



LIMURU

Integrated Strategic Urban Development Plan

A Globally Competitive Agro Based Industrial Hub

2020 - 2030



Food and Agriculture
Organization of the
United Nations

CERTIFICATION

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

Signed: _____ Date: _____

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Registered Physical Planner

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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.

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PREFACE



I am glad to introduce Limuru Integrated Strategic Urban Development Plan (ISUDP) 2020–2030, which is a road map on development of Limuru. This is the first comprehensive spatial plan for Limuru, and it has been prepared at a time when the County is grappling with the challenges of rapid urbanization. The recent past has seen a deterioration in the quality of our urban areas due to uncontrolled development and increasing congestion.

This Integrated Strategic Development Plan gives us the tools to rectify the situation, and establish a system that will give the County the powers that it needs to direct development to the most appropriate locations and improve service delivery. Most importantly it provides a guidance into how we

can make Limuru a more attractive and efficient town. I am happy to note that this Plan has been prepared in a participatory manner considering the contributions of various stakeholders whose role in the implementation of the proposals as detailed in this Plan is fundamental.

Kiambu is the 3rd most urbanized County after Nairobi and Mombasa and has witnessed rapid urbanization in the last few decades with people moving in to settle, set up businesses and other development activities. Limuru has witnessed rapid population growth and increased economic activities over the last ten years since the onset of the devolved government. However, most of the urbanization is happening in the peri-urban areas where barely little planning takes place. These are areas that are also characterized by piecemeal and disjointed subdivision coupled with a haphazard conversion of agricultural land that consistently distorts urban planning processes. In addition, due to an absence of a local ISUDP to guide and manage this sprawl, Limuru 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 Limuru 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 whole of Limuru. 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. The County Department of Land Housing and Physical Planning led by CECM Salome Wainaina have played 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 wananchi, for their engagement and valuable inputs during various stages of the preparation of the plan. My government pledges to ensure during implementation of this Plan, the involvement of and collaboration with all stakeholders to achieve its full realization. It is hoped that the implementation of the Plan will produce positive changes and improvements in our peoples' lives.

I welcome all to support this noble course in realizing the vision of this Plan.



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

FOREWORD



Limuru Integrated Strategic Urban Development Plan (ISUDP) 2020–2030, is a 10-year Plan geographical information-based Systems plan that will guide the spatial development of Limuru Town from 2020–2030. This development blue print is a statutory requirement, as outlined in section 111 of the count 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.

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

This ISUDP forms part of the Nairobi Municipal Services Improvement Programme (NaMSIP) which is a World Bank funded project. The Limuru Integrated Strategic Urban Development Plan reflects the desired spatial form for Limuru and the preferred land use zoning within the 2020–2030 plan period. The desired patterns of land use have been synchronized to other existing regional, national and other county plans. Indeed, the plan reflects the objectives and aspirations of the County as outlined in the County Integrated Development Plan (CIDP) for the said period.

The ISUDP provides strategies for conservation, use and management of natural resources. In addition, the spatial structure of the population, existing infrastructure, economic activities and human settlements have been mapped. Similarly, the challenges and opportunities for tapping into these resources have been identified. I also take note that the Plan has identified areas where priority strategic intervention and funding is required. Equally important, the Plan has considered the rights of all special groups within the County within the constitutional requirements for participatory planning and development.

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

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

ACKNOWLEDGMENTS



The preparation of the Limuru Urban ISUDP is a milestone in the Physical Planning Department, and I would like to express my gratitude to everyone who was instrumental in making this assignment a success.

Thanks to the County Government of Kiambu especially to His Excellency the Governor of Kiambu, Hon. Dr. Kimani Wamatangi for his support in the preparation and approval of this Plan.

My gratitude also goes to the Kiambu County Assembly for their leadership in overseeing and adopting this Plan which will guide the planning and development of Limuru Urban Plan

I would like to acknowledge efforts of staff of the Ministry of Transport, infrastructure, Housing, Urban Development and Public Works (MoTIHUD & PW), the State Department for Housing and Urban Development and the Nairobi Metropolitan Services Improvement Project- NaMSIP (under the Department of Metropolitan Development) for supervising, and supporting the entire preparation of this Plan.

Special thanks go to the NaMSIP Project Coordinator, Engineer Benjamin Njenga, Planner Ann Mugo (Project Supervisor), as well as Planner Esther Muthoni, Planner Mutisya Mutua, Engineer Anthony Moire, Alex Maroko, Kevin Onjiko Kevin Gitau, Michael Ibabu, Mercy Kirema and Kelvin Ruto.

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

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Further gratitude goes to the different State and County Departments and Agency members, who patiently met the members of the study team, and provided useful information that was essential in carrying out this planning exercise. To this, we say thank you all.

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

Finally, I wish to thank the people of Limuru for sharing their proposals during the county-level stakeholders' workshops. It was their contributions that shaped this advisory plan.



HANNAH N. MARANGA

County Director of Physical and Land Use Planning

EXECUTIVE SUMMARY

The Limuru Integrated Strategic Urban Development Plan (ISUDP) for the period 2020-2030 has been prepared by the County Government of Kiambu in collaboration with the National Government through the Nairobi Metropolitan Services Improvement Project (NaMSIP), Ministry of Lands, Housing and Urban Development. The plan was prepared within the framework of the Kenya Constitution 2010, County Government Act 2012, Urban Areas and Cities Act 2011 and the Physical and Land Use Planning Act 2019, among others. The plan is guided by Kenya Vision 2030, National Spatial Plan 2015-2045, National Land Use Policy 2018, and the National Land Policy 2009.

The purpose of the plan is to define the vision and spatial structure of the centre up to the year 2030. Specifically, the plan intends to achieve the following objectives: provide a basis for infrastructure and service provision for present and projected population over the plan period; determine demographic changes in the last ten years and those expected over the life of the plan, and how these relate to economic changes, welfare and administrative shifts; identify environmental issues and concerns affecting Limuru; identify development potentials of the planning area (social, economic and environmental profiling); 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; provide for adequate land for recreation and open spaces; enhance and promote safety and security; and to uphold innovative civic and urban design that enhances its character and form.

The ISUDP was prepared in a participatory process bringing together all actors, including the local community, Kiambu County Government, and NaMSIP. The planning process began with the notice of intention to plan, inception workshops, reconnaissance survey, delimitation of planning boundaries and base map preparation. 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.

Limuru is located within Kiambu County. It is the administrative headquarter for Limuru Sub-County. The strategic location provides opportunities for improving the commercial and retail sector, the service function, and the agricultural sector. This, coupled with strategic investment in agro-based industries, road circulation systems, as well as support services such as water and sewerage systems, have the potential to revitalize the economic and social status.

Guided by the social, physical and economic data, a vision for the urban area was formulated during the visioning workshop as "A globally competitive agro-based industrial subcounty."

Towards developing the plan proposals, various spatial development opportunities and challenges in the area were analysed. Three scenarios were considered in the preparation of the ISUDP, namely nil Scenario, agro city model, Multi nodal model. The integrated agro-city model that was eventually selected was a hybrid of the two development trajectories; agro city and multi nodal models.

The agro-city model seeks to ensure the preservation of the farmland by focusing on improvement and maintenance of farms as well as boosting the agricultural sector as a whole. Permanently preserving agricultural land will ensure that the agricultural industry remains sustainable and thrives in the future. The four main benefits of this model are that it encourages local and national food security, employment in the agricultural industry, efficient development of urban and rural land and the protection of rural and environmental amenities.

Multi-Nodal model is a concept which encourages intensive development within specific areas. The multi-nodal model encompasses redirecting and intensifying urban growth based on the existing functions of the main nodes.

The Integrated Model encompasses putting together good elements of the Agro-city and multi-nodal models. The Integrated Model will enhance the quality of planning in Limuru Sub-County using the two models. The key components of this model are Farmland preservation, specialisation of nodal functions, linkages between the rural and urban areas as well as Zoning and development control.

A capital investment plan is provided showing the cost of the major projects to be implemented within the plan period. It is further proposed that the ISUDP will be reviewed after 5 years to harmonize the development strategies with changes that could have occurred within the five years. It is expected that implementation of this ISUDP will promote socio-economic development through agro industrial developments and creating strategic linkages in the region resulting into enormous positive multiplier effects towards improved livelihoods to the people including employment creation and poverty reduction.

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 within 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 Nineteen

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.

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.

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

Chapter Nineteen presents the recommendations and conclusions.

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Abbreviations and Acronyms

CBD	Central Business District
CIDP	County Integrated Development Plan
CoK	Constitution of Kenya 2010
CSP	County Spatial Plan
DoNMED	Directorate of Nairobi Metropolitan Development
ECDE	Early Childhood Development Education
FGD	Focus Group Discussion
GIS	Geographic Information System
GoK	Government of Kenya
ICT	Information Communication Technology
ISUDP	Integrated Strategic Urban Development Plan
KNBS	Kenya National Bureau of Statistics
KPLC	Kenya Power and Lighting Corporation
Kshs.	Kenyan Shilling
MDA	Ministries Departments and Agencies
MoTIHUD&PW	Ministry of Transport, Infrastructure, Housing, Urban Development and Public Works
NaMSIP	Nairobi Metropolitan Services Improvement Project
NEMA	National Environment Management Authority
NLC	National Land Commission
NMR	Nairobi Metropolitan Region
NMT	Non-motorised Transport
PSV	Public Service Vehicle
ROW	Right-of-Way
SMEs	Small and medium-sized enterprises
SPC	Spatial Planning Concept
SWOT	Strengths-Weaknesses-Opportunities-Threats
TFR	Total Fertility Rate
TOD	Transit-Oriented Development
TOR	Terms of Reference
UACA	Urban Areas and Cities Act
WRA	Water Resources Authority
WRMA	Water Resources Management Authority



REPUBLIC OF KENYA



COUNTY GOVERNMENT OF KIAMBU

PART I

INTRODUCTION AND PLANNING CONTEXT

1 INTRODUCTION

1.1 Background

The preparation of the Limuru Integrated Strategic Urban Development Plan (ISUDP) 2020–2030 herein referred as the Plan, is part of Component 1 on Institutional Reform and Planning of the Nairobi Metropolitan Service Improvement Project (NaMSIP). The Nairobi Metropolitan Service Improvement Project (NaMSIP) is part of a wide municipal development initiative by the National Government and development partners to address different elements of urban development. NaMSIP is an initiative of the Kenya Government with the support of the World Bank under the Country Partnership Strategy (CPS). The CPS emphasises on the themes of growth, equity, and environment, with a special emphasis on governance. NaMSIP contributes to the governance, growth, and improved environmental management agendas.

The Nairobi Metropolitan Region (NMR), where Limuru falls into, continues to be a national, regional, and international strategic centre for education, commerce, transport, regional cooperation and economic development. It connects eastern, central, and southern African countries. It plays a significant role in the global, regional, and local economy, and is the centre of international diplomacy, finance, banking and commerce. In 2009, the population of NMR was estimated at 6,658,000 (CBS–2009) currently estimated at 9.3 million people based on 2019 population census of Kiambu, Machakos, Kajiado, Nairobi and Murang'a counties.

One of the major problems and challenges facing the Sub-County is the rapid urban growth against a declining urban environment. Key urban centres in the Sub-County are experiencing rapid growth and development that is unplanned, uncoordinated, and uncontrolled. As a result, these urban areas are experiencing several development challenges such as inadequate housing and mushrooming of informal settlements, unemployment, environmental degradation, inadequate infrastructure, services and facilities, escalation in crime and social distress. Other problems include excessive and uncoordinated piecemeal subdivisions of privately owned land without approved planning schemes and uncontrolled developments without requisite expansion of utilities and services.

In light of the above, an urgent need to look at urban development of the Sub-County from a perspective that integrates physical, economic, social, cultural, and environmental as well as institutional aspects was identified. There was need to align urban development planning with the on-going socio-economic and political reform and transformation in the country, which requires a major shift in planning – “strategic planning approach” which is a more flexible and development- oriented tool that is desirable to catalyse the government’s economic recovery strategy for wealth and employment creation (2003–2007).

Thus, under the auspices of NaMSIP, this Plan has been prepared to support design and implementation of critical urban services including transport, sanitation, and solid waste management that will allow the Sub-County to meet the needs of businesses and residents. Investment in infrastructure also contributes to the growth agenda by improving the competitiveness of Limuru Sub-County as places to live and invest. Some of the areas targeted for improvement in the Plan include solid waste management, transport systems, stormwater management, water supply and sanitation, disaster management, and security/street lighting, amongst others.

Consequently, this Plan has identified priority programmes that can transform it into a vibrant and well-planned human settlement. With effective implementation, this should be reflected in quality living and working environment to the residents and enhance revenue to the County Government

of Kiambu. Moreover, the Plan provides for the full exploitation of opportunities for expansion of agro-industrial development and rural-urban linkages.

1.2 ISUDP Concept

Integrated and strategic planning approaches underpinned by participatory processes form the cornerstones of an ISUDP. In this context, the integrated approaches include metropolitan-wide studies that contextualised Limuru's environmental setting, transportation linkages and functional role in the NMR, in particular, and Kenya, in general. The integrated approach was further characterised by recognising the relationship of urban areas to its hinterland from an environmental, economic, social and infrastructural perspective. It likewise entailed the determination of well-placed relationships of various sectoral projects such as promoting forest conservation while promoting eco-tourism and sustainable livelihood.

The strategic approach was applied to several aspects during the preparation of this Plan. First was in determining the functional role of Limuru within the NMR and the key requirements to ensure the realisation of these functions. The strategic approach was also characterised by determining key interventions that would yield the most benefits such as by putting forward transit-oriented development proposals to improve the efficiency of land use as well as the viability of transportation systems.

In order to guide the integrated and strategic urban planning process, the economic context for the preparation of this Plan was analysed with the following objectives in mind: (a) identifying the key economic planks and role of Limuru to contribute in the economic development priorities of NMR, and turn, the economy of Kenya; and (b) identifying the key challenges and constraints which Limuru faces in the process of fulfilling its role in the NMR and Kenyan economy as well as how these challenges and constraints can be managed through strategic urban planning. The analysis of Limuru's economies and transport corridors involved economic profiling, identifying their role in the cluster economy as well as NMR, key challenges and

constraints faced by the economies and how to manage these challenges and constraints through strategic urban planning.

These approaches were underpinned by participatory planning processes oriented towards engaging stakeholders in problem identification and problem-solving at critical stages of ISUDP preparation. This will not only imbue ownership of the Plan to the stakeholders but also contribute to improving the capacities of government implementers in planning, implementation and monitoring.

1.3 Purpose of the Plan

The purposes of this Plan include:

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

1.4 Specific Planning Challenges for Limuru

The key planning issues that face Limuru include the following:

- Unplanned and uncoordinated urban growth;
- Inadequate serviced land to accommodate urban growth;
- Inadequate infrastructure services and facilities (i.e., narrow roads, sewer, and water supply, waste disposal, drainage etc.);
- Poor quality housing and inadequate community services—schools, health facilities, and recreation;
- Unemployment and declining employment opportunities;
- Uncontrolled land subdivisions;
- Urban sprawl;
- Lack of updated development plans that could form the basis for planning decisions;
- Proliferation of informal settlements;
- High crime levels;
- Poor coordination among relevant government authorities and non-government organisations (NGOs);

- Ineffective participation in planning and development by the local communities and private sector;
- Environmental degradation;
- HIV/Aids pandemic; and
- High incidences of urban poverty.

1.5 Objectives of the Plan

According to the TORs, the objectives of the Plan are:

- To determine the boundaries of Limuru considering projected requirements for urban land within the plan period;
- To analyse demographic changes in the last ten years and those expected over the life of the Plan, and how these relate to economic changes, welfare and administrative shifts;
- To identify development constraints, potentials and challenges of Limuru (social, economic, infrastructure and environmental profiling) and propose strategies to address them;
- To identify environmental issues and propose strategies for effective environmental management including, amongst others, climate change adaptation and disaster risk reduction and management measures;
- To allocate sufficient space for various land uses, including recreation and open spaces, to ensure efficient function and convenience of users and accommodate future growth;
- To uphold innovative civic and urban design that enhances the character and form of Limuru;
- To provide a basis for development control and investment decisions; and
- To develop a plan for implementation and monitoring framework.

1.6 Scope of the Plan

1.6.1 GEOGRAPHICAL SCOPE

The geographical scope of the Plan includes a wider territory considering the urban sprawl that has occurred from the original central business district (CBD). The planning area comprises Limuru Sub-County which has an area of 285 km². Limuru is located at the south-western portion of Kiambu County. It is also part of the NMR's Northern Metro Region and about 35 km northwest of Nairobi along the Nairobi-Nakuru Highway.

1.6.2 SCOPE OF PLANNING TASKS

The preparation of this Plan involved the following tasks:

- Delineation of the planning boundaries for Limuru;

- Preparing an elaborate base map showing the existing spatial structure of Limuru to include, at the minimum, planning boundaries, existing road network, landmarks, major natural features and topography;
- Carrying out a contextual analysis of Limuru and its environs;
- Undertaking a land-use and socio-economic study and survey of Limuru, accommodating all the changes that have occurred over time and projecting future changes, and comparing how these changes compare in the metro region and County;
- Undertaking an assessment of transport, infrastructure and utility needs, housing and community services. This included mapping of the transport, infrastructure and utility network of Limuru;
- Detailed study on the redevelopment of the CBD;
- Identifying suitable land for residential, industrial, education, recreational, public purposes, commercial, public utilities, transportation and other uses applicable to Limuru;
- Analysing administration and institutional requirements in planning and development;
- Projecting land use, infrastructure and services required over the plan period;
- Preparing a detailed 10-year Land Use Plan for Limuru;
- Preparing detailed 10-year Sectorial Development Plans in support of the land use plan for Limuru; and
- Preparing zoning plans for Limuru with requisite development densities and guidelines.

1.7 Outputs/Deliverables of the Plan

The outputs of this Plan include:

- Detailed Geographic Information System (GIS)-based land-use plan;
- Action area plans;
- Detailed transportation strategy;
- Detailed environmental strategy;
- Detailed residential (housing) strategy;
- Detailed social facilities strategy;
- Detailed local economy activities strategy
- Detailed investment strategy; and
- Local authority financing/revenue enhancement strategy.

1.8 Vision and Mission of the Plan

A participatory approach in the formulation in the shared vision for the Sub-County and mission statement of the County Government was informed by views of various stakeholders who were involved in the ISUDP

preparation process. The community vision for the Sub-County is to be “To be a Globally Competitive Agro-based Industrial Hub.” In order to achieve the shared vision, the County Government’s mission is “To stimulate a sustainable, agro-based economy for the development of the Sub-County.”

1.9 Methodology

1.9.1 PREPARATORY

The preparatory stages for the preparation of this Plan involved profiling, transect survey, preparation of the Inception Report and Project Design. Profiling involved scanning general aspects of Limuru to appreciate the challenges and opportunities. The output was the refinement of the problems and objectives of the Plan. Transect survey involved undertaking a reconnaissance survey of the planning area. The output at this stage was the identification and appreciation of the planning area’s major planning issues, challenges and opportunities in line with metropolitan spatial development plan; delineation of the planning area and consolidation of the base maps as provided for by Directorate of Nairobi Metropolitan Development (DoNMED); and preparation of the Inception Report. Project design involved fine-tuning of the scope and timeframe of the project. The output was the production of a detailed work plan.

1.9.2 SENSITISATION

Sensitization of key stakeholders was carried out through publication of a Notice of Intention to Plan. This was done in collaboration with the Director Metropolitan Planning & Environment (DoNMED) and Kiambu County Director of Physical Planning.

1.9.3 INVESTIGATIVE

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

Secondary data was collected through desk study from past reports and publications on the planning area. This was carried out before field visits were made with the objective of clearly identify data gaps to be

collected. Reports such as publications, topo-cadastral maps and land-use plans were reviewed to give clear insights into the Limuru Sub-County. It also included reviews of existing plans, policies and statutes. Some of the documents reviewed are Kenya Vision 2030 and its two Medium Term Plans; County Integrated development plans for Kiambu County; the Nairobi Integrated Urban Development Masterplan (NIUPLAN), 2014–2030; Nairobi Metro Vision 2030 Strategy; Kiambu County Spatial Plan; and Konza City Plan, amongst others.

Field studies were carried out so as to fill any information gap which were identified during the desk study. This involved collecting information about existing conditions to assess the adequacy and functioning of existing facilities. The field studies also assisted in verifying data collected from secondary sources, identification of planning issues, potential problem areas, and existing and future development potentials of the project areas. Some of the key techniques used to collect various types of data included:

- **Comprehensive stakeholder forums** conducted to establish the key development challenges including on transport, access to amenities and community facilities and the challenges involved, amongst others; the key forums. Some of the forums are summarised below

Table 1-1: Stakeholder Forums

No.	Stakeholders Forum	Date	Venue	Purpose
1	Limuru	11/3/2016	Kiboko Hotel	First-round presentation of key findings of the thematic studies to key stakeholders for orientation of stakeholders, refinement of the town's problems, visioning, and objective setting of the project design.
2	Ndeiya Ward – Limuru East	16/8/2018	Kanu Office, Nderu market	Second round presentation of key findings of the thematic studies for orientation of stakeholders, refinement of the town's problems, visioning, and objective setting of the project design.
3	Mabroukie ward – Limuru East	16/8/2018	Itungi Community Hall	Third round presentation of key findings of the thematic studies to key stakeholders for orientation of stakeholders, refinement of the town's problems, visioning, and objective setting of the project design.
4	Stakeholders' Presentation	07/09/2018	ACK	Presentation of key findings to stakeholders, presentation, evaluation and selection of alternative development proposals.

5	Stakeholders Validation Workshop	20/02/2020	Kamunde Hall	Validation of final draft report by stakeholders.
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Source: VisionRI

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

1.9.4 PLAN FORMULATION

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

conclusion of studies were modelled and presented in a spatial context showing desired outcomes, alternatives, strategies and programmes. The output was presented to the stakeholders' forum for comments. This was followed by the formulation of alternative development proposals and selection of preferred alternative to inform land management and investment decisions. A stakeholders meeting focussing on the presentations of the draft plan proposal and preferred models was then organised to gain consensus on preferred plans and strategies for approval.

1.9.5 PLAN APPROVAL

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

2 PLANNING CONTEXT

2.1 Overview

This chapter focuses on the planning context outlining, amongst others, the constitutional basis for planning, policy, and the legal basis. It also includes a review of national, regional & local plans such as National Spatial Plan, Nairobi Metro 2030, Spatial Planning Concept (SPC) for the Nairobi Metropolitan Region (NMR), draft Kiambu County Spatial Plan and Kiambu County Integrated Development Plan. It also presents the institutional framework for planning.

2.2 Geographic Location and Size

Kenya has 47 counties, and the focus of the Plan is on Kiambu. Kiambu has twelve sub-counties, Limuru being one of them. The planning area is located at the south-western portion of Kiambu County. It is part of the NMR's Northern Metro Region and is about 35 km Northwest of Nairobi, along the Nairobi-Nakuru Highway.

Limuru Sub-County has an area of about 285 square kilometres. It is located on the eastern slopes of the Aberdare Range at an altitude of about 2,237 metres above sea level. It encompasses Limuru Town, surrounding urbanised wards. Limuru Town lies at an altitude of 2,237 metres above sea level. It is at a latitude of 1006'28.0" S and longitude 36038'34.0" E. Limuru Sub-County borders Lari Sub-County to the north, Githunguri and Kiambaa Sub-Counties to the east, Kikuyu and Kabete to the south, and Naivasha and Ngong Sub-Counties of Nakuru and Kajiado Counties respectively, to the west.

Maps 2-1, 2-2 and 2-3 show the location of the planning area in the national, regional, and local context, respectively. In turn, Maps 2-4, 2-5 and 2-6 show the administrative wards and sub-locations in Limuru Sub-County as well as the base map, respectively.

2.3 History and Previous Planning Interventions

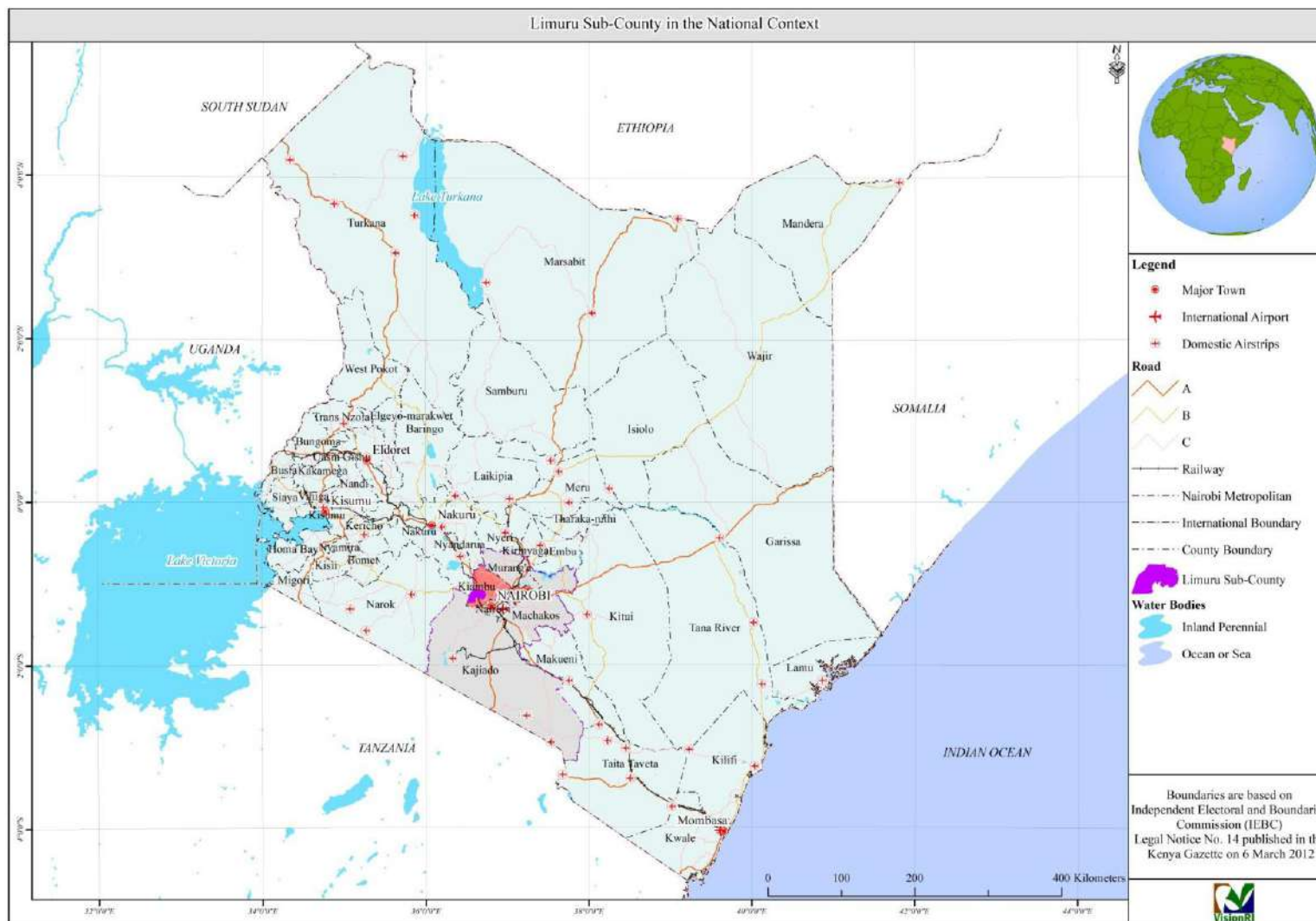
The earliest settlers of Limuru were the Agikuyu people. Trade and other human activities led to an incursion of other people, who brought diverse cultures and traditional practices. At the beginning of the 20th Century, residents were observed to speak Swahili and English, as well as Kikuyu. Limuru area further grew and expanded as a result of the Kenya-Uganda railway line, tea industries and Bata Shoe Company. The Limuru railway station was established in the early 1900s, which is about the same time the white people started settling in the area. Most of the areas in Limuru were previously known as the "white highlands", a rich agricultural land, just south of the equator.

The term "white highlands" was adopted by the British and other Europeans, who realised the area's productive potential. They settled in large numbers with the support of the colonial government and

established tea plantations, cereal farms, and ranches. The area became the largest tea exporting zone, attributed to the putting up of tea industries. The tea industries further attracted the setting up of the Bata Shoe Company factory as well as, milk assembly and processing industries. The area's industrial nature has attracted a lot of employees, who currently work in both agricultural and manufacturing-based industries.

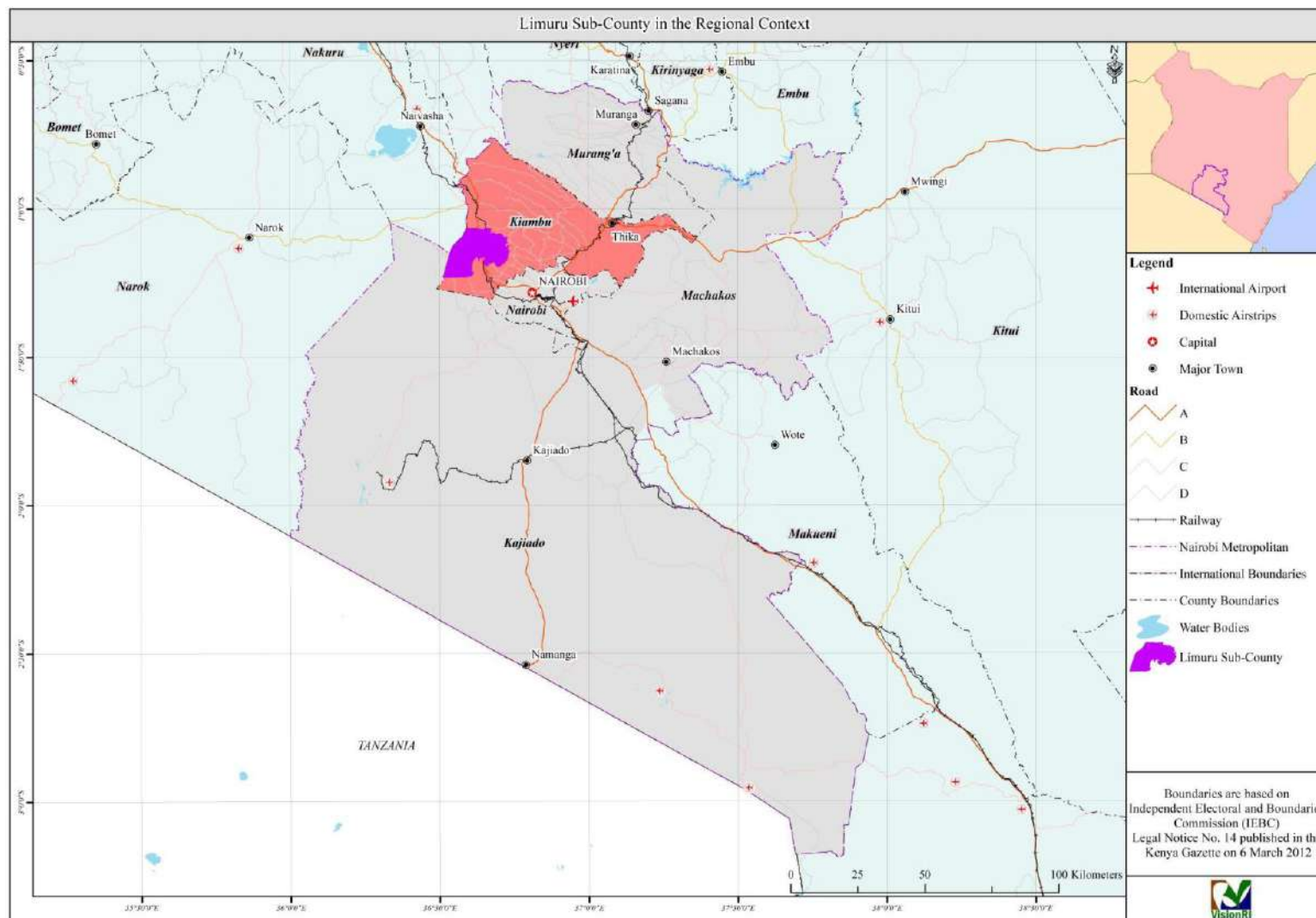
2.4 Planning Area Base Map

The base map for the planning area includes key topographic features, cadastre information, roads, rivers, contours, administrative boundaries, and existing developments as presented in Map 2-6.



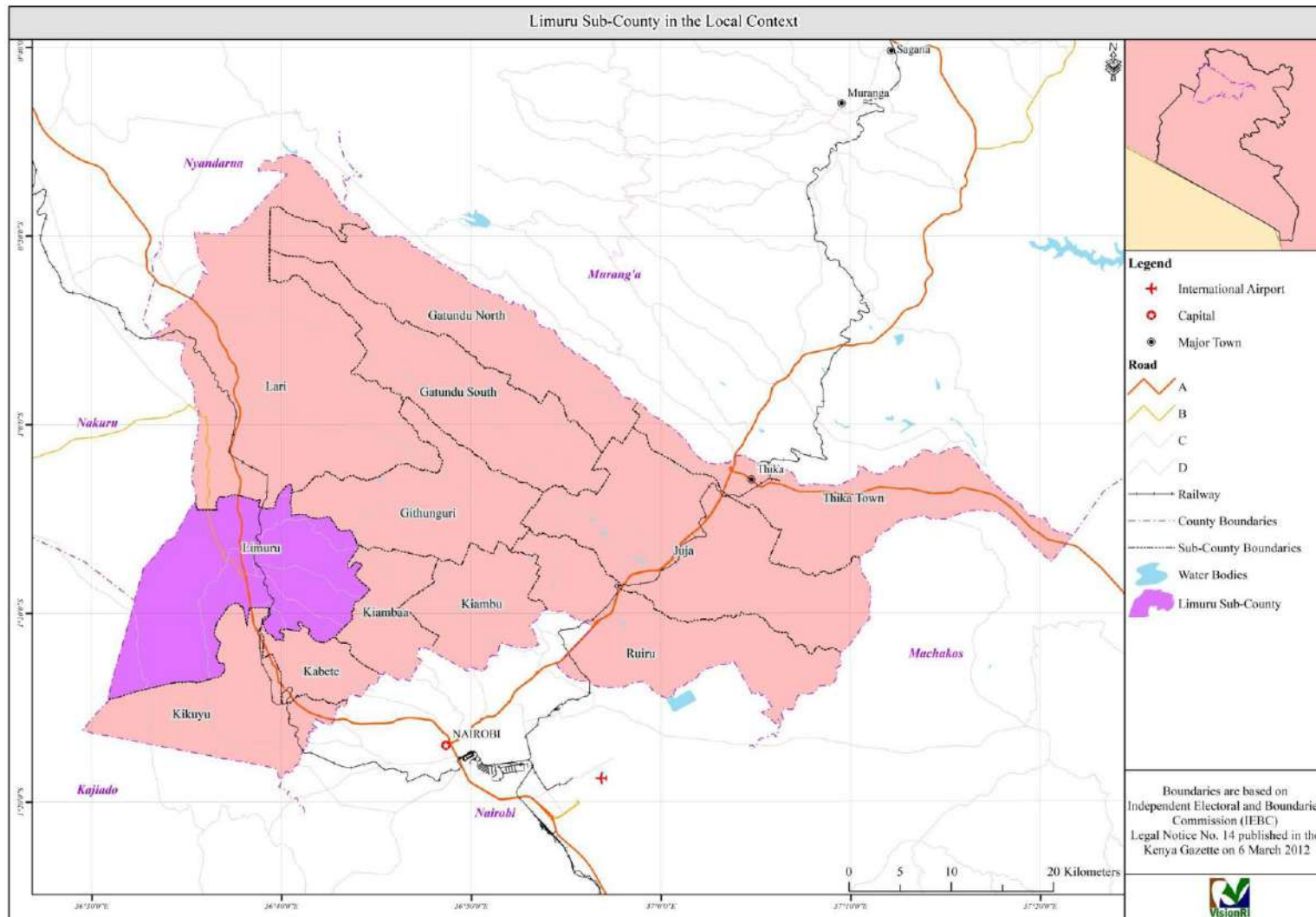
Map 2-1: Location of Limuru in the National Context

Source: VisionRI



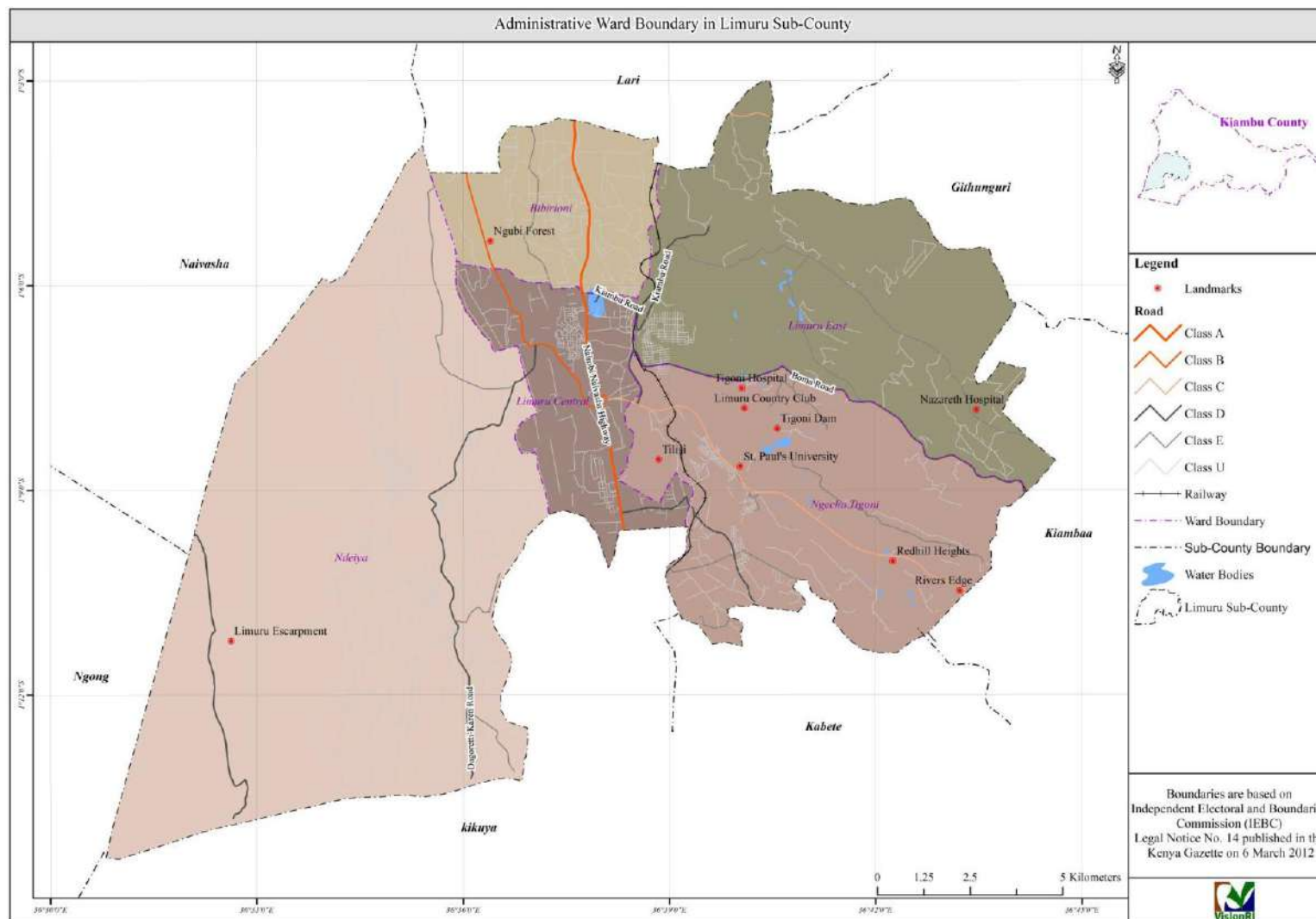
Map 2-2: Location of Limuru in the Regional Context

