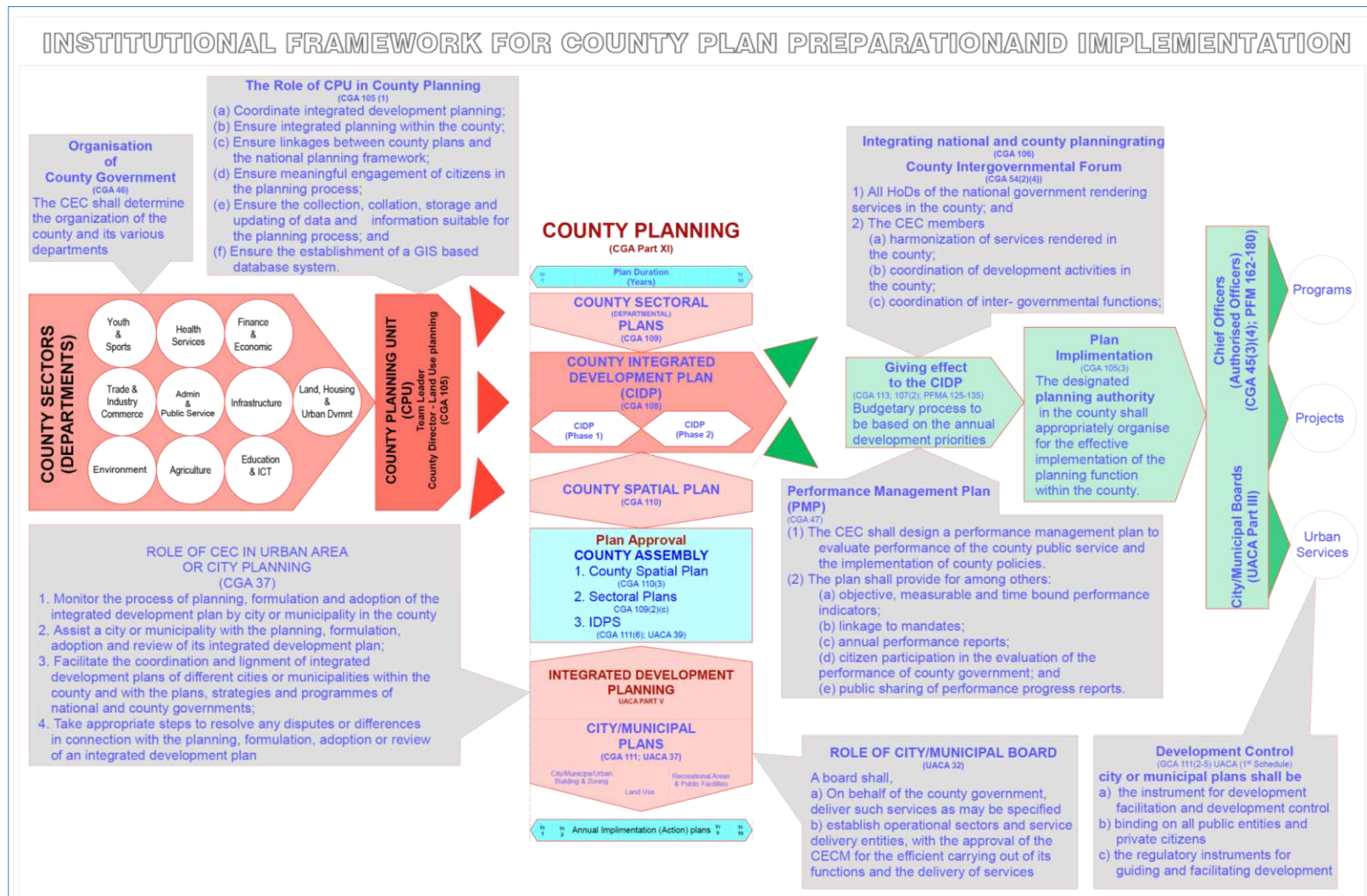


Figure 17-1: Framework for Plan Preparation and Implementation

Source: VisionRI

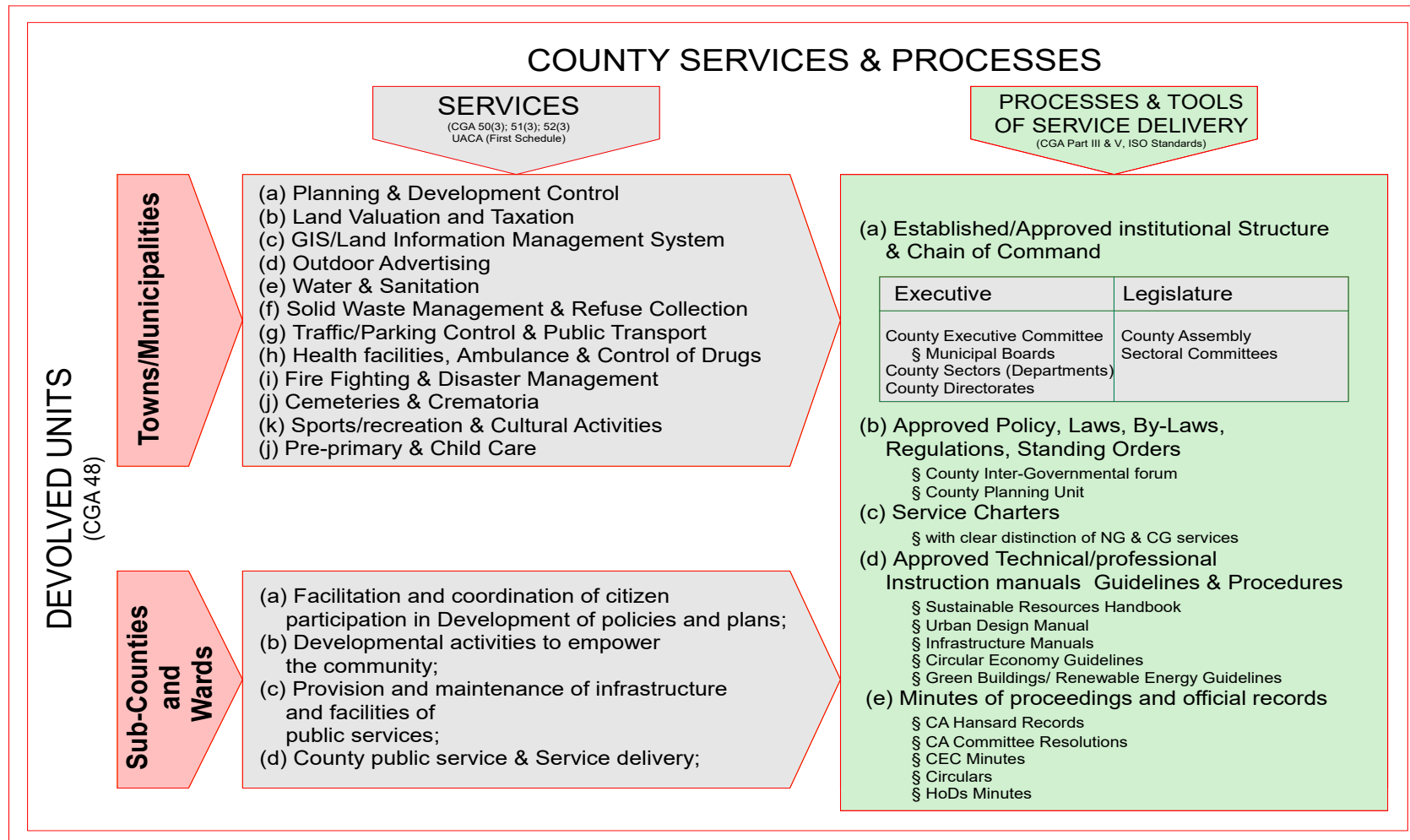
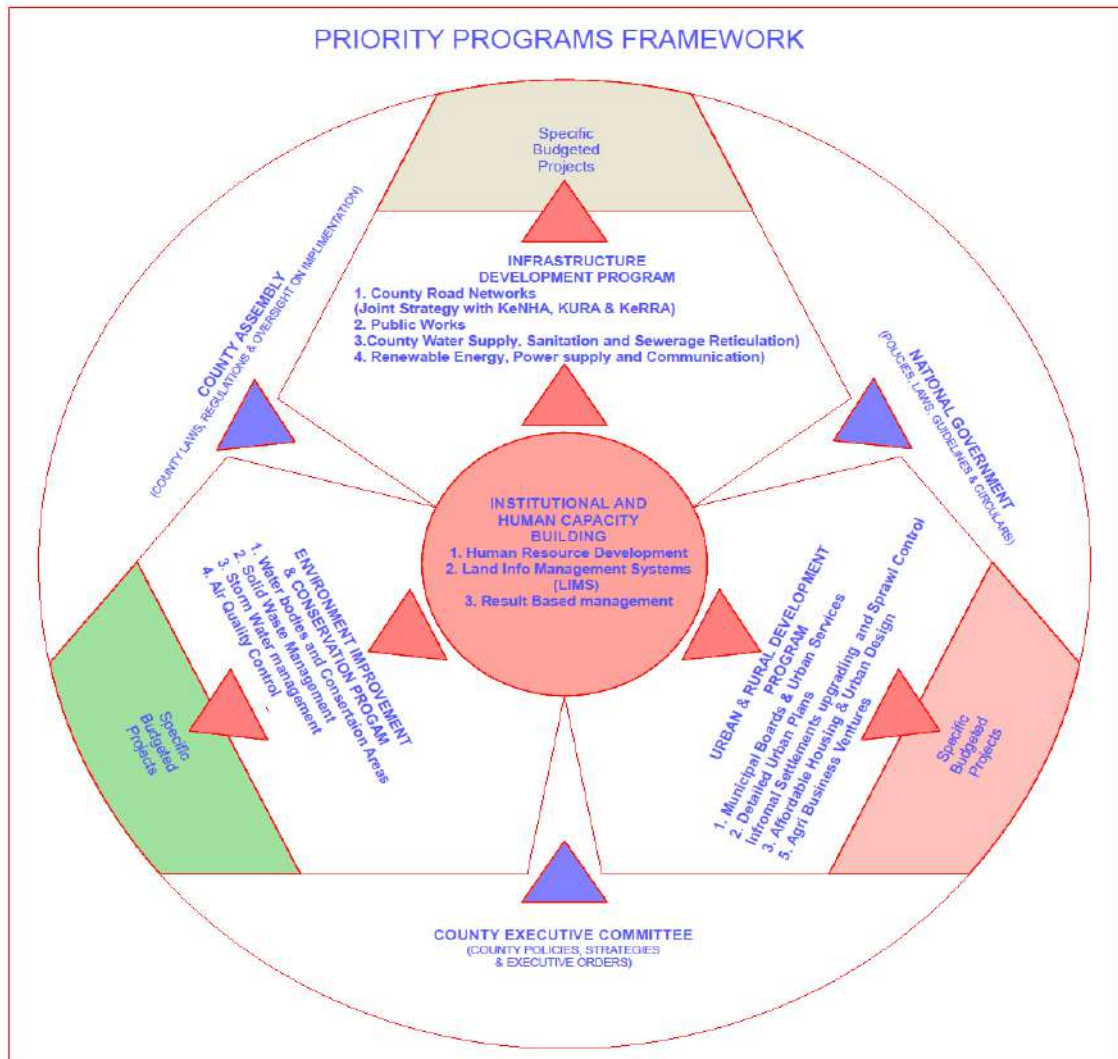


Figure 17-2: County Services & Processes

Source: VisionRI



**Figure 17-3: Priority Program & Projects Framework**

**Source: VisionRI**

#### 17.4.2 17.4.2 Institutional and Human Resource Capacity Building

This will require structuring under the RBM guidelines, recruiting, training and retaining professionals in all technical and managerial skills capable of setting up and running ICT systems, including a land information management system, exercise a clear chain of command and reporting methods and active stakeholder engagement, partnerships and feedback.

#### 17.4.3 17.4.3 Human Resource Framework

The County from the Joint Capacity Assessment and Rationalisation Report of 2015 came up with a human resource framework for its Legislative and Executive arms. The executive comprises ten ministers who are in charge of various County departments.

The organogram below shows the proposed organisational structure both at the macrostructure and the departmental structure.

