

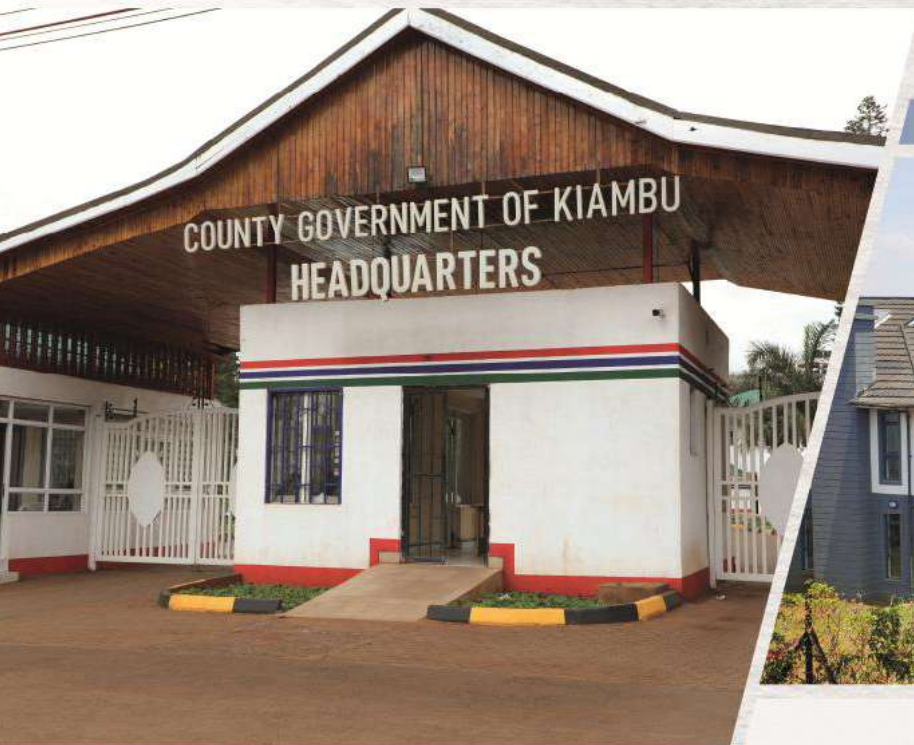


# KIAMBU TOWN

# Integrated Strategic Urban Development Plan

A Principal Administrative & Preferred Home Town  
That Promotes Entrepreneurship & Trade

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. DAN KIARA**

**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.

**5**

\_\_\_\_\_

## PREFACE



I am glad to introduce Kiambu Integrated Strategic Urban Development Plan 2020-2030, which is a road map on the strategic development of Kiambu Municipality. This is the first comprehensive spatial plan for Kiambu, having 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 Kiambu a more attractive, effective and efficient Municipality.

I am happy to note that this plan has been prepared in a participatory manner in line with the Kenya Constitution 2010, and considering the diverse contributions of various stakeholders whose role in the implementation of the proposals as detailed in this plan is fundamental.

It is worthwhile to note 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. Kiambu Municipality 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 plan to guide and manage this sprawl, the Municipality 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 municipality 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 Municipality.

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 and the County Department of Lands, Housing, Physical Planning, Municipal Administration & Urban Development (LHPPMAUD) led by CECM Salome M. Wainaina for the pivotal role in steering the planning process 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 people of Kiambu 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 improve the lives of our people.

I welcome all to support the realization of the Vision of this plan.

*H.E. Dr. Kimani Wamatangi*

H.E. Dr. Kimani Wamatangi

Governor, Kiambu County

## FOREWORD



Kiambu Integrated Strategic Urban Development Plan is a ten-year geographical information system that will guide the spatial development of Kiambu Municipality from 2020 to 2030. 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 entire municipality. The plan also aims to help coordinate implementation of sectoral projects and programs, eliminate wastage of scarce resources and 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 Kiambu Integrated Strategic Urban Development Plan reflects the desired spatial form for Kiambu urban area 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 Plans (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 in line with 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 Constitution, 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, diverse 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 Kiambu towards the desired Vision. I am further confident that this plan will become an important guide for investments in the Municipality. I therefore take this opportunity to appeal to the people of Kiambu 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 Kiambu ISUDP is a great 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.

Many thanks to the County Government of Kiambu especially to the Governor, His Excellency, Dr. Paul Kimani Wamatangi for his support in the preparation and approval of this Plan as well as the Kiambu County Assembly for their leadership in overseeing and adopting this plan which will guide the spatial growth and development of Kiambu Municipality.

I acknowledge the technical support provided by the Nairobi Metropolitan Service Improvement Project (NaMSIP) Team led by Eng. Benjamin Njenga (Co-ordinator), Plan. Ann Mugo (Project Supervisor) and other team members for their guidance, coordination, and technical support throughout the preparation of this Plan; the consulting team from ALPEX Consulting Africa Ltd (ACAL), and BC Gildenhuys and Associates CC (South Africa), worked tirelessly with the Department of Planning Kiambu to prepare this plan.

I also wish to acknowledge the team from Kiambu County's Physical Planning Department who include Martin Kang'iri (Chief Officer); 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.

I would like to acknowledge the Team of private consultants led by the late Plan. Geoffrey Njoroge, Plan. Dan Kiara, Plan. Anthony Mwangi Githaiga, Plan. Millicent Towett, Plan. Martin Kimotho, Dr. Samuel Gichere, and Nelson Ndirangu who provided technical expertise towards the completion of this assignment.

Further gratitude goes to the different National Government and County Government Departments and agencies who provided useful information that was essential in carrying out this planning exercise. Our appreciation also goes to Food and Agricultural Organisation (UN-FAO) for their invaluable financial support in completion & publishing of the plan.

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).

The completion of this plan would not have been realized without the support from the citizens of Kiambu Municipality who provided important inputs through their participation in various planning forums. Their participation and views informed the vision, mission, and strategic proposals of the “Kiambu We Want”. Their feedback has been incorporated to define the futuristic growth of the Kiambu Municipality.



HANNAH N. MARANGA

County Director of Physical and Land Use Planning

## EXECUTIVE SUMMARY

The Kiambu Integrated Strategic Urban Development Plan (ISUDP) for the year 2020-2030 has been prepared as part of the Nairobi Municipal Services Improvement Programme (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, the National Land Policy 2009 and the National Land-Use policy. The plan has been prepared by a consortium of ALPEX Consulting Africa Ltd (ACAL) and BC Gildenhuis in collaboration with the County Government of Kiambu.

The ISUDP was prepared in a participatory process bringing together all actors, including the local community, state agencies, academia, non-governmental organizations (NGOs), 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.

Kiambu urban area is located within Kiambu Municipality and is the administrative headquarters of Kiambu County. The Municipality has 4 administrative Wards, namely, Township, Riabai, Ting'ang'a, and Ndumberi. The urban area covers an area of approximately 104.8 km. The historical growth of the town can be traced to when it became a township in 1903 during the colonial days. The town's close proximity to Nairobi and improved physical and social economic infrastructure provides it with immense opportunities for real-estate, trade and commerce.

Guided by the municipality social, physical and economic data, a vision for the town being *“A principal administrative and preferred home town that promotes entrepreneurship and trade”* was crafted during the visioning workshop. In coming up with the plan proposals, various spatial development opportunities and challenges in the county were analysed. Three scenarios were considered in the preparation of the Kiambu plan, namely Service led strategy, Urbanization strategy, and Transportation-led development. The development model that was eventually adopted was a hybrid of the three development models, that is, integrating administrative strategies, urbanization strategies, and transportation strategies.

The structure plan provides a framework that sets out strategic planning policies in terms of space. The structure plan comprises of three elements – namely a physical zoning map, land management policies, and land use standards.

The service led strategy aims at capitalizing on the town's administrative function to drive growth. As the sub counties headquarter, the Municipality boasts of numerous social infrastructures. The economic regeneration strategy is anchored on agricultural development as the basis to spur economic growth. 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 & aggregation centres for value addition of cash & horticultural crops such as coffee, avocados, macadamia nuts, pineapples, among other crops.

Another key strategy is urban regeneration strategy. The strategy focuses on expansion of commercial and retail space to spur trade. It further proposes use of zoning to promote densification of urban core, provide adequate land for human settlements, as well as improve access to basic services: water, sanitation, and education and recreation facilities.

Transportation strategies support achievement of the vision through identification of key roads for upgrading so as to enhance linkages and de-congest certain routes within the town. The strategy also proposes measures for improvement of circulation within the town by opening up bypasses and investment in Non-Motorized Transport (NMT) facilities.

The environmental strategy will focus on conservation of riparian zones and areas of steep slopes by controlling development in such areas, embracing conservation agriculture and agroforestry. This is in line with climate change mitigation & adaptation.

A Capital Investment Plan (CIP) is provided showing the proposed short term & long-term projects within the planning cycle. It is further envisaged that the ISUDP will be reviewed within the planning period to harmonize the proposed development strategies with changes & eventualities that will have occurred.

The Integrated Strategic Urban Development Plan (ISUDP) is structured in four (4) parts as follows: -

### **Part I: Introductory and Planning Context**

Part one consists of chapter one and two. Chapter one which presents the background covers the purpose of the plan, the planning challenges, objectives, scope, deliverables of the plan, and the organizational structure that presents the plan.

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

## **Part II: Situational Analysis**

Part two consists of chapter three to twelve, covering the different aspects of situational analysis.

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

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

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.

### **Part III: Plan Formulation**

Part three details the plan formulation process and the contents of the plan. It consists of chapters thirteen to seventeen.

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 highlights the different strategies for achieving the preferred scenario.

Chapter fifteen presents the spatial development propels in the form of a structure plan, presenting the different land use options recommended for attainment of the vision.

Chapter sixteen 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 seventeen presents the plan implementation matrix, 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.

## LIST OF ACRONYMS

<b>CBD</b>	Central Business District
<b>EMCA</b>	Environment Management and Coordination Act
<b>GoK</b>	Government of Kenya
<b>ISUDP</b>	Integrated Strategic Urban Development Plan
<b>KeNHA</b>	Kenya National Highway Authority
<b>KeRRA</b>	Kenya Rural Roads Authority
<b>KFS</b>	Kenya Forest Service
<b>KURA</b>	Kenya Urban Roads Authority
<b>KWS</b>	Kenya Wildlife Service
<b>MTIH&amp;UD</b>	Ministry of Transport, Infrastructure, Housing and Urban Development
<b>NaMSIP</b>	Nairobi Metropolitan Services Improvement Project
<b>NEMA</b>	National Environment Management Authority
<b>NGOs</b>	Non-Governmental Organizations
<b>NMR</b>	Nairobi Metropolitan Region
<b>NMT</b>	Non-Motorized Transport
<b>WRA</b>	Water Resources Authority
<b>WSPs</b>	Water Services Providers

## GLOSSARY OF TERMS

**The Plan:** Integrated Spatial Urban Development Plan

**Building density:** Area of buildings/hectare

**Corridors:** A corridor is a linear strip of land or area, connecting large activity nodes, traversing urban or inter-urban areas, surrounding a major transport facility or facilities providing an appropriate regional level of mobility and accessibility to adjacent areas. It constitutes a high concentration of population and mixed land uses” and “...accommodate major linear transport routes like heavy and light rail and/or freeways, large shopping concentrations, etc., social, cultural and sporting facilities as well as a large amount of residential accommodation”.

**Densification:** Densification is the increased use of space both horizontally and vertically within existing areas/ properties and new developments, accompanied by an increased number of units and/or population threshold.

**Density:** The number of units per unit of land area, e.g. dwelling units/ hectare. There are five measures of density:

**Efficiency:** Development that maximizes development goals such as sustainability, integration, accessibility, affordability, and quality of living, relative to financial, environmental, and social costs, including on-going and future costs.

**Gross dwelling unit density:** Dwelling units / total land area of a project or suburb including roads, public open space and non-residential land uses.

**Infill Development:** Development of vacant or underutilized land within existing settlements to optimize the use of infrastructure, increase urban densities and promote integration.

**Kernel density:** Calculates the density of features in a neighbourhood around those features. The result is a smooth surface indicating the intensity of an attribute (buildings, schools, settlement, social facilities, etc.) over the study area.

**Land Use Management System:** A system used to regulate land use, including a town planning or zoning scheme, or policies related to how land is used on a plot-by-plot basis.

**Land Use Management:** Establishing or implementing any measure to regulate the use or a change in the form or function of land and includes land development.

**Net dwelling unit density:** Dwelling units/land occupied by residential plots only.

**Nodes:** Nodes are focused areas where a higher intensity of land uses, and activities are supported and promoted. Typically, any given area would accommodate a hierarchy of nodes that indicates the relative intensity of development anticipated for the various nodes, their varying sizes, and their dominant nature.

Population density: People / hectare.

**Sector Plans:** This refers to plans for different functions such as biodiversity conservation, housing, transport, local economic development and disaster management. They may also be geographically based, for example, a sub-region, settlement within an area or a component of that settlement.

**Settlement density:** (dwelling units / total land occupied by settlement) also known as average gross dwelling unit density.

**Spatial Development Framework:** A Spatial Development Framework (SDF) is a core instrument in spatially expressing the economic, sectoral, social, institutional, environmental vision. In other words, it is a tool for moving towards a desired spatial form for the planning area.

**Stakeholders:** Agencies, organizations, groups or individuals who have a direct or indirect interest in a development intervention or its evaluation.

**Urban Edge:** The urban edge is defined as an indicative boundary within the planning area with the sole purpose of containing physical development and sprawl and re-directing growth towards a more integrated, compact and efficient urban form.

**Urban-rural transect (continuum):** A cut or a path, a gradient or a geographical cross section of a region that can be used to reveal a sequence of environments

**Zoning Scheme:** A legal instrument for regulating the use of land regarding county or national legislation (see Land Use Management System.)

## TABLE OF CONTENTS

CERTIFICATION.....	i
APPROVAL.....	ii
PREFACE.....	iii
FOREWORD.....	vi
ACKNOWLEDGEMENTS.....	viii
EXECUTIVE SUMMARY.....	x
LIST OF ACRONYMS.....	xiv
GLOSSARY OF TERMS.....	xv
LIST OF TABLES.....	xxv
TABLE OF MAPS.....	xxvi
TABLE OF FIGURES.....	xxvii
1 INTRODUCTION.....	2
1.1 Background.....	2
1.2 Terms of Reference.....	4
1.2.1 Purpose of the Plan.....	4
1.2.2 Goal and Objectives.....	5
1.2.3 Scope of the Plan.....	5
1.2.4 Deliverables of the plan.....	6
1.3 Justification.....	6
1.4 Vision.....	7
1.5 Mission Statement.....	7
1.6 Organization of the Report.....	7
2 PLANNING CONTEXT.....	10
2.1 Overview.....	10
2.2 Historical Background.....	10
2.3 Geographic Location and Size.....	11
2.3.1 National context.....	11
2.3.2 Regional Context.....	13
2.3.3 Local Context.....	14

2.4	Previous planning interventions.....	15
2.5	Kiambu Base Map.....	15
2.6	Planning Methodology.....	18
2.7	Legal, Policy and Institutional Framework.....	20
2.7.1	Constitutional Framework.....	20
2.7.2	Policy Framework.....	21
2.7.3	Legal Framework.....	22
2.7.4	Institutional Framework.....	24
2.8	Other Relevant Policies & Strategies.....	26
2.8.1	Bottom-Up Economic Transformation Agenda (BETA) .....	26
2.8.2	Vision 2030 .....	27
2.8.3	The National Spatial Plan .....	27
2.8.4	Big Four Agenda.....	27
2.8.5	Nairobi Metropolitan Urban Development Strategies .....	28
2.8.6	Kiambu County Spatial Plan (CSP).....	28
2.8.7	Kiambu County Integrated Development Plan (CIDP) .....	28
2.9	Emerging Issues.....	28
3	PHYSIOGRAPHIC CHARACTERISTICS.....	31
3.1.1	Overview .....	31
3.1.2	Topography .....	31
3.1.3	Slope analysis.....	33
3.2	Geology and Soils.....	34
3.3	Wildlife .....	35
3.4	Vegetation .....	35
3.5	Hydrology.....	36
3.6	Climatic Conditions.....	38
3.6.1	Rainfall.....	38
3.6.2	Wind .....	38
3.6.3	Humidity.....	39
3.6.4	Temperature.....	39
3.7	Emerging Issues on Physiography.....	40

4	POPULATION AND DEMOGRAPHY.....	41
4.1	Overview.....	41
4.2	Population Size.....	41
4.3	Population Structure .....	44
4.4	Population Distribution and Density .....	44
4.5	Demography.....	47
4.5.1	Human Development Index.....	47
4.5.2	Literacy .....	47
4.5.3	Mortality.....	47
4.5.4	Migration patterns.....	48
4.5.5	Morbidity .....	48
4.5.6	Access to health services.....	49
4.6	Welfare indicators.....	49
4.6.1	Housing.....	49
4.6.2	Access to energy .....	49
4.6.3	Poverty level.....	49
4.6.4	Dependency level .....	50
4.7	Social Analysis.....	50
4.7.1	Religion.....	50
4.7.2	Culture and Heritage/Customs.....	52
4.7.3	Vulnerable Groups.....	52
4.7.4	Minority groups.....	52
4.8	Emerging Issues on Demography.....	52
5	LAND .....	54
5.1	Overview.....	54
5.2	Land Tenure.....	54
5.3	Land Classification .....	54
5.4	Land Use Pattern .....	56
5.5	Projected land Budget.....	58
5.6	Land Use Trends.....	59
5.7	Land Sub-division.....	59

5.8	Land Management and Administration .....	61
5.9	Land availability and Suitability .....	61
5.10	Land values/markets .....	63
5.11	Emerging Issues on Land .....	63
6	ENVIRONMENT.....	65
6.1	Overview.....	65
6.2	Physical Environment.....	65
6.2.1	Water .....	67
6.3	Urban greenery, Open spaces and Recreational areas.....	67
6.4	Climate Change.....	68
6.5	Waste Management Environmental issues .....	69
6.5.1	Liquid Waste Management.....	69
6.5.2	Solid Waste Management .....	69
6.6	Emerging Issues on Environment.....	70
7	URBANISATION AND HUMAN SETTLEMENTS.....	71
7.1	Overview.....	71
7.2	Patterns and Trends of Human Settlements .....	71
7.3	Rural Settlements/Rural Development.....	71
7.4	Urbanization of Development Nodes.....	71
7.4.1	Kiambu Township Node.....	73
7.4.2	Ndumberi Node .....	74
7.4.3	Riabai Node.....	75
7.4.4	Kanunga Node.....	76
7.4.5	Thindigua Node .....	77
7.4.6	Kirigiti Node .....	78
7.5	Housing and Housing Demand.....	79
7.6	Emerging Issues on Challenges and Opportunities.....	79
8	CHAPTER EIGHT: PHYSICAL INFRASTRUCTURE .....	81
8.1	Overview.....	81
8.2	Transportation.....	81
8.2.1	Existing Road Network.....	81

8.2.2	Terminus and Bus Parks.....	84
8.2.3	Connectivity.....	84
8.2.4	Municipality requirements.....	88
8.3	Water.....	88
8.4	Waste Management and Sanitation.....	91
8.4.1	Solid Waste Management.....	91
8.4.2	Liquid and Human Waste Management.....	92
8.5	Energy.....	93
8.6	Information, Communication and Technology (ICT).....	96
8.7	Emerging Issues on Challenges and Opportunities.....	96
9	CHAPTER NINE: SOCIAL INFRASTRUCTURE.....	98
9.1	Overview.....	98
9.2	Education Facilities.....	98
9.2.1	Pre –Primary Schools/ Nursery Schools.....	99
9.2.2	Primary Schools.....	99
9.2.3	Secondary Schools.....	104
9.2.4	Tertiary schools.....	107
9.3	Health Facilities.....	107
9.4	Fire Station.....	110
9.5	Law and Order-Security facilities, Courts, Prisons.....	110
9.6	Other social facilities.....	110
9.6.1	Cemeteries.....	110
9.6.2	Recreation Facilities.....	110
9.6.3	Libraries.....	111
9.7	Municipality Requirements.....	111
9.8	Emerging Issues on Challenges and Opportunities.....	114
10	CHAPTER TEN: ECONOMIC ANALYSIS.....	115
10.1	Overview.....	115
10.2	Agriculture.....	115
10.3	Industrial Activities.....	116
10.4	Trade and Commerce.....	117

10.5	Financial Institutions .....	118
10.6	Revenue Generation.....	118
10.7	Emerging Issues on Challenges and Opportunities.....	120
11	CHAPTER ELEVEN: GOVERNANCE AND INSTITUTIONS .....	121
11.1	Overview.....	121
11.2	Existing Institutional Framework.....	121
11.3	National Government.....	122
11.4	County Government.....	124
11.5	Revenue Collection and Sources.....	125
	11.5.1 Private Sector .....	125
	11.5.2 Civil Societies.....	125
	11.5.3 Residents Association.....	125
11.6	Emerging Issues on Challenges and Opportunities .....	126
12	CHAPTER TWELVE: STAKEHOLDER ENGAGEMENT .....	127
12.1	Overview.....	127
13	CHAPTER THIRTEEN: SYNTHESIS OF EMERGING ISSUES, OPPORTUNITIES AND CHALLENGES .....	130
13.1	Overview.....	130
13.2	Planning Context .....	130
13.3	Physiographic Characteristics.....	130
13.4	Demography.....	131
13.5	Land Use Analysis.....	131
13.6	Environment.....	132
13.7	Urbanization and Human Settlements.....	132
13.8	Physical Infrastructure.....	133
13.9	Social Infrastructure.....	134
13.10	Economic Analysis.....	135
13.11	Governance.....	135
14	CHAPTER FOURTEEN: SCENARIO BUILDING AND CONCEPTUAL FRAMEWORK.....	138
14.1	Overview.....	138
	14.1.1 Nil Scenario.....	138

14.1.2	Service Led Scenario.....	139
14.1.3	Urbanization Scenario.....	140
14.1.4	Transportation Scenario.....	142
14.1.5	The Preferred Model.....	143
15	CHAPTER FIFTEEN: DEVELOPMENT PROPOSALS, STRATEGIES AND MEASURES.....	147
15.1	Overview.....	147
15.2	Development Goals.....	147
15.3	Guiding Principles.....	148
15.3.1	Sustainability.....	148
15.3.2	Resilience.....	148
15.3.3	Equity.....	149
15.3.4	Integration.....	149
15.3.5	Accessibility.....	149
15.3.6	Safety.....	149
15.3.7	Sense of place.....	149
15.3.8	Spatial development concept.....	150
15.4	Land Use and Management Policies.....	150
15.5	Development Strategies.....	151
15.5.1	Transportation Strategy.....	151
15.5.2	Environmental Strategy.....	154
15.5.3	Economic and Social Infrastructure Strategy.....	159
15.5.4	Housing Strategy.....	162
15.5.5	Revenue Enhancement Strategy.....	165
15.6	Disaster Management.....	166
16	CHAPTER SIXTEEN: PROPOSED LAND USE PLAN.....	168
16.1	Overview.....	168
16.2	Proposed Land Use.....	168
16.2.1	High Density Residential.....	171
16.2.2	Medium Density Residential.....	171
16.2.3	Low Density Residential.....	171
16.2.4	Industrial.....	171

16.2.5 CBD .....	171
16.2.6 Agricultural.....	172
16.2.7 Conservation.....	172
16.3 Zoning Regulations .....	173
16.4 Action Area Plans .....	207
16.4.1 The CBD (Urban Core).....	207
16.4.2 Kirigiti .....	217
16.4.3 Thindigua .....	220
16.4.4 Ndumberi .....	223
16.4.5 Kanunga .....	226
16.4.6 Riabai .....	229
17 PLAN IMPLEMENTATION, MONITORING AND EVALUATION.....	233
17.1 Overview.....	233
17.2 Plan Implementation.....	233
17.3 Capital Investment Plan .....	245
17.4 Plan Monitoring and Evaluation .....	255
REFERENCES.....	256
APPENDIX:.....	257
ANNEX I: NOTICE OF COMPLETION OF DEVELOPMENT PLANS .....	257

## LIST OF TABLES

Table 1: Institutional Framework.....	24
Table 2: Emerging Issues on Geographical Location & Size.....	28
Table 3: Emerging Issues on Physiography.....	40
Table 4: Population Size.....	42
Table 5: Household number and distribution.....	43
Table 6: Emerging Issues on Environment.....	70
Table 7: Emerging Issues on Challenges and Opportunities.....	79
Table 8: Road Linkage and Conditions in Kiambu town .....	81
Table 9: Connectivity to Surrounding Towns.....	86
Table 10: Planning Area Water Demand.....	89
Table 11: Liquid Waste Matrix.....	92
Table 12: Liquid Waste Production .....	93
Table 13: Emerging Issues on Challenges and Opportunities.....	96
Table 14: 2018 ECDE Enrolments in Kiambu town.....	99
Table 15: Public primary school enrolment.....	100
Table 16: 2018 Secondary school enrolment .....	104
Table 17: Public health facilities in Kiambu.....	107
Table 18: Emerging Issues on Challenges and Opportunities .....	114
Table 19: Markets.....	118
Table 20: Revenue Budget .....	119
Table 21: Emerging Issues on Challenges and Opportunities.....	120
Table 22: Emerging Issues on Challenges and Opportunities.....	126
Table 23: Stakeholder Issues Raised.....	127
Table 24: Development Goals.....	147
Table 25: Proposed land use and management policies.....	150
Table 26: Revenue Collection Challenges with Actions for Solutions .....	165
Table 27: Proposed Land Use .....	168
Table 28: Plan Implementation Matrix.....	234
Table 29: Monitoring and Evaluation Matrix.....	255

## TABLE OF MAPS

Map 1: Kiambu at National Context.....	12
Map 2: Kiambu at Regional Context.....	13
Map 3: Kiambu Town Local Context.....	14
Map 4: Kiambu Town Development Plan, 1977.....	15
Map 5: Kiambu Base Map .....	17
Map 6: Topography of Kiambu.....	32
Map 7: Slope Analysis.....	34
Map 8: Geology & Soil Structure.....	35
Map 9: Vegetation Cover.....	36
Map 10: Hydrology.....	37
Map 11: Population Distribution .....	45
Map 12: Population Density.....	46
Map 13: Religious Groups.....	51
Map 14: Kiambu Land Classification .....	55
Map 15: Existing Land Use Map.....	57
Map 16: Kiambu Town Cadastre .....	60
Map 17: Land Suitability Map.....	62
Map 18: Environmentally Fragile Areas.....	66
Map 19: Recreational Facilities within Kiambu .....	68
Map 20: Urban Footprints.....	72
<b>Map 21: Transport Map .....</b>	<b>83</b>
Map 22: Regional Connectivity .....	85
<b>Map 23: Local Interconnectivity.....</b>	<b>87</b>
Map 24: Electricity Distribution within Planning Area.....	95
<b>Map 25: Primary Schools Catchment .....</b>	<b>98</b>
Map 26: Primary school catchment area .....	101
<b>Map 27: 500m Primary School Catchment .....</b>	<b>102</b>
Map 28: Primary Schools Distribution .....	103

Map 29: Secondary School Catchment.....	105
Map 30: Secondary Schools Distribution.....	106
Map 31: Hospitals in 5000m Catchment.....	108
Map 32: Other Public Health Facilities in 2000m Catchment.....	109
Map 33: Social Infrastructure Distribution.....	113
Map 34: Nil Scenario.....	139
Map 35: Service Led Scenario.....	140
Map 36: Urbanization Scenario.....	141
Map 37: Transportation Scenario.....	142
Map 38: Preferred Model.....	144
Map 39: Proposed Kiambu Land Use.....	170
Map 40: Natural Open Space Strategy.....	172
Map 41: Kiambu Action Area Plan.....	216
Map 42: Existing situation in Thindigua.....	220
Map 43:Thindigua Zoning Plan.....	222
Map 44: Ndumberi Action Area Plan.....	225
Map 45: Kanunga Action Areas.....	227
Map 46: Kanunga Zoning Plan.....	228
Map 47: Riabai Action Area Plan.....	231
Map 48: Riabai Zoning Plan.....	232

## TABLE OF FIGURES

Figure 1: Kiambu stores, 1960(Sikh Heritage).....	11
Figure 2: Planning Methodology.....	18
Figure 3: Literacy Levels.....	47
Figure 4: Kiambu CBD Trends.....	73
Figure 5: Ndumberi Growth Trends.....	74
Figure 6: Riabai Growth Trends.....	75
Figure 7: Kanunga Growth Trends.....	76

Figure 8:Thindigua Growth Trends.....	77
Figure 9: Kirigiti Growth Trends.....	78
Figure 10: Road condition in Kiambu town.....	84
Figure 11: Bus terminus in Kiambu town.....	84
Figure 12: Parking and Traffic Control.....	88
Figure 13: Water Sources.....	90
Figure 14: Kiambu sewerage treatment plant and Sewer line in Kiambu town.....	92
Figure 15: Power lines in Kiambu Town.....	94
Figure 16: Social Facilities Within Planning Area.....	111
Figure 17: Agriculture in Planning Area.....	116
Figure 18: Industrial Activities.....	116
Figure 19: Commercial activities in Kiambu.....	117
Figure 20: National Government Structure.....	122
Figure 21: Kiambu County Government Structure.....	124
Figure 22: Development and Design Guidelines for the Environment.....	157
Figure 23: Location of the various nodes.....	207
Figure 24: Existing Street Character.....	209
Figure 25: Public Transport in Kiambu Town.....	210
Figure 26: Street Design.....	211
Figure 27: Street Scape.....	214
Figure 28: Existing situation in Kirigiti.....	217
Figure 29: Kirigiti Action Area Plan.....	218
Figure 30: Thindigua Action Areas.....	221
Figure 31: Existing situation in Ndumberi.....	223
Figure 32: Ndumberi Action Area.....	224
Figure 33: Existing situation in Kanunga.....	226
Figure 34: Existing situation in Riabai.....	229
Figure 35: Riabai Action Areas.....	230



REPUBLIC OF KENYA



COUNTY GOVERNMENT OF KIAMBU

---

# **PART I**

## **INTRODUCTION & PLANNING CONTEXT**

# 1 INTRODUCTION

This part of the report gives a description of the project background and planning context; the urban planning methodology, the integrated and strategic approach; and the national policies, legal context and institutional frameworks that guided the preparation of the Kiambu Integrated Strategic Urban Development Plan.

## 1.1 Background

The promulgation of the Constitution of Kenya, 2010 (CoK) ushered a fundamental paradigm shift in governance, creating a two-tier system of governance: National and County governments. The devolved system created 47 counties with vested substantial power and authority on governance. The Constitution makes great demands on development planning as a means of delivering sustainable and productive management of land resources and allows the state to regulate use of any land and property (Article 66) in the interest of land use planning among others. The Constitution further places governance and public affairs management in the hands of the people at the local level which is best guided by the approved development plans of respective jurisdictions in the counties such as municipalities.

According to Cities and Urban Areas Act, 2011 every county government is constitutionally required to prepare and approve integrated urban development plans for every settlement with a population of at least two thousand residents.

An Integrated Strategic Urban Development Plan (ISUDP) is a tool for promoting social and economic development and the provision of proximate, easily accessible services. It contributes to the protection and promotion of the fundamental rights and freedoms as contained in the Kenya Constitution 2010 and the progressive realization of the socio-economic rights. The ISUDP is expected to nurture and promote development activities in an orderly and sustainable manner. In addition, the ISUDP guides and inform all planning development and decisions in the respective urban centres and ensure comprehensive inclusion of all urban functions.

Kenya has a high population, ranking at twenty seventh (27th) in the world and estimated to be growing at an annual average rate of three (3) per cent (National Spatial Plan 2015-2045). The proportion of urban population to the total population is estimated at twelve million representing approximately 31.8 per cent of the population and growing at a rate of 4.4 per cent. The bulk of this growth has occurred within the Nairobi Metropolitan region. The metro region extends some 32,000 square kilometres, and is a national, regional and international strategic centre for education, commerce, transport, regional, cooperation and economic development. The region comprises of thirteen key urban areas including Nairobi City County; Kiambu, Machakos, Thika, Ngong, Kitengela, Limuru, Mavoko, Ruiru, Kikuyu, Kenol, Muranga and Tala/Kangundo Towns. Most towns within the metro are

experiencing overwhelming challenges in the provision of civic services and utilities, diminished returns on investment and challenges of sufficient access to basic needs.

Kiambu County lies within the metro region, and is one of the most spatially dynamic counties. The county is fast urbanizing owing to her close proximity to the country's capital City, Nairobi. Kiambu is experiencing the 3rd highest urbanization rate after Nairobi and Mombasa at average rate of 3.4% compared to the 4% national urban growth rate (Draft County Spatial Plan). As a result, most of the urban centres in the county, including the rural towns have experienced a boom in development activities, driven by demand for affordable land, as well as opportunities arising from capital inflows from the devolved governance system. However, most of the urban centres are ill prepared to accommodate the rapid growth, leading to a lag in service provision (water, sewerage, garbage collection). Consequently, there have been rising cases of slum proliferation, informal settlements; constrained mobility; inadequate water supply; illegal dumping and exposed wastewater among other urban challenges. This points to the need for planning interventions to enable manage the negative impacts while maximizing on the benefits of urbanization.

The various strategies used by the government to manage urban development have largely failed and there is need to rethink urban planning and development strategies to arrest the inevitable crises that are likely to result from the uncontrolled urban growth. Planning for the Nairobi Metropolitan needs to cover the entire metropolitan region, with special measures being taken to address the different needs of its diverse population and landscape. The Nairobi Metropolitan Services Improvement Project (NaMSIP) is a project aimed at strengthening urban services and infrastructure in the Nairobi Metropolitan Region for an estimated 1.5 million urban residents.

The County Government of Kiambu, in collaboration with the National Government, through NAMSIP, commenced plan to prepare Kiambu Integrated Strategic Urban Development Plan (ISUDP).

Kiambu Municipality lacks a development plan to guide sustainable urban growth. The town and its rural peripheries are currently experiencing uncoordinated growth and urban sprawl thus the need for physical planning intervention. The ISUDP is expected to nurture and promote development of commercial and human settlement activities in an orderly and sustainable manner. In addition, the ISUDP shall bind, guide and inform all planning development and decisions in the municipality and ensure comprehensive inclusion of all urban functions.

The plan was prepared with the assistance of ALPEX Consulting Africa Ltd (ACAL) and BC Goldenhuys & Associates under a contract agreement with the Government of Kenya (GOK) through the then Ministry of Land, Housing and Urban Development. The consultants were supervised by the Nairobi Municipal Services Improvement Programme (NaMSIP) officers in

the Nairobi Metropolitan Development (NMED) section of the then Ministry of Land, Housing and Urban Development.

In undertaking this assignment, the consultants worked very closely with the County Government, relevant National Government agencies and authorities, the local community and ensured participation of all key stakeholders in the municipality.

## **1.2 Terms of Reference**

The terms of reference highlighted outline the scope of work and the deliverables of the consultant to the client.

### **1.2.1 Purpose of the Plan**

The purpose of this Plan is to:

- Define a vision for future growth and development of Kiambu municipality over the next 10 years;
- Indicate anticipated patterns of land use and set out basic standards and guidelines for a land use management system designating desirable urban settlements, functional spaces and management of natural resources within the planning area;
- Provide an overall strategic and integrated spatial framework for the location and function of development and the resultant urban growth within Kiambu municipality;
- Provide a framework to guide infrastructural development and service provision within the planning area and revitalize housing, industries, trade and commerce to spur economic development;
- Provide development guidance based on optimum location and nature of development within planning area and enhance environmental protection and conservation;
- Determine the effective boundary for Kiambu and develop a smart urban system in Kiambu municipality;
- Interpret and align National, Inter-County and County Development policies and strategies and reflect them as development programmes in the planning area and establish better development coordination and implementation mechanism;
- Provide a basis for coordinated programming of development projects and budgeting within the planning area, thereby serving as a downstream management tool guiding public and private investment on key urban infrastructural projects and programmes;
- Improve transport and communication networks and linkages and identify opportunities for job creation and employment.

### 1.2.2 Goal and Objectives

The main objective of Kiambu Integrated Strategic Urban Development Plan is to provide an overall development framework for the planning area. Though the plan shall have a 10-year time-horizon, it shall provide a basis for long-term sustainable urban development for Kiambu municipality.

The specific objectives of the Plan include:

- To provide a basis for infrastructure and service provision for present and projected population over the plan period;
- To determine demographic changes in the last ten years and those expected over the life of the plan for each municipality, and how these relate to economic changes, welfare and administrative shifts;
- To identify environmental issues and concerns affecting Kiambu municipality
- To identify development potentials of the planning area (social, economic and environmental profiling)
- To provide a basis for development control and investment decisions;
- To allocate sufficient space for various land uses to ensure efficient function and convenience of users and accommodate future growth;
- To provide for adequate land for recreation and open spaces;
- To enhance and promote safety and security;
- To uphold innovative civic and urban design that enhances the character and form of Kiambu town;
- To develop plans implementation and monitoring framework

### 1.2.3 Scope of the Plan

#### **i. Geographic Scope**

The geographic scope of Plan covers Kiambu Municipality, a total of 98.3 square kilometres.

#### **ii. Planning Scope**

The Plan is a medium term spatial urban development framework with a planning horizon of ten (10) years from 2020-2030 and shall be subject to five (5) year reviews. It covers the following thematic areas: Natural and Physical Environment, Human settlements, urban development, physical infrastructure, and social infrastructure. The plan integrates the strategies, policies and objectives of the Vision 2030, the National Spatial Plan (NSP), the Metro 2030 Strategy, and the Metropolitan Spatial Plan.

#### **iii. Mapping Scope**

The plan has prepared a GIS based data base depicting the different land uses and zones for the planning area.

### 1.2.4 Deliverables of the plan

The significant output of this assignment is the Kiambu Integrated Strategic Urban Development Plan that provides the structural blueprint guiding development of Kiambu Municipality. The plan was prepared in various complementing phases which generated the following outputs:

- i. Situational analysis reports
- ii. Base map
- iii. An appropriate and widely accepted vision
- iv. Vital Kiambu town sector development strategies
- v. A comprehensive Town Spatial Development Framework
- vi. A Programmes Implementation Matrix
- vii. Structure and action plans
- viii. Plan implementation strategy
- ix. Capital Investment Plan (CIP)
- x. Monitoring and Evaluation Plan

### 1.3 Justification

Section 111(2) of the County Governments Act, 2012 (CGA) mandates County governments to prepare plans for populations above 2000 persons. The ISUDP is provided for in Section 36 (1) of Urban Areas and Cities Act (UACA) further states that 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.

In anticipation for the growth experienced in major towns, there is need for the County governments to prepare ISUDPs as an instrument for guiding optimal use of land to achieve sustainable development by addressing development challenges and exploiting opportunities in key areas that have spatial dimension.

The proximity of the Kiambu to Kenya's capital Nairobi has morphed it to a bedroom town where many people work in Nairobi and live in Kiambu. This has put pressure on the physical environment and infrastructure due to the increasing population. With this realization, the need to respond quickly in order to meet urban demands in terms of service provision cannot be ignored. The lack of an Urban Development Plan for Kiambu Municipality had hampered harmonious and coordinated development of the town and led to some key problems manifesting in the town. The planning challenges facing Kiambu at the time of preparing this plan include, but are not limited to the following:

- Land use changes to accommodate urban growth

- Inadequate civic infrastructure;
- Inadequate serviced land to accommodate urban growth;
- Inadequate land information system as a basis for planning, optimal revenue and land rates collection, land data management and development control;
- Inadequate provision for recreational grounds, parking areas;
- Poor infrastructure provision, especially roads, water reticulation, drainage and storm water management system, poor solid waste management;
- Un-coordinated/illegal sub-division of land leading to fragmentation;
- Poor governance, weak public institutions and inadequate financial and technical capacity to undertake planning and development control;
- Climate change and environmental degradation;
- Poor promotion of innovation, inadequate informal business acceptability and regulation;
- Inadequate promotion of tourism, culture and natural resources as revenue enhancers;
- Inadequate disaster preparedness

## 1.4 Vision

The Vision guiding this plan is:

***“A principal administrative and preferred home town that promotes entrepreneurship and trade”***

## 1.5 Mission Statement

The plan is guided by the mission statement below:

“To guide sustainable urbanization within Kiambu town into a liveable administrative and investment hub that enhances the wealth, convenience, and welfare of the people in Kiambu municipality”

## 1.6 Organization of the Report

The Kiambu Integrated Strategic Urban Development Plan (ISUDP) consists of narrative and graphical interpretations of the contextual aspects as well as the existing character and proposed spatial structure of the Town. It is hereby presented in four (4) parts that rationalize a logical flow of chapters as follows:

### **Part I: Introductory and Planning Context**

**Chapter One:** Background- covers the purpose of the plan, planning challenges in the municipality, objectives, scope, deliverables of the plan, and the organizational structure that presents the plan

**Chapter Two:** Planning Context- Describes the National, Regional and Local context of Kiambu municipality, the policy and legal framework guiding the ISUDP process, provides linkages to other relevant plans i.e. CIP and previous planning interventions in the municipality and explains the methodology and approach employed in preparing the ISUDP.

## **Part II: Situational Analysis**

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

**Chapter Four:** discusses the population and demographic characteristics of the municipality; focusing on population size and structure, population projections, morbidity and mortality, poverty levels as well as employment data for the town.

**Chapter Five:** Analyses the land uses in the planning area, land tenure details, land administration arrangements and 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:** This chapter synthesizes all the issues discussed with the aim of laying the framework for the plan formulation process

Part III: Plan Formulation

**Chapter Thirteen:** The chapter 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:** Highlights the different strategies for achieving the preferred scenario.

**Chapter Fifteen** presents the spatial development propels in the form of a structure plan, presenting the different land use options recommended for attainment of the vision

**Chapter Sixteen:** 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 Seventeen** presents the plan implementation matrix, outlining the actions, the actors and the time frames for implementing the different strategies. It also presents and capital investment plan outlining the cost implications for implementing the plan.

## 2 PLANNING CONTEXT

### 2.1 Overview

This chapter details the location of the planning area, focusing on the national, regional and local context. It gives a brief background of the planning areas, as well as the legal, policy and legislative framework under which the plan has been prepared. The chapter also outlines how the vertical and horizontal linkages of the plan with other plans.

### 2.2 Historical Background

Kiambu town is the administrative capital of Kiambu County Government. It is also the headquarter of Kiambu Municipality, one of the 12 municipalities within the county. Kiambu is a fast-growing economic hub due to its close proximity to Nairobi City and acts as a major trading centre for farm produce (both dairy products and crops) from the surrounding agricultural areas. It is a significant “dormitory” town within the larger Nairobi Metropolitan Region as a large number of middle-class workers in Nairobi reside in Kiambu town and commute daily to Nairobi for work.

The municipality had a population of approximately 145,903 people as per the 2019 Population and Housing Census. There are 2 theories that explain the origin of the name Kiambu; One theory suggests that it was derived from a prominent Kikuyu clan known as ‘Mbari ya Mbuu’ who used to live next to the current day Ndumberi town. Another theory suggests the area used to experience traditional night dances, merry making, loud cries in the evenings hence the kikuyu phrase ‘kia mbuu’ meaning the “place of wailing.”

Kiambu historical development reveals that Kiambu became a township with the creation of Township Ordinance in 1903 together with Nairobi, Mombasa, Nakuru, Eldoret, Naivasha and Machakos. In order to promote growth of the town, the colonial Government elevated the town to an Urban Council status in 1903.

By 1960, several permanent buildings dotted the green urban township especially along what is now known as the Indian Bazaar. In the area, there existed Sikh Heritage which was built by Kiambu colonial settlers. In 1974, the town was accorded the status of Town Council, thereby attaining a higher degree of financial and managerial independence from the Kiambu County Council - its former financial and administrative manager and granted a Municipal Charter in 1981.

According to Kenya's national urbanization and rural development policy, Kiambu was designated as an urban service centre serving the surrounding rural agricultural areas. Similarly, Kiambu was designated along with other outlying townships (Kikuyu, Limuru, Athi River, and Machakos) as an important service centre according to the Nairobi Metropolitan Growth strategy.



**Figure 1: Kiambu stores, 1960(Sikh Heritage)**

The town is home to Kiambu Golf course which opened in 1914. Ndumberi centre was also associated with golfing. The town is now a favoured location for major real estate development due to the rapid urbanization experienced in its neighbouring urban areas.

## 2.3 Geographic Location and Size

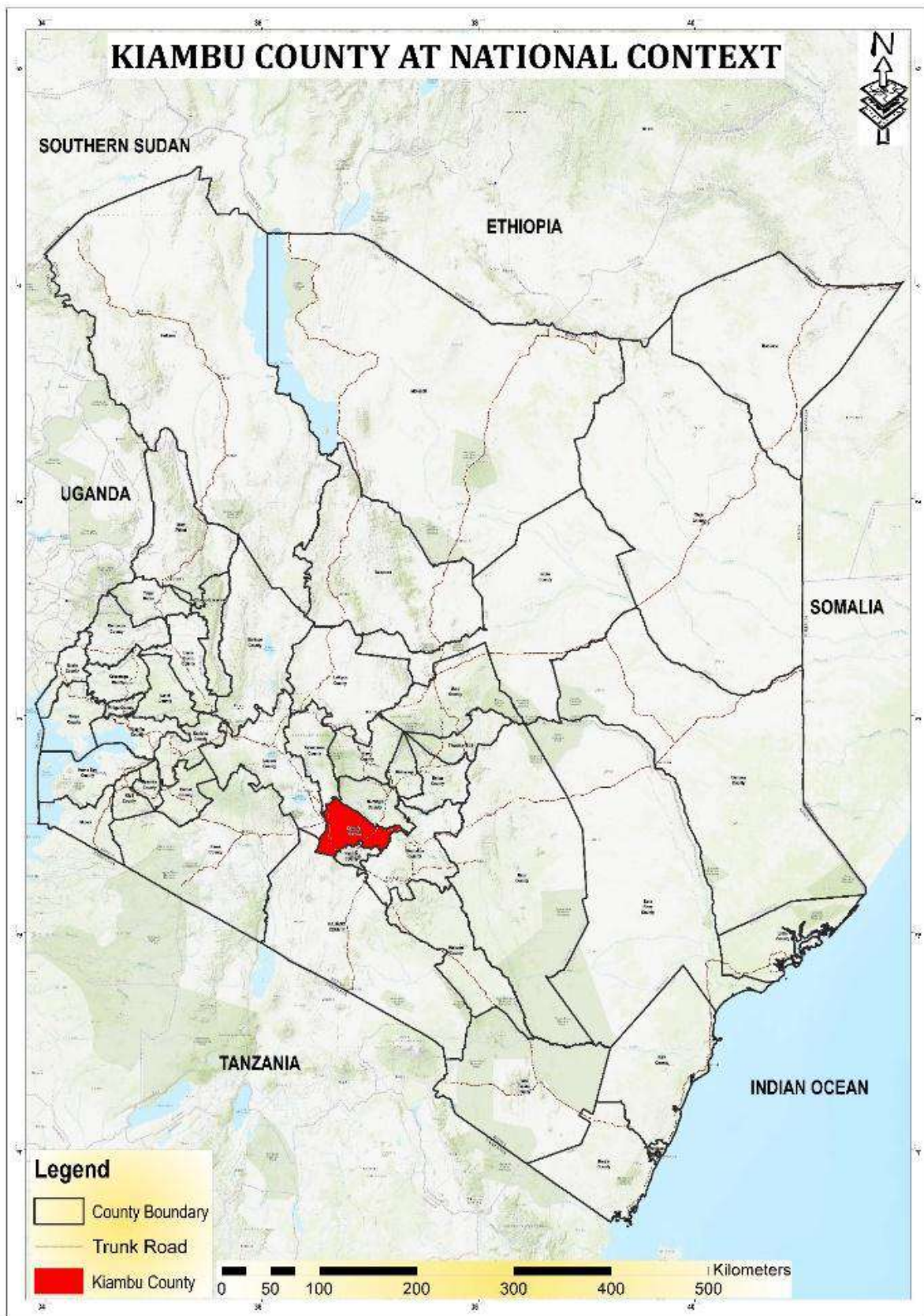
Kiambu lies between Latitudes 1°08'05" S and 1°12'52" S, and Longitudes 36°46'36" E and 36°52'27" E. at an elevation of about 1,720 meters above sea level. It covers a total area of 98.3 km<sup>2</sup>.

### 2.3.1 National context

Kiambu is located within Kiambu county which is in the central region of Kenya. Kiambu County has an area of 2,543.5 Square Kilometres. Kiambu County borders Nairobi and Kajiado Counties to the South, Machakos County to the East, Murang'a County to the North and North East, Nyandarua County to the North West, and Nakuru County to the West. This is as shown on Map1.

Kiambu town is a significant gateway hub to Nairobi. Kiambu is located approximately 16 Km North of Kenya's capital Nairobi, 130 Km South East of Nakuru Town (a Rift Valley regional hub), and 449 Km from Kenya's coastal city of Mombasa.

In line with Kenya's national urbanization and rural development policy, Kiambu was designated as an urban service centre with the role of stimulating the growth of the surrounding rural agricultural areas.



**Map 1: Kiambu at National Context**

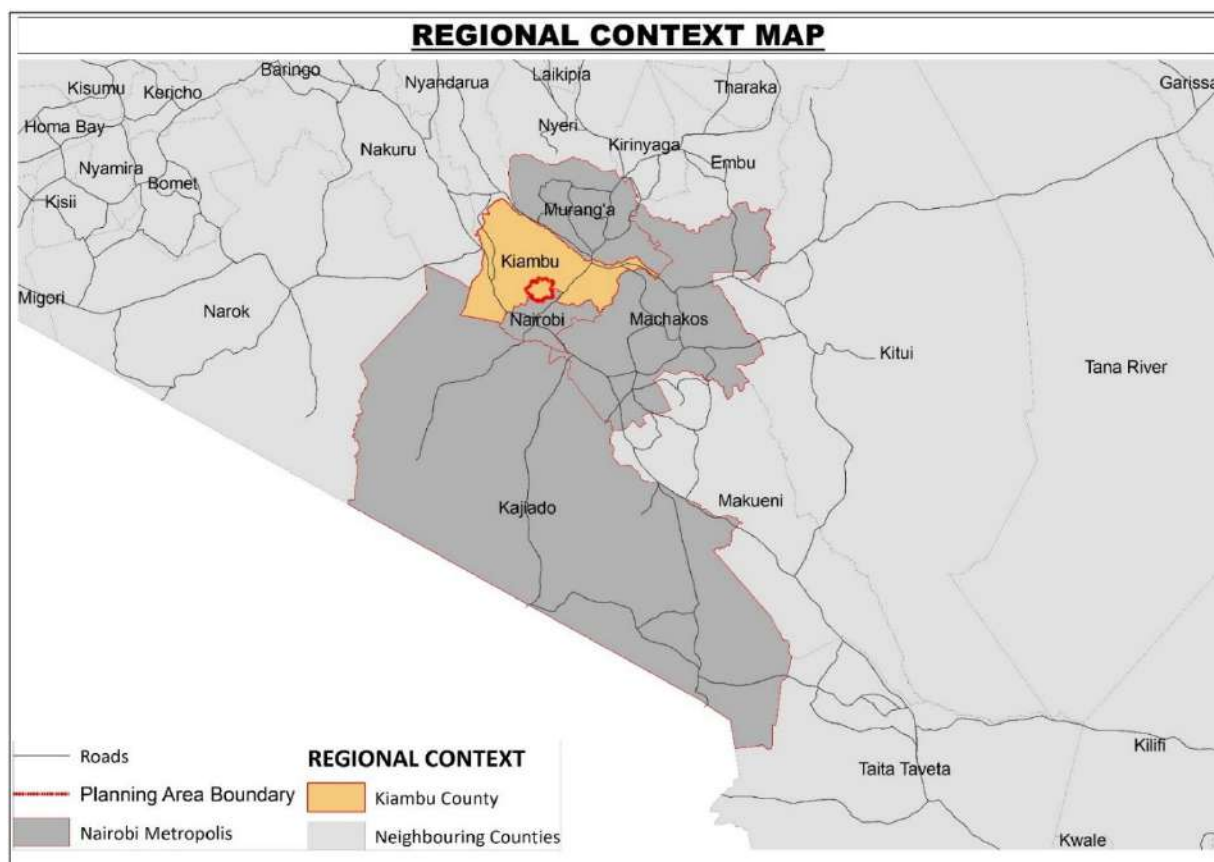
(Source: Survey of Kenya, 2019)

### 2.3.2 Regional Context

Kiambu municipality lies within the Nairobi Metropolitan region and has close social and economic relations with the City of Nairobi and the surrounding urban centres of Kiambu, Murang'a, Kajiado, and Machakos counties.

Kiambu town is one of the principal urban centres in the Nairobi Metro region and is seen as a future anchor to the capital city of Nairobi which is undergoing rapid development with limited space for growth. The town has relatively good transport network and is well connected to Nairobi and other key towns within Kiambu County such as Ruaka, Karuri, Limuru, Ruiru and Githunguri and Kimende. This has seen the rapid development of the agriculture through agro-processing and service led sub-sector of the economy.

The dormitory character of the town is evidenced by the large proportion of workers commuting to places of work outside the town such as Nairobi (19%) and other centres+ of employment (2.3%) particularly Limuru, Karuri, Ruiru and Thika which is barely 30 kilometres away. Presently, Kiambu Municipality is now home to real estate development with large housing projects such as Migaa, Muthithi Gardens, Mushroom Gardens, Thindigua, Edenville, Five Star paradise, Bustani, Wamicky in various stages of development.



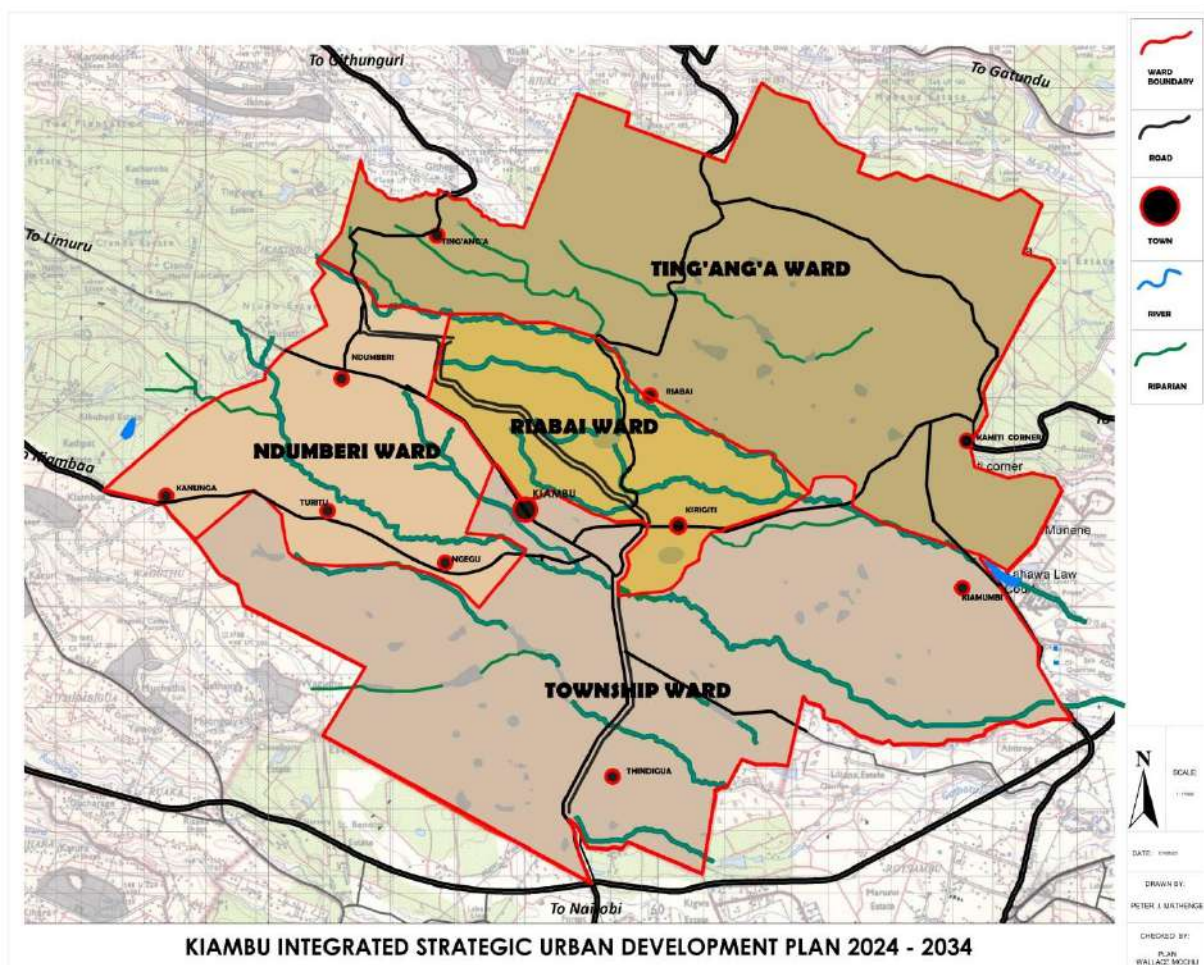
**Map 2: Kiambu at Regional Context**

Source: ACAL & BC Gildenhuys & Associates, 2019

### 2.3.3 Local Context

The municipality town is located in Kiambu County and is the seat of the county headquarters where it hosts the Governor's office.

Kiambu municipality consists of four (4) County Assembly Wards namely Riabai Ward, Ndumberi Ward and Township Ward, and Ting'ang'a Ward within the larger Kiambu constituency. Kiambu town is located within township ward and is the most developed in terms of urban infrastructure. Coffee farming and food crops such as cultivation of maize and beans is the major economic activity in the neighbouring wards of Riabai and Ting'ang'a.



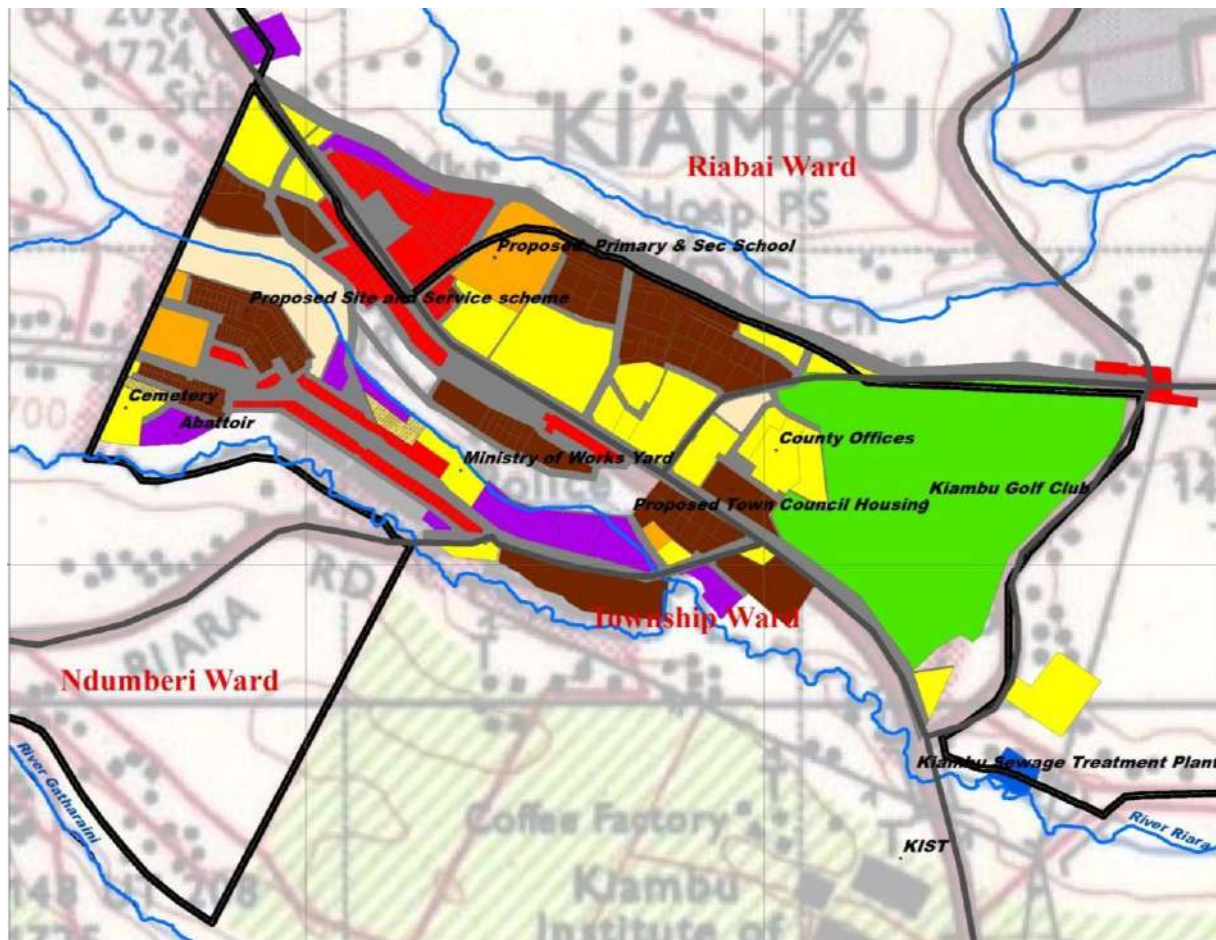
**Map 3: Kiambu Town Local Context**

Source: ACAL & BC Gildenhuys & Associates, 2019

## 2.4 Previous planning interventions

There have been previous attempts to prepare plans for Kiambu township. The town had an approved Development Plan dated 1977 (see Map 4). The plan covered only a part of the current Kiambu town extent and planning area.

Kiambu Town is considered a key cog in the planning of the Nairobi Metropolitan Region due to its location in Kiambu County, and is included in its plan. It plays a vital role in providing urban space within the region and is a link to other parts of the region.



**Map 4: Kiambu Town Development Plan, 1977**

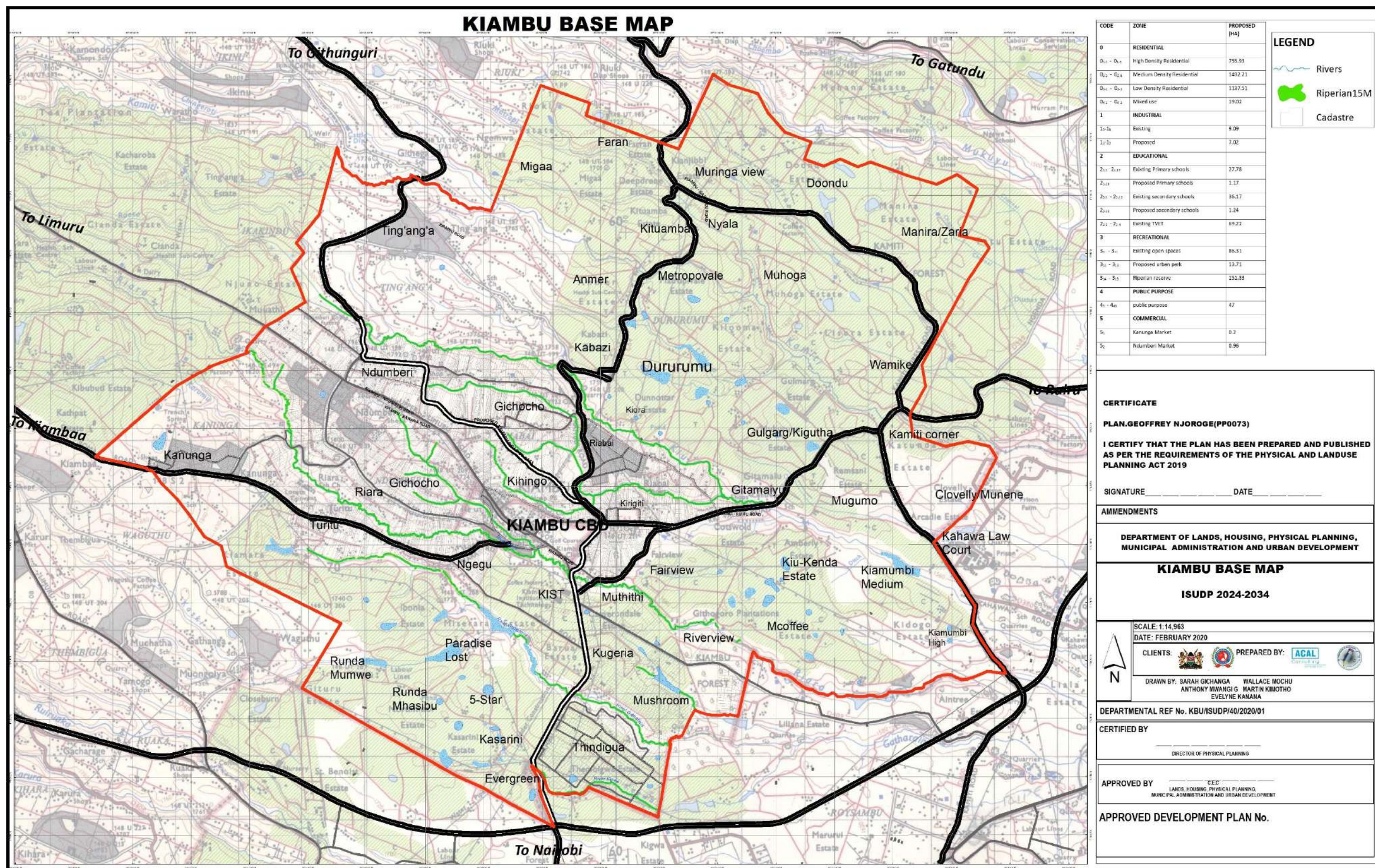
Source: Department of Physical Planning, Kiambu County

## 2.5 Kiambu Base Map

A base map is the graphic representation depicting baseline reference information at a specified scale and forms the background setting for a map. The baseline reference information may include landforms, rivers, roads, landmarks, and political boundaries. The main function of a base map is to provide background detail necessary to orient the location of the map, though they also add to the aesthetic appeal of a map.

The Kiambu ISUDP base map (Map 5) was prepared in GIS environment that enabled digitization of an overlay of the town's aerial imagery, development plans and cadastral layout. This facilitated the digitization of the town's boundary, cadastre, natural features, structures as well as main infrastructure including roads, markets and public utilities.

The Kiambu ISUDP base map has been applied as a canvas backdrop in the analysis of the several sectoral thematic maps including transport networks and connectivity, human settlement patterns, infrastructure and services provision, and problem and opportunities map.



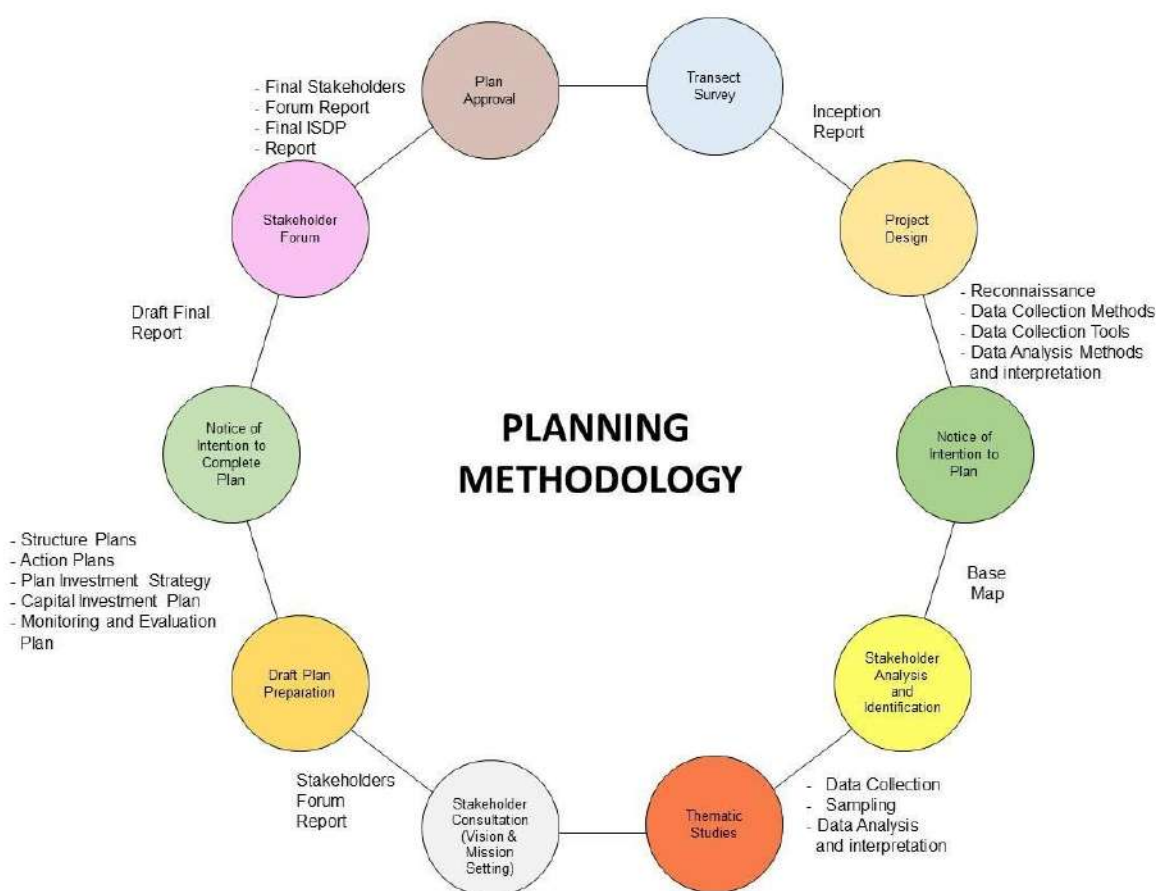
Map 5: Kiambu Base Map

Source: ACAL & BC Goldenhuys & Associates, 2019

## 2.6 Planning Methodology

In undertaking this assignment, the team adopted an integrated and inclusive approach that would yield a relevant, effective and implementable integrated urban strategic development plan. A mixed method approach allowing active participation of the mapped stakeholders was utilized as part of the process considering guidelines provided in various statutes including the Constitution of Kenya 2010, Physical and Land Use Planning Act, 2019, the County Governments (Amendment) Act, 2016 and the Urban Areas and Cities Act, 2011. This was necessary in order to ensure that, among other reasons, the processes and the final products are legally compliant. Figure 2 illustrates a summarized planning methodology framework.

**Figure 2: Planning Methodology**



**Source: ACAL & BC Gildenhuys & Associates, 2019**

The process had ten major phases namely transect survey, project design, notice of intention to plan, stakeholder analysis and identification, thematic studies, first stakeholder consultations, preparation of draft plans, notice of plan completion, second stakeholder consultations and the final plan approval. All the Phases were followed in a participatory manner and were validated through technical working groups and stakeholder workshops.