Source: VisionRI



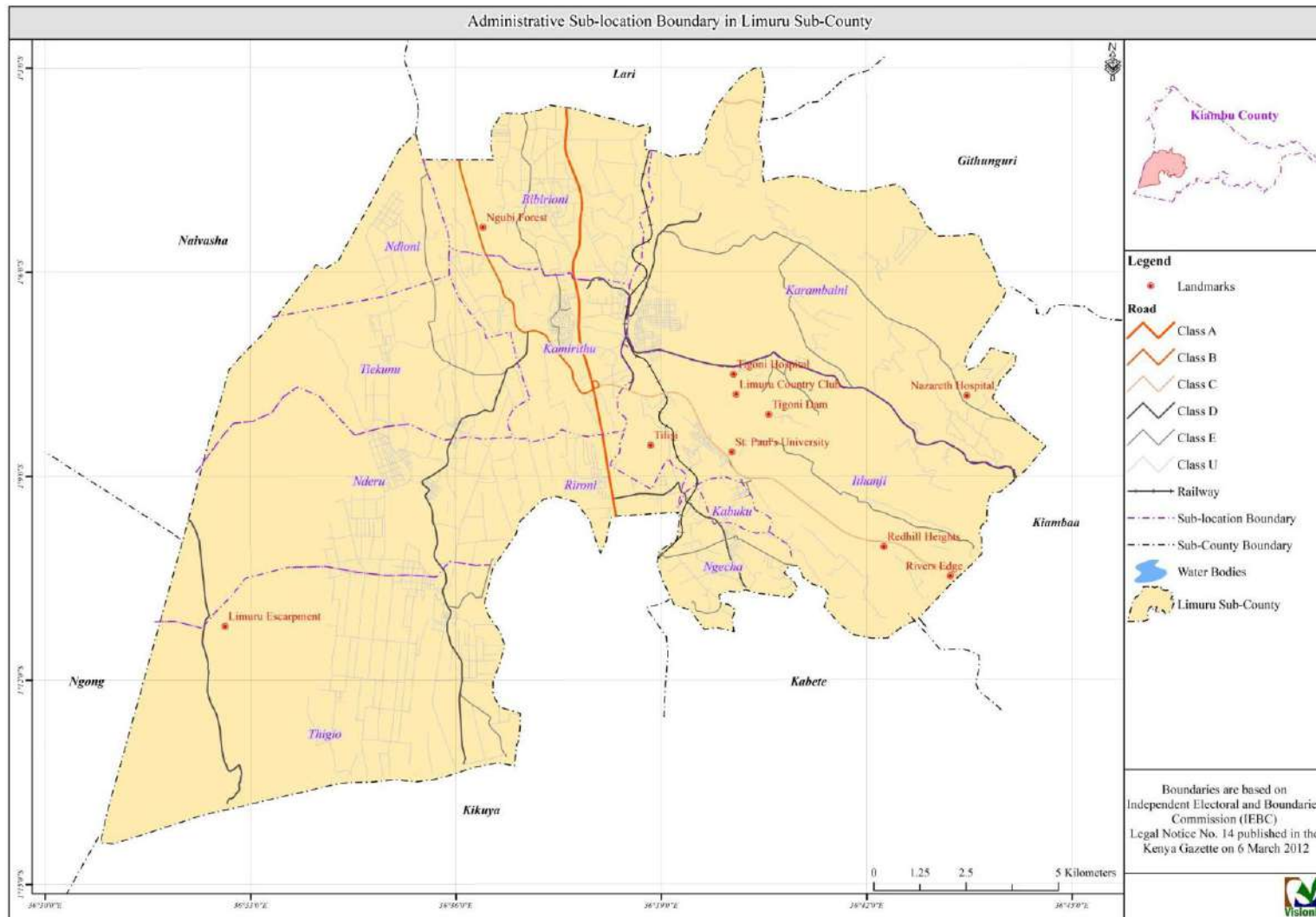
Map 2-3: Location of Limuru in the Local Context

Source: VisionRI



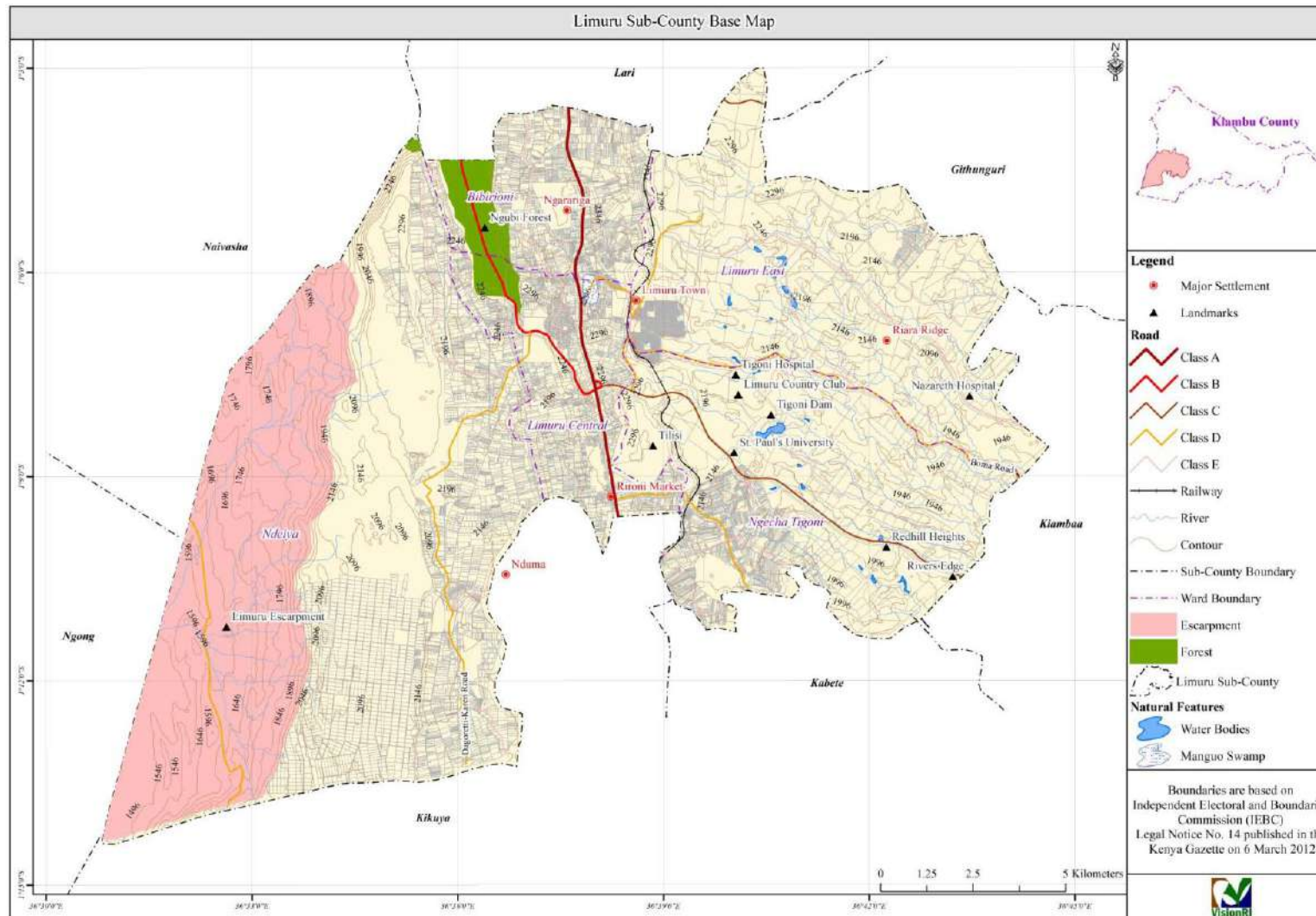
Map 2-4: Administrative Wards in Limuru

Source: VisionRI



Map 2-5: Administrative Sub-locations in Limuru

Source: VisionRI



Map 2-6: Limuru Base Map

Source: VisionRI

2.5 Policy and Legal Framework Context

2.5.1 CONSTITUTIONAL FRAMEWORK

The Constitution of Kenya (CoK) 2010, provides the overarching legislation that guided the preparation of this Plan. Through the objects of a devolved system of government, the Constitution places planning functions both at the national and county levels. Pursuant to the Fourth Schedule of the Constitution, the National Government is mandated to formulate the general principles of land use planning and the coordination of planning by the counties while counties are in charge of planning and development control within their jurisdiction.

Further, the preparation of this Plan was guided by the spirit of participation of the people, human dignity, equity, social justice, inclusiveness, equality, human rights, non-discrimination and protection of the marginalised with the overall goal of attainment of sustainable development pursuant to Article 10 of CoK 2010.

With regard to achieving the objectives of Article 60 of the Constitution, the ISUDP has observed and achieved various principles such as (a) security of land rights; (b) sustainable and productive management of land resources and (c) sound conservation and protection of ecologically sensitive areas such as forests, swamps and wetlands. Subject to Article 66 of CoK 2010, this has been developed by the County Government of Kiambu (established under Article 176) in a bid to support the overall state mandate of regulating the use of any land, or any interest in or right over any land, in the interest of defence, public safety, public order, public morality, public health, or land use planning.

Lastly, the overall implementation of this Plan will be overseen and monitored by the National Land Commission (NLC) established under Article 67. Other functions to be performed by NLC with regards to the implementation of this Plan include, amongst others, to manage public land on behalf of the County Government of Kiambu, conduct research related to land and the use of natural resources, and make recommendations to appropriate authorities; initiate investigations on its initiative or a complaint, into present or historical land injustices, and recommend appropriate redress as well as to encourage the application of traditional dispute resolution mechanisms in land conflicts within the county.

2.5.2 POLICY FRAMEWORK

The key policies that have informed the preparation of this Plan include National Environment Policy, 2013, Sessional Paper No. 3 of 2009 on National Land Policy, and Sessional Paper No. 1 of 2017 on National Land Use Policy.

With regard to the provisions of National Environment Policy, 2013, the Plan recognises the importance of the link between development and sustainable environment by:

- Addressing environmental degradation issues and challenges facing the Sub-County. Notable drivers of environmental degradation are high rates of population growth, inappropriate technology, unsustainable consumption and production patterns, increased incidences of poverty and climate change;
- Providing a framework for an integrated approach to planning and sustainable management of Kenya's environment and natural resources;
- Ensuring sustainable management of the environment and natural resources, such as unique terrestrial and aquatic ecosystems, for both the county and national economic growth and improved livelihoods; and
- Promoting and enhancing cooperation, collaboration, synergy, partnerships and participation in the protection, conservation, sustainable management of the environment and natural resources.

Sessional Paper No. 3 of 2009 on National Land Policy provides an overall framework and defines the key measures required to address amongst others, the critical issues on land, land use planning, environmental degradation, conflicts and unplanned proliferation of informal urban settlements, outdated legal framework, institutional framework and information management. In tandem with the provisions of this policy, the Limuru ISUDP has promoted and encouraged a multi-sectoral approach to land use, provision of social, economic and other incentives and put in place an enabling environment for investment, agriculture, livestock development and the exploitation of natural resources.

Sessional Paper No. 1 of 2017 on National Land Use Policy emphasises the importance of land as a resource for the economic life of a majority of people in Kenya. The way people handle and use land resource is decisive for their social and economic well-being as well as for the sustained quality of the environment. In tandem with this policy, the Limuru ISUDP seeks to strike a balance between satisfying the human livelihood needs and sustainable use of resources for posterity. This has been taken into consideration in the ISUDP through

- a. Anchoring the Sub-County's land development initiatives that will respond positively to the market demands;
- b. Environmental management and sustainable production initiatives in the utilisation of land resources;
- c. Coordination and integration of institutional linkages in planning at sectoral and cross-sectoral levels to foster collaboration and decision making among different land users: and

- d. Optimum utilisation of land resources to meet governance, social-economic, political and cultural obligations of the people of the county and Kenya at large.

Other relevant policies that the ISUDP has considered and integrated are summarised in the table below.

Table 2-1: Other Relevant Policies

Policy	Relevance
Housing Policy Sessional Paper No. 3 of 2004	That comprehensive land-use planning as a major component of housing in facilitating provisions of adequate shelter and a healthy living environment, at an affordable cost to all socio-economic groups in Kenya in order to foster sustainable human settlements.
National Information and Communications Technology (ICT) Policy	Seeks to improve the livelihoods of Kenyans by ensuring the availability of accessible, efficient, reliable and affordable ICT services.
National Climate Change Response Strategy, 2010	Seeks to strengthen and focus nationwide actions towards climate change adaptation and greenhouse gas (GHG) emission mitigation.
Integrated National Transport Policy Sessional Paper No. 2 of 2012	Aims to develop a world-class integrated transport system that is responsive to the needs of people and industry, since the government recognises the transport sector as one of the critical enablers in achieving Vision 2030.
Sessional Paper No. 2 of 2009 on Forest Policy	Requires County Governments to establish and maintain arboreta, mini-forests or mini-recreational parks within their areas of jurisdiction and during the construction of housing estates by the public and private investors.
Energy Policy, 2012	Seeks to ensure adequate, quality, cost-effective, and affordable supply of energy to meet development needs while protecting and conserving the environment.
Public Health Policy, 1994	Focuses on the essential priority packages based on the burden of disease and the required support systems to deliver service among major players in the health sector include the Government represented by the Ministry of Health and the County Government, private sector and NGOs
National Urban Development Policy	Creates a framework for sustainable urban development in the country and addresses the following thematic areas: urban economy; urban finance; urban governance and management; national and county urban planning; land, environment and climate change; social infrastructure and services; physical infrastructure and services; urban housing; urban safety and disaster risk management; and marginalised and vulnerable groups.

2.5.3 LEGAL FRAMEWORK

This Plan has also been prepared in line with provisions of the following statutes: County Governments Act 2012, Urban Areas and Cities Act 2011, Physical and Land Use Planning Act 2019, and Environment Management and Co-ordination (Amendment) Act of 2015, amongst others.

The County Governments Act 2012 mandates county governments to prepare county plans which include “cities and urban areas plans,” amongst others. The said Act provides that the “county planning framework shall integrate economic, physical, social, environmental and spatial planning” (Article 104(2)).

The Urban Areas and Cities Act 2011 provides that Town Committees should “formulate and implement an integrated development plan” (Article 20(2-c)) as well as “control land use, land sub-division, land development and zoning...within the framework of the spatial and ISUDPs for the (town) as may be delegated by the County Government (Article 20(2-d)).” The integrated development plan “shall bind, guide and inform all planning development and decisions and ensure comprehensive inclusion of all functions” (Article 36(2)).

The Physical and Land Use Planning Act 2019 regulates physical planning activities in Kenya. It empowers the County Governments to regulate development within their areas of jurisdiction. Further, it empowers the Director of Physical Planning to prepare various types of physical and land use development plans. In addition, the Director formulates national, regional and local physical development policies, guidelines and strategies.

Under Article 20, the County Director of Physical and Land Use Planning’s responsibilities include- advising the County Government on physical and land use planning matters that impact the County; formulating County physical and land use planning policies, guidelines and standards; preparation of County physical and land use development plans; and preparation of local physical and land use development plans.

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

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

Article 36 mandates each County to develop a 10-year physical and land use development plan which should be in conformity with the National Physical and Land Use Development Plan and any relevant Inter-County Physical and Land Use Development Plan. According to Article 37, such plan should provide an overall physical

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

This Act lends guidance to the development of the contents of structure plans, development plans, advisory plans, zoning plans, subdivision plans among other plans. The Act also stipulates the plan preparation and approval processes. Article 56 empowers the Kiambu County Government to prohibit or to control the use and development of land and buildings in the interests of proper and orderly development of its area and to consider and approve all development applications and grant all development permissions.

Environmentally, this ISUDP seeks to ensure every person has a clean and healthy environment and duty to safeguard and enhance the environment pursuant to Section 3 of Environment Management and Co-ordination (Amendment) Act of 2015. The entitlement to a clean and healthy environment in the ISUDP has included access by any person to various public elements or segments of the environment for recreational, educational, health, spiritual and cultural purposes. Other regulations that stem from EMCA (Amendment) Act of 2015 which have been considered during the preparation of this ISUDP include the followings:

- Environmental (Impact Assessment and Audit) Regulations, 2003;
- Air Quality Regulations, 2013 (Legal Notice No. 34);
- Waste Management Regulations, 2006 (Legal Notice 121);
- Water Quality Regulations, 2006 (Legal Notice No. 120);
- Controlled Substances Regulations, 2007 (Legal Notice No.73);
- Wetlands, Riverbanks, Lake Shore and Sea Shore Management Regulations, 2009 (Legal Notice No. 19); and
- Noise and Excessive Vibration Pollution (Control) Regulations, 2009 (Legal Notice No. 25).

The Kiambu County Community and Neighbourhood Associations Engagement Act 2016 gives statutory recognition to community and neighbourhood associations and effect to their initiatives in complementing County Government service delivery to enable structured co-operation between the County Government, residents and businesses; to facilitate the activities of the associations and organisations; and to give further effect to Articles 10 and 174 of the Constitution as regards the principle of participation of the residents and for connected purposes.

The Kiambu County Valuation and Rating Act 2016 is meant to affect the implementation of Article 209 (3) (a) of CoK that involves valuation and rating of land and for connected purposes. The purpose of this Act is to

provide a framework for valuing and rating land in order to ensure efficiency, accountability and transparency in the administration of valuation of land for rating; promoting economic development; ensuring equity and fairness in land valuation and rating system and compliance with payment of rates related to land. The Act has established the Directorate of Valuation and Rating whose functions include the followings:

- Undertaking valuation;
- Preparing the draft valuation and supplementary valuation rolls;
- Administering the draft valuation rolls;
- Preparing the schedule of rates; and
- Advising the Executive Committee Member on the appropriate methods of rating among other functions.

Other laws involved are outlined in the table below:

Table 2-2: Other Relevant Laws

Law	Relevance
Agriculture, Fisheries and Food Authority Act, (2013)	Provides the confines within which to make proposals on agriculture promotion and conservation of soils and fertility for sustainable agriculture and optimisation of land use.
Water Act (2002)	Provide guidelines on plan proposals touching on management, conservation, use and control of water resources, water supply, and sewerage services.
Land Act, 2012	Provides for sustainable administration and management of land and land-based resources nationally.
National Land Commission Act, 2012	Provides for County Land Management Boards which are critical in processing development applications and allocation of public land as well as NLC that will monitor and have oversight responsibilities over land use planning throughout the country.

Source: VisionRI

2.6 Institutional Framework

2.6.1 CORE PLANNING MANDATE

Institutional mandates for planning in Kenya are examined in relation to urban planning at various scales. Schedule Four of the CoK 2010 distributes planning functions across a two-tier government: National and County Governments with provisions for coordination across the two levels. Planning roles and responsibilities at both the National and County Governments are governed by the CoK 2010 under Chapter

5: Land and Environment, particularly, Article 66. The Fourth Schedule Part 1 (21) and (32) forms the foundation of national government planning mandates while Part 2 (8) of the schedule forms the foundation of county governments planning mandates.

At the county level, planning mandates are governed by the County Governments Act, 2012 Part XI: County Planning (Section 102–115) and Urban Areas and Cities Act, 2011 Part V: Integrated Development Planning (Section 36–42). The Physical and Land Use Planning Act, 2019, governs the planning framework under Schedules 1, 2, 3 and 5 (matters to be considered in spatial planning); Part V (framework control for development control) and Section 16, 17 and 24 (purpose and content of spatial plans).

Inter-governmental Relations Act No.2 of 2012 forms a basis in planning mandates under Part III: Transfer and Delegation of Powers, Functions and Competencies (Section 24–29) and Part IV: Dispute Resolution Mechanisms (Section 30–36). Moreover, Statutory Instruments (Physical Planning Act 1, 2, 5, 6 & 7) serves as a tool for development control. The National–County Government Operational Linkages in planning are further presented below.

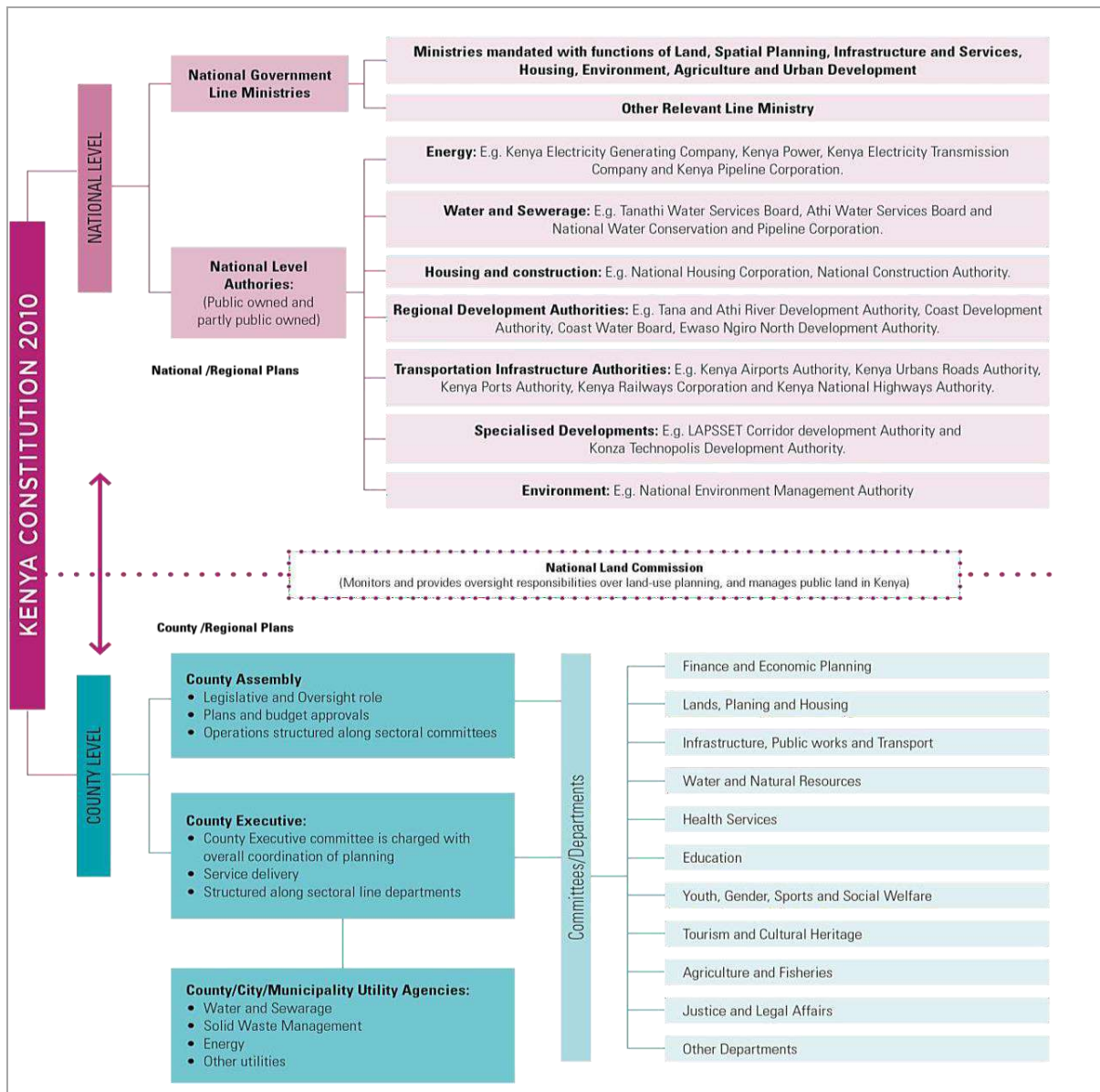


Figure 2-1: Institutional linkages between National and County Government Stakeholders

Source: Urban Planning for City Leaders Handbook

Table 2-3: Roles and Responsibilities of Core Planning Institutions

Level of Government	Roles and Responsibilities
National Government	<ul style="list-style-type: none"> Formulating general principles, policies, standards and guidelines of land planning; Preparation and approval of the National Physical Development Plan, national policies, i.e., land use;

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

Source: VisionRI

2.6.2 CROSS-CUTTING STAKEHOLDERS

Key stakeholders usually include government agencies; civil societies that include civil society organisations, residents' associations, community-based organisations, non-government organisations and the community at large; private sector; developers and property owners (donor agencies or development partners) and local businesses inter alia. Stakeholders should be spatially mapped to ensure that there is even representation across Limuru. Public participation whether in form of public consultation or decision making to entail leaders and stakeholders. Likewise, the public shall be engaged in budget and policy formulation, planning and social service delivery priority setting. These are vested from the powers provided by the Constitution of Kenya, 2010 (Articles 174, 201 and 232); County Governments Act, 2012 (Section 47, 91, 99-100); Public Finance Management Act, 2012 (Section 125, 128, 131 and 137) and Urban Areas and Cities Act, 2011 (Section 21 and 22).

Table 2-4: Key Sectoral Government Agencies

Institutions / Organizations	Roles and Responsibilities	Role and Responsibility in this Plan
National Treasury	Responsible for managing Kenya's national government finances.	<ul style="list-style-type: none"> • Budgetary guidelines; • Negotiations with bilateral partners; • Proposed Ward Development Fund; and • Disbursement of funds to Ministries Departments and Agencies (MDAs) for implementation of programmes and projects at the county level.

Institutions / Organizations	Roles and Responsibilities	Role and Responsibility in this Plan
Ministry of Lands and Physical Planning	Charged with the following functions: National Lands Policy and Management; physical planning; land transactions; survey and mapping; land adjudication; settlement matters; rural settlement planning, i.e., eco- village; land reclamation; land registration; national spatial infrastructure; land and property valuation services administration; administration of public land as designated by the Constitution; and land information systems	<ul style="list-style-type: none"> • Undertake capacity building and technical support for County planning authorities; and • Provide guidelines on aligning national and inter-county planning processes.
Ministry of Transport, Infrastructure, Housing & Urban Development	The Ministry consists of the following five State Departments: State Department for Transport; State Department for Infrastructure; State Department for Housing and Urban Development; State Department for Maritime and Shipping Affairs; and State Department for Public Works. These departments have various roles and responsibilities. For example, the State Department for Housing and Urban Development is responsible for, among others, housing policy management; development and management of affordable housing; management of building and construction standards and codes; shelter and slum upgrading; and urban planning and development	<ul style="list-style-type: none"> • Coordination of road and transport infrastructure developments; • Coordination of affordable housing, slum upgrading; • Building and maintenance of public buildings; • Building and engineering services and standards (Building Code); and • Policy matters on affordable housing,
Ministry of Environment and Natural Resources	The main functions of the Ministry include environment and natural resources policy formulation and review; sustainable management of mineral resources and environmental conservation; continual development of a geodatabase for integrated natural resources and environmental management systems; promoting environmental management activities; and enforcing compliance with regulations and guidelines amongst others.	<ul style="list-style-type: none"> • Policy and coordination of environmental programmes; • Guidelines on environmental conservation; and • Gazettement of environmental special areas e.g., forests, parks, swamps and other ecologically fragile areas.
National Environment Management Authority (NEMA)	Established by the Environment Management and Coordination Act, No. 8 of 1999. Key agency in charge of the coordination of environmental management activities; ensure compliance with environmental guidelines and advise the government on legislative measures concerning environment management.	<ul style="list-style-type: none"> • Approval and licensing of projects which have environmental impacts; and • Monitoring and enforcing environmental laws and regulations.
National Land Commission (NLC)	Established under Article 67 of the Constitution of Kenya, 2010. Responsible for, amongst others, managing public land on behalf of the National and County Governments; recommending a National Land Policy to the National Government; advising the National Government on a comprehensive programme for the registration of title in the land throughout Kenya; and monitoring and oversight responsibilities over land use planning throughout the country.	<ul style="list-style-type: none"> • Management of public land on behalf of the County Government; • Renewal of leases on public land; • Alternative arbitration and conflict resolution on land matters e.g., using traditional dispute resolution mechanism; and • Monitoring and evaluation of the local physical and land use development plans
Kenya National Highways Authority (KeNHA)	State Corporation established under the Kenya Roads Act 2007 under section 3, 4 and 5 with the responsibility for the management, development, rehabilitation and maintenance of international trunk roads linking centres of international importance and crossing international boundaries or terminating at international ports.	<ul style="list-style-type: none"> • Responsible for construction, maintenance and management of international and national roads e.g., Nairobi-Nakuru Road.
Kenya Urban Roads Authority (KURA)	State Corporation established by the Kenya Roads Act 2007 under Section 9, 10, 11 and 12 with the core mandate of management, development, rehabilitation and maintenance of national urban trunk roads.	Development, rehabilitation and maintenance of urban roads within the Sub-County.

Institutions / Organizations	Roles and Responsibilities	Role and Responsibility in this Plan
Kenya Forest Service (KFS)	Established under the Forest Act of 2005. Mandated to conserve, develop and sustainably manage forest resources for Kenya's socio- economic development.	Conservation and management of forests in the Sub-County.
Water Resources Authority (WRA)	Established under the Water Act, 2002. State Corporation under the Ministry of Water and Irrigation mandated in nation-wide water resources management.	<ul style="list-style-type: none"> Policy guidelines on the management of water resources in the Sub- County; Licencing of ground and surface water abstraction; and Licencing of the water utility.
Water Services Regulatory Board (WASREB)	<ul style="list-style-type: none"> Prescribe national standards for the provision of water; Approve water and services tariffs; and Accredits water services providers by licencing and monitoring. 	<ul style="list-style-type: none"> Evaluate and recommend tariffs for water and sanitation services; and Enforce compliance.
Council of Governors of Kenya (CoG)	Established under Section 19 of the Intergovernmental Relations Act (2012) with the mandate to provide a mechanism for consultation amongst Counties County Governments, share information on the performance of the counties in the execution of their functions, facilitate capacity building for governors and consider reports from other intergovernmental forums on national and county interests amongst other functions.	<ul style="list-style-type: none"> Information sharing on best practices on planning and development matters; and Support capacity building on planning matters in liaison with partners.
County Government Entities	<ul style="list-style-type: none"> Constitutes of County Assembly and County Executive Committee with responsibilities outlined under Constitution 2010 Part 2 (Fourth Schedule, Article 185 (2), 186 (1) and 187 (2); The responsibilities of the County Assembly include exercising the powers of enacting laws at the county level; acting as an oversight on the County Executive; and approval of plans and policies for smooth operation and management of resources and County institutions; and The County Executive is charged with the responsibility of exercising executive power at the county level, implementing laws for the administration of the county as well as carrying out other executive functions of the County. 	<ul style="list-style-type: none"> Funding for the preparation of the plans and the recommendations of the proposals therein; Conduct public participation and consultations on planning matters; Approval of the Plan; Plan implementation and monitoring; and Review and update the Plan.
Kenya Investment Authority (Ken Invest or KIA)	A statutory body established in 2004 through an Act of Parliament (Investment Promotion Act No. 6 of 2004). Mandated in promoting investments in Kenya. Responsible for facilitating the implementation of new investment projects, providing aftercare services for new and existing investments, as well as organizing investment promotion activities both locally and internationally.	Promote the Plan proposals and attract investors.
Micro and Small Enterprise Authority (MSEA)	State Corporation established under the Micro and Small Enterprise Act No. 55 of 2012. The Act was developed through a stakeholder's consultation process. Tasked in financing, training, infrastructure development and policy development	Financing and capacity building of local small and medium-sized enterprises (SME) in Limuru.
Kenya Industrial Estate Ltd (KIE)	Established as a limited liability company (Companies Act, Cap 486) of the laws of Kenya to address indigenisation of businesses, capital formation, regional dispersion of wealth, exploitation of local resources, undertake special government projects and offer business advisory services.	Promote industrial development proposals contained in the Plan.

Source: VisionRI

2.7 Other Plans and Strategies

2.7.1 VISION 2030

As the country's development blueprint covering the period 2008–2030, Kenya Vision 2030 aims to achieve a "globally competitive and prosperous country with a high quality of life by 2030." In support of this Vision (economic pillar), the Limuru ISUDP seeks to increase the level of value addition of local agriculture products such as tea, cereals, seedlings, cheese, ghee, yoghurt, milk, feeds and horticulture products. Value addition of agricultural produce shall increase the farmers' earnings, therefore, enhance their livelihoods. In addition, manufacturing for the East and Central African regional market shall be made possible through export production approach thus increasing the country's foreign exchange earnings. Moreover, Vision 2030 Strategy puts forward proposals in with the promotion of ICT, gender balance and catering for persons with disabilities. All these aspects have been observed in the ISUDP through provisions for all the socio-economic groups and people with disabilities both through access to economic activities and social rights.

2.7.2 NATIONAL SPATIAL PLAN

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

The specific objectives of the National Spatial Plan include: (a) creating a spatial planning context that enhances economic efficiency and strengthens Kenya's global competitiveness; (b) optimising the utilisation of land and natural resources for sustainable development; (c) creating a liveable and functional human settlement in both urban and rural areas; (d) securing the natural environment for the high quality of life; and (e) establishing an integrated national transportation network and infrastructure system. Based on the characteristics of Limuru Sub-County, the key strategies outlined in the National Spatial Plan that have been integrated into this ISUDP are as presented in Table 2-5.

Table 2-5: Relevant National Spatial Plan Strategies

Objective	Strategies
Promoting regional balance	<ul style="list-style-type: none"> ● Promoting industrialisation and value addition; ● Encouraging equitable exploitation and sound management of mineral resources; ● Promoting investment in tourism including eco-tourism aspects; ● Developing appropriate transport and infrastructural facilities and services; ● Promoting rural industrialisation; ● Promoting commercial and large-scale livestock production practices; and ● Promoting urban containment to reduce the effects of urban sprawl into rich agricultural land.
Urbanisation	<ul style="list-style-type: none"> ● Strengthening urban-rural linkages through the provision of integrated physical infrastructure; ● Creating an enabling environment for commercial and industrial developers; ● Providing alternative areas for the development of urban centres by the provision of services and infrastructure; and ● Promoting the development of centres as per their potentials and population.
Environmental conservation and protection	<ul style="list-style-type: none"> ● Intense forest cover through afforestation and reforestation; ● Controlling water abstraction; ● Putting flood mitigation measures in place; and ● Ensuring optimal utilisation of available natural resources.
Transport infrastructure	<ul style="list-style-type: none"> ● Creating an integrated road transport corridor; ● Preserving and securing adequate land for future transport infrastructure development; ● Encouraging the use of green transport; and ● Creating linkages between agricultural, tourist and urban centres as well as rural areas.

Source: VisionRI

2.7.3 BIG 4 AGENDA

The Government of Kenya launched a five-year development plan (2017-2022) that will focus on four key areas, i.e., ensuring food security, affordable housing, manufacturing and affordable healthcare as the priority areas in response to the needs of the Kenyans. The National Government aims to increase food production, especially of staple foods, increase the number of housing units by having 500,000 affordable homes in all major cities by 2020, enhance manufacturing capacity and activities in all levels of manufacturing and affordable healthcare is available universally to all Kenyans. The ISUDP aims at making Limuru an agro-industrial hub, therefore, promoting the National government's Big Four Agenda.

2.7.4 NAIROBI METROPOLITAN STRATEGIES

Nairobi Metro 2030 provides the policy direction for the development of the metropolis to support Kenya Vision 2030. The ISUDP will be guided by these policies, particularly in the course of determining the town's overall development goals and various strategies to achieve them. Nairobi Metro 2030 envisions the NMR to become a "world-class African metropolis" characterised by world-class working environment, living environment, business environment and governance. Its key result areas are the following¹:

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

The Spatial Planning Concept (SPC) for NMR provides the physical direction for the region's development in support of Kenya Vision 2030 and Nairobi Metro 2030. It provides a holistic "conceptual framework" that defines the future spatial growth of the NMR and thus provides a guide in the preparation of local development plans. The SPC promotes a land-use system intended to ensure the development of an "environmentally sustainable region" that will² build an internationally competitive and inclusive economy for prosperity; deploy world-class infrastructure and utilities for the region; optimise mobility and accessibility through effective transportation; enhance the quality of life and inclusiveness in the region; deliver a unique image and identity through effective place branding; ensure a safe and secure NMR, and employ world-class Metropolitan Governance Systems.

¹ Nairobi Metro 2030, Chapter 4, pp. 45-80

² Spatial Planning Concept for NMR, page ix

Key parameters that are provided in the SPC for NMR that guided the development of the ISUDP for Limuru are its envisioned economic function of being an “Agro-based Industrial Town” and its role in the proposed settlement hierarchy for NMR, 2030 of being a “Growth Centre.”