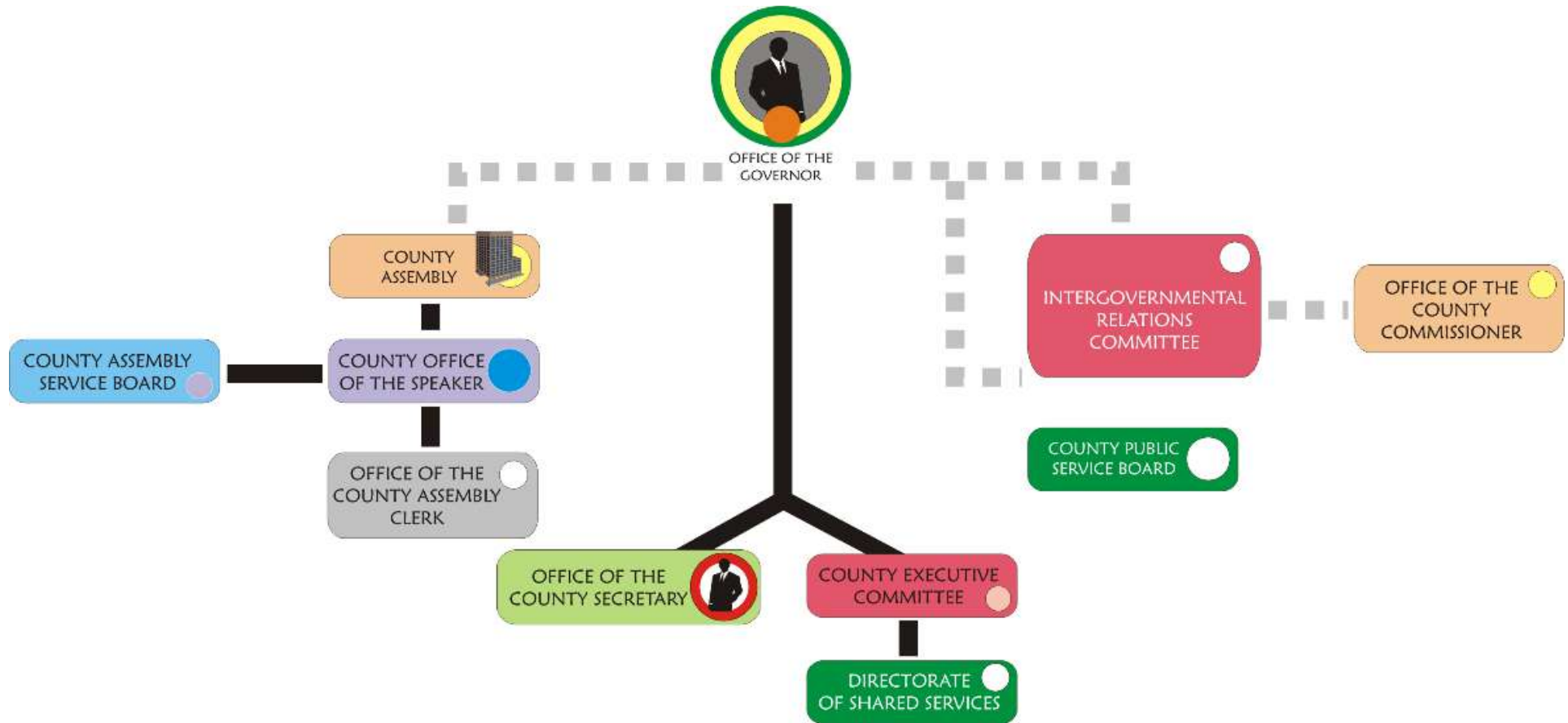


Figure 17-4: Human Resource Framework for Kiambu County's Housing lands and physical planning Ministry

Source: Kiambu County Joint Capacity Assessment and Rationalization Report of 2015

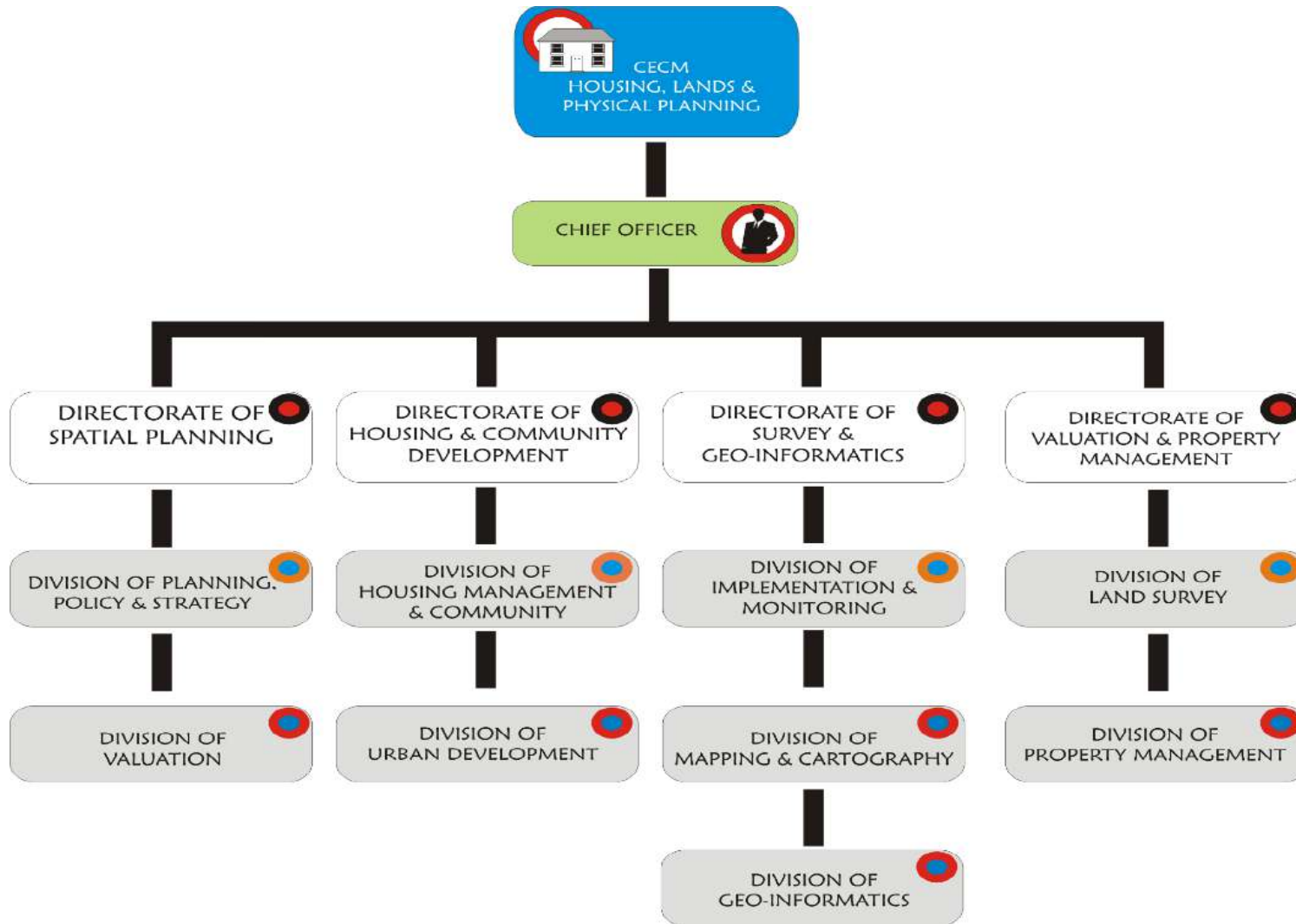


Figure 17-5: Human Resource Framework for Kiambu County’s Housing lands and physical planning Ministry

Source: Kiambu County Joint Capacity Assessment and Rationalisation Report of 2015

The Report also proposed the optimal staffing level which will ensure that no department is understaffed.

#### 17.4.4 Public/Community Participation Framework

This framework is underpinned by Part VIII on Citizen Participation of the County Governments Act No.17 of 2012 and, The Kiambu County Citizen Petition and Participation No. 9 of 2016. The two Acts generally highlight the principles of the citizens' participation in the counties.

Public participation mechanisms have been spelt out in this ISUDP, Mechanisms of Citizen Participation in accordance with the County Governments Act 2012 Sections 97 and 115.

## 17.5 Quick Win Projects

Table 17-2 illustrates interventions that could be immediately be undertaken in Kikuyu:

**Table 17-1: Quick Win Projects and Strategies**

Sector	Intervention	Strategy	Timeline
Environment & Natural Resources	Focus on Swamps including nyakumu	Protection of Ondiri and Nyakumu Swamps as environmentally sensitive areas.	ST
		Eviction of private encroachment surrounding the Ondiri and Nyakumu swamps.	
		Establishment of appropriate green buffers to protect natural greenery around these environmentally sensitive areas.	
		Enforcement of appropriate and related regulations regarding riparian reserves.	
		Establishment of conservation centres and sites (Ondiri and Nyakumu) to demonstrate sustainable natural resource management.	
		Encourage eco-friendly tourism activities and initiatives at the conservation centres.	
Commerce and Economy	Boost the local economy of Kikuyu Urban Area	Focus on the agricultural sector.	MT
		Encourage growth of agriculture value addition cottage industries e.g. milk, eggs, meat, etc.	
		Promote modern agricultural farming techniques e.g. green housing - with links	

		to appropriate markets locally and internationally.	
		Improve transportation links across agriculturally productive regions and the hinterlands in order to grow the agricultural markets.	
		Encourage growth of Small and Medium Enterprises (SMEs) by creating a conducive business environment - reduction of entrepreneurship red tape.	
Kikuyu CBD Redevelopment	Improvement of Kikuyu's Urban Design	Application of TOD principles - vehicle use management; quality public transport (BRT, public transport); active transport complete with adequate NMT and traffic calming measures; mixed-used development with strict building guidelines; and public spaces and amenities.	MT
		Managing linear growth along the by-passes (Northern and Western) and main A109.	
		Rejuvenate and promote commuter railway in Kikuyu CBD.	
		Develop proper conservation designs for environmentally fragile and conservation areas.	
		Reclaim encroached road reserves and enforce guidelines across the Kikuyu Urban Area roads.	
Solid & Liquid Waste Management	Improve and extend clean water supply across the Sub-County	Enhance liquid and solid waste management systems.	ST
		Provide waste collection and transfer facilities in the Sub-County.	
		Privatise solid waste management across Kiambu County; encourage private Kikuyu Urban Area players.	