- 1. Transect Survey-** This phase basically involved project commissioning. Preliminary discussions were held between the Client, project beneficiary and project consultants on 2nd June 2015. The main aim was to build consensus on the planning area. The Terms of Reference were also defined to regulate the project and its outputs. On 20<sup>th</sup> June 2015 a kick-off meeting was called by the project beneficiary for purposes of notifying key players and stakeholders of the intention to prepare the ISDP and confirmation of the planning boundaries. Thereafter, a County Introductory Meeting was convened to introduce the planning team to the county officers. Reconnaissance surveys were conducted for the consultants to familiarize with the project area.
- 2. Project Design-** This is where defining the methodology (data collection tools, data collection methods, data analysis methods and interpretation, data synthesis and presentation), the base map (using the County agreed upon planning area in Kiambu municipality with all the cadastral data from the survey of Kenya) and work plan were created. In the work plan Technical Working Groups were to be formed by the County Government which would review each report produced before and after each stakeholder meeting. Two stakeholder forums (first for situation analysis report and second for the Draft Plan validation) were agreed upon by the client and the County during the 20<sup>th</sup> June 2015 a kick-off meeting.
- 3. Notice of Intention to Plan-** To sensitize and attract the involvement of the greater public, notices of Intention to Plan were published in daily newspapers. This was in the Standard and Daily Nation dated 30th July 2015. The notices were also simultaneously placed at strategic notice boards within the local area
- 4. Stakeholder Analysis and Identification-** Pursuant to the Constitution of Kenya and Urban Areas and Cities Act, 2012, public participation was a key component of this project. In this regard, stakeholders to be engaged in this project were identified through consultation among various actors including project managers at the Ministry of Lands, Housing and Urban Development, County Government of Kiambu, and Consultants. Actors from different agencies were involved, they were drawn from the National Government, the County Government, opinion leaders, Civil society including NGOs, Churches, professional groups, businessmen, farmers, landowners, resident associations and the general public. Also entailed in this phase was the formation of a technical working group at the county Level.
- 5. Thematic Studies -** The data collection process for the project began in August 2016, soon after which the thematic studies (situation analysis) began. The data used for the preparation of this ISUDP was obtained from both primary and secondary sources. Primary data was obtained through field surveys and visits. Methods involved; Land use surveys, where each plot within the planning area was identified in the satellite imagery and its land use mapped. Other attributes of the individual parcels were collected and filled in a mapping sheet. The consultants also held

Focus Group Discussions to collect data for problems in various sectors, and conducted key informant interviews for purposes of acquiring firsthand information on various thematic sectors (such as social infrastructure, and physical infrastructure). Secondary data collection was achieved through desktop survey, and this was mainly collected for thematic sectors that had current data (demography and physiography). Secondary sources reviewed included various policy and legal documents, previous plans and maps for various towns among other credible and authoritative sources. Following data collection, an assessment of physical and social infrastructure was undertaken alongside the population demand. This was in an effort to determine the needs of the population. Also, an environmental and natural resource evaluation was undertaken. This was aided through various computer programs such as ArcGIS for spatial analysis.

- 6. Stakeholder Consultations-** The findings of the situational analysis were validated during workshops forums held between held in May 2018. Visioning was also done at the same time.
- 7. Draft Plan Preparation and Development Proposals-** The existing situation was a key consideration in this phase. Preparation of the draft plan involved formulation of structure plan models, Action plans, Capital Investment Plan, Plan Implementation Strategy and Monitoring and Evaluation Plans. The draft plan proposals report was prepared and submitted to the client and the County team for review before being subjected to stakeholders for validation.
- 8. Notice of Completion of Plan-** To sensitize and attract the involvement of the greater public, notice of Completion of Plan was published in daily newspapers. The notices were also simultaneously placed at strategic notice boards within the local area.
- 9. Stakeholder Forum-** the Draft Plan preparation and development proposals were presented to the stakeholders on February 7<sup>th</sup> 2020, input was received and the plan validated.
- 10. Final Plan Approval-** The draft proposal was reviewed by the client and validated by the stakeholders. The Final Kiambu ISUDP plan was presented to the Kiambu County Assembly for approval.

## 2.7 Legal, Policy and Institutional Framework

The legal, policy and institutional framework form the anchor to which the ISUDP lies on. These elements guide the implementation, monitoring and evaluation of the plan hence making its understanding paramount in the planning process.

### 2.7.1 Constitutional Framework

The supreme law; the Constitution gives the people of Kenya sovereignty over use of their resources. This directly translates to planning to not only realize development but also ensure equitable distribution of these very resources. Article 42 of The Constitution of

Kenya, 2010 gives every Kenyan a right to clean and healthy environment. Other provisions of the Constitution that will guide formulation of the Kiambu ISUDP include:

**Article 60 (1)** - provides that land in Kenya shall be held, used and managed in a manner that is equitable, efficient, productive and sustainable and in accordance to principles such as equity in access to land, security of land rights, sustainable and productive management of land resources, transparent and cost-effective management of land, sound conservation and protection of ecologically sensitive areas.

**Article 61 (1) (2)** - describes land classification in Kenya

**Article 63** - guarantees the rights of communities to their lands and territories. It states that community land consists of land lawfully held, managed or used by specific communities as community forests, grazing areas or shrines and that it includes ancestral lands

**Article 66 (1)** - states that the state may regulate the use of any land or right over land in the interest of public safety, order, health or land use planning

**Article 69** - envisions the achievement and maintenance of a tree cover of at least ten per cent of the land area of Kenya.

**Article 174** - outlines principles of promoting socio-economic development and provision of proximate and easily accessible services which equally depend on proper planning, development and management of utilization of resources.

## 2.7.2 Policy Framework

### a) Global/ Policies

#### **Sustainable Development Goals**

The Sustainable Development Goals (SDGs) define global sustainable development priorities and aspirations for 2030 and seek to mobilize global efforts around a common set of seventeen goals and targets. SDG 11 aims to make cities and human settlements inclusive, safe, resilient and sustainable.

#### **New Urban Agenda**

The New Urban Agenda provides a roadmap for building cities that can serve as engines of prosperity, inclusion and centres of cultural and social well-being while protecting the environment. The Agenda also provides guidance for achieving the SDGs and provides the underpinning for actions to address climate change. Additionally, the Agenda provides a framework for urban policies, urban planning and design and urban governance, rules and regulations to enhance municipal finance.

### b) National Policies

#### **National Land Use Policy (Sessional Paper No. 1 of 2017)**

Provide legal, administrative, institutional and technological framework for optimal utilization and productivity of land related resources in a sustainable and desirable manner at national, County and community levels. Advocates for the development of land use plans for the country with full participation of all stakeholders and strict adherence to them enforced. There is need to promote environmental conservation and preservation.

### **National Land Policy (Sessional paper No. 3 of 2009)**

The National Land Policy guides the country towards a sustainable and equitable use of land. It aims at providing a framework for undertaking land use planning and development control in all administrative levels i.e. national, County and town level. It also calls for immediate actions to addressing environmental problems that affect land such as degradation, soil erosion and pollution.

### **Sessional Paper No. 3 on National Housing Policy for Kenya**

The overall goal of the Housing Policy is to facilitate the provision 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. This will minimize the number of citizens living in shelters that are below the habitable living conditions. It will also curtail the mushrooming of slums and informal settlements especially in the major towns.

## **2.7.3 Legal Framework**

### **Physical and Land Use Planning Act, 2019**

The Physical and Land Use Planning Act (PLUPA) which came to effect in August 2019 repealing the Physical Planning Act (Cap 286) is the framework law guiding the preparation of plans and development control in the country.

**Section 45** gives the basis for preparation of urban area plans for Cities, Municipalities, Towns or unclassified urban areas. It provides that a County shall prepare local physical and land development plans for these urban areas which could be long-term or short-term development plans. The prepared urban plans are required to be in consistency with the integrated city or urban development plans as contemplated by the Urban Areas and Cities Act, 2011.

**Section 46** provides for the purposes for which the urban plans shall be prepared including; Zoning, redevelopment, regulating land use and developments, providing sectoral coordination framework and guiding the infrastructure provision. Sections 47 and 48 give provisions for the initiation and preparation of the plans.

**Section 54** provides that the plans made under the Urban Areas and Cities Act, 2011 shall with necessary modifications be prepared and approved in accordance with this Act. This section as read together with section 45 gives a legal grounding for the preparation of Integrated Strategic Urban Development Plans.

### **County Government Act, 2012 & County Government (Amendment) Act, 2016**

The Act gives mandate to the County Governments, with the role of county planning according to the Constitution of Kenya. No public funds will be appropriated to counties without preparation of spatial plans. The Act requires the County Governor to promote and facilitate citizen participation in the development of policies and plans, and delivery of services in the County. In addition, the Act provides that all plans prepared for a County be approved by the respective County assembly.

Other sections of the Act relevant to the formulation of the Kiambu ISUDP include: Sec 102 (c) and Sec 103 (f) - protect and integrate rights and interest of minorities and marginalized groups and communities and integrating under-developed and marginalized areas to bring them to the level generally enjoyed by the rest of the Country.

Sec 103 (i) - achievement and maintenance of a tree cover of at least ten per cent of the land area of Kenya as provided in Article 69 of the Constitution.

### **Urban Areas and Cities Act, 2011, Urban Areas and Cities Amendment Act, 2019**

The Act establishes a legislative framework for classification of areas as urban areas or cities, governance and management of urban areas and cities and participation by the residents in the governance of urban areas and cities.

Urban Management Boards are established by the Act with the function to oversee the affairs of urban areas. This Act was amended through the Urban Areas and Cities Amendment Act reclassifying urban areas as follows:

1. A city should have a resident population of 250,000 residents
2. A municipality should have a resident population of a least 50,000 residents,
3. Every headquarters of a County government shall be conferred the status of a municipality, whether it meets the criteria for a classification as a municipality.
4. A town should have a resident population of 10,000 residents
5. A market center should have a resident population of 2,000 residents and have an integrated urban area development plan

### **The National Land Commission Act, 2012**

States the functions, powers of the NLC such as; to monitor and oversee responsibilities over land use planning throughout the country. In addition, this Act provides for the management and administration of public, private and community land in accordance with land policy principles. It provides a linkage between the commission, County government and other institutions dealing with land.

### **Land Act, No. 6 Of 2012**

The Act provides power to revise, consolidate, and rationalize land laws as well as provide for the sustainable administration and management of land and land-based resources.

### **Environmental Management Coordination Act, 1999 [Revised 2015]**

EMCA provides for establishment of an appropriate legal and institutional framework and procedures for management of the environment. It provides regulations for the conservation and sustainable use of resources on wetlands, river banks and land for the benefit of the people and communities living in the area. This Act also offers preliminary provisions for the regulation of solid waste, industrial waste, hazardous wastes, pesticides and toxic substances, biomedical wastes and radioactive substances.

### **Water Act, 2016**

This Act provides for sustainable management, conservation, use and control of water resources in the country. The Act recognizes that water related functions are a shared responsibility between the national and county governments. It creates a framework for water resources management (focusing on management and regulation of the use of water resources), as well as water service provision (water supply and sewerage services).

### **Agriculture Fisheries and Food Authority Act, 2013**

This Act provides for the establishment of an Agriculture Fisheries and Food Authority. It also provides for the development of policy guidelines by the authority on preservation, utilization and development of agricultural land and related matters.

### **Energy Act, 2019**

This Act replaces the Energy act 2006, and consolidates the laws relating to energy in Kenya. The Act further delineates the functions of the national and devolved levels of government in relation to energy, providing for the exploitation of renewable energy sources, regulation of midstream and downstream petroleum and coal activity and for the supply and use of electricity and other forms of energy.

### **Agriculture Fisheries and Food Authority Act, 2013**

This Act provides for the establishment of an Agriculture Fisheries and Food Authority. It also provides for the development of policy guidelines by the authority on preservation, utilization and development of agricultural land and related matters.

## **2.7.4 Institutional Framework**

The laws discussed herein have created institutions that will play a key role in managing the various processes related to the plan:

**Table 1: Institutional Framework**

<b>Institution</b>	<b>Role/Activities</b>
Ministry of Transport, Public Works Infrastructure, Housing, Urban Development	The Ministries hosts the State Department for Housing and Urban Development. One of the key functions of the ministry is Urban planning and development. The Nairobi Metropolitan Services Improvement Project (NaMSIP) is housed in this department. The mission of NaMSIP is to support the

Institution	Role/Activities
	development of an inter-connected, sustainable dynamic economy.
Ministry of Lands and Physical Planning	<p>Has mandate to ensure efficient administration, equitable access, secure tenure and sustainable management of Land resources.</p> <p>Is also in charge of</p> <p><b>Physical Planning:</b> Provision of advisory and National Physical Planning services, general principles on land planning and coordination of planning by counties in terms of policies, standards and guidelines and technical assistance and capacity building for counties on Physical Planning matter</p> <p><b>Land Adjudication and Settlement:</b> Ascertainment of land rights and interests, land consolidation and adjudication as well as Arbitration of Land disputes.</p> <p><b>Survey:</b> The official Government agency for land surveying and mapping.</p> <p><b>Land Administration:</b> Administration and management of private land, control and regulation of land use and property in respect of all categories of land and maintenance of land records.</p> <p><b>Land Valuation:</b> Valuation of land and assets for stamp duty, Government leasing including foreign missions, asset valuation, rating and development of National Land Value Index.</p> <p><b>Land Registration:</b> Registration of land transactions and other legal documents and determination of land and boundary disputes in collaboration with Surveys Department</p>
NLC	The National Land Commission is concerned with the management and administration of the public land in Kenya
Ministry of Water and Irrigation	<p>Trustee of all water and natural resources in the country.</p> <p>Key roles and functions include water policy formulation; water resources management policy; apportionment of water resources and abstraction licensing; appointment of water undertakers; regulation, setting and approval of standards; approval of water tariffs, levies, rates and charges; development and operation and maintenance of urban and rural water supply systems; wastewater treatment and control; water quality and pollution control; catchment area</p>

Institution	Role/Activities
	<p>conservation; water conservation; irrigation and dam construction schemes; flood control and land reclamation.</p> <p>The ministry has several institutions that enables it achieve its objectives. These include: <b>Water Resource Authority</b>; overall responsibility of overseeing sustainable development of the national water resource base. <b>Water Service Boards (WSBs)</b>: ensuring adequate access to water and sanitation services within their jurisdictions. <b>Water Services Regulatory Board (WSRB)</b>: national regulator with responsibility for providing guidelines on tariff setting and quality standards. <b>Water Services Trust Fund (WSTF)</b>: provide financial support to the rural water sector through grant finance for capital investments &amp; <b>Water Service Providers</b>: Provide water services to consumers, ranging from public urban utilities, to small private network.</p>
Ministry of Environment, & Forest	<p>Mandate for Environment and Natural Resources Policy formulation, analysis and review, as well as Promoting, monitoring and coordinating environmental activities and enforcing compliance of environmental regulations.</p> <p>Institutions under it include: <b>National Environment Management Authority</b>: overall environmental watchdog; <b>Kenya Water Towers Agency (KWTA)</b> protection of water towers, <b>Kenya Forest Service (KFS)</b> custodian of Forests, <b>National Environment trust Fund (NETFUND)</b>. <b>National Environment Council</b>: facilitate research intended to further the requirements of environmental management, <b>National Environment Tribunal</b>: review administrative decisions made by NEMA relating to issuance, revocation or denial of license and conditions of license.</p>
Kiambu County Government	The County Government will be in charge of adopting, approving and implementing the plan.

Source: ACAL & BC Gildenhuys & Associates, 2019

## 2.8 Other Relevant Policies & Strategies

### 2.8.1 Bottom-Up Economic Transformation Agenda (BETA)

Economic, Social and Political. The Bottom-up Economic Transformation Agenda (BETA) has been designed to address the current challenges facing the country's economy, stimulate economic recovery and bolster resilience. It places special emphasis on priorities

that target reduction in the cost of living, creation of jobs, achievement of more equitable distribution of income, enhancement of social security, expansion.

The agenda is anchored on 5 pillars with the largest impact and linkages to the economy as well as on household welfare, and 12 enablers that aim at the creation of a conducive business environment for socio-economic transformation. The 5 pillars are: Agricultural Transformation; Micro, Small and Medium Enterprise (MSME) Economy; Healthcare; Housing and Settlement; and Digital Superhighway and Creative Industry.

The key enablers are: Blue Economy; Education and Training; Environment and Climate Change; Foreign Policy and Regional Integration; Governance; Infrastructure; Manufacturing; Service Economy; Women Agenda; Social Protection; Sports, Culture and Arts; and Youth Empowerment and Development Agenda.

### **2.8.2 Vision 2030**

Vision 2030 is the blueprint for Kenya's long-term national development. It is anchored on three main pillars: Economic, Social and Political. The Vision 2030 seeks to transform Kenya into "a newly industrializing, middle income Country providing a high quality of life to all its citizens in a clean and secure environment" through improvement of key thematic sectors such as Infrastructure; Energy; Security; Tourism; Agriculture; Wholesale/Retail Trade; Manufacturing; Financial Services; and Business Process Outsourcing. With Vision 2030, Kiambu municipality will provide affordable housing, administrative services, wholesale/retail trade, encourage manufacturing, industry, commerce and financial services among others.

### **2.8.3 The National Spatial Plan**

The NSP defines the general trend and direction of spatial development for the country by providing a framework for better national organization and linkages between different activities within the national space hence informing the future use and distribution of activities.

The national spatial plan seeks to provide a framework for functional human settlements, enhanced agricultural productivity, planning and managing natural resources and the environment, providing a framework for infrastructure provision, promoting industrial and commercial development and the enhancement of good governance. Kiambu ISUDP will provide detailed plans that will be an implementation of the National Spatial Plan.

### **2.8.4 Big Four Agenda**

From December 2017, the national government announced the Big 4 Agenda that would be prioritized in resource allocation. The four sectoral areas mentioned included:

- Affordable Housing.
- Food Security
- Manufacturing

- Universal Healthcare

The Kiambu ISUDP has addressed issues of affordable housing in low income areas, food security by addressing the issue of protecting rich agricultural areas, providing for manufacturing space and recommending accessibility to public healthcare for all residents of Kiambu municipality.

### 2.8.5 Nairobi Metropolitan Urban Development Strategies

In 2008, the National Government prepared the Nairobi Metro 2030 Strategy aimed at making the Nairobi metropolitan region ‘A World Class African Metropolis’ which is safe secure and prosperous. The Strategy forms part of larger national plans such as the Kenya Vision 2030 document. Due to the dominance of the Nairobi Metro, the overall Strategy has national and regional development implications specifically for surrounding counties such as Kajiado, Machakos and Kiambu. Sustainable development that focuses on social (liveability), economic (competitiveness) and environmental sustainability underpin the Strategy.

### 2.8.6 Kiambu County Spatial Plan (CSP)

In compliance with Chapter 11 Section 110 of the County Government Act, 2012, the County Government of Kiambu has prepared a Kiambu County Spatial Plan (Draft). The spatial plan is a long-term physical development framework for a period of ten (10) years (2015-2025) anchored on the vision *‘to transform Kiambu into the most developed and prosperous county, economically and socially through sustainable development and good governance’*. The plan integrates three development models namely: agricultural and rural development, urbanization and industrialization, tourism and environment, and outlines the practical steps over the next decade and spatial expression of the development course in next 10 years.

### 2.8.7 Kiambu County Integrated Development Plan (CIDP)

The 2023-2027 CIDP provides the County’s vision for the next five years while detailing various projects and programme per sectors with their location for implementation. The CIDP outlines proposals for budgetary allocations to various sectoral programmes such as establishment of industrial parks, upgrading of road networks, among others.

## 2.9 Emerging Issues

Table 2: Emerging Issues on Geographical Location & Size

Issues	Challenges	Opportunities
<b>Historical Background</b>	The documented history of the county does not include	Need to document the historical development

Issues	Challenges	Opportunities
	the indigenous people's account	with a special focus on Gikuyu people
<b>Geographic location and size</b>	The scope under study was the entire sub-county. Municipal boundaries were yet to be defined	Allocation of resources for the urban areas will call for the delineation of municipal boundaries vis-à-vis sub-county
<b>Kiambu Town Base Map</b>	Parts of Ndumberi and Tinganga Wards were left out of the planning area (scope)	Prepare Kiambu local physical and land-use development plan in the next phase
<b>Planning Methodology</b>	The ToR were heavy in content vis-à-vis the time and duration allocated for the assignment	Simplify the planning methodology to cut on the time for plan preparation, validation & approval
<b>Legal, Policy and Institutional Framework</b>	The Municipal Boards/management be able to financially implement the plans	Operationalize the Municipal Boards and Municipal Management secretariat
<b>Other Plans and Strategies</b>	Overlap between the BETA and Big 4 Agenda	Ensure the plan captures the aspirations of the strategic plans



REPUBLIC OF KENYA



COUNTY GOVERNMENT OF KIAMBU

---

## **PART II: SITUATIONAL ANALYSIS**

## 3 PHYSIOGRAPHIC CHARACTERISTICS

### 3.1.1 Overview

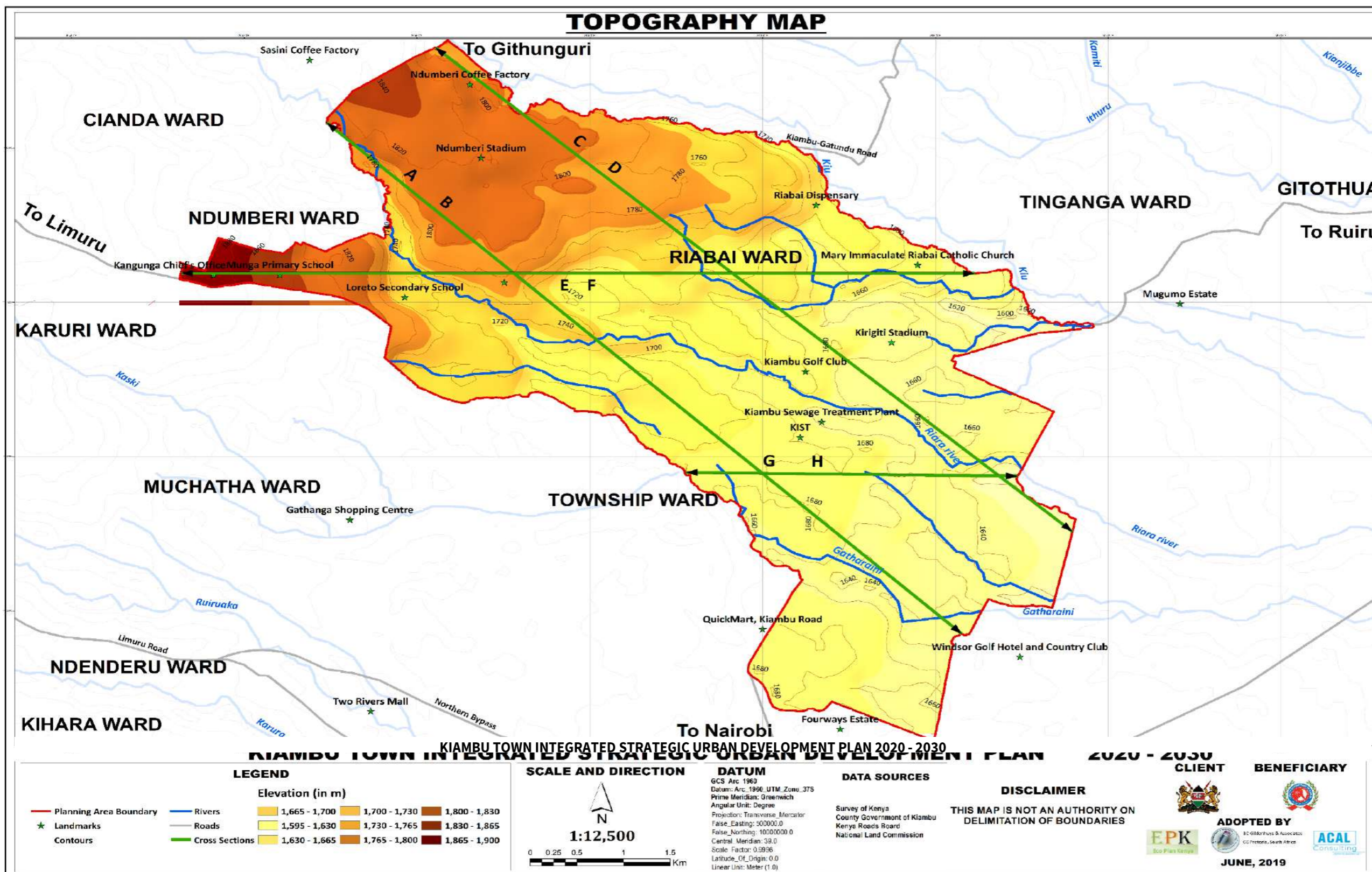
Despite coming under increasing pressure from human development, physiographic assets in Kiambu continue to play a structuring role that shapes the urban and rural / natural form and quality of life enjoyed by citizens. This chapter details the physiographic elements found in Kiambu planning area with focus on the soils and geology, hydrology, topography, vegetation and climate which influence the planning area.

It is worth noting that sustainable urban development must respect the presence, role and function of natural assets, and develop in a complementary manner making the most of the possible benefits residents and future generations can derive from them.

### 3.1.2 Topography

The topography of Kiambu is manifested by a series of undulating ridges running in a West-East direction across the planning area. Proposed development along these ridges are mostly restricted to flatter areas on the crests, with the land down the slopes into the valley sections remaining free of development or in some instances used for small-scale agricultural & riparian reserves. The North-Western, Eastern and South-Eastern parts of the planning area have a flatter topography, with fewer intermittent valleys. The local topography influence settlement to the flatter parts on top of the ridges (Map 6) forming clusters and strip settlement patterns. The highest point is at 1880 meters above sea level, while the lowest point is 1600 meters above sea level.

Map 6: Topography of Kiambu



Source: ACAL & BC Gilmanhus & Associates, 2019

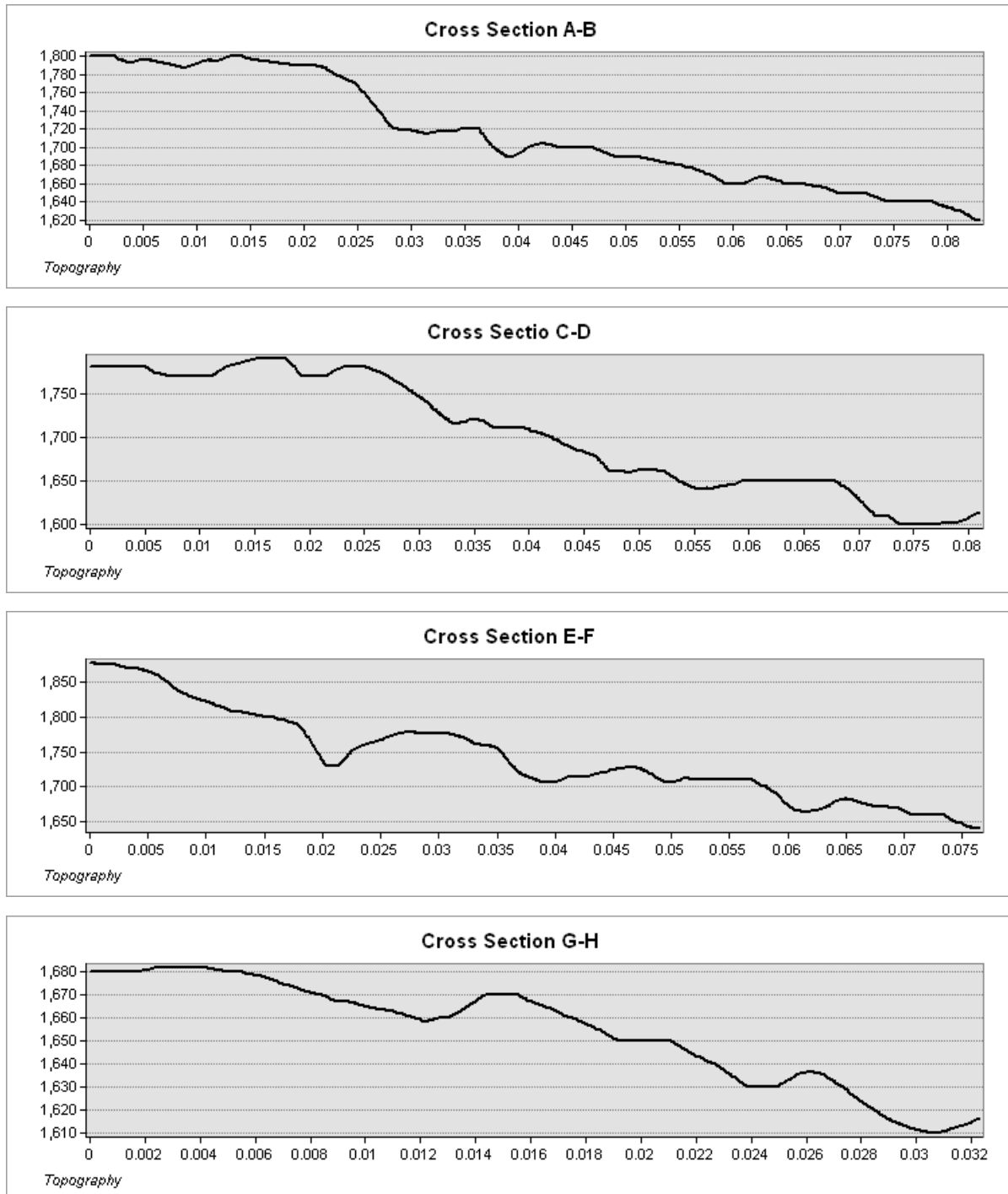


Figure 1: Cross sections on Topography

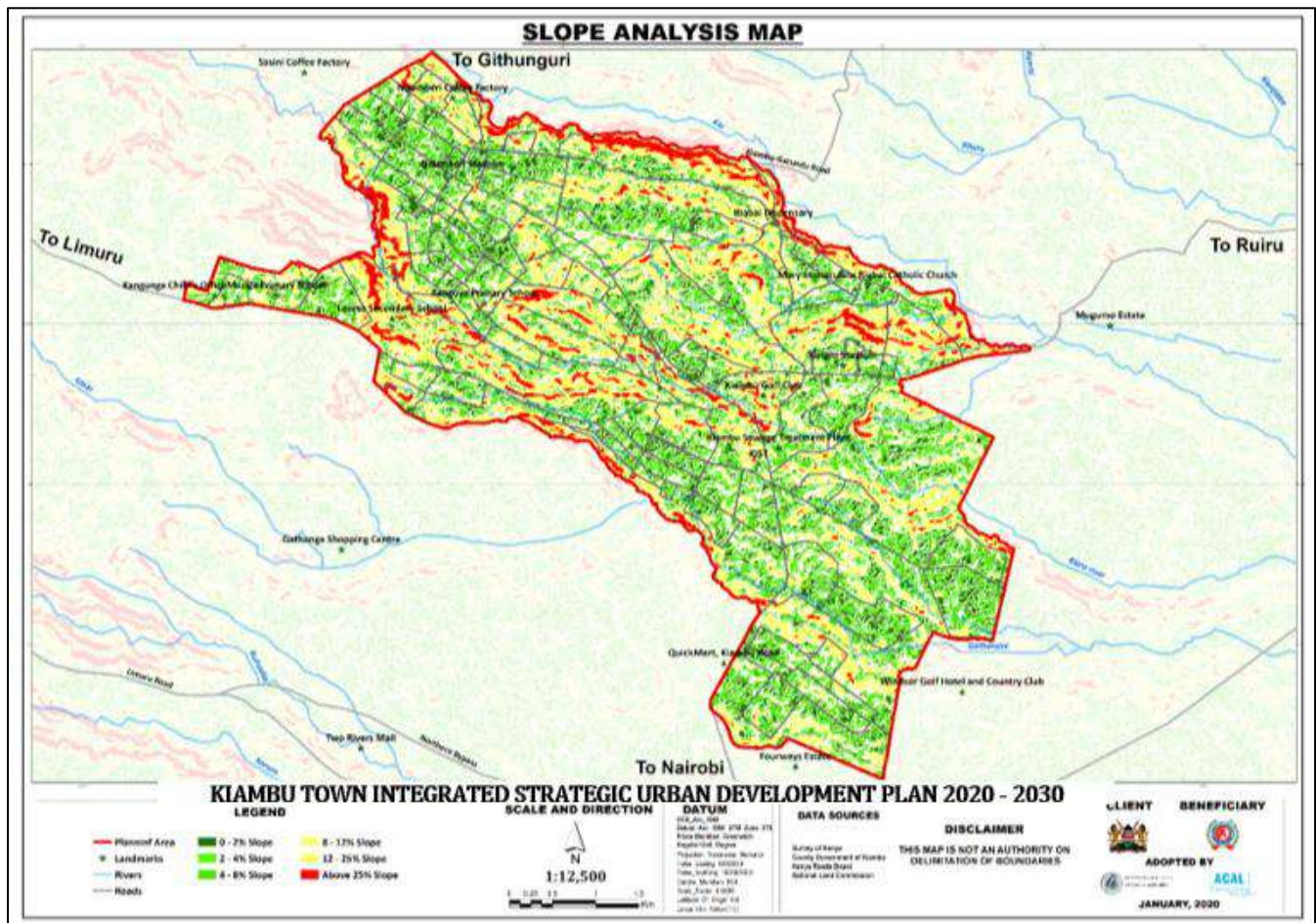
### 3.1.3 Slope analysis

Slope is a topographical factor in the determining of settlement patterns in Kiambu municipality. Kiambu is generally characterized by an uneven terrain with ridges dotting the landscape. Areas with less than 8% slope percentage are characterized by settlements. Areas within 8%-25% slope percentage are characterized by agricultural activities with few

or no physical developments. More than 25 % slope percentage indicates steep areas, such as hills and river valleys.

More than 90% of the Kiambu town planning area is as developable, and 9.4% of the area is not suitable for any development and much of it is riparian reserve.

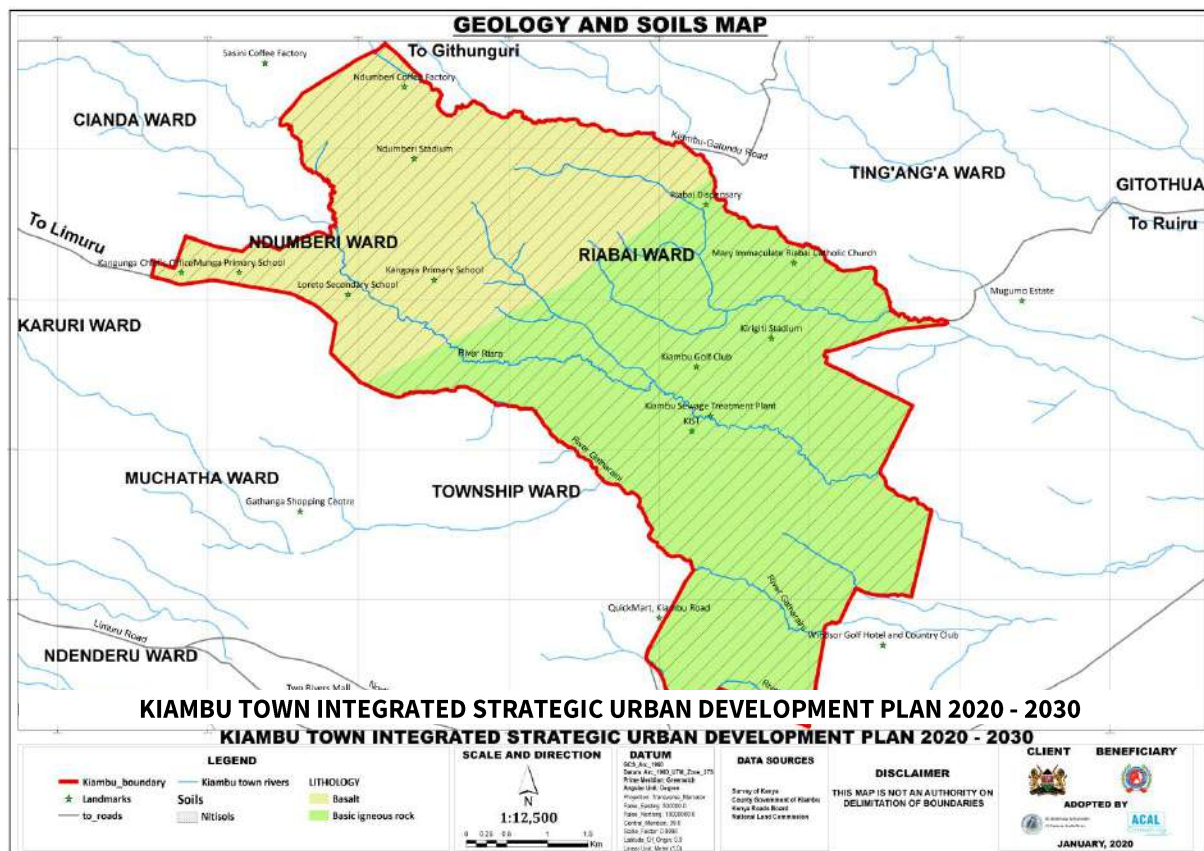
### Map 7: Slope Analysis



Source: ACAL & BC Gildenhuys & Associates, 2020

### 3.2 Geology and Soils

The planning area has a relatively elementary geological structure where the Northern side of the CBD consists mainly of basalts and the rest of the area consists of other basic igneous rocks like dolerite and gabbro. The Nitisol soils that cover the entire planning area are perhaps the most inherently fertile of the tropical soils because of their high nutrient content and deep, permeable structure. This partly explains why Kiambu planning area was historically coffee plantations.

**Map 8: Geology & Soil Structure**

Source: ACAL & BC Gildenhuys & Associates, 2019

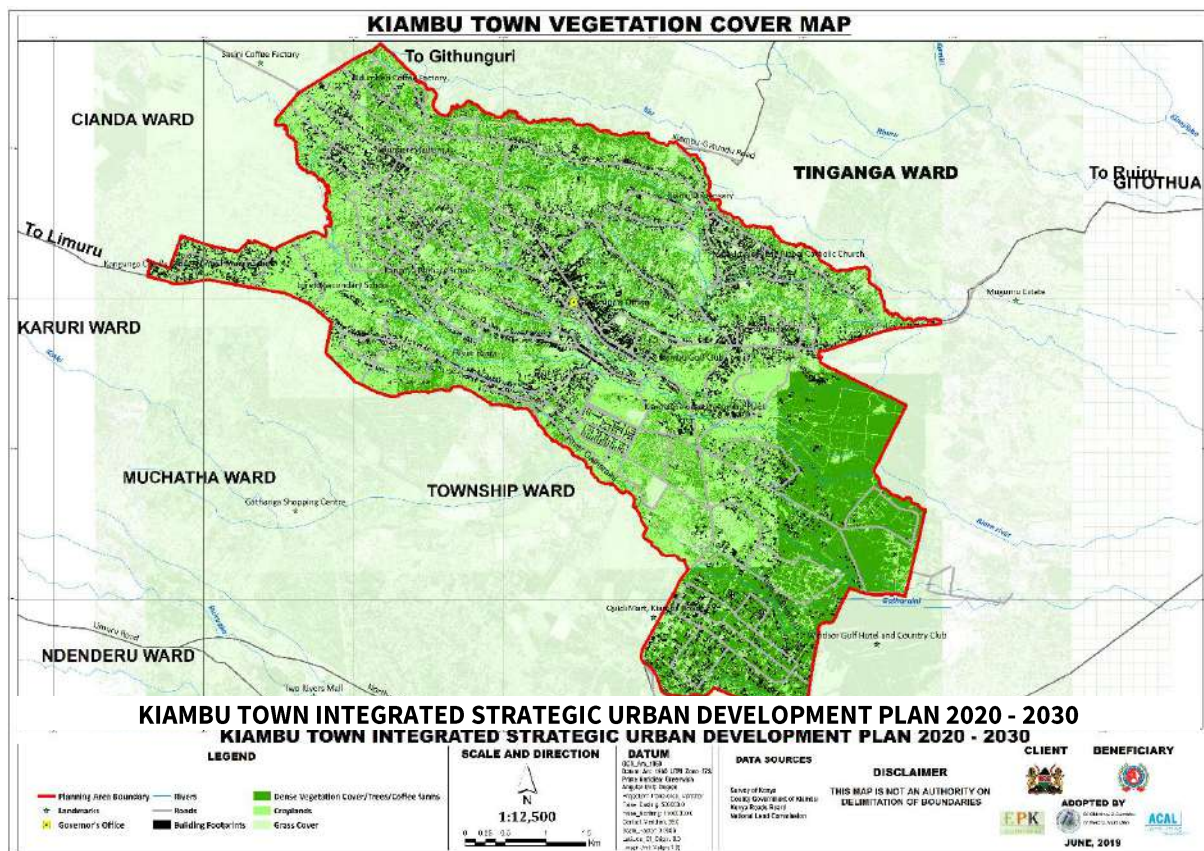
### 3.3 Wildlife

There was noted presence of wild animals such as wild dogs, monkeys, chimpanzees, snakes, antelopes, ostrich, wild cats, gazelles especially near Paradise Lost and the tea and coffee estates in Tinganga and Township Wards.

The close proximity to Karura forest within Nairobi City County also contributes to the growth of the wildlife habitat within Kiambu.

### 3.4 Vegetation

Natural vegetation within Kiambu Municipality is on a sharp decline and scattered due to human activities. A snapshot of google images over the years show a rapid decline of natural vegetation cover as a result of the increasing rate of urbanization especially in township, Nduemberi and Riabai Wards.

**Map 9: Vegetation Cover**

**Source: ACAL & BC Gildenhuys & Associates, 2019**

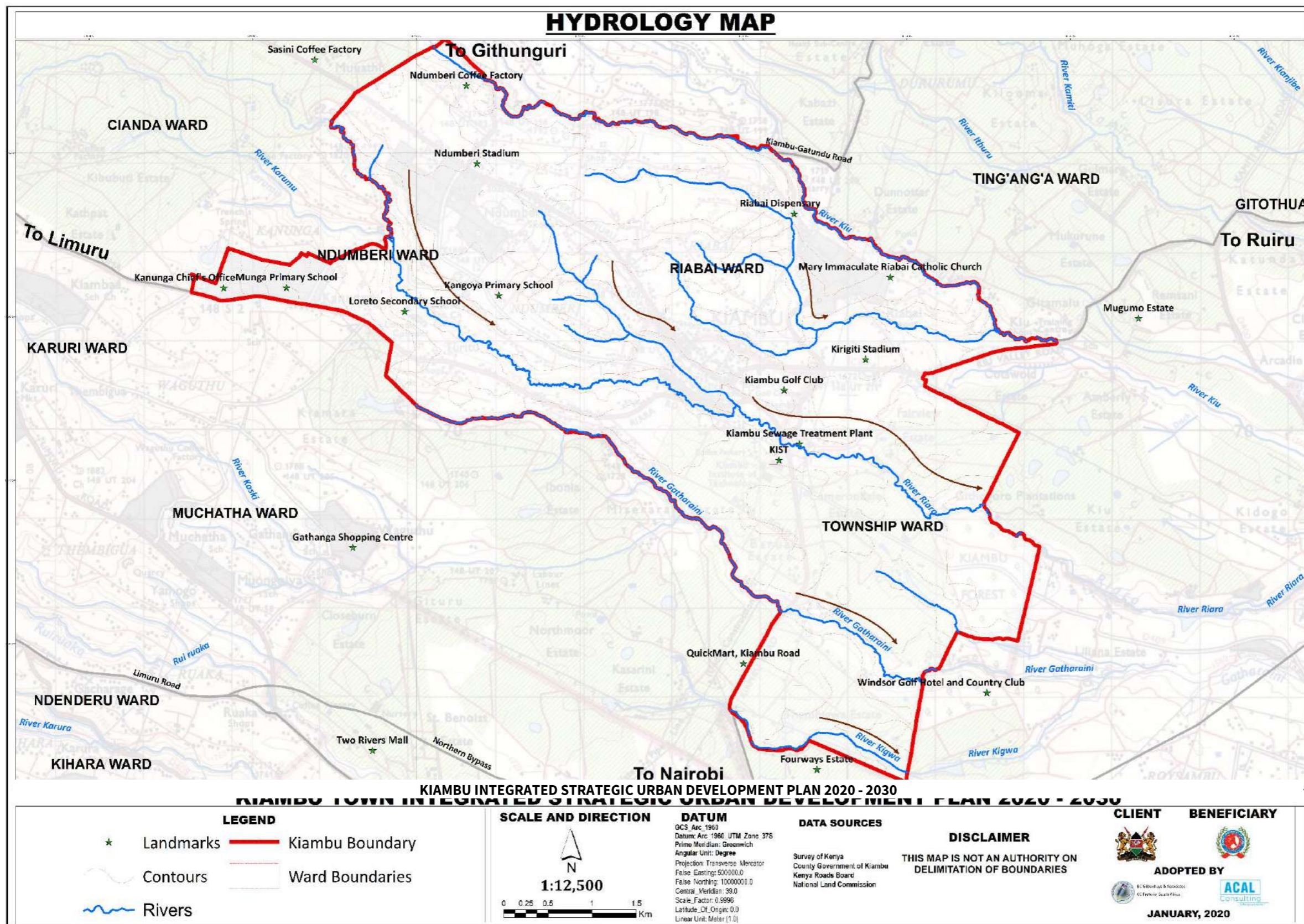
Human settlement development and other related human activities notably in the planning area have greatly interfered with natural vegetation and the underground water resource base. This has then significantly reduced the natural vegetation cover as a result of clearing natural cover to put up development. Land that was previously under agriculture has been converted to other land uses such as urban development.

### 3.5 Hydrology

The Kiambu planning area is well drained horizontal valleys, vertical slopes and loamy red volcanic soils which are porous and allow for infiltration. The upper ranges are covered by tea zones e.g. area along Sasini past Ndumberi township. The catchments are constituted by lower Aberdare ranges feeding to the numerous rivers and streams around. Flooding is only being experienced in the CBD of Kiambu town and the urban cores such as Ndumberi, Riabai, Kirigiti, Mugumo, and Thindigua. This is caused by flush surface runoff and exacerbated by climate change. Numerous springs and streams drain this area; the major rivers are Kiu, Kamiti, Riabai, Kigwa, Riara and Gathara-ini.

The main source of water in the planning area are numerous boreholes, water pans, and swallow wells with an average yield of 7m<sup>3</sup>/hr and pumps set at an average depth of 200 to 300 m deep. (Source: Athi Water Services Board 2016).

Map 10: Hydrology



Source: ACAL & BC Gildenhuys & Associates, 2020

### 3.6 Climatic Conditions

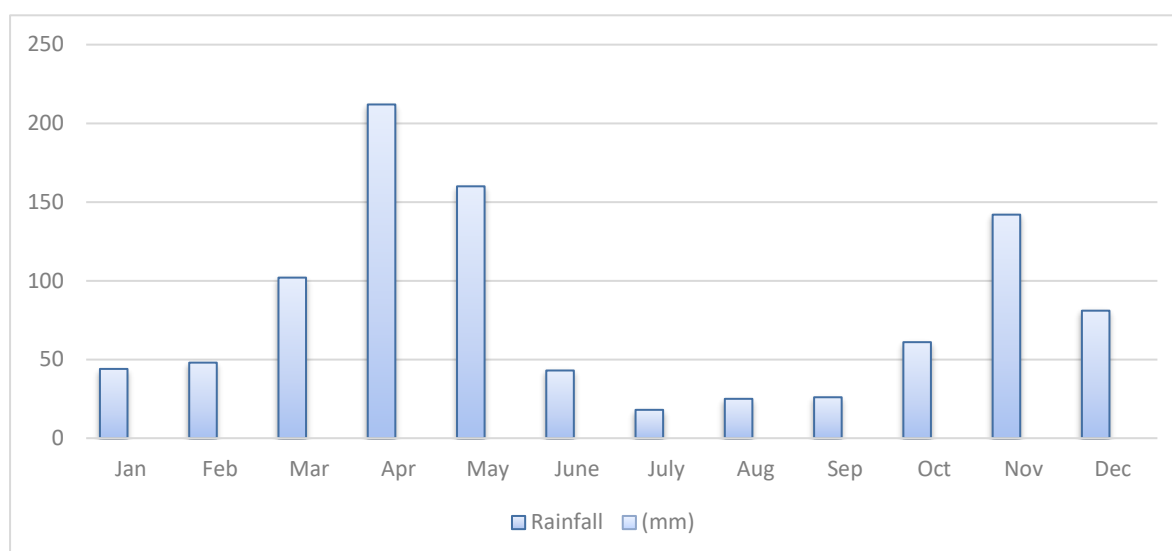
The climate in Kiambu town is warm and temperate with the wettest month being April and driest being July.

#### 3.6.1 Rainfall

The planning area receives rainfall throughout the year while having two seasons. The long rains are experienced from March to April, while the short rains during the months of September to December.

April recorded the highest rainfall of 212mm.

**Figure 2: Rainfall Distribution**

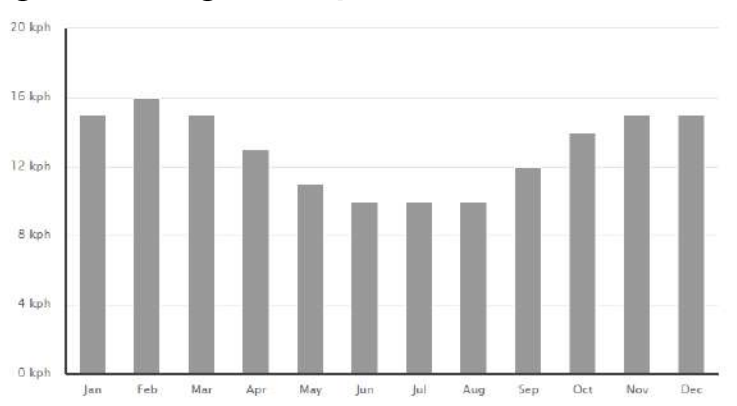


Source: Kenya meteorological department 2019

#### 3.6.2 Wind

Kiambu Municipality has mostly gentle wind speeds that range from 10 – 16kilometers per hour. A monthly average windspeed of over 16km/h or 10mph suggests a location is fairly windy. The higher wind speeds are experienced during the months January – April and October to December. Main wind direction is easterly and evaporation ranging from 100 to 150mm per month.

**Figure 3: Average Wind Speed**



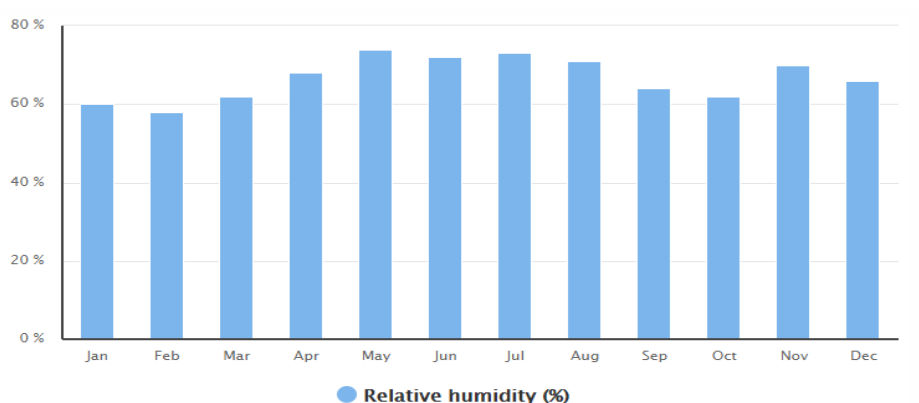
Source: <https://www.weather2visit.com/africa/kenya/kiambu.htm>, 2020

### 3.6.3 Humidity

Absolute humidity is the water content of air at a given temperature expressed in gram per cubic meter. Relative humidity, expressed as a percent, measures the current absolute humidity relative to the maximum (highest point) for that temperature.

Kiambu’s relative humidity ranges from 50% - 74%. 40% - 60% is considered to be comfortable humidity, and out of 12 months of the year, Kiambu has 10 months of humidity above 60% which means that it has high humidity. This means easy mold growth (vegetation) and high paint peeling capacity (wear and tear).

**Figure 4: Relative Humidity**

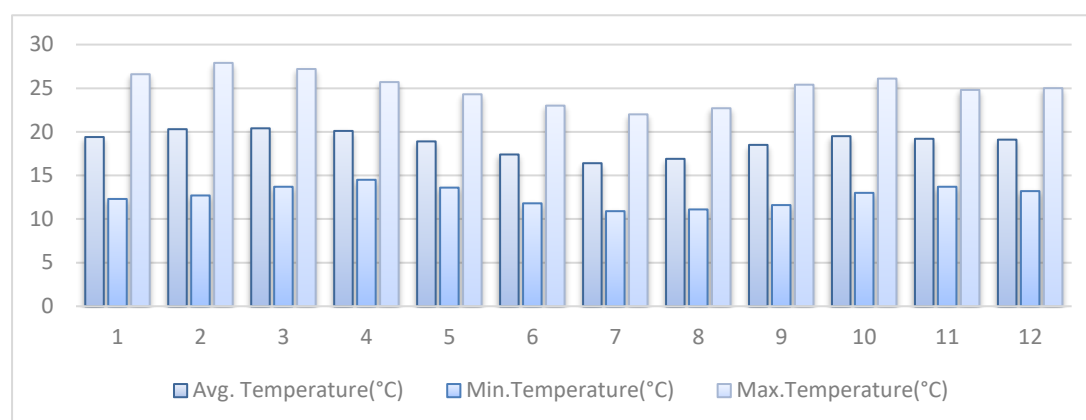


Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
60%	58%	62%	68%	74%	72%	73%	71%	64%	62%	70%	66%

Source: <https://www.weather2visit.com/africa/kenya/kiambu.htm>, 2020

### 3.6.4 Temperature

The planning area does not experience great variance in temperature. The coldest month was July with an average temperature of 16.4<sup>0</sup>C while the hottest month was March with an average temperature of 20.4<sup>0</sup>C. Figure 5 summaries the minimum, maximum and average temperatures experienced in the area. The annual temperature averages at 18.8 °C<sup>2</sup>

**Figure 5: Temperature Range**

Source: Kenya meteorological department 2019

### 3.7 Emerging Issues on Physiography

**Table 3: Emerging Issues on Physiography**

Issues	Challenges	Opportunities
<b>Topography</b>	Steep slopes that may affect highrise development.	Development control on sloppy areas, riparian reserves, conservation
<b>Soil and Geology</b>	Conversion of agricultural land for urban development	Mapping & zoning areas of agricultural development
<b>Vegetation</b>	Decline in natural vegetation cover	Conserve indigenous vegetation habitats.
<b>Hydrology</b>	Heavy reliance on underground water	Encourage rainwater harvesting; map areas for construction of water pans
<b>Climate</b>	High humidity which causes increased building maintenance costs due to paint peeling and mould development	Build better initiatives. Adopt new building code 2024,

Source: ACAL & BC Gildenhuys & Associates, 2019

## 4 POPULATION AND DEMOGRAPHY

### 4.1 Overview

Population and demography are central to planning for sustainable development and growth. This chapter explains the population demographics of the planning area, projection and emerging planning issues. It gives an analysis of the factors that have contributed to population increase and the anticipated population projection.

### 4.2 Population Size

According to the 2019 Kenya Population and Housing Census, Kiambu County had a population of 2,417,735 persons.

The population of Kiambu Sub-County stood at 145,903. The population of the town is projected to grow by 3.4% to 208,209 persons by 2027 (Kiambu CIDP 2023-2027). This population growth is mainly attributed to by proximity of the town to Nairobi, as a large portion of the city's workforce resides in Kiambu town.

**Table 4: Population Size**

Ward	Enumeration Zone (Sub location)	Population Density - 2019 [Pop/km <sup>2</sup> ]	Population [2019]		Projection 2020 (3.4% Growth Rate)		Projection 2025 (3.4% Growth Rate)		Projection 2030 (3.4% Growth Rate)		Area Occupied by planning area [Sq. Km]	
Ndumberi [15.68 Sq. Km]	Ndumberi	2,707	6,767	31,359	6,997	32,425	8,270	54,219	9,775	45,299	2.5	11.37 [51.66%]
	Kahuho	5,038	11,587		11,981		14,161		16,738		2.3	
	Kanunga	3,941	13,005		13,447		15,894		18,786		3.3	
Riabai [6.9 Sq. Km]	Riabai	4,753	8,556	26,854	8,847	27,767	10,457	32,820	12,359	38,791	1.8	6.9 [100%]
	Kihingo	3,587	18,298		18,920		22,363		26,432		5.1	
Kiambu Settled Area [34.07 Sq.Km]	Township	5,725	8,015	30,416	8,288	31,451	9,796	37,173	11,578	43,937	1.4	13.13 [67.18%]
	Thindigua	1,093	22,401		23,163		27,377		32,359		11.73	
Kirigiti [2.2 Sq.Km]	Kirigiti	5,990	13,177	13,177	13,625	13,625	16,104	16,104	19,035	19,035	2.2	2.2 [100%]
Total			<b>101,807</b>		<b>105,267</b>		<b>124,422</b>		<b>147,062</b>		<b>34.1</b>	

Source: KNBS 2019

**Table 5: Household number and distribution**

Ward	Enumeration Zone (Sub location)	House Hold Population [2019]		House Hold Projection 2020 (3.4% Growth Rate)		House Hold Projection 2025 (3.4% Growth Rate)		House Hold Projection 2030 (3.4% Growth Rate)	
<b>Ndumberi</b> [15.64 Sq. Km]	Ndumberi	2,090	10,160	2,161	10,506	2,554	12,417	3,019	14,677
	Kahuho	3,632		3,756		4,439		5,247	
	Kanunga	4,438		4,589		5,424		6,411	
<b>Riabai</b> [8.1 Sq. Km]	Riabai	2,728	9,038	2,821	9,346	3,334	11,046	3,941	13,056
	Kihingo	6,310		6,525		7,712		9,115	
<b>Township</b> [34.07 Sq.Km]	Township	2,568	9,854	2,649	10,183	3,131	12,036	3,701	14,226
	Thindigua	7,286		7,534		8,905		10,525	
<b>Kirigiti</b> [2.2 Sq.Km]	Kirigiti	4,671	4,671	4,830	4,830	5,709	5,709	6,747	6,747
<b>Total</b>		<b>33,723</b>		<b>34,865</b>		<b>41,208</b>		<b>48,706</b>	

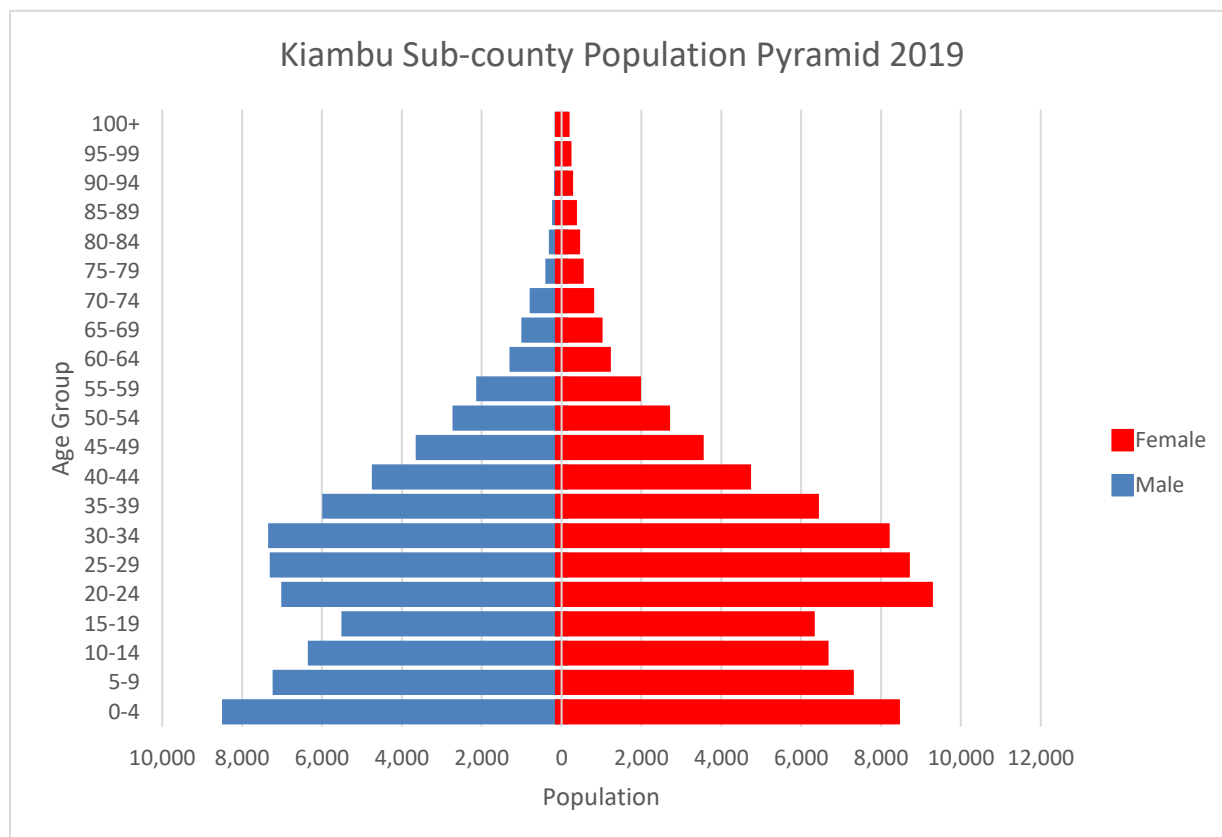
Source: KNBS 2020

The number of households in the planning area was 33,723 in 2020 and is projected to increase to 48,706 in 2030.

### 4.3 Population Structure

The planning area has a high number of youthful population and reproductive age. They account for 74% of the total population. This provides an opportunity for exploitation of human capital. The ration of men to women is almost equal. There is a gradual decrease in persons above 50 years of age signifying loss of persons in that age bracket to natural attrition.

**Figure 6: Population Structure**



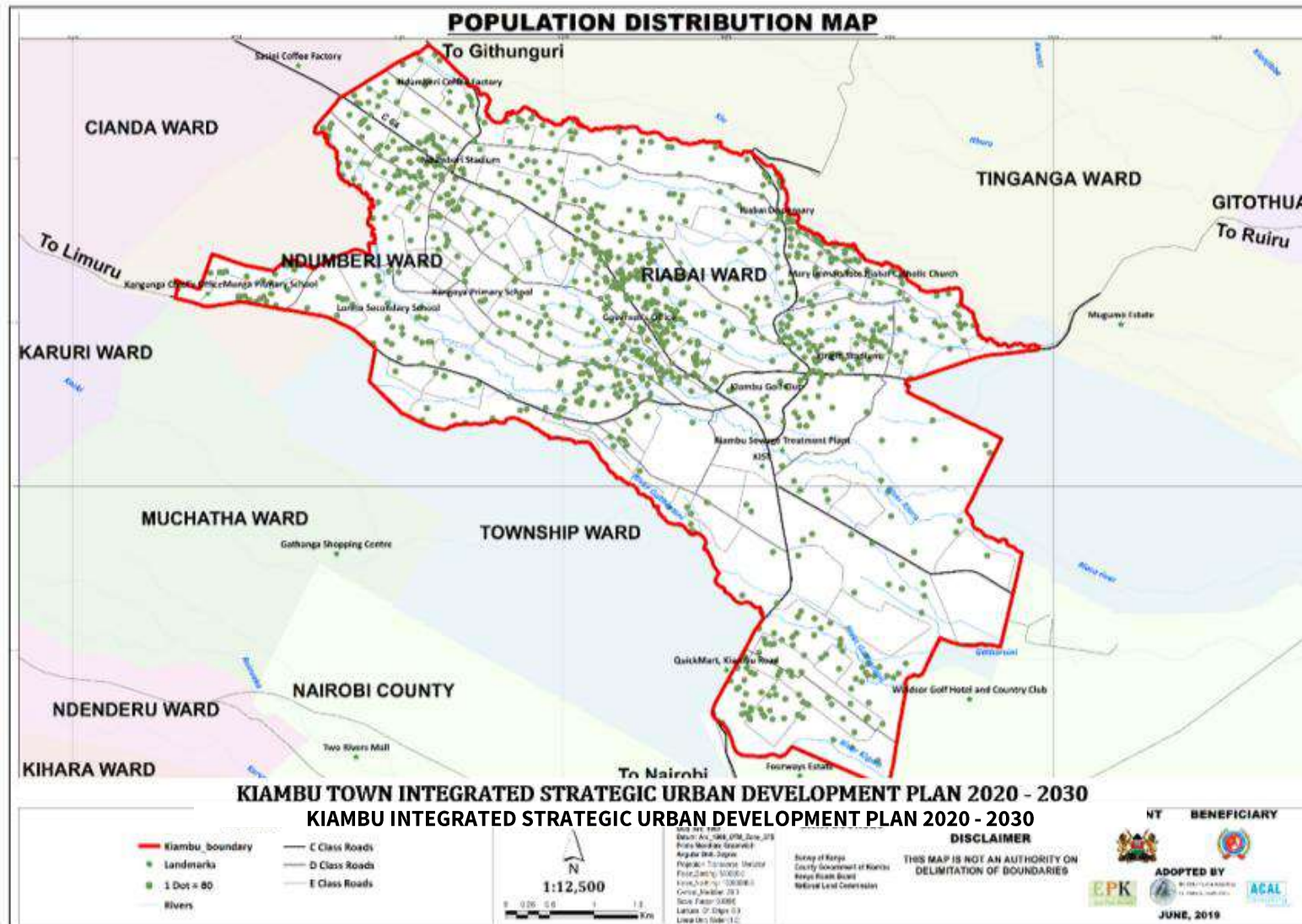
Source: KNBS, 2019

The reproductive age of women (15-44) constitutes 31.32% of the population. Their fertility rate is 2.7% in comparison to Kenya’s 3.9% (KNBS 2019). This may imply that the population of Kiambu may be increasing more by in-migration of people to settle or look for work.

### 4.4 Population Distribution and Density

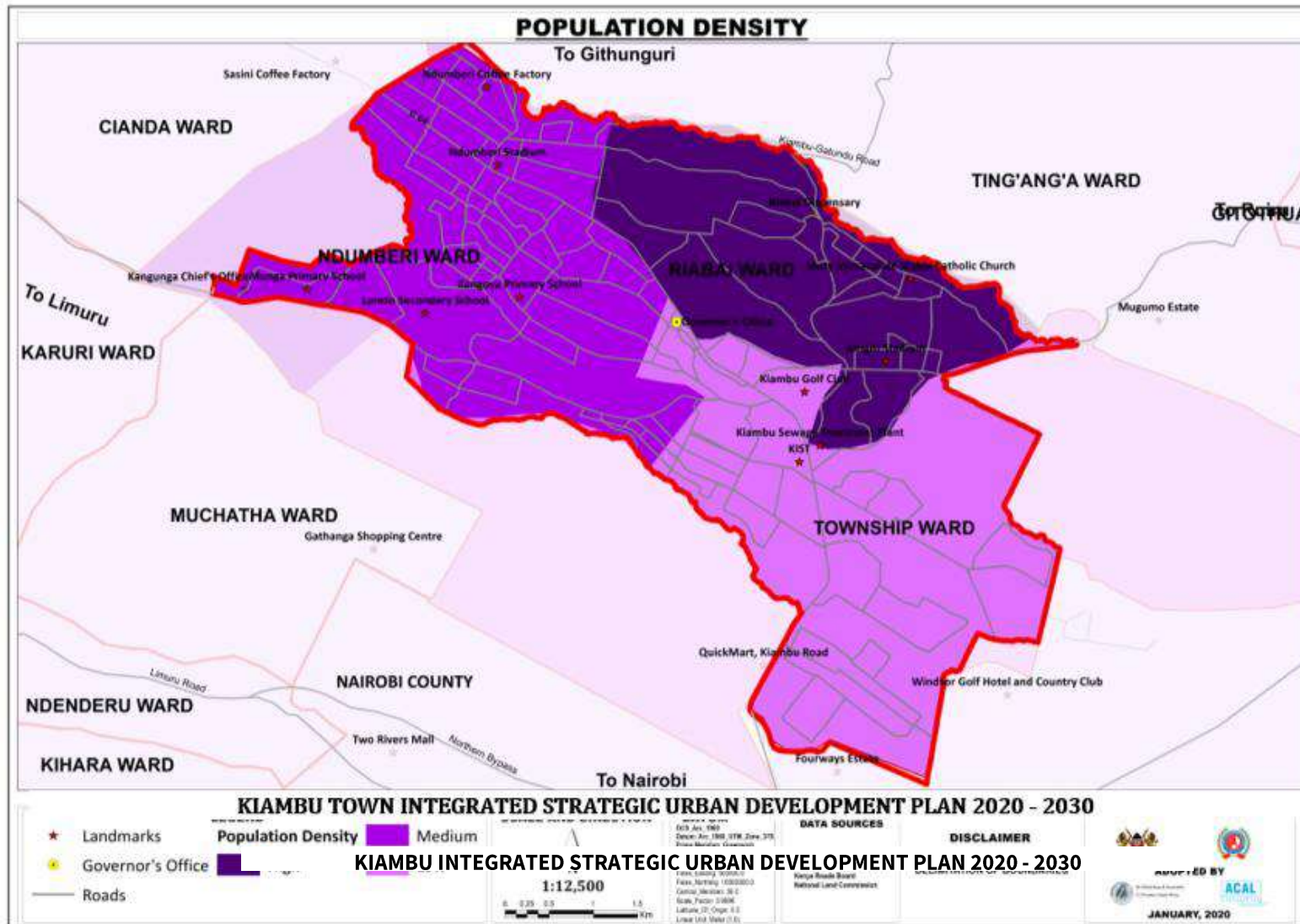
Currently, the population of Kiambu is mainly aggregated in Ndumberi, the Kiambu CBD, Kirigiti, Riabai, Tinganga and Thindigua areas. The structuring element is mainly along the road corridors, and in the urban townships. The high residential areas of Thindigua, Ndumberi, Riabai, Kiamumbi, and Kirigiti have a higher population density per area.