2.7.5 DRAFT KIAMBU COUNTY SPATIAL PLAN

The draft Kiambu County Spatial Plan (CSP) 2016–2026 has its strategic focus on land use planning, multi-modal transportation planning, informal settlements as well as zonal planning. Other elements that have been focused on include environmental protection, heritage conservation and physical and social infrastructure management planning. The CSP considers Kiambu as a rapidly urbanising County with rapid outward growth from its core. The CSP is inextricably linked to the County Integrated Development Plan (CIDP), having a key focus on optimal utilisation of resources and ensuring infrastructural development in the region. Limuru Sub-County will have its plans and programmes mainly pegged on Kiambu’s CSP and Kiambu CIDP. This will act as the base for the articulation and formation of action area plans and zoning plans for the ISUDP. Below are the key programmes and strategies in the Kiambu CSP 2016–2026.

Table 2-6: Relevant Strategies in Kiambu County Spatial Plan

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

	<ul style="list-style-type: none"> • and other light industries; and • To strengthen and promote community-based financial institutions.
Tourism and Environmental Conservation	<ul style="list-style-type: none"> • Ensuring conservation and sustainable use of the environment and natural resources; • Supporting protection and sustainable management of water resources; • Promoting the conservation of natural heritage and indigenous cultural sites; • Ensuring diversification and improvement of tourist attraction sites/products; • Coordinating infrastructure planning and development; and • Promoting tourism investment opportunities in the region.

Source: VisionRI

2.7.6 KIAMBU COUNTY INTEGRATED DEVELOPMENT PLAN (CIDP)

Kiambu CIDP 2018-2022 has five main pillars that are meant to steer development in the County. These pillars are security, employment, education, health and urban planning. The CIDP has integrated relevant strategies, with a key focus on projects that have already been planned for or are ongoing. Some of the programmes and projects in Kiambu CIDP relevant for this ISUDP are summarised in Table 2-7. The specific contents of this CIDP include:

- Providing a general overview of Kiambu County information such as its location and size;
- Physical and topographic data; administrative subdivisions; population density and distribution; infrastructure development evaluation;
- Land and land-use patterns; employment; service provision in water and sanitation;
- Education;
- Health access and nutrition; and
- Social protection strategies.

The CIDP has also envisaged linkages with Kenya's Vision 2030 and other plans. It has also covered a concise review of the implementation of the previous CIDP (2012-2017); outlined the County development priorities and strategies; implementation framework; and finally, the monitoring and evaluation structure. This ISUDP has referred to this structure to ensure that it is in concordance with the CIDP.

Table 2-7: Relevant CIDP Strategies

Sector	Strategies
Energy, Infrastructure and Information and Communication Technologies (ICT)	<ul style="list-style-type: none"> ● Supporting ICT infrastructure development hence ensuring efficiency and accessibility; ● Creating incentives for service providers to deploy services in rural and underserved areas; and ● Ensuring proper physical infrastructure layout to ensure proper connectivity between land uses enhancing mobility and accessibility.
Agriculture and Rural Development	<ul style="list-style-type: none"> ● Ensuring small scale holder horticulture and promotion unit programme (SHEP-UP); ● Promoting livestock production and curbing parasites and diseases; ● Laying out proper physical infrastructure in agricultural zones linking them properly to the markets; ● Improving livelihoods of the community adjoining forests while providing alternative income sources; and ● Improving forest cover for biodiversity and water catchments.
Environment Conservation and Water	<ul style="list-style-type: none"> ● Reclaiming the riparian reserve and maintaining them through planting vegetation cover; ● Providing adequate portable water within the County; ● Ensuring proper solid and liquid waste disposal mechanisms; and ● Increasing the forest cover in the county mainly through afforestation and reforestation.
Community facilities	<ul style="list-style-type: none"> ● Ensuring proper distribution of educational facilities within the County; ● Improving sanitation in schools at all levels; and ● Improving health services in the hospitals by equipping the health centres, increasing the number of staff as well as the number of health centres.

Source: VisionRI



REPUBLIC OF KENYA



COUNTY GOVERNMENT OF KIAMBU

PART II

SITUATIONAL ANALYSIS

3 PHYSIOGRAPHIC CHARACTERISTICS

3.1 Topography and Landforms

Limuru lies in Kiambu County's lower highland zone, which is characterised by hills, plateaus and high-elevation plains. It has an undulating topography that slopes towards the south-east of Kenya, which has an effect on developments in the area. Areas with this sort of topography include parts of the steep slopes in Limuru East. The escarpments in Ndeiya have limited development due to the following:

- Cost of development is high as the terrain is rough, therefore, costs more to develop;
- Difficult to service in terms of roads, sewerage and power lines;
- Sparse population densities across these regions; and
- Vulnerability to environmental disasters such as landslides.

At the same time, the Sub-County is endowed with rich, well-dried volcanic loam soils that support agriculture. Maps 3-1 and 3-2 show the Sub-County's landforms map and contour map, respectively. Notice the elevations on Map 3-3 that endeavours to illustrate the most important features in the Sub-County including the escarpment, forest areas and regions that have tea plantations.

3.2 Hydrology and Drainage

Limuru has two major wetlands, namely Manguo and Nderu swamps. A wetland is an area that is saturated with water, either permanently or seasonally, such that it takes on the characteristics of a distinct ecosystem. The primary factor that distinguishes wetlands from other landforms or water bodies is the characteristic vegetation of aquatic plants adapted to the unique hydric soil. Wetlands play a number of roles in the environment, principally water purification, flood control, and shoreline stability. Wetlands are also considered the most biologically diverse of all ecosystems, serving as home to a wide range of plant and animal life.

The main sources of surface water in Limuru Sub-County include Ndarugo River which emanates from the higher regions of the Aberdare ranges. Other rivers include Tigoni, Ithanje, Ruaraka, Kamiti, Riara and Kiuu. With regard to Limuru Sub-County's terrain, the rivers drain towards the south-east. A study carried out by Hadgu et al., 2013 revealed that most of the physical water quality parameters for Ndarugo River were within the World Health Organisation's (WHO) standard limits for drinking water.

The sub-basin has a discharge capacity of 3,500 m³/day during the dry season and 662,770 m³/day during the wet season. There are observed encroachments in riparian areas. These include illegally constructed buildings as well as squatter settlements which do not observe the 6-metre easement requirement set by the Urban Rivers Restoration Programme Department at the Ministry of Water and Irrigation and Water Resources

Management Act (WRMA). Encroachments also include agricultural activities and quarrying. This type of scenario is set to negatively impact the flow of rivers as well as harm human activities.

Encroachment of settlements on riparian reserves will interfere with the flow of water and this will, in turn, result in flooding, especially during the rainy season. The growing of crops near water bodies will reduce the volume of flowing water and lead to water pollution when fertilisers are eroded into the river. Continuous quarrying will lead to deposition of debris at the bottom of rivers and reduce the volume of flowing water. In general, surface water will reduce in volume and become polluted, if measures are not set to control the nature and types of human activities allowed near water bodies.

Within the volcanic areas, where the volcanic rocks rest on an old, bevelled land surface, an aquifer is probably provided by the weathered gneiss of that surface. Numerous boreholes have been sunk in the area, particularly through the volcanic rocks. In general, it may be said that boreholes sited on volcanic areas are more successful than those sited in basement system rocks. The effect of sinking too many boreholes without establishing reasonable intervals is that some boreholes will be unable to provide their users with enough water since the waters within their aquifers will seep into lower-lying boreholes. The best way to curb this is to set up a good infrastructure and provide piped water to the residents.

Manguo wetland is a typical tropical swamp, covering an area of approximately 50 ha. It is only about 200 metres northeast of Limuru Town. The swamp has three unique ecological units (open water, swamp, and floodplain) that support substantial populations of bird species and wetlands plants (Macharia and Thenya 2007b). Over 30 species of the Resident and Palearctic bird have been recorded in the swamp, a feature that makes it an important site for bird watchers and researchers. The wetland is under threat. For example, several people claim to have title deeds in Manguo swamp. Private developers have subdivided this wetland into small plots, and some have even started refilling the swamp to construct a commercial building. Moreover, it is also threatened by grazing and cultivation on the adjacent land and pollution from Bahati slaughterhouse. The County Government together with National Government needs to work together to reclaim this vital resource and save it from drying due to its major contribution as groundwater recharge and its reach bird species.

Proper management of wastewater and water resources contributes to a clean and healthy environment. However, water pollution is a major challenge in Limuru Sub-County. This is caused by the prevalent use of septic tanks and soaks pits, open sewers, poor drainage systems, improper disposal of solid waste, and use of agrochemicals in agricultural activities, amongst others. These have negatively affected the rivers in Limuru Sub-County. Poor disposal and management of solid waste have affected the health of some of the residents as well, as they use natural sources of water for domestic use. Long term water pollution will lead to increased death of living organisms, including plants and animals both on land and water bodies.

3.3 Geology and Soils

The geological structure of Kiambu County is a product of volcanic activities and faulting. The dominant rock formation comprises of a series of volcanic rocks namely igneous rock, volcanic ash and alluvium. Most of the rocks in the County have undergone weathering forming deep soils while the remnants act as water retainers such as in Limuru and Lari Sub-Counties³.

In the central and western parts of Limuru, where there is reliable rainfall and rich well-dried volcanic loam soils fertile soils, there is a thriving large-scale tea farming sector. This is common in Mabroukie and Bibirioni, Thigio and Rironi where there is small-scale farming.

On the other hand, the Ndeiya ward is characterised by low precipitation, attributing to the sparse population density. Residents practice irrigation and farming drought-resistant crops. Moreover, the Government sinks boreholes and establish water pans.

Soil pollution as a result of poisoning from the use of fertilisers is an environmental challenge in the cultivation areas that have had an adverse effect on the natural and productive soils across agricultural regions of the Sub-County (see Map 3-4 and 3-5). This too affects underground water when chemicals leach in and surface run-off is experienced during rainfalls (DeKimpe & Morel, 2000). Continuous pollution leads to soil degradation and reduced farm yield throughout the affected soils.

3.4 Vegetation

Limuru is characterised by a variety of vegetation cover. Tree species dominant in the area are as follows: *Azadirachta indica* (Neem or Indian lilac), *Calliandra calothyrsus* (Calliandra or Red Carriandra), *Senna siamea* (Cassod tree or Cassia tree), *Casuarina equisetifolia* (Whistling pine tree), *Croton megatocepus* (Mukinduri) (Croton Tree), *Prunus africana* (Muiri) (African Cherry), *Cupressus lusitanica* (white cedar), *Eucalyptus* species (southern blue gum), *Ficus* species (Figs), *Grevillea robusta* (silky oak), *Mangifera indica* (mango), *Moringa oleifera* (drumstick tree), *Senna siamea*, *Sesbania sesban* (sesban), *Terminalia brownie*, *Schefflera actinophylla* (Australia umbrella tree), and *Spathodea camulanata* (African tulip tree), amongst others.

Vegetation is essential as they clean air and help in noise absorption. The planning area's ecology has been degraded over the decades from agriculture and settlements. Land-use changes to accommodate the production of tea and food crops have affected the natural vegetation.

³ Kiambu County Spatial Plan (2018-2028)

3.5 Climate

3.5.1 TEMPERATURES

The planning area has a mean annual temperature of 26°C, which ranges between 20.4°C in the upper highlands to 34°C in the midlands of Limuru division. The average minimum monthly temperature for Limuru Sub-County, recorded from 1981 to 2010, varies throughout the year. The highest minimum temperature is recorded in the month of April while the least minimum temperature is recorded in the month of July. Thus, the area is relatively cold, seen as it has recorded the majority of the months as having minimum temperatures within the range of 14–15°C. Limuru Sub-County has recorded the highest average maximum temperature in the month of February, while the lowest average maximum temperature is normally recorded in July. The difference between the maximum and minimum monthly average temperatures gives the monthly temperature range.

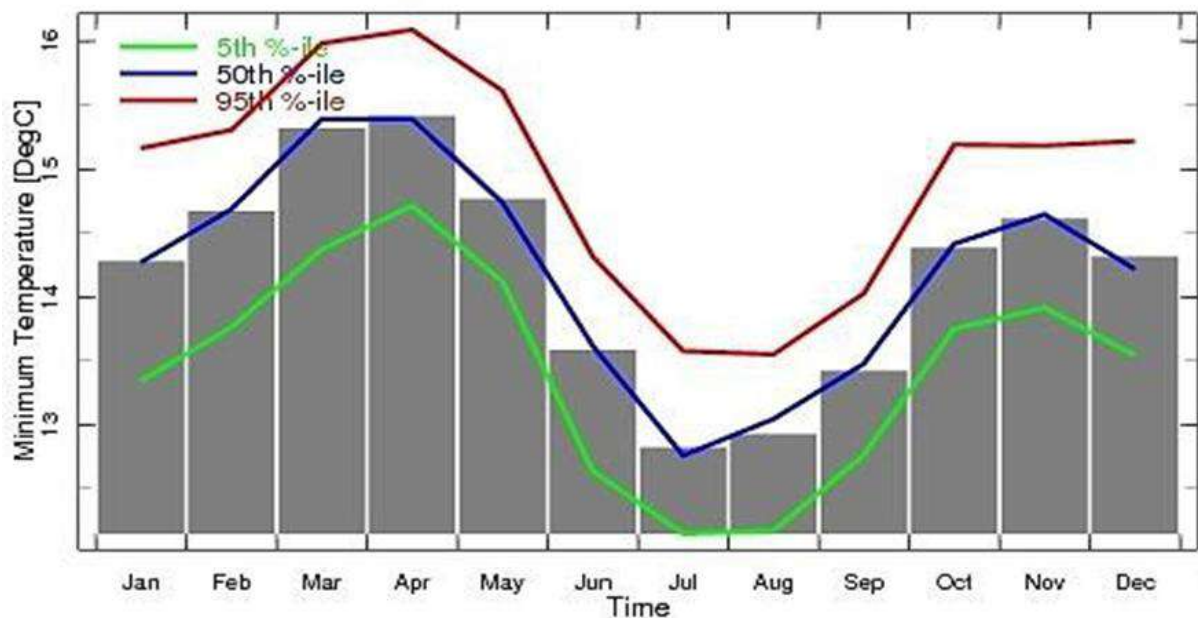
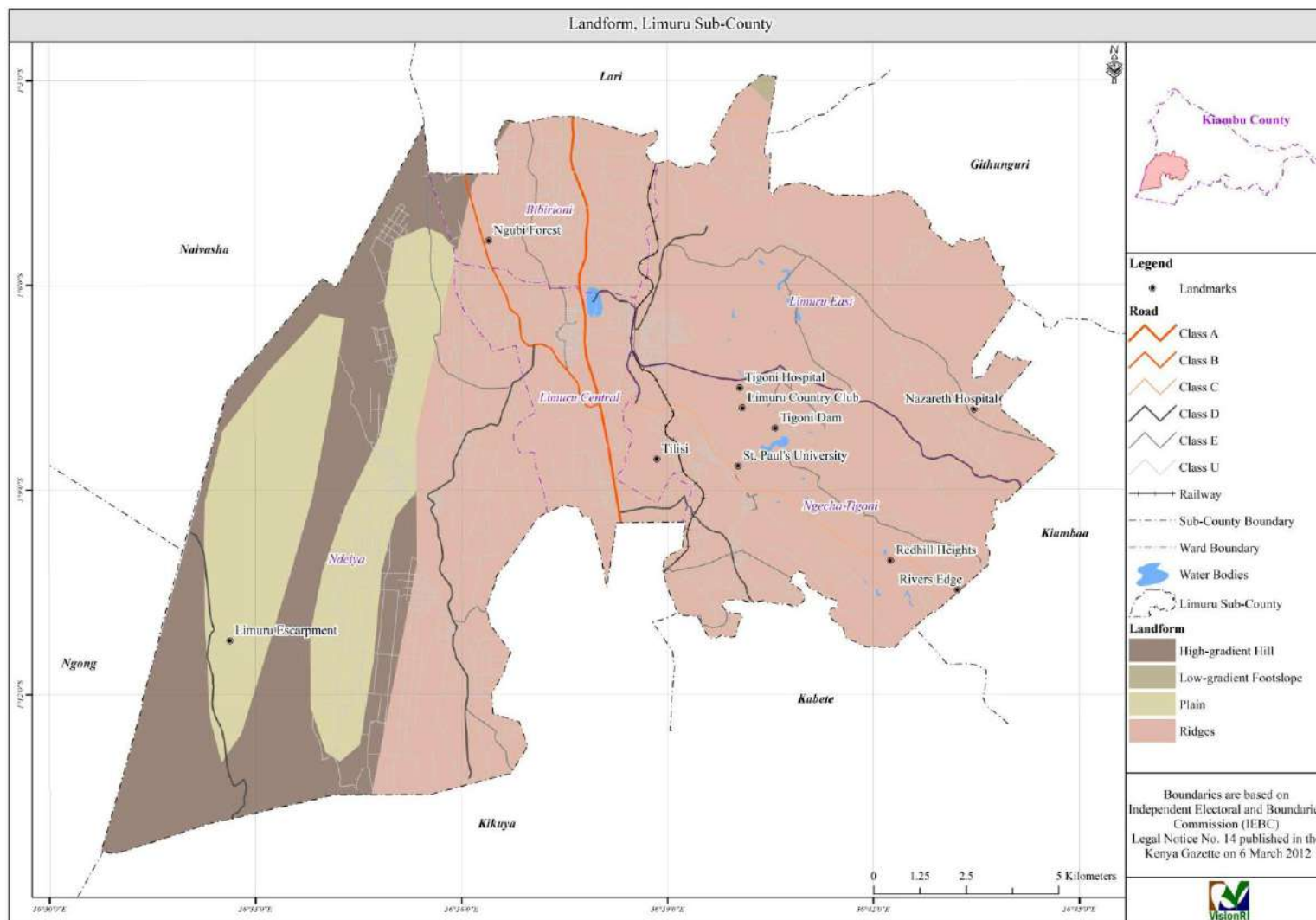


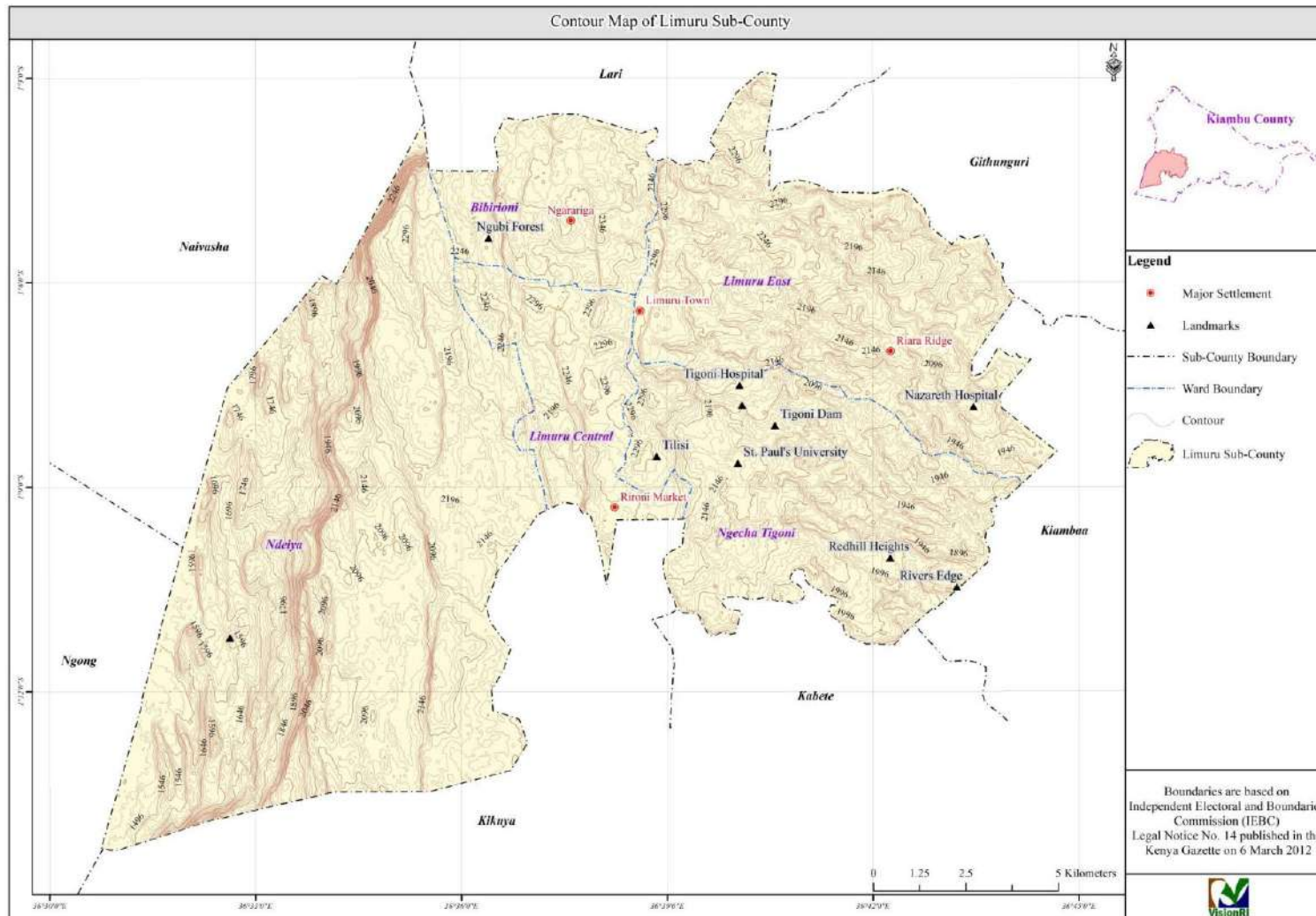
Figure 3-1: Limuru Monthly Minimum Temperature

Source: Kenya Meteorological Department, Climatology 1981–2010



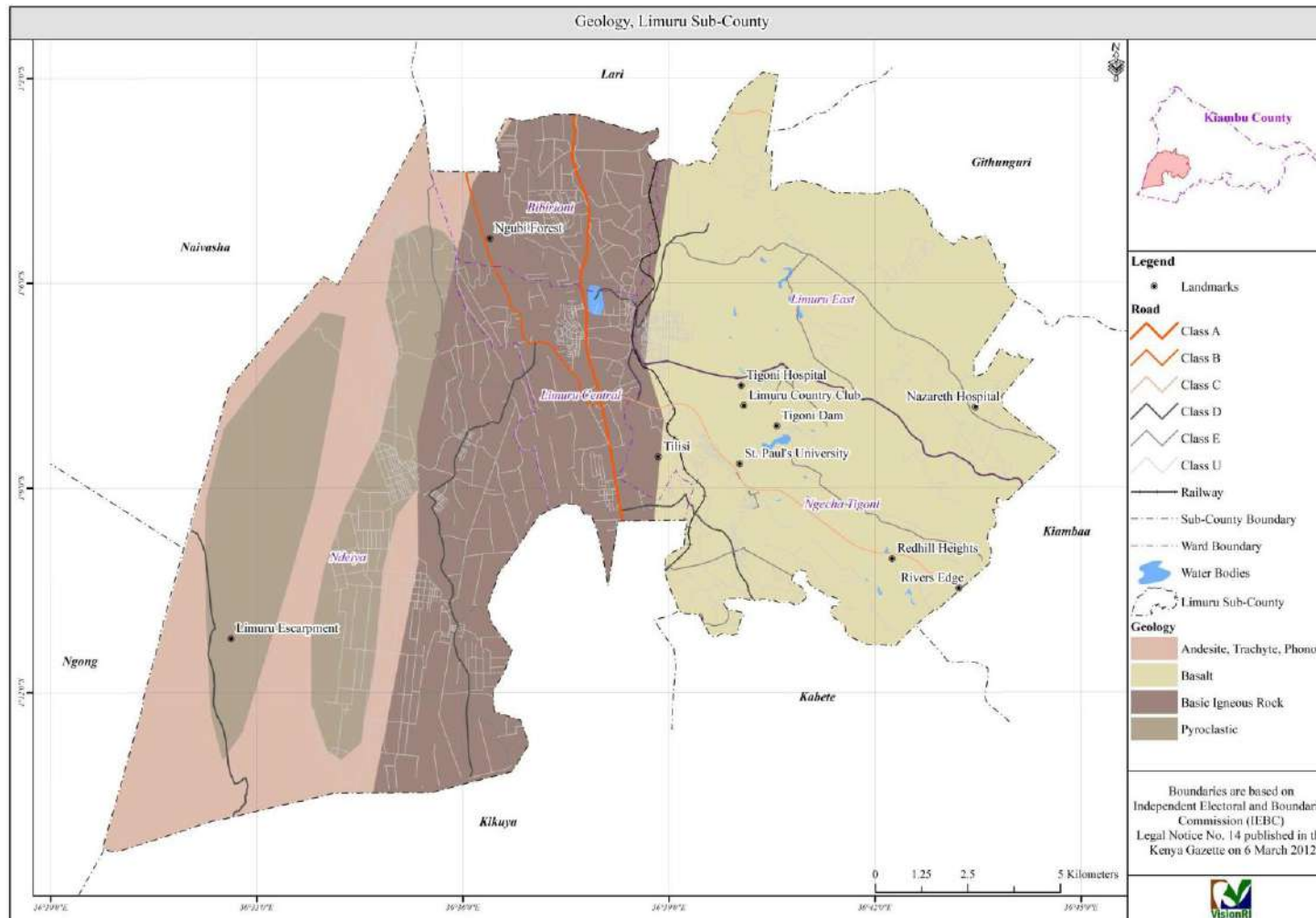
Map 3-1: Landforms Map

Source: Survey of Kenya (SoK)



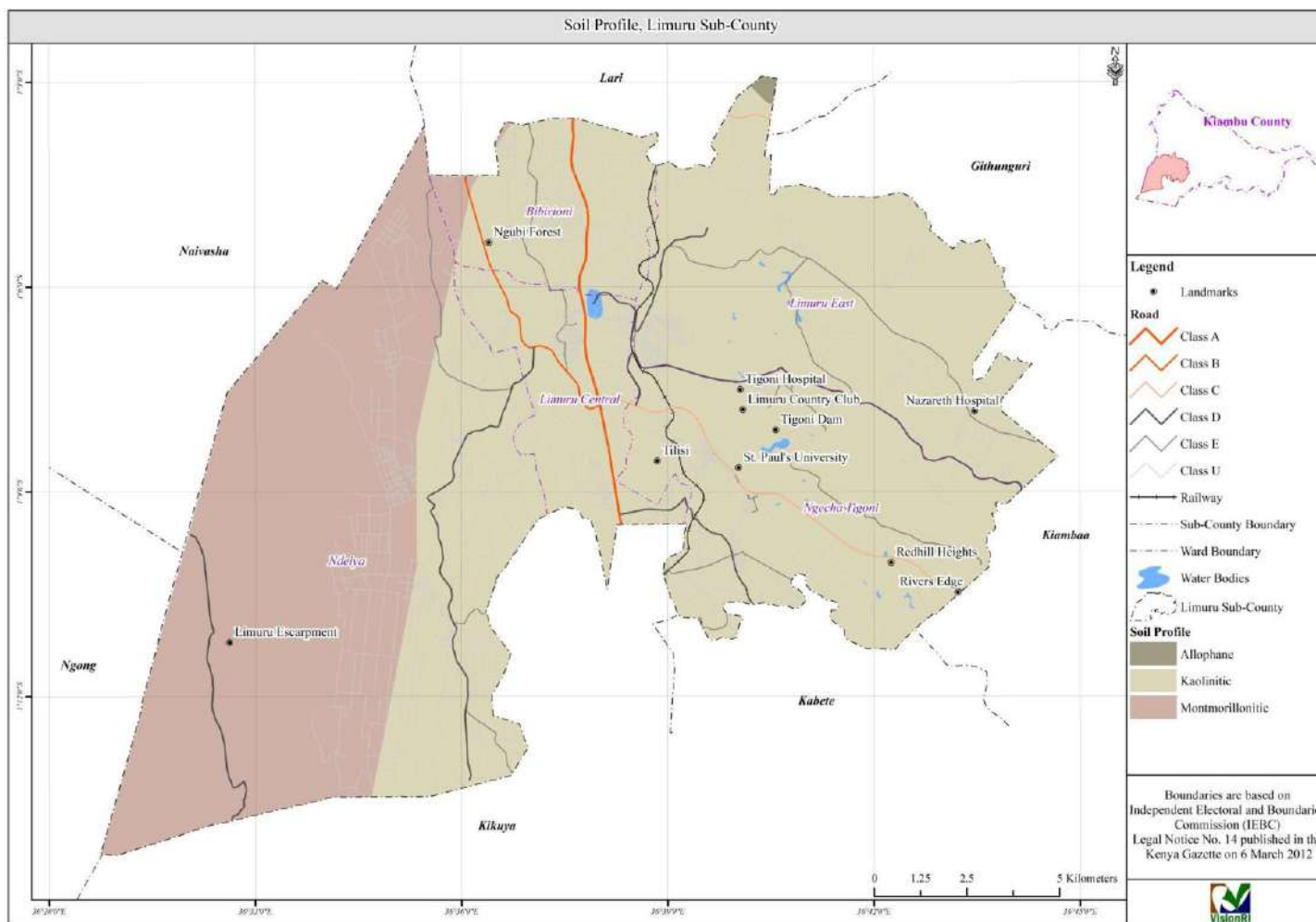
Map 3-2: Hydrology and Elevation Map

Source: ASTER data



Map 3-3: Geology Map

Source: Mines and Geology Department, Kenya



Map 3-4: Soil Map

Source: Survey of Kenya (SoK)

3.5.2 WIND

The predominant average hourly wind direction in Limuru is from the east throughout the year. The average hourly wind speed in Limuru experiences significant seasonal variation over the course of the year. The windier part of the year lasts for 7.5 months, from September 13 to April 29, with an average wind speed of more than 8.3 miles per hour. The windiest day of the year is November 25, with an average hourly wind speed of 10.2 miles per hour. The calmer time of year lasts for 4.5 months, from April 29 to September 13. The calmest day of the year is June 16, with an average hourly wind speed of 6.4 miles per hour.

3.5.3 RAINFALL

Limuru Sub-County experiences a bimodal type of rainfall. The long rains fall between mid- March-May followed by a cold season usually accompanied by drizzles and frost between the months of June to August and the short rains between mid-October-November. There are no dry months, however, a few months receive low rainfall. Low rainfall is experienced between the months of July to October for the four-continuous years of rainfall observation. The average annual rainfall for Limuru is 1500mm. Generally, rainfall is good for planting and sustaining cash crops of tea, coffee and flowers. This creates an opportunity to employ more people in the agriculture sector throughout the year.

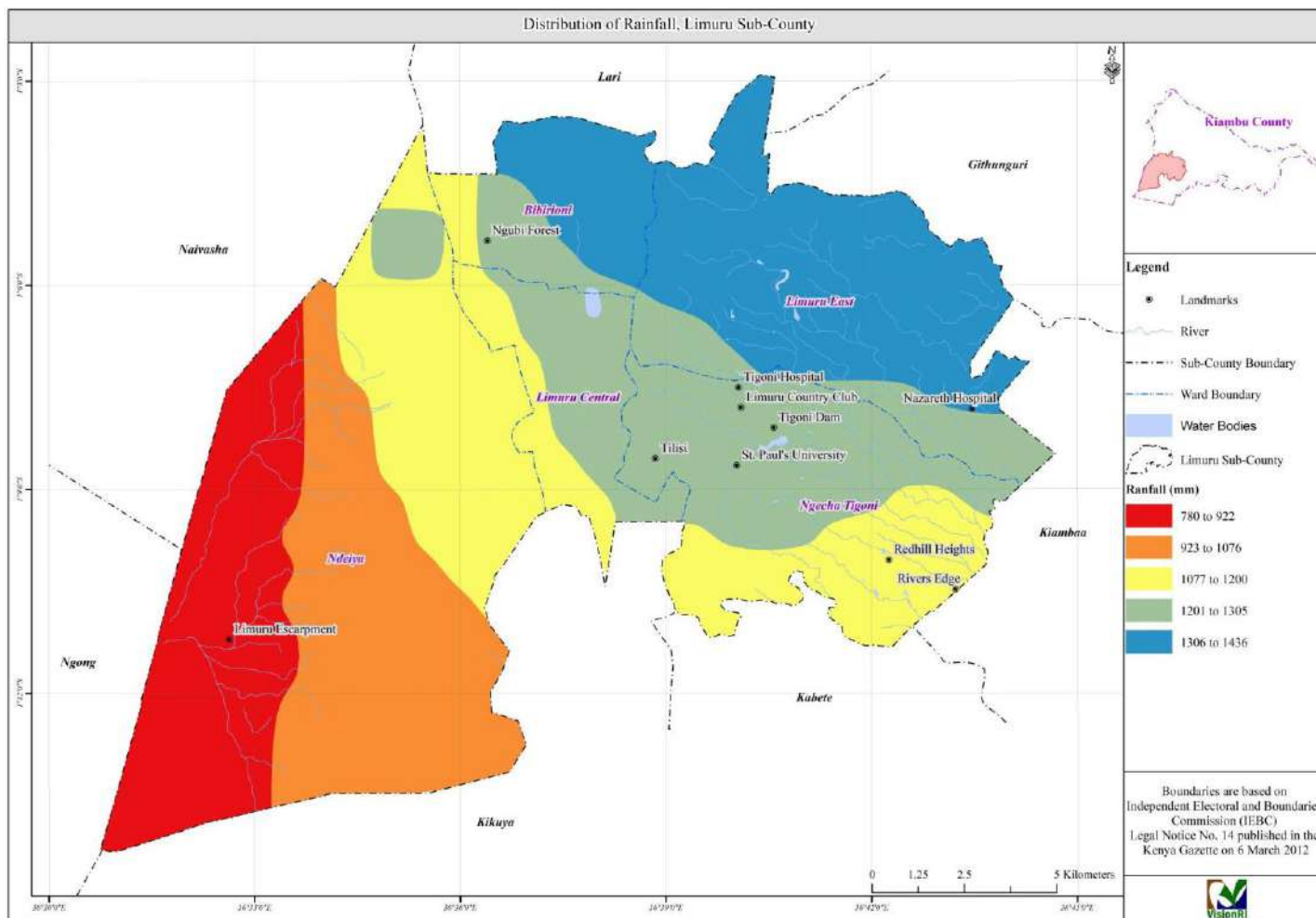
3.6 Emerging Planning Issues

The key planning opportunities and constraints are listed in Table 3-1:

Table 3-1: Key planning opportunities and constraints on physiographic characteristics

Opportunities	Constraints
Limuru has rich well-dried volcanic loam soils fertile soils, which promote thriving large-scale tea farming sector.	Encroachment on water catchment areas.
The area receives bi-modal rainfall, which favours agriculture.	Pollution, i.e., water, air and soil.
Gentle slopes in some areas which make the area not susceptible to floods.	Agricultural practices along the sloping terrain pose a challenge on proper management of soils as well as the nearby water bodies.

Source: VisionRI



Map 3-5: Limuru Rainfall Map

Source: Meteorological Department of Kenya

4 POPULATION AND DEMOGRAPHY

4.1 Population Size and Distribution

The total population of the planning area was 159,314 with 49,096 households as of the census done by the Kenya National Bureau of Statistics (KNBS) in 2019. The census also showed that the Sub-County has a total land area of about 285 square kilometres with a population density of 559 persons per square kilometres. The population density varies across the wards in Limuru as shown in the Table 4-1.

Table 4-1: Limuru Sub-County Population Density by Ward

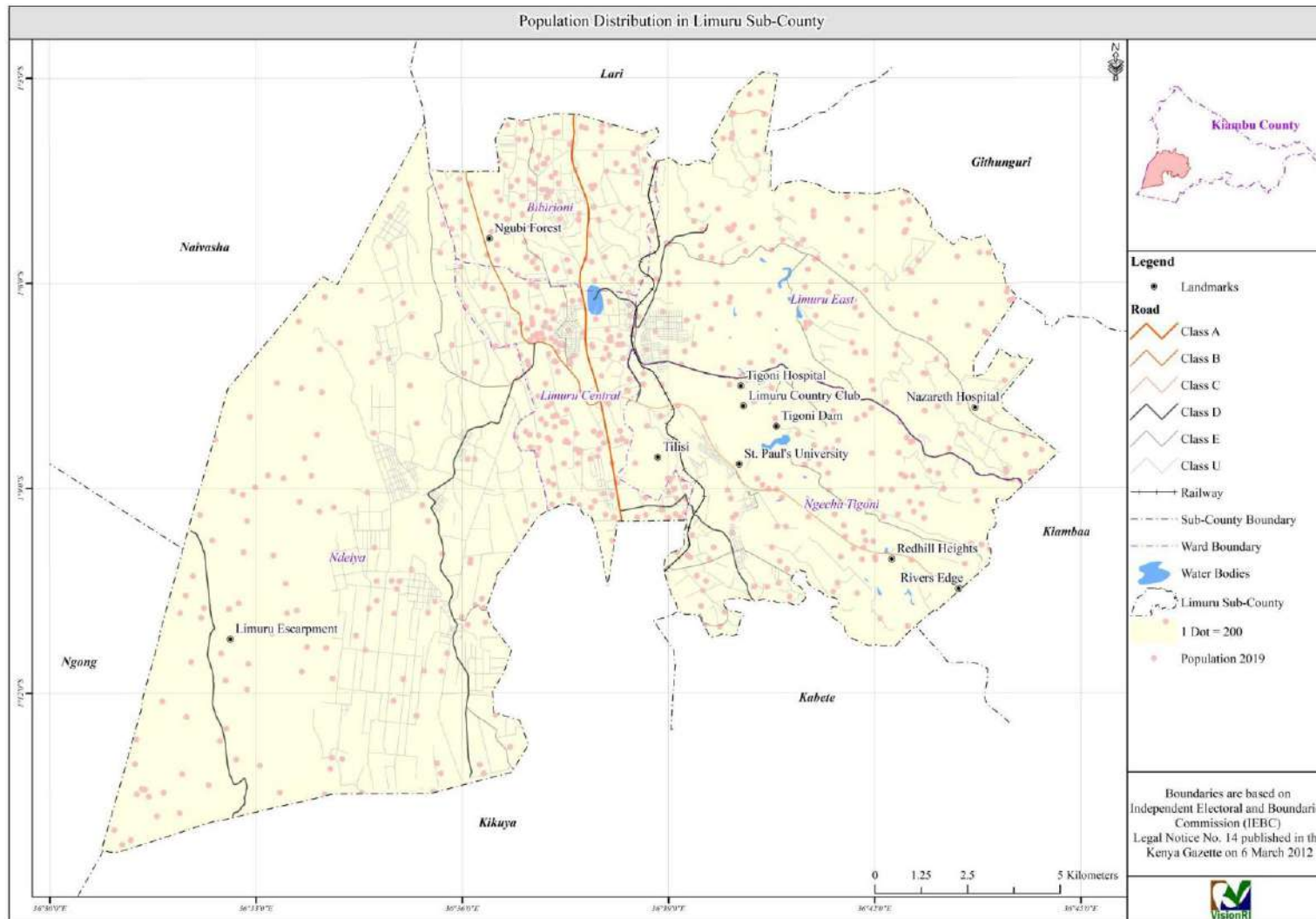
Ward	Population (2019)	Area in Sq. Km	Density (Pop) Per Sq. Km
Bibirioni	25,269	20.7	1,218
Limuru Central	40,491	30.3	8,972
Limuru East	33,763	58.8	1,458
Ndeiya	30,819	127	243
Ngecha/Tigoni	28,972	48.2	1,808
Total	159,314	285	559

Source: 2019 KNBS Population Census Reports

The overall population slightly grew at an average annual growth rate of 1.97% between 2009 and 2019. This can be backed up evidently by the limited expansion of Limuru Town and the fact that no major residential estates were established in Limuru during the period under review. Except for Limuru Central Ward, the rest of Limuru is relatively sparsely populated mainly because of large scale tea and dairy farms. Limuru is basically an agro-based industrial sub-county that does not service Nairobi significantly as a 'dormitory town' like other towns in the metropolitan region such as Kikuyu and Ruiru. This scenario affects the distribution of social facilities such as schools and increases the distance to the existing ones as people have to cross big farms to reach the facilities. This is a challenge to planning.