Source: VisionRI

Table 17-2: Proposed Budget for CBD and Ondiri Swamp

Project		Cost (Ksh)	Timeline
Kikuyu CBD	New market	300,000,000	ST
	New public bus terminus	25,000,000	ST
	Redevelopment of old market	150,000,000	ST
	Train interchange station sheds	10,000,000	ST
	Post office road; carriageway, street lighting, pedestrian walkways, drainage and landscaping. 500 m long	250,000,000	ST
	Pedestrianisation of adjacent roads 2100 m long.	17,000,000	ST
	Roads upgrade; proposed roads 5.5 km	550,000,000	Short-Term to Medium-Term
	Slip road from southern by-pass	50,000,000	Short-Term
	3 open spaces and landscaping	10,000,000	Short-Term
	Densification of the CBD	Cost to developers	Short-Term to Long-Term
	Total	1,362,000,000	

## 17.6 The Priority Sectoral Programmes and Projects

For ease of implementation, the final out outputs of the Plan are specific projects and urban services based on the specifics thematic and sectoral areas. The projects can be grouped into three broad programme areas:

- **Infrastructure development programme:** Comprising the roads networks, public works, water supply networks and sewerage reticulation and renewable energy, power supply and communication improvement;
- **Urban and rural development programme:** Setting up of municipal board structures, detailed urban plans for towns and market centres to manage urban sprawl, services systems, development control and enforcement, affordable housing and community development services; agricultural extension and agri-business cooperative support to rural-based economic activities; and
- **Environmental improvement and conservation programme:** Water bodies and conservation activities, stormwater drainage and solid waste management and air quality control activities.

Table 17-3: Implementation Schedule for priority programmes and projects in Kikuyu

Sector	Planning Issues	Objectives	Strategy	Projects	Location	Time Frame	Implementation Agency	Actors	Budget
Environment and Natural Resources	Management and improvement of Environment and Natural Resources	Protection of ecologically sensitive areas	Control from the encroachment of the Ondiri swamp private investments.	Fencing off of Ondiri Swamp along its officially defined boundaries.	Ondiri Swamp	ST	Lands & Physical Planning	NEMA Police Environment & Natural Resources Development Partners	5M
			Establishment of appropriate green buffers to protect natural resources in the Sub-County.	Protection and fencing off of 5 ecologically sensitive areas in the Sub-County.	Muguga Forest, Dagoretti Forest, Ondiri Swamp, Nyakumu, Kikuyu Springs	ST	Environment & Natural Resources	NEMA KFS	5M
			Implement SESA recommendations		Sub-County	LT	Environment & Natural Resources	NEMA Development Partners	2M
			Establishment and	Carry out a survey of 8	Sub-County	ST	Lands & Physical Planning	NLC	2M

Sector	Planning Issues	Objectives	Strategy	Projects	Location	Time Frame	Implementation Agency	Actors	Budget
			environmental inventory of all existing natural features across the Sub-County.	natural features across the Sub-County.				Environment & Natural Resources KFS NEMA	
			Sensitisation and awareness creation on environment and conservation efforts.	Reforest three forest areas in Kikuyu Urban Area.	Dagoretti, Bama and Muguga Forest	ST		KFS Development Partners NEMA	10M
			Enforcement of appropriate and related regulations regarding riparian reserves and wayleaves.	Clear and restore riparian areas across water catchments and sources in the Sub-County.	Mbagathi, Nyangara, Mweteta, Nairobi, Gitathuru, Nyakumu, Ondiri and Kikuyu Springs	ST	Water	Environment & Natural Resources NEMA WRA KIWASCO	5M

Sector	Planning Issues	Objectives	Strategy	Projects	Location	Time Frame	Implementation Agency	Actors	Budget
			Manage and control pollution into the environment affecting natural resources e.g. rivers, swamps.	Implement water recovery mechanisms in the rivers in the Sub-County.	Sub-County	MT	Environment & Natural Resources	Water NEMA WRA	40M
			Development and enforcement of requisite laws and regulations on managing environmental pollution e.g. on effluent disposal etc.	Formulate an environment protection law emphasis on sustainably managing the water catchment areas for the Sub-County.	Sub-County	MT	Environment & Natural Resources	NEMA WRA	5M
		Sustainable exploitation of natural resources	Establishment of conservation centres and sites (Ondiri	Intervention to conserve Ondiri and Nyakumu Swamps as	Ondiri & Nyakumu	MT	Environment & Natural Resources	ERC NEMA Trade, Tourism,	7M

Sector	Planning Issues	Objectives	Strategy	Projects	Location	Time Frame	Implementation Agency	Actors	Budget
			and Nyakumu) to demonstrate sustainable natural resource management.	conservation areas.				Industries & Enterprise Development	
			Promote agroforestry (in Nachu) and agro-tourism across the Sub-County.	Delineate areas for agroforestry in Nachu and Gacuthi.	Nachu	MT	Environment & Natural Resources	NLC KFS NEMA	8.5M
			Promote water harvesting in schools, homes and public facilities in Kikuyu.	Construction and implementation of water harvesting facilities in 20 primary and secondary schools in the Sub-County.	Sub-County	Continu ous	Environment & Natural Resources	WRA Water NEMA KIWASCO	34M

Sector	Planning Issues	Objectives	Strategy	Projects	Location	Time Frame	Implementation Agency	Actors	Budget
	Air and noise quality	Reduction of air and noise pollution in urban areas, quarrying and construction sites	Enforce NEMA regulations on air quality and noise levels	Conduct periodic measurements	Urban areas Market centres Public transport Quarries Construction sites	Continuous	Public Health Dept	Private sector NEMA	10M
Social Infrastructure	Social Infrastructure	Improve access to social infrastructure	Encourage private investment towards the provision of health and education facilities.		Sub-County	ST	Health	Development Agencies	2M
		Housing	Enforcement of the building and construction code and regulations across the Sub-County.		Sub-County	ST	Lands & Physical Planning	NEMA	2M

Sector	Planning Issues	Objectives	Strategy	Projects	Location	Time Frame	Implementation Agency	Actors	Budget
		Education	Construct more schools in Nachu ward.	Construction of 20 classrooms and 10 dormitories in primary and secondary schools in the Sub-County.	Nachu	MT	Education	Development Partners National Government	150M
		Health service provision	Construct health facilities in Nachu, Muguga, Kamangu.	Construction of 6 public health facilities (wards and medical units) in Nachu and Kamangu.	Nachu, Kamangu, Muguga	MT	Health	Lands & Physical Planning	100M
			Build a bigger health facility in Nachu and equip it to be able to attend to the residents of Nachu.	Upgrade Lusigetti Hospital, Gikambura H. Centre and Nachu Dispensary to Level 3 centres.		MT		Development Partners	500M