Map 11: Population Distribution



Source: ACAL & BC Gildenhuys & Associates, 2019

Map 12: Population Density



Source: ACAL & BC Gildenhuys & Associates, 2019

## 4.5 Demography

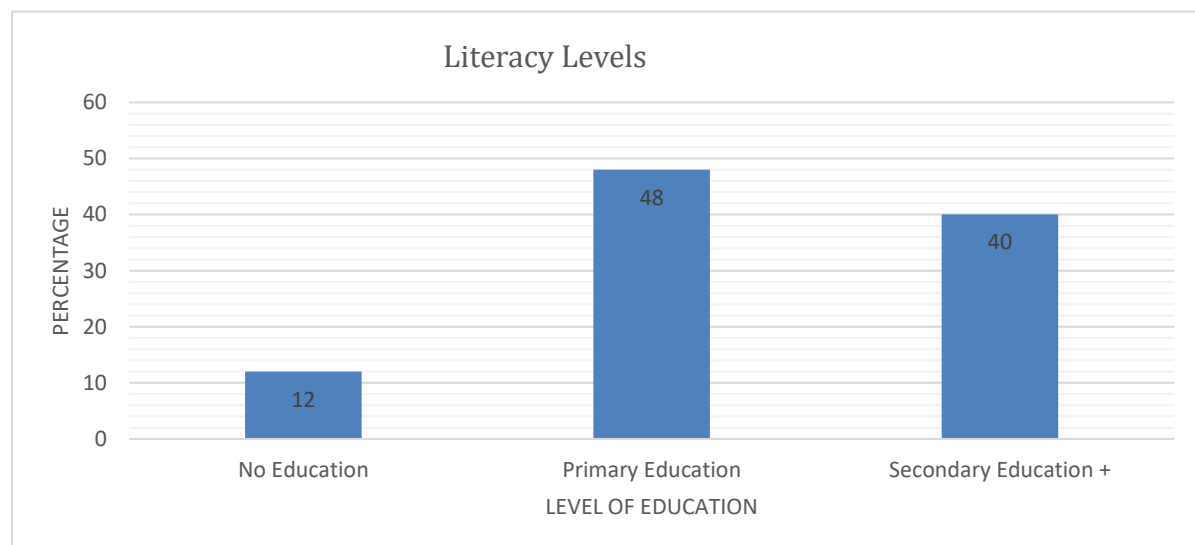
### 4.5.1 Human Development Index

Kiambu is a high growth population area within a region whose human development index is estimated to be 0.62, which is higher than the national average of 0.59 (KNBS, 2013). Its proximity to the Nairobi metropolitan core and the benefits of good connectivity and accessibility and good infrastructure will ensure long-term growth. The general well-being of individuals and societies is good as compared to other counties. Access to social economic goods and services is higher in Kiambu than many other areas in the county.

### 4.5.2 Literacy

The percentage of people within Kiambu County who can read stands at 95.6 while those who can write are 95.2 per cent of the total population. Those who can read and write are 95.4 per cent. When it comes to education, 12% have had no education, 48% have studied up to primary level, while 40% have a secondary education and above.

**Figure 3: Literacy Levels**



Source: KNBS & SIDS, 2013.

### 4.5.3 Mortality

#### a) Infant mortality

Infant mortality which stands at 58/1,000 and under five mortality rates, which stands at 48/1,000. Due to high rate of delivery at health institutions which stands at 80.4 per cent, children 's health is fair and data available for stunted growth is negligible.

#### b) Adult mortality

Availability of health facilities associated with the minimal hazard and disaster likelihood, good nutrition from the locally available agricultural farms has led to a relatively lower adult mortality rate which stands at 48/1000 in the planning area.

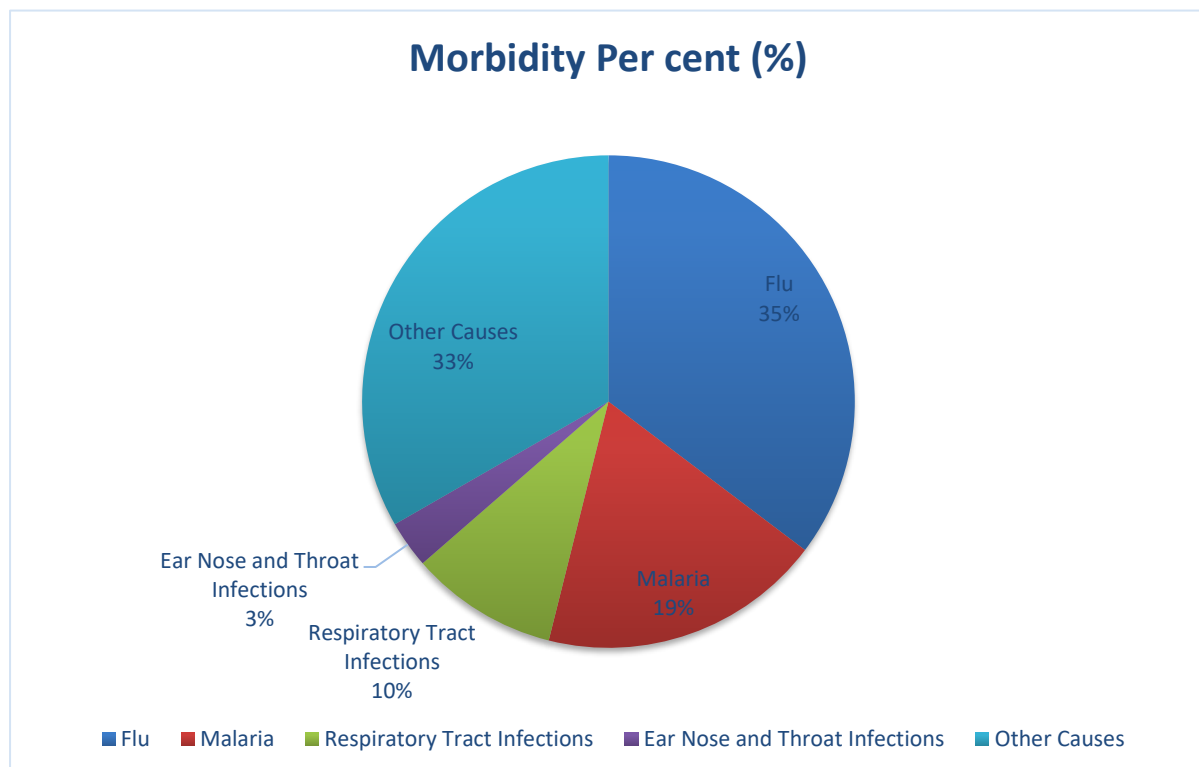
#### 4.5.4 Migration patterns

Migration in the planning area is both rural-urban and urban-urban. The rural-urban migration constitutes people from neighbouring rural areas moving to the town in such of employment. In the urban-urban migration, the close proximity of the town to Kenya's capital city, has contributed greatly to immigration. Presence of social facilities like education and industries in the town has also contributed to migration. However, a small proportion of people from the town have also moved to other places for various endeavours. Factors that affect migration pattern in the municipality include but not limited to; Work and employment; Housing; Education; Family related matters

#### 4.5.5 Morbidity

The most prevalent diseases in the county are flu which accounts for 35.3 per cent of the total hospital visits, malaria accounts for 18.6 per cent of the total hospital visits, Respiratory Tract Infections (RTI) at 9.7 per cent, and Ear Nose and Throat (ENT) Infections account for 3.1 per cent of hospital visits.

**Figure 8: Kiambu County Morbidity**



**Source: Kiambu Civil Registration Services, 2020**

#### 4.5.6 Access to health services

There are several health facilities spread out across the planning area which include public and private facilities. Public facilities include: Kiambu level 5 hospital in the CBD, Tinganga & Kanunga Health Centres, Riabai, Thindigua dispensaries. Private hospitals include; Aga Khan satellite clinic, Thindigua Nursing Home, Radiant Hospital, Mercy Light Hospital, PEFA Mercy Medical centre, Ndumberi, Bethsaida Catholic Dispensary among others. The facilities have ambulance services that help ferry patients in and out of the town. There is an inherent need to plan for expansion of public health facilities especially in the high-density areas of Thindigua, Kiamumbi, Kirigiti, Ndumberi to cater for the growing populace.

### 4.6 Welfare indicators

#### 4.6.1 Housing

Housing conditions within the planning area reveals the quality of life of the people. The Ndumberi area has a mix of flats (low-mid income) and individual housing many of which are mabati structures. In Thindigua zone, there is a concentration of flats and apartments (high-mid income). In the Kiambu CBD area there is a mix of flats (low income) and single residential masonry block houses. Kiambu is also home to Affordable Housing Project (AHP) under the County and National Governments.

#### 4.6.2 Access to energy

The planning area has access to several energy sources. The most common source of cooking energy with the area is charcoal/firewood and gas while electricity is used for lighting. Over 70 per cent of the total number of households in Kiambu Town are connected to electricity and this number is expected to rise to 90 per cent by the year 2030. Solar energy has less than five (5) per cent coverage, while Biogas use is at 25 per cent especially by farmers practicing urban agriculture within the municipality. The County Government of Kiambu through the Department of Physical Planning is promoting the use of solar and other forms of green energy by making it a requirement during approval and implementation of proposed building plans.

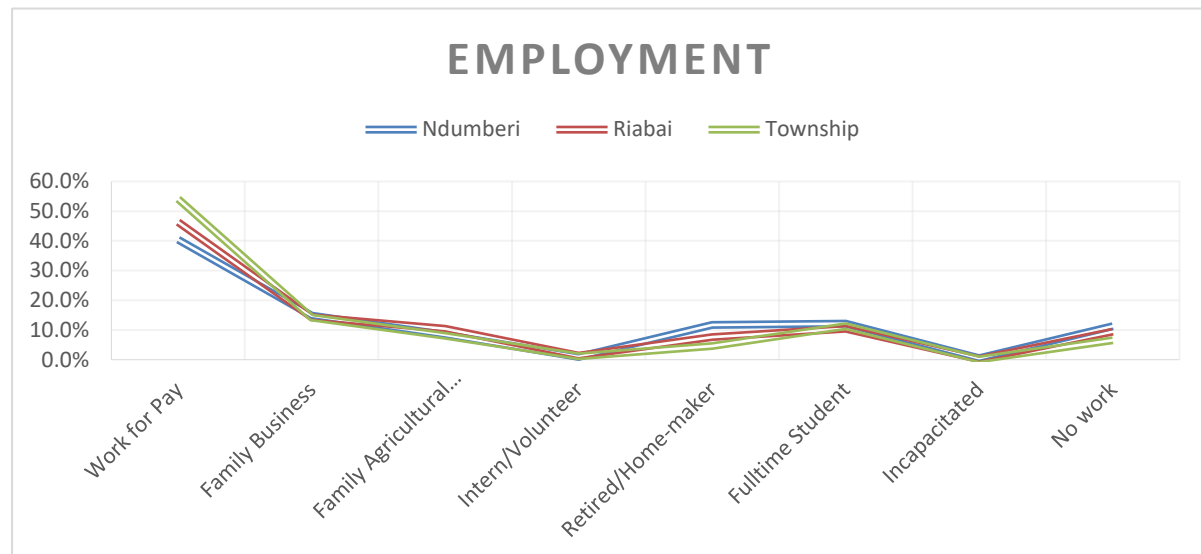
#### 4.6.3 Poverty level

The major factors which contribute to poverty in the planning area are: rising unemployment, high cost of agricultural inputs, population pressure, poor yields brought about by has climate, low agricultural produce prices by buyers, poor infrastructure, lack of credit, rise in HIV and AIDS, and insecurity.

About 24% of the population in Kiambu County are living below the poverty line (Census 2019). The severity of these poor population is 2% is the urban and rural poor. These people spend Ksh1,440 or less monthly per household.

According to the census data, in Ndumberi, 40.4% are employed, 14.8% have businesses, 8.4% are farmers while 11.3% are not employed. In Riabai, 46.3% are employed, 14.3% have businesses, 10.4% are farmers while 9.4% are not employed. In Township, 54.1% are employed, 14.2% have businesses, 8% are farmers while 6.5% are not employed. See the figure 9 below:

**Figure 9: Employment Levels in the electoral Wards**



Source: KNBS 2019

#### 4.6.4 Dependency level

Kiambu County has a dependency rate of 0.62 and this dependency of individuals below 15 years and above 64 years (KNBS & SID, 2013). This is much lower than the national level of 0.87. The aged dependency ratio is significantly higher in the planning area, compared to the national average of 0.065. The National Government and Kiambu County Government have programmes to support the aged through monthly disbursement of stipends and pension for the retired officers.

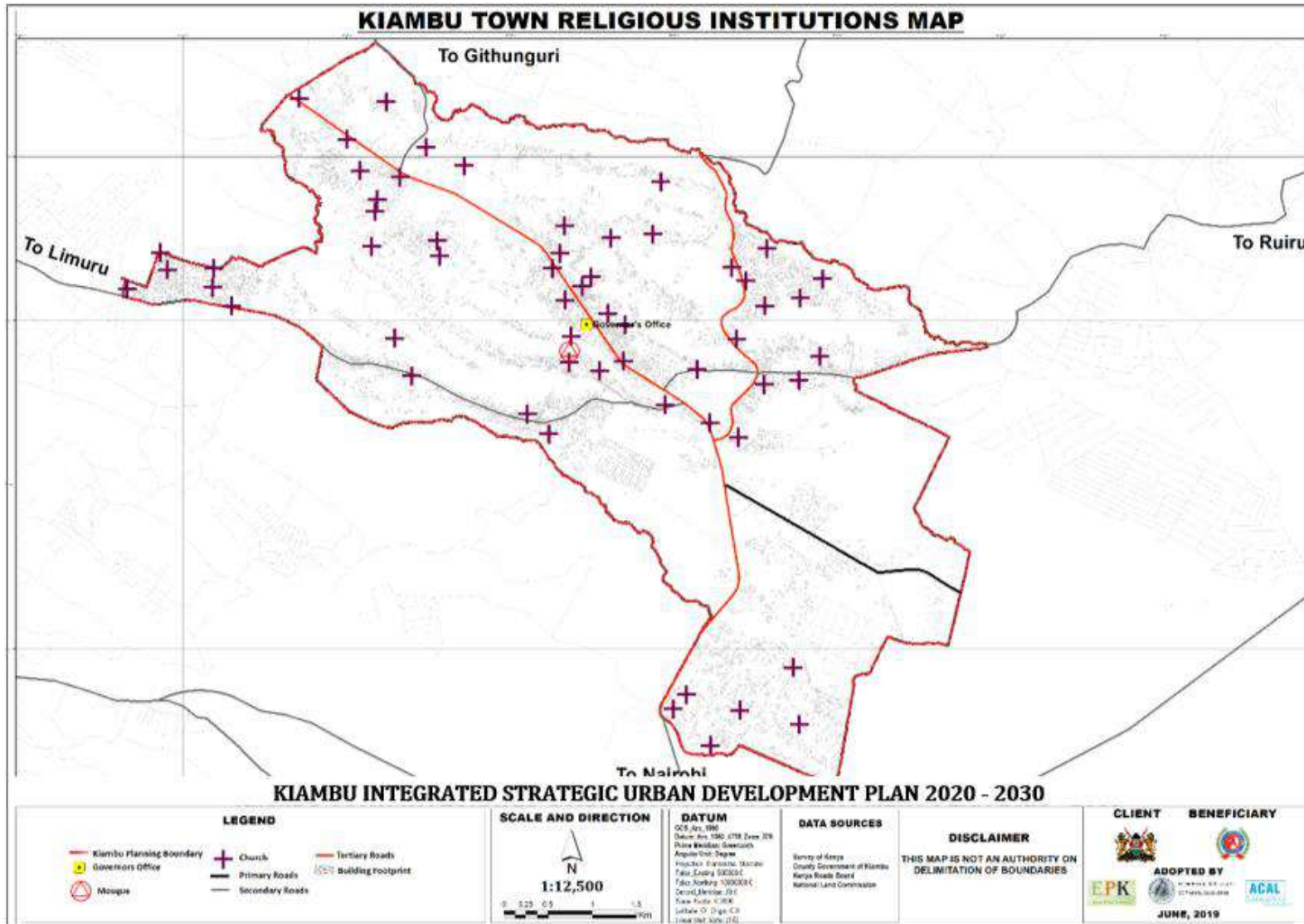
### 4.7 Social Analysis

#### 4.7.1 Religion

The majority of residents within the planning area is the Gikuyu community who worshipped Ngai whom they believed resides in Kirinyaga Mountain. Being farmers, they sacrificed goats beneath a fig tree famously known as Mugumo as a way to seeking for blessings of rain in times of drought.

With the introduction of Christianity majority of the people in Kiambu are Christians and belong to the mainstream Christian denominations including Catholics and Protestants. Apart from Christianity, there is a small number of other religious groups like Islam, Hindu, Atheists and Pagans, Rastafarians, Kalasingas and Wakorinos within the planning area.

Map 13: Religious Groups



Source: ACAL & BC Gildenhuys & Associates, 2019

#### 4.7.2 Culture and Heritage/Customs

Most residents within Kiambu municipality are from the Kikuyu community. For this reason, many may believe that modern influence has eroded the traditional way of life for this community, who mainly live around the capital city and the highlands. The Kikuyu are believed to be descendants of Gikuyu and Mumbi. According to Kikuyu mythology, Ngai created the first man and woman and bequeathed to them nine daughters. However, with now inter-marriages with other communities from other parts of the country the culture has been eroded and changed to a cosmopolitan culture/melting pot of all tribes. Sub-division of land is mainly along family lines and ties to this day.

#### 4.7.3 Vulnerable Groups

Women, children and people living with disabilities form part of the vulnerable group in the planning area as they are more prone to impacts of disaster and unplanned development.

Some of the challenges they face include: deprivation of rights to own land, limited access less to available credit, unfair cultural practises, and unjust access to employment opportunities through marginalization and social injustices.

Chapter 4 on Bill of Rights in the Kenya Constitution 2010 guarantees rights and freedoms to all citizens in the country including the vulnerable groups.

#### 4.7.4 Minority groups

There are several minority communities within the planning area comprising of the diverse communities in the country who have come to look for work or reside in Kiambu. Several ambassadorial homes are located within the planning area.

### 4.8 Emerging Issues on Demography

**Table 6: Emerging Issues on Demography**

Sector	Challenges	Opportunities
<b>Population size</b>	<ul style="list-style-type: none"> <li>▪ Due to in-migration, population is increasing faster than the provision of public utilities i.e. water, solid and liquid waste management</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provision of public utilities as per the demand</li> </ul>
<b>Population structure</b>	<ul style="list-style-type: none"> <li>▪ High population of elderly people (65 and above)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provision of special care through homes for the elderly</li> </ul>

Sector	Challenges	Opportunities
<b>Population distribution</b>	<ul style="list-style-type: none"> <li>▪ High population concentrations in certain areas such as Kirigiti and Thindigua where services such as sewer and water supply are not provided publicly provided</li> </ul>	<ul style="list-style-type: none"> <li>▪ Upgrading of physical infrastructure such as sewer tanks and water supply through public service.</li> </ul>
<b>Demography</b>	<ul style="list-style-type: none"> <li>▪ Lifestyle diseases</li> </ul>	<ul style="list-style-type: none"> <li>▪ Exercise and healthy diets should be encouraged through public health and the provision of exercise facilities such as parks and pedestrian walkways</li> </ul>
<b>Welfare indicators</b>	<ul style="list-style-type: none"> <li>▪ High dependence on electricity, thus power failures gravely affect the population</li> </ul>	<ul style="list-style-type: none"> <li>▪ Renewable energy exploitation like solar and biogas</li> </ul>
<b>Social analysis</b>	<ul style="list-style-type: none"> <li>▪ Too many churches located within a small area</li> </ul>	<ul style="list-style-type: none"> <li>▪ Government agencies to regulate churches</li> </ul>

Source: ACAL & BC Gildenhuis & Associates, 2019

## 5 LAND

### 5.1 Overview

Land is the main factor of production even as one considers labour, capital and entrepreneurship as the other key factors for development.

This section outlines the analysis of the existing land-use within the Kiambu planning area.

### 5.2 Land Tenure

Land tenure refers to the terms and conditions under which rights to land and land-based resources are acquired, retained, used, disposed of or transmitted. The planning area covers 98.3 km squared.

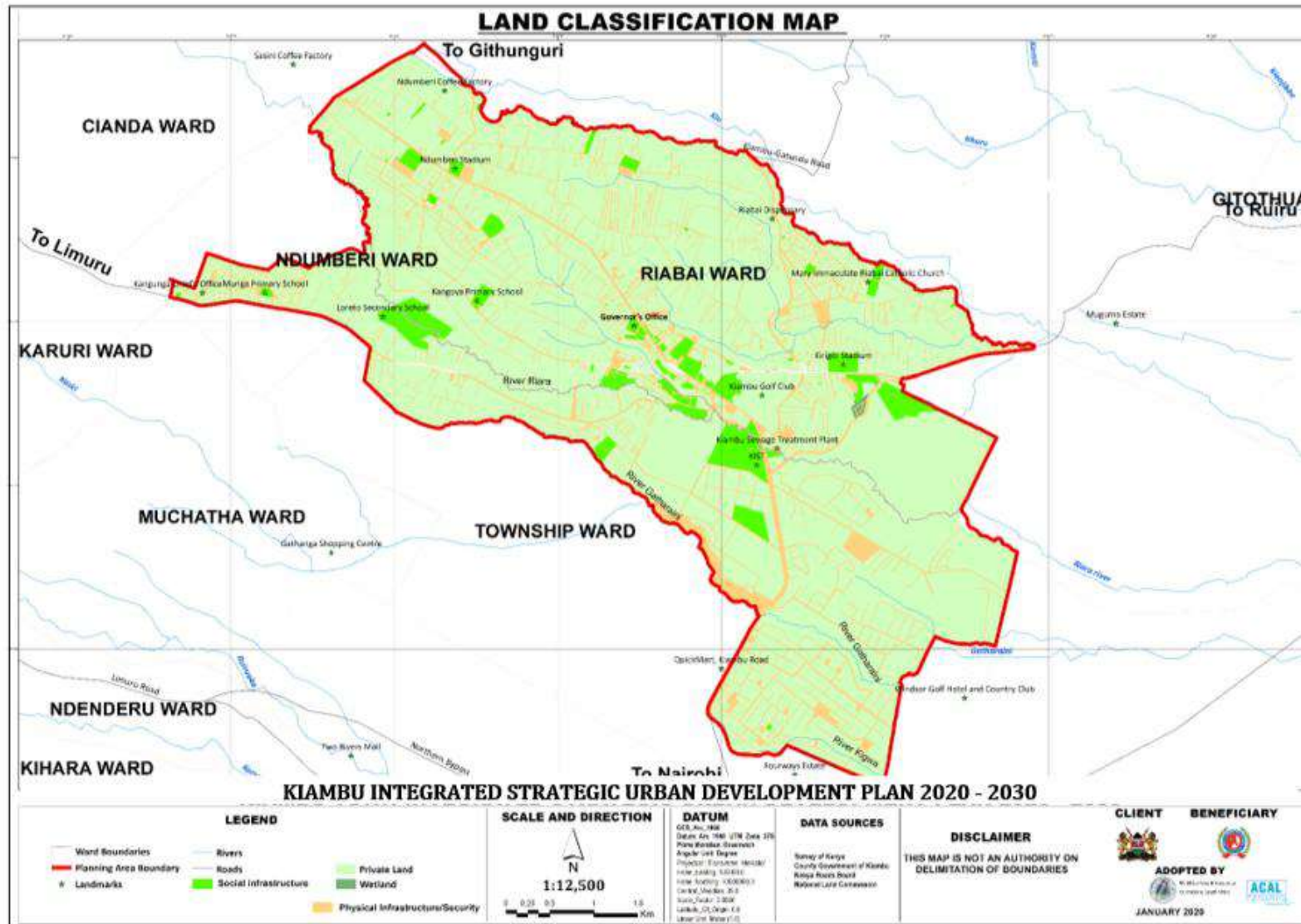
Land in Kiambu is majorly in private tenure as freehold and leasehold under National and County Government trusteeship. About 86% of the land is freehold family owned, while as the rest mainly consisting of land within the Kiambu Central Business District (CBD) is under leasehold.

### 5.3 Land Classification

The Constitution of Kenya 2010 classifies land into three categories, namely, public land, community land and private land.

Land in the Kiambu planning area is both public and private. About 87% of the land is privately owned. Public land which constitutes about 13% includes the land occupied by public institutions like the County Government and its utilities, public schools, hospitals, dispensaries, police station, churches, social halls, fire stations and infrastructure utilities e.g. roads.

Map 14: Kiambu Land Classification



Source: ACAL & BC Gildenhuis & Associates, 2019

## 5.4 Land Use Pattern

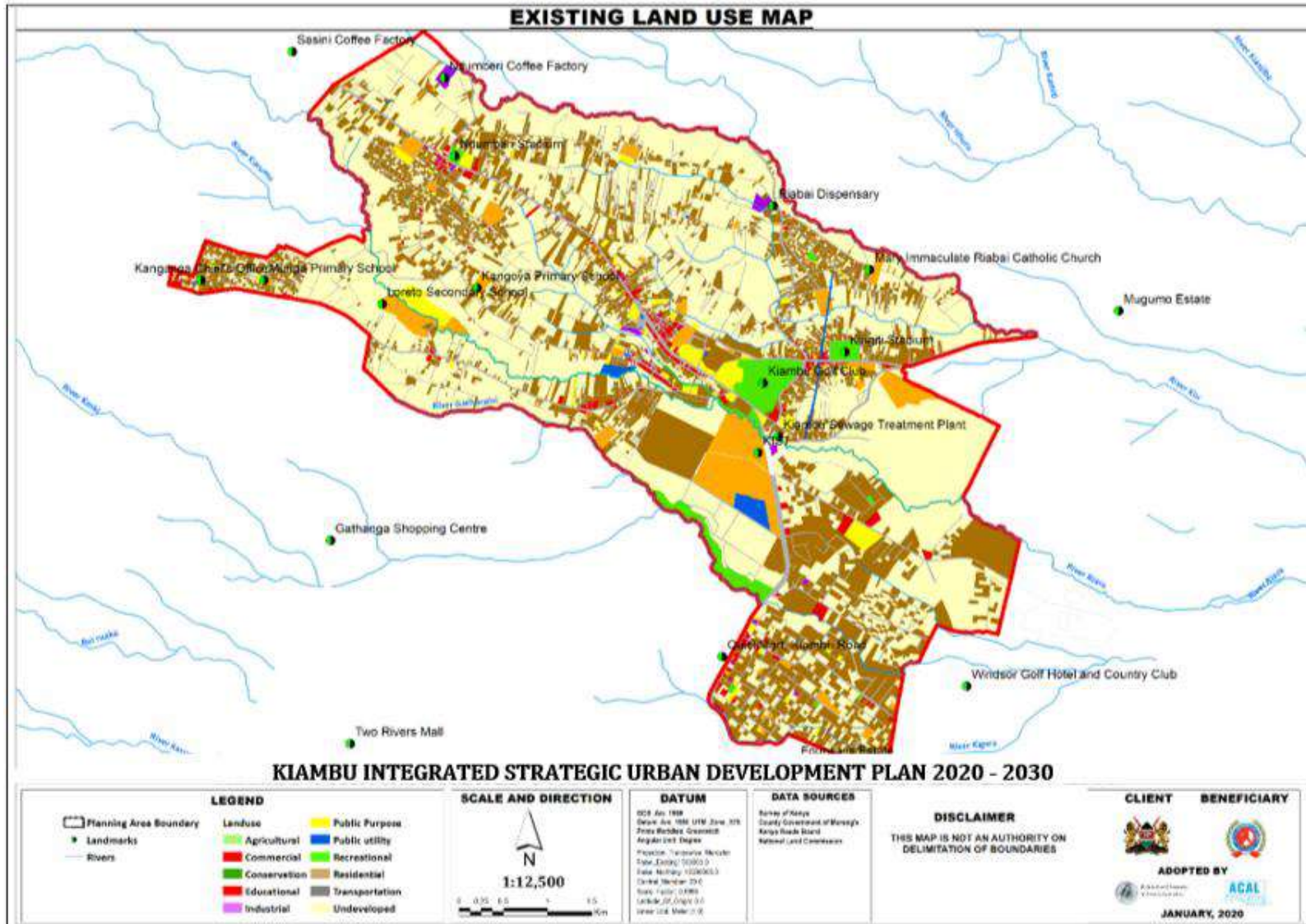
It is significant to note that residential land use has been given special attention as its coverage would affect the space taken by the other land uses. The mean holding size of adjudicated sections is 0.8. Table 9 and Map 15 shows a summary of the existing land uses.

**Table 7: Existing Land Use**

CODE	LAND USE	ACTUAL AREA	AVERAGE LAND SIZE	% AREA
1	RESIDENTIAL	375.36	0.43	12.76
2	INDUSTRIAL	12.64	0.38	0.39
3	EDUCATIONAL	91.36	2.86	2.83
4	RECREATIONAL	53.14	5.90	1.65
5	PUBLIC PURPOSE	93.38	1.00	2.90
6	COMMERCIAL	27.00	0.08	0.84
7	PUBLIC UTILITIES	13.23	1.32	0.41
8	TRANSPORTATION	150.23	4.17	4.67
9	AGRICULTURAL	2402.16	2.85	74.64
	TOTALS	3218.47	18.99	100

**Source: ACAL & BC Gildenhuis & Associates, 2019**

Map 15: Existing Land Use Map



Source: ACAL & BC Gildenhuys & Associates, 2019

## 5.5 Projected land Budget

Agricultural land use takes a great portion of the planning area, making 74.64%. This can be attributed to the fact that the area has a big agricultural hinterland. Residential land use also covers a significant percentage because Kiambu Town which is a major node of the planning area is a dormitory town.

Other land uses like industrial, educational, public purpose, commercial, public utility and transportation have significantly lower percentages of land within the planning area. The Table 10 shows the existing land use budget of the planning area. This data has been arrived at by looking at the projected population of 2030 and looking at the land use needs of that time as per the Physical Planning Handbook, 2007.

**Table 8: Land Budget**

Colour Code	ZONE	Existing (Ha)	Proposed 2034 (Ha)
<b>0</b>	<b>RESIDENTIAL</b>		
	Proposed Low Density Residential	136.86	-86.28
	Medium Density Residential	235.8	523
	High Density Residential	198.24	105.28
<b>1</b>	<b>INDUSTRIAL</b>		
	Existing Industrial	10.78	19.22
<b>2</b>	<b>EDUCATIONAL</b>		
	Existing Secondary Schools	41.38	23.22
	Existing Primary Schools	32.42	135.3
	Existing Tertiary Schools		
<b>3</b>	<b>RECREATIONAL</b>		
	Existing Recreational	42.33	109.43
<b>4</b>	<b>PUBLIC PURPOSE</b>		
	Existing Public Purpose	69.64	52.2
<b>5</b>	<b>COMMERCIAL</b>		
	Existing CBD	47.25	27.75
<b>6</b>	<b>PUBLIC UTILITY</b>		
	Existing Public utility	18.79	-
<b>7</b>	<b>TRANSPORTATION</b>		
	Existing Transportation	272.03	233.97
<b>8</b>	<b>AGRICULTURAL</b>		
	Existing agriculture	2402.16	-1513.81
<b>9</b>	<b>MIXED USE</b>		
<b>TOTAL</b>		<b>3373.10</b>	

Source: ACAL & BC Gildenhuys & Associates, 2020

## 5.6 Land Use Trends

In the recent past, there has been un-controlled subdivision of land to uneconomical sizes. The large coffee farms have been subdivided into smaller plots and then sold to real estate developers. Other land use trends include but not limited to;

- a) Kenyans will opt to move to further towns such as Juja, Kiambu, Thika and Kitengela where land is affordable. This means that land in those areas will become pricier, a trend we will see in 2020.
- b) Gentrification – The wealthy people will improve and buy property meant for the middle class.
- c) Change of use - Cases of land owners changing the use of their land i.e. agricultural to commercial/residential has been observed.

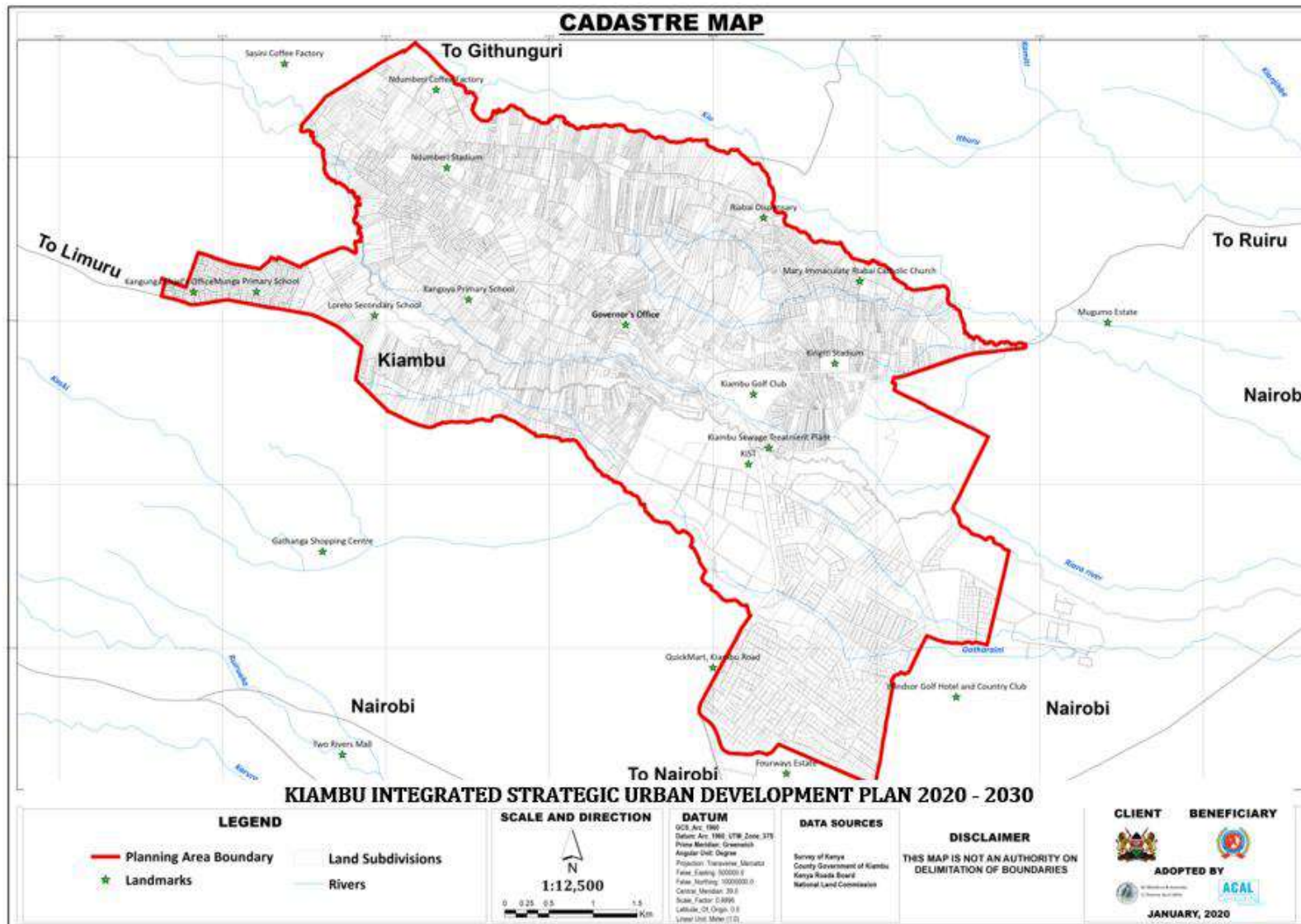
## 5.7 Land Sub-division

Land within the planning area has been sub-divided mostly into small parcels the smallest being 0.003478 Ha. The larger portion of the planning area that includes Ndumberi, Riabai wards and Township sub location is composed of these small plots. Their average is 0.22ha. This makes it hard to do any kind of comprehensive or large development. The shape of these subdivisions (thin and long - some 10m wide) also lead to many dead-end roads, especially when they come across a water body. In the Kanunga area, many roads in the sub-division are 3m wide, making it hard to access some areas with an emergency vehicle such as a fire fighting engine.

The Thindigua area has some large parcels, the largest of which is 106.09 Ha. This provides room for some well-planned comprehensive subdivisions.

The land subdivision map (Map 16) shows these kinds of sub-divisions.

Map 16: Kiambu Town Cadastre



Source: ACAL & BC Gildenhuy & Associates, 2019

## 5.8 Land Management and Administration

Land administration is administered by both the National and County Governments. These agencies include:

- a) National Registry,
- b) Kiambu Sub-County Registry,
- c) National Ministry of Lands (Thika),
- d) Survey of Kenya
- e) Kiambu County Physical Planning Department
- f) National Land Commission

For the various agencies to work, specific instruments are used for land administration. These instruments allow them to keep records of land uses, land sizes, tenure, and ownership. With these instruments, the County and National Government can determine income through Land Rates and Land Rent. These instruments include

- |                     |                          |                        |
|---------------------|--------------------------|------------------------|
| 1. Zoning Plan      | 7. Consent               | 13. Allotment Letter   |
| 2. Land subdivision | 8. Search                | 14. Extension of Lease |
| 3. Amalgamation     | 9. Green Card            | 15. Renewal of Lease   |
| 4. Change of use    | 10. Property File        | 16. Survey Map         |
| 5. Extension of use | 11. Tile Deed            | 17. Deed Plan          |
| 6. Land transfer    | 12. Certificate of Lease | 18. Mutation           |

Kiambu Town lacks an approved zoning policy and regulations to guide land subdivision and management. There has been un-controlled subdivision to uneconomical sizes which requires guidance from the land administrators in its management.

## 5.9 Land availability and Suitability

Land in Kiambu Town is privately owned with some being public land where the civic and administration offices are located. Land is scarce in Kiambu Town and this call for land acquisition for public amenities and utilities. Majority of land in Kiambu is ancestral which affects its legal ownership in the land market hence affecting the demand and supply. The land availability informs future planning policy development and will assists in the monitoring of adequate supply of deliverable land.

There are an estimated 5,267 land parcels within the planning area. (See Map 17). The land in Kiambu Town is gradually being fragmented as the population grows. The parcels of land under residential use measure about 0.084 Ha in area on average. A land suitability analysis indicates that when environmentally fragile areas are removed, 90% of the land is suitable for development.



## 5.10 Land values/markets

The management and operation of land markets is largely governed by private sector with little public sector intervention. The proximity to Nairobi City town and its good connectivity has played a major role in the increase of value of the land in Kiambu. Many investors purchase for speculation and for high density residential and commercial development. The current land values in Kiambu Town range from KES 20,000,000 to KES 45,000,000 per Acre. The high value of land makes it difficult to acquire land for public projects. Land has been previously set aside for these purposes but unfortunately some of these have been converted to private use illegally.

## 5.11 Emerging Issues on Land

Table 9: Emerging Issues on Land

<b>SECTOR</b>	<b>CHALLENGES</b>	<b>OPPORTUNITIES</b>
<b>Land Classification</b>	Some land that had been set aside for public use has been grabbed by private individuals	Reclaim grabbed land
<b>Land Use Patterns</b>	Ongoing subdivision of land is done in irregular longitudinal shapes that makes development hard to implement	The amalgamation and creation of regular shapes Development control to stop further sub-division beyond a certain size/width/length
	High increase in change of land uses	Planning and designating land for commercial/industrial/residential and other desired uses
<b>Projected land use requirements</b>	About 50% of land that was once agricultural is projected to be converted to other uses	Urbanization
<b>Land use trends</b>	A burst of development growth in the area especially Thindigua in the last ten years has put a strain in physical infrastructure	Growth opportunity for the physical infrastructure such as solid and liquid waste, water supply, road upgrades

<b>SECTOR</b>	<b>CHALLENGES</b>	<b>OPPORTUNITIES</b>
<b>Land Sub-division</b>	Plot shapes that are so thin that they resemble a road size (10m wide), making them hard to develop any real estate	Development control – no more sub-division of land into irregular shapes. Educate stakeholders on the disadvantages of this practice
<b>Land management and administration</b>	Inefficient land management and administration resulting in land grabbing and encroachment on roads	Development control standards Staffing for efficient development control
<b>Land Suitability/availability</b>	With 90% of the land being developable, it is easy to over-urbanize and not include vegetation	Designate a percentage of vegetation to be planted/conserved
<b>Land Value and Land Markets</b>	The high cost of land makes it expensive for compulsory acquisition to support infrastructure provisions	Protect and reclaim land that was set aside for public purposes

Source: ACAL & BC Gildenhuis & Associates, 2019

## 6 ENVIRONMENT

### 6.1 Overview

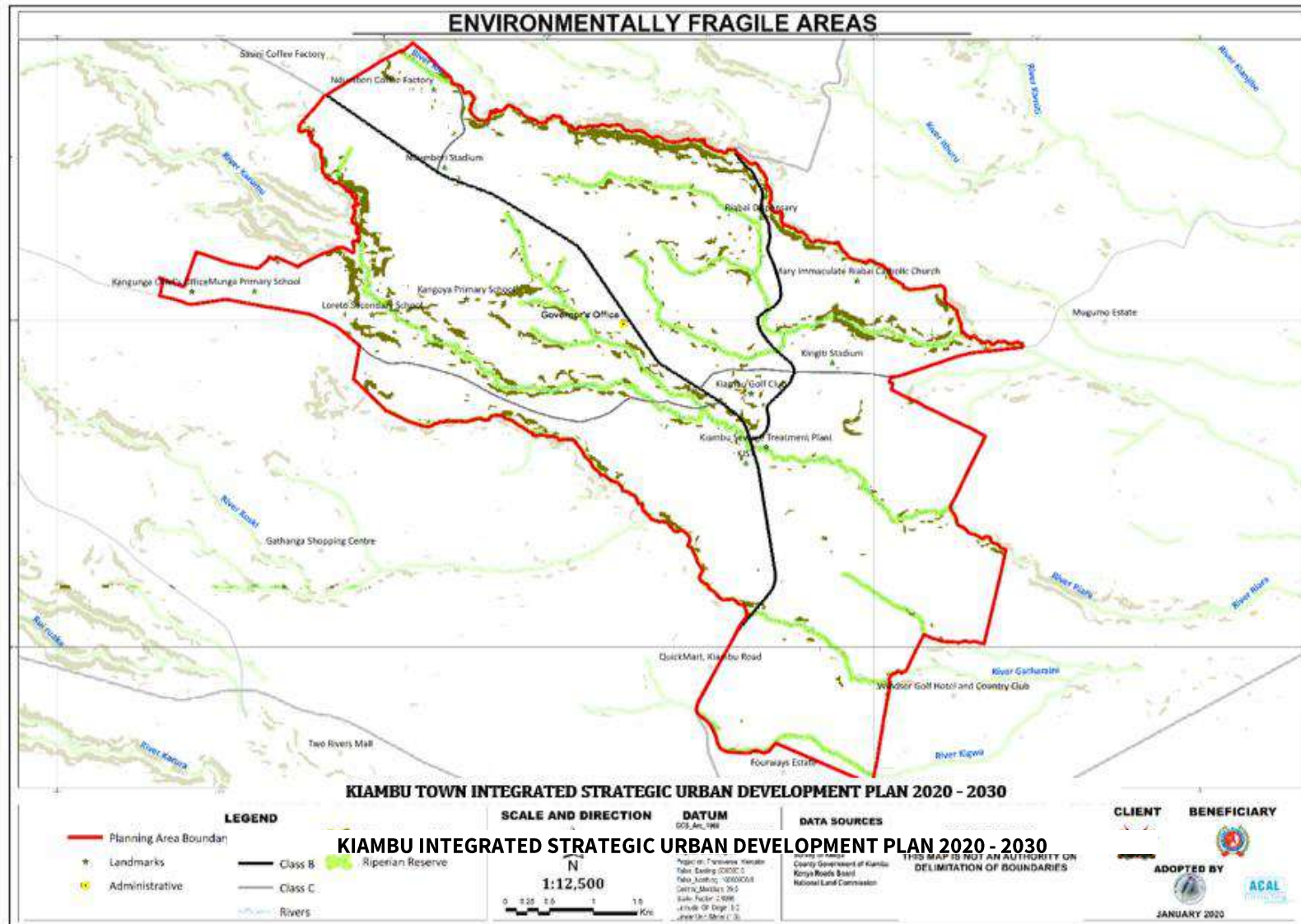
This chapter identifies the main environmental issues manifesting in Kiambu municipality; their causes and proposed management strategies for environmentally sustainable urban development.

### 6.2 Physical Environment

The physical environment includes land, air, water, plants and animals, buildings and other infrastructure, and all of the natural resources that provide our basic needs and opportunities for social and economic development. The population in Kiambu has increased exponentially causing reduction of natural resources and this is manifested by increased illegal land sub-division into fragmented uneconomical sizes.

The steep slopes that form the ridges are prone to soil erosion in the face of reducing vegetation cover due to anthropogenic activities. Uncontrolled urbanization within the town has brought flooding due to the increased run offs in the built-up areas, lack of natural sinks which can take in the excess water, lack and clogging of stormwater drains. The map below depicts the ecologically fragile areas of Kiambu Planning area.

Map 18: Environmentally Fragile Areas



Source: ACAL & BC Gildenhuis & Associates, 2019

### 6.2.1 Water

Ground and surface water constitute the major sources of water. However, with increasing agricultural activities, settlements and urban expansion, the water sources are potentially faced with pollution threats from increased erosion and waste from urban runoffs.

There is need for creating buffers along rivers/riparian reserves and all water bodies including water pans and swamps within the area to prevent pollution from commercial activities and effective solid and wastewater management from the urban settlements.

### 6.3 Urban greenery, Open spaces and Recreational areas

The Municipality town has no urban park or designated open space for recreation. The only open spaces are found in the Primary and Secondary schools within the planning area, and private spaces such as Kiambu Golf Club, Kirigiti International Stadium and Ndumberi Stadium (see map 19 below).

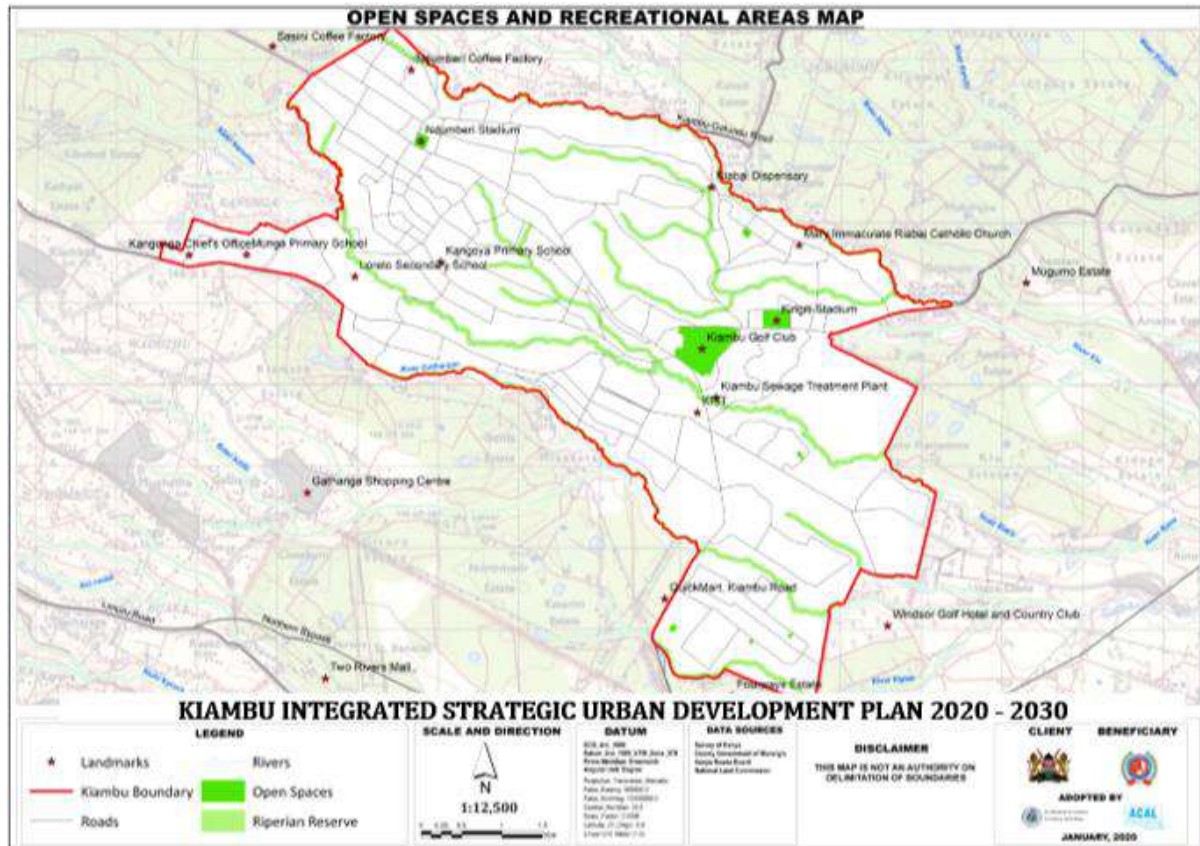
There is an urgent need to develop urban parks especially in the Kiambu CBD and in the high-density areas such as Kirigiti, Thindigua, Ndumberi, Kiamumbi for recreation, urban regeneration, climate change mitigation. The Plate 2 below shows the sorry state/congestion in Kirigiti CBD



**Plate 2: Lack of greenery/open space in Kirigiti**

**Source: Field Survey 2019**

Map 19: Recreational Facilities within Kiambu



Source: ACAL & BC Gildenhuys & Associates, 2019

## 6.4 Climate Change

Climate Change has affected global weather patterns in that there are unpredictable seasons such as prolonged drought, high temperatures or at times high intensity of rainfall. The effects of this is catastrophic and this is mainly being impacted in our urban areas.

The prevalent flooding in Kiambu Town causes extensive damage to infrastructure such as roads, water pipe lines and underground electric cables, which generally disrupts both residential and commercial activities in the town.

The lack of storm water drains and their proximity to human settlements has led to several negative impacts that include high road maintenance costs, difficulties in access to properties, among others.

There is a need to mainstream climate change initiatives in the management of the urban areas. Such strategies include: building back better, adapting to changes in climate, planting of trees, non-motorised transport, among others.

Plate 3 & 4: Poor Stormwater Drains in Riabai



Source: Field Survey 2019

## 6.5 Waste Management Environmental issues

### 6.5.1 Liquid Waste Management

Liquid waste consists of waste water and effluent from households, institutions, industries and commercial centres. Currently, Kiambu Water & Sewerage Company (KIWASCO) covers 24% of the planning area (2020) mainly in the Kiambu CBD, part of Kirigiti, Ndumberi and Thindigua zones. Majority of the residents in the rural fringes use pit latrines as well as septic tanks/conservancy pits within the urban areas which create an existential risk for ground water contamination.

### 6.5.2 Solid Waste Management

The County Government lacks capacity to handle solid waste. Only 42% of solid waste generated within the planning area is collected and transported by road to Kang'oki dumpsite in Thika by the county government (Dept of Environment, Kiambu 2020). The rest is handled informally by groups such as parking boys, resident associations, while much is disposed off illegally within the urban areas.

People in the rural areas dispose non-biodegradable waste while the bio-degradable waste is used to prepare organic manure. Burning of this non-degradable waste causes air pollution.

The County Government of Kiambu is improving its efforts of waste management by constructing waste transfer stations across the 12 municipalities, buying more skips and waste bins to serve the urban areas, increasing the frequency of collection, enhanced civic education to encourage recycling of waste at household level, and also involving the private sector and CBOs in solid waste management.

#### **Plate 5: Illegal Solid Waste Collection Point in Indian Bazaar**



Source: Field survey, July 2019

## **6.6 Emerging Issues on Environment**

**Table 6: Emerging Issues on Environment**

<b>Issue</b>	<b>Challenges</b>	<b>Opportunities</b>
<b>Physical Environment</b>	Surface water pollution due to solid waste being blown by the wind and washed by the rain into the rivers and streams	Discourage illegal dumping
<b>Urban greenery</b>	Lack of urban parks and open spaces	Designate land for urban parks within all the wards/high density areas
<b>Climate change</b>	Flooding	Rain water harvesting strategies, construction of storm water drains
<b>Solid &amp; Wastewater Management</b>	The use of septic tanks increases the chance of ground water contamination Solid waste is dumped in illegal collection points	The extension of sewer network Enhanced solid waste management processes

Source: ACAL & BC Gildenhuys & Associates, 2019

## 7 URBANISATION AND HUMAN SETTLEMENTS

### 7.1 Overview

Over the last decade, high urbanization rates are recorded in the developing world. Kenya urbanization rates are approximately 4% while the urban population stood at 32% according to World Bank estimates of 2014. Kiambu Town is urbanizing at 3.4%. Pull and push factors continue to determine rate and direction of urbanization in the county. Urbanization has as a consequent, influence and shaped structure of settlements both in rural and urban settings. This chapter studies the dynamics of urbanization and settlement in the context of Kiambu town

### 7.2 Patterns and Trends of Human Settlements

There are three settlement patterns exhibited within the area namely; linear, nuclear and dispersed patterns with linear settlement pattern being the most dominant. The settlement patterns in Kiambu Town are influenced by various factors. The linear patterns are influenced by road networks (accessibility), rivers and ridges. The nucleated patterns are influenced by demand for real-estate and the increase in property value (e.g Kirigiti, Thindigua, Ndumberi Centre, Kiambu CBD). The dispersed patterns can be seen in some parts of Thindigua, Ndumberi and Riabai as these farms that have larger plot sizes.

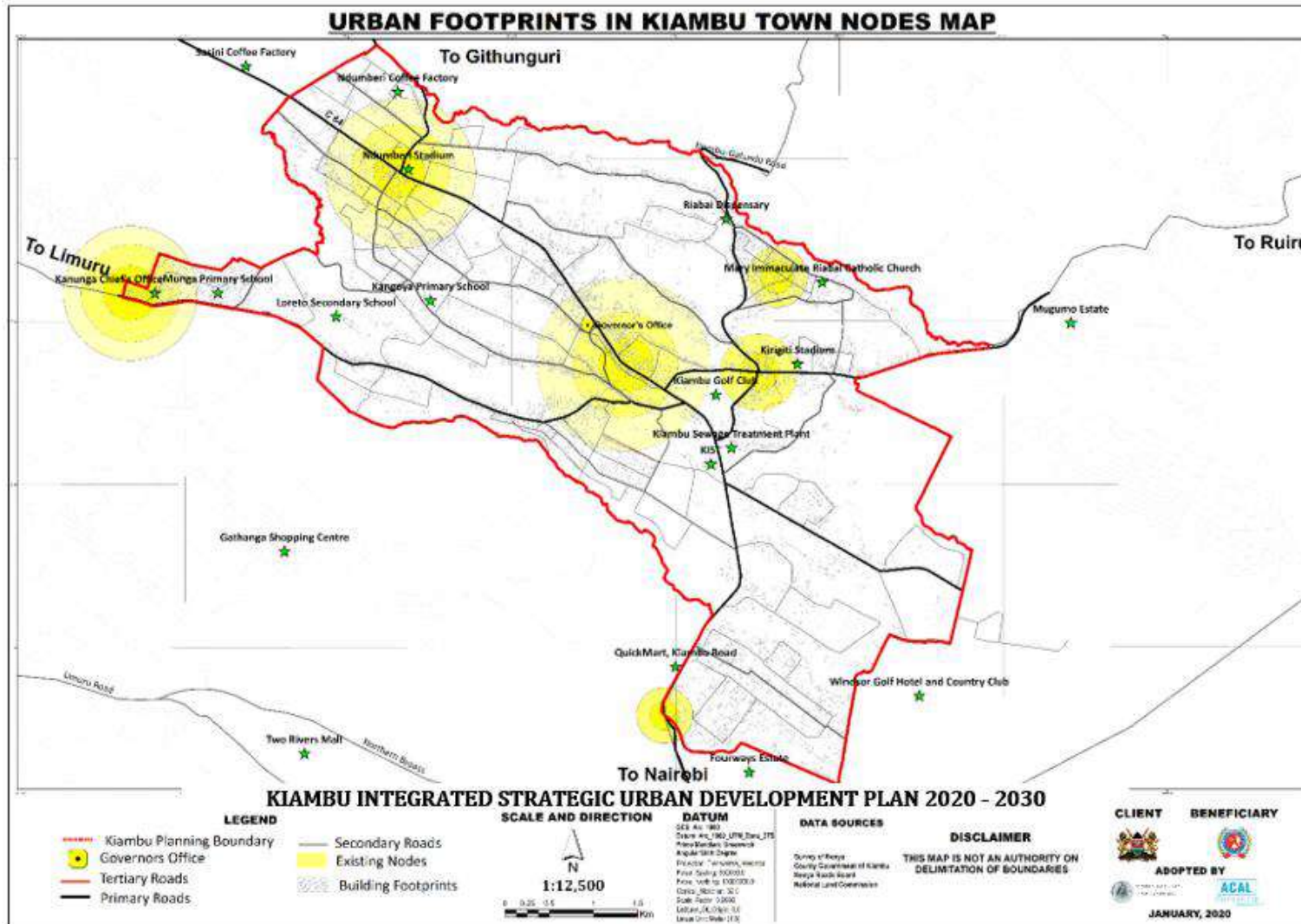
### 7.3 Rural Settlements/Rural Development

The planning area exhibits rural development mostly within the agricultural hinterland. The planning area is experiencing rapid urbanization. This is partly due to proximity to Nairobi City. If not checked development will spill to the unplanned agricultural land. This calls for delineation of the urban area where urban development will be confined.

### 7.4 Urbanization of Development Nodes

Kiambu town is a rapidly urbanizing therefore necessitating high demand for services and infrastructure. The rapidly urbanizing areas in Kiambu include Thindigua, Kirigiti, Riabai, Kanunga, Ndumberi and Kiambu Central Business District that form nodes (See Map 20). These nodes are unique based on their functions and services.

Map 20: Urban Footprints

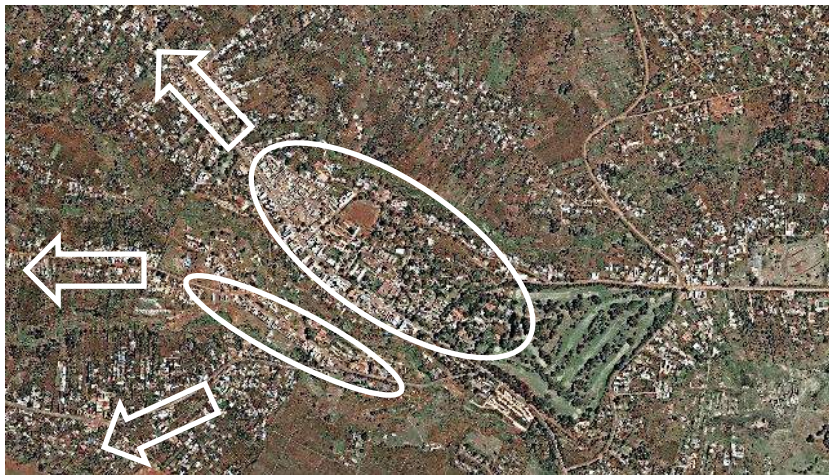


Source: ACAL & BC Gildenhuys & Associates, 2020

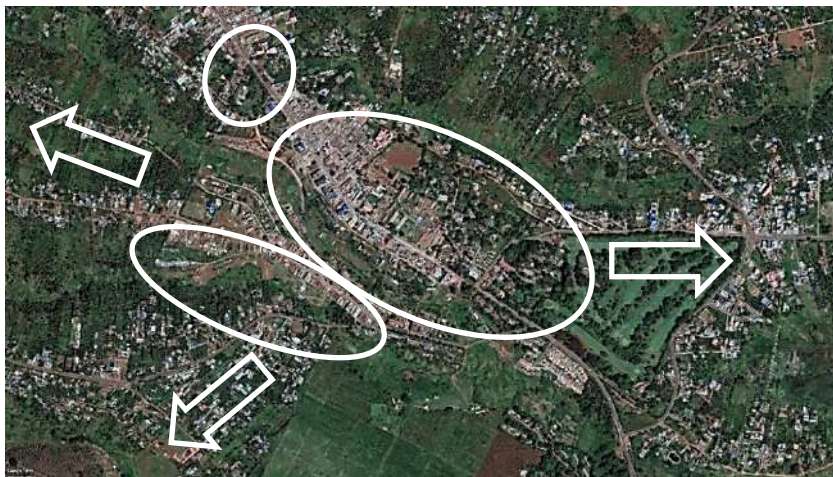
### 7.4.1 Kiambu Township Node

It is located in Kiambu Township ward along Kiambu road and Kiu Valley Road Junction as shown on map 20. Its functions include both administrative and commercial. It hosts most of the administrative offices such as County Headquarters, Law courts amongst others and home to Kiambu Golf Course. Some of the main commercial activities happen within the town both formal and informal. The town hosts three markets such as Kangangi, Kangoya and the main Kiambu market in the town. It is the main shopping centre for both agricultural and other products for the surrounding settlement areas.

**Figure 4: Kiambu CBD Trends**



Nucleated development at the CBD with growth flowing out to Ndumberi along the Kiambu-Ndumberi Road. The Golf course prohibits development on the south east, while linear development experienced at the Indian



Nucleated development at the CBD densifies, while growth towards Ndumberi Along the Kiambu-Ndumberi Road also densifies. The road next to the Golf course towards Kirigiti has linear development. The linear development experienced at the Indian



Nucleated development at the CBD densifies, while growth towards Ndumberi Along the Kiambu-Ndumberi Road merges With the CBD. The road next to the Golf course towards Kirigiti has development that accelerated into nuclear growth. The linear development experienced at the Indian Bazaar densifies and merges with the new

Source: Google Earth 2020

### 7.4.2 Ndumberi Node

It is located in Ndumberi ward, at the Kiambu-Githunguri Road and Kiambu-Limuru Road junction. It is situated approximately 3 Km from Kiambu Town, 16 Km from Githunguri, and 25 Km from Limuru town. The main activities include Commercial, Agricultural and Industrial activities. Ndumberi acts as a satellite trading Centre for Kiambu Town serving the area residents. Gatunyu Open Air Market is the only identifiable market facility.

The area residents are mainly small-scale farmers for both crop and dairy products. Large scale industries include coffee factories, milk processing industries, dairy meal industry, maize flour millers. Small scale industries include small flour millers, jua kali and garages. The growth patterns seen in the Ndumberi Centre are originally linear growing into nuclei.

**Figure 5: Ndumberi Growth Trends**



Linear growth along access routes in 2000



Linear growth along some access routes and nuclear growth in resulting when infill development happens to the west of the Kiambu-Limuru Road in



Linear growth along some access routes and nuclear growth is densified, with ridges being the areas where there are no

Source: Google Earth 2020

### 7.4.3 Riabai Node

It lies at an altitude of 1700m, 1Km North of Kirigiti area and to the North East of Kiambu town market (See Map 5). Riabai is predominantly a residential area with plot sizes majorly at 0.1Ha. Public facilities include Riabai dispensary, a chief’s office, Riabai playing field, Riabai-Kihingo water project, Riabai Open air Market space.

Figure 6: Riabai Growth Trends



Dispersed settlement pattern in 2000, buildings scattered all over

Nuclear settlement pattern in 2010, buildings densify in concentrated In one area

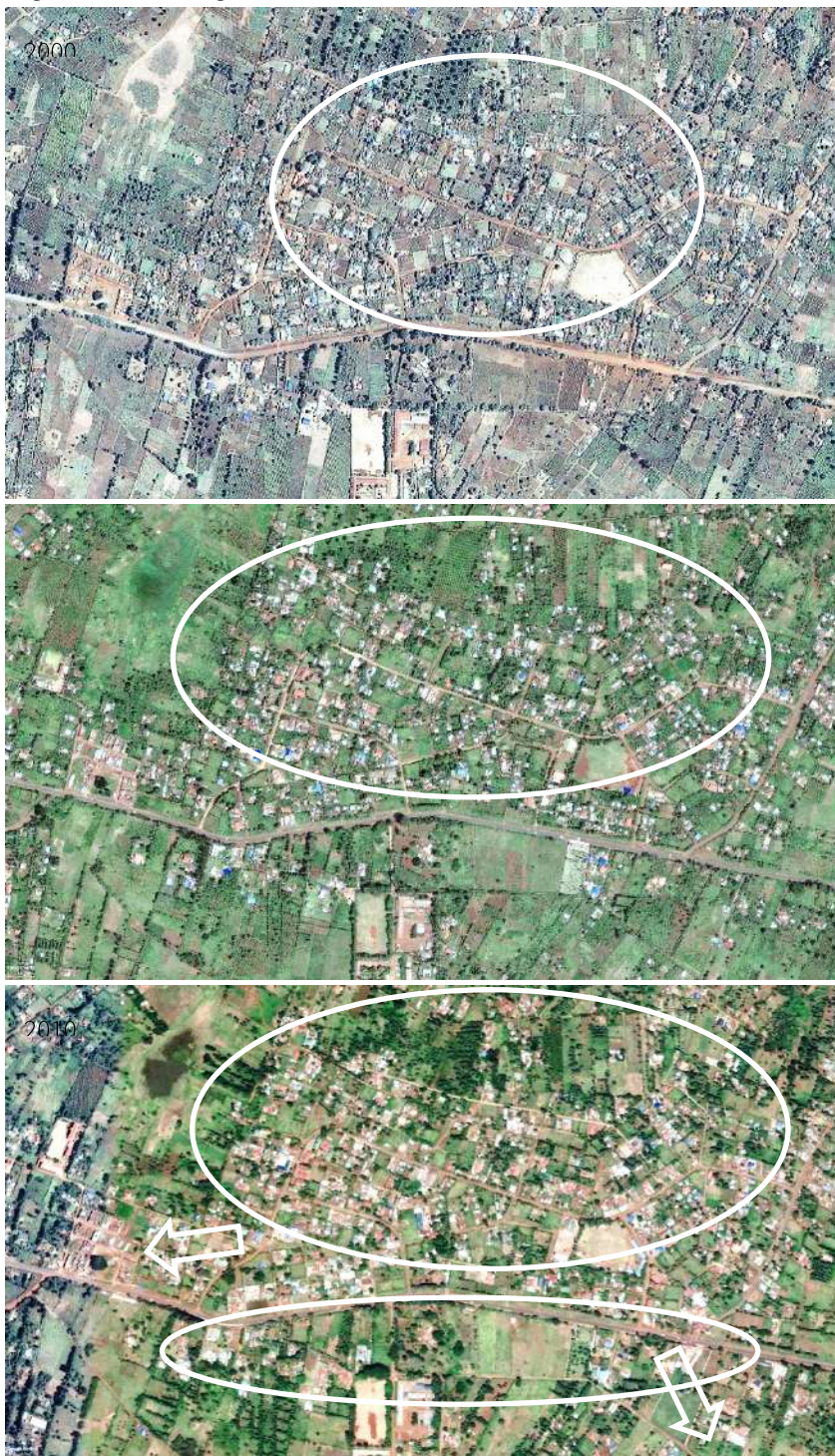
Nuclear settlement pattern in 2020, buildings densify in concentrated In one area but growing outwards, south east

Source: Google Earth 2020

### 7.4.4 Kanunga Node

It is located at 1860m altitude approximately 8 Km to the North East of Kiambu Town as shown Map 6. It was formerly an agricultural area. Kanunga area is currently dominantly residential with plot sizes averaging at 0.08 Ha. The largest parcel is 1.18 Ha while the smallest is 0.005Ha. There is need to regulate the sizes of these plots that they do not turn into slums.

Figure 7: Kanunga Growth Trends



In 2000, there is medium density nucleated Growth in Kanunga node.

Kanunga intensifies in density in 2010.

The growth trend is more densification of the already nucleated area with additional linear growth across the road with development extending outwards to the south east, and

Source: Google Earth 2020

### 7.4.5 Thindigua Node

Thindigua was formerly a coffee estate. It is a rapidly growing residential area which neighbours Fourways junction estate to the north, Windsor Golf and Country Club to the West, Kiambu Township and Kirigiti to the south. It is mainly a residential area characterized by medium and low-density residential settlements on approximately half acre plots. Thindigua acts as a dormitory centre for both Nairobi and Kiambu towns as well as other neighbouring commercial areas.

Figure 8:Thindigua Growth Trends



Low density settlement concentrated  
In a central area in 2000



Settlement concentrated  
In a central area densified in 2010



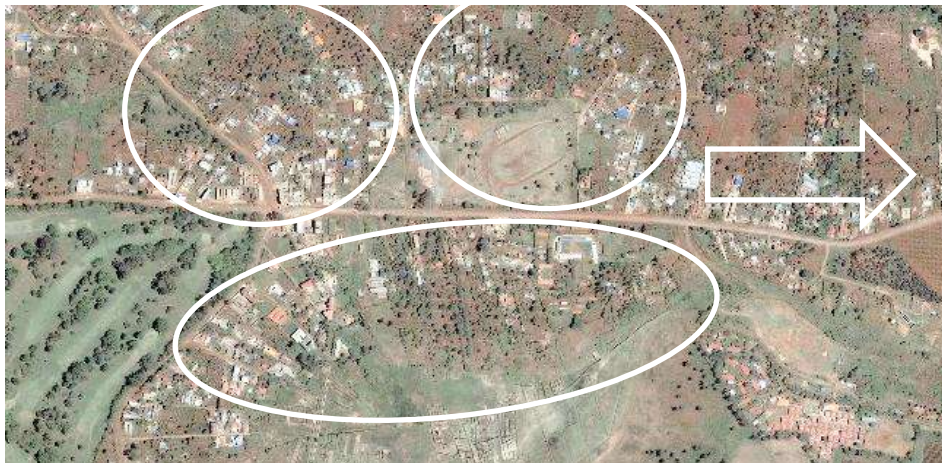
Settlement concentrated  
In a central area densified and growing  
Outward in 2020

Source: Google Earth 2020

### 7.4.6 Kirigiti Node

The cricket field in Kiambu was popular with settlers who would frequent the place from surrounding farms. The local kikuyu community could not pronounce the name “cricket” and hence pronounced it as “Kirigiti” thus its name. The rapid growth of the node can be attributed to urban sprawl from Kiambu township therefore acting as a settlement area for lower and the middle-class population. Its main function is a residential centre characterized by high and medium density settlements. Other Social facilities include recreation such as the Kiambu golf course and Kirigiti stadium.

Figure 9: Kirigiti Growth Trends



Dispersed settlements are experienced to the east and north east of the Golf course, and linear growth from the CBD in 2000



The settlements have densified, the Kirigiti stadium remaining empty while linear growth increased towards the CBD in 2010



The settlements have densified, the Kirigiti stadium with little development While linear growth increased towards the CBD and this densification in 2020

Source: Google Earth 2020

## 7.5 Housing and Housing Demand

Kiambu town is the commercial and administrative capital of Kiambu County and covers an area of 33.45 km<sup>2</sup>. It has a projected population of 105,267 in 2020 making it one of the most populated towns outside Nairobi Metropolitan. Due to its proximity to the City of Nairobi (16 kilometres), the town enjoys the trickle-down effects of the City. It's almost considered a suburb of Nairobi with most middle class residing in Kiambu while they make daily commutes to Nairobi for work. The town is witnessing rapid growth with major road infrastructure and complex real estate developments taking place around and neighbouring environs. The increased immigration rate leads to an increase in housing demand so that the population can be accommodated in the town.