4.2 Population Structure

The distribution of the population by sex in the Sub-County showed that there were 50 more females than males (79,632) in 2019. On the other hand, the distribution of the population by age indicated that the 0-4 age group had the largest population (17,832) whereas the 100+ age group had the least population (43). The youth between the ages of 15-34, represented 36.1 % of the entire population in 2019, a decrease of about 0.9% since 2009. The dependent population, which comprises of the population between 0-14 and 65-75+, represented 37.05% of the total population, a decrease of 3.85% since 2009. The rest of the 26.85% represented the population between 35-64 years of age. Since the population is set to increase in the future, the percentages are likely to vary, with the youth or working population being slightly higher than the dependent population. The reverse of this would create an overdependence between the non-working and working population.



Map 4-1: 2019 Population Distribution Map

VisionRI based on KNBS 2019 Census Report

The population structure illustrated in the following figure depicts an expansive type of a population pyramid indicating a larger percentage of young people at the bottom in Limuru Sub-County. The young persons' dependency ratio, i.e., the age group of 0-14 years as a proportion of the labour force (age of 15-59 years) is 53.1%, a decrease of 3.9% since 2009. Alternatively, the old persons' dependency ratio stood at 10.7%, an increase of 1.7% since 2009. Indeed, this has implications for social services mainly education and health care. Thus, the population pyramid has a wider base and a smaller peak. This shows that the Sub-County was comprised of many youths, thus, similar to the national population pyramid of Kenya. This type of population pyramid represents the population structure of developing countries. As for our study, this population pyramid indicates a steadily urbanising area.

The ideal scenario is to see a population pyramid which has a relatively smaller base, a wider mid- section and smaller peak, as it will indicate that the area is developed. Having the above population pyramid in future will indicate that the future population will be comprised of more non-working population than the working. Straining the working population reduces the individual productivity of the people, especially in this setting, whereby the people are employed in the industrial and agricultural sector. At the end of the day, lower productivity will result in the decline of the dominant sectors within the Limuru Sub-County. More thought will be put into planning for the longevity of the industrial and agricultural sector to encourage sustainable development.

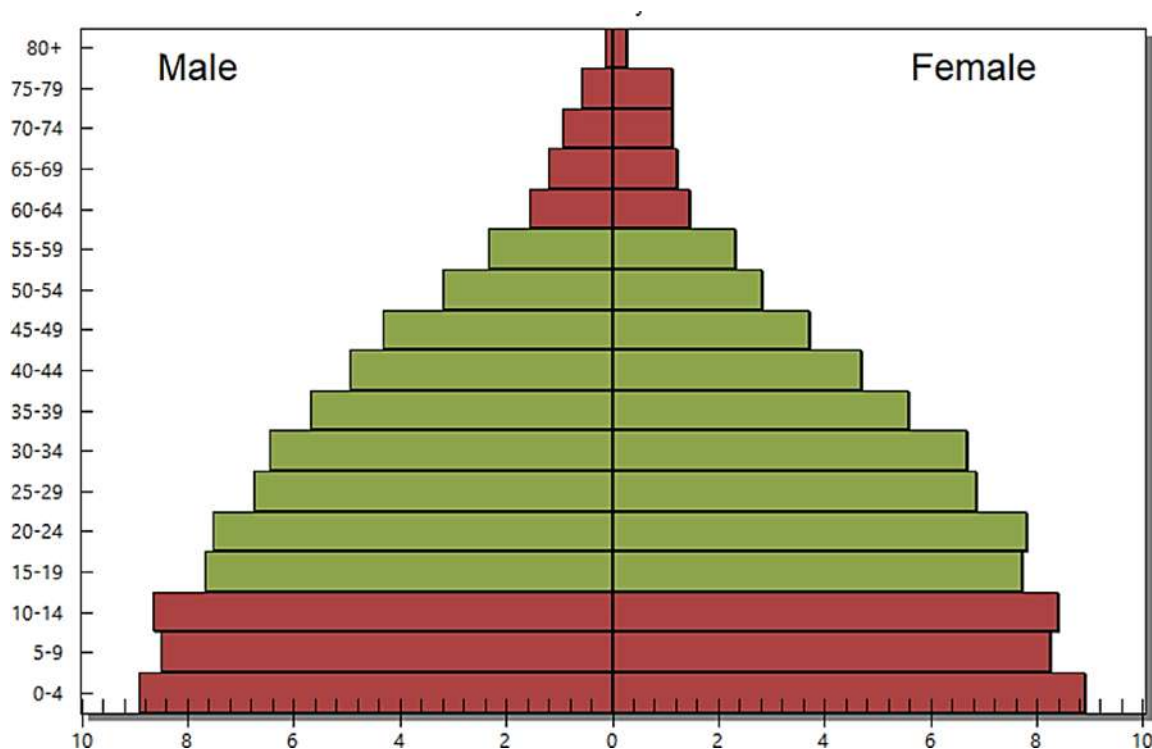


Figure 4-1: Limuru Population Pyramid in 2019 (Thousands)

Source: 2019 KNBS Census Data and 2017 UN World Population Prospectus via Spectrum

4.3 Population Projection

In recent years, the planning area has been significantly affected by urbanisation. With all factors held constant, the Limuru Sub-County population is projected to rise from 159,314 in 2019 to 197,447 in 2030. The base year used for the 2020 to 2030 population projection is that of the 2019 population census. The population of Limuru Sub-County is projected to grow up to 3% per annum come 2030. In 2019, the population density of the area was 559 persons per square kilometres and is exponentially set to become 779 persons per square kilometres in the year 2030. However, due to the dualling of Nairobi-Nakuru Highway, the Western By-pass, Gikambura-Mutarakwa Road, among other infrastructure this may lead to a higher population increase by attracting people to settle in Limuru.

The population projections for Limuru Sub-County are as shown in the table below.

Table 4-2: Limuru Sub-County's Projected Population

Ward	Years					
	2009	2019	2022	2025	2028	2030
Bibirioni		25,269	26,792	28,407	30,119	31,317
Limuru Central		40,491	42,931	45,519	48,263	50,183
Limuru East		33,763	35,798	37,956	40,243	41,844
Ndeiya		30,819	32,677	34,645	36,734	38,196
Ngecha/Tigoni		28,972	30,718	32,570	34,533	35,907
Total	131,132	159,314	168,916	179,097	189,892	197,447

Source: Based on the 2019 KNBS Census Report

4.4 Demographic Characteristics

4.4.1 AVERAGE HOUSEHOLD SIZE

As stated earlier in the chapter, there were 49,096 households and a population of 159,314 people in the Sub-County in 2019. This translates to an average number of 3.2 persons per household. The projected household size will be expected to rise about 4 persons per household come 2030. This is because the current population is comprised of more youths, who are expected to have larger households later in life. This implies that some of the population will also be starting their own families and need homes. Increased demand for residential houses will need more developers to come up with affordable housing. If the demand is not met with ample supply, the people will look for their means of shelter, raising the probability of informal housing development in the area.

4.4.2 AGE-SEX RATIO

Based on the 2019 KNBS census, the female to the male sex ratio of Limuru Sub-County is 1:0.99. This is correspondingly higher than the standard sex ratio at birth in the country at 103 male births per 100 female births. The projections over the planning period do not seem to change this ratio. Overall, there are more women than men in the Sub-County.

4.4.3 FERTILITY RATE

This is described as the total number of live births a woman has during her productive years, which is between 15–49 years or 12–49 years for the international and Kenyan standards, respectively. According to (KNBS, 2012), the national Total Fertility Rate (TFR) was at 6.7 children in 1989 and 4.8 children in 2009. The calculated TFR for Limuru Sub-County based on the 2019 census and demographic indicators presently within the Central region based on the UN Population Statistics 2017 stood at 3.66 children and is projected to decline to 3.18 children come 2030 as illustrated in the following table. From the afore-sourced statistics, the mean age of childbearing was about 28.65 in 2019 and is expected to be 28.45 in the year 2030.

This drop is largely due to the use of contraceptives and late marriages. This is despite the decline in the population slightly increasing at a rate of about 1.97 % people per annum within Limuru Sub-County. The TFR values are juxtaposed with the current Crude Birth Rate (CBR) per 1000 mid-year population to show the gravity of the situation. This means that the population has been growing at a relatively slower rate. Even though the women have been very fertile, the population growth and fertility rate are seen to be dropping. The positive impact of the drop is that there will be a steady urbanisation rate in the future, while the most dominant-negative effect is that the population will be comprised of an increased number of older people than the youth, thus decreasing the human labour as a source of production. Table 4-3 shows the fertility rate in comparison with the vital statistics of the crude birth rate in Limuru Sub-County.

Table 4-3: Limuru Sub-County Total Fertility Rate Projection

Year	2019	2022	2025	2028	2030
TFR Values	3.66	3.55	3.40	3.26	3.18
CBR per 1000 mid-year population	29.5	29.6	25.3	21.0	17.4

2019 KNBS Census Data and 2017 UN World Population Prospectus via Spectrum

4.4.4 MORTALITY RATE

There are several concepts related to death rate such as age-specific death rate, child mortality, crude death rate, infant mortality, maternal mortality ratio and under 5 mortality rates. These rates are vividly observed as the population transitions from one age group to another from conception. The maternal mortality ratio is the number of women who die during pregnancy and childbirth. Adult mortality is calculated as the probability of

dying between the ages of 15 to 59 years, derived from adult age-specific death rates. The most common death rates are under 5 mortality and infant mortality rates. On this basis thereof, Table 4-4 shows Limuru Sub-County's trend in mortality level, which indicates that the male and female adult mortality rates are expected to decline come 2030. The infant and under-five mortality rates are expected to follow a similar trend.

The highest death rate in the Limuru Sub-County, as well as any population, is the crude death rate. It is depicted to rise from 5.5 in 2019 to 7.0 in 2030. The crude death rate is described as the annual number of deaths occurring per a thousand mid-year population. As the population transitions from one age group to another, the number of deaths is recorded. It is evidently seen in the age-sex pyramid that the bars fluctuate in length. This indicates that a high number of people died as they transitioned to the; 30-34, 35-39 and 40-44 age groups. Table 4-4 also shows the mortality rate in comparison with the vital statistics of the crude death rate in Limuru Sub-County.

Table 4-4: Limuru Mortality Rate Projection

Mortality Year	2019	2022	2025	2028	2030
Infant Mortality Rate per 1000 live-births (IMR)	30.8	29.5	27.6	25.8	24.7
Under 5 Mortality Rate per 1000 live-births (U5MR)	41.9	40.0	37.0	34.2	32.4
Total Adult Mortality (45q15) per 1000 population	167.9875	168.7055	156.9286	135.8148	110.5238
Crude Death Rate per 1000 mid-population	5.5	6.0	6.4	6.6	7.0

2019 KNBS Census Data and 2017 UN World Population Prospectus via Spectrum

4.4.5 LIFE EXPECTANCY

This is the average number of years a person is expected to live in a lifetime. According to the World Health Organisation (Kelley, 2016), the average life expectancy was 52.81 years in 1999; while

in 2009 the average life expectancy was at 57.80 years. The current statistics show that the average population can live up to an average of 63.4 years. In the current century, women are expected to live up to an average of 65.8 years while the men live up to an average of 61.1 years.

Given the foregoing, the projected life expectancy for Limuru based on the 2019 census and demographic indicators presently within the central region based on the UN Population Statistics 2017 stood at 67.0 for males and 71.5 for females in 2019. They are also expected to rise to 69.8 and

73.8 come 2030, respectively. The increase in life expectancy is attributed to an improvement in people's health. Quality health care has been provided to the people by the government as well as the private sector.

4.5 Social-Economic Analysis

4.5.1 CULTURE AND RELIGION

Limuru is a cosmopolitan area with various denominations, however, the dominant ethnic group in Limuru is the Kikuyu which consists of several clans thereby depicting monolithic culture based on Kikuyu customs and traditions. There are no cultural sites within Limuru. Other ethnic communities include the Maasai, Akamba, Ameru and Luos, just to mention a few.

4.5.2 MARGINALISED AND MINORITIES

The vulnerable members of the society include elderly people and people living with disabilities. This group of people is faced with challenges such as increased poverty, increased abandonment rates of elderly persons, inadequate shelter and health for the elderly. Limuru has 3,473 persons living with a disability which translates to 2.5% of the total sub-county population. Other vulnerable people include women and children.

4.5.3 EMPLOYMENT AND UNEMPLOYMENT

The SPC for NMR notes that 30.94% of Limuru residents are employed. While 4,994 are formally employed, 27,270 persons are employed in the informal sector. The formal to informal sector employment is projected to change considerably over the next 15 years (from 1:5.46 presently, to 1:2.5 by 2030). Employment structure of Limuru is similar to other areas of the metropolis, with a strong agricultural component and similar informal employment pattern of 20%. Largely behaving as an agro-industrial economy, 30% of the population is engaged in agriculture, while another 43% is employed in the tertiary sector.

The percentage share of transportation, manufacturing and construction is 10%, 9% and 8%, respectively. The transportation business is common among the youth, many operate matatus, buses, lorries, motorbikes donkey carts to transport people and goods. Small and medium-sized enterprises (SMEs) like retail shops, wholesale shops, vegetables and fruits, supermarkets, petrol station, banks and microfinance institutions are common. Manufacturing industries such as Bata manufactures leather shoes and employees over 5,000 people from the area. Other industries in the area include tea factories, Limuru Dairy Limited, Ken Chic, Limuru Posho Mills, Horticulture Development Co-operative, Polypipe, Proctor and Alan Company dealing with cereals. Agricultural farming, including tea farming, horticulture, dairy farming and poultry farming. Real estate has increased with increased population in the planning area; plot owners are constructing residential apartments to capture this increased population.

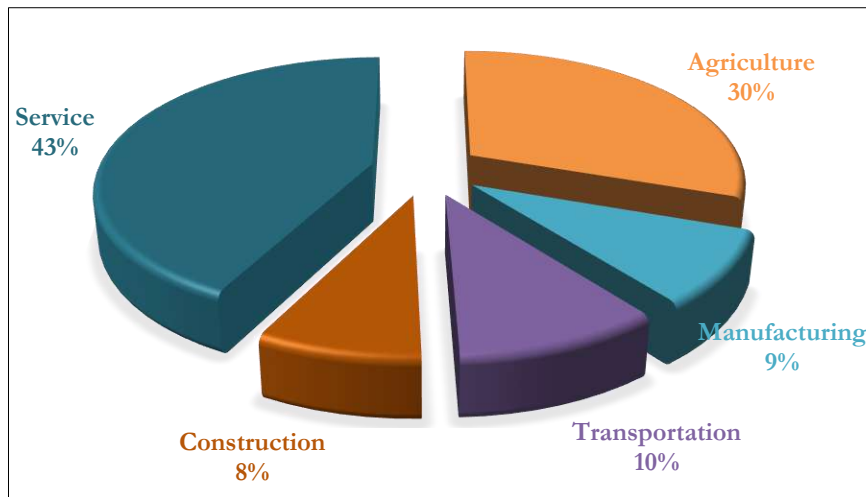


Figure 4-2: Occupation Distribution Analysis

Spatial Planning Concept for Nairobi Metropolitan Region 2012

4.5.4 POVERTY RATES

The poverty level in Kiambu County is estimated at 21.75 per cent (CIDP). Spatial Dimensions of poverty are such that people of a similar socio-economic background tend to live in the same areas because of the amount of money a person makes usually, but not always, influences their decision as to where to purchase or rent a home. At the same time, the area in which a person is born, or lives can determine the level of access to opportunities like education and employment because income and education can influence settlement patterns and also be influenced by settlement patterns.

4.6 Emerging Planning Issues

The key planning opportunities and constraints are given in the table below.

Table 4-5: Key planning opportunities and constraints on population and demography

Opportunities	Constraints
Limuru planning area has a youthful and educated population which translates into the availability of quality manpower to support economic growth.	<ul style="list-style-type: none"> • Increase in the number of urban dwellers has significantly resulted in the encroachment of human settlements on Manguo swamp’s wetland reserve since they preferred constructing on the low-lying areas where construction is not as difficult; and • The urban poor has moved into the Misri informal settlements, leaving the majority of the private developers to incur the cost of constructing on the steeper sides of the planning area.

Source: VisionRI

5 LAND USE ANALYSIS

5.1 Land Tenure

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

Land in Limuru is largely held under private tenure. Public land is only found in public facilities and conservation areas like forests. Due to increased population, the demand for land for housing, industrial, commercial and other infrastructural facilities have also increased. This has caused land scarcity resulting in the sharp price increase.

5.2 Land Use

Agriculture remains the major land use occupying 65% of the planning area. Agricultural activities are segmented into the small scale and subsistence farming in Ndeiya; large scale tea farms in Limuru East; and horticulture in Redhill and Ngecha. Despite the area having rich soils, suitable climate, and well-developed infrastructure, the agriculture sector is facing a real threat from the real estate sector due to a number of contributing factors which include the following:

- Declining prices of produce;
- Natural population increase;
- Urbanisation – e.g., demand for land for human settlement;
- Pollution – water and air;
- Climate variability affecting rainfall patterns (reliance on rainfed agriculture); and
- Roads and infrastructure development – construction of major roads. However, due to the lack of connecting infrastructure.

In Limuru Sub-County, 65% of the land is under agriculture including tea plantations and horticulture farms in Limuru East on its eastern and south-eastern flanks, particularly in Red Hill, Kabuku, Ngecha, Ithanje (Tigoni) and Mabroukie which are relatively at higher elevations. This can be attributed to good soils, suitable climate, ready market for horticultural produce in Nairobi and other areas and large-scale tea estates for international markets. An estimated 7% of the land is under residential development.

Farms in Limuru range from less than 0.3 ha to large plantations of well over 1,000 ha. In Limuru East, the least notable plot size is 20 acres since most of the residents there have set aside land for large scale tea farming. Over 90% of the total rural landmass is suitable for farming. However, agricultural activity continues to face

major competition in the form of real estate as housing, trading centres and shopping malls offer more reliable dividends to investment than farming. This conversion is mainly in response to the growing demand created by an economically thriving capital city. Moreover, horticulture, which has seen considerable growth in the country over the last two decades, appears to be favourable to agricultural investors as compared to the traditional tea and coffee. Other agricultural activities include dairy farming and growing of pyrethrum and subsistence crops such as maize, beans and locally consumed vegetables.

Table 5-1: Land Use Inventory in Limuru

S.N.	User	Area in Hectares (Ha)	Percentages (%)
0	Residential		
	Residential – High	62.73	0.22%
	Residential – Medium	922.82	3.23%
	Residential – Low	788.67	2.76%
	Total	1,774.22	6.22%
1	Industrial	118.51	0.42%
2	Educational	551.85	1.93%
3	Recreational	165.55	0.58%
4	Public Purpose	132.47	0.46%
5	Commercial	195.92	0.69%
6	Public Utility	31.23	0.11%
7	Transportation	1,021.00	3.58%
	Conservation Areas		
	Escarpment	5271.66	18.48%
	Forest	570.24	2.00%
	Water bodies	88.23	0.31%
	Total	5930.13	20.79%
9	Agriculture	18,450.84	64.67%
10	Mixed-Use	158.95	0.56%
Total		28,530.67	100%

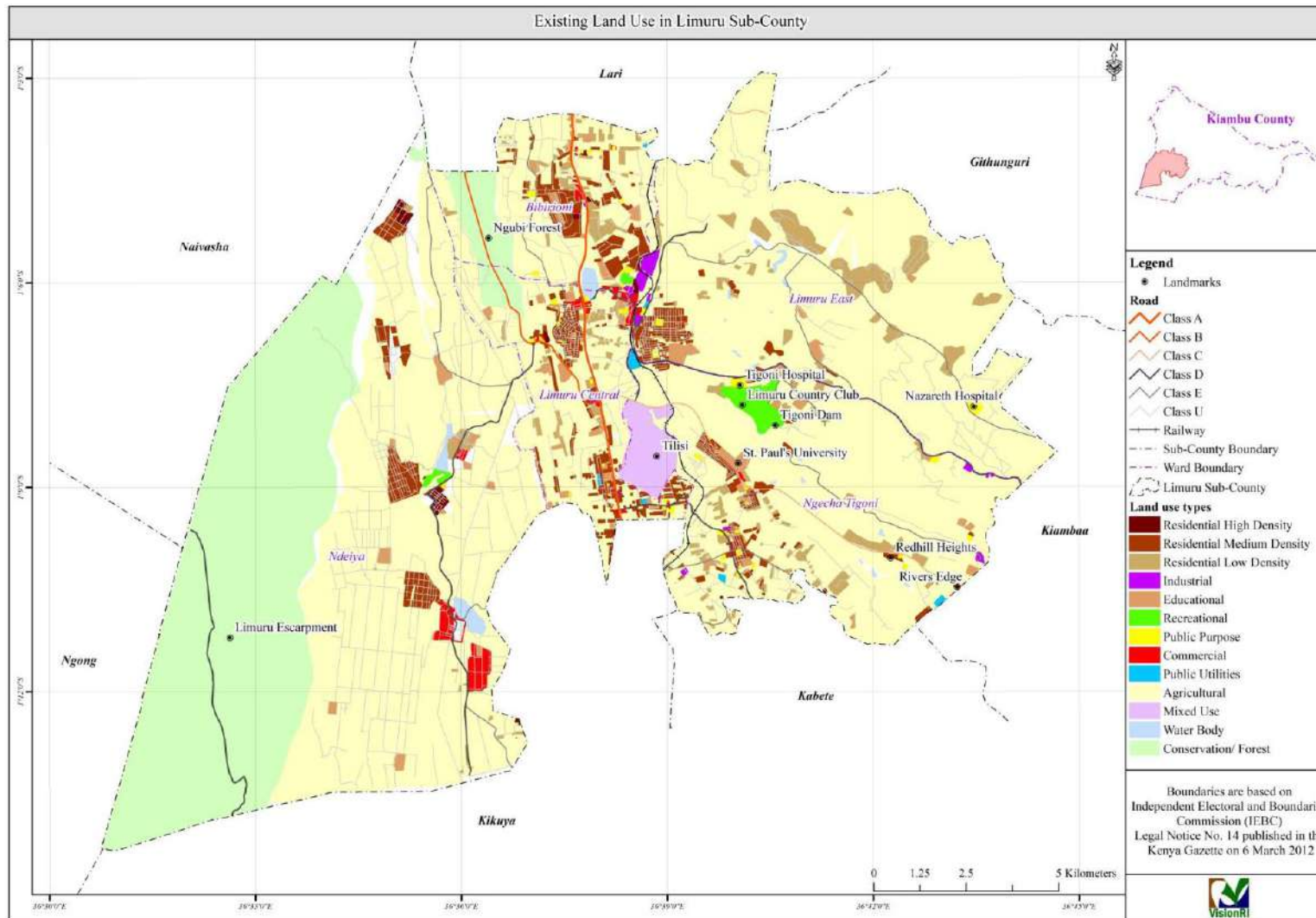
Source: VisionRI

5.3 Projected Land Use Requirements

There is a need for the provision of more residential areas to accommodate the increasing population. In addition, Limuru is being planned as an agro-industrial hub, the need for expansion and development of new industries, storage and cooling areas thus the allocation of more land. Increase in a number of industries will create new job opportunities thus resulting in an increase in population.

As a result of an increase in population, the existing educational facilities will be strained, thus, the Plan ought to create more space for educational land use from Early Childhood Development Education (ECDE) centres, primary schools, secondary schools and technical-vocational education and training (TVET) facilities. Currently, Limuru has no public recreational facilities as a result there is a need to create more land for recreational land use. Commercial activities are expected to increase during and after implementation of the Plan. This calls for the creation of more commercial zones, especially in the secondary towns within the Sub-County.

With the proposed developments, the existing public utility services will be strained. This calls for expansion of the existing water supply system, development of more dams and treatment plants and sewer systems. There is a need to expand the transport system, especially in the rural areas which are the agricultural hubs. This will ensure smooth transportation of farm products, thus reduced spoilage.



Map 5-1: Existing Land Uses in Limuru

Source: VisionRI

Conservation areas have been encroached, thus there is a need to conserve them. This calls for demarcation of these areas, creation of their reserves and conservation. This process will lead to an increase in the number of conservation areas as it will involve the reclamation of the grabbed parts.

Agriculture is the backbone of Limuru. There is a need for the consolidation of all other land uses in order to create more land for agricultural practices.

Table 5-2: Projected Land use requirements

Existing			Projected		Allocated	
User	Area in Hectares	%	Area Hectares	in %	Area Hectares	in %
Residential	1540.0	5.37%	4597.00	34%	4160.00	15%
Industrial	59.3	0.21%		0%	109.00	0%
Educational	201.0	0.70%	630.50	5%	355.00	1%
Recreational	101.0	0.35%	108.00	1%	166.00	1%
Public Purpose	70.0	0.24%	154.00	1%	63.00	0%
Commercial	20.0	0.07%		0%	98.00	0%
Public Utility	19.2	0.07%		0%	19.20	0%
Transport	6358.0	22.19%			1100.00	4%
Agriculture	14513.0	50.65%		0%	15600.00	54%
Water body	75.1	0.26%		0%	749.23	3%
Escarpment	5271.0	18.39%	5271.00	39%	5271.00	18%
Forest	427.0	1.49%	2840.00	21%	964.00	3%
Total	28654.6	100.00%	13600.50	100.00%	28654.67	100%

Source: VisionRI

5.4 Land Administration and Management

Land administration and management in Limuru is handled by both the National and County Governments. Land administration and management refers to the process of registration and dissemination of land information in relation to land transactions. It can also be described as a process of managing the use and development of land resources. An efficient land administration and management system ensures ease in land transactions, hence enhancing the security of tenure and supporting land taxation and valuation.

The NLC is charged with managing public land. The functions assigned to the NLC include (a) processing of transactions (alienation and allocation of public land, renewal of the lease) to subject to physical planning and survey processes; (b) inspection of public land allotment for adherence to planning requirements; and (c) encourage the use of alternative and traditional dispute resolution mechanism in land dispute amongst others. In terms of land management and administration, the County's role includes preparation of land use plans, development control, survey and allocation of county land in consultation with NLC, land rating, and taxation.

Land Control Boards (LCB) are charged with the responsibility of, amongst others, providing consent to subdivide and sell agricultural land. However, there has been a conflict of land management with the LCB granting subdivision consent without planning inputs. The Land Registry at the County is where all land transactions are recorded. However, the Registry is still operating on analogue platforms, which make access to land information difficult. There are also gaps in laws related to land management and administration. These have affected smooth land transactions.

Some of the challenges facing land administration and management include procedural challenges between LCB, surveying and land registration procedures which are done without input from planning. This results in non-compliance of planning and development requirements. The Land Control Board plays a critical role in land administration and management, yet it lacks professional and technical representative well versed in matters relating to land use planning and standards requirements; the lengthy process of amalgamation, subdivision; change of user, etc., leading to many people avoiding the process resulting in unplanned development.

Other challenges include misunderstanding of the mandate of the Land Control Board by the public. For example, once a party obtains consent to subdivide land, and all fairness has been observed, they do not proceed to the respective County Government Department to seek approval of that particular transaction. This leads to an uncontrolled subdivision of land and loss of revenue.

Again, land-use planning has been a preserve of urban areas, hence negating rural and agricultural land resulting in subdivision and land uses, which lead to loss of vital agricultural, forest and land use, etc. Due to poor enforcement, it has been observed that there are encroachments on road reserves across the Sub-County. This further complicates land management particularly in times of road expansions.

Currently, the County is collecting rates on agricultural land which has faced objection from the public. To mitigate some of these challenges, there is a need to automate land registries, the LCB should give consent subject to planning approvals, amendments at the Director of Survey should comply with planning conditions, and registration of titles and leases should comply to physical planning conditions given during planning approval.

The table below shows the actors and their roles in land administration and management.

Table 5-3: Land Administration and Management Actors

	Key Actors	Roles	Guiding Legislation
National Government	National Land Commission	<p>Amongst other functions of the National Land Commission, the main ones are:</p> <ul style="list-style-type: none"> ● Manage public land on behalf of the National and County Governments; ● Monitor and have oversight responsibilities over land use planning in the country; and ● Alienate public land. 	<ul style="list-style-type: none"> ● Kenya Constitution 2010 Article 67; and ● National Land Commission Act of 2012.
	National Director of Physical Planning	<p>According to the Physical and Land Use Planning Act 2019, the Director has the following functions:</p> <ul style="list-style-type: none"> ● Advise government on strategic physical and land use planning matters; ● Formulate policies, guidelines, and standards; and ● Capacity building and technical support on County planning staff 	<ul style="list-style-type: none"> ● Physical and Land Use Planning Act of 2019.
	Director of Survey	<ul style="list-style-type: none"> ● Establish and maintain a national geodetic control network to facilitate other surveys and research; ● Produce and maintain plans of property boundaries in support of land registration; ● Produce and continuously update national topographical basic maps. ● Maintain national and international boundaries; and ● Prepare and publish the National Atlas of Kenya, as documentation of National Heritage and promotion of Nation's identity. 	<ul style="list-style-type: none"> ● Survey Act.
	Director of Land Administration	<p>Functions of the office include the following:</p> <ul style="list-style-type: none"> ● Establish and manage Land Control Boards; ● Process and approve development applications e.g., issuance of consents to charge, lease, or transfer; ● Process ownership documents such as titles/grants for both public and community; ● Setting apart land for public use; ● Custody and maintenance of land records; and ● Document public land and preservation of fragile ecosystems e.g., wetlands and water catchment areas for purposes of conservation. 	<ul style="list-style-type: none"> ● Land Act of 2016; and ● Land Registration Act of 2012.
	Principal Land Registrar/Chief Land Registrar	<ul style="list-style-type: none"> ● Registers land titles, leases. 	<ul style="list-style-type: none"> ● Land Registration Act of 2012; and ● Community Land Regulations of 2017.

	Key Actors	Roles	Guiding Legislation
	County Executive Committee Members of Land	<ul style="list-style-type: none"> Oversees the entire County Land Management and Administration team. 	<ul style="list-style-type: none"> County Governments Act of 2012; Urban Areas and Cities Act; and County Government Act, 2012.
County Government	County Director of Physical Planning	<ul style="list-style-type: none"> Develop sustainable strategies for urban and rural development and management; Formulate, implement, and review various policies in the Department; Promote and facilitate the development of decent housing; and To achieve timely delivery of planning decisions on private sector and community development initiatives. 	<ul style="list-style-type: none"> County Governments Act of 2012; Urban Areas and Cities Act; and County Government Act, 2012.
	County Director of Survey	<ul style="list-style-type: none"> Carry out a survey on public land; Develop a Geographic Information System and Land Information System database for spatial data management; and Provide efficient land and property management for effective county land documentation and land taxation. 	
	Land Control Board	<ul style="list-style-type: none"> Approve or reject subdivision requests on agricultural land; Approve transactions such as sale, transfer, or mortgage of shares in private companies or cooperative societies that own agricultural land; and Issue consent to carry out transactions on majorly agricultural land (freehold land). 	<ul style="list-style-type: none"> County Governments Act of 2012; and Survey Act, 1961 (Revised 2012).
	Registered Physical Planners	<ul style="list-style-type: none"> Development approval applications to the county; and Advise County on new innovations in the land and planning sector. 	<ul style="list-style-type: none"> Land Control Act Cap 302 (Revised 2017).
Other key players	Registered Land Surveyors	<ul style="list-style-type: none"> Boundary confirmation; Beaconing of approved subdivision and amalgamation scheme; Amendment of RIM; and Preparation of deed plans. 	<ul style="list-style-type: none"> Urban Areas and Cities Act, 2011(Amended 2019); Physical and Land Use Planning Act, 2019; Physical Planners Registration Act, 1996; Land Act, 2012 (Amended 2016); and Water Act, 2002. Survey Act, 1961 (Revised 2012).

Source: VisionRI

5.5 Land Value and Markets

The land market in Limuru is driven by the following factors;

- Population increases at the rate of 3% per annum.
- Demand for land for real estate development which is perceived to have higher returns than agriculture;
- Favourable climate attracting investors and residents to move into places such as Red Hill, Tigoni and Kabuku areas; infrastructure development-increased subdivisions especially in Ndeiya-Mutarakwa road, the Limuru-Nairobi Highway, Nairobi-Nakuru Highway; and
- Nairobi has become less attractive due to high rental values.

Limuru is experiencing accelerated development as investors troop to the area to establish manufacturing plants, shopping malls and office complexes. An eighth of an acre in Karanje goes for Ksh. 3 million, 1 acre of land in Red Hill goes for Ksh. 25 million, an eighth of an acre in Ndeiya is sold for at least Ksh. 800,000 and an eighth of an acre along the Limuru road near the Limuru CBD goes for about Ksh. 300 million. Comparing the above land prices with the rest of the NMR, it may be seen that land values increase when one buys land within the CBD while these decrease as one buys land in the outskirts. The land sizes in the outskirts are larger parcels as compared to the CBD, which has smaller plot sizes. The land tenure differs as well, as seen the plots in the rural areas are freehold as compared to the land within the CBD's vicinity which are leased.

5.6 Emerging Planning Issues

- Land in Limuru is largely private. Due to increased population, the demand for land for housing, industrial, commercial and other infrastructural facilities have also increased. This has caused land scarcity resulting in a sharp price increase; and
- Gaps in laws related to land management and administration. These have affected smooth land transactions. In addition, it has been observed that there is an encroachment on road reserves across the Sub-County. This further complicates land management particularly in times of road expansions.

Table 5-4: Comparative values for various localities according to size and land use

Locality	Land use	Value in 2017				Value in 2019			
		Size in acres				Size in acres			
		1	0.5	0.25	0.125	1	0.5	0.25	0.125
Limuru town	Single dwelling	15,000,000	10,000,000	6,000,000	3,000,000	24,000,000	17,000,000	9,500,000	5,700,000
	Multi-dwelling	27,000,000	19,000,000	12,000,000	9,000,000	50,000,000	24,000,000	17,000,000	10,000,000
	Commercial	17,000,000	14,000,000	8,000,000	5,000,000	40,000,000	22,000,000	15,000,000	8,000,000
	Industrial	20,000,000	15,000,000	10,000,000	6,000,000	55,000,000	26,000,000	15,000,000	10,000,000
Tigoni/Mabrouke	Single dwelling	4,000,000	2,500,000	1,500,000	1,000,000	7,000,000	5,000,000	4,500,000	3,500,000
	Multi-dwelling	13,000,000	10,000,000	8,000,000	6,000,000	17,000,000	12,000,000	10,000,000	8,000,000
	Commercial	10,000,000	7,000,000	5,000,000	3,000,000	14,000,000	10,000,000	7,000,000	5,000,000
	Industrial	11,000,000	9,000,000	6,000,000	5,500,000	15,000,000	13,000,000	9,000,000	7,000,000
	Agricultural	3,000,000	2,000,000	1,000,000	500,000	6,000,000	4,500,000	3,700,000	2,800,000
Kamirithu	Single dwelling	14,000,000	8,000,000	4,000,000	2,500,000	20,000,000	15,000,000	9,000,000	5,000,000
	Multi-dwelling	18,000,000	12,500,000	6,500,000	3,500,000	26,000,000	20,000,000	15,000,000	10,000,000
	Commercial	15,000,000	11,000,000	5,000,000	3,000,000	23,000,000	17,000,000	10,000,000	7,000,000
	Industrial	17,000,000	12,000,000	7,000,000	3,200,000	24,000,000	18,000,000	12,000,000	9,000,000
	Agricultural	11,000,000	9,500,000	3,000,000	1,000,000.00	13,000,000	8,500,000	5,200,000	3,000,000
Kabuku	Single dwelling	12,000,000	9,000,000	5,000,000	3,000,000	17,000,000	12,000,000	7,000,000	5,000,000
	Multi-dwelling	19,000,000	15,000,000	11,000,000	9,000,000	22,000,000	18,000,000	12,000,000	9,000,000
	Commercial	14,000,000	11,000,000	8,000,000	5,000,000	18,000,000	13,000,000	10,000,000	7,000,000
	Industrial	16,000,000	13,000,000	9,000,000	7,000,000	20,000,000	16,000,000	12,000,000	8,000,000
	Agricultural	8,000,000	5,000,000	3,000,000	1,500,000	15,000,000	10,000,000	5,000,000	2,800,000

Source: Field Survey and County Valuation Roll

6 ENVIRONMENT AND NATURAL RESOURCES

6.1 Physical Environment

The landforms in the planning area predispose it to the agents of land degradation. The steep slopes are prone to agents of soil erosions in the face of changing vegetation cover due to anthropogenic activities. Surface water quality is generally fresh and clear. However, with increasing agricultural activities, settlements and urban expansion, the water sources are potentially faced with pollution threat from increased erosion and waste from urban runoffs.