Sector	Planning Issues	Objectives	Strategy	Projects	Location	Time Frame	Implementation Agency	Actors	Budget
			Ensure that there is at least a dispensary in each ward.	Construct health facilities in Nachu, Kanyayo, Muguga Jet and Kerwa.		MT			50M
			Increase the number of health workers in Nachu.			ST			
		Land management - Public spaces	Develop an inventory of public land available for the provision of public facilities.		Sub-County	ST	Lands & Physical Planning	NLC	5M
			Construction of recreational facilities in each ward.	Upgrade Kikuyu's playground to a 7000 seat second tier stadium.	Kikuyu	ST	Social Services		15M

Sector	Planning Issues	Objectives	Strategy	Projects	Location	Time Frame	Implementation Agency	Actors	Budget
				Construct three playfields in Kinoo, Karai and Sigona.	Kinoo, Karai, Sigona		Social Services		60M
		Security improvement	Construction of Police Posts to enhance security, especially in Nachu.	Construct two Police Posts in Nachu.	Nachu	MT	Security	Development Partners	22M
			Installation of streetlights in towns, commercial and residential places.	Install street lights to 5 urban centres in the Sub-County.	Nachu, Kanyayo, Kerwa and Muguga Jet	ST	Security	Energy KPLC	20M
	Economy	Improve the agricultural sector	Promote modern agricultural farming techniques.	Set up two agricultural innovation centres in Kikuyu and Sigona.	Kikuyu, Sigona	Continuous	Agriculture, Livestock & Irrigation	Development Partners	60M

Sector	Planning Issues	Objectives	Strategy	Projects	Location	Time Frame	Implementation Agency	Actors	Budget
Economy			Improve rural roads to facilitate the movement of farm produce to markets	(See road improvement proposals).	Sub-County	Continuous		Academic Institutions	120M
			Promote the adoption of drought-resistant crops.	Propagate 300 acres of drought-resistant legumes in Nachu.	Sub-County	Continuous			60M
			Promote organic fertilisers (composting).	Establish composting and fortification centres in Kikuyu and Kinoo.	Kikuyu and Kinoo	Continuous			25M
		Create a conducive business environment in order to	Encourage the growth of Small and Medium Enterprises (SMEs) by	Simplify the process of acquiring approvals for commercial	County and Sub-County	ST			3M

Sector	Planning Issues	Objectives	Strategy	Projects	Location	Time Frame	Implementation Agency	Actors	Budget
		promote a diverse economy	creating a conducive business environment.	developments within areas zoned for commercial.					
			Encourage innovation into new frontiers.		e.g. Nachu	Continuous			
		Promote the growth of industries	Create new zones where industries can set up.			MT			
			Formulate favourable policies to incubate and help the growth of businesses.			ST		Development Partners	
	Urban & Rural Development	Enhance urban and rural interaction	Improve conditions of feeder roads that drain into Dagoreti road.	(See road improvement proposals).	Kikuyu	ST	Road Department	KeRRA	

Sector	Planning Issues	Objectives	Strategy	Projects	Location	Time Frame	Implementation Agency	Actors	Budget
Urban & Rural Development			Establish administrative operations across the Sub-County.	Construct County Admin offices in 4 Centres in the Sub-County.	Kikuyu CBD	LT	County Government		60M
		Control urbanization	Strictly enforce zoning guidelines so as to protect rural areas.		Kiambu County and Kikuyu Urban Area	ST	Physical Planning Department	Dept. of Agriculture	
			Review the fees charged for change of user in farming zones with a view to protecting agricultural land.			MT	Physical Planning Dept.	Land control Board	
	Urban Design	Promote public spaces	Promote NMT including cycle paths.	Construct 1 Km of NMT in Kikuyu Town.	Urban centres across the Sub-County	MT	Roads Dept	Physical Planning Dept.	33M

Sector	Planning Issues	Objectives	Strategy	Projects	Location	Time Frame	Implementation Agency	Actors	Budget
Urban Design			Develop proper conservation designs for environmental conservation areas.	Install environment-friendly disposal bins in all urban centres across the Sub-County.		MT	Environment Dept.	Physical Planning	20M
		Sustainable developments	Institute controlled urbanisation by densification of residential districts.		County and Sub-County	Continuous			
	Transportation	Promote multi-modal transportation modes	Promote light rail especially in Kikuyu CBD.		County and Sub-County	MT	Roads Dept.		
Transportation			Develop strategic stations where different transport modes intersect.	Construction of a major transport terminus in Kikuyu.		MT	Roads Dept.	KeRRA, KURA and KeNHA	53M

Sector	Planning Issues	Objectives	Strategy	Projects	Location	Time Frame	Implementation Agency	Actors	Budget
			Promote BRT to and around the Sub-County.			MT	Roads Road Dept.	KeRRA, KURA, KeNHA	
			Promote NMT in urban areas in the Sub-County.	Construct an additional two km NMT in Kikuyu and Kinoo centres.		MT	Roads Road Dept.	KeRRA, KURA, KeNHA	20M
		Road and transportation improvement across the Sub-County	Provision of drainage channels, and pedestrian paths on roads.	Construction of 3 km stormwater drains in Kikuyu and Kinoo.		MT	Roads Dept.	Roads Dept, KeRRA, KURA, KeNHA	15M
			Phase-out 6-metre roads for at least a road reserve of 9 metres.			ST	Physical Planning and Roads Depts.		
			Reclaim encroached road reserves.			ST			

Sector	Planning Issues	Objectives	Strategy	Projects	Location	Time Frame	Implementation Agency	Actors	Budget
	Housing and Informal Settlements Upgrading	Improve housing conditions	Promote rainwater harvesting to supplement tapped water.	Install water harvesting facilities in all County Admin offices across the Kikuyu Urban Area	Kikuyu, Kinoo	Continuous	LHP&UD		2M
Housing and Informal Settlements Upgrading			Improve housing conditions in Nachu and informal settlements of Kiamburi and Muthiga.	Construct 50 housing units in three centres.	Nachu, Kiamburi, Muthiga	MT	As above	KISIP	125M
			Innovate new technology for the construction of affordable housing.			MT	As above	Private sector	
			Encourage private			Continuous	As above	Private	

Sector	Planning Issues	Objectives	Strategy	Projects	Location	Time Frame	Implementation Agency	Actors	Budget
			developers to build more to increase housing stock.						
		Managing Urban Sprawl	Encourage and permit densification of residential districts to reduce urban sprawl.		County and Sub-County	Continuous	LHP&UD		
			Strictly enforce zoning guidelines to curb urban sprawl.		County and Sub-County	Continuous			
		Informal settlements	Provision of subsidised services e.g. water to informal settlements to improve	Upgrading of at least half of Kiamburi Informal settlement into permanent housing units.	Kiamburi	Continuous			200M

Sector	Planning Issues	Objectives	Strategy	Projects	Location	Time Frame	Implementation Agency	Actors	Budget
			livelihoods and increase access to services.						
			Encourage the use of cheaper materials to create decent housing.			Continuous			
			Widen roads in informal settlements to allow delivery of services to informal settlements and to also enable authorities to respond to emergencies.	Expand 500 m of the road in Kiamburi and Muthiga settlements.	Kiamburi, Muthiga	Continuous			13M
	Physical Infrastructure Strategies	Improve access to water	Provision of tapped water in Nachu.	Extension of 5km piped water (complete with water	Nachu	MT	Water Dept.		20M