Demand for housing in Kiambu is ever rising due to the increasing working population in Nairobi and Kiambu hence making Kiambu an attractive area for potential investors in Housing to satisfy the demand. There are 33,723 households in 2019 imply that this is the current housing. As of 2030, Kiambu Town should expect to provide housing for 48,706 households. Kiambu then should expect to provide an extra 14,983 houses by 2030. Emerging Planning Issues

## 7.6 Emerging Issues on Challenges and Opportunities

Table 7: Emerging Issues on Challenges and Opportunities

Sector	Challenges	Opportunities
Patterns and trends of human settlements	<ul style="list-style-type: none"> <li>▪ Linear trends make it hard and expensive to provide public utilities and services</li> </ul>	<ul style="list-style-type: none"> <li>▪ Delineating boundaries for urban areas</li> <li>▪ Development control</li> </ul>
Urbanization of Development Nodes  Kiambu Township	<ul style="list-style-type: none"> <li>▪ Lack of efficient drainage infrastructure [present Only along Kiambu road]</li> <li>▪ Inadequate market space and facilities; poor state of Kangangi market and congestion in the main constructed market, Kangoya market structure not in use</li> <li>▪ Poor solid waste management; haphazard waste disposal, lack of collection bins</li> <li>▪ Temporary and semi-permanent structures; e.g. Kangoya</li> <li>▪ Road reserve encroachment; e.g. by commercial activities</li> </ul>	<ul style="list-style-type: none"> <li>▪ Development of storm water drains</li> <li>▪ Upgrading of markets</li> <li>▪ Upgrading of solid waste management system</li> <li>▪ Upgrading of houses</li> <li>▪ Providing organized markets in nodes that lack one</li> <li>▪ Road upgrading of roads</li> <li>▪ Development of land allocated for cemetery in Thindigua</li> </ul>

	<ul style="list-style-type: none"> <li>▪ Poor road maintenance in Kiambu old town, Ngegu and Turitu areas</li> <li>▪ Cemetery (Source; Kiambu DP 1977) allocated for dumpsite.</li> </ul>	
Ndumberi	<ul style="list-style-type: none"> <li>▪ Traffic congestion at Ndumberi - Githunguri road junction lacks a bus stage and parking.</li> <li>▪ Dilapidated condition of some local roads</li> <li>▪ Poor state and lack of market facilities in Gatunyu open air market.; Roadside stalls</li> <li>▪ Poor surface drainage infrastructure</li> <li>▪ Lack of solid waste management facilities</li> <li>▪ Inadequate water supply; not covered by KIWASCO piped water-borehole and shallow wells as the main water sources.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provision of a bus stop</li> <li>▪ Road upgrades</li> <li>▪ Development of an organized market with ablution facilities</li> <li>▪ Development of storm water drains</li> <li>▪ Provision of solid waste collection point</li> <li>▪ Upgrading of water supply system</li> </ul>
Riabai	<ul style="list-style-type: none"> <li>▪ Lack of market facilities despite there being a market plot, Numerous roadside stalls</li> <li>▪ Poor solid waste management</li> <li>▪ Lack of bus park/stage</li> <li>▪ Inefficient surface runoff drainage channels</li> </ul>	<ul style="list-style-type: none"> <li>▪ Development of a formal market with ablution facilities</li> <li>▪ Provide a solid waste collection point</li> <li>▪ Provision of a bus stop</li> <li>▪ Development of storm water drains</li> </ul>
Kanunga	<ul style="list-style-type: none"> <li>▪ Lack of market facilities at the designated market plot</li> <li>▪ Unpaved minor roads impassable in rainy season</li> <li>▪ Lacking drainage channels for storm water.</li> <li>▪ Poor Solid waste management</li> </ul>	<ul style="list-style-type: none"> <li>▪ Development of a market and ablution facilities</li> <li>▪ Upgrading of roads</li> <li>▪ Development of storm water drains</li> <li>▪ Provision of waste collection point</li> </ul>
Housing and housing demand	<ul style="list-style-type: none"> <li>▪ Increase of demand of housing by middle class immigrants from Nairobi</li> </ul>	<ul style="list-style-type: none"> <li>▪ Development of middleclass type housing</li> </ul>

**Source: ACAL & BC Gildenhuys & Associates, 2019**

## 8 CHAPTER EIGHT: PHYSICAL INFRASTRUCTURE

### 8.1 Overview

Transport is a main driver to economic and spatial development of an area. The provision and maintenance of physical infrastructure and social amenities needs to respond to the formal and informal development patterns that have shaped Kiambu Town. Similarly, the provision of new infrastructure remains an immediate and direct mechanism that the town has available to direct the pace and direction of future growth. It is important to acknowledge deficiencies and deficits in the current networks and systems and to sequence the prioritization of infrastructure programs with the spatial and socio-economic priorities.

This chapter illustrates the current infrastructure facilities associated with transport, energy, waste, sanitation, electricity and ICT. It concludes by giving an overview of the emerging planning issues and opportunities that exist.

### 8.2 Transportation

#### 8.2.1 Existing Road Network

In Kiambu Town, roads are the only mode of transport. Kiambu Town lies at the intersection of Roads C63, C64 and Kiambu Road (D409) and has major roads both class C and D as well as connectors/ feeder roads. There has been a continuous improvement of the road network in a bid to enhance accessibility and connectivity. This has seen the completed construction of Githunguri- Ndumberi road (D404), starting from Ndumberi trading centre off-Kiambu-Limuru road, and ends at Ruiru-Githunguri Road (C65) junction.

Kiambu Town has 50km of paved roads, 314km of gravel road and 91km of earth roads which gives it a good transport network that enables efficient movement of people, goods and services. It also facilitates trade between peoples across town centres, the Capital city of Nairobi and its Metropolitan region. Major developments in Kiambu, which are a lifeline of economic and social wellbeing, are along the transport corridors. See Map 21 for the current road network. Kiambu Town has about 348 Km of classified road network. The table 14 shows the various classified roads and their distances.

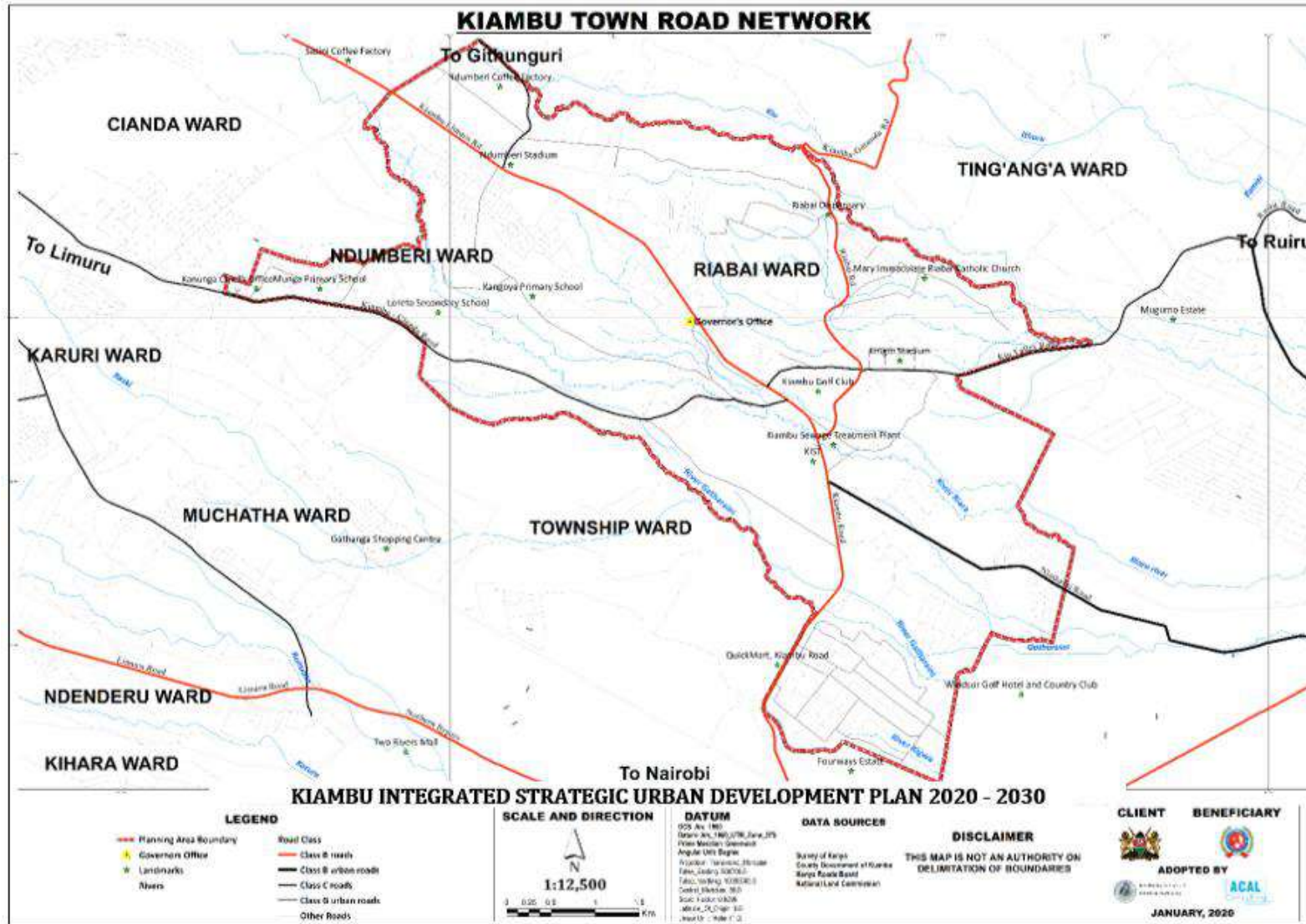
**Table 8: Road Linkage and Conditions in Kiambu town**

Road Linkage	Road Class	Road reserve	Road Length	Surface Type	NMT	Storm Water	Street Lighting	Name
Kiambu-Nairobi	B32	40m	5.204Km	Paved	No	No	No	Kiambu Road
Kiambu-Ruiru	C559	24m	3.827Km	Paved	No	No	No	Kiu Valley Road

Kiambu-Gatundu	B30	24m	2.959Km	Paved	No	No	No	Kiambu-Gatundu Road
Kiambu-Limuru	B32	40m	4.41Km	Paved	No	No	Partially	Kiambu-Limuru Road via Ndumberi
Kiambu-Githurai 44	B18	40m	3.006Km	Paved	No	No	No	Njathaini Road
Kiambu-Githunguri	C558	16m	1.118Km	Paved	No	No	No	Ndumberi Githunguri Road
Kanunga-Ndumberi	D1456	12m	4.181Km	Paved	No	Partially	Partially	Kiratina Road
Ndumberi-Kiambu Old Town	D1455	12m	4.143Km	Paved	No	Partially	Partially	Ndumberi-Kiambu Road
Ndumberi-Riabai	D1457	12m	3.769Km	Gravel	No	No	No	Kiriguini B Road

**Source: ACAL & BC Gildenhuys & Associates, 2019**

Map 21: Transport Map



Source: ACAL & BC Gildenhuys & Associates, 2019

**Figure 10: Road condition in Kiambu town**

Source: Field Survey, July, 2019

### 8.2.2 Terminus and Bus Parks

Kiambu Town has two main bus parks. These are: Kiambu Lower and Upper bus parks. It boasts of approximately 1,000 parking spaces, 300 of which are in good condition, and the rest needs to be upgraded. The Town is served by public transport as there are 76 buses and 820 matatus registered with the Department of Roads, Transport, Public Works and utilities.

**Figure 11: Bus terminus in Kiambu town**

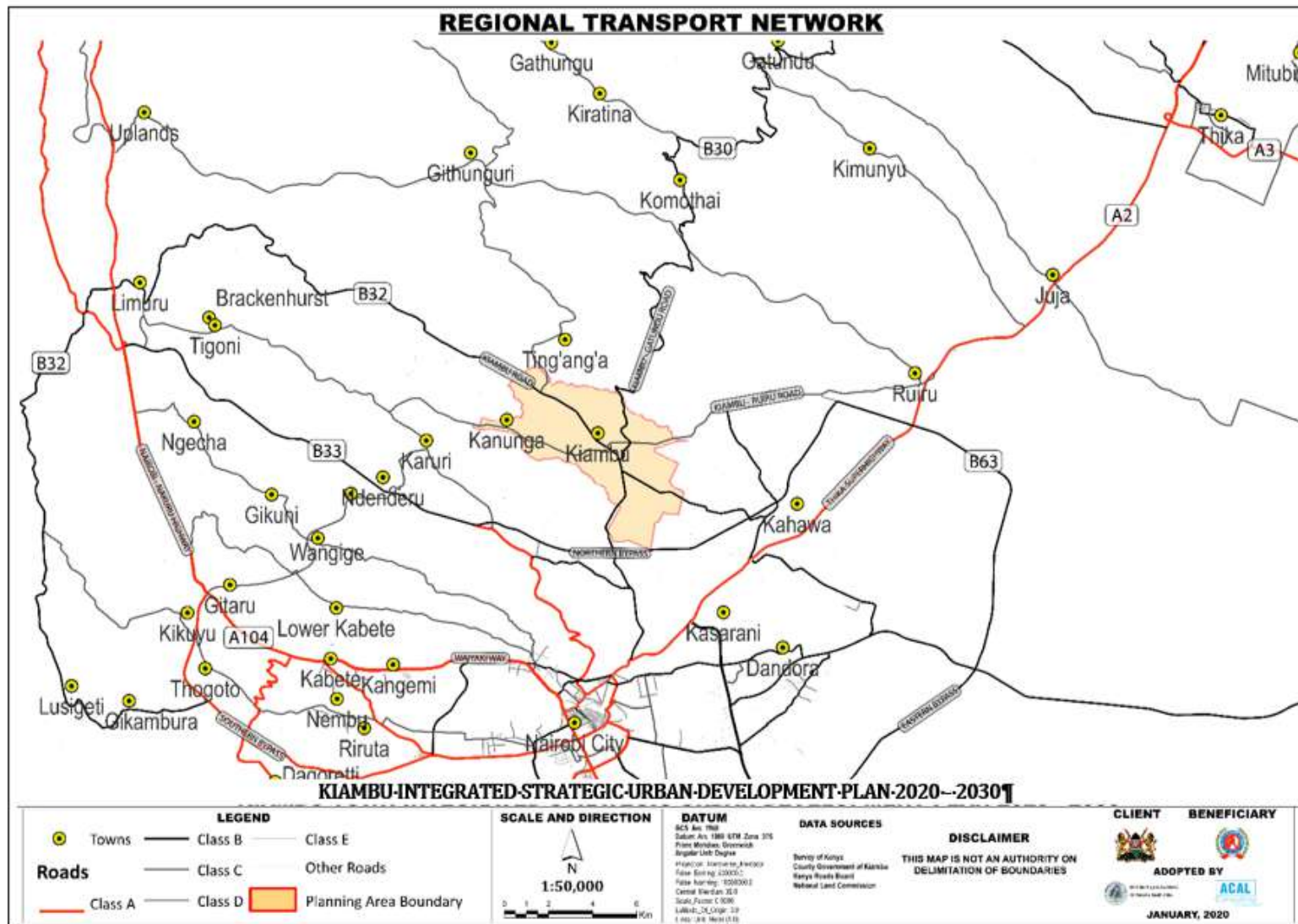
Source: Field Survey, July, 2019

### 8.2.3 Connectivity

#### **Regional Connectivity**

The area is served by road transport mode. The planning area has interconnection of roads, linking Kiambu to Nairobi City and towns such as Ruiru, Gatundu, Limuru and Karuri. Major bypasses like the northern by pass that connect major highways in the Nairobi metropolitan also pass near by making the town well connected.

Map 22: Regional Connectivity



Source: ACAL & BC Gildenhuys & Associates, 2019

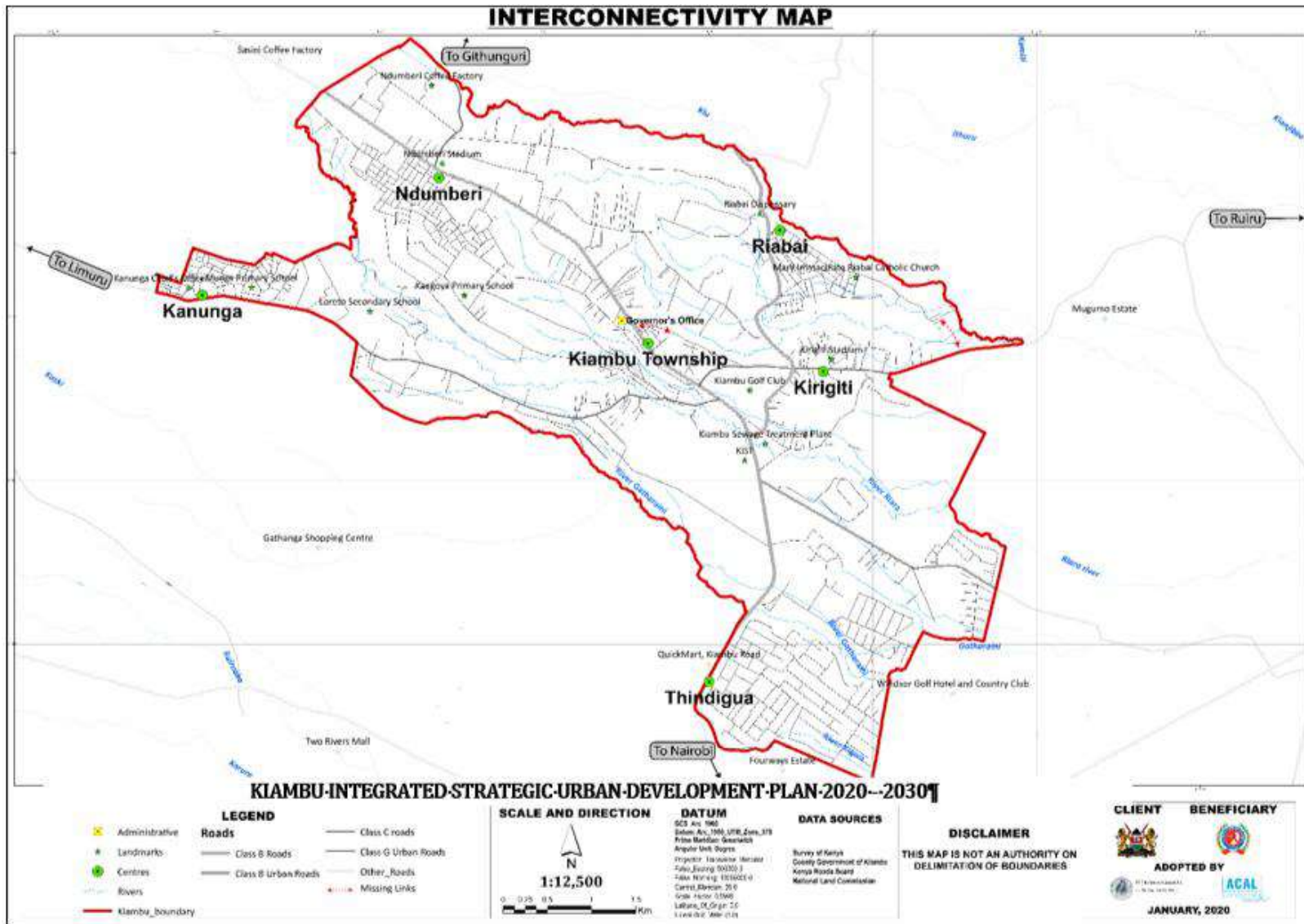
## **Local Connectivity**

**Table 9:: Connectivity to Surrounding Towns**

Town/Settlement	Distance from Kiambu CBD	Direction from Kiambu CBD
Kanunga	5 km	West
Muchatha	6.5 km	South-West
Ruaka	6.5 km	South-West
New Tatu City Development	8 km	East
Kahawa	9.5 km	East
Kimathi	7.5 km	North
Tinganga	6 km	North

**Source: Kiambu County Government,2012**

Map 23: Local Interconnectivity



Source: ACAL & BC Gildenhuys & Associates, 2019

### 8.2.4 Municipality requirements

Traffic control and parking, street lighting, public transport, and storm drainage is a requirement so as to qualify as a municipality.

Kiambu Town has parking provided in the CBD area, but this is not sufficient. Cars can be seen parking on road reserves not designated as parking areas, therefore causing congestion. More parking should be provided to take care of this need.

Traffic control is the supervision of the movement of people, goods or vehicles to ensure efficiency and safety. Some tools of traffic control include traffic lights, bumps, roundabouts, directing traffic in certain directions, road crossings, street lights among others. Traffic is controlled in the planning area by directed traffic (one-way is a section getting into the CBD), street lights and some bumps. Due to congestion, it is prudent to engage more traffic control tools in the CBD to help ease this congestion. One such tool is redirecting traffic, and assigning a lane to NMT only.

#### Figure 12: Parking and Traffic Control



**Cars parking on road reserves, insufficient storm water drainage.**

**Source: Field Survey 2019**

Public transport is provided but by the private sector (matatus, tuk tuks). Some sections in the planning area have storm water drains, others are being constructed, while other access routes need to have storm water drains. There are also local distributor roads throughout the planning area (see Kiambu Transport Map 21). Kiambu municipality is required to have an air strip, but one is lacking within the area. The closest is Bob Harries Airstrip in Ruiru.

## 8.3 Water

Kiambu Water and Sewerage Company is responsible for water connections and supply throughout the county. The service area comprises of four wards, namely Ndumberi, Township, Riabai and Ting'ang'a. The total geographical area of jurisdiction is 105 square kilometres.

## **WATER DEMAND**

According to the Urban areas and Cities Amendment Act 2019, a municipality should provide water for its residents. Current water demand in Ndumberi, Township, Riabai and Ting'ang'a is 15,000 cubic meters per day current water production is 8100m<sup>3</sup>/day, meaning there is currently a shortage in supply by 6,900 cubic meters.

In the planning area, the demand has been determined in the following way:

**Table 10: Planning Area Water Demand**

No	Category	Demand Per Day	Total 2020	Total 2030
1	Residential	0.1m <sup>3</sup> per person	10,527m <sup>3</sup>	14,706m <sup>3</sup>
2	Commercial	20m <sup>3</sup> per ha	945m <sup>3</sup>	1880m <sup>3</sup>
3	Industrial	20m <sup>3</sup> per ha	220m <sup>3</sup>	600m <sup>3</sup>
4	Education (day)	0.025m <sup>3</sup> per person	375m <sup>3</sup>	750m <sup>3</sup>
5	Education (boarding)	0.05m <sup>3</sup> per person	125m <sup>3</sup>	250m <sup>3</sup>
6	Hospitals	4m <sup>3</sup> per health centre	40m <sup>3</sup>	48m <sup>3</sup>
	<b>Total</b>		<b>12,232m<sup>3</sup></b>	<b>18,234m<sup>3</sup></b>

Sources: <https://water-for-africa.org/en/water-consumption.html>, Practice Manual for Water Supply Services in Kenya.

By 2030, Kiambu Town should be able to supply 18,234m<sup>3</sup> of water to its residents.

## **WATER SOURCES**

Water sources within the area include surface and ground water. These include:

- Kamiti weir on Kamiti River in Ngorongo production capacity of 4,000 cubic meters of water per day. This source supply supplies water to residents in Kiambu town, Kirigiti, Thathini Ndumberi, Riabai and Mugumo.
- Riara weir on Riara River at Sasini Estate near Njunu has a production capacity of 4,000 cubic meters of water per day. This source supplies water to residents in Upper and lower Kangoya and also supplements supply in Kiambu town. This source is at 50% utilization.
- 12 boreholes drilled within the municipality with a yield of 2100m<sup>3</sup>/day as produced from the following:
  - Town hall, yield of 450m<sup>3</sup>/day,
  - Kangoya Market, yield 450m<sup>3</sup>/day,
  - Kangoya primary, yield 70m<sup>3</sup>/day,
  - Ndumberi Chief, yield 30m<sup>3</sup>/day,
  - Ndumberi primary, 80m<sup>3</sup>/day,
  - Bore hole No. 5, yield of 70m<sup>3</sup>/day,
  - Waithaka, yield 100m<sup>3</sup>/day,
  - Karunga, yield 100m<sup>3</sup>/day,
  - Gishiru, yield 50m<sup>3</sup>/day,

- Kirigiti, yield of 600m<sup>3</sup>/day,
- Kihingo, yield of 70m<sup>3</sup>/day,
- Bore hole No 3, yield of 30m<sup>3</sup>/day.

Most of the bore holes are on standby with only four currently in operation, as the company is maximizing use of the surface water sources from the rivers. Current yield from the bore holes is 500m<sup>3</sup>/day.

- Bulk supply from Nairobi City Water Company, the company buys water for resale from NCWSC an average of 3000m<sup>3</sup>/day
- There are also community water projects in Kiambu Sub – County that produce an average of 300m<sup>3</sup>/day (*Kanunga water project*)

### **CURRENT STATUS OF SERVICE**

- Water coverage: 56%
- Hours of service per day: 22
- Number of consumers: 8780

### **ONGOING PROJECTS:**

Athi Water Services Board is implementing a sewer upgrade project for Kiambu with funding from The African Development Bank. The project covers Ndumberi, Kiambu Town, Kirigiti, Kiamumbi and Thindigua. It entails:

- 17.7 kilometers of water distribution network in Ndumberi and Riabai. (1.9 Kilometers already done in Riabai)
- Drilling and equipping one borehole

### **UPCOMING PROJECTS**

Athi Water Services Board will be implementing Ruiru II water project projected to deliver 40,000 cubic meters of water to Kiambu town daily.

### **FUTURE PROJECTIONS**

The company projects to improve the service levels in the next five years as enlisted below after completion of the ongoing projects:

- Water Coverage: 80% (Services will be extended to Thindigua, Kiamumbi, Ndumberi and Ting'ang'a.
- Hours of service: 24 Hours

(Source: KIWASCO, 2020)

**Figure 13: Water Sources**



Water vending



Riabai-Kihingo water project



Ndumberi Water project



Shallow wells in Kanunga

Source: Fieldwork 2019

## 8.4 Waste Management and Sanitation

### 8.4.1 Solid Waste Management

Solid waste management and refuse collection in Kiambu Town is done by the Directorate of Environment and this meets the requirement to provide solid waste management services by the Urban Areas and Cities Amendment Act 2019. However, solid waste collection is estimated to be at 70% with high concentration in township where most of the waste is generated. The main solid waste management facilities in Kiambu include use of skips and dumpsites. The directorate is the custodian of all equipment that enables its smooth operation. This equipment includes: 3 garbage trucks, 1 Skip Loader, 4 skips provided in various Markets and 2 functional exhausters. In addition, there are private waste handlers collecting wastes from the residential areas. The Directorate has partnered with approximately 10 youth groups and private investors in waste management. Areas that require funding are: Skips, Skip loaders, Landfill, Incinerators, Organic waste management Hubs, Transfer Stations, Mass education, Waste recycling hubs and decommissioning of

Gacharage dumpsite. Figure 14 shows this dumpsite in Kiambu Town. The collected waste is eventually disposed off at Kangoki Landfill in Thika.

In Kiambu Town, it is expected that a person produces 0.5kg of waste per day. This means that as of 2019, Kiambu Town produced 50,904kgs of waste. In 2020, this will be expected to be 52,634kg, in 2025 62,211kg and 73,531kgs in 2030. For Kiambu Town to function efficiently, it will have to find a way of having the capacity to handle this amount of waste.

#### 8.4.2 Liquid and Human Waste Management

Kiambu Sewer Treatment Works is the sewer treatment company providing liquid sanitation services in Kiambu Town, and it currently has one mechanical sewerage treatment plant, whose capacity is 1500m<sup>3</sup>/day.

Kiambu Water and Sewerage Company operate a mechanically operated wastewater aeration pond and sedimentation basin. It treats 2500m<sup>3</sup>/day from 7.5Km-225mm concrete sewer pipelines. Kiamumbi water and Sewerage Company also provides services to the residents of Kiambu Town. A substantial number of the developments within the Town are not served by the sewer system as only 12% of the Service provision area, [Town only] is covered by the conventional sewer lines. The other urban and peri-urban areas not covered use septic tanks while the rural areas use pit latrines.

**Table 11: Liquid Waste Matrix**

County/ Constituency	Main Sewer	Septic Tank	Cess Pool	VIP Latrine	Pit Latrine	Improved Sanitation	Pit Latrine Uncovered	Bucket	Bush	Other	Unimproved Sanitation
Ndumberi	2.62	5.26	0.29	6.56	70.09	84.81	15.11	0.04	0.03	0.01	15.19
Riabai	1.92	16.51	0.08	6.83	50.78	76.12	23.78	0	0.07	0.03	23.88
Township	22.95	28.25	0.48	6.04	34.11	91.82	7.81	0.3	0.07	0	8.18

**Figure 14: Kiambu sewerage treatment plant and Sewer line in Kiambu town.**



Source: Field Survey, 2019

According to the Urban Areas and Amendment Act 2019, Kiambu Municipality should provide liquid waste services for its residents. This is currently done but not fully. The recommended service provision should be as indicated in table 18.

Table 12: Liquid Waste Production

No	Category	Liquid Waste Per Day	Total 2020	Total 2030
1	Residential	0.1m <sup>3</sup> per person x 80%	8,422m <sup>3</sup>	11,765m <sup>3</sup>
2	Commercial	20m <sup>3</sup> per ha x 80%	676m <sup>3</sup>	1504m <sup>3</sup>
3	Industrial	20m <sup>3</sup> per ha x 80%	176m <sup>3</sup>	480m <sup>3</sup>
4	Education (day)	0.025m <sup>3</sup> per person x 80%	300m <sup>3</sup>	600m <sup>3</sup>
5	Education (boarding)	0.05m <sup>3</sup> per person x 80%	100m <sup>3</sup>	200m <sup>3</sup>
6	Hospitals	4m <sup>3</sup> per health centre x 80%	32m <sup>3</sup>	38m <sup>3</sup>
	<b>Total</b>		<b>9,706m<sup>3</sup></b>	<b>14,587m<sup>3</sup></b>

Sources: <https://water-for-africa.org/en/water-consumption.html>, Practice Manual for Water Supply Services in Kenya.

### **ONGOING PROJECTS:**

Athi Water Services Board is implementing a sewer upgrade project for Kiambu with funding from The African Development Bank. The project covers Ndumberi, Kiambu Town, Kirigiti, and Thindigua. It entails:

- Upgrading the existing sewerage treatment plant to operationalize the unused aerator and double the capacity of treatment.
- Connecting Kiambu sewerage trunk with Nairobi Water sewer trunks in Thindigua.
- Extending approximately 60 kilometers of sewer line.
- Construction of two ablution blocks.

### **FUTURE PROJECTIONS**

The company projects to improve the service levels in the next five years as enlisted below after completion of the ongoing projects:

- Sewer Coverage: 42% (Services will be extended to Ndumberi, Kirigiti, Thindigua)
- Hours of service: 24

Source: KIWASCO, 2020

## **8.5 Energy**

The planning area has access to several energy sources thus meeting the municipality requirement in the Urban areas and Cities Amendment Act 2019. The most common source

of cooking energy with the area is charcoal and gas while most commonly used energy for lighting is electricity. 70 per cent of the total number of households in Kiambu Town are connected to electricity and this number is expected to rise to 100 per cent by the year 2022. (Map 8.4 indicates electricity distribution). Solar energy has less than 5 percent coverage, while Biogas use is at 25 percent especially by farmers practicing urban agriculture within the municipality. The County Government of Kiambu had by the year 2017 installed flood masts as follows: 9 masts of 30M high, 3 masts of 20M high and 4 masts of 15M high.

**Figure 15: Power lines in Kiambu Town**



**Source: Field Survey, 2019**



## 8.6 Information, Communication and Technology (ICT)

Kiambu Town has one post office located in the core Central Business District (CBD) off Kiambu road near the bus stop. However, emergence of technology has introduced new forms of communication for instance use of emails, Short Messaging Services (SMS), phone calls and courier services, leading to underutilization of postal services.

The Town has coverage of all mobile phone operators in the country which are Safaricom, Airtel and Orange Kenya. Money transfer is mainly done through Posta Pay, Airtel Money, Orange Money, and mostly M-Pesa services. There are several cybercafés located in the CBD. Other communication operators in the area include Kenya postal services, Matatu Sacco, G4S among other private enterprises which mainly offer parcel delivery services. Installation of fibre optic cables has been ongoing in some areas of the town.

With all these Telecommunication services /postal services/ICT, the planning area meets the requirement needed in this area for a municipality in the Urban Areas and Cities Amendment Act 2019.

## 8.7 Emerging Issues on Challenges and Opportunities

Table 13: Emerging Issues on Challenges and Opportunities

Sector	Issues/Challenges	Opportunities
Transport and Road Infrastructure	<ul style="list-style-type: none"> <li>▪ Narrow Roads</li> <li>▪ Traffic Congestion</li> <li>▪ Encroachment onto road reserves</li> <li>▪ Inadequate NMT infrastructure</li> <li>▪ Some areas have poor roads during rainy seasons</li> <li>▪ Unplanned Bus Terminus</li> <li>▪ Lack of street lighting has reduced street visibility</li> <li>▪ Some plots have no access</li> </ul>	<ul style="list-style-type: none"> <li>▪ Plans to widen major roads are underway</li> <li>▪ Proper road drainage is being put in place</li> <li>▪ Feeder roads such as Kiambu-Gatundu roads should be improved in new plan.</li> <li>▪ The new plan integrated a new main terminus</li> <li>▪ Providing access to plots with no access</li> </ul>
Water	<ul style="list-style-type: none"> <li>▪ Under supply of water</li> <li>▪ Lack of supply to accessible water points</li> </ul>	<ul style="list-style-type: none"> <li>▪ Rain water harvesting</li> <li>▪ Plan provides adequately for water piping systems to improve access</li> </ul>

Sector	Issues/Challenges	Opportunities
Waste Management	<ul style="list-style-type: none"> <li>▪ Inefficient solid waste management</li> <li>▪ Lack of sewerage in residential areas</li> </ul>	<ul style="list-style-type: none"> <li>▪ There are measures in place to improve waste management in the town i.e. the youth groups are being involved</li> <li>▪ Provision of solid waste collection points</li> <li>▪ Development of adequate sewer trunks</li> </ul>
Energy	<ul style="list-style-type: none"> <li>▪ Use of charcoal for cooking may increase global warming</li> </ul>	<ul style="list-style-type: none"> <li>▪ Advocate for use of more clean and renewable energy</li> </ul>
ICT	<ul style="list-style-type: none"> <li>▪ Lack of Community ICT Centre</li> <li>▪ Unaffordable internet connections</li> </ul>	<ul style="list-style-type: none"> <li>▪ Private sector is working to provide affordable internet</li> <li>▪ Provide ICT hub</li> </ul>

**Source: ACAL & BC Gildenhuys & Associates, 2019**

## 9 CHAPTER NINE: SOCIAL INFRASTRUCTURE

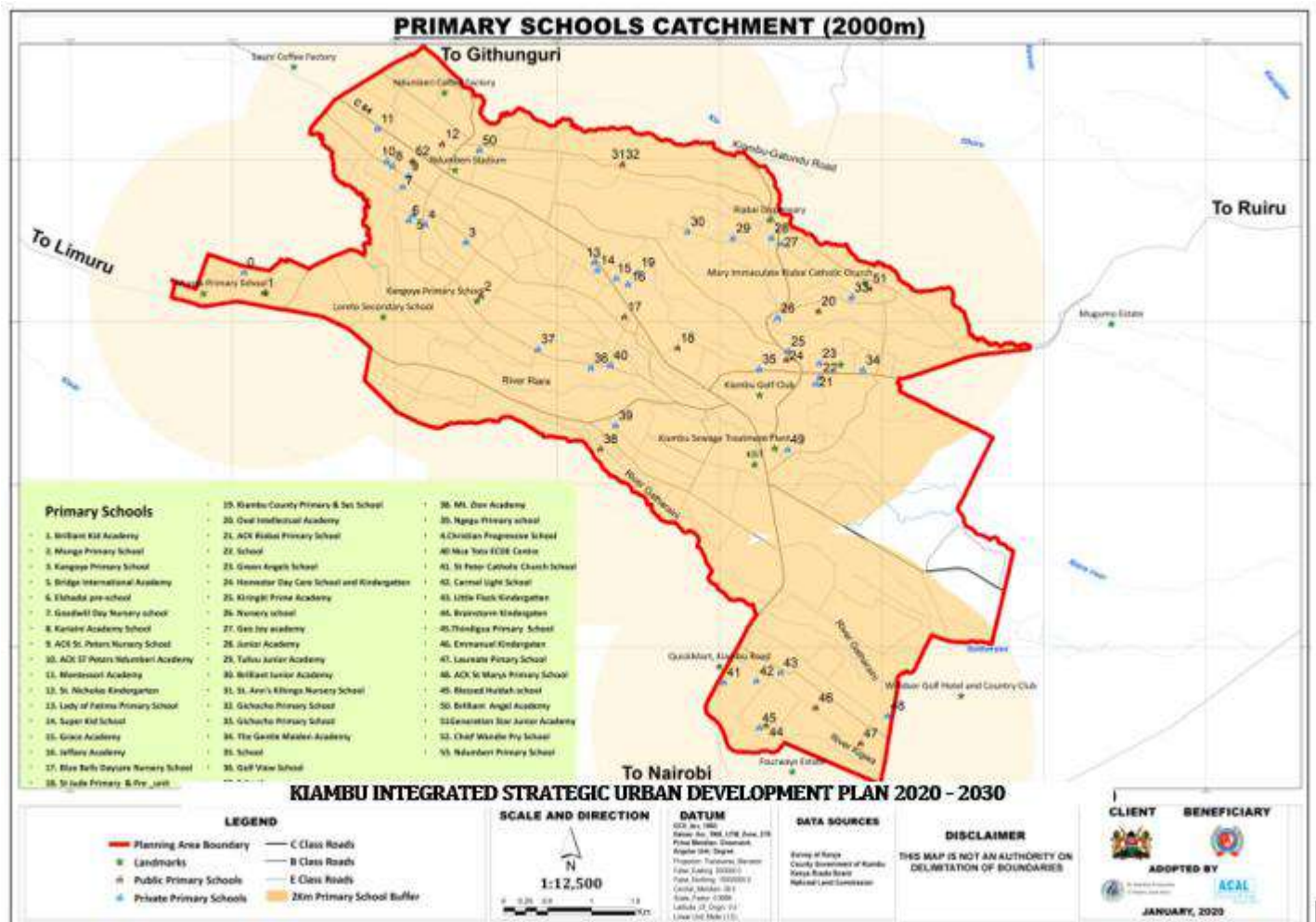
### 9.1 Overview

The planning area is endowed with various social infrastructure. The social facilities within the area are educational facilities, health facilities, community facilities, safety and security installations.

### 9.2 Education Facilities

Kiambu Town hosts 73 educational institutions which include EDE centres, primary, secondary and tertiary level schools. There are 63 primary schools, 8 secondary schools, 5 tertiary institutions and 1 special education institution within the planning area. The map above shows the distribution of the educational institutions within the planning area. The county has a teacher-pupil/student ratio of 1:40 for ECDE, 1:38 for Primary Schools and 1:25 for Secondary Schools.<sup>4</sup>

Map 25: Primary Schools Catchment



Source: ACAL & BC Gildenhuyts & Associates, 2019

### 9.2.1 Pre –Primary Schools/ Nursery Schools

There are 10 schools in the category of pre-primary/nursery schools. Table 9.1 gives a detailed breakdown of their enrolment and number of care givers in 20018. All these schools are attached to a primary school.

**Table 14:2018 ECDE Enrolments in Kiambu town**

<b>ECDE Enrolment 2018</b>				
<b>School</b>	<b>Boys</b>	<b>Girls</b>	<b>Total</b>	<b>Caregivers</b>
<b>Kiambu</b>	139	89	228	4
<b>Thindigua</b>	22	47	69	4
<b>Riabai</b>	18	40	58	2
<b>Gicoco</b>	19	39	58	2
<b>Chief Wandie</b>	21	38	59	3
<b>Ndumberi</b>	26	44	70	2
<b>Kangoya</b>	15	20	35	2
<b>Loreto</b>	3	7	10	1
<b>Mungai</b>	24	27	51	2
<b>Ngegu</b>	17	40	57	2

Source: Kiambu County Education Department

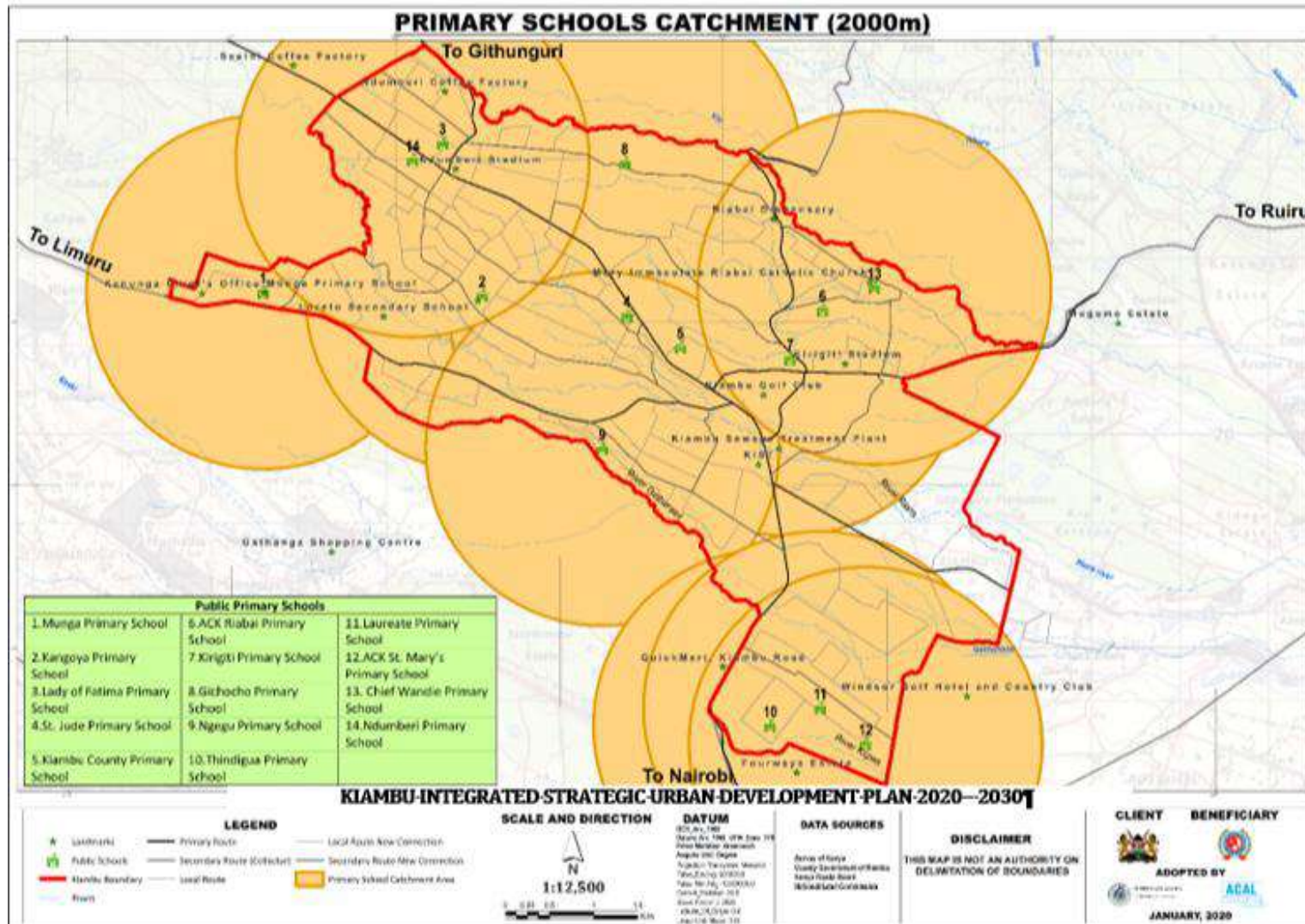
### 9.2.2 Primary Schools

There are 39 Primary Schools in Kiambu Town and their enrolment can be seen in the table below. To know if Kiambu Town has been well catered for with public schools, an analysis of schools with catchment of 500m and 2km have been illustrated in Map 26 and 27. According to the Physical Planning Handbook 2007, one primary school should cater for a population of 4000. With a current population of 108,631, the area should have 31 public primary schools. However, there are only 14 public schools, and 2 of them are beyond the normal capacity of 960 students, 1 of them is at the recommended enrolment, while the others have very low enrolment. Is this an indicator of low performing schools? There are 25 private schools in the area. These seem to stand in the primary education gap (see map 28). Thindigua, Kanunga and Ndumberi areas appear to be short of primary schools.

**Table 15: Public primary school enrolment**

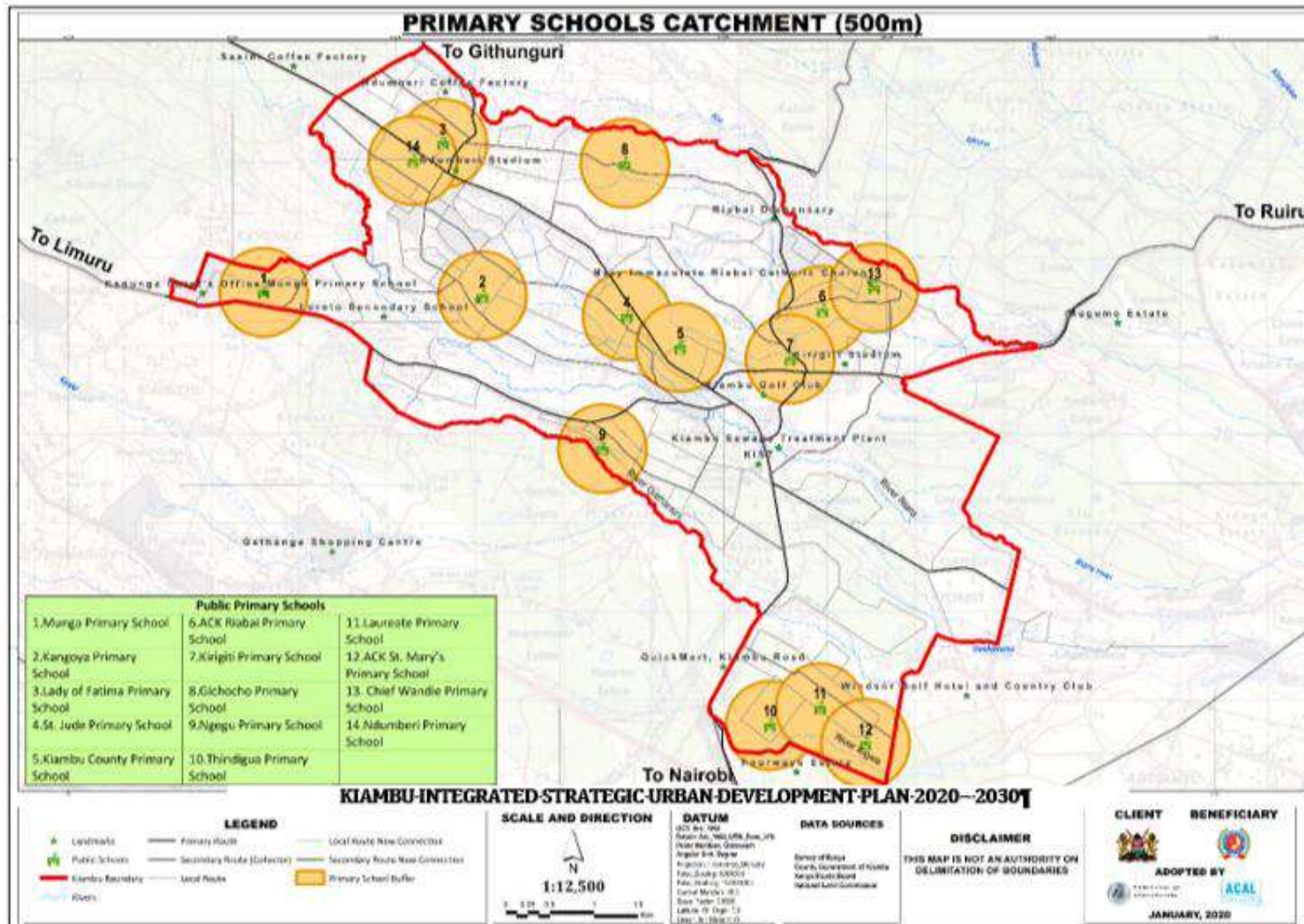
<b>School</b>	<b>Boys</b>	<b>Girls</b>	<b>Total</b>
Chief Wandie	223	227	450
Kiambu	931	1015	1946
Mungai	201	209	410
Riabai	191	201	392
Ndumberi	464	471	935
Gicoco	317	307	624
Loreto	176	212	388
Mary Immaculate	685	629	1314
Kangoya	355	349	702
<b>Total</b>	<b>4237</b>	<b>4336</b>	<b>8573</b>

Map 26: Primary school catchment area



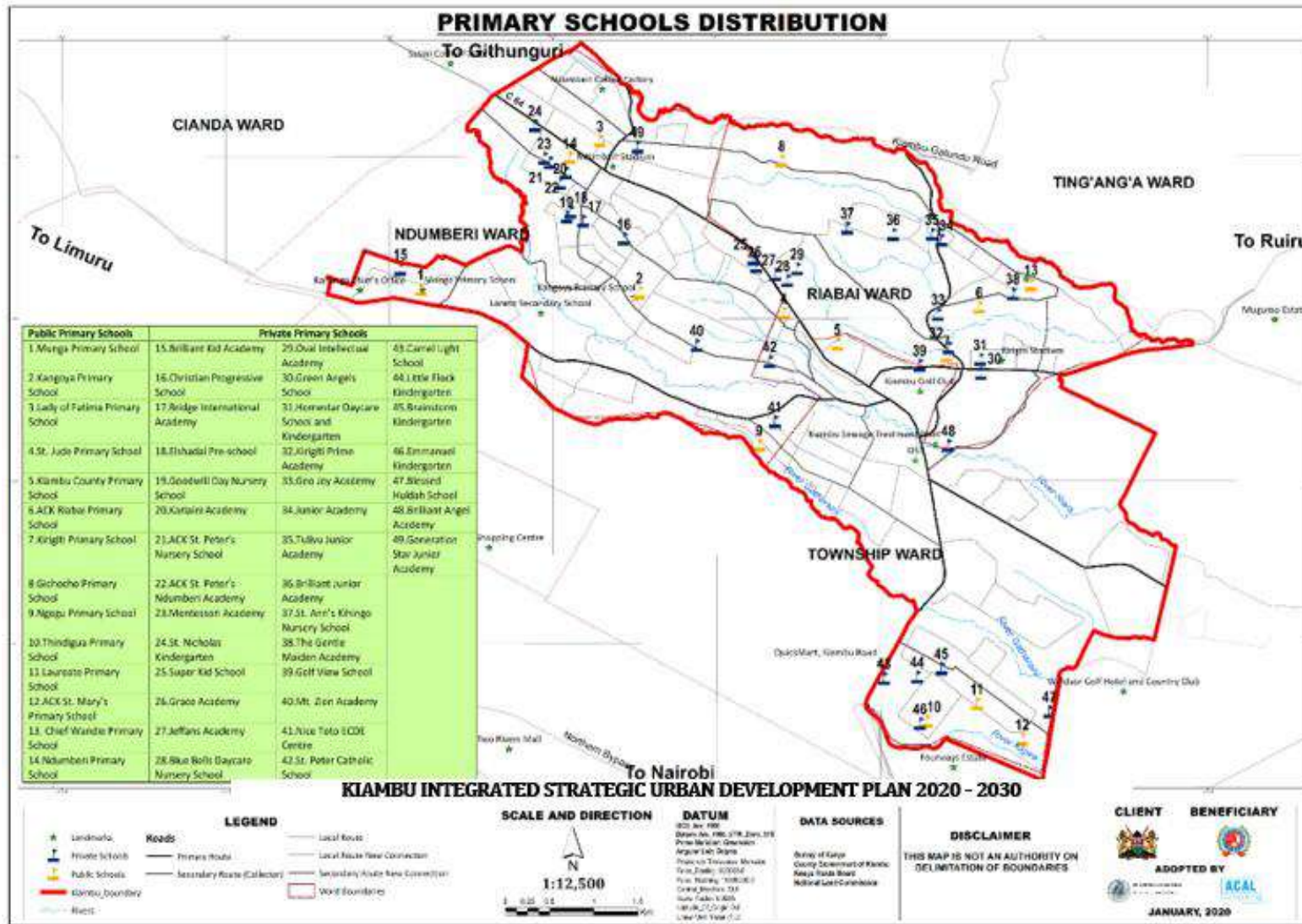
Source: ACAL & BC Gildenhuys & Associates, 2020

Map 27: 500m Primary School Catchment



Source: ACAL & BC Gildenhuys & Associates, 2020

Map 28: Primary Schools Distribution



Source: ACAL & BC Gildenhuys & Associates, 2020

### 9.2.3 Secondary Schools

There are seven public secondary schools within the area of which Map 23 indicates their catchment area of 3kms each. According to the Physical Planning Handbook 2007, the area should have at least 14 public secondary schools. Of the public schools present, only three have attained the recommended enrolment, the other five having very low enrolment.

Why are people not attending these schools in higher numbers? The population at the lower end of Thindigua lacks access to a public secondary school. There are four private schools within the private area.

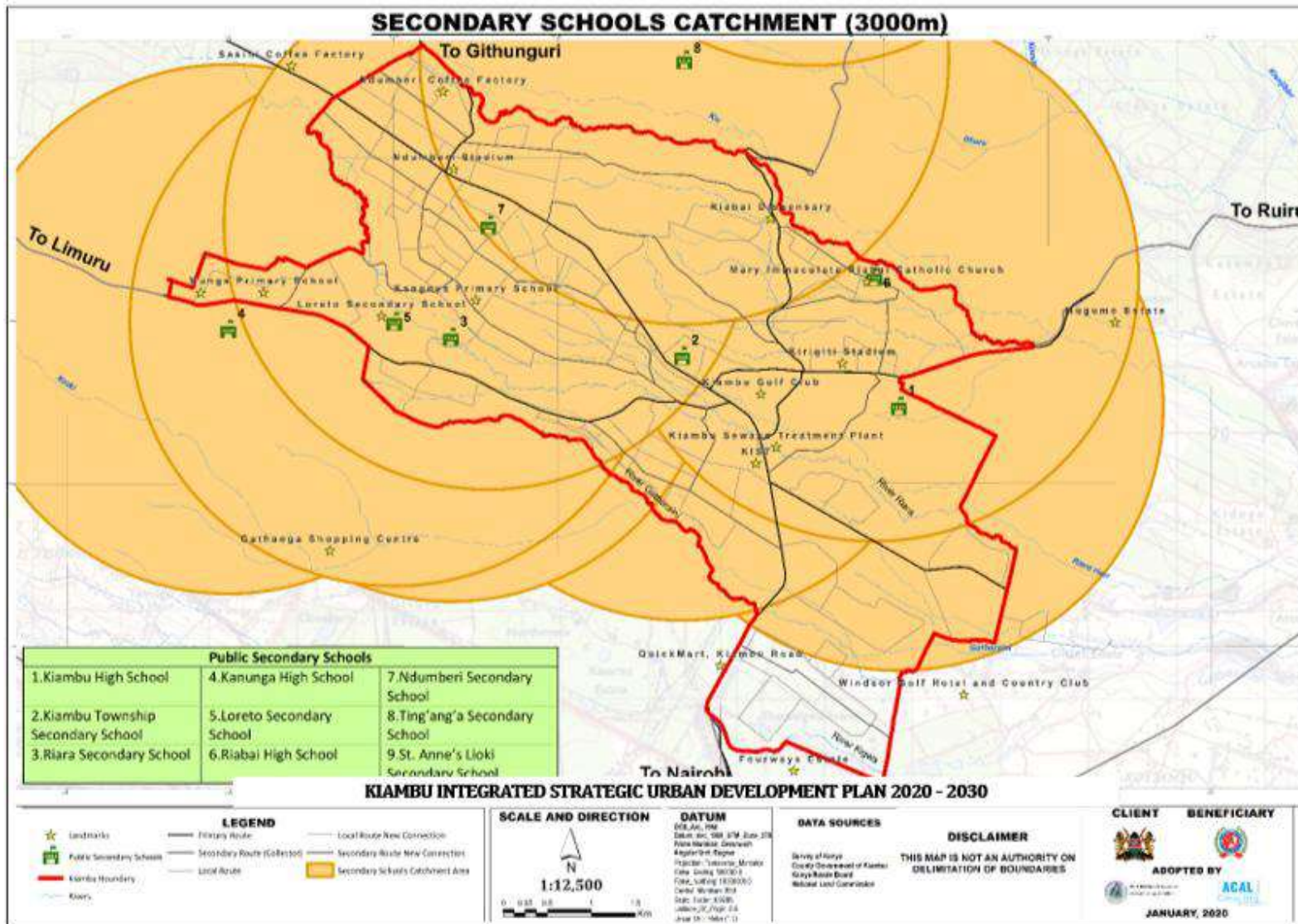
Table 16 gives a break-down of the enrolment within these schools in 2018.

**Table 16: 2018 Secondary school enrolment**

School	Boy	Girls	Total
Loreto		1299	1299
Kiambu	1087		1087
Ndumberi		550	550
Kiambu Township	249	211	460
Riabai	316		316
St. Peters	202	174	376
St. Josephs	146	114	260
Total	2000	2348	4348

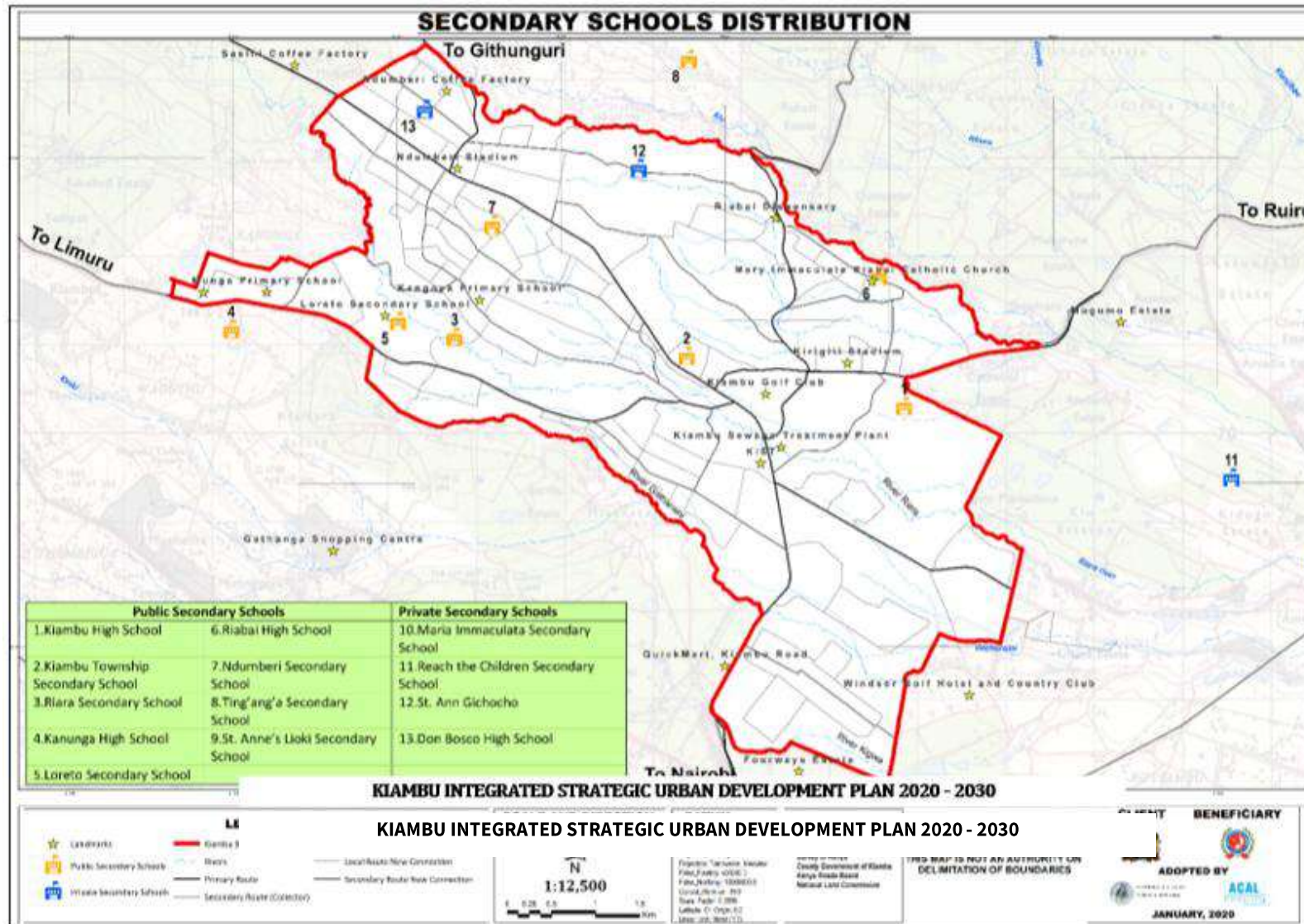
**Source: Kiambu County Government, 2019**

Map 29: Secondary School Catchment



Source: ACAL & BC Gildenhuys & Associates, 2020

Map 30: Secondary Schools Distribution



Source: ACAL & BC Gildenhuys & Associates, 2020

### 9.2.4 Tertiary schools

There are a number of tertiary education institutions in the planning area namely Kiambu Institute of Business Studies (KIBS), Kiambu Institute of Science and Technology (KIST), Ndumberi Youth Polytechnic, and Riabai Vocational Training Centre. There is a proposed project to expand and upgrade KIST.

## 9.3 Health Facilities

### Hospitals and dispensaries

There are 2 public health facilities in Kiambu town and these include Kiambu level 5 hospital and Riabai Dispensary. Maps 31 and 32 give a visual description of their distribution within the planning area. The level five Hospital covers the whole planning area, but this is mainly for serious illnesses. The Riabai Dispensary is the only public health facility that is within the area to treat less serious conditions. It is, therefore, recommended that at least two more health facilities be included within the planning area, to cover Ndumberi and Thindigwa areas.

**Table 17: Public health facilities in Kiambu**

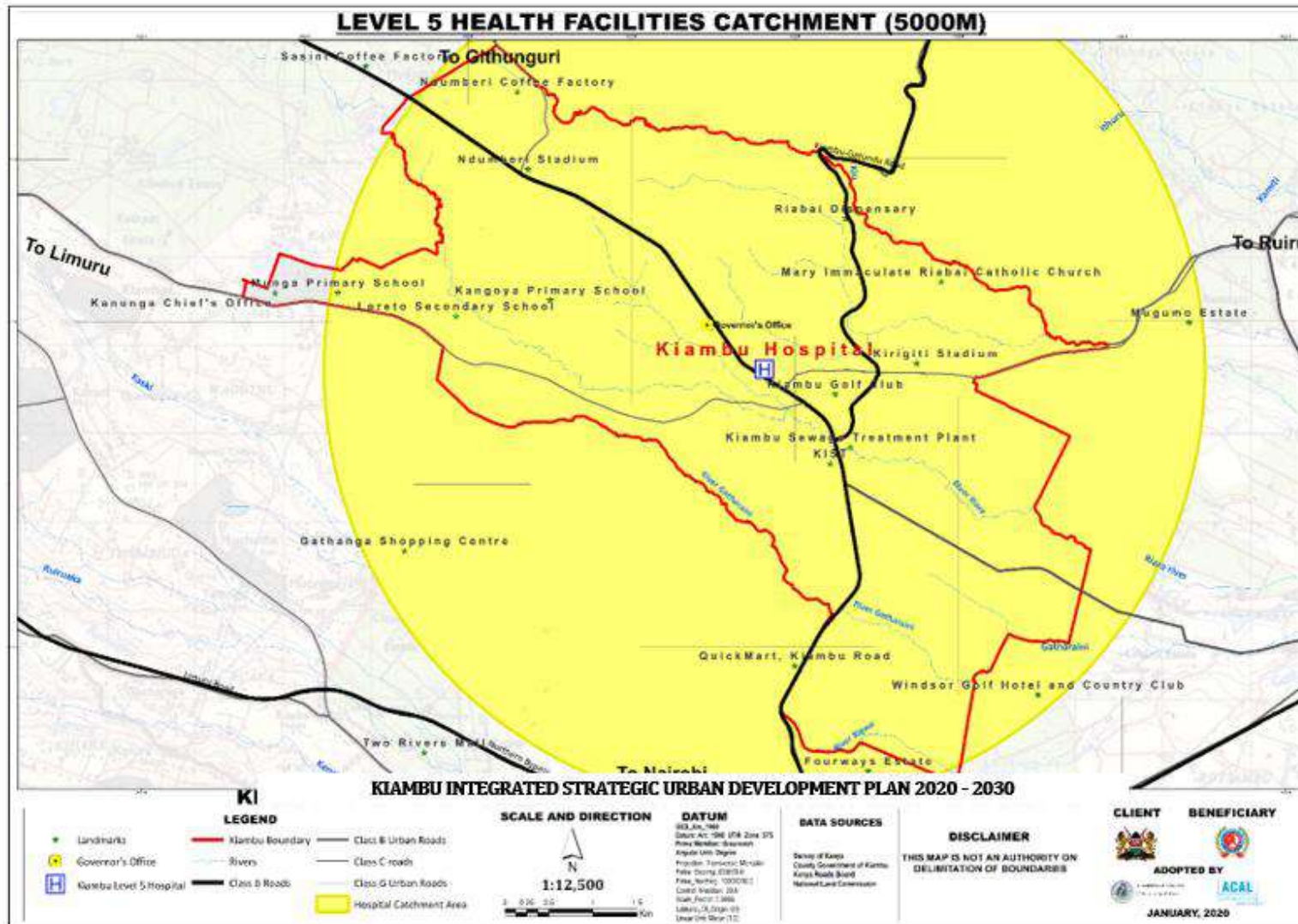
Location	Facility	Level
Township	Kiambu level 5 hospital	V
Riabai	Riabai dispensary	II

Source: Kiambu County Government, 2019

Some of the other private and faith-based health institutions in the area include;

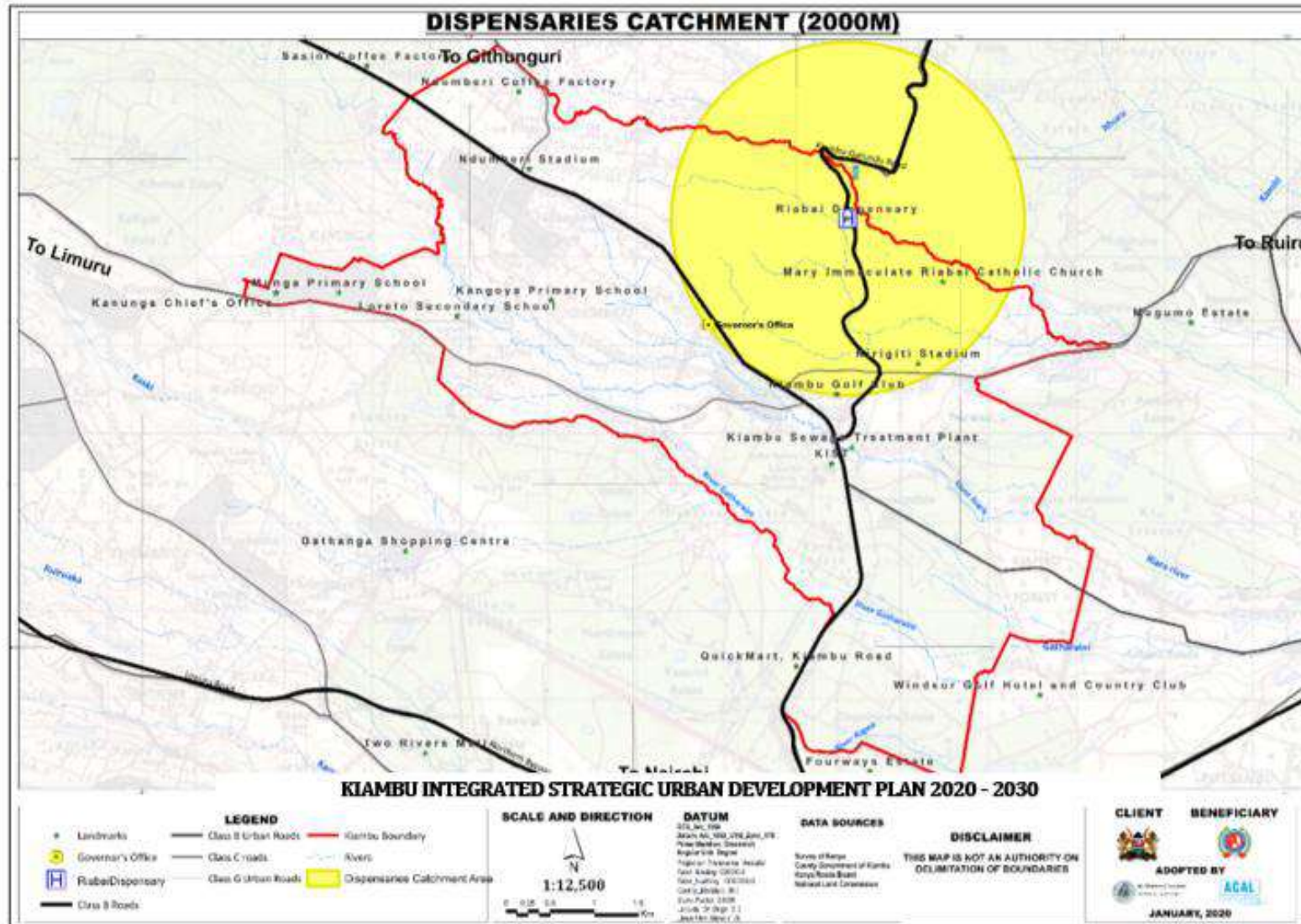
- St Theresa Hospital, Thindigwa,
- Aga Khan University Hospital,
- Marura Nursing Home, Kirigiti and Kiambu Branches,
- Radiant Hospital,
- Caretech Medical Centre, Thindigwa [Mushroom area],
- Mercy Light Hospital,
- PEFA Mercy Medical Centre, Ndumberi,
- St Mark's Clinic, Kanunga
- St. Ann's medical clinic
- Bethsaida Catholic Dispensary, Riara.

Map 31: Hospitals in 5000m Catchment



Source: ACAL & BC Gildenhuys & Associates, 2019

Map 32: Other Public Health Facilities in 2000m Catchment



Source: ACAL & BC Gildenhuys & Associates, 2019

## 9.4 Fire Station

There is one operational fire station in Kiambu Town located at the Indian Bazaar and is supported by 11 fire-fighters. For a response time of five minutes, it is recommended that more fire stations should be built within the urban centres. One station should be located at Ndumberi area. Fire hydrants also need to be located within the area, of which proposed locations are CBD, Kirigiti and Ndumberi.

## 9.5 Law and Order-Security facilities, Courts, Prisons

Kiambu town has 3 police stations, bases and posts namely Kiambu police station, Thindigua police station, Kanunga police station and Ndumberi AP post. There is 1 prison located within the planning area, Kiambu Prison. The planning area also has law courts in the CBD.