6.2 Natural Resources

6.2.1 LAND

Land is the primary natural resource in Limuru. The area is rich in arable land that supports agriculture. Agriculture is the dominant land use (65% of the total area) and economic activity, driven by the availability of fertile/arable land and favourable climatic conditions. The planning area lies within the Lower Highland, Upper Midland agro-ecological zones, thus supporting cash crops like tea. Both subsistence and commercial agriculture is practised in the area.

6.2.2 WATER

The planning area's water resources comprise groundwater and surface water from rivers including Ndarugo, Tigoni, Ithanje, Ruaraka, Kamiti, Riara and Kiu. Water resources have been described in more detail in the earlier Section 3.2 Hydrology and Drainage.

6.2.3 FORESTS

There are no gazetted forests within the planning area. However, the escarpments and Ngumbi forests cannot be overlooked as they form part of the forested areas within the Sub-County. There are several woodlots in the area mainly due to farm forestry and agroforestry practices. Farm forests provide timber and non-timber products for household use as well as for sale. They are an important source of household fuel, raw materials for wood products, and also play an important role in soil and water conservation.

6.2.4 QUARRIES

There are no active quarrying activities in Limuru, however, in Ndeiya area, there are unexploited diatomite deposits.

6.3 Urban Greenery and Open Spaces

The Sub-County has no public park and playgrounds except those in playgrounds within schools where only enrolled students have access or a few privately-owned residential areas such as Limuru County Golf Club. The open and green areas in the area are limited to the forests and local market centres. Currently, there is an undeveloped five-acre piece of land next to Bata Shoe Company designated specifically as a public stadium. To encourage people into sports, there are plans to level this stadium, and the playing field at Nyoro Primary School at Rironi. The administration has also set aside funds purchase land in Limuru East to convert it into a sports ground. Further, there are plans by the County Government to construct a community hall at Kiawaroga in Limuru East.



Figure 6-1: Playground in Limuru

Source: VisionRI

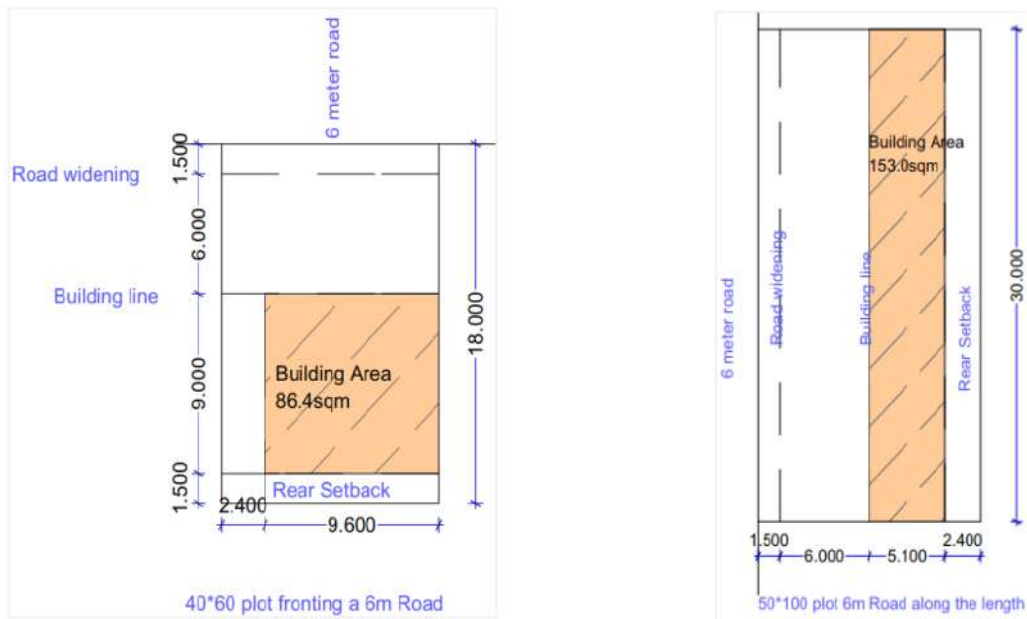
6.4 Urban Agriculture

Limuru subcounty is largely agricultural. In the CBD which is the most urbanized area of the subcounty, Urban Agriculture is barely practiced. In the peri urban zones such as Kabuku, Bibirioni, Rironi, Ngecha Kamirithu Urban Agriculture is mostly practiced at the house hold backyards. However, within the urban nodes of these areas where the typology is largely high rise residential and commercial buildings, urban agriculture is not practiced. Limuru subcounty is urbanizing. Introduction of zero-acre farms that involve vertical farming, rooftop farming, green wall cultivations and indoor greenhouses. Zero-acre farms are best captured by integrating them with architecture. They utilize waste water, human waste, waste heating and organic waste. The conversion of agricultural to land to residential has to a large extent affected the level of food production.

The cultivation of agricultural products in urban areas for purpose of improving food security,it takes place in different locations due to the limited space for production. It can be for subsistence use at household level to more commercialized.

Land for Urban Agriculture

Zero-acre farms that involve vertical farming, rooftop farming, green wall cultivations and indoor greenhouses they are farms are best captured by integrating them with architecture. They utilize waste water, human waste, waste heating and organic waste.



6.5 Environmental Sensitive Areas

Limuru Sub-County has diverse land uses and is endowed with natural resources, for example, the Ngubi forest, Manguo swamp and Ndarugo, Thiririka, Ruiru, Athi, and Theta rivers. Dispersed settlements and uncontrolled human activities such as deforestation have threatened the existence of these environmentally sensitive areas as habitats of living organisms and ecological friendly areas. The rivers coursing through Limuru Sub-County could be transformed into green corridors. The riparian areas could be well-landscaped, and some sections turned into public parks along with the provision of non-motorised transportation (NMT) facilities. This will serve several purposes, namely, protect the riverbanks from erosion, eliminate the encroachment of illegal settlements, promote health consciousness amongst the population and serve as filters to air pollution.

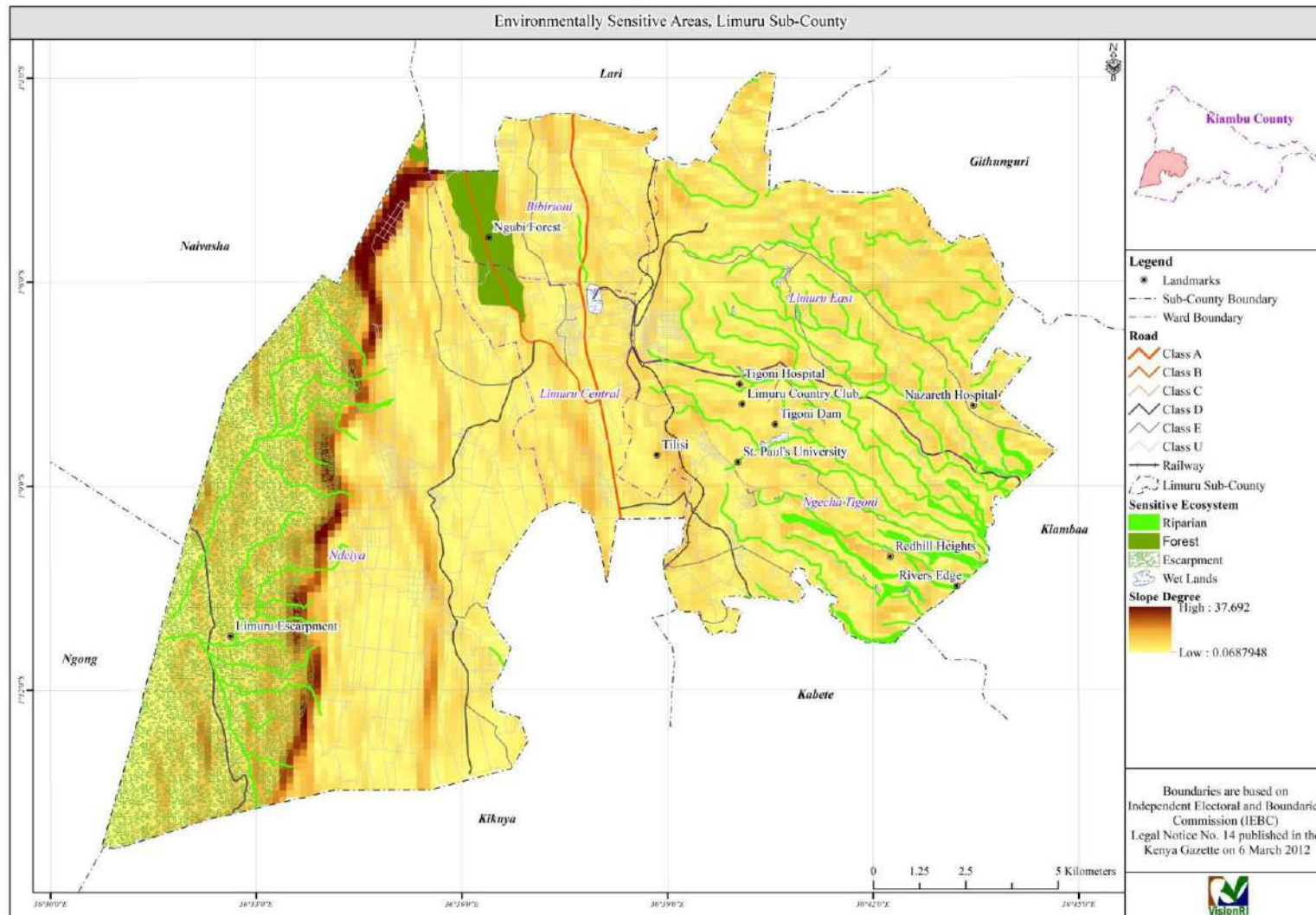
6.6 Climate Change Adaptation

To a large extent, natural disasters worldwide are climate-related and about 10 per cent of these emanate from geological, biological and technological/anthropogenic activities. Consequently, climate change in Limuru manifests in a number of ways:

- Variability of precipitation: The Sub-County's lower parts including Ndeiya is susceptible to drought due to low rainfall. This has an effect on famine, loss of livestock, lack of water and other environmental challenges;
- Unpredictability and unreliability of rainfall has led to a reduction in tea production; and
- During the El Niño period, the planning area's rivers and dams may overflow and cause damages to crops and threats to human life.

During the field survey, farmers mentioned the impacts of climate change. They include:

- Increase in new species of invasive weeds uncommon in the area that competes with their crops which at times lead to crop failure and reduced yield;
- Recurrent drought;
- Declining pasture areas leading to loss of livestock;
- Drying of boreholes water pans and water bodies like Nderu pond in Ndeiya; and
- Loss of livelihoods to those who depend on agriculture as farmers or employees.



Map 6-1: Environmentally Sensitive Areas

Source: County Department of Environment and Forestry

6.7 Disaster Risk Reduction and Management

According to Kiambu CIDP 2018–2022, disaster management is under the Department of Administration and Public Service. The core functions of this unit are to improve disaster preparedness and management services, enhance safety, increase resilience and build a more sustainable society.

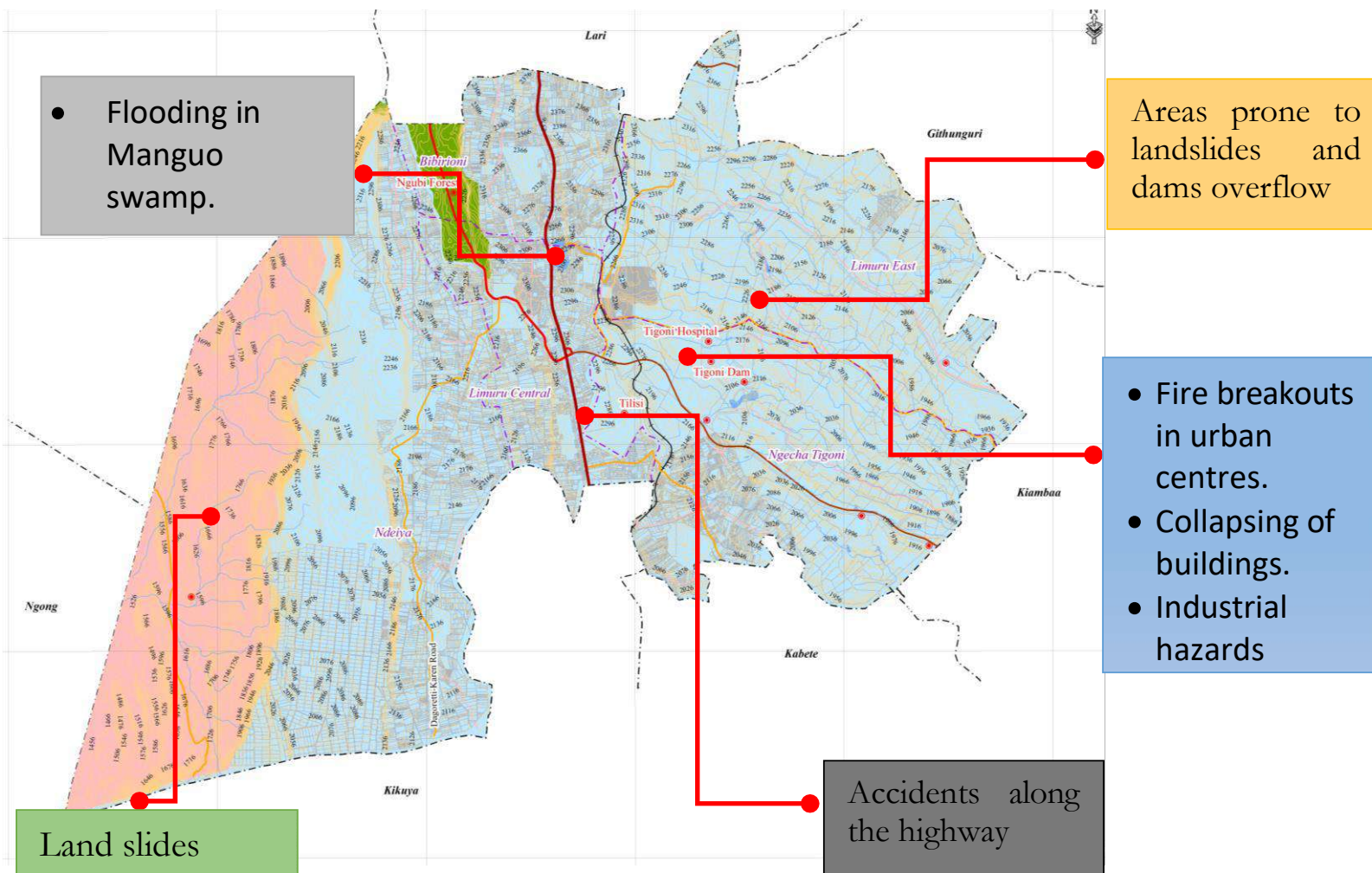
In Limuru Sub-County, the main disasters can be categorised into two major types: natural and man-made. Natural disasters include drought, floods and landslides. Drought is mainly experienced in Ndeiya, which experiences severe drought conditions leading to loss of pasture, crop failure, livestock losses, and famine. In April 2009, the area experienced a drought that the residents had to reach out for food aid. Floods are experienced around Manguo swamp and Limuru Town where stormwater drains get blocked during heavy rains. Landslides and rockfalls are susceptible in steep and hilly areas such as Misri informal settlement while rockfall is in the escarpments e.g., in Ndeiya and Ngubi areas. Limuru is also prone to man-made disasters such as fires reported in institutions, commercial areas and in homes; road accidents along major highways and roads in urban and peri-urban areas; and drugs and substance abuse mostly alcohol poisoning. Map 6–2 below shows some of the disaster-prone areas.

6.8 Emerging Planning Issues

Key environmental and natural resource issues in Limuru Sub-County include inadequate wastewater disposal, inadequate solid waste management, inadequate green and open spaces, the encroachment of fragile ecosystem, and pollution. Disposal of wastewater in the Sub-County is deficient. There are some areas that are not served with the trunk sewer and utilise septic tanks for liquid waste disposal. This leads to ground and surface water pollution. This leads to waterborne diseases in the area.

Like any other urban area, solid waste management in Limuru is faced with inadequate collection and disposal challenges. Due to limited infrastructure, waste receptacles and defined collection centres, dumping in available open spaces and rivers is the most common disposal method. This leads to pollution of the ecosystem.

Public spaces have come under increasing pressure during the urbanisation process which has negatively affected ecosystem services, climate change, psychological well-being, and health of urban dwellers. Uncontrolled human activities such as construction and cultivation on riparian land have threatened the existence of these environmentally sensitive areas as habitats of living organisms and ecological friendly areas. Pollution is one of the major environmental threats facing Limuru Sub-County and includes water and air pollution from industrial effluents and dust, open sewers, encroachments to water wetlands and riparian reserve, agricultural activities along riverbeds and use of agrochemicals, poor solid waste disposal methods along water bodies such as Manguo swamp. Urban Agriculture offers the opportunity to provide food to communities; however, it's a concept that hasn't been fully embraced.



- Flooding in Manguo swamp.

Areas prone to landslides and dams overflow

- Fire breakouts in urban centres.
- Collapsing of buildings.
- Industrial hazards

Land slides

Accidents along the highway

Map 6-2: Disaster Prone Areas

Source: VisionRI

7 HOUSING AND HUMAN SETTLEMENTS

7.1 Patterns and Trends of Human Settlements

The overall settlement pattern is characterised by a strong single node of activity, Limuru Town, which is located near the junction of A104 Road and Boma Road. The Town is less than 1.5 km from this junction. Other settlements are dispersed due to the planning area's sloping and sometimes rugged terrain. The minor urban growth centres described earlier define the secondary settlements in Limuru. These mainly have linear growth patterns that capitalised on existing infrastructure, particularly roads. Some of these minor centres are expanding laterally from the roads forming residential settlements such as those in Mabrouke and Kabuku. The residential settlements observe a grid pattern of development.

Smaller urban growth centres are found in an area west of Limuru Town which may be considered as market centres. These include Kamandura area, which is an emerging industrial area; Rironi town centre along Naivasha road; Kabuku town centre along Mahiga road; Ithanje (Tigoni) town centre at the junction of Mahiga and Limuru roads; and the area at the junction of Tigoni and Limuru–Raini roads. Incipient corridor-type urban growth is evident along Limuru Road in Red Hill. This growth is driven by the demand for residences that capitalises on the pleasant environment in Red Hill. It is also influenced by expansion coming from the Karura area at the southeastern side of Red Hill. There is an obvious tendency for this corridor growth to negatively impact Red Hill's high-value rural environment.

7.2 Urban Form and Morphology

Limuru central business district (CBD) is juxtaposed within the vast tea plantations to the east; dense human settlements of Kihingo, Murengeti and Bibirioni to the north; Kwa Mbira, Kamirithu, Manguo swamp and Nairobi–Nakuru Highway to the west; and farmlands to the south.

Urban growth is centred in Limuru Town which has a bustling commercial area and surrounding residential and institutional areas. Limuru Town is hemmed-in by sloping areas which have somehow arrested extensive urban growth. The result is inward and intensive compact urban growth resulting in a congested and constrained CBD. Residential developments have nonetheless expanded onto the sloping areas surrounding the town calling attention to soil protection measures. Some of these settlements are Karanje and Misri.

The core CBD has a robust trading atmosphere and buildings are quite densely built. Mixed-use commercial-residential buildings are concentrated in the CBD. Notable landmarks in the CBD include the bus park, public market, Njengi Plaza, Bata Shoe Factory, Dairy Cooperative House, Kirathimo Centre, Rev. Stanley Kahahu Memorial PCEA Church, Proctor and Allan Factory, Kenya Power Station and Limuru Railway Station.

The road pattern in the planning area may be characterised as having a radial pattern with Nairobi- Nakuru Highway, Limuru road (Ndenderu-Maai-Mahiu section), Kiambu Road, Nazareth-Riara Ridge road and Boma Road, amongst others.

The image below shows the existing core CBD of Limuru town.



Image 7-1: Existing core CBD of Limuru town

Source: Adapted from Google Maps – Accessed November 2020

Streetscape within the CBD is disorganised due to the lack of a definitive division between spaces for vehicles and pedestrians. There are narrow sidewalks in the market area, but these are being occupied by commercial establishments and vendors. There are also pedestrian sidewalks in the government centre, but these are not extensive. The inadequacy of sidewalks causes pedestrians, vehicles as well as work animals to use the road carriageway for movement.



Image 7-2: Market in Limuru CBD

Source: VisionRI

7.3 Housing and Housing Demand

Limuru is largely rural but with mixed housing typologies ranging from high-end estates and homes in Red Hill, Kabuku and Tigoni, to low-end residential areas found in Misri and the workers' quarters in the tea estates. In rural areas, there is a mix of bungalows and simple housing units that dot the rural landscape. There are also flats and apartments mainly in Limuru Town and along the major transport corridors that serve residents who commute to Nairobi and other areas. Bungalows are mostly owner-occupied, while apartments are rental houses for transient tenants who commute to work locally or to Nairobi.

Recently, there is a booming real estate business due to Limuru's proximity to Nairobi, availability of prime land, favourable weather, good road connection and availability of supporting services. This development is found in Tilisi, Red Hill, Kabuku, Tigoni and along the Nairobi-Limuru highway.

Currently, the housing deficit in Kiambu County is at 12,500 houses, which it intends to cover under an affordable rent-to-own scheme⁴ project. The ISUDP study found that 41% of houses in Kiambu West are permanent⁵. The table below projects the housing stock by 2030. Based on this trend, there is a need to develop strategies to not only bridge the gap between demand and supply but also to consistently lift the standard of housing for the low-income settlements through the adoption of appropriate building technologies.

⁴ Business Daily, Tuesday, June 12, 2018

⁵ Population and Housing Census Report 2009

Table 7-1: Housing Stock and Projections

Ward	2015	2018	2022	2025	2030
Bibirioni	4,240	6,247	8,707	10,279	12,136
Limuru Central	6,242	9,196	12,817	15,132	17,865
Limuru East	5,669	8,352	11,641	13,744	16,226
Ngecha/Tigoni	4,796	7,774	10,836	12,793	15,104
Ndeiya	5,277	7,066	9,849	11,628	13,728
Total	26,224	38,635	53,850	63,576	75,059

Source: Based on 2019 Population and Housing Census Report Vol. II

7.4 Informal and Unplanned Settlements

Limuru is characterised by some informal settlements and unplanned high-density areas. The cause of these are colonial African reserves, tea estate labour lines, subdivision into small plots by individuals and land buying companies without complying to planning standards.

Misri⁶ is one of the notable informal settlements located next to Limuru CBD and sitting on 12.6 hectares located along Limuru –Tigoni road and Kiambu road and Karanje settlement to the east of the town. The informal settlement is on public land and presently has a population of about 1,000 people. The residents of the settlement are mostly from the Kikuyu ethnic group, although there are a few people from the Meru, Kisii and Luo ethnic groups. Children from the settlement often attend Limuru Mission Primary School, which is outside the informal settlement. The settlement is not connected to the national electricity grid. The main source of energy for lighting is kerosene, and for cooking, people use wood, charcoal, and kerosene stoves.



Image 7-3: Misri Informal Settlement area

Source: Adapted from Google Maps

⁶ The name Misri is attributed to the problems faced by the people; an analogy from the Bible. Out of the negative derivation of this name Misri, the residents have tried to change the name to Goshen, but it has not been adopted because the problems that the residents have been facing are persistent.

The County Government of Kiambu has intended to undertake a slum upgrading programme at Tigoni in Ngecha Ward to relocate the informal settlers. It has also set aside funds for the provision of water in Misri (Kiambu, 2013). The problems facing the informal settlements include unsustainable housing conditions aggravated by low incomes, narrow roads attributed to encroachment and high density 30 by 60-metre plots, lack of recreational open spaces, poor sanitation and solid waste management, and lack of public facilities such as hospitals and schools.



Image 7-4: Misri Informal Settlement

Source: VisionRI

Unplanned settlements which require special planning attention include Kamirithu, Kwa Mbira, Ngarariga, Rwa Mburi, Rwacumari, Gikabu na Futi, Manjiri (Thande Road), Muna, Itungi, Mathanja, Kwa Nyaga, Kwa Muhuri, Motel, Ngecha, Kamandura, Rironi, Gatimu, Royo, Tiekunu, Nderu, Kabuku and Tigoni centre, amongst others. These areas require various specific interventions that may vary from one settlement to the other. They include land use planning, zoning and buffering, infrastructure improvement, tenure regularisation.

7.5 Building Materials

About 80% of the houses in the Sub-County are semi-permanent constructed using iron sheets, timber or mud walls. The table below illustrates the types of building materials and their sources.

Table 7-2: Sources of Selected Building Materials

Material	Source	Remarks
Quarry stones	Neighbouring Juja and Ruiru sub-counties as well as Nakuru County.	30 – 100 kilometres away.
Sand	Narok and Nakuru Counties especially near Naivasha.	60 – 100 kilometres away.

Material	Source	Remarks
Timber	Within the Sub-County and in neighbouring sub-counties.	Hardwood timber is imported from Meru and DRC Congo.
Steel	Nairobi	Distributed through local hardware shops.
Galvanised iron sheets	Nairobi	Distributed through local hardware shops.

Source: VisionRI

7.6 Emerging Planning Issues

Table 7-3: Emerging planning issues on housing and human settlements

Sector	Issues	Opportunities
Urban form and morphology	<ul style="list-style-type: none"> • Limuru CBD growth is constrained. 	<ul style="list-style-type: none"> • Urban renewal and redevelopment; • Integrated transport system (commuter hub); • Delineation of the extended CBD; and • Identification of other growth nodes.
Housing	<ul style="list-style-type: none"> • Poor quality housing especially in the peri-urban and rural areas. 	<ul style="list-style-type: none"> • Explore affordable housing delivery; and • Mix of delivery approaches – public- private partnership (PPP), public and individual.
Informal settlements and unplanned areas	<ul style="list-style-type: none"> • Poor infrastructure and housing; • Lack of social amenities; • Tenure insecurity; and • Lack of delineation and sprawl. 	<ul style="list-style-type: none"> • Declaration of these areas as Special Planning Areas (SPA); and • Partnership with Kenya Informal Settlements Improvement Project. (KISIP) and other relevant government projects to support tenure regularisation.
Building materials	<ul style="list-style-type: none"> • Poor housing standards; and • Unaffordable building materials. 	<ul style="list-style-type: none"> • Alternative building technologies (ABT); and • Design of type building plans accessible to low-income earners.

Source: VisionRI

8 PHYSICAL INFRASTRUCTURE AND UTILITIES

8.1 Transportation

Road transport is the main mode of carriage in Limuru that lies along the Northern transport corridor, which is the main gateway to Mombasa and Uganda, Rwanda and South Sudan. The expansion of the Nairobi–Naivasha highway which cuts across Limuru will attract increased interest in the Sub-County and region as a whole. Already, the Nairobi–Rironi section is ongoing.

Most local roads are narrow (they are either one lane or they lack NMT provision for pedestrians and cyclist) and are in poor condition. During the field survey it observed that some of the challenges in the planning area are:

- Inefficient accessibility, connectivity and circulation which include missing links;
- Undeveloped section of the roads some of which have not been surveyed;
- Narrow roads measuring 3–6m in the rural areas which were not designed for vehicular use, characterised by ununiform road reserves;
- Absence of wayleaves and insufficient parking space especially within the Limuru CBD;
- Roads have varying widths which may necessitate acquisition or surrender during upgrading;
- Illegal road encroachment by farmers and developers; and
- Poor state of most local roads which become completely impassable during the rainy season thus constraining the mobility of people, goods and services.

The following table lists the main roads, types and conditions.

Table 8-1: Main Roads in Limuru

Road Name	Link	Length	Surface Type	Condition	Average Daily Trip Volumes (Both directions)	
					NMT	MT
Kiroe–Rironi Road	Waiyaki Way to Kiroe	5	Gravel	Good	-	-
Acre 5– Ngecha Road	Waiyaki Way to Ngecha	4	Gravel	Fair	-	-
Kawango–Mahinga Road	Ngecha Road to ACK	2	Gravel	Fair	-	-
Ngecha– Wangige Road		11	Gravel	Very Poor	-	-
Ngecha – Kabuku Road	Ngeche to Kabuku	2.6	Bituminous	Very Poor	-	-
Ngecha – Chunga Mali Road	Ngecha to Chunga Mali	3.1	Gravel	Fair	-	-
Mai Mahiu Road	Kamandura to Mai Mahiu	20	Bituminous	Fair	-	-
Murengeti–Roromo Road	Waiyaki to Ngara	9	Bituminous	Fair	-	-
Mutarakwa–	Mutarakwa to	50	Gravel	Fair	-	-

Road Name	Link	Length	Surface Type	Condition	Average Daily Trip Volumes (Both directions)	
					NMT	MT
Thogoto- Ngong Road	Thogoto					
Ndioni Road	Mai-Mahiu Road to Ndioni	4	Gravel	Fair	-	-
Mutarakwa- Limuru Road	Mutarakwa to Limuru	6	Bituminous	Good	-	-
Nairobi- Nakuru Road (A104)	Limuru to Uplands	15	Bituminous	Very Good	4,755	15,066
Ngarariga Road	Ngarariga to Bibirioni	6	Gravel	Fair	-	-
Bata – Murengeti Road	Murengeti to Bata	3	Gravel	Fair	-	-
Manguo Road-	Uplands to Limuru	2.5	Bituminous (Completely Worn Out)	Poor	-	-
Kiambu Road	Section A Nakuru Highway to Limuru Town	1.7	Bituminous	Poor	2,787	8,940
Kahuho Road	Kiambu Road to Offices	2	Bituminous	Good	-	-
Market Road	Railway Station	2	Bituminous up to the market (600 m), after which it is under construction	Good	-	-
Kiambu Road (D409)	Limuru to Kiambu	29	Bituminous	Very Good	3,452	6,023
E427 Road	D409 to Nazareth Hospital	4	Bituminous	Very Good	-	-
Misri slum Road	D409 to Misri	3	Gravel	Poor	-	-
Tigoni – Kabuku Road	Tigoni to Kabuku	6	Bituminous	Poor	-	-
Limuru Road	A104 to Nairobi via Ruaka	8	Bituminous	Fair	-	-

Source: Kiambu County Road Department

The main modes of road transport include public, private, and cycling, NMT. Figure 8-1 below represents the motorised modes of transport.

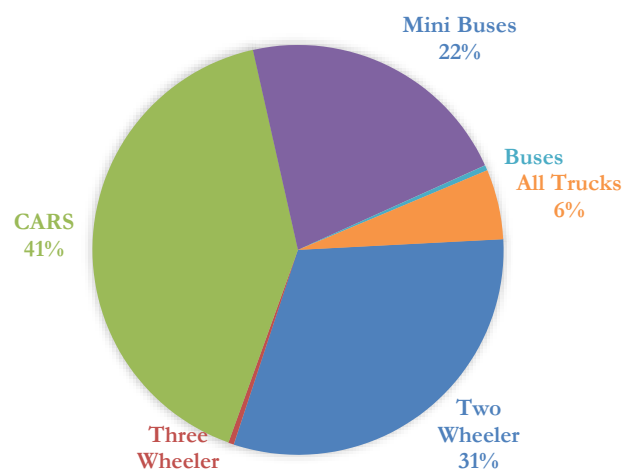


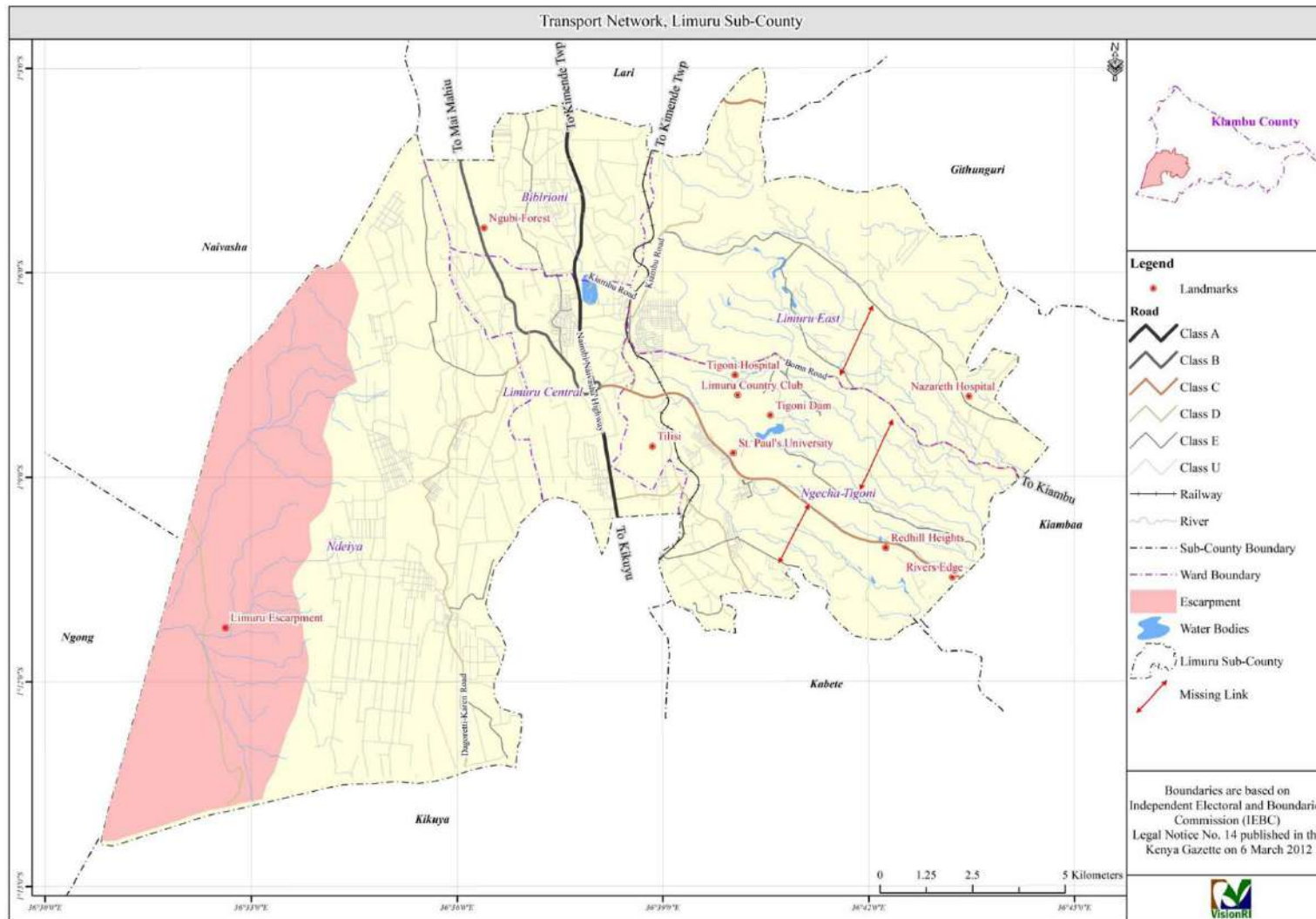
Figure 8-1: Motorised Modes of Transport

Source: Field Survey

There are many freight vehicles to and from the industries located in the town (such as Bata Shoe factory, and Proctor and Allan industry, amongst others). Limuru is also an agricultural town and many trucks ferry farm produce such as milk, tea, and grocery. In addition, many trucks ferry construction materials from quarries along the Mai Mahiu road. In addition, A104 road traverses through the town and has many trucks to/from Mombasa and Nairobi to other parts of Kenya and the rest of East Africa.

Public transport vehicles in Limuru mainly consist of 14-seater matatus, minibuses, buses, motorcycle taxis and rickshaws. Public service vehicles (PSV) operate under Savings and Credit Cooperatives (SACCO) such as Likana, Ndikana, and Lina, amongst others. The main routes are Limuru–Nairobi (via A104); Limuru–Nairobi (via Limuru road); Limuru–Mutarakwa; Limuru–Kiambu; and Limuru–Naivasha/Nakuru, amongst others. There is only one bus terminus within the town with 207 parking spaces which are fairly adequate for now because the highest utilisation percentage is about 96%. Motorcycle taxis are the main intermediate means of transport, catering for flexible door-to-door transport. However, their operations are un-regulated and without appropriate infrastructures such as pick-and-drop bays and waiting sheds.

There is a main rail trunk line from Mombasa to Malaba which passes through the Sub-County. However, railway services are not operational. Current services start at Nairobi and terminate at the Kikuyu station. Plans are underway to revive the railway with the ongoing modernisation of the stations by NaMSIP. In Phase 2 of the Nairobi Commuter Rail Service Project, a commuter rail network will be developed within the existing railway corridor and extend commuter rail services to Limuru as well as Thika, and Lukenya. Limuru will have stations at Limuru and Tilisi areas. The projected population in Limuru is more than 400,000 people. The Limuru train station projects to be able to handle between 2,000 and 5,000 passengers per hour.



Map 8-1: Transport and Circulation in Limuru

Source: Department of Roads, Transport, Public Works and Utility Services

8.2 Water

8.2.1 WATER SUPPLY

The planning area is served by Limuru Water and Sewerage Company (LIWASCO) established as a private company under the Companies Act, Cap 486 and wholly owned by the Kiambu County Government. The Water Company's designated area of supply is 555 km². LIWASCO's jurisdiction covers the entire Limuru Sub-County, parts of Lari Sub-County (Kamae, Kinale, Kijabe, Gitithia, Kirenga Gatamaiyu), and part of Kikuyu Sub-County (Nyanduma). The water company only serves 123,450 people against a total population of 215,786. According to KIWASCO, there are 8,705 active and 296 inactive connections.

The main water sources for the company are: (a) Bathi Water Supply Scheme of capacity 20,000 m³/day, which serves the main trading centres of Magina, Kimende, Lari and Uplands; (b) Limuru Water Supply Scheme for Limuru Town; and (c) Kijabe Springs which serves part of Kijabe Location. Other sources include 17 community-owned self-help water schemes, privately operated boreholes with an average yield of 1,776 m³ per day, dams such as Tigoni dam, domestic rainwater harvesting, and water pans mainly in Ndeiya.