Sector	Planning Issues	Objectives	Strategy	Projects	Location	Time Frame	Implementation Agency	Actors	Budget
				conservation measures) to residents of Nachu.					
Physical Infrastructure Strategies									
			Subsidise the cost of water to enable more residents to get connected.		Sub-County	ST			
		Enhance waste management	The County Government to enhance waste collection within the town.	Provision of 3 strategically placed additional waste skips in four urban centres.	Kikuyu, Magana, Kinoo and Gikambura	Continuous	Environment and Natural resources.		50M
			Encourage the entry of private companies to collect garbage.			ST			

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Sector	Planning Issues	Objectives	Strategy	Projects	Location	Time Frame	Implementation Agency	Actors	Budget
			Regular collection of waste in Kikuyu.		Kikuyu	ST			

Source: VisionRI

## 17.7 Proposed Capital Investment Financing

The proposed programmes and projects will be financed using the following approaches:

- Preparation of detailed sectoral plans for each programme and secure budgetary allocation through the CIDP process;
- Financing by National Government and agencies in major infrastructure such as roads, energy, water supply and sanitation;
- Factor specific projects within the bilateral funding programmes such as Kenya Urban Support Programme (KUSP), Kenya Informal Settlement Improvement Programme (KISIP) and NaMSIP; and
- Direct private sector investment and partnership with the County in housing, education, industrial, health, etc.

## 18 MONITORING, EVALUATION AND REPORTING

### 18.1 Procedure for Monitoring and Evaluation

The purpose of monitoring and evaluation is to assess the effectiveness of the implementation of the Plan. A fully functional M&E system is important for the implementation and review of the plan to ensure it delivers the intended results. An effective M&E requires inter-agency/departmental coordination to ensure inclusiveness, which reflects the multi-spectral framework of the Plan.

CoK 2010 requires all county governments to plan and budget for the delivery of goods and services under their mandate. The Constitution requires counties to prepare the following plans to guide expenditure and investment programmes within their areas. These include:

- County Integrated Development Plan (CIDP);
- County Sectoral Plans;
- County Performance Management Plans;
- County Spatial Plan; and
- Cities and urban area plans.

Annual budgets are based on the approved plans by the respective county assemblies. Related guidelines are mainly directed to the monitoring and implementation of programmes and projects outline the CIDP, Constituency Development Fund (CDF) and other devolved funds as well as priority government and private sector priority investment programmes being undertaken within the county.<sup>13</sup>

It verifies whether the activities of each county's priority project or programme are happening according to planning timelines and targets presented in the County Integrated Development Plan (CIDP); and whether resources are being used in a correct and efficient manner.

On matters of physical and land use planning, the CoK (2010) requires the Department of Physical Planning and the National Land Commission (NLC) to work in concert. The National Spatial Plan has spelt out the need to develop performance indicators to facilitate the monitoring of the plan.<sup>14</sup>

NLC has developed the Urban Land Use Planning Monitoring and Oversight Guidelines to "provide a lawful basis for engagement between the County Governments as planning authorities responsible for preparing, approving, implementing and reviewing Urban Land Use Plans and the National Land Commission as a monitoring and oversight agency over land-use planning."<sup>15</sup>

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<sup>13</sup> Kenya's County Integrated Monitoring and Evaluation System (CIMES 2016)

<sup>14</sup> Government of Kenya, 2016:254

<sup>15</sup> Republic of Kenya (2016), Urban Land Use Planning: Monitoring and Oversight Guidelines - National Land Commission

The guidelines provide for:

- Systematic, purposeful and regular checking of the plans;
- Documenting and providing feedback on land use planning activities undertaken by planning authorities;
- Ensure the quality of the planning outputs and outcomes;
- Adherence to the Constitution, relevant policies, legislation, planning standards and guidelines;
- Take remedial actions to mitigate inappropriate practices;
- Hold the planning authorities accountable for their actions so as to enhance performance; and
- Guide and systematise the practice of preparing, implementing and reviewing Urban Land Use Plans in the country.

## 18.2 Existing M&E Situation

The M&E system in the Urban Land Use Planning recognises the present challenges in the Sub-County, which include:

- Lack of an effective M&E system – currently, the system is mainly used on how funds are used and not in programme/project planning;
- M&E activities at County level are limited due to lack of capacity and backstopping role from NLC, National Physical Planning Department;
- Lack of clear indicators and tools to guide tracking of changes at all levels;
- Most sectoral (infrastructure, social and economic) plans are not synchronised with physical development plans;
- Most planning activities are on development control with little emphasis on plan preparation and review, leading to developments occurring in unplanned areas;
- Low appreciation of physical and land use planning by policymakers; and
- Inadequate resources availed for land use planning at the county level.

## 18.3 Suggested M&E Proposals

An effective physical and land use planning M&E system should be domiciled within:

- National policies such as Vision 2030, National Land Use Policy, Urban Policy, Housing policy etc.;
- County planning and development framework as provided in the County Governments Act, 2012, UACA, Physical Planning and Land Use Act 2019 etc.;
- Public participation with an emphasis on grassroots aspirations; and
- Effective partnerships to ensure inclusivity, resource mobilisation and timely delivery of programmes and projects.

Table 18-1: Physical Planning Indicators/Outcomes

Physical planning indicators	Means of verification
Targets Indicators	
Legal and Policy Compliance	Compliance with ISUDP and Urban Dev. Sector with Vision 2030;
	Compliance with Urban Agenda and National Spatial Plan;
	Compliance with relevant legislation;
	Compliance with relevant policies;
	Compliance with NLC guidelines; and
	Compliance with other national agenda.
Physical Planning process	% of entities using the ISUDP;
	% of applications in compliance with the ISUDP;
	% of planning areas defined as problem areas;
	Number of reviews of the ISUDP;
	Number of projects/initiatives completed per year;
	% of functional planning committees in accordance with the Act; and
	Integration with other plans.
Institutional framework	Effectiveness of Municipal Boards in ISUDP implementation;
	Effectiveness of the relationship between the Municipal Board and County;
	The functionality of the Physical Planning Liaison Committee;
	Technical staff capacity of the Kikuyu Urban Area
	Technical equipment capacity at the Kikuyu Urban Area and
	Number of committees constituted as per legal requirements.
Community participation	Level of resident consultation on physical and land use planning issues;
	Number of neighbourhood associations engaged in planning issues;
	Number of planning clinics on awareness held per year;
	Responses on public notices on plans and planning intention advertisements; and
	% of participation in planning forums.
Monitoring and evaluation	Number of departments/units reporting well functional M&E;
	Number of annual physical planning needs assessments carried out;
	Number of staff trained and applying M&E tools; and
	Availability of M&E tools.
Resource Mobilization	Number of partners/agencies supporting ISUDP implementation; and
	Revenue generated by physical planning activities.

Source: VisionRI

## **18.4 Institutionalisation of M & E**

As described above, the role of M&E will be anchored within the CPU whose core mandate as stipulated in Clause 105 of the County Governments Act is to integrate and coordinate all the County sectors in planning and implementation of the various plans.

The County Director of Physical/Land Use Planning who is a member of the CPU will ensure that the ideals of this Plan are integrated across the County's planning process.