## 9.6 Other social facilities

### 9.6.1 Cemeteries

Cemeteries are important facilities although more often than not, planning for cemeteries is not given the consideration it deserves. The need for cemeteries is as important as that of other community facilities. Forecasting capacities for needed cemetery space considers factors not only related to land but also the availability of land, the purchase trends, zoning regulations, the nature of an area's topography (where cemeteries cannot be built in certain areas such as sloping terrains), and the extent of infrastructure.

A variety of cemeteries are in operation in Kiambu County. They comprise broadly of: **public** and **private** cemeteries. In the public cemeteries, any member of the public can be buried in accordance with their religious norms upon completion of the required logistics of death registration and fee payment to the County Government. Within the planning area, there are three functional cemeteries including Ndumberi, Riabai and Kanunga. There is a cemetery that was planned for in Thindigua, and it has been used at least once. It has no facilities.

### 9.6.2 Recreation Facilities

Recreation is a form of play or amusement, refreshment of body and mind and something that pleasantly occupies one's time after work is done. It can also be seen as an activity that involves play which allows for self-expression and from which relaxation, pleasure and satisfaction can be derived. According to Butler (1960), recreation is an activity which is voluntarily undertaken and practically motivated to leisure and satisfaction.

Recreational facilities in Kiambu town include: Kiambu Golf Club, Kirigiti Stadium and Ndumberi Stadium. Kirigiti and Ndumberi Stadium are both in a state that could be improved for better use by the public.

### 9.6.3 Libraries

Kiambu Town has one Library located within the Kiambu community hall. This Community hall is under renovation thus it is not available for use by the community.

## 9.7 Municipality Requirements

The Urban area and City's Amendment Act 2019, has many social infrastructure requirements that a municipality needs to meet. Table 27 gives details of these requirements and if the planning area has met them.

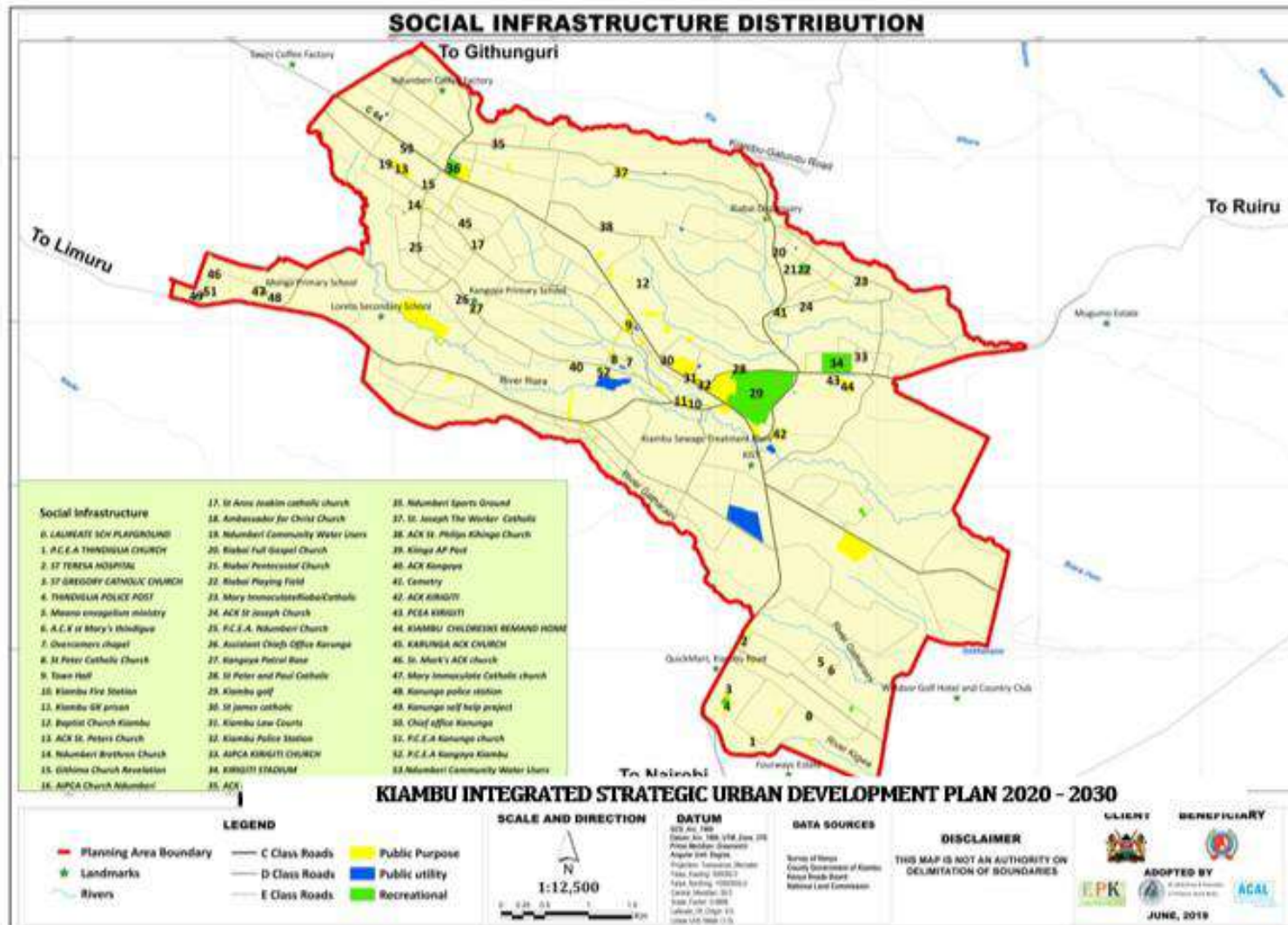
**Figure 16: Social Facilities Within Planning Area**

	<b>Infrastructure</b>	<b>No.</b>	<b>Required for Municipality</b>
1	Town hall (under construction)	1	Yes
2	Fire station (with disaster management)	1	Yes
4	Police station	2	Yes
5	Police post	2	Yes
6	AP post	1	Yes
7	Chief office (administrative seat)	2	Yes
8	Law court	1	No
9	Prison	1	No
10	Cemetery and crematoria	3	Yes
11	Funeral Parlour	1	Yes
12	Stadium	1	Yes
13	Play field	1	Yes
14	Sports Activities (Golf club)	1	Yes
15	Community water project	3	No
16	Children's remand home	1	No
17	Churches (Religious institutions)	53	Yes
18	Library/ICT services (under construction)	1	Yes
19	Health Facilities (public)	1	Yes
20	County Hospital	1	Yes
21	Ambulance services (by public hospital)	1	Yes
22	Control of Drugs – Rehabilitation centre	0	Yes
23	Sports activities – Golf Course	2	Yes

24	Recreational Park (Ndumberi Field)	1	Yes
25	Museum/cultural centres	0	Yes
26	Abattoirs	1	Yes
27	Child care facilities	0	Yes
28	Pre-primary education	10	Yes
29	Community centres (under construction)	1	Yes
30	Constituent University Campuses	0	Yes
31	Polytechnic	1	Yes
32	County School	2	Yes
33	Stadium	1	Yes
34	Theatre	0	Yes

**Source: ACAL & BC Gildenhuys & Associates, 2020**

Map 33: Social Infrastructure Distribution



Source: ACAL & BC Gildenhuis & Associates, 2019

## 9.8 Emerging Issues on Challenges and Opportunities

**Table 18: Emerging Issues on Challenges and Opportunities**

<b>Sector</b>	<b>Challenges:</b>	<b>Opportunity:</b>
<b>Education</b>	Low enrolment in many public schools Few public schools	Presence of private schools Public schools have plenty of space for expansion
<b>Health Facilities</b>	Only one public health facility that is not a referral hospital in the area	The development of more public health facilities
<b>Fire Station</b>	Only one fire station Narrow roads make it difficult to access with fire truck	Develop other fire station Widen roads
<b>Other Social Facilities</b>	No public parks or stadiums are available for public use	Develop the land available for parks and stadiums
<b>Community and Religious Facilities</b>	There are too many churches	The need to regulate churches

Source: ACAL & BC Gildenhuys & Associates, 2019

## 10 CHAPTER TEN: ECONOMIC ANALYSIS

### 10.1 Overview

This is among the most vital sectors of a society. Over 80% of the people's daily activities revolve around this sector of life. The sector determines the living conditions as well as their lifestyle. With vibrant economic activities, the society's living standards are high and vice versa. The town's level of development largely depends on the resource's potential, levels of exploitation, utilization, conservation and management. Economic factors are crucial in development planning and implementation. The most important resources in Kiambu town include land, water, physical developments, minerals, forests and tourism.

Within the planning area, there are various sectors that that bring income to the area and these include public administration, public service, industry, commerce, trade and agricultural activities.

### 10.2 Agriculture

Agriculture is the predominant economic activity in Kiambu County and contributes 17.4 per cent of personal income. 4,525 Ha of land is used for agricultural purposes in Kiambu Sub-county, of which 3,083 Ha is for subsistence farming, while 1,379 Ha is for commercial farming. 9% (10,505) of all the households get an income from farming. Some land that was used for farming since 2010 has been converted to real-estate. This is especially true with coffee farms in Thindigua. Since farming is still providing a substantial income and food source, it is important to preserve some land for this purpose.

When broken down into the kind of farming, 7,831 households engage in crop production, while 6,907 practice livestock farming, 28 in aquaculture and 80 in fish farming. Agricultural activities within and around Kiambu town include;

- Dairy farming, beef farming, pig farming, sheep, goats, rabbit and bee keeping and horticulture in Ndumberi, Kanunga and small pockets throughout the Town.
- Poultry keeping in Ndumberi, Thindigua and Riabai
- Coffee farming in Ndumberi, Riabai, KIST Area and Mawara Coffee estate, Urban agriculture in Ndumberi and KIST Area

**Figure 17: Agriculture in Planning Area**

Source: Field Survey 2019

### 10.3 Industrial Activities

In the planning area the industrial activities practised include Agro-industries such as milk processing, coffee factories and maize milling which are mostly situated in Ndumberi. There is some furniture making in Thindigua in an area that encourages road encroachment by interested buyers. These cause a conflict of land use. Many car washes are also located along the main access routes. The small and medium enterprises (SMEs) and jua kali sector are also widely present in the nodes where there is a lot of activities such as Kirigiti and Ndumberi.

The Kiambu Town youth of ages of 15-39 are 70% of the population. This is the age where most creativity and entrepreneurship potential lie. With this in mind, only 10.78 Ha is currently land used for industrial activity. If more land can be allocated for industrial use and small businesses encouraged in this sector through training, financial and marketing assistance, this is an area that can see growth and income generation to some of the 10,083 people in Kiambu Sub-county who are said to be jobless and seeking employment according to KNBS 2019.

**Figure 18: Industrial Activities****Ndumberi Dairies****Riabai Coffee Factory**

Source: Field Work 2019

## 10.4 Trade and Commerce

Kiambu town is the main commercial centre. The commercial centres harbour both formal and informal businesses. Kiambu town is characterised by financial institutions, commercial shops and markets.

Formal activities include but not limited to; general retail and wholesale shops, agricultural produce, retail, general hardware and appliances, restaurants, hotel and lounge, and service providers like motorbike taxis. Informal activities include, hawking, and roadside vending.

There are some markets that are scattered throughout the planning area that are underused. All but the Kangangi market in the CBD miss infrastructure and sanitation facilities thus discouraging their use. This Kangangi market is currently used to capacity, and there is a trend of getting out of the market to sell on the main street in Kiambu CBD from 5pm onwards. This habit causes congestion and land use conflict between traders, pedestrians and motor vehicles.

The recreation facilities – Kirigiti and Ndumberi Stadiums are potential commercial areas for trading with users when these locations are upgraded.

Also, Kiambu Town being the Administrative capital of Kiambu County, it has potential for accommodating conferences from meetings that may occur related to government matters. There is currently only one institute – ‘Elysian Resort’, in the near vicinity but outside the planning boundary that has such conference facilities. There is room for growth in this sector.

In the real-estate sector, 31,003 households rent their premises in Kiambu Sub-county (KNBS 2019). This is 66% of the Households. There are also various buildings being constructed throughout the planning area, especially in Thindigua and Kirigiti.

**Figure 19: Commercial activities in Kiambu**





Source: Field Survey 2019

Table 19: Markets

Location	Name of Market	Status
Riabai	Kirigiti	Temporary Open-Air Market
Riabai	Gatamaiyu	Temporary Open-Air Market
Riabai	Riabai shopping centre	Temporary Open-Air Market
Township	Kangangi	Permanent market
Township	Gatiri	Temporary Open-Air Market
Township	Kangoya	Temporary Open-Air Market
Township	Kiamumbi	Temporary Open-Air Market
Ndumberi	Karia-ini	Temporary Open-Air Market
Ndumberi	Kanunga	Temporary Open-Air Market

Source: County Government of Kiambu

## 10.5 Financial Institutions

There are a number of banks in the planning area namely; KCB Bank, Equity Bank, Cooperative Bank, and Standard Chartered. Mpesa is greatly used, with many vendors offering this service.

## 10.6 Revenue Generation

The key sources of revenue in Kiambu town include fees and charges/cess levied in open air markets, wholesale markets, car/bus parks, business permits, slaughter houses, farm produce, quarrying, land rates, way leave charges, public health/medical services, rental housing, solid waste management, and development application fees.

The main sources of revenue for Kiambu Sub County where the planning area lies can be summarized in table 26.

**Table 20: Revenue Budget**

<b>KIAMBU SUB COUNTY</b>	<b>KIAMBU SUB COUNTY</b>
Management Unit Description	Management Unit Description
Agriculture Livestock & Fisheries Management Unit	Agriculture Livestock & Fisheries Management Unit
Physical Planning Management Unit	Physical Planning Management Unit
<b>BUSINESS PERMIT MANAGEMENT UNIT</b>	
Cess Management Unit	Amount
Education Culture ICT & Social Services Unit	3,268,801.20
Health Services Management Unit	88,959,126.44
Housing Management Unit	15,930,771.04
Land Rates Management Unit	590,537.60
Market Management Unit	
Others	78,105,209.28
Roads Transport Public Works Management Unit	11,284.00
Slaughter House Management Unit	15,604,095.52
Trade Tourism Industry & Cooperatives Unit	3,879,456.56
Vehicle Parking Management Unit	3,569,263.12
Water Environment & Natural Resources Mgt Unit	2,365,114.00
Liquor Licences Management Unit	19,964.00
Direct Transfers	199,708.20
Total:	34,206,863.20

**Source: Kiambu County Financial Statements, 2017**

There is a target supposed to be attained by the revenue collected from the said sources. The end goal is to be able to eventually raise funds for recurring costs and development projects.

## 10.7 Emerging Issues on Challenges and Opportunities

Table 21: Emerging Issues on Challenges and Opportunities

Sector	Challenges:	Opportunities:
Agriculture	<ul style="list-style-type: none"> <li>▪ Urbanization resulting in the reduction of land for agricultural purposes</li> <li>▪ Conversion of coffee farms to real-estate due to reduced income from farming</li> </ul>	<ul style="list-style-type: none"> <li>▪ Development control – planning boundaries to save valuable agricultural land</li> <li>▪ Managing income from agricultural produce to allow decent profits</li> </ul>
Industry	<ul style="list-style-type: none"> <li>▪ Some industries cause land use conflicts</li> </ul>	<ul style="list-style-type: none"> <li>▪ Allocation of industrial space in appropriate locations</li> </ul>
Trade and Commerce	<ul style="list-style-type: none"> <li>▪ Traders encroach on the road reserve during high traffic times</li> <li>▪ Congested/under-utilized markets</li> </ul>	<ul style="list-style-type: none"> <li>▪ Enforcement</li> <li>▪ Upgrading and developing organized markets with ablution facilities</li> </ul>
Revenue Generation	<ul style="list-style-type: none"> <li>▪ Many projects to be accomplished by the County Government</li> </ul>	<ul style="list-style-type: none"> <li>▪ Look for new revenue alternatives</li> </ul>

Source: ACAL & BC Gildenhuys & Associates, 2019

## 11 CHAPTER ELEVEN: GOVERNANCE AND INSTITUTIONS

### 11.1 Overview

The ISUDP is being prepared within the framework of the recently devolved system of government as provided in CoK, 2010. A key provision of the new constitution is the creation of county governments whose functions include county planning and development (Fourth Schedule), amongst others.

The County Governments Act 2012 was then enacted to give effect to the devolution provisions of COK 2010. The said Act further defined the functions and powers of county governments which include the preparation of the following plans:

- County integrated development plan;
- County sectoral plans;
- County spatial plan; and
- Cities and urban areas plan as provided for under the Urban Areas and Cities Act (No.13 of 2011).

The County Governments Act 2012 also provided that the above plans shall be prepared using a framework that integrates “economic, physical, social, environmental and spatial planning.” It underscores the importance of development planning by further providing that the mandated plans “shall be the basis for all budgeting and spending in a county.”

The executive branch of the County Government has the responsibility for preparing these plans. In turn, their approval resides with the County Assembly.

Citizen participation in ISUDP preparation and implementation is also enshrined in the County Governments Act 2012. The Act provides that the County Government shall provide citizens with “reasonable access to the process of formulating and implementing policies, laws and regulations, including the approval of development proposals, projects and budgets, the granting of permits and the establishment of specific performance standards.” Citizen participation shall be ensured through several modalities including the “establishment of citizen fora.”

### 11.2 Existing Institutional Framework

Institutions are agents of plan implementation; a sound institutional framework can make or break a plan’s implementation. An analysis of the governance capacity to implement the Kiambu Town ISUDP becomes important to the planning preparation process.

The National Government and the County Government play a major role in the governance of the County and guides the roles of other actors like the private sectors and civil societies.

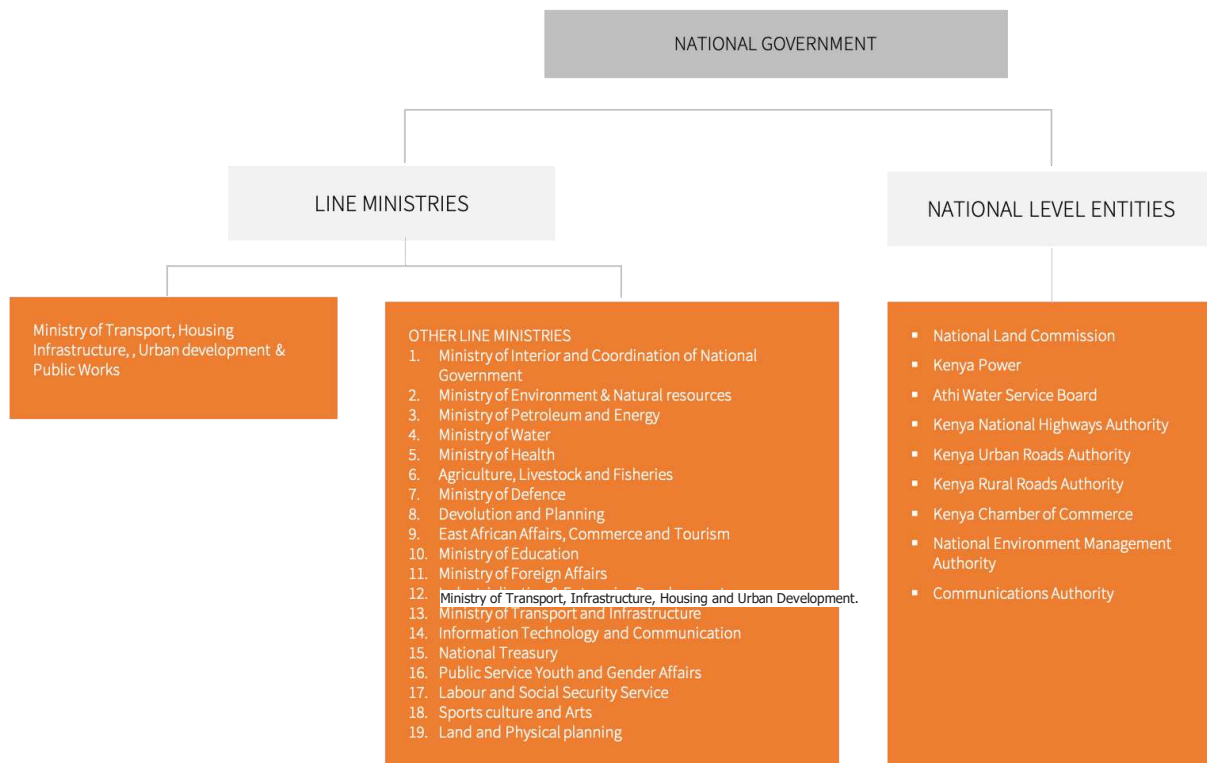
### 11.3 National Government

#### Roles

The National government provides the funds for projects in the County, making it a major institutional player in the success of the ISUDP. The National Government is also mandated with the construction of international roads that may pass by the town, educational facilities except ECD’s and village polytechnics within the County. The role of the National Government is also to ensure budgetary allocation in the County and facilitate national statistics and data on population, the economy and society in general. In the implementation strategy, the office of director of Physical Planning may can provide capacity building and issuance of Technical Assistance.

The National Land Commission’s oversight role covers land use planning in the country, they will participate in the planning process as a stakeholder, and they will assess the final planning document before its approval in the Ministry of Physical Planning. The National Environment Management Authority which is responsible for the management of the environment, and environmental policy, can provide technical assistance, and it access and approves the plan before it becomes a legal document.

**Figure 20: National Government Structure**



**Source: ACAL & BC Gildenhuys & Associates, 2019**

### **Collaboration with NaMSIP**

The national government through Nairobi Metropolitan Services Improvement Programme (NaMSIP) - under the State Department of Housing and Urban Development in the Ministry of Transport, Infrastructure, Housing and Urban Development, has the role of strengthening urban services and infrastructure.

According to the World Bank, this will be achieved by investing in local infrastructure (roads, markets, street lighting, bicycle and pedestrian pathways, drainage, and the like). Equally important is supporting improvements in integrated solid waste management and sewerage collection and disposal.

Through the collaboration with NaMSIP the National Government will ensure improvement in service delivery by strengthening the current and future entities responsible for service delivery (through capacity building and issuance of Technical Assistance as per provision of CoK), including the central ministry, current local authorities and Kiambu County Government, utilities and other service providers, and possible future metropolitan authorities responsible for planning, transport, and other services.

The population will benefit from better planning and a reduction in the chaotic, unplanned development that has plagued the greater metropolitan region. In particular, they will benefit from the project's support for planning and public infrastructure in the areas surrounding the commuter rail stations. They will also benefit from increased access to urban infrastructure and services under the project, such as access roads, street and security lighting, sanitation services, and solid waste collection and disposal.

### **Financial Capacity**

It is constitutionally required that the revenue raised nationally is shared equitably among the National and County Governments. Among the National Government revenue, 43% is transferred to the County Governments. Additional allocations from the national government's share of the revenue, either conditionally or unconditionally can be added to the County Governments (CRA, 2014).

The County government of Kiambu financial projections for the year 2019/2020 is KSh 15.63B constituting Ksh 2.96B own source revenues and 12.6B allocations from National government. All projects involving NaMSIP will be funded by the World Bank and non-bank sources. The resources required are outlined in every project to ensure implementation.

### **Challenges**

Inadequate funding, lack of comprehensive budgets from the county governments and controversies between the distinct functions of the County government and National government are some of the issues yet to be resolved.

## 11.4 County Government

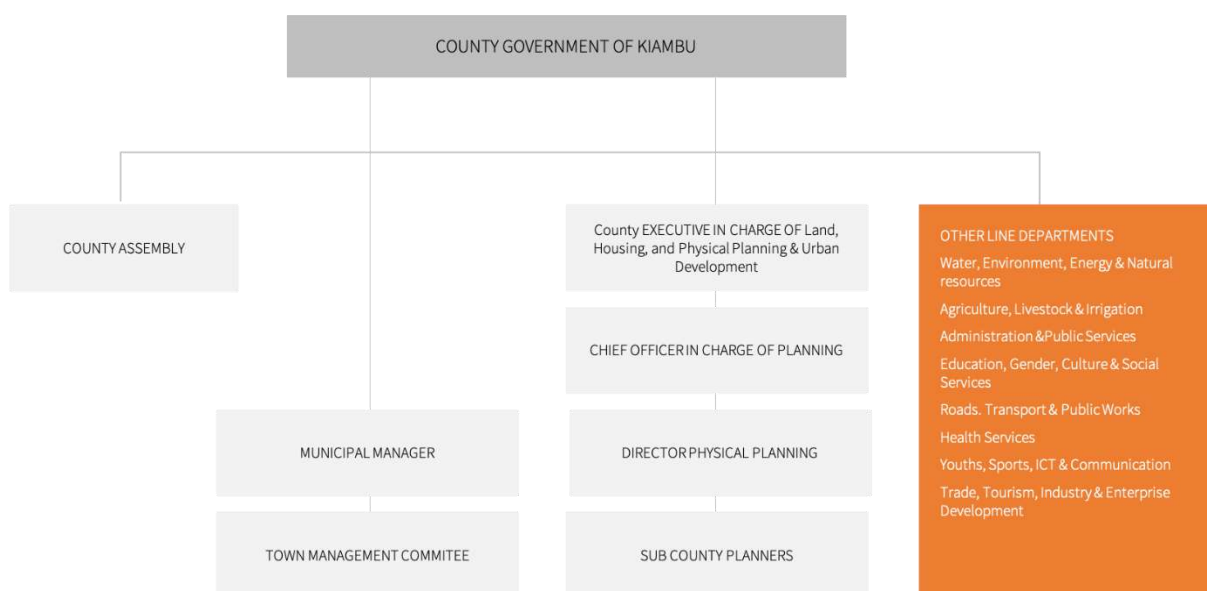
### Roles

The Constitution confers powers on the County Assemblies to receive and approve plans and policies. These plans and policies affect the management and exploitation of the County’s resources. They also affect the development and management of County infrastructure and institutions

Leadership and governance of towns is at the County level and guided by the Acts of parliament: County Government Acts and the Urban Areas and Cities Act. The multi sectors such as infrastructure and public works, health and other social facilities are guided by the various departments existing within the County level. Therefore, the County government has the role of construction of necessary infrastructure and facilities like transport facilities, storm water drainages, pre-primary education facilities, and polytechnics. The County government has a role of ensuring environmental protection is observed in the County. It is also the duty of the County government to ensure maximum public participation in the development projects within the County.

The effective implementation of the Kiambu ISUDP requires the appointment of a competent town/urban management committees for the urban areas. The function of the urban management committee is to oversee the affairs of the town, formulate and implement integrated development plans, and control land use, land sub-division, land development, and zoning. Such a committee also promotes and undertakes infrastructural development, implements applicable national and County legislations, collects rates, taxes, levies, duties, fees, and surcharges on fees, and promotes a safe and healthy environment.

**Figure 21: Kiambu County Government Structure**



**Source: ACAL & BC Gildenhuys & Associates, 2019**

## 11.5 Revenue Collection and Sources

The main source of revenue includes Physical Planning at 88.9m, Health Services Management Unit at 78.1m. Other sources include, Vehicle Parking Management Unit plot and land rates, market fees and building materials and another cess. Also license penalties and land rates penalties are sources of revenue.

### 11.5.1 Private Sector

#### Roles

The private sector plays a major role in the County development. The private sector within the planning area includes financial institutions, service providers, small and medium-size enterprises (SMEs), educational institutions, transport and communication companies, credit and savings societies, and manufacturing companies.

The private sector is important in formulation and implementation of the Kiambu Town ISUDP through formation of Private-Public Partnerships that are a source of funds for projects proposed in the CSP. The private sector also plays a role in the training and employment of the residents in the County thus reducing unemployment. They are also expected to carry out various projects not limited to provision of services including health, education, ICT and industries. This sector is therefore fundamental in achieving material growth in Kiambu Town.

### 11.5.2 Civil Societies

#### Roles

Civil work is considered one of the most important means of the County's progress. This has become more important with the widening gap between the resources and population's necessities, which is why civil organizations should be considered the County's partner in sustainable development, and in providing the necessary needs. Civil society is direct supervisory power of the people on the rulers and authority's performance. Through civil societies, the people in Kiambu Town are catered for in terms of welfare and societal well-being. Through them, the people participate in the development of their residences and the County at large. With serious and vital consideration of civil societies in development, Kiambu County will increase its rate of development and reduce corruption levels in governance, and this guarantees one of the most basic foundations of development.

### 11.5.3 Residents Association

#### Roles

The Residents' associations within the planning area are formed by groups of people from specific residential communities. The role of these organizations is to address issues within their local area and act as a voice for their local community.

## 11.6 Emerging Issues on Challenges and Opportunities

The major planning challenges and opportunities presented by the governance sector have been summarized in Table 28.

Table 22: Emerging Issues on Challenges and Opportunities

Sector	Challenges	Opportunities
<b>National Government</b>	<ul style="list-style-type: none"> <li>▪ Inadequate funding</li> <li>▪ Controversies between the distinct functions of the County government and National government</li> </ul>	<ul style="list-style-type: none"> <li>▪ Public Private Partnerships</li> <li>▪ Discussions should be encouraged to straighten out controversies of distinct functions of National and County Governments</li> </ul>
<b>County Government</b>	<ul style="list-style-type: none"> <li>▪ Lack of comprehensive budgets from the county governments</li> </ul>	<ul style="list-style-type: none"> <li>▪ Comprehensive budgets should be made</li> </ul>

Source: ACAL & BC Gildenhuys & Associates,

## 12 CHAPTER TWELVE: STAKEHOLDER ENGAGEMENT

### 12.1 Overview

A first stakeholder’s workshop covering Kiambu town was held on 23 May 2017. The objective of the stakeholder workshop was;

- a) To create awareness and sensitize the stakeholders of the planning exercise and its importance.
- b) Initiate the transfers of ownership of the plan to the stakeholders

As a part of the planning methodology, categories of stakeholders were listed during a meeting between the County and the Consultants, and people from each category were invited for the stakeholder’s meeting. These included Members of the County Assembly for each ward, County Officials (CECMs, Chief Officers, Directors from all departments), Kiambu Sub-county officers from each department, the Chiefs, Co-operative representatives, Religious representatives, National Government representatives from all ministries in all planning sectors, the Business Community representatives, residential associations representatives, women organizations representatives, people living with disabilities, youth representatives, and service providers in the planning area (such as water, sanitation, electricity and telecommunication service providers).

A guided session was done with the stake holders asked to raise any issue that they think may not have been addressed during the presentation of the situation analysis. They were also to comment on any issue that they thought was incorrect or needed additional information. These issues were addressed by sector, needed to be within the planning boundary, and all stakeholder categories (e.g. women, youth, disabled, business men among others) needed to participate in this session. The issues that were raised during the meeting are included in table 29.

**Table 23: Stakeholder Issues Raised**

Sector/Theme	Issues
Land and Land Use	<ul style="list-style-type: none"> <li>• Reclamation of public land from grabbers.</li> </ul>
Environment	<ul style="list-style-type: none"> <li>• Proper management of sloping areas, to reduce unfavorable developments</li> </ul>
Urbanization and Human Settlements	<ul style="list-style-type: none"> <li>• Promote affordable housing, to target middle income earners, with proper services e.g. water and sanitation</li> </ul>
Physical Infrastructure	<ul style="list-style-type: none"> <li>• Poor transport linkage of Kiambu town to some other local towns e.g. Gatundu due to poor roads</li> </ul>

	<ul style="list-style-type: none"> <li>• Improve all the feeder/local roads in the area, to open up agricultural areas</li> <li>• Within Kiambu town the plan should include NMT to enhance safety and faster movement of persons</li> <li>• Policy formulation to solve traffic congestion, especially btw Kiambu and Nairobi.</li> <li>• Poor sewer connectivity, KIWASCO should provide sewer services concurrently with water provision</li> <li>• Lack of solid waste recycling initiatives.</li> <li>• Only one skilled personnel in solid water management, the Sub-county environment officer</li> <li>• Public participation and civil education to promote improved waste disposal and recycling</li> <li>• Relocation or proper rehabilitation of the dumpsite next to old town.</li> <li>• The dumpsite is located on cemetery land, thus leaving no space for the latter</li> </ul>
Social Infrastructure	<ul style="list-style-type: none"> <li>• Empowerment programs and provision of infrastructure such as theatre/social halls, stadia could help engage the jobless youth.</li> <li>• Poor state/degradation of most public facility structures such as health institutions, government offices</li> <li>• Increase polytechnic services and provide for the disabled in all sectors. E.g. Special schools and therapy sections in all hospitals</li> <li>• Recreation spaces are inadequate or in poor condition. Characterized by only 2, poorly maintained, stadia within the planning area.</li> </ul>

	<ul style="list-style-type: none"> <li>• Improvement of service provision in health facilities and establishment of satellite dispensaries to decongest Kiambu hospital</li> </ul>
Economy	<ul style="list-style-type: none"> <li>• Encourage agro-business to enhance food security and regional stability. Agricultural extension officers to engage residents</li> </ul>
Governance	<ul style="list-style-type: none"> <li>• Capacity building / civic education for residents to own up and support development,</li> <li>• Empowerment of devolved institutions for easier service provision, e.g. management of water and natural resources</li> <li>• A request for Tingángá area to be included in the ISUDP by the area residents, it has lot to offer to the growth of the municipality Inadequate cemetery space</li> <li>• Development approvals to be investor friendly</li> <li>• Priority budgetary allocation for necessary services, e. g markets and local roads</li> <li>• Inadequate services provided by public health and county government offices.</li> </ul>

**Source: ACAL & BC Gildenhuis & Associates, 2019**

## 13 CHAPTER THIRTEEN: SYNTHESIS OF EMERGING ISSUES, OPPORTUNITIES AND CHALLENGES

### 13.1 Overview

A situational analysis of demographics, environment, physical infrastructure and social/economic conditions in Kiambu reveals several opportunities across the different sectors. These can be summarised as follows:

### 13.2 Planning Context

#### **Historical Background**

The written history of the county does not include the indigenous people's history account, therefore, for the purpose of a museum an indigenous account of Kiambu County can be researched and recorded.

#### **Geographic location and size**

The planning area was selected during a period when municipalities had not yet come in place. When the plan is completed and approved, funding can be set aside for an amendment plan can be done to include all areas of the Kiambu Municipality.

#### **Planning Methodology**

When the methodology is implemented and takes too long, being overtaken by elections, stakeholders tend to differ, efforts should be made to complete the plan within the allocated time, ensuring that the needed funding and human resource capacity is made available.

#### **Legal, Policy and Institutional Framework**

The Municipal Boards/management to be able to financially implement the plans, there needs to be a budget and funding. When plans arise from these, development approvals should be investor friendly.

#### **Other Plans and Strategies**

For the implementation of the Vision 2030 and Big 4 Agenda especially the manufacturing aspect, there is a need for land and funding allocation.

### 13.3 Physiographic Characteristics

#### **Topography**

Steep slopes should be protected with development control.

#### **Soil, Geology and Vegetation**

Soils are very good for farming, advantage of the good soils should be taken by encouraging tree planting, natural vegetation conservation and urban agriculture.

## **Hydrology**

Heavy reliance on underground water should be relieved by tapping into rivers for domestic/commercial/institutional/industrial use

## **Climate**

High humidity causes paint peeling and mould on buildings. Building code policy should address this issue to ensure the prevention of mould, require frequent painting or the use of materials that do not need paint.

## **13.4 Demography**

### **Population size and Distribution**

Due to in-migration, population is increasing faster than the provision of public utilities i.e. water, solid and liquid waste management. Planning should be done and these public utilities provided efficiently

### **Population structure**

Due to the high population of elderly people (65 and above), special care through homes for the elderly should be provided.

### **Demography**

Lifestyle diseases are prevalent and this should be prevented through public health education on healthy diets and exercise, and the provision of exercise facilities such as parks and pedestrian walkways.

### **Welfare indicators**

The high dependence on electricity means that power failures gravely affect the population. Renewable energy exploitation like solar and biogas should be encouraged.

### **Social Analysis**

Too many churches located within a small area, thus the organized church leadership should regulate genuine churches.

## **13.5 Land Use Analysis**

### **Land Classification/ Land Value and Markets**

The high cost of land makes it expensive for compulsory acquisition to support infrastructure provisions. Some land that had been set aside for public use has been grabbed by private individuals. Steps should be taken to protect and reclaim land that was set aside for public purposes.

### **Land Use Patterns**

Ongoing subdivision of land is done in irregular longitudinal shapes that makes development hard to implement. There should be steps taken for the amalgamation and creation of regular shapes, together with development control to stop further sub-division beyond a certain size/width/length.

The high increase in change of land uses should be tackled by planning and designating land for commercial /industrial /residential and other desired uses.

### **Land management and administration**

Inefficient land management and administration resulting in land grabbing and encroachment on roads. Development control standards should be implemented by having efficient staff who are well equipped.

### **Land Suitability/availability**

With 90% of the land being developable, it is easy to over-urbanize and not include vegetation. It is prudent to designate a percentage of vegetation to be planted/conserved.

## **13.6 Environment**

### **Physical Environment**

There is surface water pollution due to solid waste being blown by the wind and washed by the rain into the rivers and streams. Discourage illegal dumping by closing illegal dumping areas, demarcate garbage collection points and provide efficient garbage collection and solid waste management services.

### **Urban greenery**

urban parks are underutilized, and areas where there is a very high concentration of multi residential dwelling lack greenery. Kirigiti and Ndumberi Stadiums should be upgraded for use by the public, and development control should include the provision of green space within the built environment.

### **Climate change**

Flooding has come about as a result of climate change, and this can be addressed with rain water harvesting strategies and the construction of storm water drains.

### **Waste Management environment issues**

The use of septic tanks increases the chance of ground water contamination. The extension of sewer lines can reduce the chances of ground water contamination.

## **13.7 Urbanization and Human Settlements**

### **Patterns and trends of human settlements**

Linear trends make it hard and expensive to provide public utilities and services. Delineating boundaries for urban areas together with development control should solve this problem.

### **Urbanization of Development Nodes**

In all the urbanized nodes within the planning area, the following challenges were identified; lack of efficient drainage infrastructure, inadequate market space and facilities, haphazard waste disposal, lack of collection bins, a cemetery allocated for a dumpsite, temporary and semi-permanent structures road reserve encroachment by commercial activities, traffic congestion, dilapidated condition of some local roads, inadequate water supply, lack of bus park/stages.

The following solutions should be used to solve these challenges; development of storm water drains, upgrading of markets, upgrading of solid waste management system, provision of solid waste collection points, upgrading of semi-permanent houses, providing organized markets with ablution blocks in nodes that lack one, upgrading of roads, development of land allocated for cemetery in Thindigua, provision of bus stops, and upgrading of the water supply system.

### **Housing and housing demand**

There has been an increase of demand of housing by middle class immigrants from Nairobi, development of middleclass type housing will resolve this issue.

## **13.8 Physical Infrastructure**

### **Transport and Road Infrastructure**

The following issues were identified in the transport and road infrastructure sector; narrow Roads, traffic Congestion, encroachment onto road reserves, Inadequate NMT infrastructure, some areas have poor roads during rainy seasons, poor transport linkage of Kiambu town to some other local towns e.g. Gatundu due to poor roads, unplanned Bus Terminus, lack of street lighting has reduced street visibility, and some plots have no access.

To resolve these issues, roads below 9m should be widened, proper road drainage, NMT and street lighting should be put in place, feeder roads such as Kiambu-Gatundu roads should be improved in the new plan, improve all the feeder/local roads in the area, to open up agricultural areas, policy formulation to solve traffic congestion, especially btw Kiambu and Nairobi the bus terminus should be upgraded and access provide to plots with no access.

### **Water**

There is an undersupply of piped water, and this can be improved by increasing the water supply pipes and encouraging the harvesting of rain water.

### **Waste Management**

Within the planning area, the solid waste management is inefficient, the County Environment Department is understaffed, there is a lack of solid waste recycling initiatives, the location of a dumpsite on cemetery land thus leaving no space for the latter, and there is lack of sewerage in some residential areas.

The following should improve waste management issues; Upgrading the solid waste management by an efficient collection, processing and final disposal system, public participation and civil education to promote improved waste disposal and recycling, relocation or proper rehabilitation of the dumpsite next to old town and hiring adequate staff in the County Environment Department. Also, an adequate system of sewer trunks that serve the population should be developed.

### **Energy**

The use of charcoal for cooking may increase global warming, therefore the use of more clean and renewable energy should be encouraged.

### **ICT**

With the lack of a Community ICT Centre and unaffordable internet connections, the County should provide an ICT hub, and the internet providers notified of the unaffordability of the internet to the residents.

## **13.9 Social Infrastructure**

### **Education**

There are few public schools in the planning area, and enrolment is low. There is a large presence of private schools that residents seem to prefer these. The public schools present should improve their quality so as to attract more students. Increase polytechnic services and provide special schools for the people living with disabilities. There is also no university within the planning area, KIST can be upgraded to fill this position.

### **Health Facilities**

There is only one public health facility that is not a referral hospital in the area, more public health facilities should be developed, and improvement of service provision in current health facilities (therapy sections should be included).

### **Fire Station**

There is only one fire station in the planning area and it lacks water hydrant facilities. The narrow roads some as small as 3m make it difficult for the fire truck to access plots. An additional fire station and water hydrants should be considered, and all roads widened to a minimum of 9m.

### **Other Social Facilities**

There are no public parks or stadiums are available for public use, the Kirigiti and Ndumberi Stadiums should be upgraded for this purpose.

There is stakeholder concern for the poor state/degradation of most public facility structures such as health institutions, government offices. These should be improved by the upgrading of these structures.

## **Community and Religious Facilities**

There are 53 (too many) churches within the planning area. The organized church leadership should regulate this number. Also, with the high unemployment rate among the youth, empowerment programs and provision of infrastructure such as theatre/social halls, stadia could help engage the jobless youth.

## **13.10 Economic Analysis**

### **Agriculture**

Urbanization resulting in the reduction of land for agricultural purposes mostly due to conversion of coffee farms to real-estate triggered by reduced income from farming. Planning boundaries should be established for agricultural land to save valuable agricultural land, and development control measures implemented. Income from agricultural produce should be managed to allow decent profits. Agro-business should be encouraged to enhance food security and regional stability. Agricultural extension officers should engage residents.

### **Industry**

Some industries cause land use conflicts, thus the need for allocation of industrial space in appropriate locations.

### **Trade and Commerce**

Traders encroach on the road reserve during high traffic times, and there are congested/under-utilized markets throughout the planning area. Enforcement should be deployed to prevent road encroachment, and there should be Upgrading and developing of organized markets with ablution facilities.

### **Revenue Generation**

There are many projects to be accomplished by the County Government, therefore new revenue alternatives should be sourced.

## **13.11 Governance**

### **National Government**

The National Government does not have enough funding for all development projects. It is therefore necessary to find alternative funding such as public private partnerships.

Controversies between the distinct functions of the County government and National government make it difficult to implement projects, thus discussions should be held to clear these matters and thus allow residents to enjoy the development they deserve.

### **County Government**

When County Governments present budgets that are not comprehensive to the National Government, those projects that are not presented lack funding. The County should then create

and present comprehensive budgets. Priorities need to be set for urgently needed services such as markets and local roads.

Some departments have little funding to perform their duties; thus, they need empowerment with funds for better service provision. Capacity building in customer satisfaction is a necessity.

### **Civil Society**

The public may not know the role they play in the development of their areas. It is therefore necessary to capacity build by giving civic education to the public so that they may own up and support development.



REPUBLIC OF KENYA



COUNTY GOVERNMENT OF KIAMBU

---

## **PART III: PLAN FORMULATION**

## 14 CHAPTER FOURTEEN: SCENARIO BUILDING AND CONCEPTUAL FRAMEWORK

### 14.1 Overview

In coming up with the plan proposals, spatial development opportunities and challenges in the County have been analysed. Three scenarios are most closely related to the development of Kiambu Town, namely Service led scenario, Urbanization scenario, and Transportation-led scenario. Nil scenario has been assessed for continuing with things as they are, and a preferred scenario arrived at for the best solution.

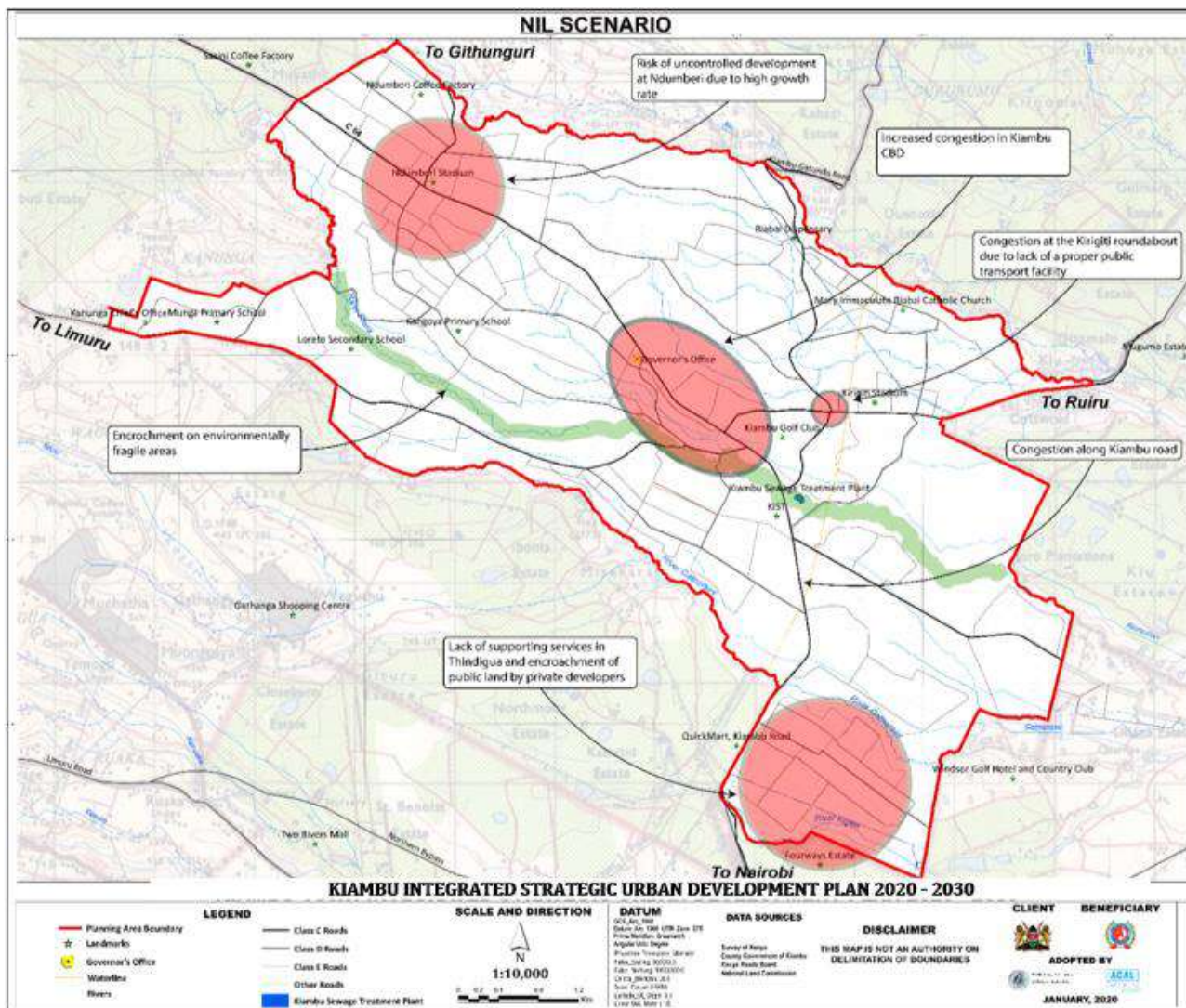
#### 14.1.1 Nil Scenario

Kiambu Town's development has been led originally by a plan that was developed in 1974, and then leaning in to the demands of the market. This has led to many 'Change of Use' from agriculture to residential, commercial, industrial among others, and a population growth that has overcome the services that were originally planned for.

If nothing is done and development continues as is, there will be a continuation of many problems that are currently being experienced such as congestion in the CBD and other urban nodes, poor supply of services such as water supply, solid waste management, and liquid waste management. A higher risk of ground water pollution will arise from the construction of both septic tanks and boreholes. Access will continue deteriorating and insecurity will start increasing due to increased poverty and poor street lighting. Eventually, the attraction of populations from Nairobi will fade away due to the increase of problems.

For a better future of the people of Kiambu Town, it is prudent to develop and implement a plan that will greatly improve the quality of life of Kiambu Town residents now, and in the future.

Map 34: Nil Scenario

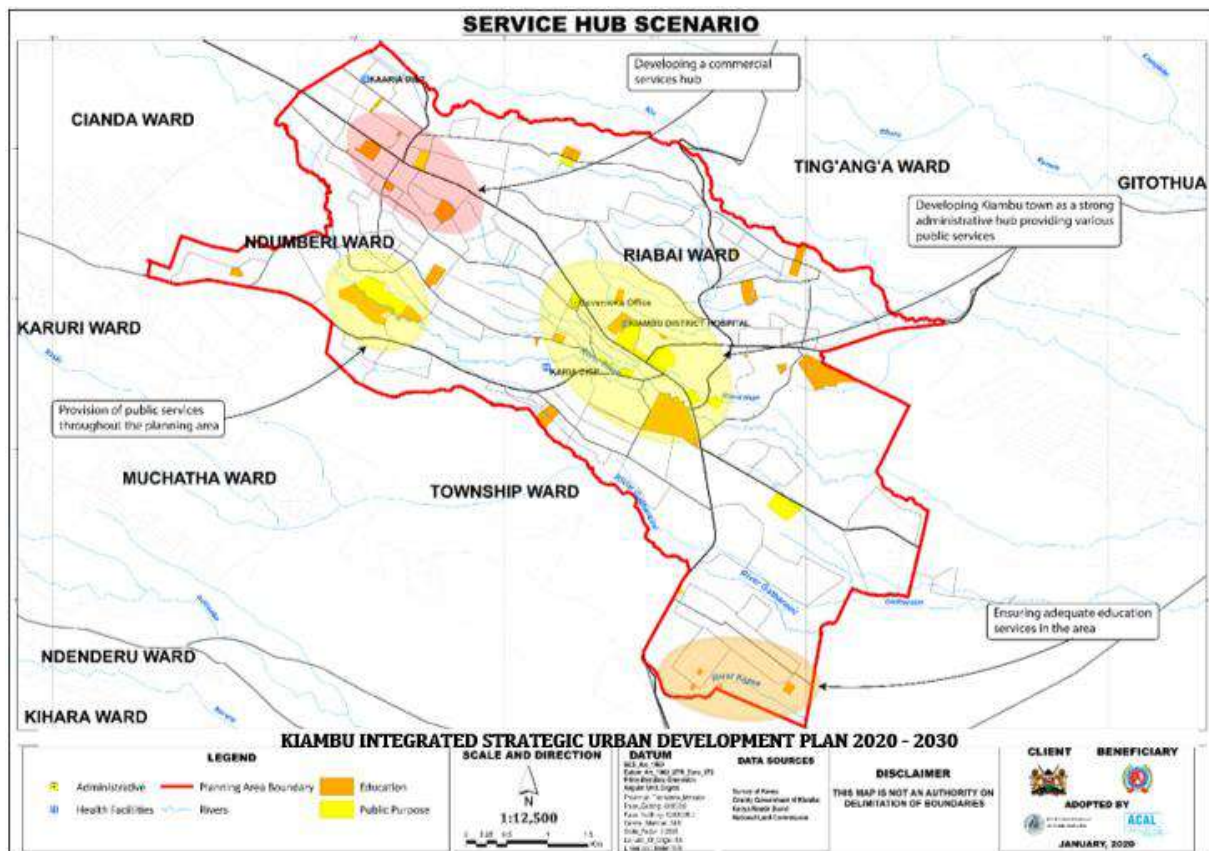


Source: ACAL & BC Gildenhuys & Associates, 2020

14.1.2 Service Led Scenario

Kiambu Town was historically founded as an administrative headquarters of Kiambu District, with various municipal offices. It also has a level 5 Hospital, KIST and various schools and commercial services. This strategy is one that looks at the area as a service provider for this and surrounding areas, strengthening these services by providing access and support facilities such as energy, water, and ICT to make these services efficient and easy to access. The rest of the land uses would be in support of these services.

Service led development creates jobs, provides key amenities that are instrumental in poverty alleviation, balanced growth and improved quality of life. However, the provision of goods is left out, and if there is no organization of these goods such as housing, spaces for trade, roads among others, a disorganized space that is hard to navigate can be developed.

**Map 35: Service Led Scenario**

Source: ACAL & BC Gildenhuys & Associates, 2020

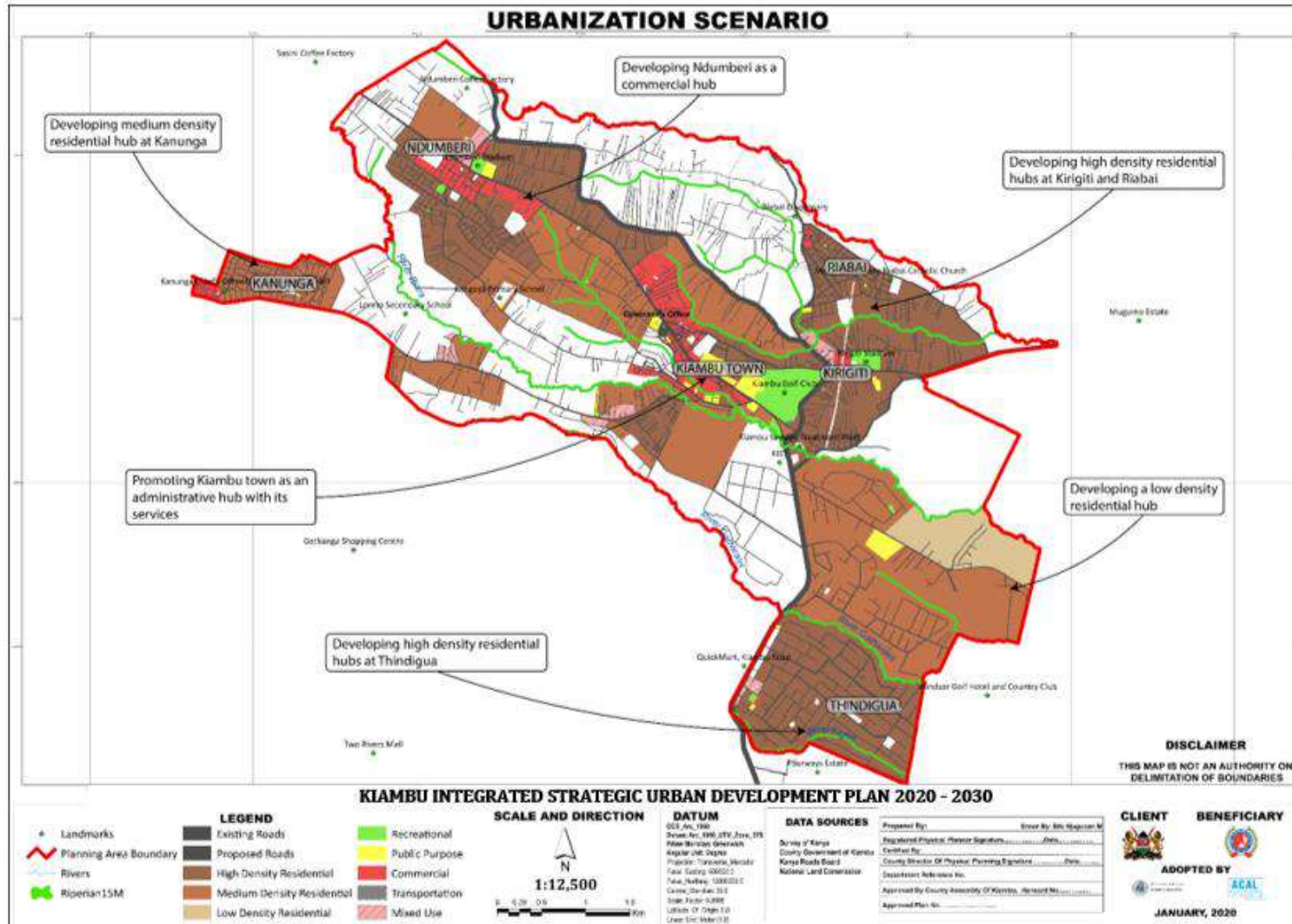
### 14.1.3 Urbanization Scenario

Kiambu Town's close proximity to Nairobi gives it an advantage in being preferred for housing especially since the nearby areas provide expensive housing. With this in mind and the fact that Kiambu is quickly urbanizing, the urbanization scenario is considered, firstly by providing various kinds of housing (low, medium and high density) at various locations, and ensuring that low-mid income types are considered. To complement this residential function, pockets of commercial/industrial, combined with social and physical structure would be provided. The environment would also be preserved by buffering riparian areas and areas with slopes 25% and above steep.

Urbanization makes it easier to supply basic amenities, for example, electricity and fresh water due to the close proximity of the populace and their density. It also promotes the separation of living standards and economic growth from environmental resource use while protecting local ecosystems.

Urbanization becomes a problem when densities are high and pollution increases due to the increase of vehicles (thus air pollution, solid waste (thus littering) among others; the rise in number can also exceeds the supply of water, electricity, sewer capacity, and this results in water shortages, electricity shortages, sewer outburst among others.

Map 36: Urbanization Scenario



Source: ACAL & BC Gildenhuys & Associates, 2020

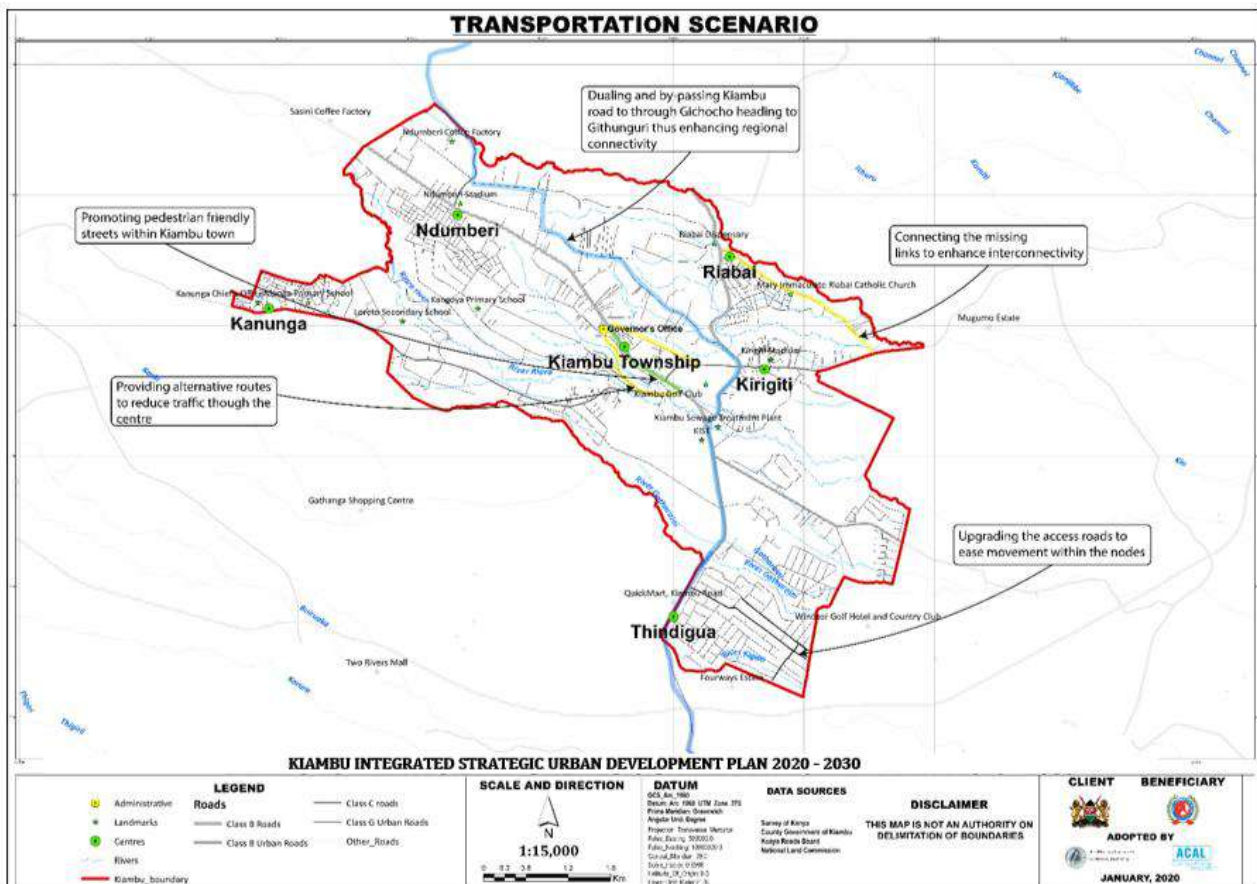
### 14.1.4 Transportation Scenario

The planning area is very well interconnected with a road network from Nairobi: Kiambu Road, Limuru-Kanunga road, Githunguri—Ndumberi road, and Ruiru—Northern By-Pass at Thindigua. All these make Kiambu Town a strategic place to be as far as transportation is concerned. For this reason, a transportation scenario would involve upgrading all the roads that are connected with the major accesses and making sure that no developments interfere with these roads. Also, care would be taken to ensure that these accesses would not degrade but enhance the lives of the people who live and work within the area. This would be done by providing non-motorized transportation lanes, street lights, bus stops, bus parks, alternative routes, overpasses and appropriate pedestrian crossings.

The advantages of transport-oriented development are that it includes better mobility, reduces car traffic, less money spent on transport by residents, healthier lifestyles, lower pollution, higher foot-traffic for commercial businesses and decreased suburban sprawl.

The disadvantages include the increase of property values and attracts wealthy people leading to gentrification in the process pushes low-income families away from transit.

**Map 37: Transportation Scenario**

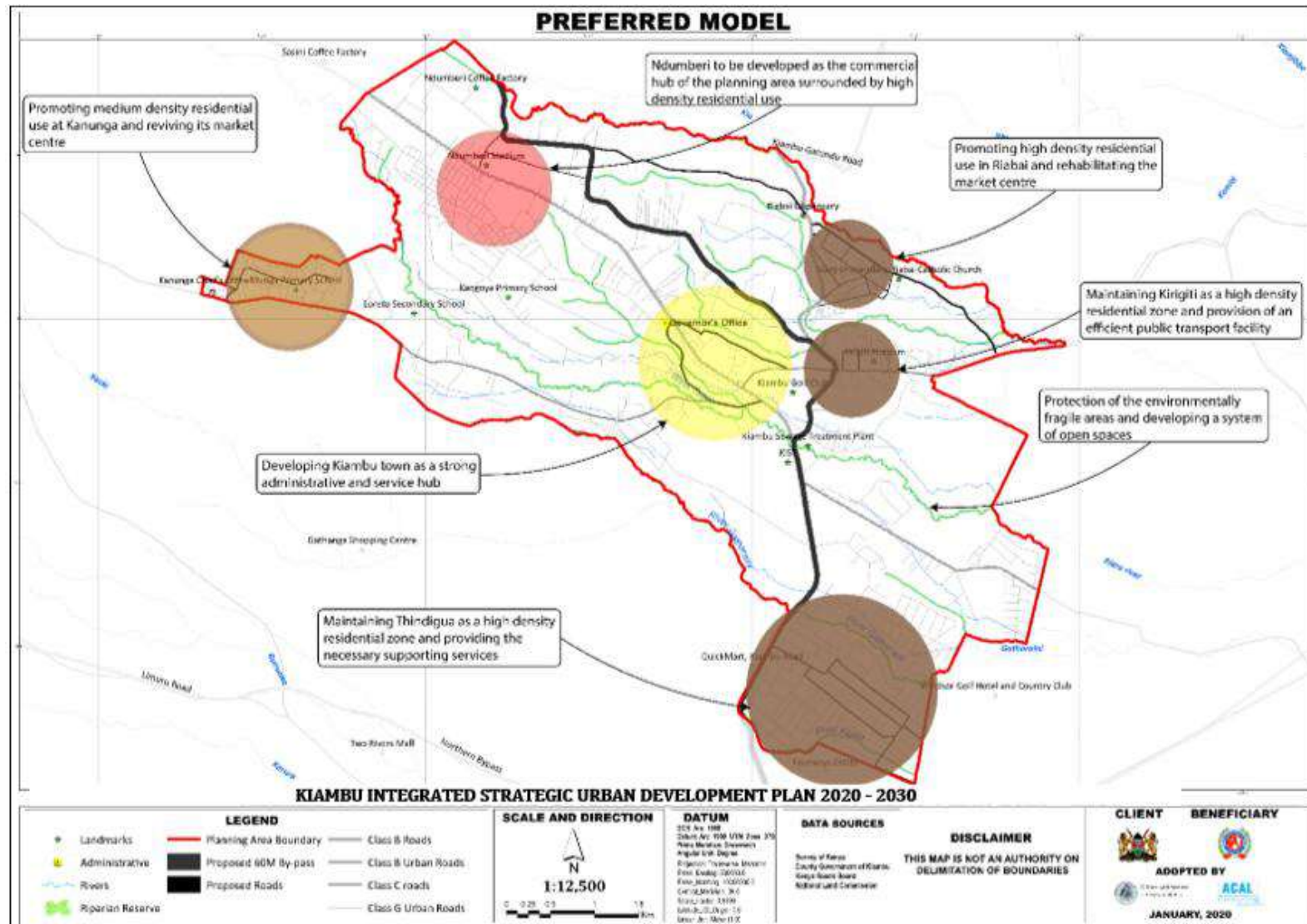


Source: ACAL & BC Gildenhuys & Associates, 2020

#### **14.1.5 The Preferred Model**

The best planning approach in this case will be to combine all the three scenarios and come up with a model that will comprehensively look at Kiambu Town and develop it in a holistic way. This will include the service led scenario, the urbanization scenario, and the transport scenario. This will ensure that the area has urban areas that have the all the social and physical infrastructure that they need to function in a safe and sustainable way, with easy access while conserving the environment.

Map 38: Preferred Model



Source: ACAL & BC Gildenhuys & Associates, 2020

The Preferred development concept for Kiambu Town is based on following main restructuring interventions:

- Ensuring efficient physical and functional linkages between Kiambu and surrounding areas, within the County and Nairobi, through the improvement of major movement routes moving into the planning area;
- Creating an efficient internal movement network that connects all parts of town for a range of transport modes, with a strong focus on non-motorized Transport;
- Directing economic development into a network of nodes and development corridors, harnessing the development potential of existing areas of opportunity as far as possible but also proposing new neighborhood nodes within a convenient walking distance from local communities;
- Developing higher density residential development in locations close to employment opportunities (i.e. around nodes and corridors) and public transport facilities; and
- Protecting sensitive natural environments and high-potential agricultural land.

### **Benefits of the Spatial Development Concept**

The implementation of the proposed spatial development concept will achieve the following benefits for Kiambu Town:

- Concentrating economic activity together in a limited network of nodes and corridors (as opposed to having scattered economic activity throughout the planning area) –
- creates agglomeration advantages that lead to greater economic efficiency for businesses;
- creates a more convenient and accessible spatial form for residents as they are able to conduct multiple transactions in one location, thereby reducing the amount of travel that is necessary; and
- Investment in infrastructure and upgrading of the public environment can be directed to a few strategic locations where the greatest benefits and spin-offs can be achieved.
- The clustering of community facilities such as education, health and taxi ranks in the network of nodes will further enhance the degree of convenience and accessibility

for residents. Nodes therefore become multi-functional in nature where residents can access many different services.

- Densification around the system of nodes and corridors allows for a larger percentage of the population to live closer to employment, social and transportation opportunities, and also creates a larger population base to support commercial activities and community facilities within the nodes and corridors.
- A focus on redevelopment, infill and densification is the most effective strategy to manage the outward spatial growth of the planning area.
- A clear spatial structure leads to greater efficiency and cost-effectiveness as infrastructure investment and the provision of services and facilities are focused.
- A clear spatial structure prevents haphazard development that becomes difficult to manage and even more difficult to service.
- A clear system of nodes, corridors and surfaces will ensure the creation of pleasant, safe and sustainable low intensity neighborhoods amongst the higher intensity nodes and corridors.

## 15 CHAPTER FIFTEEN: DEVELOPMENT PROPOSALS, STRATEGIES AND MEASURES

### 15.1 Overview

From analysis and synthesis of the primary and secondary data, the various problems and opportunities are identified. In order to bring sustainability among other desired aspects, the plan proposes the following interventions to improve, rectify, and prevent the occurrence of undesirable growth and development in the town. An addendum of the concepts, strategies and proposals together with their remarks is annexed at the end of the report.

The main objectives of this plan are to:

- Provide a basis for infrastructure and service provision for present and projected population over the plan period,
- Tackle environmental issues and concerns affecting the towns.
- Propose development potentials of the planning area (social, economic).
- Provide a basis for development control and investment decisions.
- Allocate sufficient space for various land uses 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 town.

### 15.2 Development Goals

The main goal is to achieve the objectives of this plan through strategies that will give guidelines and policies which if implement result in the attainment of Kiambu Town's Vision. The main goal can be broken down and related to the Nairobi Metro 2030 Strategy as seen in Table 30.

**Table 24: Development Goals**

Key Result Areas Nairobi Metro 2030 Strategy	Local Development Goals
	Protect the integrity and sustainability of the natural environment. Protect productive agricultural land
Building an internationally competitive and inclusive economy for prosperity	Support economic and social

	development and growth and the creation of employment opportunities
Deploying world class infrastructure and utilities for the region	Provide efficient infrastructure networks and services
Optimizing mobility and accessibility	Improve movement and connectivity
Enhancing the quality of life and inclusiveness in the region	Create an efficient and integrated urban environment
Delivering a unique image and identity through effective place branding	Create a recognizable identity for the town
Ensuring a safe and secure region	Create an attractive and safe town
Building world class governance systems	Strengthen the capacity of the land management system

**Source: ACAL & BC Gildenhuys & Associates, 2020**

### 15.3 Guiding Principles

This section sets out the overarching guiding development principles that inform the Integrated Strategic Urban Development Plan for Kiambu Town. Principles are the fundamental norms, rules, or values that represent what is desirable and positive for the development of the planning area, and act as yardsticks for determining what is right and what is wrong.

#### 15.3.1 Sustainability

Sustainability refers to the preservation of renewable and non-renewable environmental resources, while at the same time promoting economic and social sustainability. A sustainable town reduces the impact on the environment through reducing the use of resources and the production of waste while improving the liveability of the settlement.

#### 15.3.2 Resilience

Resilience is about the town's capacity to withstand shocks and disturbances such as climate change or economic crises, and to use such events to catalyse renewal and innovation. Resilient towns are those places that are able to quickly adapt to changing circumstances, albeit economic, climate or social conditions.

Resilience is about the protection of natural infrastructure (rivers, wetlands etc.) but also about how we design and build the man-made environment to allow for (i) protection against outside shocks as far as possible, but also (ii) flexibility and addictiveness in the face of change.