Water vending is also common in areas where there are no connections, and donkeys are used as a major mode of transportation. To enhance water supply, KIWASCO plans to extend water connection to Karanjee, Misri, Kamirithu, Bibirioni, Industrial Area, Limuru CBD and Kwa Mbira where currently feasibility studies are being carried out.



Image 8-1: Water Pan in Ndeiya

Source: VisionRI

8.3 Water Demand

Water supply coverage is very low compared to the total population living in the town. There is an old sewer system that was constructed within the town in 1980. However, it is small and serves only 20% of the total population. The table below presents projections on water demand and sewerage flows up to 2030.

Table 8-2: Population and Water Demand

Population, Water Demand and Sewerage Flow Projection Parameter	Year 2019	Year 2022	Year 2025	Year 2028	Year 2030
Population Projection	159,314	168,916	179,097	189,892	197,447
Water Demand (m ³ /day)	50,183.91	53,208.54	56,415.56	59,815.98	62,195.81
Sewerage flows	42565.32	45227.26	48,060.33	50,843.58	52,865.75

Source: Limuru Water and Sewerage Company

The ongoing projects are as follows: (i) Establishment of Tigoni Dam water treatment plant to supply 2,000m³ of water per day; (ii) Rehabilitation of the sewage treatment plant in Limuru Town; (iii) Construction of a pipeline from Loromo boreholes to Limuru Town; and (iv) Drilling of boreholes along Manguo road. There is also the construction of an earth dam in Ndiuni (Kiambu, 2018). The proposed future sources to augment the present sources and meet the ultimate water demand for the town is additional groundwater development in two stages: Groundwater Sources- Stage I-4,000 m³/day and Stage II-4,000 m³/day. The altitude of Limuru is too high compared to the available surface water sources, therefore, supply from groundwater/boreholes will be more economical. According to hydrogeological studies carried out in the area, there is adequate groundwater potential within the town and surrounding areas to meet the forecast demand.

8.4 Solid Waste Management

Solid waste management (SWM) remains a challenge in Limuru. SWM in the Sub-County is characterised by poor disposal practice, and lack of or inadequate waste disposal facilities. The existing dumpsite located at Nyambari in Lari was recently decommissioned. The waste was collected and transported to the new site at Kagoki sanitary landfill in Thika Sub-County.

The types of solid waste in Limuru Sub-County include domestic, commercial, municipal, institutional, industrial, and agricultural as discussed below:

- **Domestic waste:** This is waste from household activities in the Sub-County. It contains food remains, dirt from sweeping, clearing of obsolete/unwanted clothing, utensils, furniture or other material. Other household activities that produce domestic waste are gardening and disposal of packaging and reading materials. The category may contain hazardous waste such as paint cans, plastics, radioactive wastes and perfume cans.

- **Commercial waste:** This emanates from shops, retail stores, service stations, entertainment centres, offices, restaurants and hotels as well as markets. The waste comprises of packaging materials, office supplies, food waste, as well as hazardous components such as contaminated hazardous materials, radioactive elements, corrosive and combustible wastes.
- **Municipal waste:** This includes street waste from street sweeping, spilled loads, animal manure, and dead animals. Street waste may also comprise both commercial and domestic waste, especially where waste collection from these two sources is poor. The other categories of municipal waste include market waste, demolition and construction, landscaping, parks, junk and train waste.
- **Institutional wastes:** These include waste from schools, government offices, hospitals, prisons, and other institutions. The waste from the hospital constitutes infectious and hazardous materials. Most hospitals in the Sub-County have their waste management strategies.
- **Industrial waste:** They come from processing and non-processing industries. Industrial waste constitutes manufacturing wastes, construction and demolition wastes as well as food and chemical wastes.
- **Agricultural waste:** Agricultural waste emanates from animal and crop husbandry such as manure and crop remain. It may constitute hazardous wastes such as chemical containers.

The County Government of Kiambu is responsible for collecting and disposal of solid waste in the planning area under the Department of Water, Environment and Natural Resources. The main modes of solid waste disposal in the County include landfills, dumpsites, incinerators, recycling and bio-decomposers. According to the Kiambu County Spatial Plan, collection and disposal of waste at urban centres stands at 75%. According to a JICA report, it is estimated that the rate of generation of solid waste is 0.53 to 0.65 kg per person per day and that it is likely to increase up to 150 tons per day in the future (JICA 2010). Using an average of 0.65 kg/person/day, in Limuru Sub-County, it is estimated that the tonnage of waste to be generated by the year 2030 per day will be 128.341 tonnes from 103.554 tonnes estimated to have been generated in the year 2019.

The Sub-County is serviced by a 22-tonne tipper collecting commercial waste. The tipper is currently delivering waste collection services within the Sub-County, but it is not able to effectively cover all the area. This contributes to the accumulation of uncollected wastes further leading to illegal dumping of waste along the roads, waste sources and in forests and four private garbage collectors, collecting mainly residential wastes, namely, novelty crews, trash handlers, Tigoni youth refuse collectors and Paiva Okota taka.

To facilitate solid waste management, a classification of different zones has been done as areas requiring special attention as a red zone. These areas have high waste production along the major highways. These areas, if left unattended, will result in waste backlog, illegal dumping and littering. An area classified as the orange zone has less waste production and requires moderate attention. The green zones require minimal attention as most of the wastes produced is salvaged to be used in farming and animal feeds. Other areas have

been identified as notorious for illegal waste dumping and a lot of sensitisation and enforcement of the laws is required to curb the same.

Table 8-3: Classification of Zones according to the Amount and Type of Waste Generated

Red Zone	Orange Zone	Green Zone	Areas with Chronic Waste Dumping
Limuru bus park	Ngecha	Ndeiya	Farmers/Karajee
Limuru market	Rironi	Tigoni	Kwambira
Limuru CBD	Kabuku	Red hill	Rironi
Nairobi-Nakuru highway	Bibirioni		Murengeti
Farmers/Karajee	Murengeti		Ngarariga
Kwambira	Ngarariga		

Source: KAWSCO

In the peri-urban and informal settlements, SWM is still a challenge due to lack of infrastructure, waste receptacles and defined collection centres. In such places, the most common disposal methods include dumping on open spaces, roadsides and burning. The waste volume collection is poor in the sub-county. The County organises about 7 trips a week, either by dump truck or tractors pulling trailers. Of the waste generated, 97% is domestic and 3% is industrial. Reasons for the uncollected waste in the area has been cited as poor machinery, lack of personnel, lack of awareness by the community on solid waste management. The dumping site is also not enough to handle all the waste. The County has plans to construct incinerators in health facilities like Rwambiri dispensary in Ndeiya Ward. With the support of the Kenya Urban Support Programme, the County intends to enhance waste management by constructing waste transfer stations. In order to effectively manage waste, the County needs to promote the 3Rs (Reduce, Reuse, Recycle) as a best practice. The table below shows the projections for waste generation in Limuru Sub-County.



Image 8-2: Illegal Dumping of Solid Waste in Karanjee
Source: VisionRI

Table 8-4: Solid Waste Generation Projection for Limuru

Particulars	Years				
	2019	2022	2025	2028	2030
Population	159,314	168,916	179,097	189,892	197,447
Waste generation (tons) per day	103.554	109.780	116.413	123.430	128.341

Source: VisionRI

8.5 Liquid Waste Management

The three main sources of liquid waste in Limuru Sub-County are residential, commercial, and industrial areas. Stormwater is also a source of liquid waste. Liquid waste from domestic sources can be classified as black water, which contains excreta, and greywater, which does not. Majority of the residents use septic tanks as a way of managing liquid waste. Insufficient linkages between the primary and secondary sewer systems will continue to inhibit development within the urban area, as residents and potential investors will be expected to manage their wastes. In addition, the existing sewerage treatment plant, Limuru Sewerage Treatment Plant, is currently operating beyond its capacity.

Limuru Town Sewerage System which serves Limuru Town has a design capacity of treating 550m³/day which is the dry weather flow. The Wastewater Treatment Works (WWTW) was designed in 1974 and was to be implemented in two phases. Phase one was to serve a population of 4,500 people in 1985. Phase two was to be implemented at a later date to treat sewage from the estimated population of 10,950 in the year 2000. Until now, phase two has never been implemented.

LIWASCO estimates that nearly 612 m³/day influents are received by the WWTW. The WWTW system is mechanised and installed equipment is not working properly. It was reported that several types of equipment such as motors for the aerators get damaged due to frequent fluctuations in the electrical power supply. The existing sewerage network covers only Limuru Central, therefore, most of the developing areas are not served by the sewer system. Some of the areas that have had tremendous developments taking place include the former Limuru Dairy Farm with 1,180 house units already approved by the County Government, Limuru Town (CBD), Kamirithu Village, Kamandura/ Taramana area, and Karanjee/Misiri area. A number of Industries, Tigoni area and St. Paul University are expected in the area.

The sewer network comprises of approximately 8.3 km of sewers varying in diameters. The existing sewerage network comprises of trunk mains of DN 300 concrete pipes and DN 160 uPVC laterals. The WSP connects households to inspection chambers which serve several households before connecting to the trunk mains.

Due to new developments, the existing network is overloaded. The sewer lines experience frequent blockages. The metal manhole covers are missing in some areas since they were vandalised and stolen. The final effluent from the existing treatment facility does not meet the required standards for discharge into the environment, i.e., the final Biological Oxygen Demand (BOD) is as high as 50m/l instead of required 30m/l. Table 8-5 shows the population and sewerage flow projection demands for Limuru Sub-County wastewater generation projection.

Table 8-5: Wastewater Generation Projection for Limuru

Particulars	Years				
	2019	2022	2025	2028	2030
Population	159,314	168,916	179,097	189,892	197,447
Wastewater generation (l) per day	955,884	1,013,496	1,074,582	1,139,352	1,184,682
Assumptions:					
<ul style="list-style-type: none"> • 1 person uses a minimum of 7.5 litres a day; and • About 80% of the water used results in wastewater. 					

Source: VisionRI

8.6 Storm Water Drainage

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

The Kenya Urban Support Programme Project has planned a project that entails the provision of stormwater drainage facilities in Limuru Sub-County. All the roads within the Sub-County should leave space within their wayleaves to integrate stormwater drains. Collected storm or rainwater can be redirected into existing rivers thus practising integration of good road designs, as well as water conservation.

8.7 Energy

In 2015, Kenya's total power generation was 2,295 MW from 42 power plants. This was from geothermal 593 MW, hydro 827 MW, wind 26 MW, fuel oil 751 MW, biomass 38 MW, and gas turbine 60 MW. By 2020, Power Africa's report shows an increase of 45% power generation from 85 plants installed. This is envisaged as

follows: geothermal 1,984 MW, hydro 921 MW, wind 786 MW, fuel oil 751 MW, solar 430 MW, biomass 108 MW and gas turbine 60 MW⁷.

The main sources of energy in Limuru include electricity, kerosene, charcoal and firewood. The main source for energy for lighting, industrial and commercial purposes is provided by Kenya Power which has a power sub-station located along Lion's Street (Kiambu Road).

At the household level, the main energy sources for cooking are firewood at 90.2% with only 0.2% and 0.8% relying on electricity in rural and peri-urban areas, respectively. This is the main cause of indoor air pollution causing health problems. Other energy options include paraffin, LPG, biogas and solar.

Some the challenges identified include illegal power connections especially in the informal settlements and last-mile connection in the some of the rural areas.

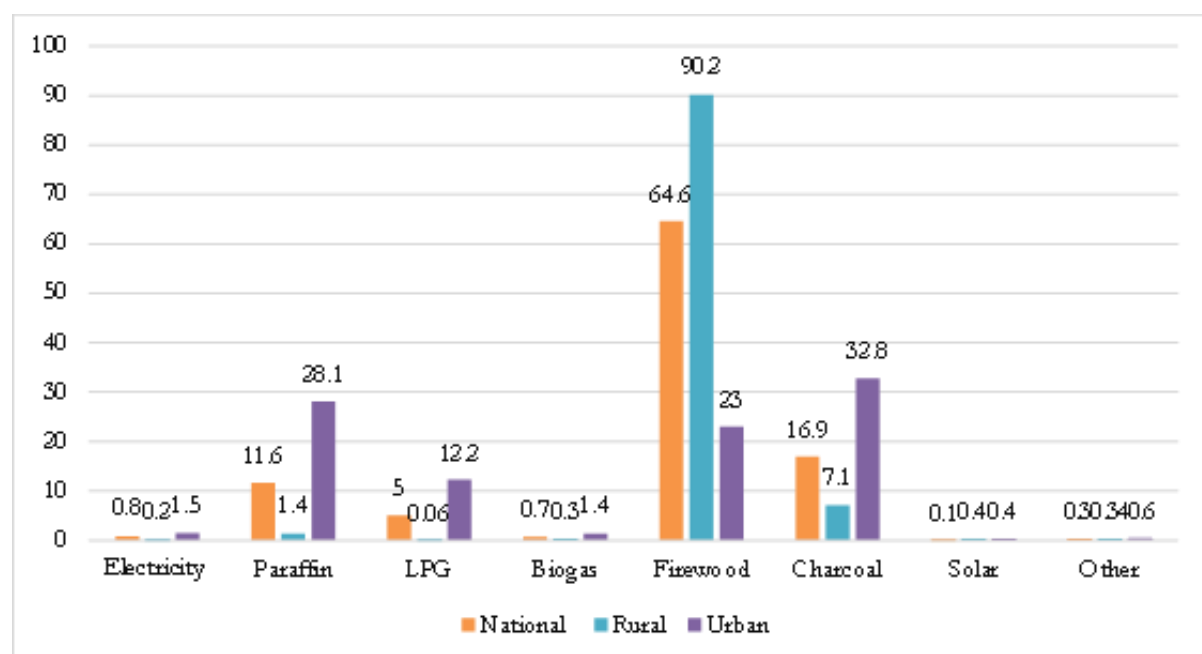


Figure 8-2: Energy sources in Limuru Sub-County

Source: KNBS 2012

8.8 Information and Communications Technology

Limuru is home to the major television signal transmitters because of its high altitude. It is also well served by ICT infrastructures such as mobile phone services including, Safaricom, Airtel, Telkom and Equitel and others. This has increased access to services like mobile money transfer, e-commerce, e-banking and

⁷ www.usaid.gov/powerafrica

internet services. This has created business and employment opportunities in cybercafés, Mpesa shops and other related services. This places Limuru as a potential centre for innovation in ICT.

8.9 Emerging Planning Issues

Table 8-6: Emerging planning issues on physical infrastructure and utilities

Sector	Issues	Opportunities
Transportation	<ul style="list-style-type: none"> Missing links and un-surveyed roads; Narrow and unmotorable roads; Encroachment of road reserves; and Poor roads conditions due to lack of maintenance and upgrading. 	<ul style="list-style-type: none"> Adaptation of the new classification of roads by the Kenya Roads Board; Budgetary allocation for roads improvement at the County and National Government; and Most parcels abutting the road are not developed making it easy to reclaim the road reserves.
Water	<ul style="list-style-type: none"> Unmet water demand; Supply water supply network is not extensive enough; and Prohibitive water connection and user tariffs. 	<ul style="list-style-type: none"> Encourage alternative water harvesting mechanisms; and Explore cross-subsidies to cushion the financial impacts on low-income earners and the vulnerable.
Solid Waste	<ul style="list-style-type: none"> Lack of or inadequate waste disposal facilities; Poor waste disposal behavioural practices; and Low level of waste reduction, reusing and recycling. 	<ul style="list-style-type: none"> Adoption and awareness creation of the 4Rs (Reduce, Reuse, Recycle and Recover) and circular economy concepts; and Identify strategic waste transfer stations in major market centres.
Liquid Waste	<ul style="list-style-type: none"> Insufficient linkages between the primary and secondary sewer systems; and High connection fees and user tariffs. 	<ul style="list-style-type: none"> Initiative last-mile connection programmes; and Promote alternative liquid waste management technologies.
Stormwater drainage	<ul style="list-style-type: none"> Poorly constructed and lack of maintenance of the drainage system; Solid waste dumping; and Encroachment of the drains by kiosks and small-scale traders. 	<ul style="list-style-type: none"> Use proper engineering designs and competent contractors; and Enforcement to discourage encroachment.
Energy	<ul style="list-style-type: none"> Indoor air pollution; and Lack of last-mile connection. 	<ul style="list-style-type: none"> Use of clean energy sources i.e., wind solar and biogas; Promote energy-saving stoves; and Promote last-mile connection.

Source: VisionRI

9 SOCIAL INFRASTRUCTURE

9.1 Education Facilities

9.1.1 PRIMARY SCHOOLS & ECDE CENTRES

Limuru Sub-County generally has high education standards especially at the basic level given their good performance in national examinations. Nonetheless, the number of schools vis-à-vis the population poses challenges to future development in the sector. The Sub-County has 26 public ECD centres all located in the public primary schools. These centres have an enrolment of 3,106 children. Although the centres are spread out around the Sub-County, children walk relatively long distances to reach them given their age. It is partly for this reason that private ECD centres flourish in as there were about 15 of them.

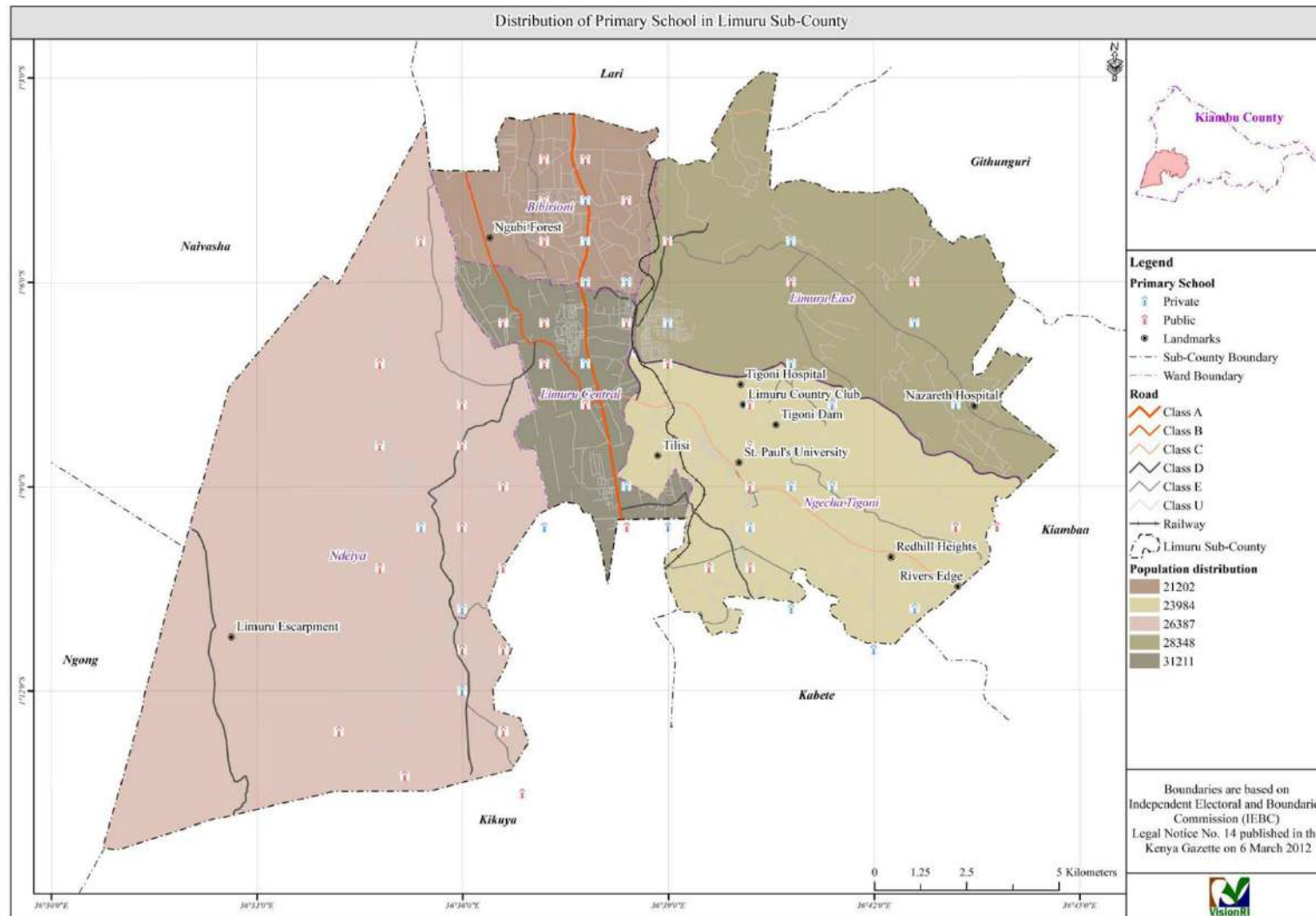
There are 26 public primary schools in the Sub-County. These schools have a total enrolment of 22,475 pupils and 587 teachers. The teacher to pupil ratio is 1:39. This is a good ratio if the teachers are deployed to schools according to the pupil population. With the projected population of 197,447 in 2030, Limuru Sub-County will require about 49 more public primary schools by 2030.

9.1.2 SECONDARY SCHOOLS

The Sub-County has 18 public secondary schools with a total enrolment of 9,041 students. Some schools such as Limuru Girls' School are graded as national, thus take most of their students from across the country and do not fully service the Sub-County. This means that there could be a shortfall in the number of schools in place. The projected population of 197,447 in 2030 implies that the demand for secondary schools in the planning will be 25 secondary schools (1:8000 population). This means that the Limuru Sub-County will require to have established seven more secondary school gap up to 2030. This is amplified by the fact that some of the secondary schools have less than 300 students while others have more than 1,000. This means that there is a need to develop existing schools in terms of infrastructure to hold more students, especially in boarding.

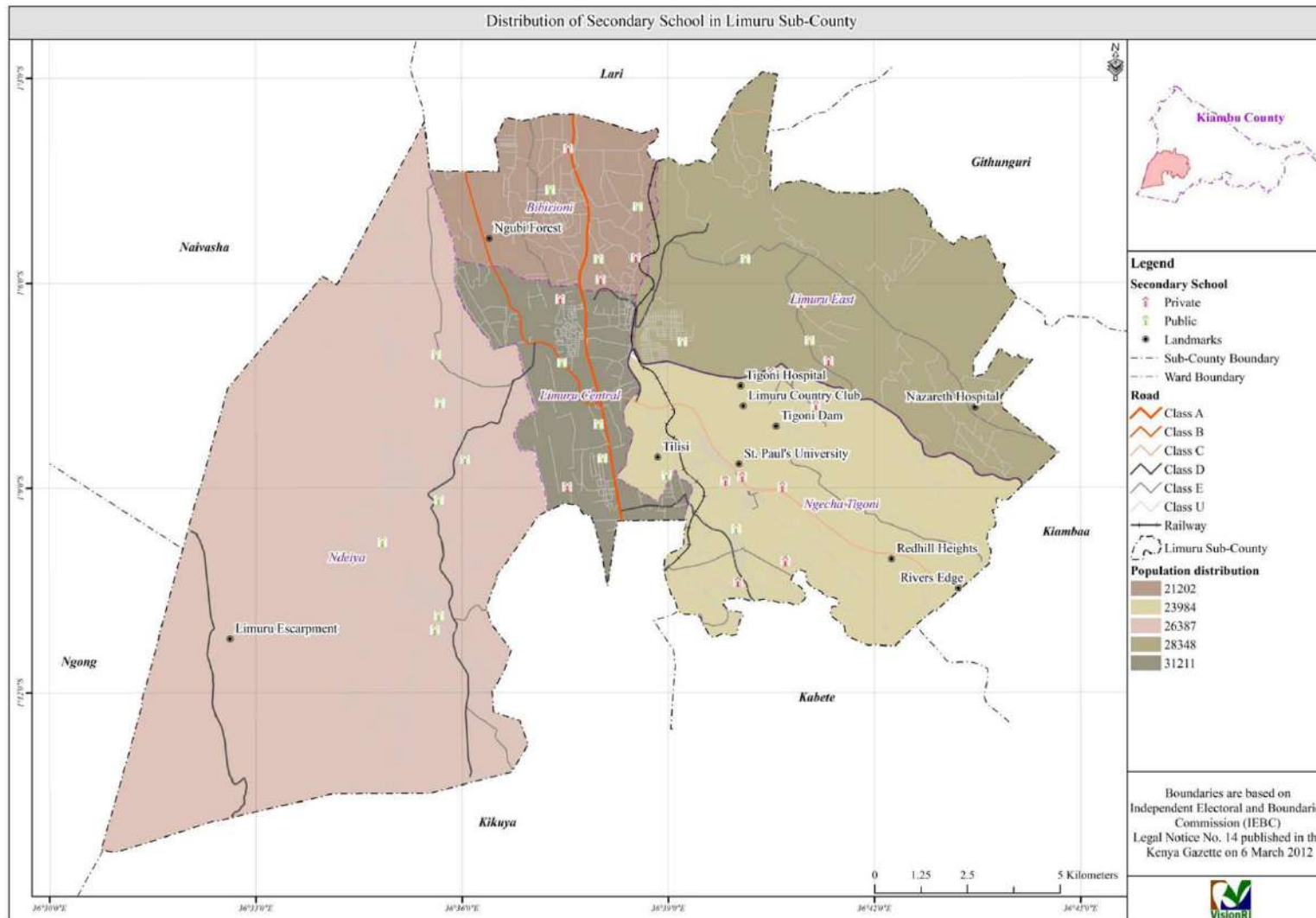
9.1.3 TERTIARY INSTITUTIONS

There are 11 adult learning centres in the Limuru Sub-County. These have a total enrolment of 134 learners. Majority of the learners (81%) are female and 19% are male. The number of learning centres in the seven sub-locations and enrolment in the Limuru Sub-County are shown in Table 9-1. The numbers of centres and enrolment show that the centres are few and far apart, meaning that adult learning has not been taken seriously in the Sub-County. A learning centre in each of the public primary schools will be appropriate in improving access to adult learning services in the Limuru Sub-County. Furthermore, there is a need to sensitise men to the need to attend adult learning classes as their numbers in the centres are still low.



Map 9-1: Distribution of Primary Schools

Source: VisionRI



Map 9-2: Distribution of Secondary Schools

Source: VisionRI

Table 9-1: Public Adult Learning Centres in Limuru Sub-County and Enrolment by Sex

Sub-location	Number	Enrolment		
		Male	Female	Total
Rironi	2	9	25	34
Mabroukie	2	6	7	13
Thingati	1	3	7	10
Kabuku	2	0	32	32
Bibirioni	2	2	25	27
Tigoni	1	4	5	9
Kamirithu	1	1	8	9
Total	11	25	109	134

Source: Directorate of Adult and Continuing Education, Limuru 2015

There is no public university in Limuru Sub-County and participants during the focus group discussions (FGD) intimated that there is a need for one. Nonetheless, there is a private university, St. Paul's University run by the Catholic Church of Kenya. There are also some Vocational Training Centres in Limuru. Each ward has one vocational institute.

Table 9-2: List of Vocational Training Centres

Sub-County	Wards	Vocational Training Centre	Remarks
Limuru	Bibirioni	St. Bosco	Operational
	Limuru Central	Kamirithu Youth Polytechnic Thigio Village Polytechnic	Operational
	Ndeiya	-	
	Limuru East	-	
	Ngecha- Tigoni	Tigoni	Operational

Source: VisionRI

9.1.4 PROJECTION OF EDUCATIONAL FACILITIES

The population increase in the ward is set to increase the need for increasing the carrying capacity of schools, therefore, necessitating the need for the County Government to make plans for constructing new classrooms in Gatimu Primary School. Limuru East will have a new polytechnic constructed at Karambaini. The community has proposed to also have the County Government construct a polytechnic at Tigoni. Schools such as St. Joseph High School, Muongoiya Secondary School, Mayuyu Primary and Muongoiya Primary, will be provided

with electricity and solar panels. This is for the purpose of lighting school premises to increase comfort to the learners. A resource centre is going to be constructed at Kiawaroga in Limuru East, targeting 5000 users (Kiambu, 2013).

Table 9-3: Projection of Educational Facilities

	Years	2019	2022	2025	2028	2030
School Type	Population	159,314	168,916	179,097	186,892	197,447
Nursery	No. of Nursery Schools	64	68	72	74	79
Schools	Land area required (Ha)	16	17	18	18.75	19.75
Primary	No. of Primary Schools	40	42	45	47	49
Schools	Land area required (Ha)	130	136.5	146.25	152.75	159.25
Secondary	No. of secondary schools	20	21	22	23	25
School	Land required (Ha)	138	144.9	151.8	158.7	172.5
Assumptions:						
<ul style="list-style-type: none"> • No. of nursery school requirements; • 1 school for a population of 2500; • 1 school requires 0.25 ha of land; • Primary school requirements; • 1 school for a population of 4000; • 1 school requires 3.25 ha of land; • Secondary school requirements; • 1 school for a population of 8000; and • 1 school requires 6.9 ha of land. 						

Source: VisionRI

Map 9.4 shows proposed education facilities area in Limuru Sub-County.

9.2 Health Facilities

According to the Kiambu County Department of Health, the doctor/population ratio in the county is 1:17,000 and the nurse/population ratio stands at 1:1,300. The average distance to the health facility is seven kilometres. Limuru has two main hospitals: Tigoni Level 4 Hospital and Nazareth Mission Hospital (private). There are six health centres located in Thigio, Kamirithu, Ndeiya, Limuru, Rironi and Ngecha. In addition, there are seven dispensaries including Rwamburi, Kiriri, Ngecha Orthodox, and Thigio, amongst others.

These facilities are supplemented by facilities within the neighbouring sub-counties such as Kiambu Level 4, Kihara Level 4 hospital, Kikuyu Mission Hospital and Kijabe Mission Hospitals in Kiambu, Kiambaa, Kikuyu and

Lari sub-counties, respectively. Due to its proximity to Nairobi, Limuru residents also enjoy health services from reputable hospitals such as Kenyatta National Hospital. The table below summarises the health facilities and their classification level.

Table 9-4: Health facilities and classification

Facility	Level
Tigoni Hospital	IV
Bibirioni Hospital	IV (Proposed)
Ngecha Health Centre	III
Ndeiya Health Centre	III
Limuru Health Centre	III
Kamirithu	III
Rironi	III
Ngecha	III
Rwamburi Dispensary	II
Thigio Dispensary	II
Rwamburi	II
Kiriri	II
Nazareth Mission Hospital	FBO
Ngecha Orthodox	FBO
Thigio Hospice	FBO
Limuru cottage hospital	Private
St. Joel Community Dispensary	Private

Source: Department of Health Service and Field Survey 2019

With this in mind, the need for local services cannot be overlooked. According to the Physical Planning Handbook, 2007, any major urban centre in the Sub-County that serves a catchment of 5,000 people or more, qualifies for a dispensary. Also, there should be a health facility within a five kilometres radius.

Table 9-5: Projection of Health Facilities

Year	2019	2022	2025	2028	2030
Population	159,314	168,916	179,097	186,892	197,447
Number of health centres	32	34	36	37	39
Land needed in hectares	128	136	144	148	156
	Recommended standards include: <ul style="list-style-type: none"> • 5000 people to be served by 1 sub-district hospital; and • Sub-health centre to have a minimum of 4 hectares. 				

Source: VisionRI

Map 9.4 shows proposed health facilities area in Limuru Sub-County.

9.3 Other Social Infrastructure

9.3.1 RECREATION FACILITIES

The planning area has several recreational and sporting facilities which are mainly private. In rural areas, there are undeveloped sports and public social facilities. Several private recreational facilities have also been developed within the Sub-County. This points to the need to invest more in recreation facilities that include green and open spaces. Table 9-6 below shows examples of both public and private facilities within the Sub-County.

Table 9-6: Recreational, Hospitality and Events facilities

S. No.	Name of site	Area	Activities
1.	Limuru Municipal Stadium	Limuru Town	Sporting activities
2.	Limuru Community Centre	Limuru Town	Social events
3.	Bata Stadium	Limuru Town	Sporting activities
4.	Limuru Country Club	Limuru	Golfing, swimming pool, cricket, squash and bowling facilities.
5.	Mwanyawa Ruhuhu	Limuru	Potential picnic site
6.	Manguo Swamp Eco-Tourism	Limuru	Birdwatching
7.	Waterfalls Inn	Limuru	Picnicking, horse rides, restaurant.

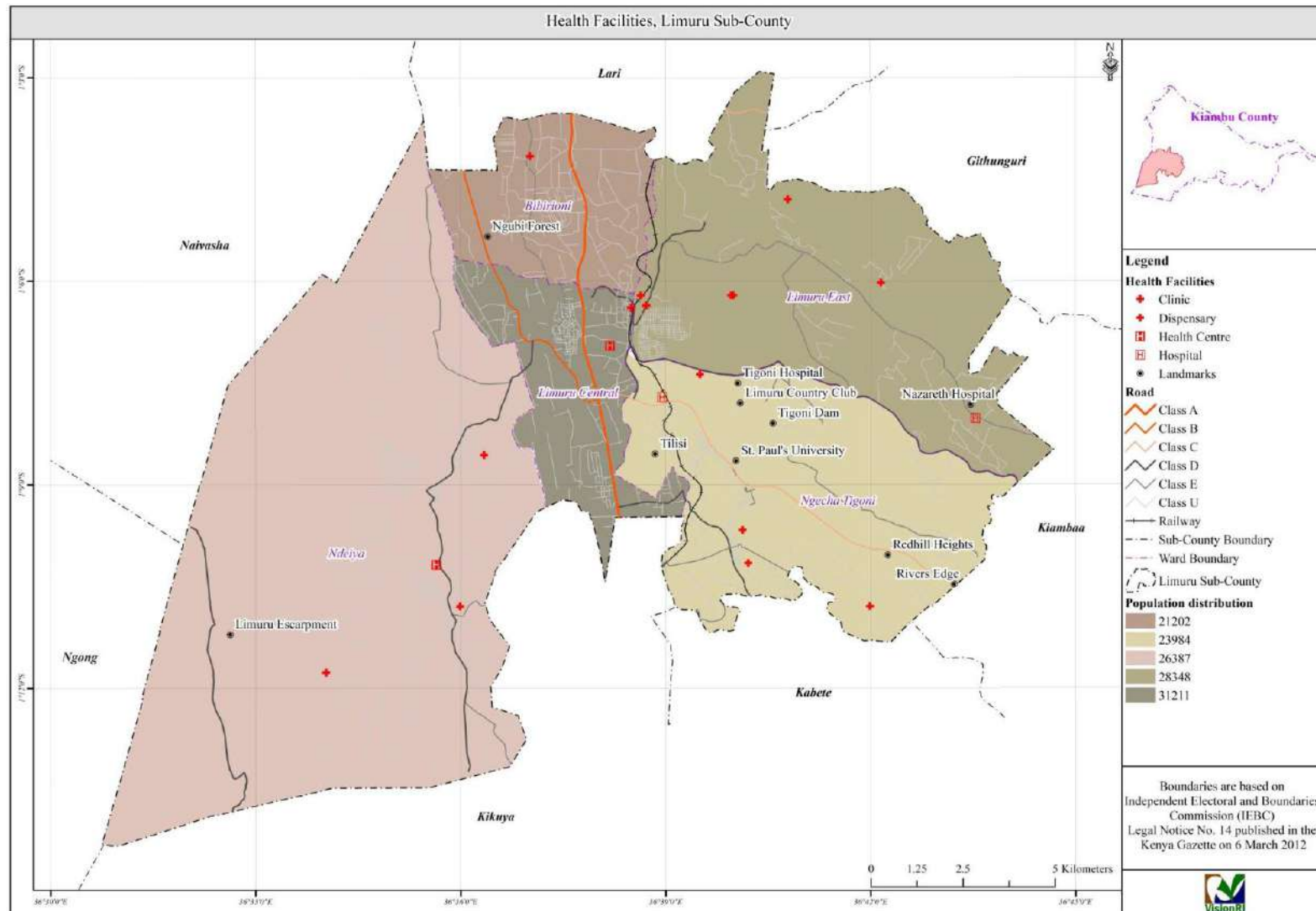
S. No.	Name of site	Area	Activities
8.	The Dam Red hill	Limuru	Floating restaurant, zip lining, bike riding, fishing camping, nature walk & picnic sites as well as boat riding and sport fishing.
9.	Limuru Tea Estates	Limuru	Tea tours
10.	Kiambethu Farm	Limuru	Farm tours, lecture and a walk in the forest.
11.	Fuchsia Gardens	Limuru	Events garden
12.	Upendo Golf	Redhill	Golfing
13.	Eva`s Garden	Redhill	Events garden
14.	Zerenity Garden	Redhill	Events garden and conference facility
15.	Bustami Gardens	Redhill	Events garden
16.	Evalush Garden	Redhill	Events garden
17.	Kentmere Club	Tigoni	Private members club
18.	Brakenhust	Tigoni	Hospitality and conferencing
19.	Dinham Resort Garden	Kentmere	Events garden

Source: VisionRI

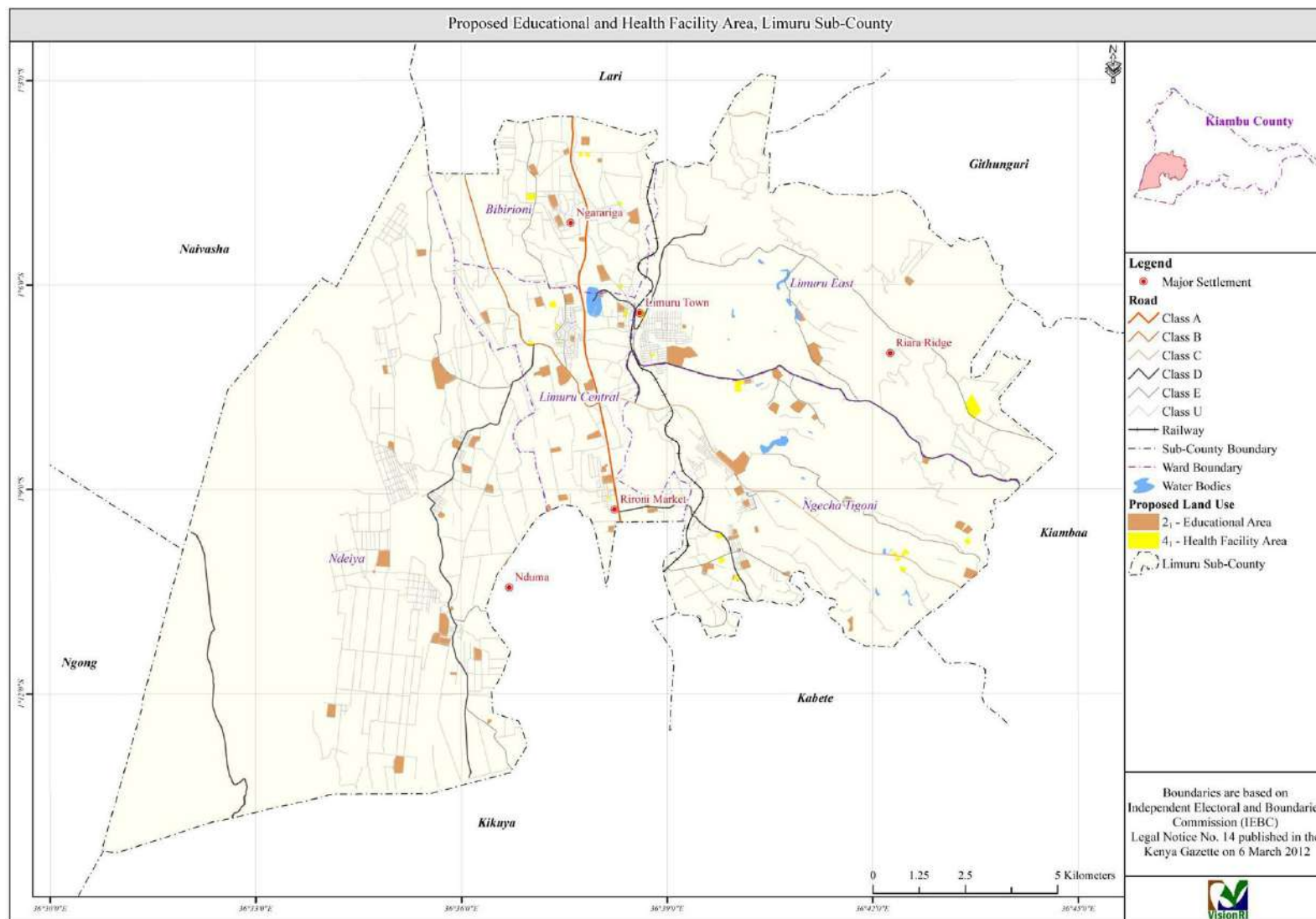
9.3.2 9.3.2 SAFETY AND SECURITY

There is a fire station which has a capacity of 4,500 litres and a complement of 10 fire-fighters. It serves both Limuru and Lari Sub-Counties. The availability of fire-fighting equipment necessitates quick response skills by the firefighters employed by the County Government. However, there have been a number of fire incidents in the Sub-County whereby traders have lost goods worth a lot of money due to fire incidents, yet there is a fire station located approximately 500 meters away from Limuru Town (Mugo, 2017). Increasing the number of fire stations within the Sub-County will reduce the time of response when there is a fire as well as employing the new fire-fighters. Kiambu County has planned to purchase fire-fighting equipment and refurbish the Limuru Central Fire Fighting Unit. This fire station will serve a threshold of 2,000 people.