## CONCLUSIONS

Kikuyu's strategic location along major highways and corridors places it at an advantage that it attracts an increasing population either transient or sedentary. Within the NMR, it is considered as a sub-regional centre, providing administrative functions as a Kikuyu Urban Area headquarter complete with good infrastructure and a growing industrial and logistical hub.

The Sub-County's growth is influenced by its proximity to Nairobi, busy transport links (Nairobi - Naivasha Highway, Western by-pass, and the Southern by-pass), and the quickly developing nodes (Ndeiya, Gikambura, Nachu etc.). At the same time, the Mombasa - Uganda Railway line (which played a major role in its establishment), continues to be a major land structure that defines the Sub-County.

As a result, this Plan is a timely tool to be used to contextualise this development. The Plan, therefore, presents the following recommendations:

- **Strengthening the CPU's Capacities:** As earlier mentioned, CPUs have the mandated the role of coordinating all County sectors, without which operations would be inconsistent. For the proposals in the Plan to be successfully implemented, the functionality of the CPU requires rejuvenation.
- **Defining Municipal Boundaries:** While there are clear landmarks that define most of the urban and growth centres in the County, it would be prudent to delineate the Municipal boundaries.
- **New growth centres:** Urban growth is accelerating in most parts of the Kikuyu Urban Area with new centres sprawling uncontrollably. This Plan recommends a review of other centres within the Kikuyu Urban Area that are likely to face this detriment and take appropriate measures to contain this. For example, Nderu, Gikambura, Lusigetti, Kanyayo, Kamangu and Nachu.
- **Strengthening service delivery at the neighbourhood level:** It is becoming clear that in the future, neighbourhood associations will influence the delivery and implementation of future plans. This recognition should drive the requisite strategy to make access easier to the residents in the Sub-County.
- **Development of a transport master plan:** Transportation across the Sub-County, influenced by the rapidly sprawling neighbourhoods and centre, needs to be reviewed. The product of this review will involve the development of a transport master plan that will explore road, rail, NMT and para-transit systems and prepare appropriate measures for the future.
- **Food security investment:** With most agricultural land giving way to more lucrative developments (residential), the Kikuyu Urban Area is faced with the issue that potentially productive lands will be converted causing food scarcity. Appropriate measures need to be put in place to protect agricultural lands.

- **Cohesive plan coordination at all levels:** The implementation of this Plan will require cohesive coordination that aligns with the National, NMR and Kiambu County planning frameworks specifically the County Spatial Plan, CIDP, ISUDPs, IDePs and other sectoral plans and initiatives.
- **Governing by provision:** The relationship between the County and Municipalities is through delegated authority. This will require elaborate governing provisions of delegation to the strengthening of the implementing institutions at both the Kikuyu Urban Area and Urban Area levels. This will streamline the operations and symbiosis of all strategies and deliverables within the ISUDP's timeframe. This includes integrating intra- and inter-regional learning to help in scaling best practices across all NMR municipalities for effective monitoring and evaluation.

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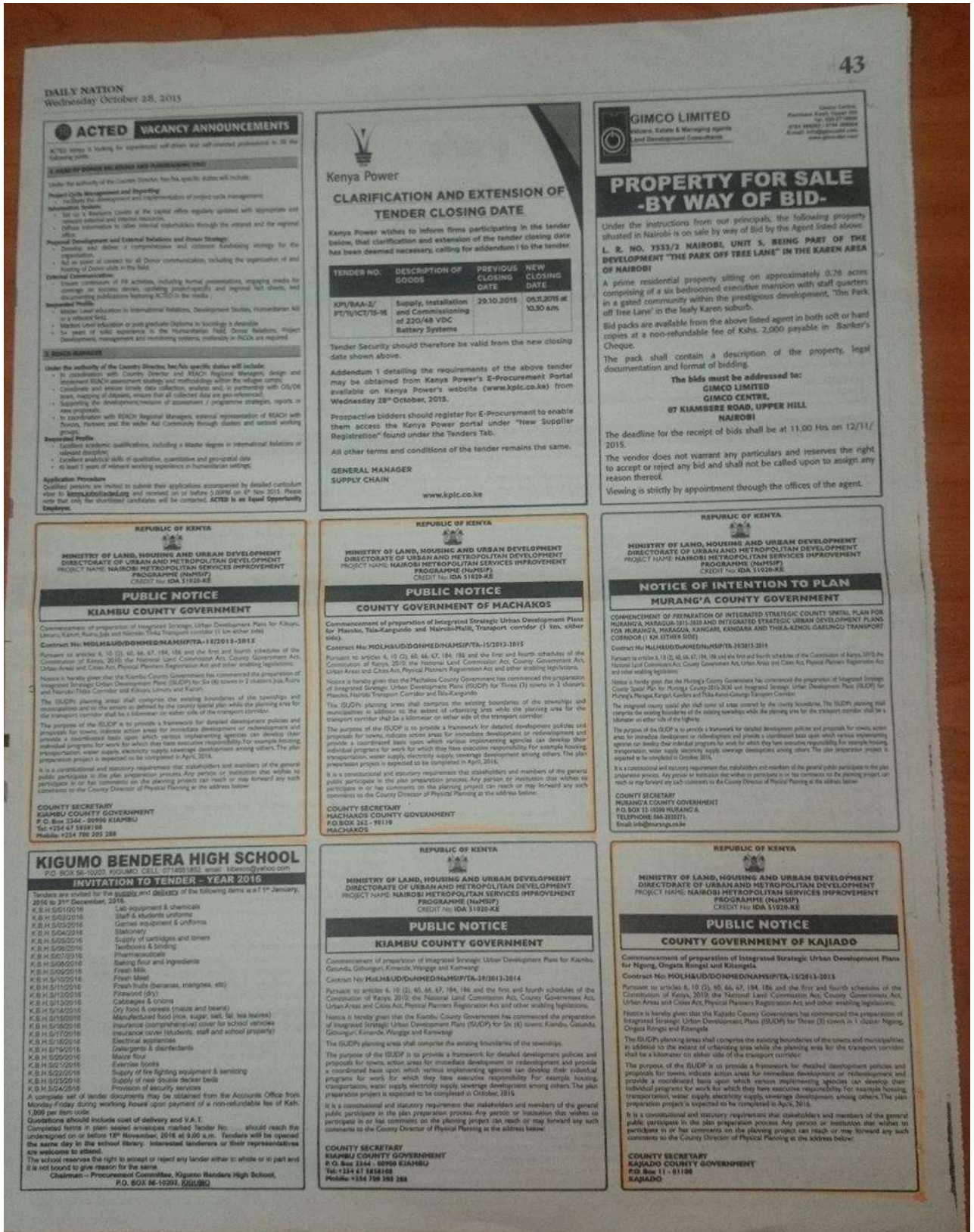
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## Appendices 1.1: Notice of Intention to Plan



## Appendices 1.2: Notice of Completion



REPUBLIC OF KENYA  
State Department for Housing and  
Urban Development



COUNTY GOVERNMENT  
OF KIAMBU

## PHYSICAL AND LAND USE PLANNING ACT, 2019

### NOTICE OF COMPLETION OF DEVELOPMENT PLANS

Names of Developments Plans:-

1. Juja Integrated Strategic Urban Development Plan, JJ/ISUDP/457/2020/01
2. Ruiru Integrated Strategic Urban Development Plan No. RRU/ISUDP/53/2020/01
3. Kikuyu Integrated Strategic Urban Development Plan No. KKY/ISUDP/43/2020/01
4. Limuru Integrated Strategic Urban Development Plan No. LMR/ISUDP/94/2020/01
5. Kiambaa Integrated Strategic Urban Development Plan No. KBA/ISUDP/605/2020/01
6. Nairobi-Thika Transport corridor Integrated Strategic Urban Development Plan No. NTTC/ISUDP/022/2020/01.