### 15.3.3 Equity

A town that is equitable is one where all residents enjoy (i) fair access to livelihood, education, and resources, (ii) full participation in the political and cultural life of the community, and (iii) self-determination in meeting fundamental needs.

### 15.3.4 Integration

Integration, whether spatial, sectoral or socio-economic, is fundamental to sustainable development, i.e.

- Spatial integration refers to the proximities and functional relationships between different functions and elements within a particular area, with the aim of creating the greatest degree of synergy.
- Socio-economic integration refers to the proximity of different socio-economic groups so as to create a socially cohesive community.
- Sectoral integration refers to the vertical and horizontal integration among the various levels of government and agencies involved in spatial governance.

Development proposals need to ensure integration of all development issues including transport, planning, economic development etc.

### 15.3.5 Accessibility

Accessibility can be defined as the ease with which a building, place, facility or service can be reached by people. An accessible town is one where there is equitable physical and functional access to services, facilities, employment, training and recreation, including a choice of safe and efficient transport modes (e.g. public transport, private vehicle, bicycle, walking and wheelchair). Accessibility also comprises of convenient and dignified access to private and public spaces.

### 15.3.6 Safety

Residents, businesses and visitors must feel safe and secure in the area. Active policing and surveillance is important, but the spatial structure and functionality of the town should also allow for passive security measures. Safety is supported when people can see potential threats, judge risks, escape if a threat is perceived, seek assistance and give aid if needed. This is supported by views into and through spaces; by multiple access routes into and out of spaces; by mixed land uses that mean other people are around all the time; and by windows and activities in buildings located to overlook streets and other public spaces.

### 15.3.7 Sense of place

Sense of place refers to an appreciation for the distinct character of a town. This distinct character is a result of a combination of all aspects of a place that together makes this place distinct from anywhere else. Places are valued because of the individual qualities that make them distinctive from other places, i.e. because of their character and identity.

### 15.3.8 Spatial development concept

The spatial development concept indicates the development approach (or model) that will be followed in the development of the town and provides a spatial interpretation of the development vision and goals by means of a high-level desired spatial structure for the planning area comprising the major structuring elements.

## 15.4 Land Use and Management Policies

Coming up with effective zoning policies and regulations to safeguard the agricultural hinterland and manage urbanization of the planning area. The overall land management policies will include:

Table 25: Proposed land use and management policies

<b>SECTOR</b>	<b>PROPOSED POLICIES</b>
<b>ENVIRONMENT</b>	<ul style="list-style-type: none"> <li>• Restriction of development around rivers and wetlands.</li> <li>• Restriction of development to approved uses only along immediate boundaries of fragile site buffers Control of development on steep slopes to reduce soil erosion</li> <li>• Increase in forest cover</li> </ul>
<b>TRANSPORTATION</b>	<ul style="list-style-type: none"> <li>• Appropriate transportation networks provision per zone as per the structure plan.</li> <li>• Non-approval of encroachment/ encroaching use on transportation way leaves.</li> </ul>
<b>INFRASTRUCTURE</b>	<ul style="list-style-type: none"> <li>• Non-approval of encroachment/ encroaching use on infrastructure way leaves.</li> <li>• Restriction of development to approved uses within the vicinity of social infrastructure facilities. Widening of the narrow roads</li> </ul>
<b>AGRICULTURE</b>	<ul style="list-style-type: none"> <li>• Curbing land fragmentation through restrictions on uneconomical sub-division of agricultural land. Non-approval of encroachment/ encroaching urban settlements use of the highly capable agricultural land areas.</li> <li>• Promotion of intensive agriculture</li> </ul>
<b>TRADE AND INDUSTRY</b>	<ul style="list-style-type: none"> <li>• Development of a designated agro-industrial zone</li> </ul>

SECTOR	PROPOSED POLICIES
	<ul style="list-style-type: none"> <li>• Restrictions on location of industries near densely populated zones.</li> <li>• Encouraging compact market development</li> </ul>
<b>TOURISM</b>	<ul style="list-style-type: none"> <li>• Restriction of development around scenic sites to eco-tourism developments only.</li> </ul>
<b>URBANIZATION</b>	<ul style="list-style-type: none"> <li>• Compacting of the urban core to prevent urban sprawl and town convergence.</li> <li>• Development control measure on minimum floors</li> <li>Enforcement of the urban fringe/ edge using agricultural belts.</li> </ul>
<b>PUBLIC LAND</b>	<ul style="list-style-type: none"> <li>• Immediate inventorying and periodical review of the state all public land in Kiambu Town.</li> <li>• Retention of all public lands under the respective government ownership unless their disposal will serve an overarching County/ national interest.</li> </ul>

Source: ACAL & BC Gildenhuys & Associates, 2019

## 15.5 Development Strategies

This section deals with the development strategies and interventions that will be used to achieve the development objectives for this Kiambu Town ISUDP. These strategies include transportation, environmental, economic & social infrastructure, housing and revenue enhancement strategies.

### 15.5.1 Transportation Strategy

#### ***Regional Connectivity and Integration***

##### Rationale

Regional connectivity and integration refer to how well the town is integrated with and linked to surrounding areas. The goal is to create physical and functional networks that will ensure mutual interactions between the town and surrounding areas. The intention is therefore to address the town as part of a larger region, “since both the problems of the area and the desired improvements result, to some extent, from conditions in other parts of the region. “Since spatial integration is predominantly dependent on linkages, the development objectives and interventions will focus on improving movement linkages.

## Objective

- To improve regional connectivity, in particular with Nairobi and other major centers and markets.

Development proposals and interventions

The following interventions should be implemented:

- Upgrade Road C64 to improve movement to and from Nairobi;
- Create a direct movement linkage between Kiambu and Githunguri;
- Improve east-west linkages between Kiambu, Limuru, Wangige and Ruiru;
- Investigate the feasibility of developing a north-south link from Maragua through Kandara, Gatundu, Kiambu and onto Nairobi;
- Improve public transport services between Kiambu and surrounding towns as indicated above.

## ***Improved Accessibility and Connectivity***

### Rationale

While the planning area has a small footprint, accessibility between different areas is weak. Neighbourhoods are isolated by poorly maintained and unsafe open spaces with inadequate linkages between them. The mono-functional character intensifies this poor accessibility and increases levels of spatial inequity in the town. While there is a functioning road network, the streets of the town have been designed and planned with cars and not people in mind. Great towns have great streets and great street spaces attract private sector investment and convey a sense of dignity and pride to residents. They are the most public and visible face of the town and their quality, cleanliness and levels of activity can inspire confidence and investment or detract from these. This strategy deals with the location, design and function of a proposed movement network, which includes the upgrading of existing streets and linkages, as well as the development of new linkages where necessary.

### Objectives

The following are the development objectives from a movement and connectivity perspective:

- To ensure a clear hierarchy of roads that connect all the different parts of town;
- To improve local movement networks through additional linkages;
- To improve public transport facilities and networks;
- To improve movement for pedestrians and cyclists;
- To improve the condition of roads; and
- To transform the street network into attractive, safe, vibrant, comfortable, landscaped spaces.

Development proposals, interventions and guidelines

The following are the development interventions required to improve accessibility and connectivity in Kiambu Town:

- There must be a clear hierarchy of roads. The primary and secondary roads should be upgraded in terms of width, surfacing and street scaping to (i) clearly distinguish them from local roads and (ii) accommodate the level of traffic and nature of functions that are associated with these roads in terms of the spatial development concept.
- To improve accessibility and connectivity in the planning area, a number of new secondary and local link roads are proposed. The intention is to allow residents greater convenience in terms of movement through the study area, but in particular towards existing and proposed nodes and corridors.
- C64 between the Northern Bypass and the centre of Kiambu Town must be upgraded to facilitate greater ease of regional movement to and from the planning area, which will have a positive impact from an economic perspective.
- All Primary and Secondary Routes must be developed as pedestrian and cycling priority routes. This requires the development of dedicated paved sidewalks and/or cycling paths of sufficient width along these routes.

### Guidelines

In order to establish a multimodal transportation system to efficiently, effectively, and safely move people, goods and services, the following should be considered.

- The design and layout of internal movement in the town should promote an open, permeable and legible movement network that allows for ease of vehicular and pedestrian movement.
- Well-located and well-managed road based public transport facilities, linked to the business and employment areas, must be available and accessible throughout town
- Development of linkage roads between residential areas to enhance integration and accessibility
- As far as possible avoid dead-end streets and roads
- Limit block sizes to a maximum length of 150m for ease of pedestrian movement
- Maintain a road hierarchy that readily distinguishes between routes of local and regional importance

Further for the planning area to be more walkable and bicycle friendly, in particular, improving and extending pedestrian and bikeway amenities to better connect residential areas, activity centres, and employment zones, the following guidelines should apply

- Improve and expand facilities for pedestrians and cyclists, initially focusing investment in urban corridors and activity streets.
- Make streets safe by providing enhanced crosswalks, sufficiently wide sidewalks, shade trees, and other street furniture (e.g., benches and pedestrian-scale light fixtures) throughout the community, most importantly along proposed urban corridors and activity streets.
- Introduce a network of off-street pathways and routes, encompassing shared use paths that are integrated with the study area's green network.
- Require bicycle parking in conjunction with public amenities and commercial development projects that will attract a significant number of users, including the provision of bicycle lockers at major transit hubs.
- Ensure that a minimum sidewalk width of 1,5m is provided on all identified pedestrian and cycling priority routes
- Ensure that safe pedestrian crossing points are provided at a minimum of 75m intervals within the street network

### 15.5.2 Environmental Strategy

#### Rationale

The development strategy for the environment deals with the designation, protection and management of biodiversity and important ecosystems. This is done in part by creating a natural open space system. This generally comprises rivers, dams, riparian zones, wetlands, ridges and other environmentally sensitive areas. Sensitive ecological environments on the one hand pose a constraint to development as these parcels of land must remain free of development. In addition, movement linkages across these areas are limited (due to cost and the need to minimise any form of intrusion into these areas) which in turn limits the urban structuring possibilities.

Ecologically sensitive areas however provide immense opportunities and value from an ecological, identity, place- making, attractiveness and property value perspective. Wetlands in particular perform a number of critical ecological functions. They moderate impacts from flooding, control erosion, purify water and provide habitat for fish and wildlife. The ISUDP therefore aims to safeguard the functionality of the planning area's life-supporting ecosystem services and to ensure development around natural open spaces is appropriate and sensitive.

#### Objectives

The following are the objectives for protecting the environment:

- To establish a continuous ecological and open space system;
- To introduce policies that will restrict degradation and promote the preservation of the environment;

- To improve water quality in rivers and water courses through the management of solid waste, waste water and industrial effluent; and
- To prevent illegal dumping in open spaces and rivers.

#### Development proposals, interventions and guidelines

There are three main types of sensitive natural environments in Kiambu Town that must be protected as natural systems with sensitive ecological characteristics, namely (i) watercourses, (ii) wetlands and (ii) ridges.

- Watercourses and the wetland must be rehabilitated to restore the ecological integrity of these natural environments.
- Watercourses must be protected from pollution resulting from development through the creation of open space buffers along watercourses. These buffers can be utilized for public green open spaces such as public parks.
- A wetland on the southern boundary of the planning area to the west of C64 that must be protected from development through the introduction of a buffer around the wetland. The acceptable minimum standard is a 30 meters buffer along the edge of the wetlands which will provide additional habitat for indigenous fauna and flora.
- Steep slope areas that exceed 25 degrees should be protected as ridges in accordance with the prescriptions of the Kenya Planning Handbook.
- The issues of focus in developing the environmental protection strategies included; storm water drainage, soil erosion, riparian reserves, ecosystems, water sources, solid waste management, sewerage systems, proposed buffers and forests.

#### Measures

##### Rivers and Riparian Reserves

- Natural flow of rivers and tributaries should be preserved and conserved. River reserves should become green networks (buffer zones to control pollution, surface erosion, squatters' intrusion)
- Sanitation services must be provided to settlements located within the catchments of water sources to avoid pollution due to surface run-off and groundwater seepage of sewerage and other harmful effluents
- Development along the Riparian Reserve should only be considered if strict measures for riverbank protection, wastewater treatment plants, storm water control and erosion control are put in place and enforced. No development shall take place directly adjacent to the Riparian Reserve without an Environmental Management Framework indicating measures for the conservation of the ecological integrity of the shoreline as well as measures to repair damage to the shoreline and its vegetation caused by construction.

- The natural drainage channels and banks of rivers must be protected up to the 100-year flood line. No development may be permitted within the 100-year flood line from rivers, streams and wetlands without the written consent of the relevant environmental and water authorities.

#### Steep slopes

- Development in hill areas requires several conditions that must be observed not to endanger stability, balance and the harmony of the natural environment
- Between 5 degrees to 15 degrees are considered as medium slopes and could be developed with the implementation of slope control measures
- Between 15 degrees to 25 degrees could be developed with the implementation of control measures
- Areas with slopes that exceed 25 degrees are not allowed any development from a safety perspective
- Natural vegetation should be preserved on steep slopes to prevent soil erosion
- All scenic vistas should be protected from development

#### Natural open spaces

- All-natural open spaces should as far as possible be linked to form a continuous system of green open space through the demarcation of green corridors throughout the urban environment, which are then linked to public open spaces
- The natural open space system must be kept visible and “public” and not be privatized in development enclaves. This is important from both a social equity perspective (i.e. that members of the community and visitors can have the visual enjoyment of the open spaces) and from a safety perspective (i.e. that these areas which could potentially become dangerous areas can always be monitored by the public)
- All land uses along green open spaces must face onto the open space with active facades including windows and/or balconies and visually permeable fencing. No high walls may be permitted.
- Pedestrian and cycling paths should as far as possible be incorporated into linear open space systems to increase the recreational value of the open space system and also to enhance safety through increased activity in or along the open space system

**Figure 22: Development and Design Guidelines for the Environment**

Environmental Feature	Definition		Guidelines
Riparian (River) Reserve	Land on each side of a watercourse as defined. Has a minimum of 3m, or equal to the full width of the river as measured between the banks of the river course up to a maximum of 30m for seasonal and perennial rivers		<p>Every development must provide 3%-5% of the area for water retention reservoir</p> <p>Natural flow of rivers and tributaries should be preserved and conserved. River reserves should become green networks (buffer zones to control pollution, surface erosion, squatters' intrusion)</p> <p>Sanitation services must be provided to settlements located within the catchments of water sources to avoid pollution due to surface run-off and groundwater seepage of sewerage and other harmful effluents</p> <p>Development along the Riparian Reserve should only be considered if strict measures for riverbank protection, wastewater treatment plants, storm water control and erosion control are put in place and enforced. No development shall take place directly adjacent to the Riparian Reserve without an Environmental Management Framework indicating measures for the conservation of the ecological integrity of the shoreline as well as measures to repair damage to the shoreline and its vegetation caused by construction.</p> <p>The natural drainage channels and banks of rivers must be protected up to the 100-year flood line. No development may be permitted within the 100-year flood line from rivers, streams and wetlands without the written consent of the relevant environmental and water authorities.</p>
Slope	0 to 2%	Area where slope does not constrain development	Development in hill areas requires several conditions that must be observed not to

Environmental Feature	Definition		Guidelines
	2 to 9%	Medium slopes which are developable although slope should be considered in site development plan and storm water management	endanger stability, balance and the harmony of the natural environment Between 5 degrees to 15 degrees are considered as medium slopes and could be developed with the implementation of slope control measures Between 15 degrees to 25 degrees could be developed with the implementation of control measures
	9 to 21%	Maximum slopes for motor vehicle access provided that all weather paved surfaces are available	Areas with slopes that exceed 25 degrees are not allowed any development from a safety perspective
	21 to 27%	Urban development is seriously constrained, and slopes of more than 21% do not allow for motor vehicle access	Natural vegetation should be preserved on steep slopes to prevent soil erosion A slope analysis should be conducted on all ridges and mountains in order to determine development restriction areas
	27 - 45%	No development allowed	All scenic vistas should be protected from development
Natural Open Space System	The natural open space system comprises rivers, dams, riparian zones, wetlands, ridges and environmentally sensitive areas		All-natural open spaces should as far as possible be linked to form a continuous system of green open space through the demarcation of green corridors throughout the urban environment, which are then linked to public open spaces  The natural open space system must be kept visible and “public” and not be privatised in development enclaves. This is important from both a social equity perspective (i.e. that members of the community and visitors can have the visual enjoyment of the open spaces) and from a safety perspective (i.e. that these areas which could potentially become dangerous areas can always be monitored by the public)

Environmental Feature	Definition	Guidelines
		<p>All land uses along green open spaces must face onto the open space with active facades including windows and/or balconies and visually permeable fencing. No high walls may be permitted.</p> <p>Pedestrian and cycling paths should as far as possible be incorporated into linear open space systems to increase the recreational value of the open space system and also to enhance safety through increased activity in or along the open space system</p>

Source: ACAL & BC Gildenhuys & Associates, 2020

### 15.5.3 Economic and Social Infrastructure Strategy

#### Rationale

The economic and social infrastructure strategy will be achieved through the economic and social network. This network refers to those areas where economic activity and community facilities are or should be concentrated in town. In Kiambu Town the spatial structure includes nodes and linear activity areas such as:

- Regional Node (or Central Business District) (CBD);
- Neighborhood Nodes;
- Urban Corridors;
- Activity Streets;
- Clusters of civic and community facilities;
- Designated industrial areas; and
- Agricultural focus areas.

Nodes and linear activity zones serve as the main structuring elements for the town, and the location of the activity network must be such that everyone can access an activity node within a comfortable walking distance of 800 meters (equal to 10 minutes walking time). These nodes are located at the most accessible points within an integrated network of connecting routes and provide a hierarchical framework or logic for locating public facilities, community facilities and economic opportunity as well as access to transport services over time.

The grouping of facilities (including social, education, economic, recreational and transport facilities) ensures convenience for users, reduces trip numbers, creates focal points for development and infrastructure provision and enables the sharing of resources and

management capacity. These clusters in turn generate higher flows of foot-traffic that generate the thresholds of support required for successful business activities including retail, personal services and small-scale production of goods for sale. They are good places for entrepreneurial development hubs.

### Objectives

The following are the objectives for the development of an economic and social network:

- To channel development into a system of nodes and development corridors supporting the development concept;
- To consolidate and strengthen mixed-use economic nodes;
- To consolidate and strengthen neighborhood nodes;
- To protect and regenerate the Regional Node (CBD) as the primary business development area;
- To optimize the location of social and community facilities by clustering them together in neighborhood nodes;
- To create and/or improve opportunities for the informal sector within the designated activity network; and
- To consolidate and strengthen industrial areas.

### **Development proposals, interventions and guidelines**

The proposed hierarchy and distribution of the network of nodes, urban corridors and activity streets in the planning area is shown on the map above.

- The highest order node is the Kiambu Township Node (CBD) situated directly west of the golf course along Kiambu Road. This node has a regional function and should therefore comprise the highest order business, civic and social activities and services. This node also presents an opportunity of Transit Oriented Development.
- The Primary Routes should be developed as Urban Corridors comprising higher order business development for a depth of approximately 50m directly adjacent to the road.
- Routes indicated on the map above should be developed as local Activity Streets, comprising lower order business opportunities that are more focused on serving local neighborhoods. Similar to the urban corridor, the depth of the Activity Street zone extends approximately 50m from the road reserve boundary.
- Demarcated Neighborhood Nodes are predominantly located at intersections on the primary and secondary road network, in order to ensure the highest degree of accessibility for surrounding communities.
- Industrial development is restricted to existing industrial areas that should be consolidated and strengthened rather than creating new industrial areas.

- Large-scale agricultural activities in the eastern part of the study area should be protected from development for as long as these activities remain economically viable. In the long term however, this land can be utilized for infill residential development.
- The development of new social and community facilities such as education and health should be restricted to existing neighborhood nodes or existing Civic and Community clusters.
- To improve the housing development in the township; various strategies were developed. The focus of these strategies was; uneven building lines and setbacks, urban informality, urban decay, housing conditions, land tenure, persons with disability friendly urban designs and social facilities adequacy.
- The Highest residential densities are restricted to Kirigiti, Riabai, Thindigua, Ndumberi Node and partly in the Central Business District and the. The rationale is that these nodes are the have highest concentration of employment activities or close to Nairobi.
  - Medium density residential development should be supported along the Urban Corridors.
  - Low density residential development comprises the areas in between at the locations furthest away from the major nodes and urban corridors.
  - Low density residential development also includes small-scale farming activities as are currently found on the majority of residential properties in the planning area. The concept of low-density residential development (and the associated densities) is relevant in the case of redevelopment and formalization of properties from small-scale agriculture to urban development.
  - The existing large-scale agricultural activities in the eastern part of the planning area can be utilized for infill residential development if it is no longer required for agricultural activities. Should these land parcels be developed, it should be done in accordance with a proper Master Plan as opposed to haphazard subdivision into smaller properties.

### **Guidelines**

Attract and accommodate high order and regional land uses to the Regional Node (CBD)

- Accommodate land uses that attract large numbers of people and that will extend the activity of the area.
- Higher order and regional land uses should be located, as far as possible, in the Regional Node (CBD).
- The Regional Node (CBD) must comprise high quality public environments, and all developments should interact with and relate to adjacent public environments (e.g. streets, squares, parks etc.) to ensure a vibrant, attractive, convenient and safe environment.

- Informal trading must be accommodated in well-designed and well-located market areas where the necessary facilities such as trading stalls, ablution facilities and refuse bins are available to the traders.
- Development is typically fine grained, multi-storied and mixed use and must comprise the highest architectural standards.
- Reduce visual blight, encouraging rehabilitation of deteriorating structures, demolition of severely dilapidated buildings, and removal of demonstrably non-conforming uses and structures.
- Encourage infill development to activate commercial sites and promote the highest and best use of land
- Protect the Central Business District by not approving out of town, mono-functional shopping malls that will draw large retailers out of the town centre

Develop vibrant and community-oriented neighbourhood nodes that serve all the needs of the local population

- The majority of social and community facilities and local businesses should be clustered together in neighborhood nodes or streets (as opposed to being dispersed throughout a neighborhood).
- The general character of the neighborhood node should be public, extroverted environments, with an open street pattern, relatively short street block lengths (to facilitate pedestrian movement), on-street parking, public spaces and the clustering of compatible land uses in a compact manner.
- All neighborhood nodes must be pedestrian- and cycling-friendly environments with safe, convenient and quality movement infrastructure to, from and within the node
- Neighborhood nodes should preferably be developed around a public open space that can serve as a meeting and recreational space for the community
- Informal trading must be accommodated in well-designed and well-located market areas, where the necessary facilities such as trading stalls, ablution facilities and refuse bins are available to the traders.
- Neighborhood nodes should comprise a public transport stop, where a public transport service exists
- Neighborhood nodes should where possible be located in such a way that all residents have access to a node within a maximum walking distance of 800m

#### 15.5.4 Housing Strategy

##### **Rationale**

This development strategy deals with residential development and comprises two parts, namely;

i. The development of good quality residential neighbourhoods that promote residential densification in appropriate locations. Residential development is an opportunity to

restructure the form of the settlement as a whole, by creating high-quality, integrated sustainable living environments that provide equitable access to opportunities, amenity and services, and are diverse, locally appropriate, compact and efficient.

A diversity of dwelling options is required to accommodate the varied need for housing over a lifetime, and to meet varied income levels and circumstances. A variety of housing types enables different types of people to live together in the same neighbourhood, and it helps people to find housing that suits their circumstances and means.

### **Objectives**

The following are the objectives for residential development:

- To encourage densification in strategic locations;
- To identify priority areas for new housing development;
- To introduce different housing typologies to provide in the needs of different residents;
- To promote infill development over development on the periphery of the town; and
- To create convenient, safe and attractive residential neighborhoods.

### **Development proposals, interventions and guidelines**

The spatial development proposals for Kiambu Town make provision for three categories of residential development, namely

- i. Low Density Residential,
- ii. Medium Density Residential,
- iii. High Density Residential.

Densities are linked to distance to employment opportunities, social and community services and public transport services. The closer a particular property is situated to the above and the higher the order of services and facilities provided in that location, the higher the densities that should be promoted and allowed on that particular property.

- The Highest residential densities are restricted to the identified Nodes
- Medium density residential development should be supported along the Urban Corridors.
- Low density residential development comprises the areas in between at the locations furthest away from the major nodes and urban corridors.
- Low density residential development also includes small-scale farming activities as are currently found on the majority of residential properties in the planning area. The concept of low-density residential development (and the associated densities) is relevant in the case of redevelopment and formalization of properties from small-scale agriculture to urban development.
- The existing large-scale agricultural activities in the eastern part of the study area can be utilized for infill residential development if it is no longer required for

agricultural activities Should these land parcels be developed; it should be done in accordance with a proper Master Plan as opposed to haphazard subdivision into smaller properties.

The following development and design guidelines shall apply to residential neighbourhoods and densification:

Ensure sustainable residential growth

- A range of housing typologies and densities must be developed, catering for different income groups, lifestyles and life stages within each settlement
- New settlement development must occur contiguous to existing urban or settlement development. Leapfrog development should not be permitted
- Residential development should as far as possible focus primarily on infill development and densification rather than continuous outward expansion of residential areas beyond the boundaries of the precinct.
- Higher densities should be provided closer to the town centers/community clusters and/or public transport stops.

Promote the development of sustainable, convenient and liveable residential neighbourhoods

- All land uses must contribute to the creation of pleasant, safe, convenient and sustainable neighborhoods.
- All development must support safe and convenient pedestrian movement, especially for children.
- Residential development must comprise the bulk of land uses, complemented by community and social facilities (community and social facilities should ideally be developed as part of demarcated neighborhood nodes) and recreation areas such as parks, sports fields and playgrounds.
- Regional community facilities (i.e. hospitals, large regional church congregations, universities, colleges etc.) should not be provided within residential neighborhoods but as part of the Regional Node (Central Business District)
- Businesses in the neighborhood should be restricted to home businesses and local convenience businesses
- No land uses that attract large volumes of foreign traffic to the area or generate excessive activity and noise should be permitted.
- In higher density residential neighborhoods, emphasis should be placed on the public realm and the interface between private development and the public space.
- Improve the attractiveness of residential neighborhoods by taking measures to eliminate nuisances and redevelop problem properties, as well as to enforce standards of maintenance.
- Fencing that is visually penetrable should be promoted. This includes palisades or palisades with walled sections.

### 15.5.5 Revenue Enhancement Strategy

For Kiambu County Government to function effectively and provide service to its residents and clients, it needs enough revenue. The revenue collected by the County can be from:

- The National Government
- Fees from services provided
- Land rent/rates from Murang'a Government Land
- Money (cess fees) collected from mining activities

Kiambu Town like the rest of the County has revenue collection challenges. These are addressed in table 36 by the actions in the adjacent columns:

**Table 26: Revenue Collection Challenges with Actions for Solutions**

ISSUE	ACTION
Build adequate human resources capacity and systems;	<ul style="list-style-type: none"> <li>a) Asses current human resource in relation to job description, qualification and job performance</li> <li>b) Replace/train staff to build capacity</li> </ul>
Introduce a more productive property tax regime;	Perform a land valuation exercise and attach the correct taxes after the exercise
Automate all accounting and finance activities;	<ul style="list-style-type: none"> <li>a) All revenue collection exercises should be cashless, apps can be used to collect revenue for fees such as parking, market stalls, cess</li> </ul>
Digitize land records;	A GIS based program should be used to keep a record of all the land. This should have the land valuation roll attached to it for land tax and land rents purpose.
Strategically and comprehensively address integrity issues;	Do random audits at revenue collection points and take disciplinary action on officers found to have integrity issues.
Expand revenue base.	<ul style="list-style-type: none"> <li>a) Create/increase parking spaces for private vehicles, trucks, public services vehicles.</li> <li>b) Process land documents for areas that are commercial and industrial so as to collect land rates</li> </ul>

**Source: ACAL & BC Gildenhuys & Associates, 2019**

## 15.6 Disaster Management

A disaster is defined as a serious disruption of the functioning of a community or a society. Disasters involve widespread human, material, economic or environmental impacts, which exceed the ability of the affected community or society to cope using its own resources.

Disaster Management can be defined as the organization and management of resources and responsibilities for dealing with all humanitarian aspects of emergencies, in particular preparedness, response and recovery in order to lessen the impact of disasters

Disasters are generally classified into 2 major categories: Natural and human made as follows:

1. Natural: Bush fires, epidemics on human beings and animals, pests on crops, forests and livestock; geologic and climatic disasters (e.g droughts, floods, landslides, cyclones, storm surges, coastal erosions, earthquakes, invasive plants.)
2. Human-made: Terrorism, Industrial accidents, fires, transport accidents, civil, resource-based and political conflicts, collapsed infrastructure, food poisoning, invasive plants, drug and substance abuse, human trafficking, industrial sabotage, environmental degradation and other emerging disasters.

There is the National Disaster Management Authority Bill, 2019 that established the National Disaster Management Authority and gave it functions and powers.

According to this bill, the following shall be the way in which disaster management shall be implement in Kenya as a whole and in county governments (Kiambu County in this case.)

5. This National Disaster Management Authority shall in liaison with the county governments, perform the following functions
  - a) Co-ordinate and control response to and management of disasters
  - b) Build capacity at both levels of government in crisis response and disaster resilience
  - c) Serve as a command centre for all communication and information relating to response operations
  - d) Co-ordinate disaster management efforts between various government agencies to ensure there is a seamless response to disasters
  - e) Undertake public awareness on disaster preparedness and response
  - f) Establish and operate an effective and efficient National Early Warning Disaster Monitoring Information System
  - g) Facilitate disaster management contingency process that will result in the formulation of contingency plans to be updated regularly
  - h) Document, publish and disseminate all relevant disaster management data and information to all stakeholders
  - i) Operate a functional and effective monitoring and evaluation system for programming and management of activities in disaster management

- j) Perform such other functions as may be necessary for the exercise of its powers and functions under this act.

26. The roles for disaster management for the national and county governments are:

- 1) The national government shall in accordance with Part 1 of the Fourth Schedule to the Constitution, be responsible for disaster management in the country
- 2) Each county government shall within its area of jurisdiction be responsible for disaster management in accordance with Part 2 of the Fourth Schedule to the Constitution.
- 3) The Cabinet Secretary shall, on the advice of the Authority, and in consultation with the county governments, develop a national policy on disaster management.
- 4) Each county government shall for the purpose of ensuring uniformity and national standards, through its legislation and administrative actions, implement and act in accordance with the national policy guidelines developed under subsection (3)

27. Each county government may establish a County Government Emergency Fund in accordance with the provisions of the Public Finance Management Act.

Kiambu county is the process of developing a disaster management policy, and it will link county hospitals with the fire department so that casualties can be rescued from the scene of the disaster and taken to the nearest health facility. It is advisable for the county government to set aside funds for the purpose of implementing the policy

So far, administrative units that can be used in disaster management include the fire department (one station in Kiambu Town), the police, administrative police, chiefs and Kiambu referral Hospital.

## 16 CHAPTER SIXTEEN: PROPOSED LAND USE PLAN

### 16.1 Overview

The development proposals need to be implemented on space. The space requirements depend on what the analysis has produced, combined with the strategies proposed. The proposed land use will then cater for all sectors according to policies proposed and for a projected population for the year 2030.

### 16.2 Proposed Land Use

The Land Use Plan (LUP) provides the overall growth strategy that will guide development of the town for the next 10 years. It shows the proposed broad categorization of land uses giving the town a land use structure. It also defines the proposed limits of growth of the town

The key elements that have influenced development and direction of growth in Kiambu planning area include: the road network such as Kiambu Road, Ruiru Kamiti Road, Riabai Road and Kiambu-Banana Road as well as rivers such as River Kiu, Gatharaini and River Riara. Valleys and extents of various nodes within the planning area including Township, Riabai, Kirigiti, Thindigua, Ndumberi and Kanunga have also had an impact on the growth of Kiambu town.

The preparation of the land use plan involves the formulation of long-term strategies that guide the developments within a town. Different land uses have been identified and allocated in different locations based on the physical planning standards and norms. In order to facilitate analysis and consequent formulation of development proposals, the planning area was clustered into nine (9) land use categories.

The Land use categorization was arrived at using various planning parameters including the level of development, with regard to, concentration of urban activities, population and level of infrastructure provision. Other factors influencing the land use clustering included, the current trend of development as evidenced in the existing land use study, population projections to the proposed life span of the plan, the land demand for the projected population and finally land use compatibility.

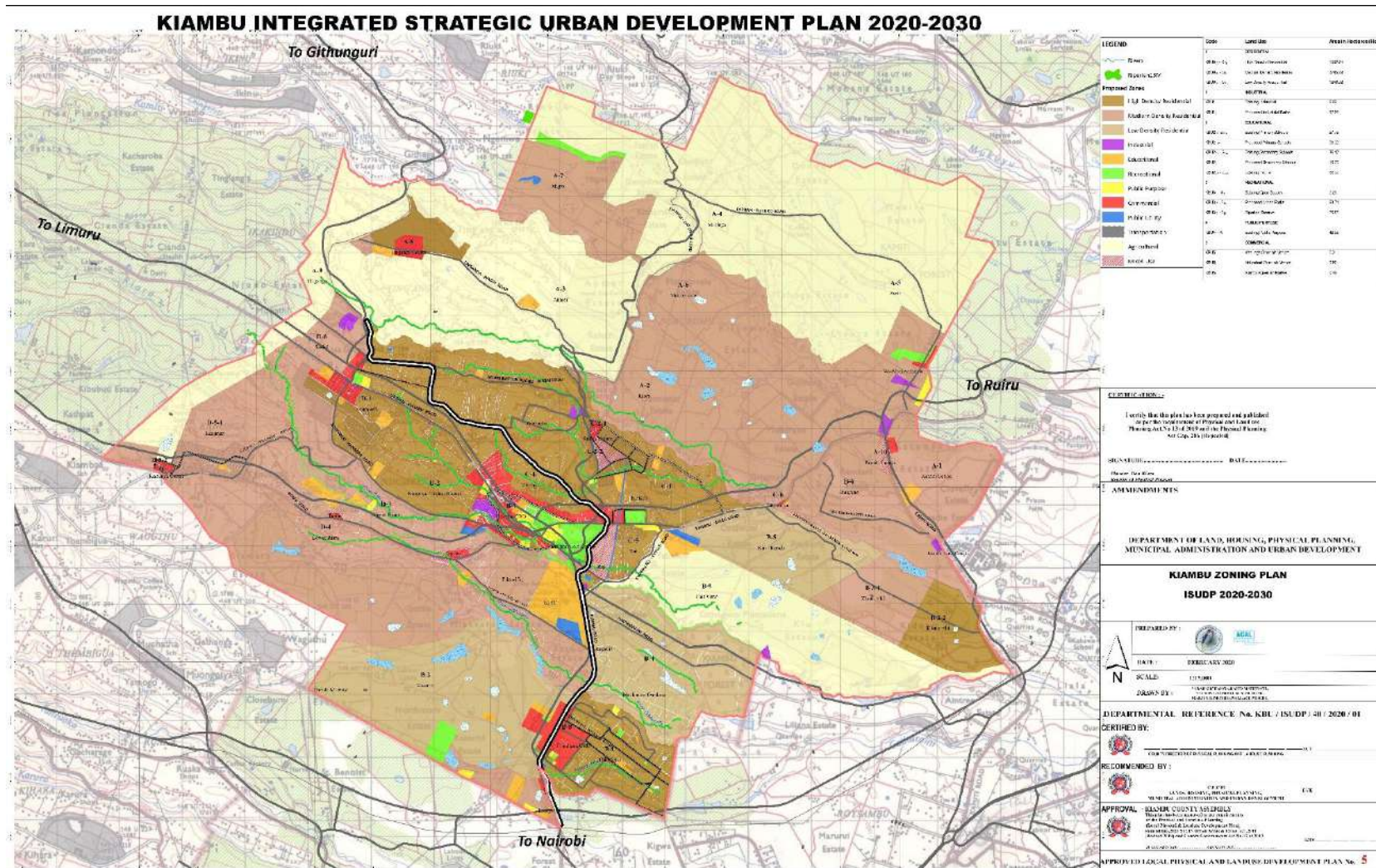
**Table 27: Proposed Land Use**

Colour code	Zone	Existing	Proposed 2030 (add or	2030 total
Residential				
	Proposed low density	136.86	-86.28	<b>50.58</b>
	Medium density	235.8	523	<b>758.8</b>

	High density residential	198.24	105.28	<b>303.52</b>
<b>Industrial</b>				
	Existing industrial	10.78	19.22	<b>30</b>
<b>Educational</b>				
	Existing secondary schools	41.38	23.22	<b>85.5</b>
	Existing primary	32.42	135.3	<b>167.7</b>
	Existing tertiary schools			
<b>Recreational</b>				
	Existing recreational	42.33	109.43	<b>151.76</b>
<b>Public purpose</b>				
	Existing public purpose	69.64	52.2	<b>121.84</b>
<b>Commercial</b>				
	Existing CBD	47.25	27.75	<b>75</b>
<b>Public utility</b>				
	Existing public utility	18.79	-	
<b>Transportation</b>				
	Existing transportation	272.03	233.97	<b>506</b>
<b>Agricultural</b>				
	Existing agriculture	2402.16	-1513.81	<b>888.35</b>
<b>Total</b>		<b>3373.10</b>		<b>3373.1</b>

Source: ACAL & BC Gildenhuys & Associates, 2019

Map 39: Proposed Kiambu Land Use



Source: ACAL & BC Gildenhuys & Associates, 2019

### **16.2.1 High Density Residential**

The proposed high-density residential zones cover 662 Ha representing 20% of planning area. The existing High residential areas are located within the urban nodes namely, Kirigiti, Riabai, Thindigua and Ndumberi. The average plot sizes in these areas are 0.045ha to 0.1 ha. The location of these areas reduces the need for travel and contributes to the development of a compact town. This zone is expected to accommodate the low- and mid-income segment of society. As urban population is expected to increase, infill development and redevelopment of pockets of low and medium density housing is recommended. This will ensure the town will not outgrow its urban boundary.

### **16.2.2 Medium Density Residential**

The proposed medium density housing covers approximately 760Ha representing 22%of the total land in the planning area. The Medium density areas mainly cover Thindigua, Ndumberi and Kanunga areas and residential neighbourhoods within the Town centre along Kiambu road. Existing Medium Density areas includes Edenville Estate. These are areas reserved for the middle class and low-income populace. The zone is between the high-density residential areas and low-density residential area. The average plot size is 0.05 ha with areas with comprehensive development have plot sizes of 0.045Ha. The areas have considerable levels of infrastructure services.

### **16.2.3 Low Density Residential**

The proposed low-density residential area covers 81 ha representing about 2.4% of the total acreage of the planning area. This area has been located around the Muthithi Gardens. The average plot size in these areas is 0.1 ha. This zone is expected to accommodate the High-income segment of society. The population densities in these areas are thus lower and plot sizes are bigger. The plot sizes have been increased in order to accommodate requirements such as extra parking and guest houses.

### **16.2.4 Industrial**

This zone is located in small segments in the planning areas. The industrial zone takes care of the light industries including Coffee factories located in the edges of the agricultural areas. Other light industry zone has proposed as hawkers square in the existing Gatiri Market. The plan also proposes light industrial zone around Kirigiti Stadium, at Thindigua along Kiambu Road. Total area zoned for Industrial use is 31 ha representing almost 0.91% of the planning area. The proposed light industrial zones are strategically located to boost their functionality.

### **16.2.5 CBD**

The structure plan proposes to retain the CBD in its current form however an extension towards Ndumberi terminating just at the Matatu Terminus within the CBD limits a hawker square has been proposed. Separating the Hawkers square and the Kangangi Market a green park has been

proposed to provide for public space. And a breather between the two land uses. Kangangi Market is to be upgraded into a modern multi storey market to also house the community ICT Centre in one of the floors.

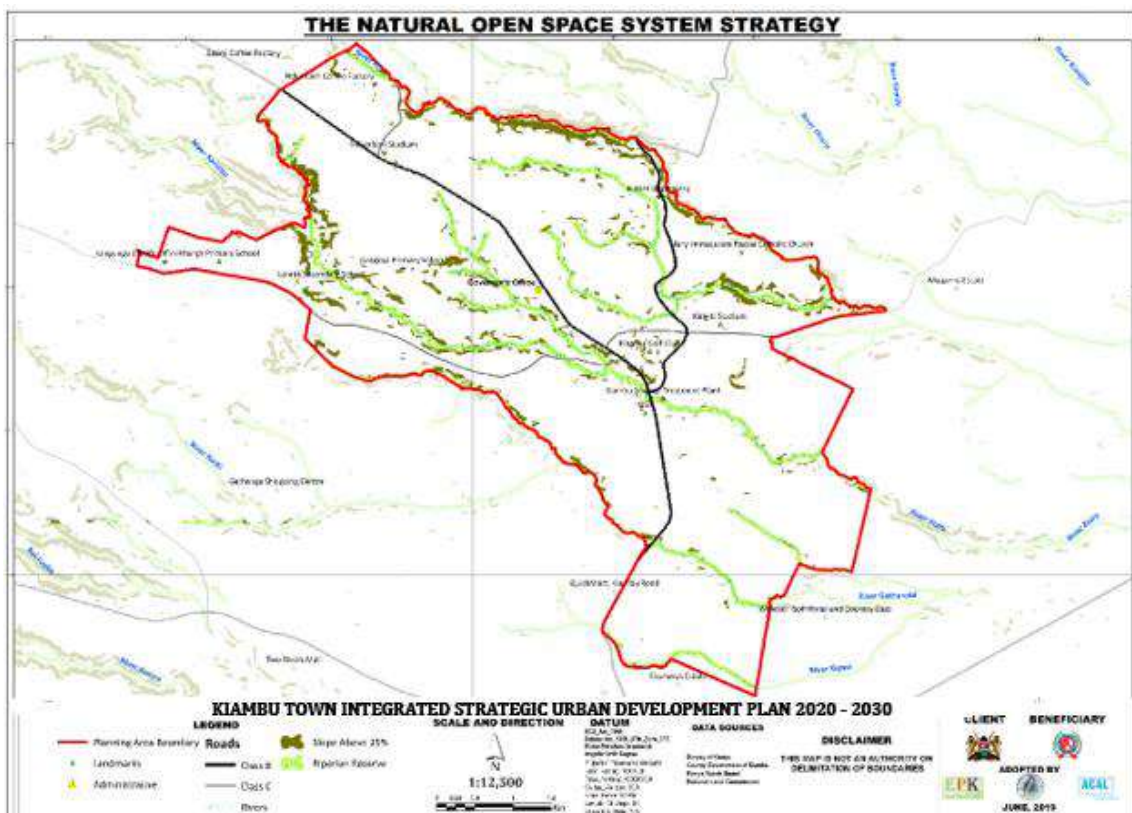
### 16.2.6 Agricultural

The planning area encompassed areas of significant agricultural activity. The town has been expanding outwards into agricultural land hence the need to set limits for urban growth. Most agricultural land is lost through creation of residential plots. For that reason, some parts are proposed to remain predominantly agricultural to avoid unwarranted and speculative subdivisions of high potential agricultural land. Furthermore, the land earmarked for residential development is adequate to cater for the expected population without having to require further loss of agricultural. This also calls for simultaneous densification of existing residential areas. The agricultural zone covers 31.7% of the planning area.

### 16.2.7 Conservation

The ecologically sensitive areas were identified and conservation measures proposed. These areas include water courses, wetlands, riparian reserves and areas with slopes exceeding 25%.

**Map 40: Natural Open Space Strategy**



Source: ACAL & BC Gildenhuys & Associates, 2019

In conclusion the proposed town structure model, apart from reducing overdependence on urban core, also strategically moulds the town into a form that is easy to service. In addition, it encourages linkages of town functions and areas to ensure sustainable and integrated growth.

### 16.3 Zoning Regulations

Designated Land Use	Zone Description	Zone No. KBU	Local Name	Permitted Land Use(s)	Minimum Plot size (Ha)	Ground Coverage max (GC) %		Plot Ratio (PR)		Minimum Setbacks (meters) (Front: Side: Rear)	Minimum Frontage Road Width (meters)	Building Line (meters)	Building Height (No. of Floors)	Special Conditions/Notes	
						S	U	S	U						
RESIDENTIAL (0)	High Density (1)														
	B-1	Thindigua	Highrise apartments;	0.1	70	60	8.4	7.0	6	1.2	3.0	12	6	G+14	a) Skyline capped at 15 floors in Kiambu CBD and Thindigua. b) PR is equated to the permitted skyline within a particular zone, cross ventilation, services available, and ability to provide parking within the proposed development. c) All proposed high-rise developments shall be subject to geological & structural integrity evaluations during vetting before approval. d) Single-room unit developments shall not be permissible e) For plots of 0.2ha and above, the proposal shall provide for social amenities e.g. recreational; shopping; green areas; kindergarten; security;
	B-3-2	Kiamumbi High	studios; bedsitters;	0.045	70	60	6.3	5.4	3	1.2	2.4	9	3	G+7	
	C1	Kirigiti High	Hostels; event gardens;	0.045	70	60	6.3	5.4	3	1.2	2.4	9	3	G+7	
	D2	Kangoya	Parks; residential	0.045	70	60	6.3	5.4	3	1.2	2.4	9	3	G+7	
	C-4	Kihingo	hotels <b>Conditional:</b>	0.045	70	60	6.3	5.4	3	1.2	2.4	9	3	G+7	
	D-1	Ndumberi	Light & medium	0.045	70	60	6.3	5.4	3	1.2	2.4	9	3	G+7	

Designated Land Use	Zone Description	Zone No. KBU	Local Name	Permitted Land Use(s)	Minimum Plot size (Ha)	Ground Coverage max (GC) %		Plot Ratio (PR)		Minimum Setbacks (meters) (Front: Side: Rear)			Minimum Frontage Road Width (meters)	Building Line (meters)	Building Height (No. of Floors)	Special Conditions/Notes
						S	U	S	U							
		A-8	Ting'anga T-plots	industry; colleges; churches; schools <b>Prohibited:</b> Heavy industry	0.045	70	60	3.5	3.0	3	1.2	2.4	9	3	G+7	power; circulation & other utilities according to needs assessment f) A service lane/easement of 6m to be provided/surrendered for plots fronting 18m road and above. g) Pent house shall not be more than 30% of the typical floor plan h) 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. i) Shall ensure adoption of locally available & environment friendly construction materials j) Provide lift for development above 5 floors. Staircase to be commensurate to number of units served
	<b>Comprehensive Developments</b>		Thindigua ; Kiamumbi	Highrise blocks	1.2	65	60	9.1	8.4	6	2.4	3	9	6	G+14	k) Land surrender & reservation for support infrastructure shall be provided (roads; parking; water; onsite sewer; educational;

Designated Land Use	Zone Description	Zone No. KBU	Local Name	Permitted Land Use(s)	Minimum Plot size (Ha)	Ground Coverage max (GC) %		Plot Ratio (PR)		Minimum Setbacks (meters) (Front: Side: Rear)	Minimum Frontage Road Width (meters)	Building Line (meters)	Building Height (No. of Floors)	Special Conditions/Notes
						S	U	S	U					
	within High Density zone		; Kirigiti; Kangoya; Kihingo; Ndumberi											recreational) commensurate to the needs assessment within the locality anchored on PLUPA, 2019 l) Provide for alternative green energy use e.g. solar, wind power m) Shall provide for water harvesting/roof tanks/underground collection n) Provide for recycling of wastewater through adoption of new technology o) Shall consider urban design considerations: orientation towards maximum solar capture, lighting and ventilation; consider direction of wind; movement of wildlife/protection of rare ecosystem/protection of heritage sites (sacred trees, structures) p) Shall ensure adoption of locally available & environment friendly construction materials

Designated Land Use	Zone Description	Zone No. KBU	Local Name	Permitted Land Use(s)	Minimum Plot size (Ha)	Ground Coverage max (GC) %		Plot Ratio (PR)		Minimum Setbacks (meters) (Front: Side: Rear)			Minimum Frontage Road Width (meters)	Building Line (metres)	Building Height (No. of Floors)	Special Conditions/Notes
						S	U	S	U							
						Medium Density (2)										
	D3; D4	Riara	<b>Permitted:</b> Single family houses; townhouses; semi-detached; <b>Conditional:</b> Convenient shops; club house; gym; nature trails; low level clinics/health centres; event	0.045	50	40	1	0.8	4.5	1.2	3	9	6	G+1	a) One Single-Dwelling only per plot. b) Typology: Maisonettes & Bungalows; townhouses c) One (1) DSQ shall be allowed. Not more than 15% GC of ground floor plinth of the main house. d) Attic house shall not be more than 30% of the typical floor plan e) Provide for min 10% greenery/tree cover. Provide at least one fruit tree f) Provide for alternative green energy use e.g. solar, wind power g) Shall provide for water harvesting/roof tanks/underground collection h) Provide for recycling of wastewater through adoption of new technology i) Designated refuse collection points j) Provide for parking -2 private vehicles k) Shall consider urban design considerations: orientation towards maximum solar capture, lighting and	
	D6	Sasini		0.1	50	40	1	0.8	4.5	1.2	3	9	6	G+1		
	D-5-1	Kanunga		0.045	50	40	1	0.8	4.5	1.2	3	9	6	G+1		
	C-5	Kirigiti-Rui		0.045	50	40	1	0.8	4.5	1.2	3	9	6	G+1		
	B-3-1	Kiamumbi		0.045	50	40	1	0.8	4.5	1.2	3	9	6	G+1		
	B-6	Mugumo		0.045	50	40	1	0.8	4.5	1.2	3	9	6	G+1		
	A-1	Kamiti		0.045	50	40	1	0.8	4.5	1.2	3	9	6	G+1		

Designated Land Use	Zone Description	Zone No. KBU	Local Name	Permitted Land Use(s)	Minimum Plot size (Ha)	Ground Coverage max (GC) %		Plot Ratio (PR)		Minimum Setbacks (meters) (Front: Side: Rear)			Minimum Frontage Road Width (meters)	Building Line (meters)	Building Height (No. of Floors)	Special Conditions/Notes
						S	U	S	U							
		A2; A3; A4; A5; A6	Kiora/Mboi Kamiti/amer farm	gardens; schools; church <b>Prohibited:</b>	0.045	50	40	1	0.8	4.5	1.2	3	9	6	G+1	ventilation; consider direction of wind; movement of wildlife/protection of rare ecosystem/protection of heritage sites (sacred trees, structures) l) Shall ensure adoption of locally available & environment friendly construction materials m) For comprehensive developments on areas with minimum subdivision of 0.2Ha, each unit to 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
			Ndumberi	Highrise apartments;	0.045	50	40	1	0.8	4.5	1.2	3	9	6	G+1	
		A9	Ting'anga	industry; clubs	0.045	50	40	1	0.8	4.5	1.2	3	9	6	G+1	
		C6	Gitamaiyu		0.045	50	40	1	0.8	4.5	1.2	3	9	6	G+1	
		<b>Comprehensive for medium density (Masterplans)</b>	Townhouses: Detached; semi-detached; duplexes	1.2	50	40	1	0.8	4.5	1.2	3	9	6	G+1	a) As per the approved masterplans within the respective zones b) Comprehensive development on residential shall include as follows: c) Each unit to occupy half of permitted min subdivision level	

Designated Land Use	Zone Description	Zone No. KBU	Local Name	Permitted Land Use(s)	Minimum Plot size (Ha)	Ground Coverage max (GC) %		Plot Ratio (PR)		Minimum Setbacks (meters) (Front: Side: Rear)	Minimum Frontage Road Width (meters)	Building Line (meters)	Building Height (No. of Floors)	Special Conditions/Notes
						S	U	S	U					
		e.g. Evergreen;;; Edenville; Migaa estate; Wa-Mickey; Bustani; Sasini												<ul style="list-style-type: none"> <li>d) Provide adequate and evenly distributed amenities commensurate to the introduced population</li> <li>e) The dominant land use should reflect the zone land use.</li> <li>f) Master plan in agricultural zones to priorities land for urban agriculture and industrial land use.</li> <li>g) Land surrender &amp; reservation for support infrastructure shall be provided (roads; parking; water; onsite sewer; educational; recreational among others commensurate to the needs assessment within the locality anchored on PLUPA, 2019</li> <li>h) Shall provide for Non-Motorized Transport (NMT) facilities: provision of friendly pedestrian walkways, cycling lanes, footbridges, zebra crossings, pick and drop points, etc</li> <li>i) Provide for alternative green energy use e.g. solar, wind power</li> </ul>

Designated Land Use	Zone Description	Zone No. KBU	Local Name	Permitted Land Use(s)	Minimum Plot size (Ha)	Ground Coverage max (GC) %		Plot Ratio (PR)		Minimum Setbacks (meters) (Front: Side: Rear)			Minimum Frontage Road Width (meters)	Building Line (meters)	Building Height (No. of Floors)	Special Conditions/Notes
						S	U	S	U							
						Low Density (3)										
																<ul style="list-style-type: none"> <li>j) Shall provide for water harvesting/roof tanks/underground collection</li> <li>k) Provide for recycling of wastewater through adoption of new technology</li> <li>l) For comprehensive developments on areas with minimum subdivision of 0.2Ha, each unit to 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</li> </ul>
		B4	Muthithi, Mushroom, Kugeria, Riverview	<b>Permitted:</b> Single family houses; townhouses;	0.2	50	40	1	0.8	6	1.2	3	12	6	G+1	<ul style="list-style-type: none"> <li>a) One Single-Dwelling only per plot.</li> <li>b) Typology: Maisonettes &amp; Bungalows</li> <li>c) One DSQ shall be allowed. Not more than 15% GC of ground floor plinth of the main house.</li> <li>d) Provide for min 10% greenery/tree cover At least one fruit tree</li> </ul>

Designated Land Use	Zone Description	Zone No. KBU	Local Name	Permitted Land Use(s)	Minimum Plot size (Ha)	Ground Coverage max (GC) %		Plot Ratio (PR)		Minimum Setbacks (meters) (Front: Side: Rear)			Minimum Frontage Road Width (meters)	Building Line (meters)	Building Height (No. of Floors)	Special Conditions/Notes
						S	U	S	U							
		B2	Kasarini, Runda Mumwe	<b>Conditional:</b> Convenient shops; club house; gym; nature trails; low level clinics/health centres; event gardens; schools; church <b>Prohibited:</b> Highrise apartments;	0.2	50	40	1	0.8	6	1.2	3	12	6	G+1	e) Provide for alternative green energy use e.g. solar, wind power f) Provide for recycling of wastewater through adoption of new technology g) Provide for parking -2 private vehicles h) For comprehensive developments on areas with minimum subdivision of 0.2Ha, each unit to 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 i) A guest house shall be permitted not exceeding 20%  GC of the main house's ground coverage plinth. j) A domestic servants' quarters shall be permitted not exceeding 50 square meters.
		B5	Kiu-Kenda		0.2	50	40	1	0.8	6	1.2	3	12	6	G+1	
		B5	Shooting Range		0.2	50	40	1	0.8	6	1.2	3	12	6	G+1	

Designated Land Use	Zone Description	Zone No. KBU	Local Name	Permitted Land Use(s)	Minimum Plot size (Ha)	Ground Coverage max (GC) %		Plot Ratio (PR)		Minimum Setbacks (meters) (Front: Side: Rear)			Minimum Frontage Road Width (meters)	Building Line (meters)	Building Height (No. of Floors)	Special Conditions/Notes
						S	U	S	U							
				heavy industry; clubs												
	<b>Comprehensive developments within low density (Masterplans)</b>		Townhouses; maisonettes; mansions		1.2	50	40	1	0.8	6	1.2	3	12	6	G+1	<ul style="list-style-type: none"> <li>a) As per the approved masterplans within the respective zones</li> <li>b) Minimum sub-division shall be at 0.2ha.</li> <li>c) For comprehensive, plot size of 1000sm per dwelling house together with auxiliary amenities</li> <li>d) Land surrender &amp; reservation for support infrastructure shall be provided for roads; parking; water; onsite sewer; educational; recreational among others commensurate to the needs assessment within the locality anchored on PLUPA, 2019</li> <li>e) Provide for alternative green energy use e.g. solar, wind power</li> <li>f) Shall provide for water harvesting/roof tanks/underground collection</li> </ul>

Designated Land Use	Zone Description	Zone No. KBU	Local Name	Permitted Land Use(s)	Minimum Plot size (Ha)	Ground Coverage max (GC) %		Plot Ratio (PR)		Minimum Setbacks (meters) (Front: Side: Rear)			Minimum Frontage Road Width (meters)	Building Line (meters)	Building Height (No. of Floors)	Special Conditions/Notes
						S	U	S	U							
																g) Provide for recycling of wastewater through adoption of new technology h) For comprehensive developments on areas with minimum subdivision of 0.2Ha, each unit to 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
	Ambassadorial Homes		Mansions		0.2	40	30	0.8	0.6	6	1.2	5	12	9	G+1	proposed in medium and low-density residential zones
	Governor's residence		Mansions		1.2	40	30	1.6	1.2	6	1.2	5	12	9	G+3	Proposed in medium and low-density residential zones
<b>INDUSTRIAL</b>	<b>Light Industry (1)</b>															
<b>(1)</b>	PSS	Along transit routes/corridors	<b>Permitted:</b> Parking; garages; warehouses;	0.2	40	30	1.6	1.2	9	3	3	15	9	G+3	Must meet environment, health & safety conditions as set out in EPRA regulations Location: Must be sited clear of residential blocks	
		Within CBD		0.1	40	30	0.8	0.6	9	3	3	15	6	G+3		

Designated Land Use	Zone Description	Zone No. KBU	Local Name	Permitted Land Use(s)	Minimum Plot size (Ha)	Ground Coverage max (GC) %		Plot Ratio (PR)		Minimum Setbacks (meters) (Front: Side: Rear)			Minimum Frontage Road Width (meters)	Building Line (meters)	Building Height (No. of Floors)	Special Conditions/Notes
						S	U	S	U							
				go-downs; indoor storage; workshops; jua-kali; petrol service & filling stations; cottage industries; carwash;												Provide 3.0m setback/buffer all round Provision of acceleration & deceleration; clear indication of entry and exit Ancillary facilities allowed: mini-marts; restaurant; offices; service bays; ATM; coffee shops Satellite clinics & hospitals prohibited All Petroleum and Gas Products to align with EPPRA, Road Agencies Standards, Regulations and Recommendations
	PFS	Along transit routes/corridors		minor automotive repair shops	0.045	40	30	0.8	0.6	6	3	3	15	6	G+1	Must meet health & safety conditions as set out in EPRA regulations
		Within CBD			0.045	40	30	0.8	0.6	6	3	3	15	6	G+1	
	Electric	Along transit corridors/CBD			0.25	40	30	1.6	1.2	9	3	3	15	9	G+3	Must meet health & safety conditions as set out in EPRA regulations

Designated Land Use	Zone Description	Zone No. KBU	Local Name	Permitted Land Use(s)	Minimum Plot size (Ha)	Ground Coverage max (GC) %		Plot Ratio (PR)		Minimum Setbacks (meters) (Front: Side: Rear)			Minimum Frontage Road Width (meters)	Building Line (meters)	Building Height (No. of Floors)	Special Conditions/Notes
						S	U	S	U							
	Vehicle Charging (EVC)															
	Gas Station	Along transit corridors/CBD			0.2	40	30	1.6	1.2	9	3	3	15	9	G+3	Must meet health & safety conditions as set out in EPRA regulations
	Hybrid 1 (Fuel +EVC)	Along transit corridors/CBD			0.4	40	30	1.6	1.2	9	3	3	15	9	G+3	Must meet health & safety conditions as set out in EPRA regulations
	Hybrid 2 (Fuel +Gas)	Along transit corridors/CBD			0.4	40	30	1.6	1.2	9	3	3	15	9	G+3	Must meet health & safety conditions as set out in EPRA regulations
	Storage/packaging	Along transit corridors/CBD			0.1	50	40	2.0	1.6	9	3	3	15	9	G+3	

Designated Land Use	Zone Description	Zone No. KBU	Local Name	Permitted Land Use(s)	Minimum Plot size (Ha)	Ground Coverage max (GC) %		Plot Ratio (PR)		Minimum Setbacks (meters) (Front: Side: Rear)			Minimum Frontage Road Width (meters)	Building Line (meters)	Building Height (No. of Floors)	Special Conditions/Notes
						S	U	S	U							
	Go-Downs															
<b>Medium Industrial (2)</b>																
	Go-Downs			<b>Permitted:</b> Agro-based	0.4	50	50	1.2	0.9	9	3	3	15	9	G+2	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 For comprehensive schemes, approval & execution of civil works (roads; water; sewer; drainage channels; street lighting) shall be mandatory before implementation of proposed development. That is, provision of infrastructure
	County aggregation centres (CAIPS)			millers; meat & milk processing plants; Brewery; Bakery; Bottling & canning; Food & Beverage; Coffee roaster:	4.0	50	50	2.0	1.6	12	6	6	18	12	G+3	

Designated Land Use	Zone Description	Zone No. KBU	Local Name	Permitted Land Use(s)	Minimum Plot size (Ha)	Ground Coverage max (GC) %		Plot Ratio (PR)		Minimum Setbacks (meters) (Front: Side: Rear)			Minimum Frontage Road Width (meters)	Building Line (meters)	Building Height (No. of Floors)	Special Conditions/Notes
						S	U	S	U							
				Honey processing												Detailed masterplan & comprehensive topographical survey maps shall be provided accompanying the proposed developments
<b>Heavy Industrial (3)</b>																
	Go-Downs			<b>Permitted:</b> Heavy processing; manufacturing; quarrying; vehicle assembly	4.0	40	30	1.5	1.2	1	9	9	18	12	G+2	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
		11	Existing Industrial	plant; power	0.2	50	40	1.5	1.2	1	9	9	18	12	G+2	Provide 3 – 6 M green zone as a buffer To provide loading and offloading zones

Designated Land Use	Zone Description	Zone No. KBU	Local Name	Permitted Land Use(s)	Minimum Plot size (Ha)	Ground Coverage max (GC) %		Plot Ratio (PR)		Minimum Setbacks (meters) (Front: Side: Rear)			Minimum Frontage Road Width (meters)	Building Line (meters)	Building Height (No. of Floors)	Special Conditions/Notes
						S	U	S	U							
	Industrial Parks		Park (Jua Kali)	generation; recycling												Provide auxiliary services (Restaurant, clinic and recreational facility).
		12	Proposed Industrial Park	plant; Distillery; concreting; bulk storage of hazardous substances; slaughterhouses; oil & natural gas processing; technological engineering	2.0	50	40	1.5	1.2	9	6	6	18	12	G+2	Provide mothers daycare.
<b>Institutional</b>																

Designated Land Use	Zone Description	Zone No. KBU	Local Name	Permitted Land Use(s)	Minimum Plot size (Ha)	Ground Coverage max (GC) %		Plot Ratio (PR)		Minimum Setbacks (meters) (Front: Side: Rear)			Minimum Frontage Road Width (meters)	Building Line (meters)	Building Height (No. of Floors)	Special Conditions/Notes
						S	U	S	U							
EDUCATION  AL  (2)	Daycare (Below 3 years)		Single		0.1	50	40	1.0	0.8	9	3	3	9	6	G+1	
	Pre-Primary (Playground; PP1; PP2; Nursery; Kindergarten)		Single		0.1	40	30	1.2	0.9	9	3	3	9	6	G+2	
			Double		0.2	40	30	1.2	0.9	9	3	3	9	6	G+2	
			Triple		0.4	40	30	1.2	0.9	9	3	3	9	6	G+2	
	Primary School		Single		0.8	40	30	2.0	1.5	9	3	3	12	6	G+4	
			Double		1.6	40	30	2.0	1.5	9	3	3	12	9	G+4	
			Triple		2.4	40	30	2.0	1.5	9	3	3	12	9	G+4	
			<b>Other facilities that take up the remaining land are soccer field; netball; athletic track; swimming; hockey field; gymnasium; circulation &amp; other supporting infrastructure</b>													
		Single		0.4	40	30	2.0	1.5	9	3	3	12	6	G+4		
			Double		0.8	40	30	2.0	1.5	9	3	3	12	6	G+4	
			Triple		1.6	40	30	2.0	1.5	9	3	3	12	9	G+4	

Designated Land Use	Zone Description	Zone No. KBU	Local Name	Permitted Land Use(s)	Minimum Plot size (Ha)	Ground Coverage max (GC) %		Plot Ratio (PR)		Minimum Setbacks (meters) (Front: Side: Rear)			Minimum Frontage Road Width (meters)	Building Line (meters)	Building Height (No. of Floors)	Special Conditions/Notes
						S	U	S	U							
	Junior Secondary School (JSS)															
	Senior Secondary School	Single		0.8	40	30	2.0	1.5	9	3	3	12	6	G+4		
		Double		1.6	40	30	2.0	1.5	9	3	3	12	9	G+4		
		Triple		2.4	40	30	2.0	1.5	9	3	3	12	9	G+4		
		Quadruple		3.0	40	30	2.0	1.5	9	3	3	12	9	G+4		
	<b>For boarding schools, additional land requirement of 50% of the minimum land requirement</b>															
	Youth Polytechnic/TVE TS			0.3	40	30	2.8	2.1	9	3	3	12	6	G+7		
	College			2	40	30	4.0	3.0	9	3	3	12	9	G+9		
	University			20	40	30	4.8	3.6	1	3	3	18	12	G+1 2		

Designated Land Use	Zone Description	Zone No. KBU	Local Name	Permitted Land Use(s)	Minimum Plot size (Ha)	Ground Coverage max (GC) %		Plot Ratio (PR)		Minimum Setbacks (meters) (Front: Side: Rear)			Minimum Frontage Road Width (meters)	Building Line (meters)	Building Height (No. of Floors)	Special Conditions/Notes
						S	U	S	U							
RECREATIONAL (3)	Stadium				2	30	20	0.3	0.3	9	6	6	18	9	G+3	Allow only buildings supporting recreational use  Add variety & activity by allowing mini shops & coffee cafeterias  Provide for centralized parking area  Provide ancillary services e.g. water, sanitation, lighting
	Playground				0.2	20	10	0.1	0.1	9	6	6	9	6	G+1	
	Recreational Garden				0.4	20	10	0.2	0.2	9	6	6	12	6	G+3	
	Park				0.4	20	10	0.1	0.1	9	6	6	12	6	G+3	
	Private Zoo				4	20	10	0.2	0.2	9	6	6	12	9	G+2	
	Amusement Park				0.2	30	20	0.1	0.1	9	6	6	12	9	G+2	
	Amphitheatre				0.4	60	40	3.0	2.0	9	6	6	12	9	G+5	
	Botanical Garden				1.2	15	10	0.4	0.3	9	6	6	12	9	G+2	
	Driving Range				2.0	50	40	1.5	1.2	9	6	6	12	9	G+2	
	Campground				0.8	30	20	1.2	0.8	9	6	6	12	9	G+3	
	Shooting Range				2.0	20	10	0.8	0.4	9	6	6	12	9	G+3	

Designated Land Use	Zone Description	Zone No. KBU	Local Name	Permitted Land Use(s)	Minimum Plot size (Ha)	Ground Coverage max (GC) %		Plot Ratio (PR)		Minimum Setbacks (meters) (Front: Side: Rear)			Minimum Frontage Road Width (meters)	Building Line (meters)	Building Height (No. of Floors)	Special Conditions/Notes
						S	U	S	U							
	Exhibition Ground				1.6	30	20	1.2	0.8	9	6	6	12	9	G+3	
	Golf Course/Mini Golf				4.0	20	10	0.8	0.4	9	6	6	12	9	G+3	
<b>PUBLIC PURPOSE (4)</b>	<b>1. Health Facilities</b>															
	Level 6 -National Referral & Teaching Hospitals				20	40	30	8.4	8.4	15	5	10	25	15	G+14	
	Level 5 -County Referral Hospitals				8	40	30	4.4	4.4	9	5	5	18	9	G+9	
	Level 4 - Hospitals				1.6	40	30	2.4	2.4	9	3	5	15	6	G+7	

Designated Land Use	Zone Description	Zone No. KBU	Local Name	Permitted Land Use(s)	Minimum Plot size (Ha)	Ground Coverage max (GC) %		Plot Ratio (PR)		Minimum Setbacks (meters) (Front: Side: Rear)			Minimum Frontage Road Width (meters)	Building Line (meters)	Building Height (No. of Floors)	Special Conditions/Notes
						S	U	S	U							
	Level 3 -Health Centres with Maternity wing				1	40	30	4.4	4.4	6	2.5	5	12	6	G+7	
	Level 2 - Dispensaries & clinics				0.1	40	30	2	2	6	2.5	3	9	6	G+3	
	Specialized clinics with inpatient wing e.g. palliative care				0.2	40	30	4.4	4.4	6	2.5	5	12	4.5	G+7	
	Level 1 - Community facilities/Health				0.1	40	30	1.5	1.5	3	2.5	3	9	4.5	G+3	

Designated Land Use	Zone Description	Zone No. KBU	Local Name	Permitted Land Use(s)	Minimum Plot size (Ha)	Ground Coverage max (GC) %		Plot Ratio (PR)		Minimum Setbacks (meters) (Front: Side: Rear)			Minimum Frontage Road Width (meters)	Building Line (meters)	Building Height (No. of Floors)	Special Conditions/Notes
						S	U	S	U							
	clubs/Rehab centres															
<b>2. Other Public Purpose facilities</b>																
	Police Station				1.2	40	30	1	1	9	6	6	12	9	G+7	
	Police Post				0.1	50	40	1.5	1	6	2.5	5	9	6	G+3	
	Patrol Base				0.045	50	40	2	1	6	2.5	5	9	6	G+3	
	High Court				1.2	50	40	2	1	9	6	6	15	9	G+7	
	Magistrate Court				0.4	50	40	1	1	6	6	6	9	6	G+3	
	Prisons				16	40	30	0.25	0.25	20	20	0	15	20	G+4	
	Religious Institutions/Church				0.1	50	40	1	1	4.5	2.5	5	9	4.5	G+3	

Designated Land Use	Zone Description	Zone No. KBU	Local Name	Permitted Land Use(s)	Minimum Plot size (Ha)	Ground Coverage max (GC) %		Plot Ratio (PR)		Minimum Setbacks (meters) (Front: Side: Rear)			Minimum Frontage Road Width (meters)	Building Line (meters)	Building Height (No. of Floors)	Special Conditions/Notes
						S	U	S	U							
	Cultural Centre/Art Gallery				0.2	40	40	1.5	1.5	6	6	6	9	6	G+3	
	Fire Station				0.4	40	30	0.5	0.5	6	2.5	4.5	12	9	G+5	
	Library				0.1	50	40	0.5	0.5	6	2.5	4.5	9	6	G+7	
	Museum				0.2	60	50	3.0	2.5	6	2.5	4.5	12	9	G+5	
	Home for the Elderly				0.2	40	30	0.5	0.5	9	6	6	9	6	G+2	
	Funeral Homes/crematorium				0.2	30	20	0.5	0.5	9	6	6	12	12	G+2	