Fire stations should be established in every centre so as to make sure they are able to serve the people of Limuru Sub- County. Limuru planning area has various public security providers. Police stations include Tigoni and Limuru town and Kabuku. Police posts include Mutarakwa and Kiawaroga Police Post in Limuru East. Aside from the public security providers, the private sector has also provided security to the people of the Sub-County. The private security providers include BM Security Firm, G4S and KK Security Services. Limuru has also enhanced security throughout its neighbourhoods by lighting up streets and also encouraging people to fence their properties.

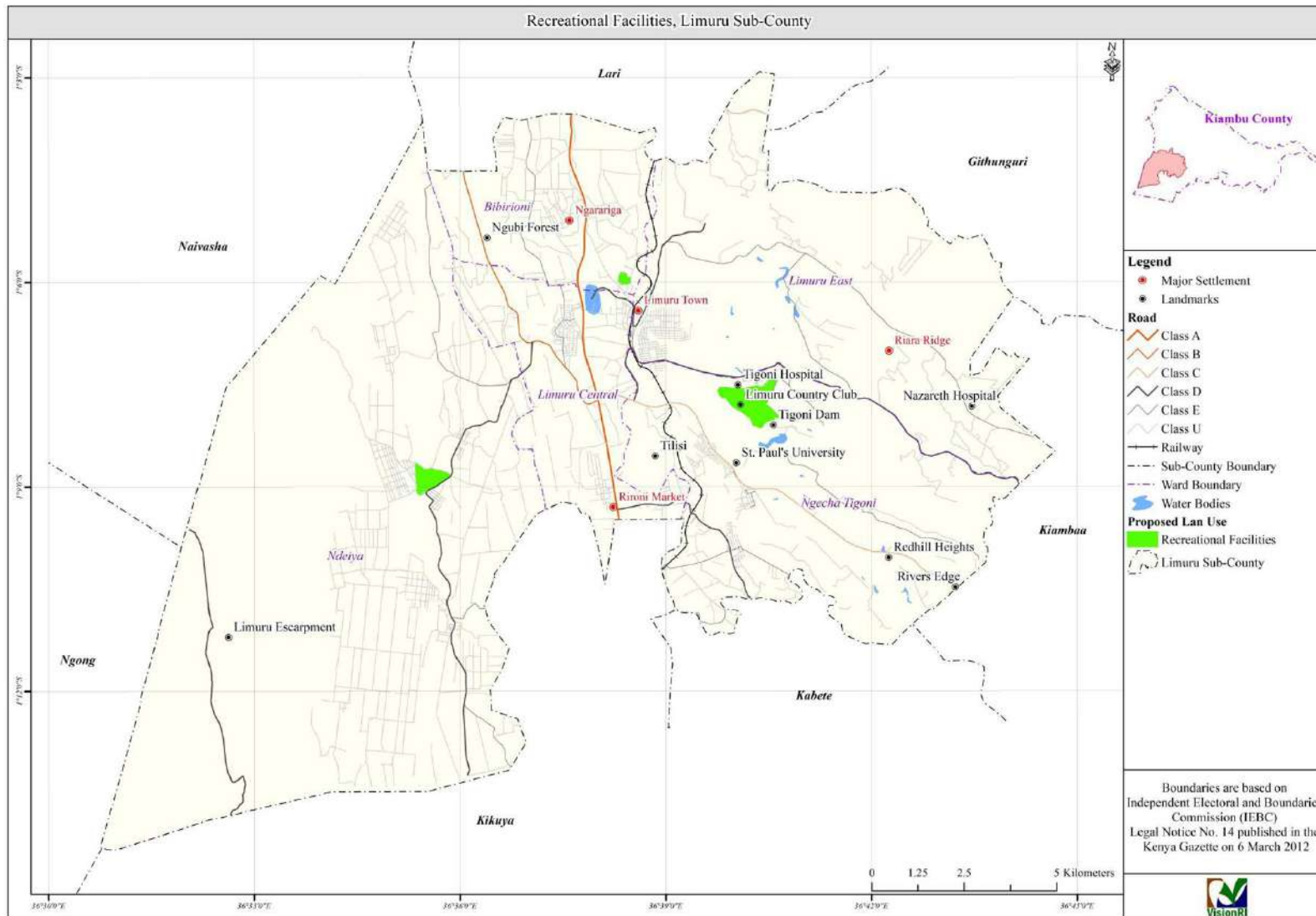


Map 9-3: Health Facilities
Source: VisionRI



Map 9-4: Proposed Education and Health Facilities Areas

Source: VisionRI



Map 9-5: Recreational Facilities

Source: VisionRI

The construction of the Nazareth AP line and Thigio police post within the Limuru planning area will enhance the people's security and promote law and order. The stakeholders proposed that the following should be constructed to improve security:

- A chief's camp at Murengeti in Bibirioni and
- Kentmere police post in Ngecha ward.

The County Government has set aside funds for the community projects as well. Rironi Shopping Centre in Limuru Central will be installed with streets lights to enhance security. This project targets at least 1,000 people.

Every neighbourhood is expected to have a police post established on 0.1 hectares. All the townships within the Limuru planning area should be served by a police station which will occupy three hectares, in the future. These developments will increase security and attract more residents and investors throughout the Limuru (Lands, 2007).

Table 9-7: Staff for Safety and Security

Items	Current Capacity	Required Capacity by 2030	Requirements
Fire engine	1 – 4,500 litre fire-engine	2	2 acres
Staff	10 firefighters	60 firefighters	
Police Stations	3 stations	6 stations	444 police (1 police officer per 450 citizens)

9.3.3 CEMETERIES

The Sub-County has at least four burial grounds in Limuru town, Bibirioni, Kwambira and Tigoni. However, the Limuru town cemetery which was established in 1990 was full by 2013, leaving three cemeteries functional (Map 9-6). The burial site in Tigoni has a sharp gradient and would mostly accommodate graves for children and not for adults that need to be dug up to six feet.

The County Government has purchased land at Kiawaroga to use it as a burial site. As the urban areas within the Sub-County continues to grow, and land becomes scarce, the demand for burial facilities is expected to rise, thus the need for designation and proper management of the public cemetery. The extra demand for burial space spawned by burial expectations is especially strong in cultures that discourage cremation.

9.3.4 SLAUGHTERHOUSES

Limuru Sub-County has two slaughterhouses in Limuru town (Map 9-6).

Table 9-8: Slaughterhouses in Limuru Town

Name	Class	Capacity per day
Bahati	A	110 bovines
Limuru town	C	50 bovines

9.3.5 LIBRARIES

The Sub-County has one public library, i.e., Limuru public library, located in Limuru Town. The rest of the Sub-County lacks these important facilities.

9.3.6 RELIGIOUS FACILITIES AND SOCIAL HALLS

The Constitution of Kenya 2010 in Article 32 provides that every person has the right to freedom of conscience, religion, thought, belief and opinion. This sets out religion as a fundamental right in Kenya. To this extent, the setting up of religious institutions including houses of worship such as mosques, temples and churches as well as religious education and health institutions is expressly allowed as long as other requisite regulations such as the Basic Education Act is respected.

The Sub-County is multid denominational with various Christian churches. These range from the Catholic Church, Presbyterian Church of East Africa and other Pentecostal churches. The main religious groups, particularly the Christians are involved in educational activities including schools and a university. Besides, the various denominations of the Christian church have many churches across the County. These should match the growing population.

9.4 Emerging Planning Issues

Table 9-9: Emerging planning issues on social infrastructure

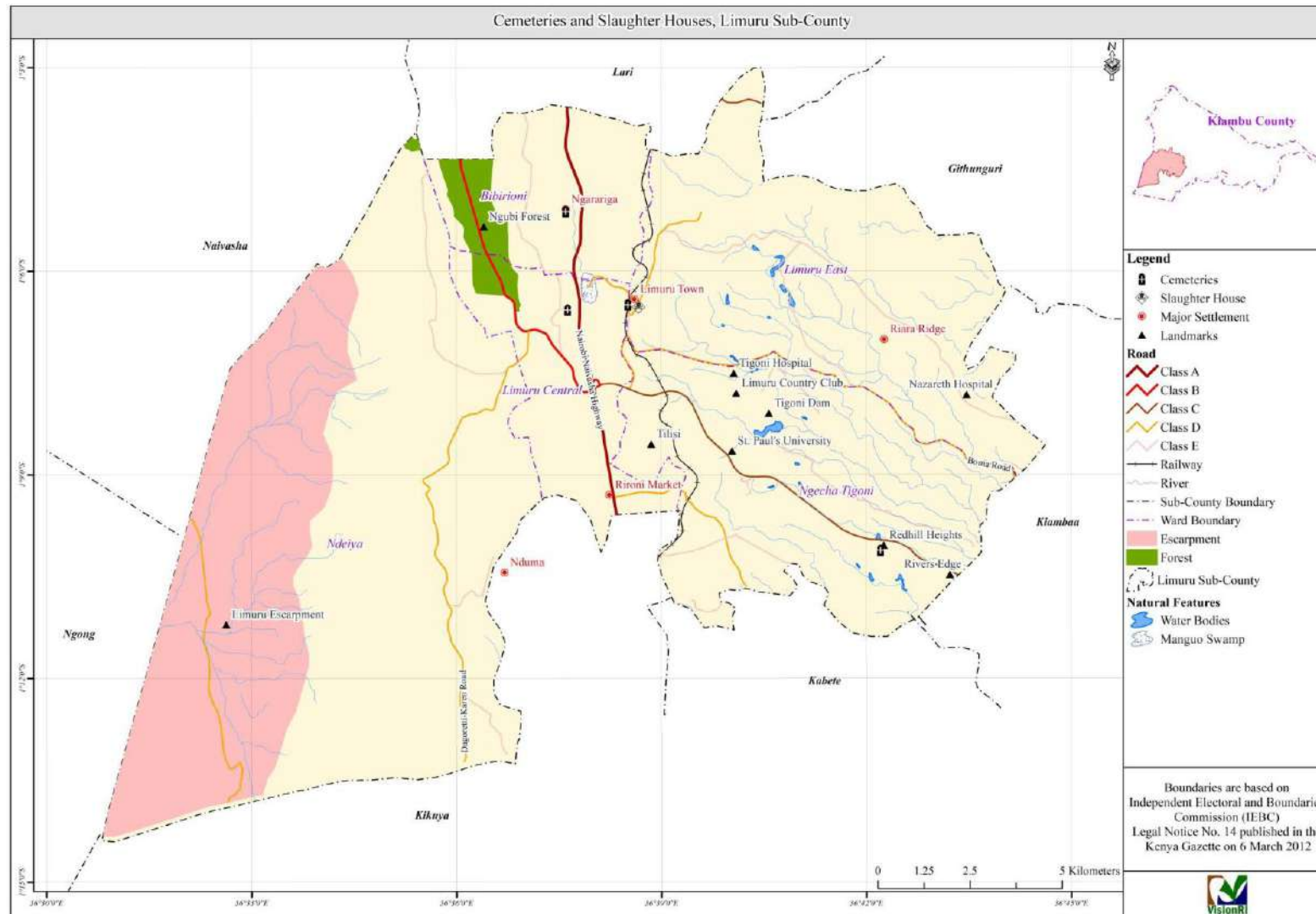
Sector	Issues	Opportunity
Education	Inadequate education facilities.	<ul style="list-style-type: none"> • Densification of existing facilities; • New facilities in emerging settlements; and • Incentives to the private sector to provide affordable education facilities.

Health	Has several health facilities although some wards are underserved?	<ul style="list-style-type: none"> ● Use of Kenya Health Policy guidelines to inform the distribution and provision of health facilities; ● Active private and faith-based sectors in health provision; ● Availability of land to upgrade existing facilities; and ● Strong County health delivery system.
Other social infrastructure	Inadequate public recreation facilities, fire stations, cemeteries, and libraries.	Government intervention in the provision of social facilities.

Source: VisionRI

The planning area has one major university, namely, St Pauls University–Main Campus.

- Social infrastructure: The planning area faces challenges in the provision of affordable housing, unequipped level 4 hospital in the CBD, accessible rural health services as well as public recreational facilities.



Map 9-6: Cemeteries and Slaughterhouses

Source: VisionRI

10 ECONOMIC ANALYSIS

10.1 Agriculture

Generally, farming is a mainstay economic activity taking the form of food and cash crop production, livestock, and aquaculture. The total land area under agriculture is 8,083 hectares with 5,841 hectares under subsistence farming and 2,169 under commercial farming. (KNBS 2019 Census).

The agricultural sector in Limuru has been identified to be strategically planned and supported to enhance its future growth and sustainability. With a substantial portion (39%) of Limuru Sub-County's population engaged in this sector, agriculture is expected to support and boost the economy of Limuru. The area is a major producer and exporter of tea in Kenya.

Tea is cultivated across 6,536 hectares in Limuru Sub-County, producing 56,286 metric tonnes of the crop. Key crops produced include maize, beans Irish potatoes, and various cash crops. Other agricultural products include pyrethrum, dairy and poultry. While the average farm size in Limuru is

0.6 hectares, it is averaged at 40 hectares for large-scale farmers who are mainly tea producers.

With an elevation of 7,000 feet, the region enjoys the perfect climate and rainfall levels that are needed for year-round tea cultivation, a factor that greatly contributes to Kenya's position as the third-largest tea producer in the world. The area is also covered by soils which are well-drained, extremely deep, dusky red to dark reddish-brown friable clay, with acid humid topsoil. Lying in Kiambu hills and alongside Rift Valley, Limuru lies within a tea-growing zone. A large proportion of the agricultural land being under tea production and tea being a highly market and export-oriented, Limuru is already engaged in export-based farming and prepared to kick off its transformation into an agriculture-based industrial economy.

There has been a growing urban sprawl that is continuously threatening agricultural land in Limuru. The reducing prices of tea in the local market is not helping the situation. For example, a farmer presenting his dilemma at a consultative meeting in Limuru says that last year the tea buying company sent him a dividend cheque of Kshs 200,000 after harvesting tea from his 70-acre plantation over the year, a flagrant loss considering the input and production costs involved. Conversely, the increasing value and demand of land in Limuru for real estate seems to be more attractive than maintaining this loss so he might as well be giving up some of it for the current lucrative real estate sector.

It is against this backdrop to ameliorate this situation where community efforts such as the Limuru Highlands Initiative, is playing a crucial role. The initiative has brought together three associations: Red Hill and Kentmere Residents Association, Tigoni Residents Association, and Riara Ridge, Cianda Welfare Association. Its

operations straddle Kiambaa Sub-County in Cianda. The initiative is in the process of developing a zonal spatial plan for the areas covered by the respective associations that will delineate major land use activities in the areas covered.

The objectives of the plan will be to ensure that land in Limuru is properly planned, organised and well-managed to prevent uncontrolled development. This will, in turn, improve the region's economic growth, productivity, facilitate innovation while preventing the upsurge of slums. The efforts of the initiative will protect the environment, conserve natural resources, improve security and link up with sectoral government plans, in line with the Kiambu County Community and Neighbourhood Associations Engagement Act, 2016.

In the end, the initiative will preserve the peace, tranquillity, beauty, and natural heritage of Limuru and safeguard the value of property in the area. The product of the initiative will see agricultural land protected, environment improved, and general development of the zones streamlined.

Table 10-1: Land Coverage and Production of Key Crops in Limuru

Crop	Area (Ha)	Total Production (MT)
Tea	6,536	56,286
Cabbages	198	3,366
Kales	205	3,075
Tomatoes	310	3,100
Courgettes	240	1,920
Astromelia	17	1,214
Arabicum	55	1,100
Avocadoes	52	1,430
Strawberries	11	252

Source: District Agricultural Office, Limuru (2017)

10.2 Industrial Activities

Industry is another key sector that should be leveraged. There are several manufacturing industries in Limuru. Kenya Bata Shoe Company, a multinational corporation specialising in leather products, is headquartered in Limuru and employing over 5,000 Limuru residents. The manufacturing plant based in the town primarily produces shoes and is the largest shoe factory in East and Central Africa. Accessories, casuals, dresses, handbags, rain-boots, sandals, and sportswear – all leather-based – are also manufactured and sold. Bata, therefore, has been providing employment and livelihood to town residents for several years.

The table below summarises the existing industries in Limuru Sub-County and the key products they manufacture. As can be seen from the table, apart from shoe manufacturing and a few other industries, most

factories and corporations in the area deal with agro-based products such as tea, cereals, seedlings, cheese, ghee, yoghurt, milk, feeds and horticulture products. This demonstrates an already existing supply-side market of agro-industrial goods in Limuru, providing a base for the expansion of similar activities. As the industry grows, economies of scale will be realised, costs will decline, and production will become more profitable.

Table 10-2: Types of Industries in Limuru

Industry	Product
Bata Shoe Company	Leather shop
Polypipes	Pipes
Proctor and Alan	Cereals
Polythene Company	Polythene Bags
Tea Factories	Tea
Hydrotech Company	Seedlings
Millennium Trading House Limited	Treating of electric poles

Source: VisionRI

10.3 Trade and Commerce

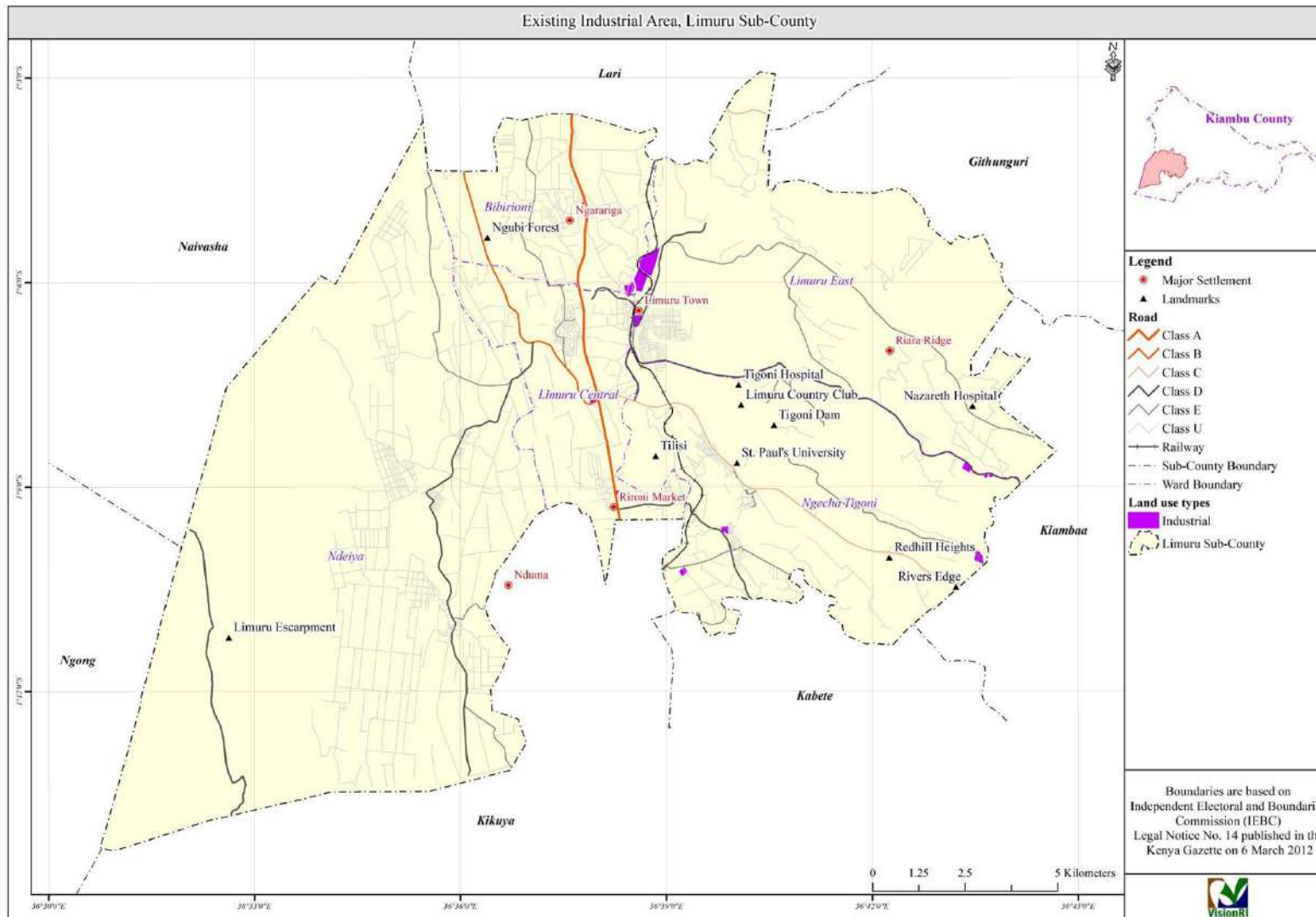
Dealers and exporters exist in the Sub-County. Some of them are Celinico Flowers Ltd., Limuru Processors Ltd., Bahati Slaughterhouse, Joparty Investment Ltd, Joseph Nganga Kironji, Limuru Dairy Farmers Co-P Ltd, Limuru Dairy Farmers Co-P Ltd, Ma Brian Abib Agencies, SK Wakulima Shop and Wa Martin Timber Works. These companies ensure that the supply chain management, marketing, sale and export of agro-industrial products will be instrumental in the growth of the industry.

10.4 Mining Activities

The arid parts of the Sub-County, mainly Ndeiya, contain unexploited diatomite deposits. There is, therefore, a great need for investment in the area to determine the economic viability of the deposits. Exploration for other mineral deposits also needs to be enhanced to determine whether other deposits are available (Government, 2020).

10.5 Emerging Issues

- **Existing Agro-industrial base:** Limuru is known as the home of Kenya Bata Shoe Company, which is the largest shoe factory in East and Central Africa, Limuru also has a significant number of factories and corporations that deal with agro-based products. These include those who deal with tea, cereals, seedlings, cheese, ghee, yoghurt, milk, feeds and horticulture products.
- **Unexploited mineral resources:** The presence of diatomite in Ndeiya.



Map 10-1: Industrial Areas

Source: VisionRI

11 GOVERNANCE AND INSTITUTIONS

11.1 Overview

This chapter discusses the framework upon which this Plan is prepared and will be implemented within the devolved system of the government. Relationships between the County Government of Kiambu and National Government are discussed as well as those between various levels in the County Government. Institutions are agents of plan implementation, and a sound institutional framework can make or break a plan's implementation. An analysis of the governance capacity to implement the Limuru Sub-County ISUDP becomes important to the planning preparation process. The National and County Government play major roles in the governance of the County and guides the roles of other actors like the private sectors and civil societies.

Two major transformations are standing out in Kenya today that will be significant in conditioning its global competitiveness, institutional transformation for the devolution of power to the local level and progressive urbanisation across the country. The rapid growth of the urban population in Kenya is the direct result of a shift in the balance between the urban and rural economies influenced by these institutional changes. In all the 47 counties, towns remain the dominant focal point of both public and private sector activities. Kiambu County provides powerful reasons underlying this defining phenomenon. Limuru's growth and anticipated urbanisation will have an impact on the future development of the planning area.

11.2 National Government

The National Government, besides providing the overall guiding legislative framework for county governments, contributes substantially to financing county budgets. This factor is key since funds are necessary for the implementation of different policies, major development programmes and Plans like the ISUDP. Additionally, the National Government is tasked with the construction of international and regional transport corridors and other major investments in the country.

The National Government through the NaMSIP has engaged in strengthening urban services and infrastructure. The programme is funded by the World Bank through the Ministry of Transport, Infrastructure, and Housing and Urban Development to improve services in the urban areas that lie in the NMR. The process of preparing this Plan for Limuru was done alongside other infrastructure projects such as the construction of markets and public transport terminus under NaMSIP programme. The spatial extent of the NMR covers Limuru and as such the planning area will benefit from these projects.

The collaboration with the National Government will ensure improvement in services and utilities by strengthening the current and future entities responsible for service delivery including the central ministry,

and Kiambu County Government and other national agencies’ like Nairobi Metro Transport Authority (NAMATA), Kenya Railways, KURA, KeRRA in planning and provision of transport and other services.

11.3 County Government of Kiambu

The Constitution of Kenya confers powers to County Assemblies to receive and approve plans and policies. These policies and plans will affect the management and exploitation of the County’s resources. This will affect the distribution and development of County infrastructure and institutions. The County Governments Act, 2012 further defines the functions and powers of the County Government to include preparation of these plans: County Integrated Development Plan; County Sectoral Plans; County Spatial Plans; Cities and Urban Areas Plans as provided for under the Urban Areas and Cities Act (No. 13 of 2011[Amendment] 2019).

The Act also provides that the above plans 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 these 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. The figures below show the County Government’s organisation structure based on administrative and executive structures.

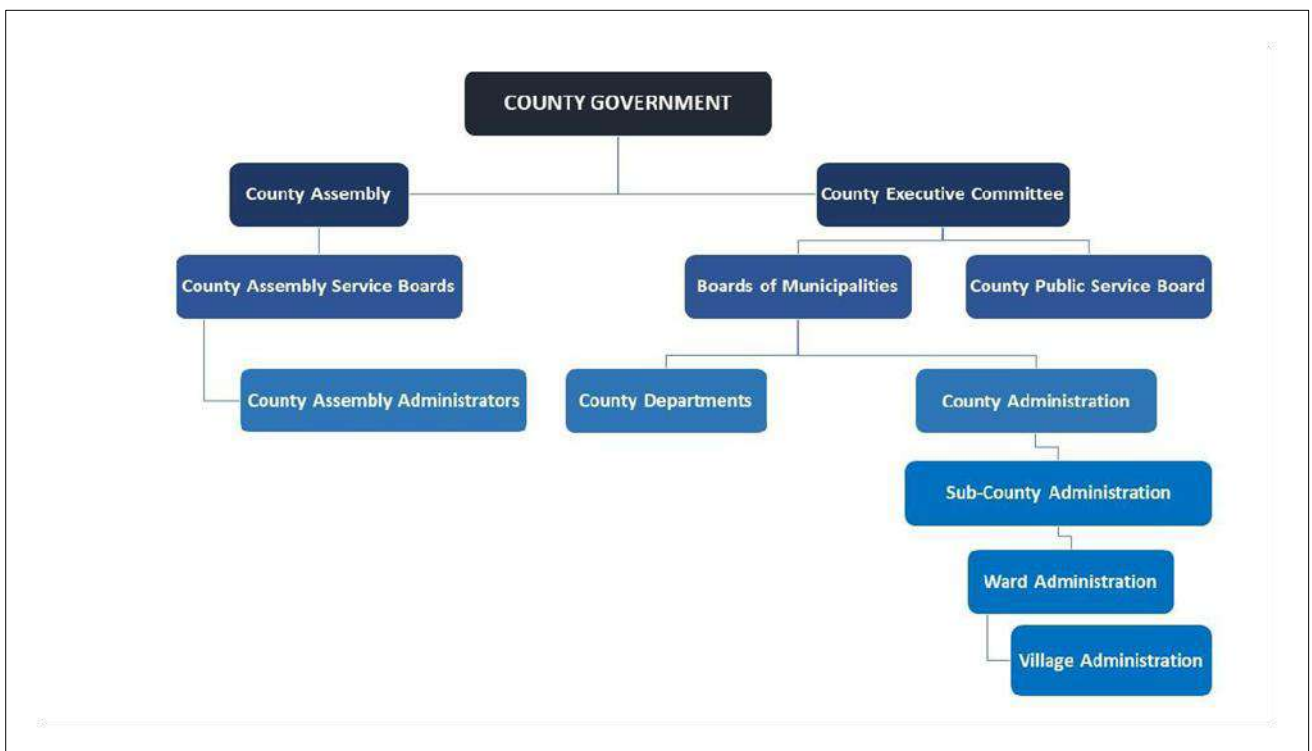


Figure 11-1: Kiambu County Government Administrative Structure

Source: VisionRI

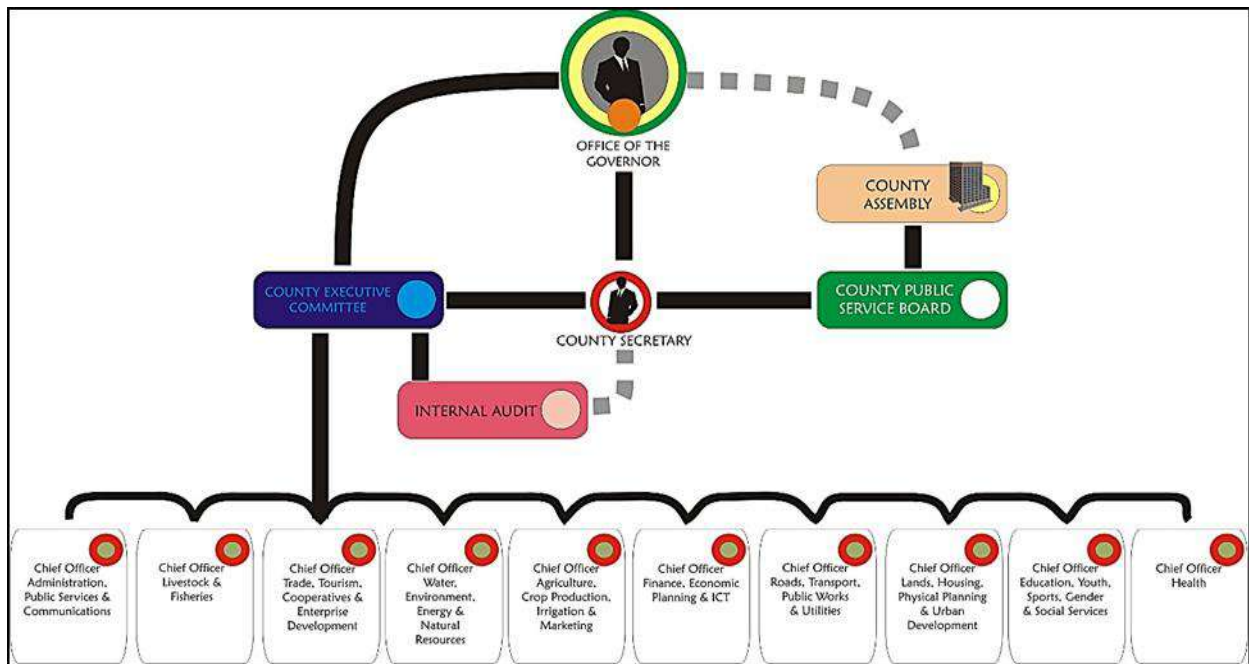


Figure 11-2: County Executive Structure

Source: Kiambu County Integrated Development Plan, 2018–2022

11.4 Key Actors in the Implementation of this Plan

The implementation of this Plan will involve a number of actors within and outside the County structure. Below are some of the key actors who will be engaged.

11.4.1 THE COUNTY ASSEMBLY

The responsibilities of the County Assembly include being an oversight instrument over the County Executive, enacting laws at the County level and approval of plans and policies for the day-to-day operations and management of resources. In this Plan, the role of the County Assembly will be to adopt the Plan and provide a budgetary allocation for the programmes and projects provided therein.

11.4.2 THE COUNTY EXECUTIVE

After the adoption of the Plan by the County Assembly, the County Executive Committee Member (CECM) in charge of Lands and Physical Planning shall gazette and approve the Plan.

According to the Physical and Land Use Planning Act (PLUPA) section 17(a & b), the CECM is charged with the responsibility of formulating county policies on physical and land use planning and promoting the integration of county physical and land use planning functions and sectoral planning levels. This, therefore, the CECM will coordinate the implementation of this Plan within the County departments, national government MDAs,

private sector and the community. The County Executive Committee is the implementing organ of programmes and projects that have been approved by the County Assembly.

11.4.3 COUNTY PUBLIC SERVICE BOARD

The role of the County Public Service Board is to provide human capacity through recruitment and deployment of staff in liaison with the County Executive. In the implementation of this Plan, the Board shall be expected to facilitate any required human development capacity enhancement.

11.4.4 MUNICIPAL BOARD

Subject to the provisions of the Urban Areas and Cities Act (UACA), No. 13 of 2011 [Amendment] 2019, Municipal Boards are mandated to oversee the affairs of the municipality. This Plan covers the jurisdiction of Limuru Urban area; therefore, the Municipal Board will play a key role in this Plan implementation in accordance with the UACA 2011(Amended 2019). Some of the instruments to be used are preparation of the Municipal Integrated Development Plan (IDeP) and the Annual Urban Investment Plan.

The Limuru Municipal Board was established in 2018. The Board operates under the provision of sections 20 and 21 of the UACA 2011 and its functions include but not limited to, formulating and implementing an integrated development plan, control land use, land subdivision, land development and zoning. The Board draws its executive mandate from the County Executive Committee and as such can impose fees, charges as may be authorized by the County Government for service delivery in the Sub-County and make by-laws.

Since establishment, the Board has prepared a series of investment plans that guide management and development in the Sub-County. The Municipal Annual Urban Investment Plan and Budget FY 2019/2020 outlines the various projects the Sub-County deems most important. These projects were agreed upon after deliberation of the submissions made by the citizen fora and members of the county assembly. In summary, the investment priorities identified for the FY 2019/2020 in Limuru are infrastructural in nature; improvement of roads to bitumen standards, Solar PV Street lighting and provision of drainage. Subsequent provisions in Part III-20 of the UACA, No. 13 of 2011 [Amendment] 2019, require that in the case of a town the functions of the Board should be performed by the Committee.

11.4.5 RESIDENTS AND NEIGHBOURHOOD ASSOCIATIONS

The two core legislations for governance at the County level, the County Governments Act, 2012 and Urban Areas and Cities Act, No. 13 of 2011 [Amendment] 2019, provide for citizen participation in preparation and implementation of plans. The County Governments Act (2012), mandates County Governments to provide residents 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 establishment of performance-specific standards.” Citizen participation shall be ensured through several modalities and structures like the establishment of a citizen forum.

Some of the notable actors in this sector are the Kenya Alliance of Residents Association (KARA), Kiambu Chapter and the Limuru Highlands which comprises of Kentmere, Tigoni, Redhill, Cianda, Thande Road and Riara Ridge Residents Association. This umbrella association has expressed intentions to develop its Limuru Highlands Neighbourhood Plan (The Limuru Highlands We Want). This neighbourhood plan will be by extension an implementation mechanism of this Plan.

Citizen Fora shall deliberate and make proposals to relevant institutions on policies, legislations, proposed development plans, annual budget estimates; plan strategies for engaging various levels and units of government on matters of concern to the citizen and receive representative feedback raised by county residents. The convergence of the Municipal Board and Citizen Fora is realised when recommendations made by the Board are such that they factor in the issues raised by the fora with regard to the administration and management of the urban area or city.

Limuru Sub-County’s Citizen Fora has been actively involved in decision-making processes which have significantly influenced the priority projects identified by the Municipal Board. During the period, this Plan was prepared, a forum held on 15th April 2019 raised issues on waste management, lighting in Limuru Bus Park, improvement of various roads and request was made to the residents to keep supporting the Board. This meeting led to the adoption of the Municipal Annual Urban Investment Plan and Budget FY 2019/2020.

In the implementation of this Plan, the citizens will be engaged in the annual budgetary forums, preparation of IDePs and investment plans, provide comments during approval and revision of this Plan.