**NOTICE** is hereby given that preparation of the above Development Plans was completed on **11<sup>th</sup> September, 2020**.

The Development Plans relate to the Plans situated in Kiambu County.

Copies of the plans as prepared have been deposited for public inspection at the office of **Kiambu County Director of Physical Planning**, located in Red Nova Building, Kiambu Town, and respective Sub county Physical Planning offices of **Juja, Ruiru, Kikuyu, Limuru and Kiambaa Sub-Counties**.

The copies so deposited are available for inspection free of charge by all persons interested at the above-mentioned address between the hours of 0800hrs and 1700hrs.

Any interested person(s) who wishes to make any representation in connection with or objection to the above Development Plans may send such representations in writing to be received by the Kiambu County Director of Physical Planning, P. O. Box 340-00900 Kiambu not later than 14 days from the date of this Notice and any such representation or objection shall state the grounds on which it is made.

Dated the **11<sup>th</sup> day of September, 2020**.

**MUGO KIMANI**  
County Executive Committee Member  
Land, Housing, Physical Planning, Municipal Administration and Urban Development  
KIAMBU COUNTY

### Appendix 1.3: Gazette Notice

3664

THE KENYA GAZETTE

18th September, 2020

NOTICE is given that the preparation of the above Development Plan was on 20th August, 2020 completed.

The Development Plan relates to the land situated in parts of Nairobi City, Machakos and Makeni Counties.

Copies of the Development Plan as prepared have been deposited for public inspection at the offices of Nairobi Metropolitan Service at KICC, 24th floor, Machakos County Government at the Lands and Physical Planning Offices, Machakos Town, opposite County Commissioner's office and Director of Physical Planning, Makeni County, Wote.

The copies so deposited are available for inspection free of charge at the offices of Nairobi Metropolitan Service at KICC, 24th floor, Machakos County Government at the Lands and Physical Planning Offices, Machakos Town, opposite County Commissioner's office and Director of Physical Planning, Makeni County, Wote, between the hours of 0800 to 1700 Monday to Friday.

Any interested person(s) who wishes to make any representation in connection with or objection to the above Development Plan may send such representations or objections in writing to be received by the following offices not later than fourteen (14) days from the date of this Notice and any such representations or objections shall state the ground on which it is made:

Secretary, Lands and Physical Planning,  
Nairobi Metropolitan Service,  
P.O. Box 40530-00100,  
Nairobi.

Director of Physical Planning,  
Machakos County Government,  
P.O. Box 1996-90100,  
Machakos.

Director of Physical Planning,  
Makeni County Government,  
P.O. Box 78-90300,  
Wote.

MR/1324611 AUGUSTINE K. MASINDE,  
National Director of Physical Planning.

GAZETTE NOTICE No. 7095

## THE PHYSICAL AND LAND USE PLANNING ACT

(No. 13 of 2019)

## COMPLETION OF DEVELOPMENT PLANS

PDP No. JJI/ISUDP/457/2020/01 – Juja Integrated Strategic Urban Development Plan.

PDP No. RRU/ISUDP/53/2020/01 – Ruiru Integrated Strategic Urban Development.

PDP No. KKY/ISUDP/43/2020/01 – Kikuyu Integrated Strategic Urban Development.

PDP No. LMR/ISUDP/94/2020/01 – Limuru Integrated Strategic Urban Development.

PDP No. KBA/ISUDP/605/2020/01 – Kiambaa Integrated Strategic Urban Development.

PDP No. NTT/ISUDP/022/2020/01 – Nairobi-Thika Transport Corridor Integrated Strategic Urban Development.

NOTICE is given that preparation of the above Development Plans was on 11th September, 2020 completed.

The Development Plans relate to the Plans situated in Kiambu County.

Copies of the plans as prepared have been deposited for public inspection at the office of Kiambu County Director of Physical Planning, Red Nova Building, Kiambu Town, and respective Sub-county Physical Planning offices, Juja, Ruiru, Kikuyu, Limuru and Kiambaa Sub-Counties.

The copies so deposited are available for inspection free of charge by all persons interested at the above mentioned address between the hours of 0800 and 1700.

Any interested person(s) who wishes to make any representation in connection with or objection to the above Development Plans may send such representations in writing to be received by the Kiambu County Director of Physical Planning, P.O. Box 340-00900 Kiambu not later than 14 days from the date of this Notice and any such representation or objection shall state the grounds on which it is made.

Dated the 11th September, 2020.

MUGO KIMANI,  
CECM,  
Land, Housing, Physical Planning, Municipal Administration  
and Urban Development, Kiambu County.  
MR/1324611

GAZETTE NOTICE No. 7096

THE ENVIRONMENTAL MANAGEMENT AND  
CO-ORDINATION ACT

(No. 8 of 1999)

THE NATIONAL ENVIRONMENT MANAGEMENT  
AUTHORITY

ENVIRONMENTAL IMPACT ASSESSMENT STUDY REPORT  
FOR THE PROPOSED REHABILITATION OF THIKA-NANYUKI  
METRE GAUGE RAILWAY (MGR) AND FOR THE  
CONSTRUCTION OF NEW CHAKA STATION FOR KENYA  
RAILWAYS CORPORATION FROM THIKA TO NANYUKI  
THROUGH KIAMBU, MURANG'A, KIRINYAGA, NYERI,  
LAIKIPIA COUNTIES

## INVITATION OF PUBLIC COMMENTS

PURSUANT to regulation 21 of the Environmental Management and Co-ordination (Impact Assessment and Audit) Regulations, 2003, the National Environment Management Authority (NEMA) has received an Environmental Impact Assessment Study Report for the above proposed project.

The proponent, Kenya Railways Corporation, is proposing rehabilitate the 178Km long Thika Nanyuki Metre Gauge Railway (MGR) and for the Construction of New Chaka Station for Kenya Railways Corporation traversing through Kiambu, Murang'a, Kirinyaga, Nyeri and Laikipia Counties.

The following are the anticipated impacts and proposed mitigation measures:

Impact	Proposed Mitigation Measures
Solid waste generation	<ul style="list-style-type: none"> <li>Special attention should be given to minimizing and reducing the quantities of waste produced during all the sites preparation and rehabilitation.</li> <li>Materials to be reused or recycled where possible.</li> <li>Wastes generated during the renovation and construction phase will be disposed of as stipulated in the EMCA (Waste Management) Regulations 2006.</li> <li>Conduct training for waste management, such as waste disposal and segregation practices.</li> <li>Comply with Waste Management Regulations, 2006.</li> </ul>
Asbestos Roof Removal	<ul style="list-style-type: none"> <li>Dispose all Asbestos Containing Materials according to WBG/IFC EHS Guidelines NEMA Guidelines/ requirements.</li> <li>Use recommended PPE.</li> <li>Conduct Risk Assessment before removal of ACMs.</li> <li>Notify the authority by filling in the notification form.</li> </ul>