Designated Land Use	Zone Description	Zone No. KBU	Local Name	Permitted Land Use(s)	Minimum Plot size (Ha)	Ground Coverage max (GC) %		Plot Ratio (PR)		Minimum Setbacks (meters) (Front: Side: Rear)			Minimum Frontage Road Width (meters)	Building Line (meters)	Building Height (No. of Floors)	Special Conditions/Notes
						S	U	S	U							
	Community/Social Hall				0.1	40	30	1.5	1.5	9	6	6	9	6	G+4	
	Youth Centre				0.1	50	40			6	3	3	9	6	G+4	
	Private Clubs & Lodges				0.2	40	30	2.8	2.1	6	3	3	12	9	G+7	
	Cemetery/Graveyard				1	20	10	0.1	0.1	9	6	6	12	9	G+3	
	Children's Home/Orphanages				0.1	60	50	2.0	2.0	9	6	6	12	6	G+5	
	Innovation Hub				0.045	60	50	2.0	2.0	9	6	6	9	4.5	G+3	
	Abattoirs				1	40	30	1.5	1.5	9	6	6	9	9	G+2	
	Slaughter slab				0.2	40	30	0.8	0.8	9	6	6	9	9	G	
	Administration Offices				0.2	60	50	3.0	2.5	9	6	6	12	9	G+5	

Designated Land Use	Zone Description	Zone No. KBU	Local Name	Permitted Land Use(s)	Minimum Plot size (Ha)	Ground Coverage max (GC) %		Plot Ratio (PR)		Minimum Setbacks (meters) (Front: Side: Rear)			Minimum Frontage Road Width (meters)	Building Line (meters)	Building Height (No. of Floors)	Special Conditions/Notes
						S	U	S	U							
<b>COMMERCIAL</b>																
<b>5a. Major Commercial Business Districts (CBD)</b>																
L (5)	Kiambu CBD (B7) Thindigua CBD (B8)	Permitted: Modern markets; multi-storey developments; shopping complexes; office buildings; showrooms; retail	Shopping mall	0.8	60	50	6	5	9	6	6	15	9	G+9	a) Commercial centres shall have service lanes for loading & offloading of goods. All plots without service lanes must have a pre-determined building line and reduced ground coverage b) Heights shall be guided by skylines, plot sizes, PR, and infrastructure present in the zone c) The CBD shall have well defined building lines to enhance safety, aesthetics and order d) Building frontage to be left open for ease of loading/offloading/pedestrian movement. Grills/perimeter walls in the CBD prohibited e) Double volume in heights encouraged especially for ground floor f) 1 parking lot per 100sm	
			Supermarket/wholesale	0.4	60	50	4.8	4.0	9	3	3	12	9	G+7		
			Mini mart/Bakery	0.1	70	60	3.5	3.0	6	2.	1.2	12	6	G+4		
			Retail shops/dukawalla	0.1	70	60	3.5	3.0	4.	2.	1.2	12	3	G+4		
			Offices/Banks/ICT	0.045	70	60	7.0	6.0	4.	2.	1.2	12	3	G+9		
			Hotels	0.1	70	60	8.4	7.2	4.	2.	1.2	12	6	G+1 2		
			Motels	0.2	60	50	7.2	6.0	9	2.	6	12	9	G+1 2		

Designated Land Use	Zone Description	Zone No. KBU	Local Name	Permitted Land Use(s)	Minimum Plot size (Ha)	Ground Coverage max (GC) %		Plot Ratio (PR)		Minimum Setbacks (meters) (Front: Side: Rear)			Minimum Frontage Road Width (meters)	Building Line (meters)	Building Height (No. of Floors)	Special Conditions/Notes
						S	U	S	U							
			& wholesale shops; confectionary stores; pharmacy; hotels; eateries; professional offices; hostels; transport yards;	Hostels	0.1	70	60	8.4	7.2	9	2.4	6	9	6	G+12	g) Additional parking shall be provided in basements or top floors h) Shall create space for recreational amenities e.g. kids playing area i) Public facilities such as toilets, watering holes, solid waste collection points shall be provided for j) Provide for green areas of min 20% in the lot and landscaping along the streets k) Provide mechanical ventilation for the building l) Provide both lift & ramps for ease of access m) <b>Hostels:</b> must have support facilities; must have common areas e.g., entertainment room, rest room, convenient shopping, courtyard; 1 parking slot per 4 units
				Public facilities/utilities	0.045	70	60	7.2	6.0	4.5	2.4	1.2	9	3	G+9	
				Serviced apartments	0.045	70	60	7.0	6.0	4.5	2.4	1.2	12	3	G+9	
				Light industry/showrooms/cottage	0.045	70	60	3.5	3.0	4.5	2.4	1.2	12	3	G+4	
				Open air markets	0.2	50	40	2.0	1.6	3	2.4	1.2	12	3	G+3	
				Modern storey markets	0.2	70	60	5.6	4.8	6	6	6	12	9	G+7	

Designated Land Use	Zone Description	Zone No. KBU	Local Name	Permitted Land Use(s)	Minimum Plot size (Ha)	Ground Coverage max (GC) %		Plot Ratio (PR)		Minimum Setbacks (meters) (Front: Side: Rear)			Minimum Frontage Road Width (meters)	Building Line (meters)	Building Height (No. of Floors)	Special Conditions/Notes	
						S	U	S	U								
			public facilities; parking silos														
<b>5b. Smaller Commercial Nodes/Cores (Secondary Centres)</b>																	
	1) Kirigiti core		Modern markets; multi-storey developments; shopping complexes; office	Shopping mall	0.4	70	60	3.5	3.0	4.5	1.2	6	9	9	G+5	a) Commercial centres shall have service lanes for loading & offloading of goods. All plots without service lanes must have a pre-determined building line and reduced ground coverage b) Heights shall be guided by skylines, plot sizes, PR, and infrastructure present in the zone c) The CBD shall have well defined building lines to enhance safety, aesthetics and order	
	2) Ndumburi core			Supermarket/wholesale	0.1	70	60	3.5	3.0	4.5	1.2	6	9	6	G+5		
	3) Turitu/Ngegu core			Mini mart/stalls	0.045	70	60	3.5	3.0	4.5	1.2	3	9	3	G+5		
	4) Riabai centre			Retail shop/dukawalla	0.045	70	60	3.5	3.0	4.5	1.2	3	9	3	G+5		
	5) Kiamumbi																
	6) Kamiti Corner																

Designated Land Use	Zone Description	Zone No. KBU	Local Name	Permitted Land Use(s)	Minimum Plot size (Ha)	Ground Coverage max (GC) %		Plot Ratio (PR)		Minimum Setbacks (meters) (Front: Side: Rear)			Minimum Frontage Road Width (meters)	Building Line (meters)	Building Height (No. of Floors)	Special Conditions/Notes
						S	U	S	U							
	7) Ting'an g'a 8) All existing local market centres (allotments)		buildings; showrooms; re& wholesale shops; hotels; eateries; professional offices; hostels; transport yards; public facilities;	Offices/Banks/ ICT	0.045	70	60	3.5	3.0	4.5	1.2	3	9	3	G+5	d) Building frontage to be left open for ease of loading/offloading/ pedestrian movement. Grills/perimeter walls in the CBD prohibited e) Double volume in heights encouraged especially for ground floor f) 1 parking lot per 100sm g) Additional parking shall be provided in basements or top floors h) Shall create space for recreational amenities e.g. kids playing area i) Public facilities such as toilets, watering holes, solid waste collection points shall be provided for j) Provide for green areas of min 10% and landscaping along the streets
				Hotels	0.045	60	50	3.5	3.0	4.5	1.2	3	9	3	G+5	
				Public facilities	0.045	60	50	3.5	3.0	4.5	1.2	3	9	3	G+5	
				Serviced apartments	0.045	70	60	3.5	3.0	4.5	1.2	3	9	3	G+5	
				Light industry/showrooms	0.045	70	60	3.5	3.0	4.5	1.2	3	9	3	G+3	
				Open air markets	0.1	70	60	3.5	3.0	4.5	1.2	3	9	3	G+5	
				Modern storey markets	0.1	70	60	3.5	3.0	4.5	1.2	3	9	3	G+5	

Designated Land Use	Zone Description	Zone No. KBU	Local Name	Permitted Land Use(s)	Minimum Plot size (Ha)	Ground Coverage max (GC) %		Plot Ratio (PR)		Minimum Setbacks (meters) (Front: Side: Rear)			Minimum Frontage Road Width (meters)	Building Line (meters)	Building Height (No. of Floors)	Special Conditions/Notes
						S	U	S	U							
			parking silos tail													
	Power Sub-Station		All zones		0.1	20	10	0.8	0.4	9	3	3	15	9	G+3	
	Data Centres				0.2	60	50	3.0	2.5	9	3	3	15	9	G+5	
	Telecommunication facility				0.2	60	50	3.0	2.5	9	1.2	2.4	15	9	G+5	
	BTS Communication masts				0.045	80	60	1.6	1.2	9	1.2	2.4	12	4.5	G+1	
	Solid Waste Transfer Stations				0.4	30	20	1.2	0.8	12	3	3	12	9	G+3	
	Solid waste recycling centers				0.2	30	20	1.2	0.8	9	3	3	12	6	G+3	
	Scrap/Junk Yard				0.1	30	20	1.2	0.8	9	3	3	12	6	G+2	

Designated Land Use	Zone Description	Zone No. KBU	Local Name	Permitted Land Use(s)	Minimum Plot size (Ha)	Ground Coverage max (GC) %		Plot Ratio (PR)		Minimum Setbacks (meters) (Front: Side: Rear)			Minimum Frontage Road Width (meters)	Building Line (meters)	Building Height (No. of Floors)	Special Conditions/Notes
						S	U	S	U							
	Waste Treatment Plant				0.1	20	10	0.2	0.2	1	3	3	12	6	G+2	
	Water Towers				0.1	30	20	1.5	1.5	1	3	3	9	6	G+2	
	Water Hydrants				0.045	50	40	1	1	1	3	3	9	6	G+1	
<b>TRANSPORT ACTION (7)</b>																
	Weighbridge		All zones		0.4	20	10	0.6	0.3	9	3	3	15	9	G+3	
	Parking Silo				0.2	80	60	4.0	3.0	9	3	3	12	9	G+5	
	Bus Parks/Stage				1.6	30	20	0.9	0.6	9	3	3	12	6	G+3	
	Boda-Boda sheds				0.045	60	50	1.2	1.0	4.5	1.2	3	12	3	G+1	
	BRT Stations				1.6	30	20	0.9	0.6	9	3	3	15	6	G+3	
	Parking lot for bicycles				0.045	60	50	1.2	1.0	4.5	1.2	3	12	3	G+1	

Designated Land Use	Zone Description	Zone No. KBU	Local Name	Permitted Land Use(s)	Minimum Plot size (Ha)	Ground Coverage max (GC) %		Plot Ratio (PR)		Minimum Setbacks (meters) (Front: Side: Rear)			Minimum Frontage Road Width (meters)	Building Line (meters)	Building Height (No. of Floors)	Special Conditions/Notes
						S	U	S	U							
	Railway Station				1.6	30	20	0.9	0.6	9	3	3	15	6	G+3	
	Parking Yard for trucks				1.2	30	20	0.9	0.6	9	3	3	15	6	G+2	
	Airstrip				8.0	15	10	0.4 5	0.3 0	9	6	6	18	12	G+2	
<b>CONSERVATION</b> (8)	All riparian reserves; wetlands; rivers; forests															As per the WARMA guidelines Low scale agriculture and landscaping allowed
<b>AGRICULTURAL</b> (9)																
	Large Scale	All zones B9	All coffee farms; avocado farms;	<b>Permitted:</b> All agricultural uses; farm houses;	0.2	75	60	2.2 5	1.8	6	3	3	15	9	G+3	Farm houses & housing for workers allowed at max 5% of land size Value addition e.g. agro-processing industries permitted

Designated Land Use	Zone Description	Zone No. KBU	Local Name	Permitted Land Use(s)	Minimum Plot size (Ha)	Ground Coverage max (GC) %		Plot Ratio (PR)		Minimum Setbacks (meters) (Front: Side: Rear)			Minimum Frontage Road Width (meters)	Building Line (meters)	Building Height (No. of Floors)	Special Conditions/Notes
						S	U	S	U							
			range lands;	storage for produce; animal pens; forestry; urban agriculture; housing for workers; low												Major land-use remains. Subdivision (first 10 acres -0.2) Above 10 acres -1 acre for each subplot Controlled transition to low density residential development with commensurate public utilities evenly distributed
	Small Scale	All zones	All land within the sub-county that can support agriculture (cash	density residential developments; water pans, dams; cottage and agro-industries	0.045	75	60	2.2 5	1.8	3	1. 2	3	9	3	G+3	This applies mostly to urban agriculture for horticulture

Designated Land Use	Zone Description	Zone No. KBU	Local Name	Permitted Land Use(s)	Minimum Plot size (Ha)	Ground Coverage max (GC) %		Plot Ratio (PR)		Minimum Setbacks (meters) (Front: Side: Rear)			Minimum Frontage Road Width (meters)	Building Line (meters)	Building Height (No. of Floors)	Special Conditions/Notes
						S	U	S	U							
			crops & food crops) maize, beans grown at peasant scale	<b>Conditional:</b> Public facilities; shopping zones;												
<b>MIXED USE</b>																
(10)	A8	Ting'anga	Highrise apartments;	studios; bedsitters; Hostels; event gardens;	0.045	70	60	3.5	3.0	3	1.2	2.4	9	3	G+5	This is the emerging urban cores of Kiambu Urban area. Such areas are still much rural in character and form. The emerging secondary towns don't have well developed commercial centres.
	Rui	Kirigiti			0.045	70	60	4.9	4.2	3	1.2	2.4	9	3	G+7	
	Indian Bazaar	Indian Bazaar			0.045	70	60	4.9	4.2	3	1.2	2.4	9	3	G+7	

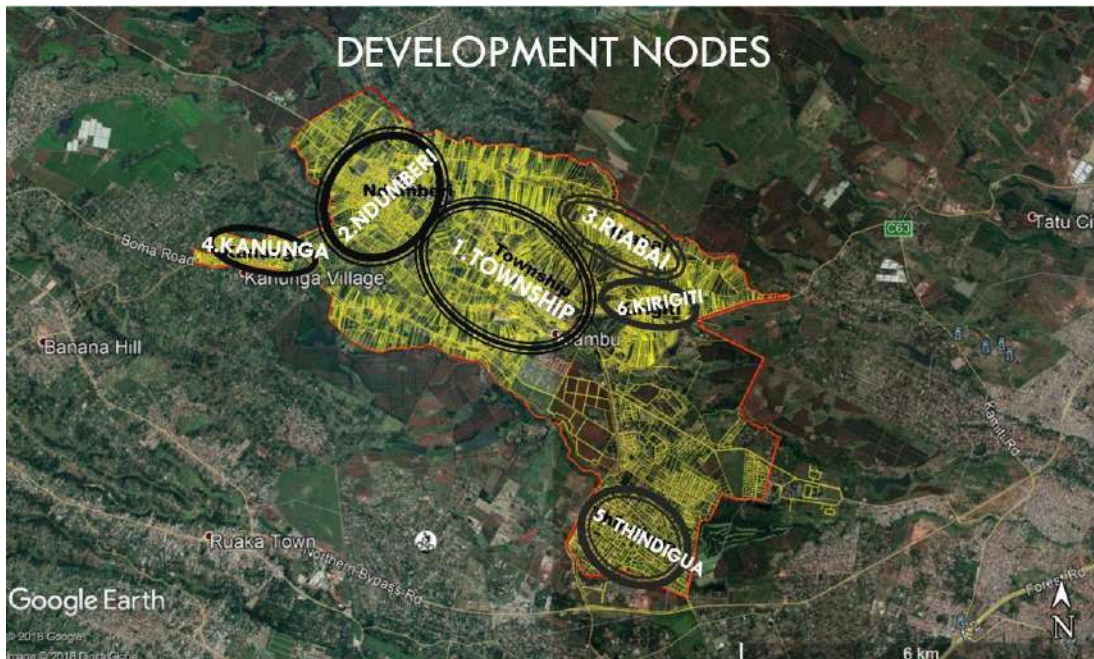
Designated Land Use	Zone Description	Zone No. KBU	Local Name	Permitted Land Use(s)	Minimum Plot size (Ha)	Ground Coverage max (GC) %		Plot Ratio (PR)		Minimum Setbacks (meters) (Front: Side: Rear)			Minimum Frontage Road Width (meters)	Building Line (meters)	Building Height (No. of Floors)	Special Conditions/Notes
						S	U	S	U							
	C-2-2		Riabai	Parks; residential	0.045	70	60	4.9	4.2	3	1.2	2.4	9	3	G+7	<ul style="list-style-type: none"> <li>a) The permitted skyline shall be at G+7 storeys maximum.</li> <li>b) Provide for alternative green energy use e.g. solar, wind power</li> <li>c) Shall provide for water harvesting/roof tanks/underground collection</li> <li>d) Provide for recycling of wastewater through adoption of new technology</li> <li>e) Shall consider urban design considerations: orientation towards maximum solar capture, lighting and ventilation; consider direction of wind; movement of wildlife/protection of rare ecosystem/protection of heritage sites (sacred trees, structures)</li> <li>f) Shall ensure adoption of locally available &amp; environment friendly construction materials</li> </ul>
	Ngegu		Ngegu	hotels; commercial; offices; public facilities <b>Conditional:</b> Light & medium industry; colleges; churches; schools; cottage industry	0.045	70	60	4.9	4.2	3	1.2	2.4	9	3	G+7	

Designated Land Use	Zone Description	Zone No. KBU	Local Name	Permitted Land Use(s)	Minimum Plot size (Ha)	Ground Coverage max (GC) %		Plot Ratio (PR)		Minimum Setbacks (meters) (Front: Side: Rear)	Minimum Frontage Road Width (meters)	Building Line (meters)	Building Height (No. of Floors)	Special Conditions/Notes
						S	U	S	U					
				Prohibited: Heavy industry										

## 16.4 Action Area Plans

Sections of the planning area with particular special concerns have been identified for purposes of detailed planning. This is because areas are experiencing intensive change and urban management challenges and as such, they require major development adjustments. The plans prepared for these areas are action oriented and known as local area plans. These areas include the CBD and other major Nodes within the planning including Kirigiti, Thindigua Riabai, Ndumberi, and Kanunga

**Figure 23: Location of the various nodes**



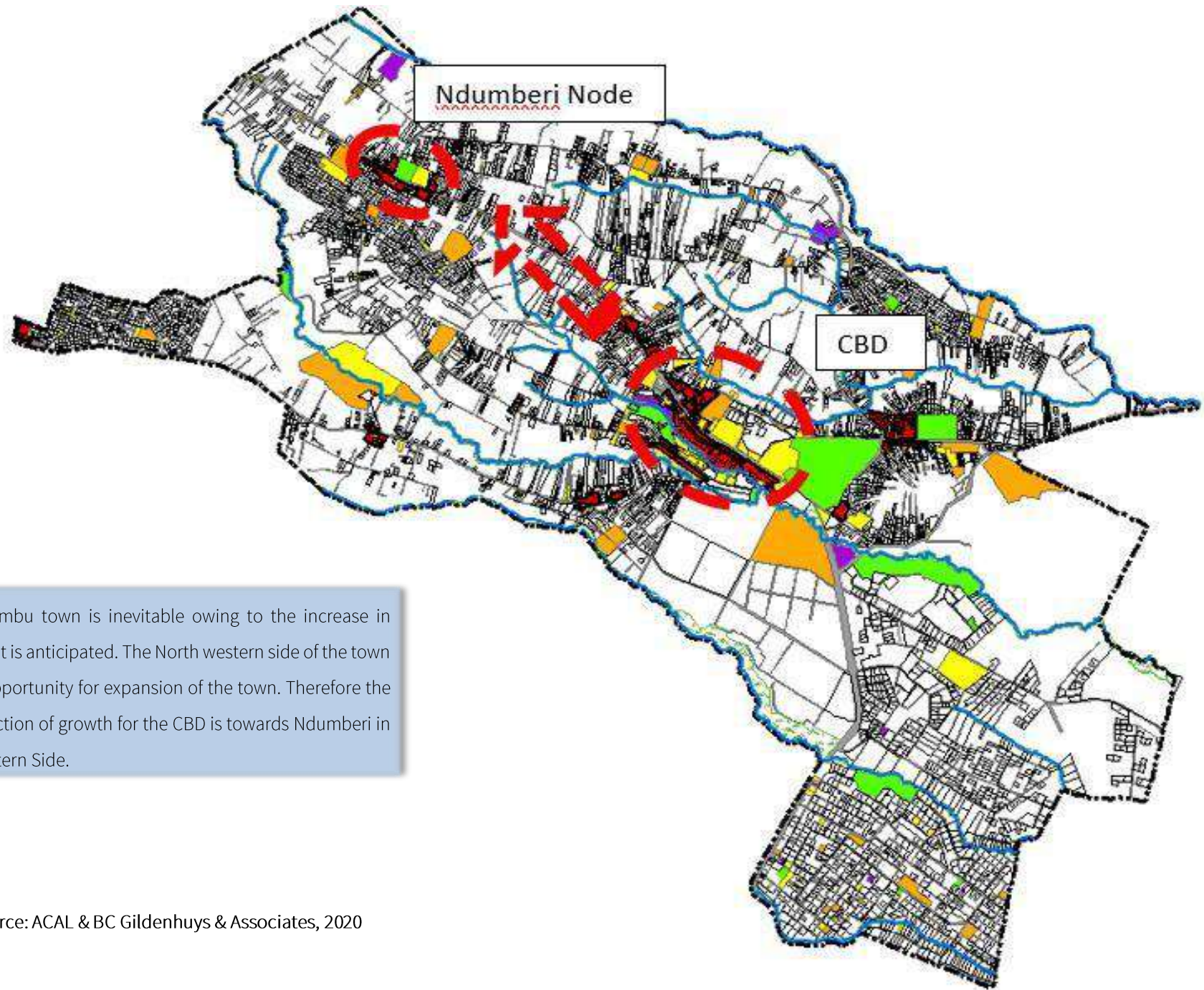
### 16.4.1 The CBD (Urban Core)

Given the pivotal role that the CBD plays in the current and future development of Kiambu, proposals have been made for its expansion. Furthermore, guidelines for detailed planning and optimal operationalization of area have been recommended. The local area plan for the CBD has taken into account the stakeholders' inputs and it's aimed at contributing to the broader vision of the planning area

#### 1. CBD Design Concept

##### The North West Growth Direction

The CBD remains a key area within the urban core majorly on the right side of Kiambu Ndumberi Road. As a primary node, it also has the potential to expand North West sides towards Ndumberi to accommodate future population growth and commercial activities. The expansion of the CBD is seen as a critical way forward complemented by other potential secondary node like Ndumberi, the extension of the commercial uses and through the creation of medium to high density residential development. The direction of growth or expansion is limited to the North West direction due to the existing buffering effect of the existing public purpose land uses on the North East /South West and Riara and Kiu Rivers



Growth of Kiambu town is inevitable owing to the increase in population that is anticipated. The North western side of the town presents an opportunity for expansion of the town. Therefore the proposed direction of growth for the CBD is towards Ndumberi in the North Western Side.

Source: ACAL & BC Gildenhuys & Associates, 2020

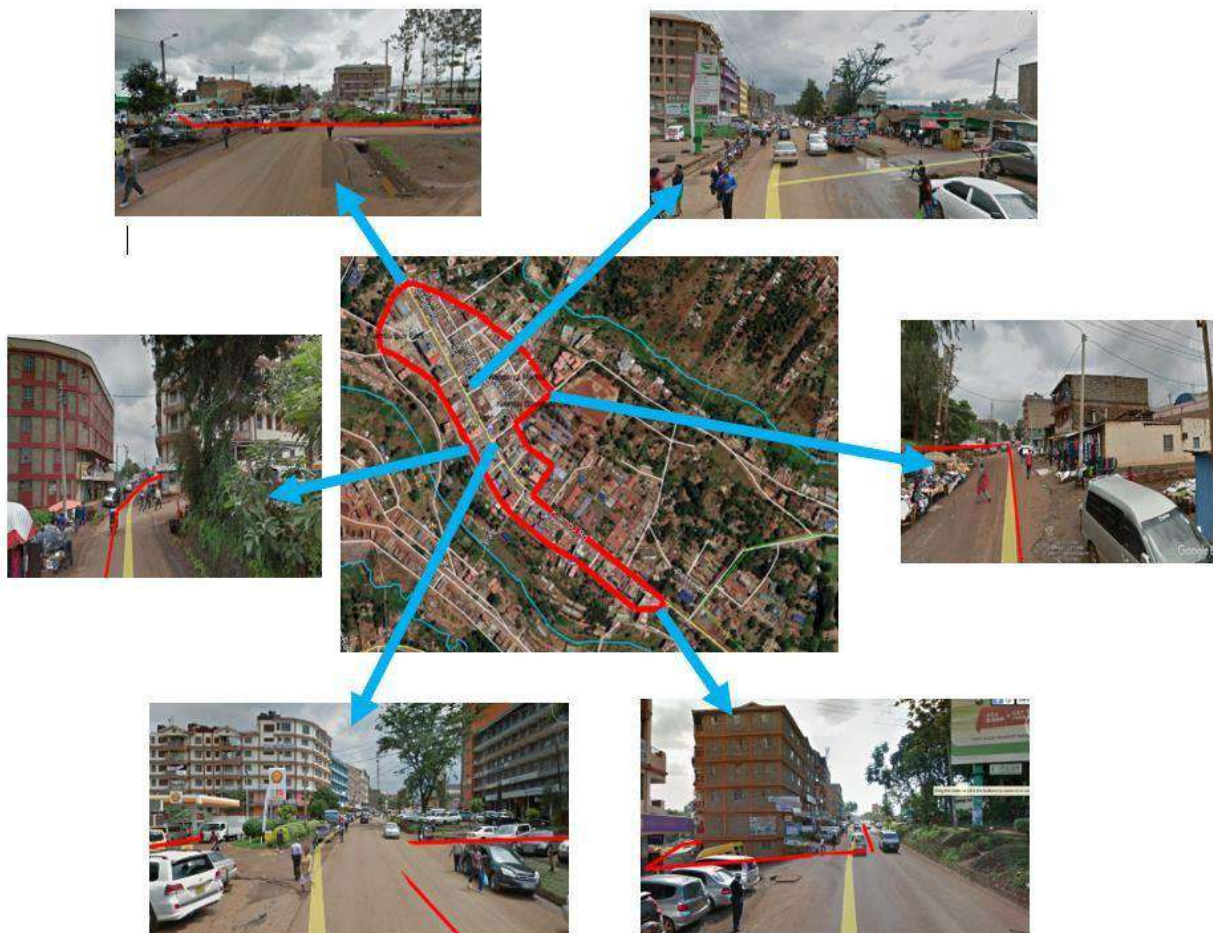
## CBD

It is proposed that the CBD be kept with the current boundaries but strengthen and redevelop the current area.

### Existing street character in the CBD

The figure below is a combination of photographic plates describing the character and scale of the predominant CBD built form. It indicates the current mobility system therein.

Figure 24: Existing Street Character



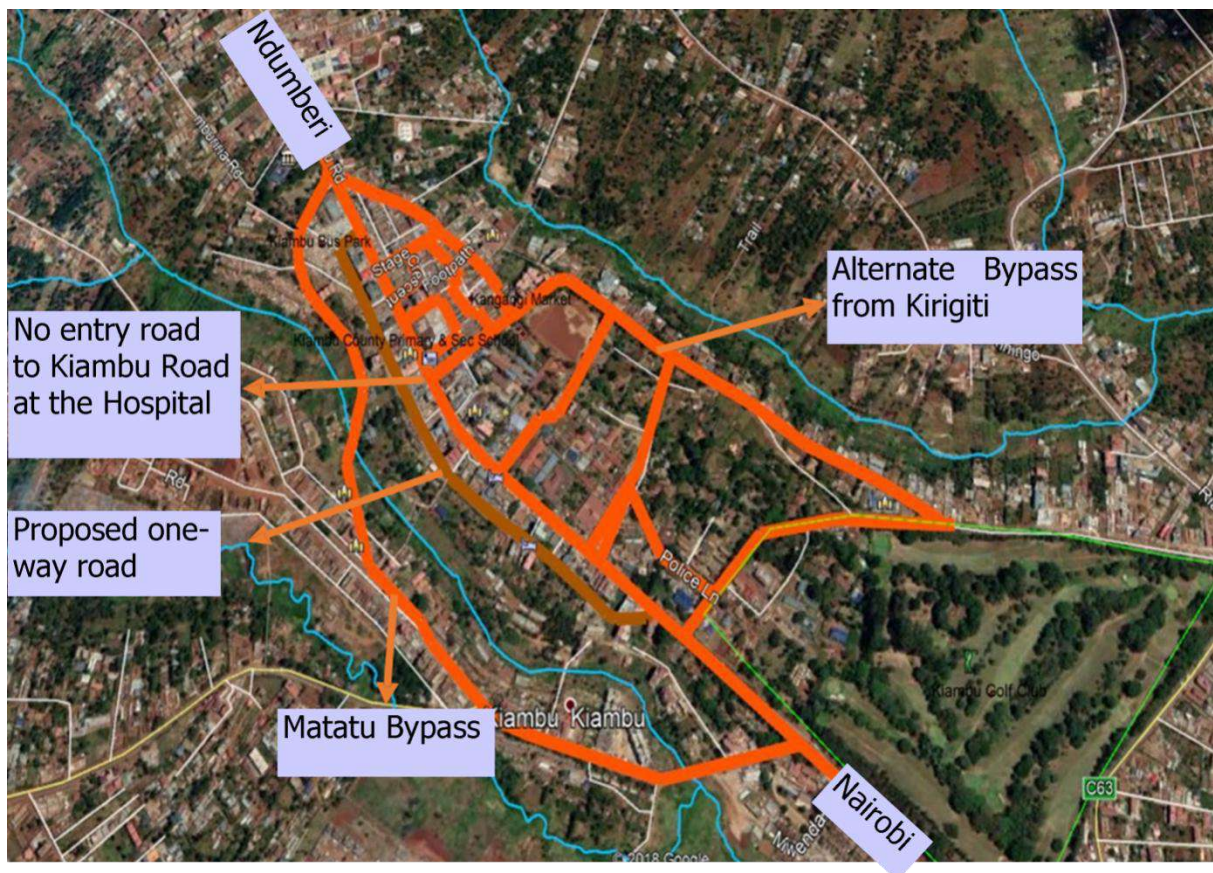
Source: Field Survey 2019

### **NMT Network and Public Transport**

The proposed public space network of pedestrian walking paths forms the backbone of the proposed non-motorized transport network within the CBD and its proposed extension. This proposed network improves walkability and the utilization of bicycles especially when the proposed dualling of Kiambu Road is actualized. This public space is proposed on both sides of the Kiambu road from Governor's office to the police station intersect.

The proposed public transport network is structured in a loop system which links with all the existing public transport and terminates strategically at the proposed terminus. A two-way bypass is proposed from the Kiambu Sub County offices through the old Kiambu town and to the Post office, this road will be used by all Public service vehicles. No access will be granted to the public service vehicles through the CBD. The Kiambu Road parallel starting at the family Bank building is proposed to be a one-way road to terminate at the edge of the current bus terminus. The link system proposes no entry into Kiambu Road from access roads, an alternative route abutting Kiambu township school to St. Peter and Paul Church is provided. The system also links with all the existing markets and activity areas throughout the CBD. This establishes an integrated public transport system; with convenient pedestrian access and transfer points at the primary hubs and station.

**Figure 25: Public Transport in Kiambu Town**



**Source: Field Survey 2019:**

### **Land Use Activities**

The CBD is structured into a series of local precincts, including the existing transportation networks and associated facilities and the market; there exists various public purpose uses including Kiambu Level 5 hospital, law court and police station. The various precincts are connected via the Kiambu Road activity spine. This activity spine extends into the North

western side to the proposed medium Density Residential area heading to Ndumberi Node. The activity spine has various connector roads to other land uses within the CBD and beyond. Beyond the extents of the CBD opposite the bus park there is exist the Governor’s Office serving as the major administrative centre in the planning areas.

### Public Environment

The proposed public space environment establishes walkable street network throughout the CBD, reinforcing the existing connections and improving accessibility. Other public spaces in form of existing and proposed parks and sport & recreation facilities are within a kilometre radius from the CBD. These include the Kiambu Golf Course and Kirigiti stadium and the proposed park in old Town. The figure below shows a sample design of a complete street with provision of public environment.

**Figure 26: Street Design**



### Other issues and challenges within CBD

- Lack of efficient storm drainage infrastructure
- Inadequate market space and facilities
  - o Poor solid waste management systems
  - o Incompatible building typologies
- Road reserve encroachment by commercial extensions
- Narrow roads
- Lack of designated boda boda sheds
- Lack of cycling paths and walking paths
- Lack of adequate parking spaces

## **Proposed interventions**

### Street Character -Kiambu Road and connecting roads

The Design Framework for the CBD provides a functional and environmental hierarchy of streets. Among these there are mixed use boulevards and mixed-use activity spines and what could be classified as activity/high streets. The intended amenities and character for these movement routes should be guided by the following principles.

#### **Accessibility and Movement**

- Street networks should be permeable to minimize travel distances, provide a choice of routes, maximize access to available facilities and services and assist people to find their way conveniently and easily.
- The design of the street should consider multiple modes of movement (motorized and non-motorized)
- Separate cycle paths should be indicated with street markings or by clearly displayed and well-designed signage
- Pedestrian and bicycle routes should be direct, continuous and well lit

#### **Intersections**

- Control vehicle speeds by introducing appropriate sidewalks designs at intersections to narrow the carriageway with street markings and signage
- Use differently textured materials to mark crossings and for traffic calming

#### **Activity Concentration**

- Retail
- Office
- Entertainment
- Work
- Service
- Commercial
- Industrial
- Community facilities
- Residential development

#### **Topography, views and vistas**

- Design the street in response to topographical features
- Protect and enhance views and vistas along particular movement routes

#### **Edge Condition and Building Frontage**

- Promote ground floor activities open to street edges
- Building corners facing pedestrian paths to be accentuated
- Urban Perimeter block typologies preserved

- Reduction of pavilion architectural typologies
- Dense built form with building heights between 4-5 storeys

### **Street and Public Realm Functionality**

- Create manageable and functional public space
- Provide a balance between hard and soft space
- Encourage a well-defined interface between public and private space
- Introduce a network of public spaces along the street
- Provide sustainable and functional Street Furniture and lighting design
- Reinforce local identity by accommodating activity patterns that have evolved organically
- Encourage the development of landmark buildings in strategic locations to reinforce a sense of place
- Public Realm to serve community needs
- Define setbacks and build to line principle along the entirety of specific streets, to maintain a harmonious edge condition
  - o Introduce landscaping and tree planting to reinforce the character of streets

Currently Kiambu Road section of the CBD is edged by mixed use buildings with most of them lacking sidewalk overhangs that create a safe environment for pedestrian movement. Similarly, motorised and non-motorised forms of movement which support the functionality of the street are unplanned.

In order to achieve this section of the road can be redesigned. The following design considerations are proposed

- Dedicated lanes for motorized and non-motorized movement
- Tree lining creating a sense of comfort for pedestrians
- Landscaped edge separating pedestrian movement from bicycle movement
- Sidewalk cafes
- Textured Side walks
- Clearly defined ground floor retail frontage

## Figure 27: Street Scape

### Markets/ Transport Termini



The existing Matatu terminus is not planned. It thus requires detailed design and restructuring to upgrade the general environment and provide a more efficient, safe and convenient facility for commuters, boda boda and Matatu operators. In order to do this, there is need for a further detailed study. The principles below are critical to consider for further and future improvement of these facilities:

#### Access

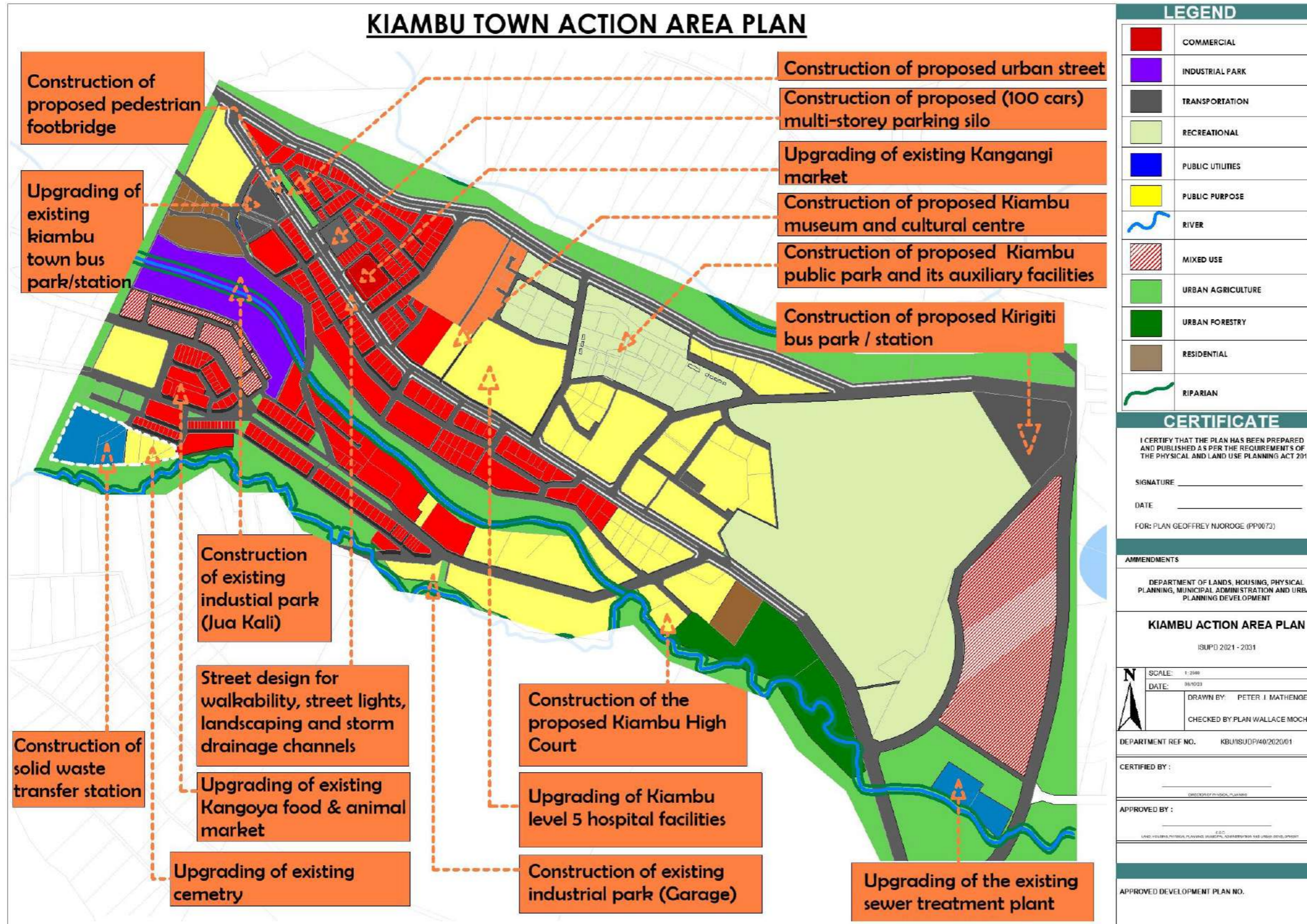
- Provide a seamless connection between the public transport facilities and spaces for trading
- Provide legible and well managed pedestrian routes connecting all public facilities
- Accommodate main vehicular movement access points from the access road and not from the mobility spine
- Differentiate pedestrian and vehicular access points
- Encourage the facilitation of easy circulation of vehicles and pedestrians

#### Land use

- Maximize the opportunities for commercial and retail uses framing the transport facilities
- Accommodate public spaces connecting the different sub-zones within the area

- Encourage the introduction of a range of robust public spaces accommodating other uses and activities such as small events and local entertainment when markets are not in operation.
- Incorporate public facilities such as street benches, cafes etc. that can support the daily requirements of commuters and others.
- Locate a museum at the municipal office space for the purpose of local tourism

Map 41: Kiambu Action Area Plan



Source: ACAL & BC Gildenhuys & Associates, 2020

## 16.4.2 Kirigiti

### Existing Situation

Kirigiti is located on the North Eastern part of Kiambu town within Riabai Ward. The development node is at the plus junction C 65 –Ruiru Kamiti Road and C63-Riabai Road as shown in the Figure below. The node is a predominantly a high-density residential zone. Other land uses within the zone include recreational facilities comprising, Kirigiti Stadium and Kiambu Golf Course. Kiambu High school is located on the edges of the node being one of the major educational facilities in the Node.



**Figure 28: Existing situation in Kirigiti**

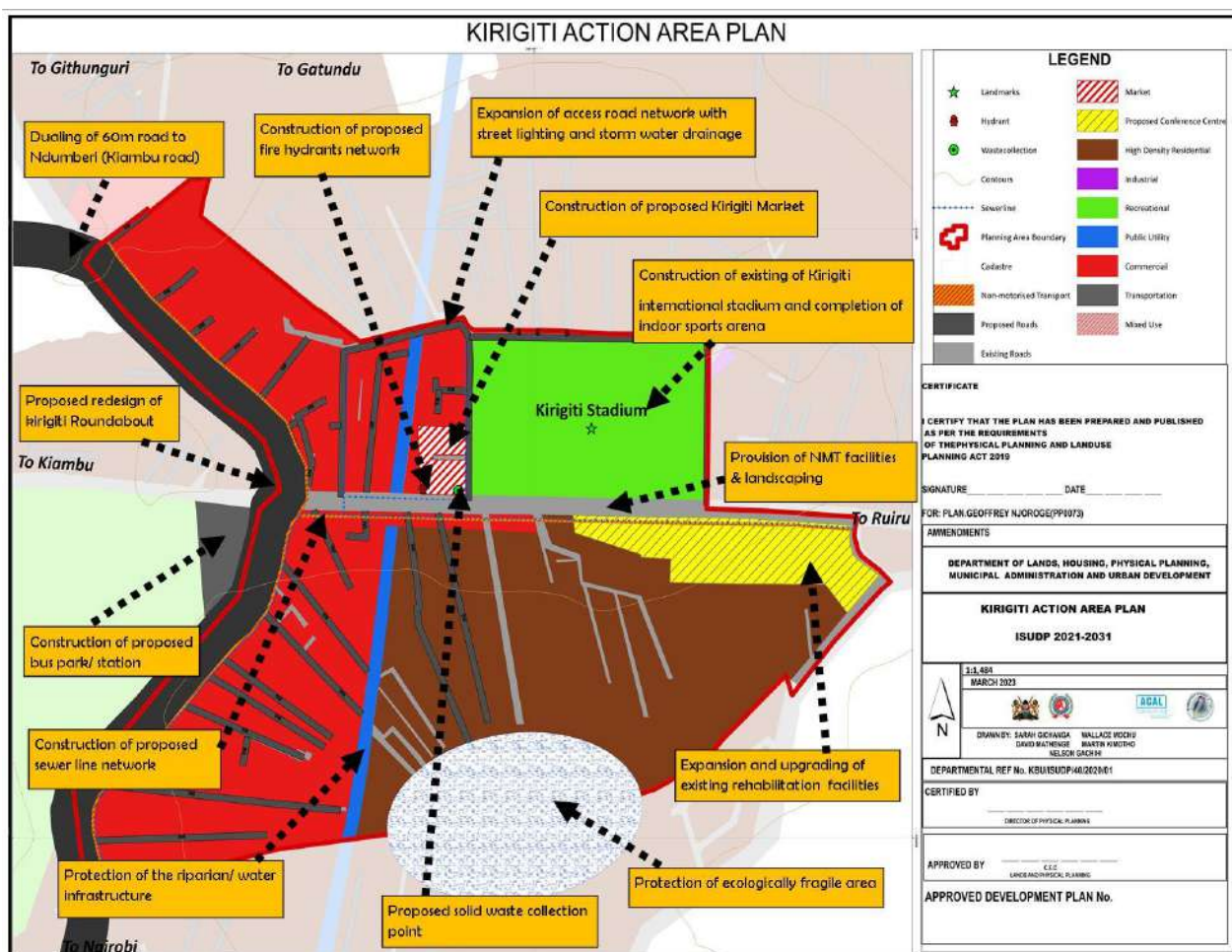
**Source: ACAL & BC Gildenhuys & Associates, 2019**

### Challenges

1. The area despite having the advantage of proximity to Kiambu CBD is devoid of essential services to support the high-density residential development. These includes sewerage systems, storm water drainage, Lack of NMT provision and street lighting. There exist different incompatible typologies housing thus compromising the aesthetic character of the node
2. The existing Kirigiti stadium is in deplorable condition and rainy season renders the facility unusable. The stadium also lacks supporting infrastructure e.g. terraces.
3. The traffic movement at the roundabout is hindered by the extension of business structures on to the road reserve thus slowing the traffic.

4. Lack of a designated Matatu terminus motivates picking and dropping passengers on the available space on the road reserves. This is particular to the vehicles plying Ruiru and Riabai Routes.
5. The access roads within the residential areas are very narrow making it impossible for a passage of vehicles from the different directions.
6. The rising needs for residential demands have led to reduction of the rich agricultural lands. This has led to fragmentation of land through uneconomical subdivisions.
7. Construction of residential units onto the riparian reserves poses great challenges on environmental management.

**Figure 29: Kirigiti Action Area Plan**



Source: ACAL & BC Gildenhuys & Associates, 2020

### Objectives

1. Create a compact and mixed high-density residential node to provide quality and affordable housing
2. Provide orderly development to improve the character of the area

3. To provide a framework for provision of physical infrastructure and services such as sewerage and storm water systems and other services
4. To provide guidelines and standards for housing development to improve quality of Housing including densification plans.
5. To plan for a suitable road and street networks for proper traffic management while providing for transportation supporting infrastructure including Matatu terminus

#### Measures

1. Develop and implement zoning regulations to guide development in the node taking care of densification, land subdivisions and environmental management issues
2. Providing access to plots that have none.
3. Widening of narrow roads within the residential area to allow for ease of vehicular movement
4. Upgrading of the Kirigiti Stadium and provide necessary supporting infrastructure
5. Provision of a bus park to accommodate distribution of traffic from Kirigiti To Kiambu, Ruiru and Riabai.
6. Provision of NMT and public spaces within the action planning area
7. Construct and extend sewage trunk line to the node and provide solid waste management system
8. Develop a market on the land provided with ablution facilities
9. For revenue enhancement and conference tourism, locate a conferencing facility with accommodation at the east edge of the area.

### 16.4.3 Thindigua

#### Existing Situation

Thindigua is located in the southern side of Kiambu town. Formerly a coffee estate, Thindigua is now a rapidly growing residential area neighbouring Fourways Junction Estate to the North, Windsor Golf and Country Club to the West and, Kiambu Township and Kirigiti to the south. Its main function is residential which is characterized by medium and low-density residential settlements on approximately half an acre plots. It acts as a dormitory centre for both Nairobi and Kiambu towns as well as other neighbouring commercial areas.

#### **Map 42: Existing situation in Thindigua**

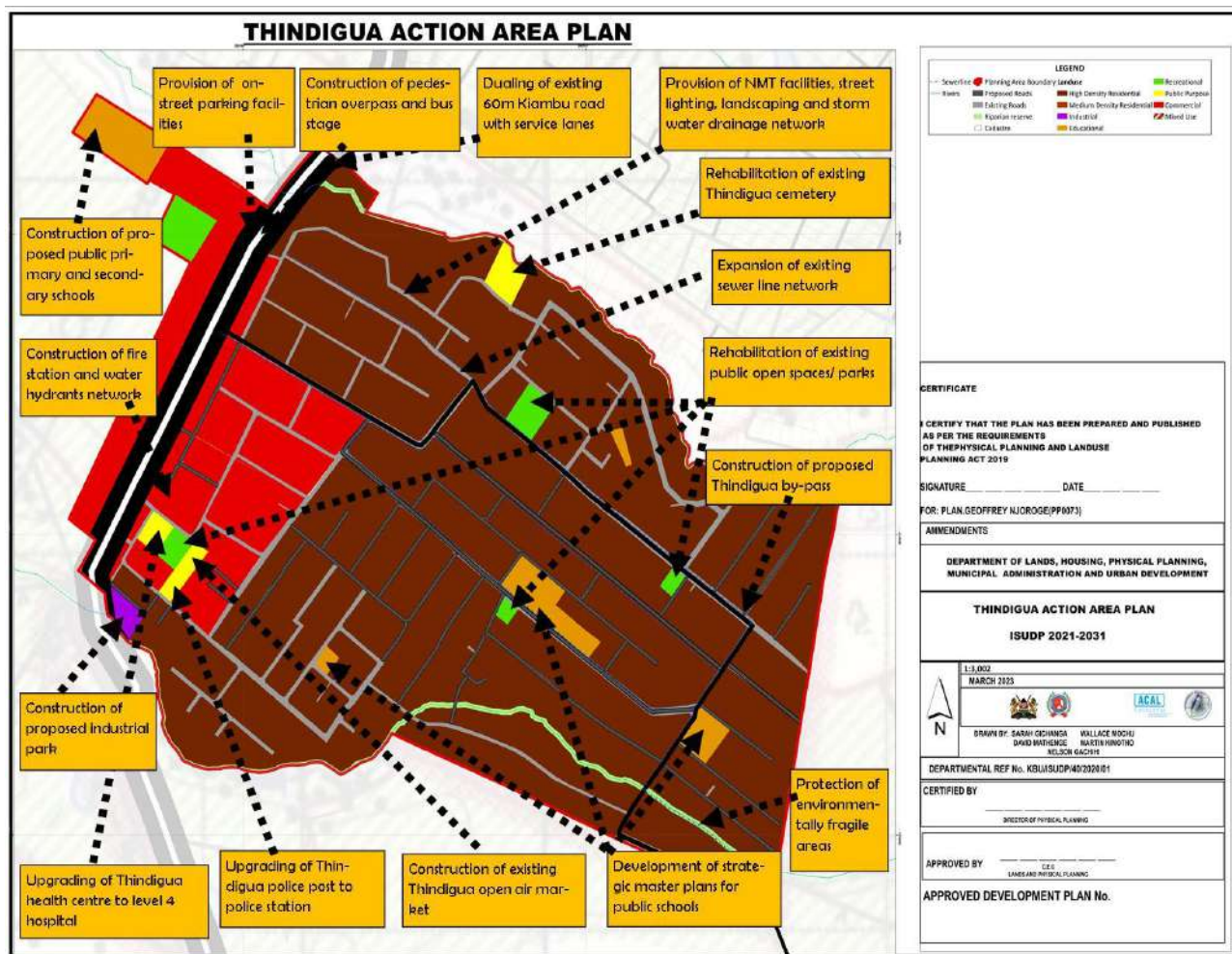


**Source: ACAL & BC Gildenhuys & Associates, 2019**

#### Challenges

1. The access roads within the residential areas are in poor state.
2. Lack of a designated Matatu terminus motivates picking and dropping passengers on the available space on the road reserves.
3. The area also presents serious environmental problems such as liquid and solid waste which pose a health hazard to the residents living in the area.
4. Lack of a designated markets promotes thriving of roadside stalls at the road reserve and car boot selling
5. The area despite having the advantage of proximity to Kiambu town is devoid of essential public social infrastructure to support residential development. These social infrastructures include health institutions and recreational spaces. The once existing at the moment are all private

**Figure 30: Thindigua Action Areas**



**Source: ACAL & BC Gildenhuys & Associates, 2020**

Objectives

1. To plan for a suitable road and street networks for proper traffic management while providing for transportation supporting infrastructure including provision of designated bus stages
2. To plan for a construction of a modern market
3. To provide a framework for provision of physical and social infrastructure such as sewerage and storm water systems, public hospitals, recreational centers and other services.

Measures

4. Road rehabilitation of the existing road, tarmacking and widening of narrow roads within the residential area to allow for ease of vehicular movement
5. Construct and extend sewage trunk line to the node and provide solid and liquid waste management systems to control storm water



#### 16.4.4 Ndumberi

##### Existing Situation

Ndumberi node is located in Ndumberi ward, at Kiambu-Githunguri Road and Kiambu-Limuru Road junction. It is located around 3 Km from Kiambu Town, 16 Km from Githunguri and 25 Km from Limuru town. Ndumberi is famous for the Golf Club and Sports Ground, popularly known as St. Andrews, which has a distinction of being a football field, as well as a golf course.

The main functions for this node include agriculture where residents are mainly small-scale farmers for both crop and dairy farming. Ndumberi also host large scale industries which include coffee factories, milk processing, maize flour millers and dairy meal industries

**Figure 31: Existing situation in Ndumberi**



**Source: ACAL & BC Gildenhuys & Associates, 2019**

##### Challenges

1. The traffic movement at the Ndumberi-Githunguri road Junction is hindered by the extension of business structures on to the road reserve thus slowing the traffic.
2. Lack of a designated parking and Matatu terminus motivates picking and dropping passengers on the available space on the road reserves.
3. Majority of the access roads in Ndumberi are in poor condition. Most of them have potholes and they lack good drainage systems to drain storm water.
4. Despite this node having Gatunyu open air market, it lacks good market facilities.
5. The area lacks proper liquid and solid waste management facilities thus posing a health hazard to the residents living in the area.

**Figure 32: Ndumberi Action Area**



**Source: ACAL & BC Gildenhuys & Associates, 2020**

### Objectives

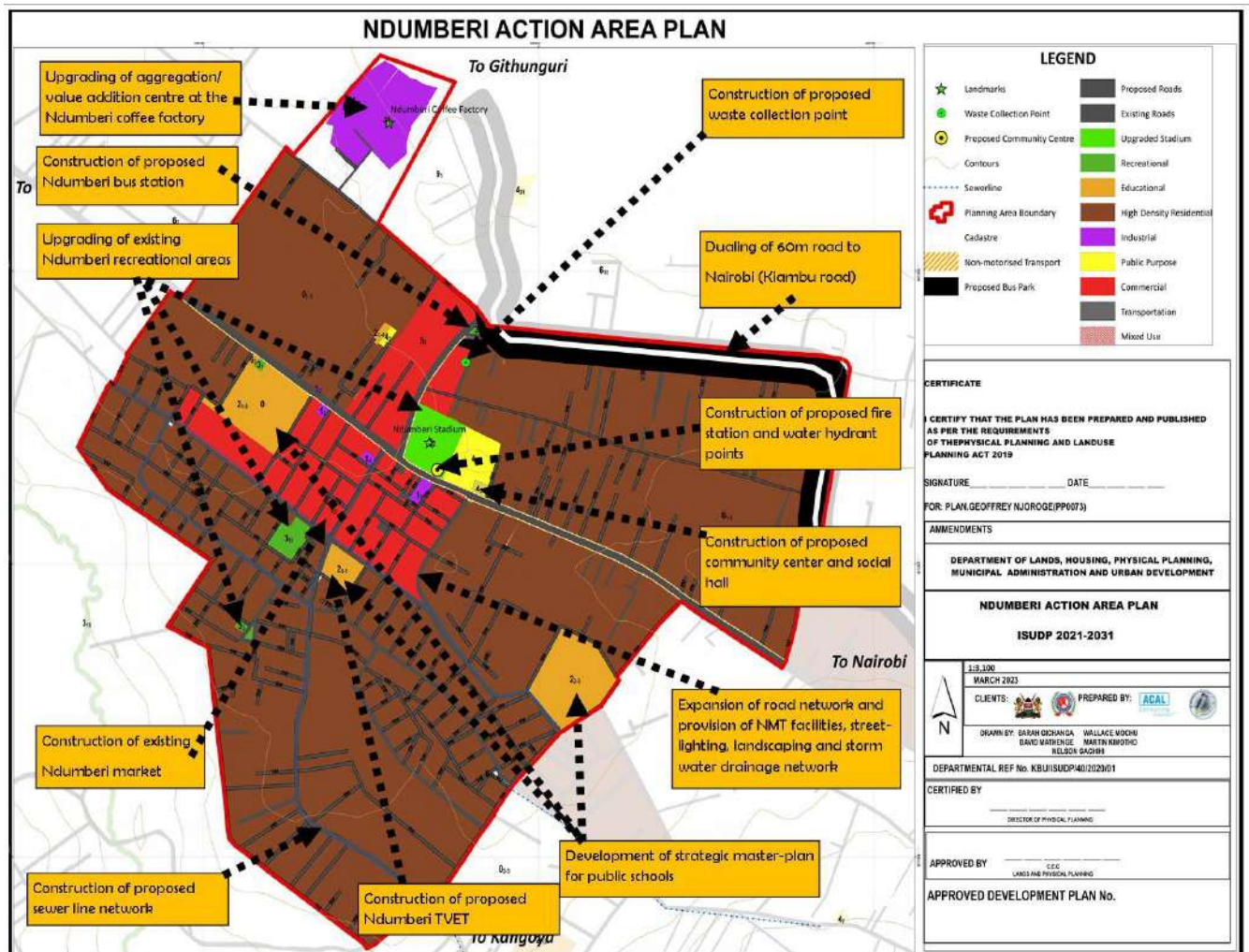
1. To plan for upgrading of suitable alternative road to access Ndumberi from Riabai and proper traffic management while providing for transportation supporting infrastructure including Matatu terminus
2. To plan for rehabilitation of the existing road, tarmacking and Widening of narrow roads within the residential area to allow for ease of vehicular movement
3. To set measure to improve the existing market facilities and to provide the missing market facilities
4. To provide a framework for provision of liquid and solid waste management infrastructure such as sewerage and storm water systems

### Measures

1. Upgrading alternative route to access Ndumberi from Riabai
2. Provision of parking and bus park spaces to accommodate distribution of traffic from and to Ndumberi

3. Rehabilitation of the existing road, tarmacking and widening of narrow roads within the residential area to allow for ease of vehicular movement
4. Improving and provision of the market facilities
5. Provision of framework for provision of solid and liquid waste management infrastructure

**Map 44: Ndumberi Action Area Plan**



Source: ACAL & BC Gildenhuys & Associates, 2019

### 16.4.5 Kanunga

#### Existing Situation

Kanunga is located at 1860m altitude approximately 8 Km to the North East of Kiambu Town. Formerly an agricultural area, Kanunga area is currently dominantly residential with an average plot size of approximately at 0.1 Ha. The node has a chief's office and police station which offer administrative services. The area also has social facilities which include primary schools, Kanunga self-help group water project, Kanunga open air market area and various churches. They access other services from Kiambu and Ndumberi towns.

Figure 33: Existing situation in Kanunga



#### Challenges

1. Despite Kanunga having a designated plot/space for a market it lacks proper market facilities leading to construction of temporary market structures on road reserves
2. Majority of the minor roads in this node are small and unpaved thus making them impassable during rainy season
3. The area lacks drainage channels for storm water and NMTs along some roads
4. The area lacks proper liquid and solid waste management facilities thus posing a health hazard to the residents living in the area.

#### Objectives

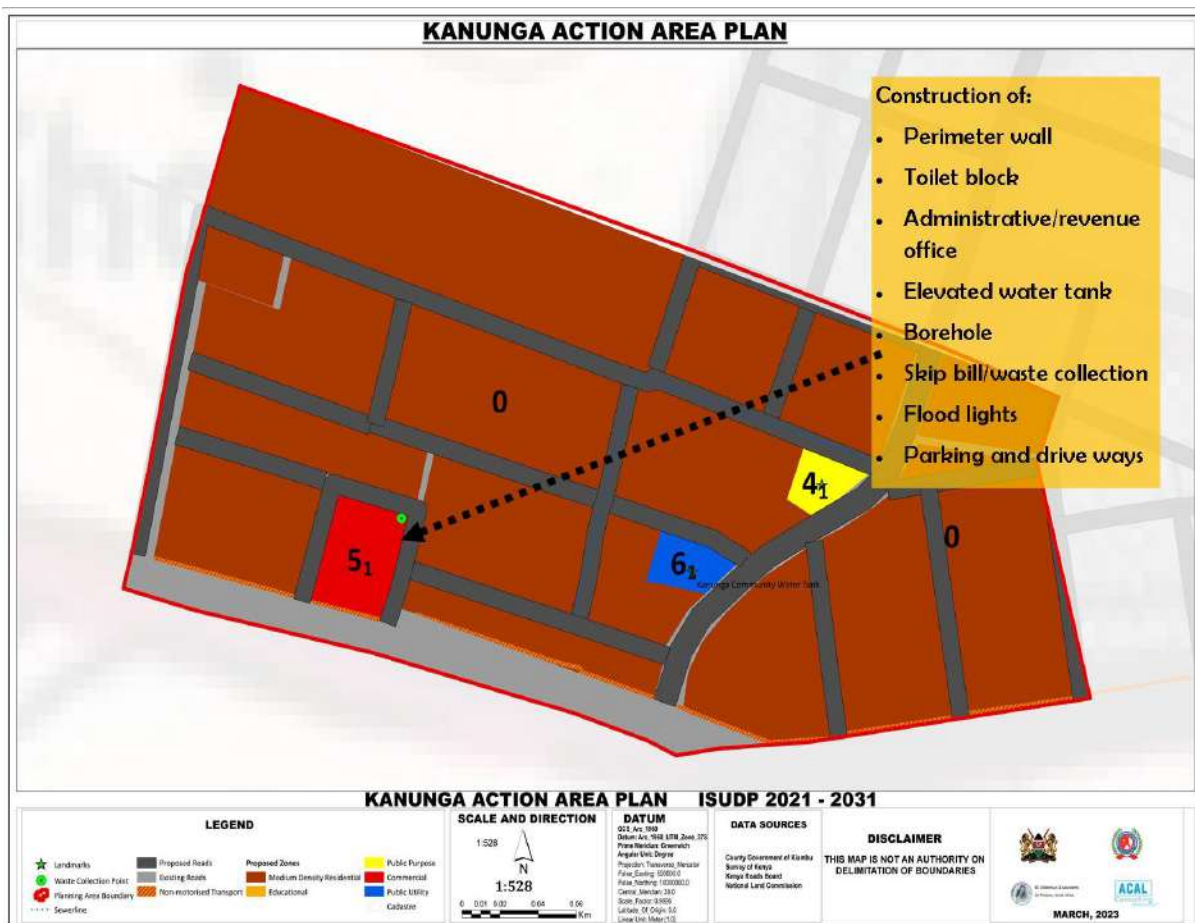
1. To set measure to provide market facilities
2. To rehabilitate the existing road, paving of the unpaved roads and widening of narrow roads within the residential area to allow for ease of vehicular movement

3. To provide NMT along the major roads within the action planning area
4. To provide a framework for provision of physical infrastructure and services such as sewerage and storm water systems and other services
5. To provide a minimum of 9m wide accesses

**Measures**

1. Provision of the market facilities
2. Rehabilitation of the existing road, tarmacking and widening of narrow roads within the residential area to allow for ease of vehicular movement
3. Widening of all 9m roads
4. Provision of NMT and public spaces within the action planning area
5. Provision of framework for provision of solid and liquid waste management infrastructure

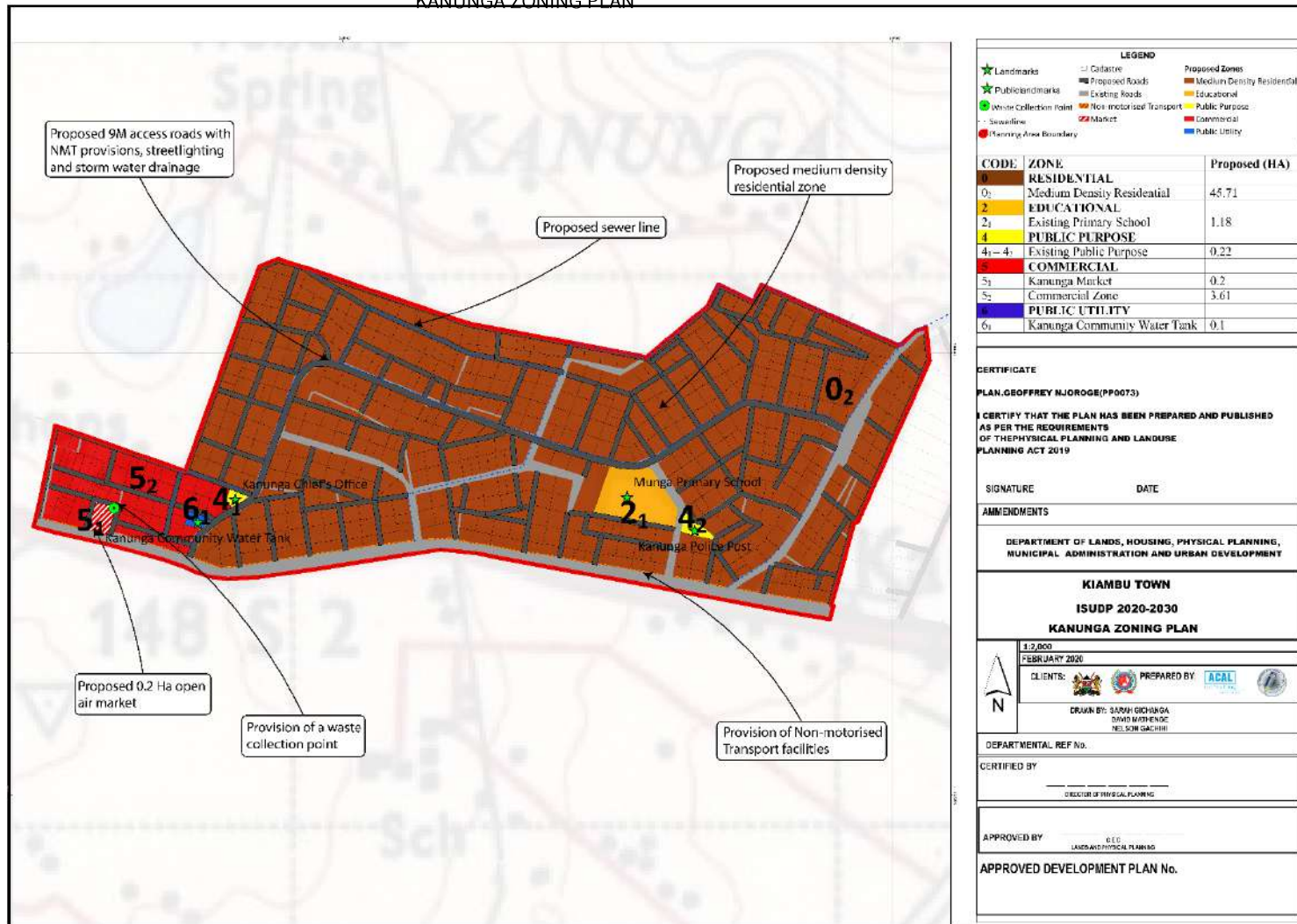
Map 45: Kanunga Action Areas



Source: ACAL & BC Gildenhuys & Associates, 2020

Map 46: Kanunga Zoning Plan

KANUNGA ZONING PLAN



Source: ACAL & BC Gildenhuys & Associates, 2020

### 16.4.6 Riabai

#### Existing Situation

Riabai lies at an altitude of 1700m, 1km North of Kirigiti area and to the North East of Kiambu town market. Riabai is predominantly a residential area with plot sizes majorly at 0.1Ha. Some of the main Public facilities found in Riabai include Riabai dispensary, a chief's office, Riabai playing field, Riabai-Kihingo water project, Riabai Open air Market space.

**Figure 34: Existing situation in Riabai**



**Source: ACAL & BC Gildenhuys & Associates, 201**

#### Challenges

1. The area lacks market facilities despite there being a plot allocated for market.
2. The area lacks proper liquid and solid waste management facilities thus posing a health hazard to the residents living in the area.
3. Lack of a designated parking and Matatu terminus motivates picking and dropping passengers on the available space on the road reserves.
4. The node lacks drainage channels for storm water

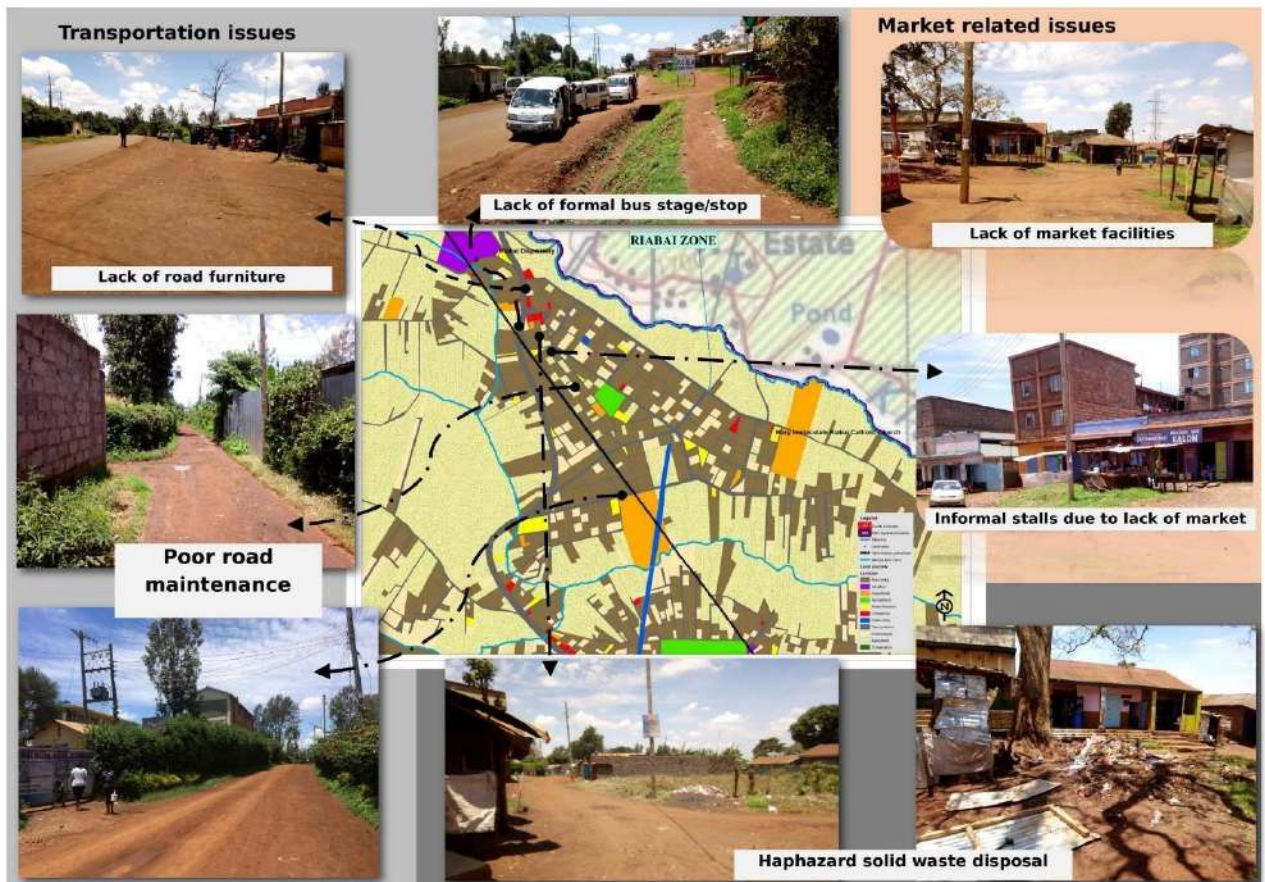
#### Objectives

1. To set measure to provide market facilities
2. To provide a framework for provision of physical infrastructure and services such as sewerage and storm water systems and other services
3. To plan for proper traffic management while providing for transportation supporting infrastructure including bus parks

## Measures

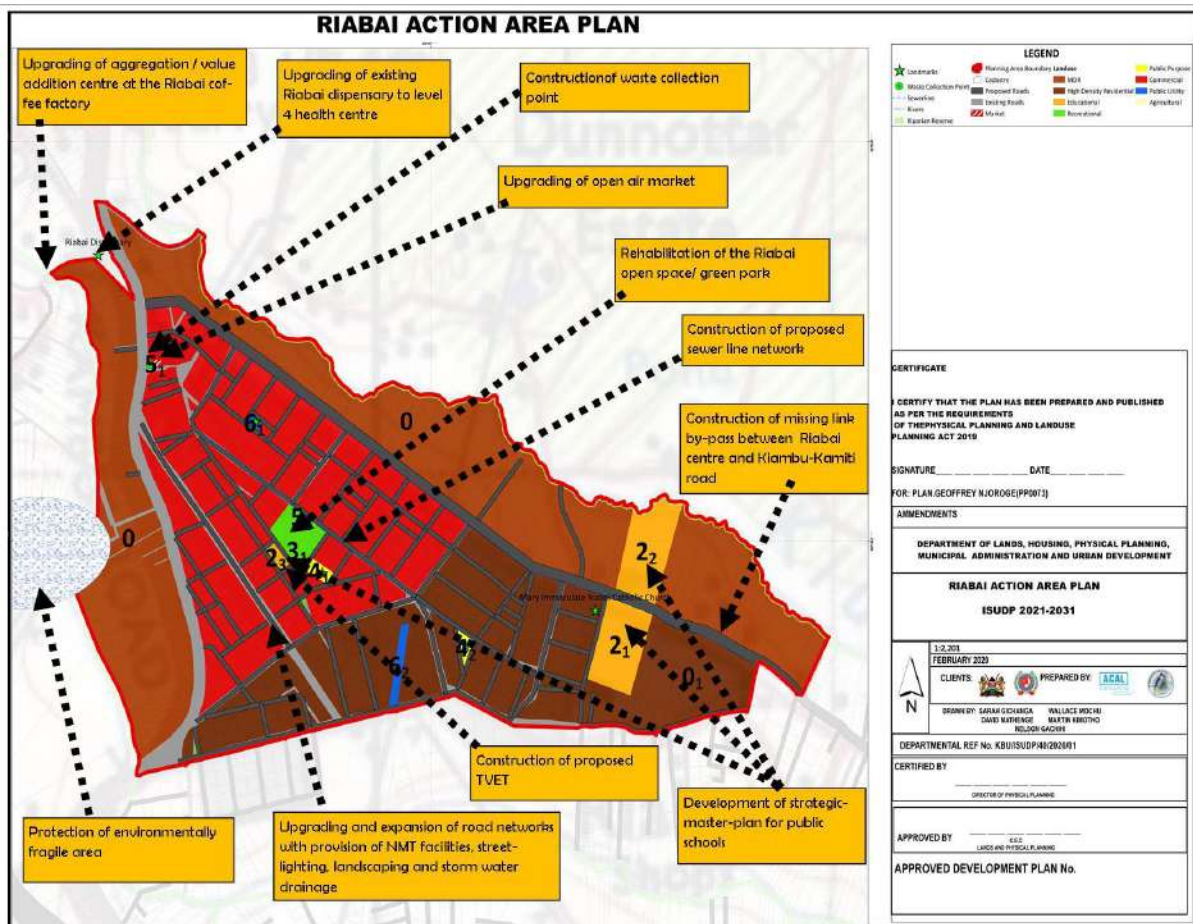
1. Provision of the market facilities
2. Provision of framework for provision of solid and liquid waste management infrastructure
3. Provision of bus stop spaces to accommodate distribution of traffic to and from Riabai.

**Figure 35: Riabai Action Areas**



Source: ACAL & BC Gildenhuys & Associates, 2020

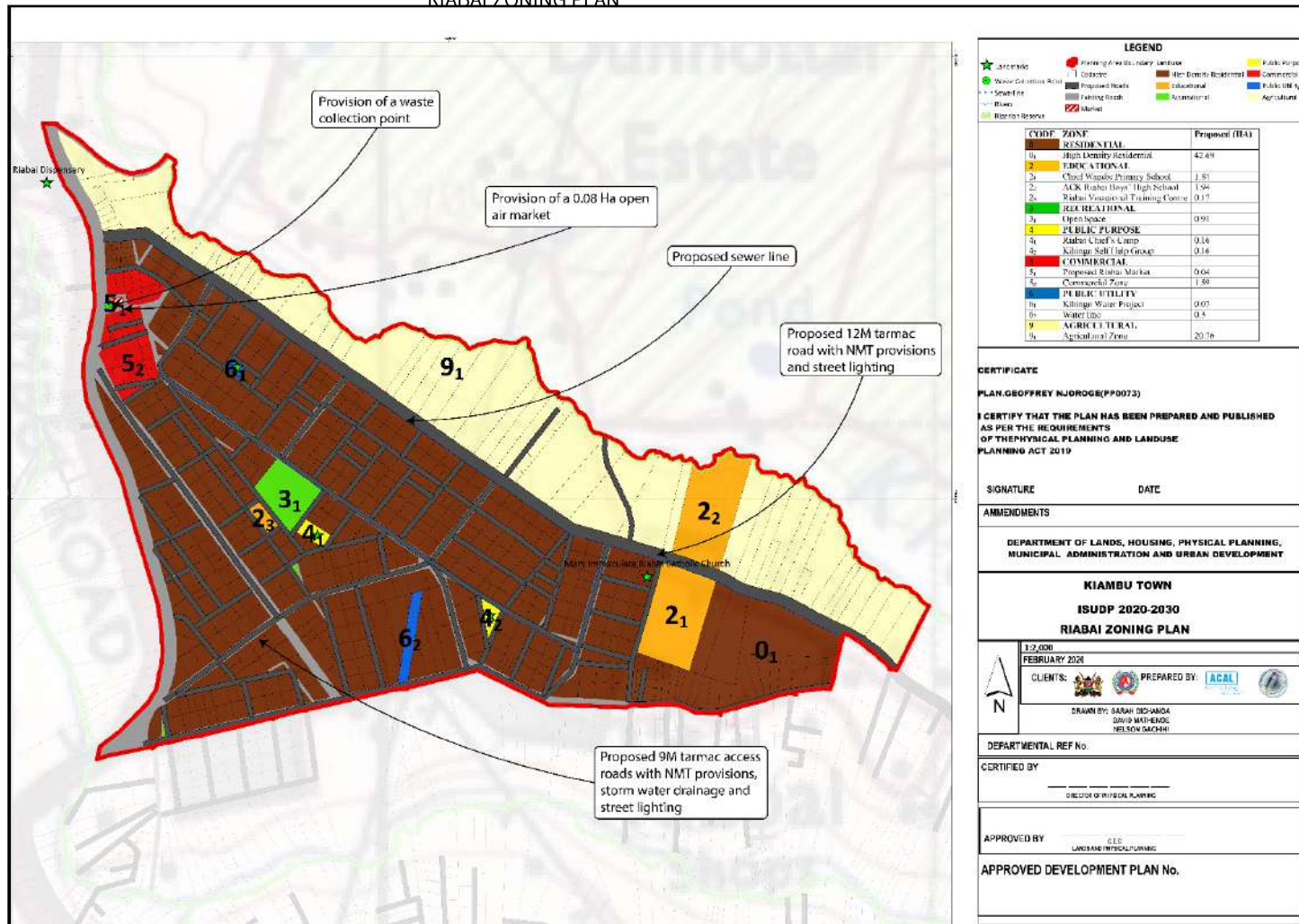
# Map 47: Riabai Action Area Plan



Source: ACAL & BC Gildenhuys & Associates, 2020

# Map 48: Riabai Zoning Plan

## RIABAI ZONING PLAN



Source: ACAL & BC Gildenhuys & Associates, 2019

## 17 PLAN IMPLEMENTATION, MONITORING AND EVALUATION

### 17.1 Overview

The integrity and impact of the ISUDP will be determined by consistent decision-making supporting the agreed long-term urban structure and form (what growth and where?) and managed in terms of prioritizing development based on the spatial transformation agenda and approach (when and how?). The most important test of its success is the planning system's willingness to implement policies and plans. To this purpose, this chapter aims to carry out a road map for successful implementation monitoring and evaluation of proposals.

### 17.2 Plan Implementation

The implementation of the plan should be done by following a plan implementation matrix, with the funding budgeted for in the Capital Investment Plan, and monitored to ensure that deliverables are being achieved with the monitoring and evaluation matrix. Evaluations should be carried out to also ensure that indicators that will help the County Government to achieve their visions are being attained. And in order to restructure the programme activities, it will be necessary to carry out a review after 5 years. The programme's progress should, at reasonable intervals, be reported to the stakeholders.

Table 28: Plan Implementation Matrix

SECTOR	OBJECTIVE	STRATEGY	PROJECT/PROGRAMME	ACTORS	OUTCOME	TIMEFRAME
ROADS, TRANSPORT, PUBLIC WORKS & UTILITIES	Provide a basis for transport infrastructure and service provision	Infrastructure & services	Tarmac the proposed bypasses to bitumen standard: Thindigua-Windsor roundabout; Ngegu-Edenville-Kiambu road; Kanunga-Kangoya-Ndumberi; Ndumberi-Gichocho-Riabai; Riabai-Gitamaiyu; KIST-Kiambu High-Kirigiti bypass	<ul style="list-style-type: none"> <li>• KENHA</li> <li>• KURA</li> <li>• KERRA</li> <li>• County Government of Kiambu (CGK)</li> <li>• NLC</li> </ul>	Ease of movement/connection Reduced traffic jams Improved road safety	3 years
			Dual Kiambu road from Four-Ways junction-Thindigua-Kirigiti-Riabai-Gichocho-Ndumberi (10kms)	<ul style="list-style-type: none"> <li>• KURA</li> <li>• CGK</li> <li>• NLC</li> </ul>	Improved connectivity and access Reduced traffic jams Improved road safety Increased business activities	3 years
			Construct & widen proposed/missing link roads & improving secondary collector roads: Tinganga-Riabai; Gitamaiyu-Kiu-Kenda-Kiamumbi; Kahawa Law courts-Mugumo-Gitamaiyu/Kiu River; Turitu-Kasarini; Muringa View-Migaa Golf Estate; Kabazi estate-Migaa Golf Estate; KIST-Kasarini; Wamickey-Muhoga-Nyala Estate; Matropivale-Kigutha estate	<ul style="list-style-type: none"> <li>• KENHA</li> <li>• KURA</li> <li>• KERRA</li> <li>• County Government of Kiambu (CGK)</li> <li>• NLC</li> </ul>	Improved connectivity and access Increased business activity Enhanced settlements	3 years
			Upgrade estate feeder roads to all-weather status within the planning area: Kiamumbi; Kirigiti; Thindigua; Tinganga; Ndumberi; Riabai; Kiambu CBD; Kasarini	<ul style="list-style-type: none"> <li>• KURA</li> <li>• KERRA</li> <li>• CGK</li> <li>• NLC</li> </ul>	Ease of movement of people & goods Reduce environmental pollution	4 years
			Installation of street lights in all towns and estates to improve safety & security: Thindigua; Kiamumbi; Kirigiti; Tinganga; Ndumberi; Riabai; Kiambu CBD	<ul style="list-style-type: none"> <li>• National Government</li> <li>• CGK</li> </ul>	Enhance safety & security Promote business development & growth Improved aesthetics	3 years
			Acquire, construct & equip proposed Kirigiti Bus Park; proposed Thindigua terminus; Tinganga bus stop; Kamiti Corner terminus; KIST bus stop; Riabai terminus; Ndumberi terminus	<ul style="list-style-type: none"> <li>• National Government</li> <li>• NLC</li> <li>• CGK</li> </ul>	Improve public transport Reduce congestion & traffic jam Enhance safety & order	3 years
			Provision of Non-Motorised-Transport (NMT) facilities along the major corridors and in the urban cores. Dedicated paved sidewalks & cycling paths in the major urban nodes including footbridges in Kirigiti; KIST; Kiambu CBD; Kiamumbi; Thindigua; Tinganga; Riabai; Ndumberi	<ul style="list-style-type: none"> <li>• National Government</li> <li>• CGK</li> <li>• KURA</li> <li>• KENHA</li> <li>• NLC</li> <li>• Donor partners</li> </ul>	Promote other modes of transport for inclusivity Enhance connectivity Promote healthier lifestyles Promote live-able towns	4 years

			Construction & opening of stormwater drainage/channels along all major feeder roads and in the estates to control flooding.	<ul style="list-style-type: none"> <li>National Government</li> <li>CGK</li> <li>NLC</li> <li>Donor Agencies</li> </ul>	Control flooding Remove environmental pollution Promote clean roads for access	3 years
			Construction of fire stations in Kiamumbi; Tinganga; Kirigiti; Thindigua	<ul style="list-style-type: none"> <li>National Government</li> <li>CGK</li> </ul>	Reduce fire incidents Enhance localized management of fires Promote business development	6 years
			Paving of urban streets/landscaping to create greenery; stormwater drains; construct parking spaces; recreational spaces in order to improve on aesthetics in Thindigua; Kiamumbi; Kirigiti; Kiambu CBD; Tinganga; Ndumberi; Kamiti Corner	<ul style="list-style-type: none"> <li>National Government</li> <li>CGK</li> <li>Donor Agencies</li> <li>NLC</li> </ul>	Improve town aesthetics Enhance revenue growth from parking slots/bays Control flooding & stormwater management	4 years
			Construction of 4 multi-storey parking silo in Kiambu CBD; Thindigua; Kiamumbi; Kirigiti	<ul style="list-style-type: none"> <li>National Government</li> <li>CGK</li> <li>NLC</li> <li>Donor Agencies</li> <li>PPPs</li> </ul>	Reduce congestion in the CBD Improve revenue base Enhance the aesthetics	4 years
<b>LANDS, HOUSING, PHYSICAL PLANNING &amp; MUNICIPAL ADMINISTRATION &amp; URBAN DEVELOPMENT</b>		Human settlements Strategy Housing Strategy Economic & social infrastructure	Develop & integrate & harmonize Kiambu County Spatial Plan (CSP) to the Kiambu Integrated Urban Development Plan (ISUDP)	<ul style="list-style-type: none"> <li>Ministry of Lands</li> <li>CGK</li> <li>NLC</li> <li>FAO</li> <li>NGOs</li> </ul>	Live-able towns Order & Harmony Good infrastructure Mitigate on informality	3 years
			Delineate the boundaries for Kiambu Township & Kiambu Municipality	<ul style="list-style-type: none"> <li>CGK</li> <li>NLC</li> <li>FAO</li> <li>IEBC</li> </ul>	Enhance revenue base Promote healthy & balanced developments Administrative control	3 years
			Plan, Survey, and Title all market centres: Tinganga; Riabai; Ngegu; Kanunga; Kangangi; Gitamaiyu; Kangoya; Kamiti-Outspan; Ndumberi; Kiamumbi	<ul style="list-style-type: none"> <li>CGK</li> <li>NLC</li> <li>FAO</li> <li>Ministry of Lands</li> </ul>	Expand revenue base Live-able towns Order & Harmony Good infrastructure Mitigate on informality	3 years
			Reclaim, plan, & survey all public land/plots within the 4 Wards	<ul style="list-style-type: none"> <li>CGK</li> <li>NLC</li> <li>FAO</li> <li>Ministry of Lands</li> </ul>	Enhance service provision to the public Enhance revenue base Create live-able spaces & estates Provide for infrastructure	3 years
			Acquire, plan, survey land for public purpose: 5 primary schools in Ndumberi; Thindigua; Kirigiti; Tinganga; Kiamumbi; 5 public secondary schools in the high-density areas; 7 open	<ul style="list-style-type: none"> <li>CGK</li> <li>NLC</li> <li>FAO</li> <li>National Government</li> </ul>	Well planned neighborhoods Provide for infrastructure Improve revenue base	6 years

		spaces in Thindigua; Kiambu CBD; Kiamumbi; Kirigiti; Kiamumbi; Ndumberi; Tinganga			
		Enhance the capacity for Development Control through hiring of Planners, Building Inspectors, Structural Engineers & acquiring field vehicles	<ul style="list-style-type: none"> <li>• CGK</li> <li>• NLC</li> <li>• Ministry of Lands</li> </ul>	Capacity development Enhanced development control	3 years
		Acquire, plan, & survey land for proposed industrial park/business incubation centres/aggregation centres in the 4 Wards: Township; Tinganga; Riabai; Ndumberi	<ul style="list-style-type: none"> <li>• CGK</li> <li>• NLC</li> <li>• National Government</li> <li>• Investment partners</li> </ul>	Promote growth & manufacturing processes Enhance revenue growth Create more employment opportunities	3 years
		Acquire, plan & survey land for stormwater wayleaves in Thindigua; Kiamumbi; Mugumo; Ndumberi; Kamiti; Kirigiti to control flooding	<ul style="list-style-type: none"> <li>• CGK</li> <li>• NLC</li> <li>• Ministry of Lands/Water</li> </ul>	Control on flooding Reduce pollution of ecologically sensitive areas Promote conservation of water & natural catchment areas	3 years
		Acquire, plan & survey land for proposed Bus Rapid Transit (BRT) system along the major transport corridors	<ul style="list-style-type: none"> <li>• CGK</li> <li>• NLC</li> <li>• National Government</li> </ul>	Promote public transport Create multi-modal transport system Enhance employment	3 years
		Acquire, plan, & survey land for proposed tramway/railway transport system/mode	<ul style="list-style-type: none"> <li>• CGK</li> <li>• NLC</li> <li>• National Government</li> </ul>	Promote public transport Create multi-modal transport system Enhance employment Enhance revenue base	3 years
		Acquire, plan, & survey land for proposed airstrip in Tinganga-Farran zone	<ul style="list-style-type: none"> <li>• CGK</li> <li>• NLC</li> <li>• National Government</li> </ul>	Promote public transport Create multi-modal transport system Enhance revenue base Create more employment	6 years
		Design and construct Affordable Housing Projects (AHP) and upgrade the County Public Housing Project in the 4 Wards	<ul style="list-style-type: none"> <li>• CGK</li> <li>• NLC</li> <li>• National Government</li> <li>• Donors</li> </ul>	Promote housing development Create job opportunities Enhance settlement Market for natural resources Promote agriculture	6 years
		Develop local physical development plans for Kirigiti, Ndumberi, Tinganga, Thindigua, Riabai, Kiambu CBD, Turitu, Ngegu, Kangoya Centres	<ul style="list-style-type: none"> <li>• CGK</li> <li>• NLC</li> <li>• National Government</li> <li>• FAO</li> </ul>	Balanced settlement Anchor for investment opportunities Anchor for infrastructure provision Job creation	3 years
		Develop neighbourhood plans for Mugumo, Kiora, Kasarini, Kugeria, Mhasibu, Kiu-Kenda, Kiamumbi, Anmer among other estates	<ul style="list-style-type: none"> <li>• CGK</li> <li>• NLC</li> <li>• National Government</li> <li>• FAO</li> </ul>	Balanced settlement Anchor for investment opportunities Anchor for infrastructure provision Job creation	3 years
		Carry out in the 4 Wards civic education/land clinics/planning workshops on physical planning processes & procedures	<ul style="list-style-type: none"> <li>• CGK</li> <li>• NLC</li> </ul>	Sensitization programmes Public participation	3 years

				<ul style="list-style-type: none"> <li>• FAO</li> <li>• NGOs</li> </ul>	More revenue for the Municipality Enhanced development control	
<b>WATER, ENVIRONMENT ENERGY &amp; NATURAL RESOURCES</b>	Infrastructure & Service provision Conservation Climate Change mitigation	Provision of piped/portable water to serve the entire Kiambu Municipality. Extend water network to serve Kiamumbi; Thindigua; Tinganga; Riabai; Kirigiti; Ndumberi; Kamiti; Mugumo; Muthithi; Township; Kiambu CBD; Farran estate; Wamickey; Kangoya	<ul style="list-style-type: none"> <li>• National Government</li> <li>• CGK</li> <li>• NLC</li> <li>• Donor Agencies</li> <li>• NGOs</li> </ul>	Improved water supply Promote the living standards of the people Improved sanitation	4 years	
		Extend sewer network especially in the high-density zones: Kiambu CBD; Thindigua; Kirigiti; Kangoya; Kiamumbi; Ndumberi; Gichocho; Riabai; Kamiti Corner	<ul style="list-style-type: none"> <li>• National Government</li> <li>• CGK</li> <li>• NLC</li> <li>• Donor Agencies</li> <li>• NGOs</li> </ul>	Promote the living standards of the people Improved sanitation	4 years	
		Upgrade the wastewater treatment plant/lagoons at Rui/Kirigiti	<ul style="list-style-type: none"> <li>• National Government</li> <li>• CGK</li> <li>• NLC</li> <li>• Donor Agencies</li> <li>• NGOs</li> </ul>	Improve the living standards of the people Improved sanitation	3 years	
		Construct and equip all health facilities, markets, social facilities within the planning area with water tanks-towers/boreholes	<ul style="list-style-type: none"> <li>• National Government</li> <li>• CGK</li> <li>• NLC</li> <li>• Donor Agencies</li> <li>• NGOs</li> </ul>	Improved sanitation Effective and efficient service delivery	1 year	
		Construct & equip all health facilities, markets, and social facilities with public toilets	<ul style="list-style-type: none"> <li>• National Government</li> <li>• CGK</li> <li>• NLC</li> <li>• Donor Agencies</li> <li>• NGOs</li> </ul>	Improved sanitation Effective and efficient service delivery	1 year	
		Identify & construct solid waste collection centres/pits in the towns, estates, and market centres: Tinganga; Riabai; Ngegu; Kanunga; Kangangi; Gitamaiyu; Kangoya; Kamiti-Outspan; Ndumberi; Kiamumbi; Kasarini	<ul style="list-style-type: none"> <li>• National Government</li> <li>• CGK</li> <li>• NLC</li> <li>• Donor Agencies</li> <li>• NGOs</li> </ul>	Improved sanitation Effective and efficient service delivery	3 years	
		Rehabilitate & secure all riparian reserves, wetlands, water pans, man-made dams, and river courses including gazetting such fragile ecological zones	<ul style="list-style-type: none"> <li>• National Government</li> <li>• CGK</li> <li>• NLC</li> <li>• Donor Agencies</li> <li>• NGOs</li> </ul>	Climate change mitigation Enhanced water resources Reduce pollution	3 years	

			Provision of minimum 2 garbage skips in all the urban and market centres: Tinganga; Riabai; Ngegu; Kanunga; Kangangi; Gitamaiyu; Kangoya; Ndumberi; Kamiti; Thindigua; Kiamumbi; Ndumberi; Kirigiti	<ul style="list-style-type: none"> <li>National Government</li> <li>CGK</li> <li>NLC</li> <li>Donor Agencies</li> <li>NGOs</li> </ul>	Improved sanitation Reduced pollution	1 year
			Rehabilitation of all cemeteries within the 4 Wards by constructing boundary wall, offices, ablution block, watering points, solar power and open arena	<ul style="list-style-type: none"> <li>National Government</li> <li>CGK</li> <li>NLC</li> <li>Donor Agencies</li> <li>NGOs</li> </ul>	Improved urban development Improved sanitation	3 years
			Rehabilitation of all open spaces & public parks including reclaiming of the encroached/grabbed parks	<ul style="list-style-type: none"> <li>National Government</li> <li>CGK</li> <li>NLC</li> <li>Donor Agencies</li> <li>NGOs</li> </ul>	Enhanced living standards Promote healthy living Climate mitigation	2 years
			Modernize by constructing all open-air markets in the following local/rural centres: Tinganga; Riabai; Kanunga; Ngegu; Kangangi; Indian Bazaar; Kangoya; Ndumberi; Kiamumbi; Kamiti-Outspan; Thindigua	<ul style="list-style-type: none"> <li>National Government</li> <li>CGK</li> <li>NLC</li> <li>Donor Agencies</li> <li>NGOs</li> </ul>	Creation of employment opportunities Secure tenure systems Promotion of agri-business Enhanced aesthetics of the urban areas	3 years
			Construct modern container kiosks/stalls within the market centres: Kirigiti; Kiambu CBD; Tinganga; Riabai; Kanunga; Ngegu; Kangangi; Indian Bazaar; Kangoya; Ndumberi; Thindigua; Kiamumbi; Kamiti-Outspan	<ul style="list-style-type: none"> <li>National Government</li> <li>CGK</li> <li>NLC</li> <li>Donor Agencies</li> <li>NGOs</li> </ul>	Creation of employment opportunities Secure tenure systems Promotion of agri-business Enhanced aesthetics of the urban areas	3 years
			Construct boda-boda sheds in all the selected road/town junctions and market centres: Kirigiti; Kiambu CBD; Tinganga; Riabai; Kanunga; Ngegu; Kangangi; Indian Bazaar; Kangoya; Ndumberi; Thindigua; Kiamumbi; Kamiti-Outspan	<ul style="list-style-type: none"> <li>CGK</li> <li>NLC</li> <li>Donor Agencies</li> <li>NGOs</li> </ul>	Creation of employment opportunities Secure tenure systems Promotion of agri-business Enhanced aesthetics of the urban areas	2 years
			Construct 4 multi-storey modern markets in the following urban areas: Kangangi; Tinganga; Thindigua; Kirigiti; Kiamumbi	<ul style="list-style-type: none"> <li>National Government</li> <li>CGK</li> <li>NLC</li> <li>Donor Agencies</li> <li>NGOs</li> </ul>	Creation of employment opportunities Secure tenure systems Promotion of agri-business Enhanced aesthetics of the urban areas	3 years
			Construct aggregation centres cum industrial parks (CAIPs) to promote local manufacturing and value addition in Tinganga; Ndumberi; Township Wards	<ul style="list-style-type: none"> <li>National Government</li> <li>CGK</li> <li>NLC</li> <li>Donor Agencies</li> </ul>	Promotion of manufacturing Creation of employment opportunities Secure tenure systems Promotion of agri-business	6 years

				<ul style="list-style-type: none"> <li>• NGOs</li> </ul>	Enhanced aesthetics of the urban areas	
			Promote local cottage industry by constructing Jua-kali sheds in Kirigiti; Kiamumbi; Kiambu CBD; Ndumberi; Tinganga; Riabai; Thindigua	<ul style="list-style-type: none"> <li>• CGK</li> <li>• NLC</li> <li>• Donor Agencies</li> <li>• NGOs</li> </ul>	Creation of employment opportunities Secure tenure systems Promotion of agri-business Enhanced aesthetics of the urban areas	2 years
			Provide milk coolers & pasteurizers for dairy farmers in Ndumberi; Tinganga; Thindigua; Riabai; Kanunga	<ul style="list-style-type: none"> <li>• National Government</li> <li>• CGK</li> <li>• NLC</li> <li>• Donor Agencies</li> <li>• NGOs</li> </ul>	Promotion of agri-business Enhanced food security Creation of employment opportunities	2 years
			Identify and promote local tourism circuit in Kasarini-Paradise Lost; Ndumberi; Tinganga; Riabai; Mugumo; Anmer; Mboi-I-Kamiti	<ul style="list-style-type: none"> <li>• National Government</li> <li>• CGK</li> <li>• Donor Agencies</li> <li>• NGOs</li> </ul>	Tap on tourism opportunities Enhanced revenue base	3 years
			Design & construct a hotel & conference facility in Kirigiti near the International Stadium	<ul style="list-style-type: none"> <li>• National Government</li> <li>• CGK</li> <li>• NLC</li> <li>• PPPs</li> </ul>	Enhanced revenue base Tap on eco-business tourism Promotion of sporting tourism in Kiambu	6 years
			Carry out civic education on weights and measures across the planning area	<ul style="list-style-type: none"> <li>• CGK</li> </ul>	Capacity development for the business Capacity enhancement for the trainers Improved revenue base	3 years
<b>FINANCE, ICT, &amp; ECONOMIC PLANNING</b>			Construct and equip 4 ICT hubs in the 4 Wards: Tinganga; Township; Ndumberi; Riabai	<ul style="list-style-type: none"> <li>• National Government</li> <li>• CGK</li> <li>• Private actors</li> </ul>		
			Provide internet backbone to the ICT hubs at the Ward level	<ul style="list-style-type: none"> <li>• CGK</li> <li>• National Government</li> <li>• Private actors</li> </ul>		
			Provide internet & equip with ICT to all the proposed Municipality offices at Ward level/Urban cores: Township; Kirigiti; Thindigua; Tinganga; Kiamumbi; Kiara; Ndumberi; Anmer	<ul style="list-style-type: none"> <li>• CGK</li> <li>• National Government</li> <li>• Private actors</li> </ul>		
			Carry out Ward-based economic surveys & data inventory for the various sub-sectors in the Municipality	<ul style="list-style-type: none"> <li>• CGK</li> <li>• NGOs</li> <li>• Donors</li> </ul>		
<b>HEALTH</b>			Upgrade and refurbish Kiambu Level 6 Hospital into a Teaching & Referral Hospital	<ul style="list-style-type: none"> <li>• National Government</li> <li>• CGK</li> <li>• Donor Agencies</li> <li>• NGOs</li> </ul>	Reduced TAT for patients Short distance for referral by patients Effective & efficient services to the people Increased learning opportunities as referral	9 years

					Enhanced revenue base Promote growth of the town	
			Upgrade and equip Ting'ang'a to a Level 4 hospital with a maternity wing	<ul style="list-style-type: none"> <li>National Government</li> <li>CGK</li> <li>Donor Agencies</li> <li>NGOs</li> </ul>	<ul style="list-style-type: none"> <li>Reduced TAT for patients</li> <li>Short distance by patients for services</li> <li>Effective &amp; efficient services to the people</li> <li>Increased learning opportunities for maternal health</li> <li>Enhanced revenue base</li> <li>Promote growth of the town</li> </ul>	6 years
			Upgrade and equip Riabai dispensary to a Level 4 hospital with a maternity wing	<ul style="list-style-type: none"> <li>National Government</li> <li>CGK</li> <li>Donor Agencies</li> <li>NGOs</li> </ul>	<ul style="list-style-type: none"> <li>Reduced TAT for patients</li> <li>Short distance by patients for services</li> <li>Effective &amp; efficient services to the people</li> <li>Increased learning opportunities for maternal health</li> <li>Enhanced revenue base</li> <li>Promote growth of the town</li> </ul>	6 years
			Upgrade and equip Kiamumbi dispensary to a Level 4 hospital with a maternity wing	<ul style="list-style-type: none"> <li>National Government</li> <li>CGK</li> <li>Donor Agencies</li> <li>NGOs</li> </ul>	<ul style="list-style-type: none"> <li>Reduced TAT for patients</li> <li>Short distance by patients for services</li> <li>Effective &amp; efficient services to the people</li> <li>Increased learning opportunities for maternal health</li> <li>Enhanced revenue base</li> <li>Promote growth of the town</li> </ul>	6 years
			Construct KMTC colleges in the 4 Wards: Tinganga; Riabai; Ndumberi; Township	<ul style="list-style-type: none"> <li>National Government</li> <li>CGK</li> <li>Donor Agencies</li> <li>NGOs</li> </ul>	<ul style="list-style-type: none"> <li>Enhanced learning opportunities by students</li> <li>Promote growth of the urban centres</li> <li>Enhanced revenue base</li> <li>Reduce TAT by patients</li> </ul>	9 years
			Upgrade and equip Ndumberi dispensary to a Level 4 hospital with a maternity wing	<ul style="list-style-type: none"> <li>National Government</li> <li>CGK</li> <li>Donor Agencies</li> <li>NGOs</li> </ul>	<ul style="list-style-type: none"> <li>Reduced TAT for patients</li> <li>Short distance by patients for services</li> <li>Effective &amp; efficient services to the people</li> <li>Increased learning opportunities for maternal health</li> <li>Enhanced revenue base</li> <li>Promote growth of the town</li> </ul>	6 years
			Construct Thindigua Level 5 hospital (reclaim grabbed land)	<ul style="list-style-type: none"> <li>National Government</li> <li>CGK</li> <li>NLC</li> <li>Donor Agencies</li> <li>NGOs</li> </ul>	<ul style="list-style-type: none"> <li>Reduced TAT for patients</li> <li>Short distance by patients for services</li> <li>Effective &amp; efficient services to the people</li> <li>Increased learning opportunities for maternal health</li> <li>Enhanced revenue base</li> <li>Promote growth of the town</li> </ul>	6 years

			Construct & equip health centres in the following areas: Gitamaiyu; Kiara; Mugumo; Farran-Zaria; Kasarini; Muthithi-Njatha-ini	<ul style="list-style-type: none"> <li>National Government</li> <li>CGK</li> <li>NLC</li> <li>Donor Agencies</li> <li>NGOs</li> </ul>	<p>Reduced TAT for patients</p> <p>Short distance by patients for services</p> <p>Effective &amp; efficient services to the people</p> <p>Increased learning opportunities for maternal health</p> <p>Enhanced revenue base</p> <p>Promote growth of the town</p>	9 years
			Boost the human resource capacity to serve in all the health facilities: Doctors; Clinical Officers; Lab Technicians; nurses; social workers; information management officers; office administrators etc	<ul style="list-style-type: none"> <li>CGK</li> <li>National Government</li> </ul>	<p>Reduced TAT for patients</p> <p>Short distance by patients for services</p> <p>Effective &amp; efficient services to the people</p> <p>Increased learning opportunities for maternal health</p> <p>Enhanced revenue base</p> <p>Promote growth of the town</p>	3 years
			Train & equip Community Health Promoters (CHP) and Volunteers to support outreach programmes in the 4 Wards: Tinganga; Riabai; Township; Ndumberi	<ul style="list-style-type: none"> <li>CGK</li> <li>National Government</li> </ul>	<p>Capacity development for health services</p> <p>Effective &amp; efficient services to the people</p> <p>Increased learning opportunities for maternal health</p> <p>Enhanced revenue base</p> <p>Promote growth of the town</p>	6 years
			Construct Public Health facilities/offices at the Ward level: Tinganga; Township; Riabai; Ndumberi	<ul style="list-style-type: none"> <li>CGK</li> <li>Donor Agencies</li> </ul>	<p>Reduced TAT for patients</p> <p>Short distance by patients for services</p> <p>Effective &amp; efficient services to the people</p> <p>Increased learning opportunities for maternal health</p> <p>Enhanced revenue base</p> <p>Promote growth of the town</p>	9 years
<b>EDUCATION, GENDER, CULTURE &amp; SOCIAL SERVICES</b>			Construct modern ECDE centres (3 classes; 1 ablution block; 2 offices; outdoor facilities) in all public schools in the 4 Wards: Tinganga; Ndumberi; Riabai; Township	<ul style="list-style-type: none"> <li>CGK</li> <li>Donor agencies</li> </ul>	<p>Excellent learning facilities for ECDE</p> <p>More enrolment numbers</p> <p>Promote good health of the pupils/learners</p> <p>Motivation for the facilitators</p> <p>Promotion of agri-business</p>	9 years
			Construct and equip 4 vocational training centres in the 4 Wards: Tinganga; Ndumberi; Riabai; Township	<ul style="list-style-type: none"> <li>CGK</li> <li>National Government</li> <li>Donors</li> </ul>	<p>Excellent learning facilities for the Youth</p> <p>More enrolment numbers</p> <p>Promote skills development</p> <p>Motivation for the facilitators</p> <p>Promotion of agri-business/creation of employment</p>	9 years
			Construct & equip special needs schools/classes within the 4 Wards: Tinganga; Ndumberi; Riabai; Township	<ul style="list-style-type: none"> <li>CGK</li> <li>National Government</li> <li>Donors</li> </ul>	<p>Excellent learning facilities for the Youth</p> <p>More enrolment numbers</p> <p>Promote skills development</p> <p>Motivation for the facilitators</p>	6 years

					Promotion of agri-business/creation of employment	
			Upgrade and equip Ndumberi Polytechnic to a Centre of Excellence-College	<ul style="list-style-type: none"> <li>CGK</li> <li>National Government</li> <li>Donors</li> </ul>	<p>Excellent learning facilities for the Youth</p> <p>More enrolment numbers</p> <p>Promote skills development</p> <p>Motivation for the facilitators</p> <p>Promotion of agri-business/creation of employment</p>	6 years
			Construct and equip 4 modern resource centres/libraries within the 4 Wards/align them with ICT hubs: Tinganga; Ndumberi; Riabai; Township	<ul style="list-style-type: none"> <li>CGK</li> <li>National Government</li> <li>Donors</li> </ul>	<p>Excellent learning facilities for the Youth</p> <p>More enrolment numbers in schools</p> <p>Promote skills development/online trainings</p>	9 years
			Provide human resources to support the ECDE programme: employ teachers; facilitators; cooks; training materials	<ul style="list-style-type: none"> <li>CGK</li> </ul>	<p>Excellent learning facilities for ECDE</p> <p>More enrolment numbers</p> <p>Promote good health of the pupils/learners</p> <p>Motivation for the facilitators</p> <p>Promotion of agri-business</p>	9 years
			Construct an amphitheatre/cultural centre in Tinganga Ward	<ul style="list-style-type: none"> <li>CGK</li> <li>National Government</li> <li>Donors</li> </ul>	<p>Promote employment opportunities through cultural exchanges</p> <p>Training of Youth in culture, sports &amp; outdoor games</p>	6 years
			Conduct training and sensitization workshops on gender mainstreaming in education; work across the 4 Wards: Tinganga; Ndumberi; Riabai; Township	<ul style="list-style-type: none"> <li>CGK</li> </ul>	<p>Enhanced capacity development in education systems</p> <p>Promote adult learning initiatives</p>	9 years
<b>YOUTH, SPORTS, &amp; COMMUNICATION</b>			Equip Kirigiti International Stadium with support infrastructure e.g. indoor games facilities	<ul style="list-style-type: none"> <li>CGK</li> <li>National Government</li> <li>Donors</li> </ul>	<p>Promote sports among the Youth</p> <p>Promote urban development public facilities</p> <p>Enhanced income</p>	3 years
			Upgrade and equip all stadiums in the 4 Wards including playgrounds	<ul style="list-style-type: none"> <li>CGK</li> <li>National Government</li> <li>Donors</li> </ul>	<p>Promote sports among the Youth</p> <p>Promote urban development public facilities</p> <p>Enhanced income</p> <p>Reduced drug abuse</p>	6 years
			Construct 4 social halls in Tinganga; Riabai; Thindigua and Ndumberi: renovate and equip Kiambu Social hall (Community)	<ul style="list-style-type: none"> <li>CGK</li> <li>National Government</li> <li>Donors</li> </ul>	<p>Enhanced public participation in governance</p> <p>Effective &amp; efficient service delivery</p> <p>Reduced drug abuse</p> <p>Promotion of employment opportunities</p>	9 years
<b>AGRICULTURE, LIVESTOCK &amp; COOPERATIVE DEVELOPMENT</b>	Expand agricultural production & improve food security	Alleviate poverty through agri-business promotion	Identify, construct and equip 4 aggregation & value addition centres within the 4 Wards to promote agri-business: avocado centre; banana processing plant; milk coolers	<ul style="list-style-type: none"> <li>National Government</li> <li>CGK</li> <li>NLC</li> <li>FAO</li> <li>Donor agencies</li> <li>NGOs</li> </ul>	<p>Enhanced agri-business opportunities &amp; value addition</p> <p>Promotion of crop production</p>	9 years

		Improve livestock production & marketing	Identify, construct and equip Ndumberi demonstration/training centre for local farmers	<ul style="list-style-type: none"> <li>• National Government</li> <li>• CGK</li> <li>• NLC</li> <li>• FAO</li> <li>• Donor agencies</li> <li>• NGOs</li> </ul>	Capacity development for local farmers  Capacity development for extension workers	3 years
		Capacity development of farmers & extension officers	Modernize & upgrade 4 abattoirs/slaughter houses: Township; Riabai; Ndumberi; Tinganga	<ul style="list-style-type: none"> <li>• CGK</li> <li>• National Government</li> </ul>	Expanded opportunities in the livestock sector  Promotion of businesses/growth in the livestock sector	6 years
		Promotion of marketing through cooperative development	Provide & map irrigation schemes to support agriculture: Tinganga; Riabai; Ndumberi	<ul style="list-style-type: none"> <li>• National Government</li> <li>• CGK</li> <li>• NLC</li> <li>• FAO</li> <li>• Donor agencies</li> <li>• NGOs</li> </ul>	Enhanced food production under irrigation Enhanced food security in the entire municipality Promotion of agri-business Growth of opportunities in agriculture	6 years
			Provide piped water for irrigation	<ul style="list-style-type: none"> <li>• National Government</li> <li>• CGK</li> <li>• NLC</li> <li>• FAO</li> <li>• Donor agencies</li> <li>• NGOs</li> </ul>	Enhanced food production under irrigation Enhanced food security in the entire municipality Promotion of agri-business Growth of opportunities in agriculture	6 years
			Conduct training for farmers and organize them into local cooperatives through outreach programmes	<ul style="list-style-type: none"> <li>• National Government</li> <li>• CGK</li> <li>• FAO</li> <li>• Donor agencies</li> <li>• NGOs</li> </ul>	Growth in the cooperatives' industry  Capacity development for framers & extension officers	9 years
			Provide training and vaccination drives for livestock sector	<ul style="list-style-type: none"> <li>• National Government</li> <li>• CGK</li> <li>• FAO</li> <li>• Donor agencies</li> <li>• NGOs</li> </ul>	Good breeds of livestock & promotion of quality breeds with higher yields  Capacity development of farmers & extension officers	6 years
			Provide seed capital for farmers such as piglets; chicks; planting seeds; fertilisers; avocado seeds	<ul style="list-style-type: none"> <li>• National Government</li> <li>• CGK</li> <li>• NLC</li> <li>• FAO</li> <li>• Donor agencies</li> <li>• NGOs</li> </ul>	Promote food security in the County Enhance good harvests Employment creation Uplifting the standards of living through good incomes	9 years

			Rehabilitation & upgrade of the food market in Indian Bazaar-Kangoya	<ul style="list-style-type: none"> <li>• National Government</li> <li>• CGK</li> <li>• FAO</li> <li>• Donor agencies</li> <li>• NGOs</li> </ul>	Provide ready market for agricultural products Enhanced growth of Kiambu CBD Enhanced revenue base	3 years
<b>ADMINISTRATIO N &amp; PUBLIC SERVICE</b>	Enhance governance & service delivery	Devolve services closer to the people in the urban centres Create hierarchy of urban centres/growth poles  Effective & efficient service delivery	Decentralize services by construction of county offices in the 4 Wards and especially in the urban cores of Kiambu: Thindigua; Kiamumbi; Riabai; Kirigiti; Ndumberi; Tinganga; Kamiti-Corner; Anmer; Kasarini-Evergreen; KIST	<ul style="list-style-type: none"> <li>• National Government</li> <li>• CGK</li> </ul>	Enhanced revenue base Enhanced service provision Effective & efficient administration	6 years
			Construction of MCA offices in the 4 wards: Tinganga; Ndumberi; Riabai; Township	<ul style="list-style-type: none"> <li>• National Government</li> <li>• CGK</li> </ul>	Enhanced service provision Effective & efficient administration Enhanced resource allocation Effective public participation in governance	6 years
			Construct and equip 4 youth empowerment/rehabilitation centres in the 4 Wards: Tinganga; Ndumberi; Riabai; Township	<ul style="list-style-type: none"> <li>• National Government</li> <li>• CGK</li> <li>• FAO</li> <li>• NGOs</li> <li>• Donor Agencies</li> </ul>	Drug abuse management Employment opportunities for the young people Enhanced governance Effective & effective service provision	6 years

### 17.3 Capital Investment Plan

While the Plan Implementation Matrix captures all the proposed projects, the Capital Investment Plan provides the numbers that the projects are expected cost, and the timeframe in which the projects will be implemented.

PROJECT ID	PROJECT/PROGRAMME	UNIT	UNIT COST	TOTAL COST (KSHS)	FUNDING AGENCY	2024-2027	2028-2030	2031-2034
KBU1	Tarmacking of proposed bypasses to bitumen standard: Thindigua-Windsor roundabout; Ngegu-Edenville-Kiambu road; Kanunga-Kangoya-Ndumberi; Ndumberi-Gichocho-Riabai; Riabai-Gitamaiyu; KIST-Kiambu High-Kirigiti bypass	38km	50M	1,900,000,000	National Government CGK NLC Donor Agencies			
KBU2	Dualling of Kiambu road via Four-Ways junction-Thindigua-Kirigiti-Riabai-Gichocho-Ndumberi	27km	100M	2,700,000,000	National Government NLC CGK Donor agencies			
KBU3	Construct & widen proposed/missing link roads & improving secondary collector roads: Tinganga-Riabai; Gitamaiyu-Kiu-Kenda-Kiamumbi; Kahawa Law courts-Mugumo-Gitamaiyu/Kiu River; Turitu-Kasarini; Muringa View-Migaa Golf Estate; Kabazi estate-Migaa Golf Estate; KIST-Kasarini; Wamickey-Muhoga-Nyala Estate; Matropivale-Kigutha estate	260km	20M	5,200,000,000	National Government NLC CGK Donor agencies			
KBU4	Upgrade estate feeder roads to all-weather status within the planning area: Kiamumbi; Kirigiti; Thindigua; Tinganga; Ndumberi; Riabai; Kiambu CBD; Kasarini	100km	5M	500,000,000	National Government CGK Donor Agencies			
KBU5	Installation of street lights in all towns and estates to improve safety & security: Thindigua; Kiamumbi; Kirigiti; Tinganga; Ndumberi; Riabai; Kiambu CBD	5 centres	20M	100,000,000	National Government CGK NGOs Donor Agencies			
KBU6	Acquire, construct & equip proposed Kirigiti Bus Park; proposed Thindigua terminus; Tinganga bus stop; Kamiti Corner terminus; KIST bus stop; Riabai terminus; Ndumberi terminus	7	100M	700,000,000	National Government CGK NLC Donor Agencies PPPs			
KBU7	Provision of Non-Motorised-Transport (NMT) facilities along the major corridors and in the urban cores. Dedicated paved sidewalks & cycling paths in the major urban nodes including footbridges in Kirigiti; KIST; Kiambu CBD; Kiamumbi; Thindigua; Tinganga; Riabai; Ndumberi	30km	10M	300,000,000	National Government CGK NLC Donor Agencies PPPs			

PROJECT ID	PROJECT/PROGRAMME	UNIT	UNIT COST	TOTAL COST (KSHS)	FUNDING AGENCY	2024-2027	2028-2030	2031-2034
KBU8	Construction & opening of stormwater drainage/channels along all major feeder roads and in the estates to control flooding.	20km	1M	20,000,000	National Government CGK NLC Donor Agencies PPPs			
KBU9	Construction of fire stations in Kiamumbi; Tinganga; Kirigiti; Thindigua	4 stations	50M	200,000,000	National Government CGK NLC Donor Agencies PPPs			
KBU10	Paving of urban streets/landscaping to create greenery; stormwater drains; construct parking spaces; recreational spaces in order to improve on aesthetics in Thindigua; Kiamumbi; Kirigiti; Kiambu CBD; Tinganga; Ndumberi; Kamiti Corner	20km	5M	100,000,000	National Government CGK NLC Donor Agencies PPPs			
KBU11	Construction of multi-storey parking silo in Kiambu CBD; Thindigua; Kiamumbi; Kirigiti	4 silos	100M	400,000,000	National Government CGK NLC Donor Agencies PPPs			
KBU12	Develop & integrate & harmonize Kiambu County Spatial Plan (CSP) to the Kiambu Integrated Urban Development Plan (ISUDP)	1 CSP	32M	32,000,000	CGK FAO NLC			
KBU13	Delineate the boundaries for Kiambu Township & Kiambu Municipality	1	20M	20,000,000	CGK IEBC FAO Donor Agencies			
KBU14	Plan, Survey, and Title all market centres: Tinganga; Riabai; Ngegu; Kanunga; Kangangi; Gitamaiyu; Kangoya; Kamiti-Outspan; Ndumberi; Kiamumbi	10 centres	10M	100,000,000	CGK PPPs FAO Donor Agencies			
KBU15	Reclaim, plan, & geo-survey & title all public land/plots within the 4 Wards	4 Wards	10M	40,000,000	Ministry of Lands CGK NLC FAO NGOs			

PROJECT ID	PROJECT/PROGRAMME	UNIT	UNIT COST	TOTAL COST (KSHS)	FUNDING AGENCY	2024-2027	2028-2030	2031-2034
KBU16	Acquire, plan, survey land for public purpose: 5 primary schools in Ndumberi; Thindigua; Kirigiti; Tinganga; Kiamumbi: 5 public secondary schools in the high-density areas; 7 open spaces in Thindigua; Kiambu CBD; Kiamumbi; Kirigiti; Kiamumbi; Ndumberi; Tinganga	17 amenities/utilities	50M	850,000,000	CGK NLC FAO NGOs Donor agencies PPPs			
KBU17	Enhance the capacity for Development Control through hiring of Planners, Building Inspectors, Structural Engineers & acquiring field vehicles	15 staff 5 utility vehicles	20M	20,000,000	CGK FAO			
KBU18	Acquire, plan, & survey land for proposed industrial park/business incubation centres/aggregation centres in the 4 Wards: Township; Tinganga; Riabai; Ndumberi	4 parks	100M	400,000,000	National Government CGK NLC Donor Agencies NGOs			
KBU19	Acquire, plan & survey land for stormwater wayleaves in Thindigua; Kiamumbi; Mugumo; Ndumberi; Kamiti; Kirigiti to control flooding	6km	10M	60,000,000	National Government CGK NLC Donor Agencies NGOs			
KBU20	Acquire, plan & survey land for proposed Bus Rapid Transit (BRT) system along the major transport corridors	20km	20M	400,000,000	National Government CGK NLC Donor Agencies PPPs			
KBU21	Acquire, plan, & survey land for proposed tramway/railway transport system/mode	20km	25M	500,000,000	National Government CGK NLC Donor Agencies PPPs			
KBU22	Acquire, plan, & survey land for proposed airstrip in Tinganga-Farran zone	8Ha	50M	400,000,000	National Government CGK NLC Donor Agencies PPPs			
KBU23	Design and construct Affordable Housing Projects (AHP) and upgrade the County Public Housing Project in the 4 Wards	10 projects	100M	1,000,000,000	National Government CGK NLC			

PROJECT ID	PROJECT/PROGRAMME	UNIT	UNIT COST	TOTAL COST (KSHS)	FUNDING AGENCY	2024-2027	2028-2030	2031-2034
					Donor Agencies PPPs			
KBU24	Develop local physical development plans for Kirigiti, Ndumberi, Tinganga, Thindigua, Riabai, Kiambu CBD, Turitu, Ngegu, Kangoya Centres	10 centres	10M	100,000,000	CGK FAO NLC Donor Agencies			
KBU25	Develop neighbourhood plans for Mugumo, Kiora, Kasarini, Kugeria, Mhasibu, Kiu-Kenda, Kiamumbi, Wa-Mickey, Anmer, among other estates	10 plans	10M	100,000,000	CGK Resident associations NLC FAO			
KBU26	Carry out in the 4 Wards civic education/land clinics/planning workshops on physical planning processes & procedures	10 programmes	1M	10,000,000	CGK FAO NGOs			
KBU27	Extension of piped/portable water in the Municipality. Extend water network to serve Kiamumbi; Thindigua; Tinganga; Riabai; Kirigiti; Ndumberi; Kamiti; Mugumo; Muthithi; Township; Kiambu CBD; Farran estate; Wamickey; Kangoya	50km	20M	1,000,000,000	National Government CGK Donor Agencies NGOs PPPs			
KBU28	Extension of sewer network in the Municipality especially in the high-density zones: Kiambu CBD; Thindigua; Kirigiti; Kangoya; Kiamumbi; Ndumberi; Gichocho; Riabai; Kamiti Corner	50km	50M	2,500,000,000	National Government CGK Donor Agencies NGOs PPPs			
KBU29	Upgrade the wastewater treatment plant/lagoons at Rui/Kirigiti	1 plant	500M	500,000,000	National Government CGK Donor Agencies NGOs PPPs			
KBU30	Construct and equip all 20 health facilities, markets, social facilities within the planning area with water tanks-towers/boreholes	20 facilities	5M	100,000,000	CGK National Government Donor Agencies			
KBU31	Construct & equip all 20 health facilities, markets, and social facilities with public toilets	20 facilities	2M	40,000,000	CGK National Government Donor Agencies			
KBU32	Identify & construct solid waste collection centres/pits in the towns, estates, and market centres: Tinganga; Riabai;	10 transfer stations	5M	50,000,000	National Government CGK NLC			

PROJECT ID	PROJECT/PROGRAMME	UNIT	UNIT COST	TOTAL COST (KSHS)	FUNDING AGENCY	2024-2027	2028-2030	2031-2034
	Ngegu; Kanunga; Kangangi; Gitamaiyu; Kangoya; Kamiti-Outspan; Ndumberi; Kiamumbi; Kasarini				Donor Agencies NGOs			
KBU33	Rehabilitate & secure all riparian reserves, wetlands, water pans, man-made dams, and river courses including gazetting such fragile ecological zones	20 selected ecological areas	5M	100,000,000	National Government CGK Donor Agencies NGOs			
KBU34	Provision of minimum 2 garbage skips in all the urban and market centres: Tinganga; Riabai; Ngegu; Kanunga; Kangangi; Gitamaiyu; Kangoya; Ndumberi; Kamiti; Thindigua; Kiamumbi; Ndumberi; Kirigiti	20 centres	300,000	6,000,000	National Government CGK Donor Agencies NGOs			
KBU35	Rehabilitation of all cemeteries within the 4 Wards by constructing boundary wall, offices, ablution block, watering points, solar power and open arena	4 Wards	50M	200,000,000	National Government CGK Donor Agencies NGOs			
KBU36	Rehabilitation of all open spaces & public parks including reclaiming of the encroached/grabbed parks	10 parks	5M	50,000,000	National Government CGK Donor Agencies NGOs			
KBU37	Modernize by constructing 10 open-air markets in the following local/rural centres: Tinganga; Riabai; Kanunga; Ngegu; Kangangi; Indian Bazaar; Kangoya; Ndumberi; Kiamumbi; Kamiti-Outspan; Thindigua	10 markets	20M	200,000,000	National Government CGK Donor Agencies NGOs			
KBU38	Construct modern container kiosks/stalls within the market centres: Kirigiti; Kiambu CBD; Tinganga; Riabai; Kanunga; Ngegu; Kangangi; Indian Bazaar; Kangoya; Ndumberi; Thindigua; Kiamumbi; Kamiti-Outspan	200 kiosks	100,000	20,000,000	CGK National Government Donor Agencies NGOs PPPs			
KBU39	Construct boda-boda sheds in all the selected road/town junctions and market centres: Kirigiti; Kiambu CBD; Tinganga; Riabai; Kanunga; Ngegu; Kangangi; Indian Bazaar; Kangoya; Ndumberi; Thindigua; Kiamumbi; Kamiti-Outspan	50	100,000	5,000,000	CGK PPPs			
KBU40	Construct 4 multi-storey modern markets in the following urban areas: Kangangi; Tinganga; Thindigua; Kirigiti; Kiamumbi	4 markets	300M	1,200,000,000	National Government CGK NLC Donor Agencies PPPs			

PROJECT ID	PROJECT/PROGRAMME	UNIT	UNIT COST	TOTAL COST (KSHS)	FUNDING AGENCY	2024-2027	2028-2030	2031-2034
KBU41	Construct aggregation centres cum industrial parks (CAIPs) to promote local manufacturing and value addition in Tinganga; Ndumberi; Township Wards	4 centers	500M	2,000,000,000	National Government CGK NLC Donor Agencies PPPs			
KBU42	Promote local cottage industry by constructing Jua-kali sheds in Kirigiti; Kiamumbi; Kiambu CBD; Ndumberi; Tinganga; Riabai; Thindigua	7 zones	50M	350,000,000	National Government CGK NLC Donor Agencies NGOs/PPPs			
KBU43	Provide milk coolers & pasteurizers for dairy farmers in Ndumberi; Tinganga; Thindigua; Riabai; Kanunga	10 coolers	10M	100,000,000	National Government CGK Donor Agencies NGOs			
KBU44	Identify and promote local tourism circuit in Kasarini-Paradise Lost; Ndumberi; Tinganga; Riabai; Mugumo; Anmer; Mboi-I-Kamiti	5 circuits	2M	10,000,000	National Government CGK Donor Agencies NGOs			
KBU45	Design & construct a hotel & conference facility in Kirigiti near the International Stadium	1 facility	300M	300,000,000	National Government CGK PPPs Donor Agencies			
KBU46	Carry out civic education on weights and measures across the planning area	10 programmes	1M	10,000,000	National Government CGK Donor Agencies NGOs			
KBU47	Construct and equip 4 ICT hubs in the 4 Wards: Tinganga; Township; Ndumberi; Riabai	4 centres	25M	100,000,000	National Government CGK Donor Agencies NGOs			
KBU48	Provide internet backbone to the ICT hubs at the Ward level	4 centers	15M	60,000,000	National Government CGK Donor Agencies NGOs			
KBU49	Provide internet & equip with ICT to all the proposed Municipality offices at Ward level/Urban cores: Township;	7 Urban cores	2M	14,000,000	National Government CGK Donor Agencies			

PROJECT ID	PROJECT/PROGRAMME	UNIT	UNIT COST	TOTAL COST (KSHS)	FUNDING AGENCY	2024-2027	2028-2030	2031-2034
	Kirigiti; Thindigua; Tinganga; Kiamumbi; Kiora; Ndumberi; Anmer				NGOs			
KBU50	Carry out Ward-based economic surveys & data inventory for the various sub-sectors in the Municipality	10 programmes	1M	10,000,000	National Government CGK Donor Agencies NGOs			
KBU51	Upgrade and refurbish Kiambu Level 6 Hospital into a Teaching & Referral Hospital	1	2B	2,000,000,000	National Government CGK Donor Agencies NGOs			
KBU52	Upgrade and equip Ting'ang'a to a Level 4 hospital with a maternity wing	1	300M	300,000,000	National Government CGK Donor Agencies NGOs			
KBU53	Upgrade and equip Riabai dispensary to a Level 4 hospital with a maternity wing	1	300M	300,000,000	National Government CGK Donor Agencies NGOs			
KBU54	Upgrade and equip Kiamumbi dispensary to a Level 4 hospital with a maternity wing	1	300M	300,000,000	National Government CGK Donor Agencies NGOs			
KBU55	Construct KMTC colleges in the 4 Wards: Tinganga; Riabai; Ndumberi; Township	4 colleges	125M	500,000,000	National Government CGK Donor Agencies NGOs			
KBU56	Upgrade and equip Ndumberi dispensary to a Level 4 hospital with a maternity wing	1	300M	300,000,000	National Government CGK Donor Agencies NGOs			
KBU57	Construct Thindigua Level 5 hospital (reclaim grabbed land)	1	500M	500,000,000	National Government CGK NLC Donor Agencies NGOs			

PROJECT ID	PROJECT/PROGRAMME	UNIT	UNIT COST	TOTAL COST (KSHS)	FUNDING AGENCY	2024-2027	2028-2030	2031-2034
KBU58	Construct & equip health centres in the following areas: Gitamaiyu; Kiora; Mugumo; Farran-Zaria; Kasarini; Muthithi-Njatha-ini	6 Facilities	50M	300,000,000	National Government CGK Donor Agencies NGOs			
KBU59	Boost the human resource capacity to serve in all the health facilities: Doctors; Clinical Officers; Lab Technicians; nurses; social workers; information management officers; office administrators etc	10 units	20M	200,000,000	National Government CGK Donor Agencies			
KBU60	Train & equip Community Health Promoters (CHP) and Volunteers to support outreach programmes in the 4 Wards: Tinganga; Riabai; Township; Ndumberi	20 facilities	2.5M	50,000,000	National Government CGK Donor Agencies			
KBU61	Construct Public Health facilities/offices at the Ward level: Tinganga; Township; Riabai; Ndumberi	4 facilities	5M	20,000,000	National Government CGK Donor Agencies NGOs			
KBU62	Construct modern ECDE centres (3 classes; 1 ablution block; 2 offices; outdoor facilities) in all public schools in the 4 Wards: Tinganga; Ndumberi; Riabai; Township	20	10M	200,000,000	National Government CGK Donor Agencies NGOs			
KBU63	Construct and equip 4 vocational training centres in the 4 Wards: Tinganga; Ndumberi; Riabai; Township	4 centers	50M	200,000,000	National Government CGK Donor Agencies NGOs			
KBU64	Construct & equip special needs schools/classes within the 4 Wards: Tinganga; Ndumberi; Riabai; Township	4 centers	10M	40,000,000	National Government CGK Donor Agencies NGOs/PPPs			
KBU65	Upgrade and equip Ndumberi Polytechnic to a Centre of Excellence-College	1 center	20M	20,000,000	National Government CGK Donor Agencies NGOs/PPPs			
KBU66	Construct and equip 4 modern resource centres/libraries within the 4 Wards/align them with ICT hubs: Tinganga; Ndumberi; Riabai; Township	4 facilities	20M	80,000,000	National Government CGK Donor Agencies NGOs/PPPs			
KBU67	Provide human resources to support the ECDE programme: employ teachers; facilitators; cooks; training materials	75 facilities	2M	150,000,000	National Government CGK			

PROJECT ID	PROJECT/PROGRAMME	UNIT	UNIT COST	TOTAL COST (KSHS)	FUNDING AGENCY	2024-2027	2028-2030	2031-2034
					Donor Agencies			
KBU68	Construct an amphitheatre/cultural centre in Tinganga Ward	1 facility	100M	100,000,000	National Government CGK Donor Agencies NGOs/PPPs			
KBU69	Conduct training and sensitization workshops on gender mainstreaming in education; work across the 4 Wards: Tinganga; Ndumberi; Riabai; Township	20 programmes	1M	20,000,000	National Government CGK Donor Agencies NGOs			
KBU70	Equip Kirigiti International Stadium with support infrastructure e.g. indoor games facilities	1 facility	500M	500,000,000	National Government CGK Donor Agencies PPPs			
KBU71	Upgrade and equip all stadiums in the 4 Wards including playgrounds	4 Wards	50M	200,000,000	National Government CGK Donor Agencies NGOs			
KBU72	Construct 4 social halls in Tinganga; Riabai; Thindigua and Ndumberi: renovate and equip Kiambu Social hall (Community)	4 facilities	5M	20,000,000	National Government CGK Donor Agencies NGOs			
KBU73	Identify, construct and equip 4 aggregation & value addition centres within the 4 Wards to promote agri-business: avocado centre; banana processing plant; milk coolers	4 facilities	10M	40,000,000	National Government CGK Donor Agencies NGOs			
KBU74	Identify, construct and equip Ndumberi demonstration/training centre for local farmers	1 facility	10M	10,000,000	National Government CGK Donor Agencies NGOs			
KBU75	Modernize & upgrade 4 abattoirs/slaughter houses: Township; Riabai; Ndumberi; Tinganga	4 facilities	12.5M	50,000,000	National Government CGK Donor Agencies NGOs/PPP			
KBU76	Provide, design & map & implement irrigation schemes to support agriculture: Tinganga; Riabai; Ndumberi	3 Wards	30M	90,000,000	National Government CGK Donor Agencies NGOs			

PROJECT ID	PROJECT/PROGRAMME	UNIT	UNIT COST	TOTAL COST (KSHS)	FUNDING AGENCY	2024-2027	2028-2030	2031-2034
KBU77	Provide piped water for irrigation	50 projects	10M	500,000,000	National Government CGK Donor Agencies NGOs			
KBU78	Conduct training for farmers and organize them into local cooperatives through outreach programmes	25 programmes	2M	50,000,000	National Government CGK Donor Agencies NGOs			
KBU79	Provide training and vaccination drives for livestock sector	50 programmes	2M	100,000,000	National Government CGK Donor Agencies NGOs			
KBU80	Provide seed capital for farmers such as piglets; chicks; planting seeds; fertilisers; avocado seeds	4 Wards	50M	200,000,000	National Government CGK Donor Agencies NGOs			
KBU81	Rehabilitation & upgrade of the food market in Indian Bazaar-Kangoya	1 facility	100M	100,000,000	National Government CGK Donor Agencies NGOs/PPPs			
KBU82	Decentralize services by construction of county offices in the 4 Wards and especially in the urban cores of Kiambu: Thindigua; Kiamumbi; Riabai; Kirigiti; Ndumberi; Tinganga; Kamiti-Corner; Anmer; Kasarini-Evergreen; KIST	7 facilities	10M	70,000,000	National Government CGK Donor Agencies NGOs			
KBU83	Construction of MCA offices in the 4 wards: Tinganga; Ndumberi; Riabai; Township	4 facilities	5M	20,000,000	CGK Donor Agencies			
KBU84	Construct and equip 4 youth empowerment/rehabilitation centres in the 4 Wards: Tinganga; Ndumberi; Riabai; Township	4 facilities	10M	40,000,000	National Government CGK Donor Agencies NGOs			

Source: ACAL & BC Gildenhuis & Associates

## 17.4 Plan Monitoring and Evaluation

**Table 29: Monitoring and Evaluation Matrix**

GOAL	OBJECTIVE/S	OUTCOME/RESULTS	KEY INDICATOR/S
Integrated Transportation Strategy	<ul style="list-style-type: none"> <li>Improved accessibility &amp; connectivity</li> <li>Regional connectivity &amp; integration</li> <li>To promote safety &amp; security</li> <li>Promote multi-modal transportation system</li> </ul>	<ul style="list-style-type: none"> <li>Increased production capacity of the Municipality</li> <li>Enhanced value addition to food crops &amp; cash crops</li> <li>Promote choice/variety on mode of transport</li> <li>Improved traffic movement &amp; road safety</li> </ul>	<ul style="list-style-type: none"> <li>Increased food security in the Municipality</li> <li>Available modes of transport: Road; water; air; rail</li> </ul>
Environmental Conservation Strategy	<ul style="list-style-type: none"> <li>To establish a continuous ecological &amp; open system</li> <li>To develop policies for environmental protection</li> <li>To prevent pollution of water courses &amp; protect the riparian reserves</li> </ul>	<ul style="list-style-type: none"> <li>Conserved &amp; protected water catchment areas</li> <li>Protected riparian reserves &amp; controlled flooding</li> <li>Increase in livestock &amp; improved breeds</li> </ul>	<ul style="list-style-type: none"> <li>Increased vegetation cover</li> </ul>
Economic & Social Infrastructure Strategy	<ul style="list-style-type: none"> <li>To consolidate &amp; strengthen industrial zones</li> <li>To channel development into a system of nodes &amp; development corridors</li> <li>To create opportunities for the informal sector</li> <li>To provide for public facilities</li> <li>To promote urban agriculture</li> </ul>	<ul style="list-style-type: none"> <li>Improved employment opportunities in various sectors of the economy</li> <li>Enhanced infrastructural capacity</li> <li>Reduced transport costs</li> <li>Increase in housing stock across the various bands: High income; middle; low; affordable</li> <li>Well planned urban settlements</li> <li>Improved health service delivery</li> <li>Preservation of heritage value &amp; culture</li> <li>Improved quality of education</li> <li>Improved access to affordable energy options</li> </ul>	<ul style="list-style-type: none"> <li>Improved, efficient transport options &amp; reduced travel times</li> </ul>
Housing/Human Settlement Strategy	<ul style="list-style-type: none"> <li>To promote densification in strategic locations/urban cores</li> <li>To identify priority areas for affordable housing</li> <li>To provide for infrastructure: water &amp; sewer services</li> </ul>	<ul style="list-style-type: none"> <li>Decongest Kiambu CBD</li> <li>Increase in funding for urban development</li> <li>Improved living environment in the Municipality</li> <li>Enhanced outlook/aesthetics of the urban areas</li> <li>Enhanced land tenure system</li> <li>Improved security &amp; safety within the urban areas</li> </ul>	<ul style="list-style-type: none"> <li>Control on urban sprawl</li> <li>Reduced degradation &amp; depletion of natural resources</li> <li>Number of well-planned neighborhoods</li> <li>Availability of planning standards &amp; guidelines/zoning</li> </ul>
Economic Development & Revenue Enhancement Strategy	<ul style="list-style-type: none"> <li></li> </ul>	<ul style="list-style-type: none"> <li>Accelerated manufacturing within the Municipality</li> <li>Increased county revenue base</li> <li>Increased investment opportunities in all sectors</li> <li>Availability of public land for public purpose &amp; utilities</li> <li>Improved access to water supply &amp; reticulation within the Municipality</li> <li>Improved access to sanitation facilities</li> <li>Improved household incomes</li> <li>Increase in value of land</li> <li>Improved tourism development</li> </ul>	<ul style="list-style-type: none"> <li>Increased inter-County trading opportunities</li> <li>Increased revenue collection across all streams</li> <li>Enhanced trading capacity in the Municipality</li> <li>Increased number of investors in the Municipality</li> <li>Increased employment opportunities in the Municipality</li> <li>Improved service delivery for Kiambu residents</li> </ul>

Source: ACAL & BC Gildenhuys & Associates, 2020

## REFERENCES

1. Acts
2. Agriculture, Fisheries and Food Authority Act, 2013
3. Environmental Management and Coordination Act, EMCA 1999
4. Forests Act, No. 7 of 2005
5. Land Registration Act, No. 3, 2012
6. The County Government Act, 2012
7. The Kenya National Land Commission Act, 2012
8. The Physical and Land Use Planning Act, 2019
9. The Public Health Act, Cap 242
10. The Urban Areas and Cities Act, 2011
11. The Water Act, 2002
12. Government Publications
13. GoK (2008): Nairobi Metro 2030. Government Printers
14. GOK (2009): 2009 National Population and Housing Census. Government Printers
15. GoK (2010) The Kenya Constitution 2010. Government Printers.
16. GoK (2013): Kenya National Bureau of Statistics, 2013, Government Printers.
17. Integrated National Transport Policy Sessional Paper No. 2 of 2012
18. Kenya Agricultural Sector Development Strategy 2009-2020
19. Kenya Industrial Master Plan
20. Kenya National Climate Change Response Strategy, 2010
21. Kenya National Land Policy (NLP)
22. Draft National Waste Management Policy, 2019
23. MoLHUD (2007) Draft Physical Planning Handbook, 2012
24. The Kenya ICT Policy
25. The Kenya National Housing Policy 2004
26. The Kenya National Spatial Plan (NSP)
27. The Kenya Vision 2030
28. The National Disaster Management Authority Bill, 2019