11.4.6 CIVIL SOCIETY

Civil society groups comprise organisations that are not associated with government; including non-governmental organizations, advocacy groups, labour unions, professional institutions, faith-based organizations and cultural institutions. Civil society groups play multiple roles in management and promotion of good governance through the advocacy of rights of the minority, capacity building, civic education, and participating in decision making. The widening socioeconomic gap in society has increased the need for civil societies to identify and voice these concerns and make policy recommendations to the government on how best to apportion resources and in most cases provide these resources directly to residents in a bid to bridge these gaps.

Through civil society groups, the underprivileged people in Limuru are catered for, in terms of welfare and societal well-being. These civil society groups give residents the platforms to participate in the development of their residences and the county at large.

With regard to this Plan implementation, civil societies can ensure participation by increasing the county's accountability, monitoring progress, and bringing the community together for collective action. A number of civil societies have been active in Limuru Sub-County. They include One Acre Fund Kenya that provides asset-based financing and agricultural training to smallholder farmers.

11.4.7 PRIVATE SECTOR ROLES

The private sector plays a crucial role in urban governance since they influence whether urban areas develop in inclusive and sustainable ways and they affect poverty reduction and drivers of fragility and conflict such as unemployment, exclusion, and instability. Private sectors within the planning area include financial institutions, service providers, small and medium-sized enterprises (SMEs), transport and communication companies, credit and savings societies and manufacturing companies.

The key private sector players in the planning area include manufacturing companies like Bata Shoe Company, Unilever, Premier Food Industries, Proctor & Allan Ltd, Limuru Dairy Farmers Co-op Society; banking institutions, Cooperative Bank, Kenya Commercial Bank (KCB), Equity Bank and Family Bank; Safaricom and KPMG.

The importance of the private sector in the implementation of this Plan lies in fostering partnerships and local economic development strategies like training and skill development. Formal partnerships like Private-Public Partnerships (PPPs) will aid the implementation of the ISUDP as possible funding avenues and realisation of industrial and commercial ambitions outlined in the Plan thus creating employment. The private sector is fundamental in achieving material growth in Limuru.

11.4.8 DEVELOPMENT PARTNERS

The role of development partners has been shown to include capacity building, project planning, lobbying and advocacy including resource mobilisation and financing. Their work in the oversight of government functions ensures that they help in the delivery of their mandates to the residents, advice on reporting templates for proper monitoring and information sharing and policy development.

The various development partners in the planning area include United Nations Environment Assembly (UNEA) which addresses environmental issues, UN-Habitat dealing with urban governance and municipal finance, Japanese International Cooperation Agency (JICA) dealing with project funding, Food and Agricultural Organisation (FAO), the World Bank for project funding and capacity building, and International Development Research Centre (IDRC), amongst other organisations. Red Cross, Amref Health Africa, and Clinton Health Access Initiative (CHAI) constitute some development partners that support the health sector in the planning area and its environs. It is expected these development partners will support the Plan's implementation in their relevant areas of expertise.

11.5 Governance

11.5.1 PUBLIC PARTICIPATION

The engagement of stakeholders is a critical factor in satisfying community needs and improves the effectiveness of decision making. These objectives are well provided for in the Constitution of Kenya, 2010 (Articles 174, 201 and 232); County Governments Act, 2012 (Section 47, 91, 99-100);

Public Finance Management Act, 2012 (Section 125, 128, 131 and 137) and Urban Areas and Cities Act, 2011 (Section 21 and 22). Comments raised by the public in the planning clinics, land development applications and through associations in the Sub-County, are regularly documented and reviewed by the County planning authorities with the County Executive Committee.

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

11.5.2 THE ISUDP STAKEHOLDERS PROFILING

For purposes of preparing this Plan, public participation was broad-based with stakeholders from both the public and private sector. The table below shows the targeted stakeholders that guided the concerted participation initiatives.

Table 11-1: Targeted Stakeholders

Stakeholders	
National Government	Public health and environment
County Government	Utility service providers
Government Agencies/Parastatals	Informal businesses
Area Member of Parliament	Residents associations
Sub-County Administrator	Non-government organisations
Ward Administrator	Community- based organisations
MCA's	Religious institutions
	Transport sector
Deputy County Commissioner	Farmers
Sub-County departments	Traditional & cultural centres
Local community	Minority and marginalised groups
Professionals from the private sector	Youth
Business community	Women

Source: VisionRI

Stakeholders were spatially mapped and carefully profiled to ensure fair representation across the study area. The objective of this approach was to have a broad-based citizenry that actively participates in governance affairs with enhanced local knowledge, understanding to determine desired goals and ownership of the process.

Key stakeholders in this exercise are listed alongside their role and responsibilities in the following table. Others include the civil society (community-based organisations, residents' associations, non-governmental organisations) and the community at large. The private sector comprised of developers and property owners, development partners and local businesses.

Institutions/ Organisations	Roles and Responsibilities
National Treasury	<ul style="list-style-type: none"> Responsible for managing Kenya's national government finances.
Ministry of Lands and Physical Planning	<ul style="list-style-type: none"> Charged with the following functions: National Lands Policy and Management; physical planning; land transactions; survey and mapping; land adjudication; settlement matters; rural settlement planning, i.e., eco-village; land reclamation; land registration; national spatial infrastructure; land and property valuation services administration; administration of public land as designated by the constitution; and land information systems.
Ministry of Transport, Infrastructure, Housing & Urban Development	<ul style="list-style-type: none"> The Ministry consists of the following five State Departments: State Department for Transport; State Department for Infrastructure; State Department for Housing and Urban Development; State Department for Maritime and Shipping Affairs; and State Department for Public Works. These departments have various roles and responsibilities. For example, the State Department for Housing and Urban Development is responsible for among others housing policy management; development and management of affordable housing; management of building and construction standards and codes; shelter and slum upgrading; and urban planning and development.
Ministry of Environment and Natural Resources	<ul style="list-style-type: none"> The main functions of the Ministry include environment and natural resources policy formulation and review; sustainable management of mineral resources and environmental conservation; continual development of a geodatabase for integrated natural resources and environmental management systems; promoting environmental

Institutions/ Organisations	Roles and Responsibilities
	management activities and enforcing compliance with regulations and guidelines amongst others.
National Land Commission (NLC)	<ul style="list-style-type: none"> Established under Article 67 of the Constitution of Kenya, 2010. Responsible for among others managing public land on behalf of the National and County Governments; recommending a national land policy to the national government; advising the national government on a comprehensive programme for the registration of title in the land throughout Kenya; and monitoring and oversight responsibilities over land use planning throughout the country.
National Environment Management Authority (NEMA)	<ul style="list-style-type: none"> Established by the Environment Management and Coordination Act, No. 8 of 1999. Key agency in charge of the coordination of environmental management activities; ensure compliance with environmental guidelines and advise the government on legislative measures concerning environment management.
Kenya National Highways Authority (KeNHA)	<ul style="list-style-type: none"> State corporation, established under the Kenya Roads Act 2007 under section 3, 4 and 5 with the responsibility for the management, development, rehabilitation and maintenance of international trunk roads linking centres of international importance and crossing international boundaries or terminating at international ports.
Kenya Urban Roads Authority (KURA)	<ul style="list-style-type: none"> State Corporation established by the Kenya Roads Act 2007 under Section 9, 10, 11 and 12 with the core mandate of management, development, rehabilitation and maintenance of National urban trunk roads.
Kenya Forest Service (KFS)	<ul style="list-style-type: none"> Established under the Forest Act of 2005. Mandated to conserve, develop and sustainably manage forest resources for Kenya social-economic development.
Water Resources Authority (WRA)	<ul style="list-style-type: none"> Established under the Water Act, 2002 State corporation under the Ministry of Water and Irrigation mandated in nation-wide water resources management.

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

Source: VisionRI

11.5.3 INCLUSIVITY (MINORITIES AND PEOPLE LIVING WITH DISABILITIES (PLWDS))

Section 97 under the County Governments Act of 2012 prescribes mechanisms to protect the marginalised and minorities within counties pursuant to Article 197 of the Constitution.

- i. Protection of marginalised and minority groups from discrimination and the treatment of distinction of any kind, including language, religion, culture, national or social origin, sex, caste, birth, descent, or other status.
- ii. Non-discrimination and equality of treatment in all areas of the economic, educational, social, religious, political, and cultural life of the marginalised and minority groups.
- iii. Special protection to vulnerable persons recognised under the County Governments Act, 2012 may be subject to threats or acts of discrimination, hostility, violence, and abuse as a result of their ethnic, cultural, linguistic, religious, or other identities.
- iv. Special measures of affirmative action for marginalised and minority groups to ensure their enjoyment of equal rights with the rest of the population.
- v. Respect and promotion of the identity and characteristics of minorities.
- vi. Promotion of diversity and intercultural education.
- vii. Promotion of effective participation of marginalised and minority groups in public and political life.

11.6 Municipal Finance

11.6.1 REVENUE COLLECTION AND SOURCES

The main sources of revenue for Limuru Sub County are outlined in the table below. Notably, health services, physical planning and business permit management units generate more revenue as compared to other sectors. The increase in physical planning revenues is mainly due to an increase in demand for housing. The Limuru Municipal Board notes that there exists potential in expanding the revenue base however the anticipated upward trend has been negatively affected by the prolonged political period in 2017/2018.

Mobilisation of additional revenue for Limuru and the County as a whole could be achieved through enforcement of administrative reforms including automation of systems and consultations with County Budget and Economic Forums and adherence to the Public Finance Management Act (PFMA) for the budget-making process.

Table 11–2: Cumulative Budget for FY 2017/2018 and projection for FY 2018/2019 for Limuru

Cumulative Revenue per Management Unit			
Management Unit Description	2017/2018	Projections 2018/2019	Average Contribution to Revenue in %
Agriculture, Livestock and Fisheries	6,932,104	7,625,314	7.26
Physical Planning	7,458,447	8,204,292	15.06
Business Permit	7,231,824	7,955,006	12.47
Cess Management Unit	4,265,923	4,692,515	2.18
Education, Culture, ICT and Social Services	–	–	0.42
Health Services	14,515,611	15,967,172	24.19
Housing	94,900	104,390	0.11
Land Rates	5,639,095	6,203,004	8.61
Market Management Unit	57,180	62,898	3.31
Road, Transport and Public Works	1,289,900	1,418,890	1.42
Slaughterhouse	2,026,000	2,228,600	3.12
Trade, Tourism industry and Cooperatives	25,295	27,824	0.04
Vehicle Parking	8,140,570	8,954,627	13.66
Water, Environment, Energy and Natural Resource	1,170,000	1,287,000	1.57
Liquor Licence	460,000	506,000	5.13
Other Charges	1,051,146	1,156,260	1.45
Own Revenue Collected	60,385,995	66,424,594	100

Source: Integrated Development Plan (IDEP) for Limuru Sub-County, 2018

11.6.2 BUDGETING AND EXPENDITURE

The fiscal framework is based on the County Government's policy priorities and programmes. This Plan is such a policy document that will significantly affect this framework. The National Government and Own Source of Revenue collected from fees, charges, rates, among others as allowable by Acts and bylaws, account for the sources through which the county budget is financed.

The County Government of Kiambu financial projections for the FY 2019/2020 are Kshs. 15.63 billion constituting: Kshs. 2.96 billion Own Resource Revenue and Kshs. 12.6 billion as transfers from the National Government. The County further projects an expenditure of 16.3 billion for FY 2019/2020. Recurrent

expenditure is expected to increase from 9.5 billion in the FY 2018/2019 to KES 9.7 billion in FY 2019/2020. This projected increase will be due to slight annual increments in these emoluments.

The Kiambu County Fiscal Strategy Paper, 2019 outlines a number of problems associated with the budget framework. Firstly, underperformance in revenue collection due to unforeseen factors like the Covid-19 pandemic. Often this generates pending bills and causes cash flow problems or undue request for borrowing. The County's high wage bill inherited from a very large workshop from defunct local authorities and continued pressure to increase salaries especially by health workers threatens the budget. The County's overreliance on the national government undermines greatly its fiscal independence. This coupled with unprecedented delays in fund transfer deters proper implementation of the County's budget.

Table 11-4 shows that Limuru Sub-County has the capacity to generate revenue. However, the trend has been downward due to political instability in 2017/2018, numerous court case challenged by the business community in 2016/2017 and the prevailing Covid-19 pandemic.

Table 11-3: Limuru Revenue Generation Potential

	2014/2015	2015/2016	2016/2017	2017/2018	Projections 2018/2019
Total Revenue	102,990,945	409,479,809	444,084,338	338,612,192	366,466,068
Total Expenditure	67,888,098	306,808,812	248,761,223	139,595,225	153,554,748
Surplus/Deficit	35,102,847.	102,670,997	195,323,115	199,016,967	212,911,320

Source: Integrated Development Plan (IDEP) for Limuru Sub-County, 2018

11.7 Emerging Issues

- i. Overlap of activities in the National Government and County Government may lead to duplication of efforts and in turn waste in resources.
- ii. Delays in funds transfer from the National Government generates pending bills and may cause cash flow problems or even cause unnecessary demand for borrowing.
- iii. Inefficient use of funds affects the delivery of services to residents and deters economic growth and development.

12 SYNTHESIS OF EMERGING ISSUES AND OPPORTUNITIES

12.1 Overview

This section provides a synthesis of stakeholders' concerns and summary of emerging sectoral issues, their causes and effect on sustainable development in Limuru. A key challenge constraining sustainable growth and development in Limuru Sub-County is the continued lack of adequate land use planning, implementation, and development control. Development control has not been adequately applied within the planning area as manifested by, amongst others, conversion of arable land into residential land for example in Karanjee. Moreover, individual landowners in areas like Ndeiya and Karanjee, have sparsely set up homes making provision of physical infrastructure more expensive. Delocalization or sparse settlements and small local centres paint an image of missing urban and rural linkages.

12.2 Stakeholder Analysis

During the Plan's preparation, several engagements with residents were done with the objectives of creating awareness and sensitize the stakeholders of the planning exercise and its importance and initiate the transfers of ownership of the Plan to the stakeholders. The issues raised during the meetings have been categorized into SWOT analysis as shown in Table 12-1 below. These issues as well as the studies conducted during the Plan preparation informed the scenario building in the formulation of this Plan.

12.3 Summary of Key Development Challenges

Some of the key challenges impeding development that should be addressed in order to properly realize Limuru's growth potentials include the following:

- **Environmental degradation:** It is essential that agricultural growth in the area does not lead to environmental degradation, nor does it challenge the ecosystem of the Sub- County. The negative externalities of expanding agricultural activities could range from the depletion of groundwater, soil erosion, and greenhouse gas emissions, the decline of biodiversity and degradation of natural resources. Techniques such as crop rotation, green manure, compost, and biological pest control should be employed in the region to manage these externalities. This will keep an ecological balance in the planning area despite the increased pressure on land in the future, thus leading to sustainable economic development. It is also equally important that the growth of settlements, industries and other urban uses do not adversely impact the environment. The planning area is already challenged by the inadequacy of sanitation services such as wastewater treatment and solid waste management which are most acutely felt in Limuru Town CBD.

Table 12-1: SWOT Analysis

Strengths	Weaknesses	Opportunities	Threats
Demography			
<ul style="list-style-type: none"> • Diverse population due to industry, plantation agriculture and proximity to Nairobi; • Adequate rural to urban linkages; and • Rapid population growth. 	<ul style="list-style-type: none"> • Poverty and inadequate housing; and • Youthful unemployed population. 	<ul style="list-style-type: none"> • Youthful and educated population; and • Economic linkages to the city of Nairobi. 	<ul style="list-style-type: none"> • Population explosion in Limuru; • Crime and poverty due to unemployment; and • Governance challenges.
Natural Resources & Environment			
<ul style="list-style-type: none"> • Available land for residential, commercial, industrial, and institutional development; • Available land for agricultural activities such as flower farms; • Increased environmental awareness in the planning area; and • EIA Reporting for every project. 	<ul style="list-style-type: none"> • Ineffective environmental regulations by the County Government; • Inability to manage solid waste; • Ignorance by the people to observe environmental regulations; and • Lack of punitive deterrent laws as regards environmental conservation. 	<ul style="list-style-type: none"> • Development of green villages/estates; • Diverse policy options for environmental conservation; • Adoption of Sustainable Development Goals (SDGs); and • Enactment of deterrence laws and regulations governing environmental protection. 	<ul style="list-style-type: none"> • Increased climate change trends; • Increased pollution; • Increasing cumulative air pollution as many more people own vehicles and start projects; and • Growth of numerous informal settlements.
Economic Activities			
<ul style="list-style-type: none"> • Existing agro-industrial base; • Available space for expansion; • A well-developed network of commercial, transport and other services in the proximity of Nairobi-Nakuru highway; • Established the banking industry; and • Cosmopolitan environment. 	<ul style="list-style-type: none"> • Inadequate physical infrastructure; and • Administrative challenges in establishing businesses. 	<ul style="list-style-type: none"> • Potential for agro-industry; • Potential for the manufacturing industry; and • Investment attractiveness. 	<ul style="list-style-type: none"> • Small size of agriculture land holdings (unproductive use); and • Global business competition.
Land Use, Land Economics & Urban Design			
Land Use			

Strengths	Weaknesses	Opportunities	Threats
<ul style="list-style-type: none"> ● Bustling, compact, and mixed- use CBD can easily be renewed to improve its competitiveness; ● Vast tea plantations and horticultural farms give the areas outside the CBD a rural ambience; ● Proximity to Ngubi forest which is an area of high environmental value; and ● Presence of high-quality environments such as pleasant climate, sloping terrain, scenic views, and lush vegetation. 	<ul style="list-style-type: none"> ● High population density in the CBD causes congestion; ● Entire planning area is inadequately served by environmental sanitation services; most acutely felt in CBD; ● Pre-mature conversion of agricultural lands due to dispersed settlement pattern; ● Encroachment of settlements onto Manguo swamp; ● Urban developments on sloping land pose threats to soil erosion, landslides, and accelerated surface water run-off; and ● Deforestation and inappropriate use of chemical fertilisers. 	<ul style="list-style-type: none"> ● Designated as a Growth Centre (Level III) in the SPC for NMR and is envisaged to, amongst others, “promote rural development and in achieving a balanced distribution of the urban population; and ● Future development of compact growth centres around multi-modal transport terminals using the TOD concept to create centralities along with the development of self-sustaining settlements. 	<ul style="list-style-type: none"> ● Continuous influx of Nairobi city’s population overspill and major development proposals will accelerate urbanisation and further stress environmentally sensitive areas; and ● Haphazard planning due to lack of compliance.
Land Economics			
<ul style="list-style-type: none"> ● Well established land registry at the County; and ● Support by the County Government for land administration. ● Flexibility of the predominant tenure (private tenure); and ● Existence of a dynamic land market. 	<ul style="list-style-type: none"> ● Analogue land registry; ● Poorly trained land administration staff (carry over from the old system); ● Rising land prices-likely to increase the cost of development of public utilities; and ● Lack of capacity to monitor land market. 	<ul style="list-style-type: none"> ● County government and national support for reform in land administration; ● Development of appropriate laws at the county and national levels; and ● Development of structure plans and zoning regulations. 	<ul style="list-style-type: none"> ● Influx of land speculators from Nairobi distorting the property market; ● Exploitation and displacement of locals from their land by richer individuals from Nairobi; <p>And</p> <ul style="list-style-type: none"> ● Emergence of slums due to illegal subdivisions due to increased demand for land.
Urban Design			

Strengths	Weaknesses	Opportunities	Threats
<ul style="list-style-type: none"> ● High number of users in the CBD will make optimal use of improved public spaces such as pocket parks and pedestrian walkways; ● Presence of pre-colonial homes which may be developed into tourism sites; and ● Clear linear urban structure defined by rivers and major roads which can be developed as green corridors. 	<ul style="list-style-type: none"> ● Disorganized streetscape in the CBD due to lack of pedestrian sidewalks, cycling tracks, and street lighting; ● Lack of public open spaces in the CBD that may commonly be used for recreation; ● Un-constructed market building is detrimental to the urban quality of the CBD; ● Un-regulated developments along major roads can increase roadside friction, create future traffic congestion, and cause the loss of natural scenic views; and ● The conversion of tea, coffee, and horticultural farms into urban development raises concerns on the loss of the rural and scenic character of the planning area. 	<ul style="list-style-type: none"> ● TOD proposals built around railway station to catalyse improvements in the CBD. 	<ul style="list-style-type: none"> ● Loss of high-quality natural environments; and ● Government project implementation may lag behind the pace of private sector developments.
Transportation			
<ul style="list-style-type: none"> ● Town situated along the Northern Corridor and the corridor to Northern Tanzania (Isebania) with major roads, a railway line, and an oil pipeline; ● There are many public transport operators, including motorcyclists; and ● Dedicated budgets for provision and maintenance of transport facilities available at the County. 	<ul style="list-style-type: none"> ● Poor state of roads: most graveled roads become completely impassable during rainy seasons; and the paved roads are in poor condition (except the A104 and D409 roads); ● Traffic congestion in the central areas due to inadequate parking lots; ● The road is narrow as they lack shoulders and there are no provisions for pedestrian and cyclists; ● Poor stormwater drainage system that results in flooding during rainy seasons; ● Encroachment of road reserves by street traders; ● Poor public transport demand management resulting in oversupply, uncoordinated and 	<ul style="list-style-type: none"> ● Multimodal transport logistics hub. 	<ul style="list-style-type: none"> ● Many accidents on A104 road due to speeding vehicles and motorcycles.

Strengths	Weaknesses	Opportunities	Threats
	<ul style="list-style-type: none"> unreliable transport services and congestion on the streets; and ● Congestion at the bus park especially during peak hours. 		
Social Infrastructure			
Housing			
<ul style="list-style-type: none"> ● Ample land for housing development; and ● Ample supply of quarry stone from neighbouring counties. 	<ul style="list-style-type: none"> ● High prices of construction steel; ● General poor housing in the planning area; and ● Expensive building technology using sand, cement, and quarry stones. 	<ul style="list-style-type: none"> ● Ample supply of sand from neighbouring counties at affordable prices; and ● Proximity to the steelworks in Nairobi's industrial areas. 	<ul style="list-style-type: none"> ● Tenants from Nairobi unable to own houses; and ● Low-income tenants from Nairobi and local plantations creating demand for informal settlements.
Education			
<ul style="list-style-type: none"> ● County Government and CDF support for basic education; ● A long history of local people's support for education in the sub-county; and ● Denominational support to the local private university. 	<ul style="list-style-type: none"> ● Insufficient number of public primary schools; and ● Competing values to children's education including child labour in emerging plantations and urban areas. 	<ul style="list-style-type: none"> ● County and national government support to basic education; and ● Free Basic Education Policy at National Level. 	<ul style="list-style-type: none"> ● Proximity to Nairobi attracts school-going children to the streets to beg; and ● Proceeds from crime in Nairobi attract children from school into crime.
Health			
<ul style="list-style-type: none"> ● Ample land for setting up Level 4 hospital in Limuru Town; and ● Funding for health facility construction from Constituency Development Fund and County Government. 	<ul style="list-style-type: none"> ● Lack of a Level Four Hospital in Limuru Town; ● Long distances covered by residents to reach dispensaries and health centres; and ● Inability to manage HIV/AIDS pandemic and other diseases. 	<ul style="list-style-type: none"> ● County Government support to health services in the planning area. ● Free Health Care for All Policy being pursued by the National Government; and ● Well distributed health facilities across the Sub-County coupled by national programmes to deal with these pandemics 	<ul style="list-style-type: none"> ● Motor vehicle accidents on the major highways in the planning area particularly Limuru-Nairobi. ● Inadequate health care personnel being hired and/or retained in the health sector in the country.
Sports and Recreation			

Strengths	Weaknesses	Opportunities	Threats
<ul style="list-style-type: none"> Land is available for the construction of a stadium in Limuru Town; and There is a tradition of sport mainly soccer in the planning area. 	<ul style="list-style-type: none"> Lack of a stadium in the planning area; and A weak history and use of social halls in the planning area. 	<ul style="list-style-type: none"> Possible funding for sports activities and facilities from the County Government; and Emphasis of the sport by the national government with possible support for sports facilities such as a stadium. 	<ul style="list-style-type: none"> Limited support and funding for social halls and in-door sports across the country.
Public Parks and Playgrounds			
<ul style="list-style-type: none"> Public land is available for public parks and playgrounds in most wards; and There is a tradition of sport mainly soccer in the planning area. 	<ul style="list-style-type: none"> Lack of public parks and playgrounds in the planning area; and A weak history and use of public parks in the planning area. 	<ul style="list-style-type: none"> Middle-class influence from Nairobi will increase demand for leisure and play spaces; and Emphasis of the sport by the national government with possible support for sports facilities such as a stadium. 	<ul style="list-style-type: none"> Limited support and funding for public parks across the country.
Religious			
<ul style="list-style-type: none"> Religious groups use private land for their activities; There is a strong tradition of religious activity in the planning area; and Large numbers of adherents in most religious groups. 	<ul style="list-style-type: none"> Inadequate quality of worship facilities in the planning area; and Poor location of worship facilities including many without adequate parking space in the planning area. 	<ul style="list-style-type: none"> Religious freedom in the country; and Widespread support and patronage of religious health and educational institutions in Kenya. 	<ul style="list-style-type: none"> Religious extremism which likely to mar inter-religious harmony in Kenya.
Cemeteries and Burial Grounds			
<ul style="list-style-type: none"> Available public land can be used to set up cemeteries for Muslims and Christians separately; Private land may be acquired and used as cemeteries; and People from the planning area are open to using public cemeteries. 	<ul style="list-style-type: none"> Lack of public cemeteries and burial grounds in the planning area; and Weak support from CDF in setting up cemeteries in the planning area. 	<ul style="list-style-type: none"> Preference by people to bury the remains of their loved ones in public land to free private land for commercial purposes; and Shrinking privately owned land sizes per family. 	<ul style="list-style-type: none"> Limited funding for public cemeteries across the country.
Cooperative Societies			

Strengths	Weaknesses	Opportunities	Threats
<ul style="list-style-type: none"> Strengthened cooperatives in the public transport sector in the planning area; and There are strong cooperative roots in the dairy industry in the planning areas. Hence, people know the benefits of movement first-hand. 	<ul style="list-style-type: none"> Cooperatives cover a limited number of sectors mainly public transport, teachers, and agriculture. Other sectors are left out; and Cooperatives especially in the public transport sector pay workers poorly and give cooperatives a bad name due to their strong profit maximisation motive. 	<ul style="list-style-type: none"> More people around the country are interested in cooperatives as they aim to pool resources together and borrow; and National government support for the cooperative movement. 	<ul style="list-style-type: none"> Competition from banks and micro-finance companies offering similar services at larger scale hence cheaply.
Informal Settlements			
<ul style="list-style-type: none"> Land in some cases public is available for housing improvements in the informal settlements; and Residents are resilient and show promise in working hard to pay rent for better but fairly priced housing in upgraded settlements. 	<ul style="list-style-type: none"> Lack of public facilities such as roads and lighting in the informal settlements in the planning area; and A weak local economy is laden with poverty and wants in the informal settlements of the planning area. 	<ul style="list-style-type: none"> International support for slum upgrading programs around the country and region; and National and county government commitments to increasing decent housing for residents. 	<ul style="list-style-type: none"> Conservative forces in national and county governments that see housing as a private rather than public good; and Limited support and funding for slum upgrading due to competing and more pressing needs such as healthcare and education at the county and national government levels.
Heritage			
<ul style="list-style-type: none"> Heritage sites exist and are well known by residents; and Existing heritage sites attract some number of visitors hence indicating their potential for commercial exploitation. 	<ul style="list-style-type: none"> Inadequate protection of identified heritage sites in the planning area; and Inadequate commercial exploitation of heritage sites including promoting them to tourists. 	<ul style="list-style-type: none"> Widespread growth of cultural tourism in the country and around the world; and International attention on cultural heritage sites and art in general following their destruction in the Middle East by ISIS in 2015. 	<ul style="list-style-type: none"> Funding constraints from the county and national government due to competing and more pressing needs.
Physical Infrastructure			
Water Supply			
<ul style="list-style-type: none"> Available water resources; especially rivers and boreholes Potential for earth dams and water pans. 	<ul style="list-style-type: none"> High connection fees; Illegal connections; and Vandalism of water pipes; 	<ul style="list-style-type: none"> Water infrastructure being developed by the County Government. 	<ul style="list-style-type: none"> Groundwater depletion due to over-extraction of groundwater.

Strengths	Weaknesses	Opportunities	Threats
<ul style="list-style-type: none"> Streamlining of water supply management. 	<ul style="list-style-type: none"> High cost of treatment of borehole water which is dirty and hard; Inadequacy of water as there is rationing during dry seasons; Contaminated water from the boreholes since the planning area does not have an adequate sewer system. This has been evidenced by cases of water-borne diseases such as typhoid, diarrhoea, and amoeba; and Water pollution due to poor storm drainage and flooding of roads. 	<ul style="list-style-type: none"> Mass sensitization on rainwater harvesting by the County Government. 	<ul style="list-style-type: none"> Watershed degradation may lead to low recharge of aquifers.
Energy Infrastructure			
<ul style="list-style-type: none"> Availability of energy sources to support socio-economic development. 	<ul style="list-style-type: none"> Environmental degradation from deforestation to provide wood fuel and charcoal; Vandalism which results in power surges and blackouts; High connection fees and maintenance; Consumption and demand are higher than supply hence rationing; and Narrow/inadequate wayleaves. 	<ul style="list-style-type: none"> Upcoming source of renewable energy, i.e., planned wind power plant project; and Availability of measures by which the community can conserve energy such as (i) use energy-saving bulbs; (ii) use of energy-saving jikos; (iii) use of renewable sources of energy such as solar panels both for home lighting and heating as well as street lighting; and (iv) use of biogas. 	<ul style="list-style-type: none"> Low cooperation of residents in energy conservation programmes.
ICT Infrastructure			
<ul style="list-style-type: none"> Covered by the services of all mobile phone operators in Kenya; Accessible internet services; Covered by the services of all major television and radio networks as well as newspaper publications; Presence of digital broadband; and Serviced by major parcel delivery service providers. 	<ul style="list-style-type: none"> Disruption of fibre optic cable and other ICT infrastructure during road maintenance and/or upgrading. 	<ul style="list-style-type: none"> Expansion of coverage of ICT service providers due to heightened demand; improved services due to business competition. 	<ul style="list-style-type: none"> Need for proper planning of the placement of the fibre optic (preferably at the edge of road reserve) to reduce disruptions.

Strengths	Weaknesses	Opportunities	Threats
Solid Waste Management			
<ul style="list-style-type: none"> ● County Government involvement in the weekly collection of waste; ● County Government conducts clean-up activities; ● River rehabilitation programmes; and ● Designated dumpsites. 	<ul style="list-style-type: none"> ● Limited funding; ● Certain households unable to make payment for solid waste collection; ● Informal settlements; and ● Population influx. 	<ul style="list-style-type: none"> ● Recycling of waste; ● Increased revenue collection; ● Energy from landfill; ● Relocation of dumpsites; ● Funding opportunities; and ● Supply of refuse collection bags. 	<ul style="list-style-type: none"> ● Poorly sited dumpsite e.g., near riparian areas, commercials, and residential areas; ● Delays in the collection by the waste collection companies or county government; ● Dumpsite may attract avian; ● Pollution of water resources; and ● Blockage of storm drains.
Wastewater Disposal			
<ul style="list-style-type: none"> ● County Government involvement in improving the storm drainage system; and ● Available land for expansion of storm drainage system. 	<ul style="list-style-type: none"> ● Poorly designed storm drainage system; ● Limited funding; ● Informal settlements; and ● Population influx (hence solid waste may block storm drainage system). 	<ul style="list-style-type: none"> ● Re-design storm drainage system; ● Funding opportunities; ● Maintenance of storm drainage system; ● Re-location of residents in informal settlements living near storm drainage system; and ● Informal settlement up- grading programmes. 	<ul style="list-style-type: none"> ● Overflow of the storm drainage system, hence pollution of the environment e.g., water resources; ● Spread of water-borne diseases such as typhoid, amoeba etc.; ● Illegal connections in the existing storm drainage system; ● Destruction of the storm drainage system. during major infrastructural developments; and ● Solid waste blockage and siltation.
Storm Drainage			

Strengths	Weaknesses	Opportunities	Threats
<ul style="list-style-type: none"> ● County Government involvement in improving the storm drainage system; and ● Available land for expansion of storm drainage system. 	<ul style="list-style-type: none"> ● Poorly designed storm drainage system; ● Limited funding; ● Informal settlements; and ● Population influx (hence solid waste may block storm drainage system). 	<ul style="list-style-type: none"> ● Re-design storm drainage system; ● Funding opportunities; ● Maintenance of storm drainage system; ● Re-location of residents in informal settlements living near the storm drainage system; and ● Informal settlement up- grading programmes. 	<ul style="list-style-type: none"> ● Overflow of the storm drainage system, hence pollution of the environment e.g., water resources; ● Spread of water-borne diseases such as typhoid, amoeba etc.; ● Illegal connections in the existing storm drainage system; ● Destruction of the storm drainage system. during major infrastructural developments; and ● Solid waste blockage and siltation of storm drainage system.
Disaster Risk Reduction & Management			
<ul style="list-style-type: none"> ● County strategies to mitigate the effects of climate change and variability; ● Global partnerships towards addressing climate change; ● Awareness created; and ● Preparedness strategies. 	<ul style="list-style-type: none"> ● In adequate resources to mitigate the effects of climate change and variability; ● There is inadequate information on climate change; and ● Climate change and variability not given priority. 	<ul style="list-style-type: none"> ● Carbon market for example tree planting and renewable energy; ● Improvement of the drainage system; ● Capacity building on climate change; and ● Financing opportunities. 	<ul style="list-style-type: none"> ● Geo-hazards such as floods and landslides; ● Loss of livelihoods as a result of prolonged droughts; ● Loss of lives and property; and ● Diseases such as malaria, typhoid, bilharzia, among other water-borne related diseases.

Source: VisionRI using outputs from the consultations

Urban growth has also caused encroachments on environmentally sensitive areas such as Manguo swamp and sloping lands, the latter posing threats of soil erosion, landslides and accelerated surface water run-off. Leap-frogging settlement growth has also caused the conversion of agricultural areas such as tea, coffee and horticultural farms. The encroachment of escarpments for human settlements and mining activities is also posing threat to degradation of this area.

It is thus important that mechanisms such as the imposition of urban limits, requirements on low-impact developments and creation of compact urban centres, be put in place to properly guide future urban growth. Conservation due to and to enhance to protect the ecologically fragile areas due to their values as wetlands and rare species habitats.

- **Sloping topography:** Limuru is economically driven by the agricultural sector. The presence of large-scale tea farms indicates that it lies at a high altitude. Agricultural practices along the sloping terrain pose a challenge on proper management of soils as well as the nearby water bodies. The sloping topography of the planning area makes it hard for the building and construction industry to utilise the land as a resource. Increase in the number of urban dwellers has significantly resulted in the encroachment of human settlements on the Manguo swamp's wetland reserve since they preferred constructing on the low-lying areas where construction is not as stressful. The urban poor have moved into the Misri Informal settlements, leaving the majority of the private developers to incur the cost of constructing on the steeper sides of the planning area.
- **Inefficient transport and circulation:** The Sub-County is characterised by the presence of narrow roads, absence of wayleaves and insufficient parking spaces, especially within the Limuru CBD. This includes the poor state of most local roads which become completely impassable during the rainy season thus constraining the mobility of people, goods and services. Incorporation of unsustainable road designs within the sub-county, especially in Ndeiya and Limuru East, has resulted in lack of provision of pedestrian walks, storm and wastewater infrastructure. Narrow and unmarked roads which traverse the Limuru Planning area have led to the increase of traffic-related accidents. Public transport operators lack space to park their vehicles within the CBD because the existing bus park has a small capacity. Roadside parking has resulted in the congestion of the roads and road user conflict between motorists and pedestrians. Lack of utilization of wayleaves, especially in putting up public utility lines such as electric poles, has made some of the people use alternative sources of heating and lighting.
- **Inadequate utilities and services:** There are also challenges of the inadequacy of water supply and energy provision, as well as drainage, wastewater and solid waste management systems. Majority of the residents use septic tanks as a way of managing liquid waste and dump their solid waste in undesignated places. Insufficient linkages between the primary and secondary sewer systems will continue to inhibit development within the urban area, as residents and potential investors will be expected to manage their

wastes. In addition, the existing sewerage treatment plant, Limuru Sewerage Treatment Plant, is currently operating beyond its capacity.

- **Social infrastructure:** The planning area faces challenges in the provision of affordable housing, Level 4 hospital in the CBD, accessible rural health services as well as public recreational facilities. Forward planning on the part of the Government, should necessarily be undertaken in order to ensure that the planning area is appropriately provided with physical and social infrastructure facilities and services.
- **Artificial land shortage:** Land prices have been increasing due to the attractiveness of Limuru to investors. The influx of land speculators is distorting the property market. This has already caused the exploitation and displacement of locals from their land by unscrupulous investors. There is also the emergence of slums due to unaffordable housing and illegal subdivisions as low-income tenants from Nairobi and local plantations drive the demand for informal settlements. The rising land prices will most likely increase the cost of development of public utilities due to high acquisition costs while making unaffordable by the poor to own land.

The threat of artificial land scarcity is also present, where land may become unaffordable especially for government or low-income housing as well as for the development of necessary physical and social infrastructure. The Government should put mechanisms in place to un-lock lands such as through a land banking programme, land re-adjustment schemes, public-private partnerships and other innovative strategies.

The problem tree (Figure 12-1) and problem/constraints map (Map 12-1) below summarise the issues identified above which informed this Plan spatial design and further the sectoral strategies.

12.4 Development Opportunities

The following is an analysis of key potentials of Limuru that could be exploited to sustain its growth and development:

- **Existing Agro-Industrial Base:** Key factors and comparative advantages make Limuru an attractive hub for agricultural activities which could lead to its transformation into an agro-business/industrial hub of the NMR. These include the availability of arable and fertile land, good climate, existing pool of farmers, and the large proportion of the agricultural land being under tea production, amongst others. Limuru is already widely known in Kenya for the large amounts of tea it produces. The tea plantations established around Limuru from 1903 onwards were the foundation of Kenya's largest export industry, which produces some of the world's highest quality tea. Tea being a highly market and export-oriented product, Limuru is already engaged in export-based farming and prepared to kick off its transformation into an agriculture-based industrial economy.

- **Transformation into an Agro-based Industrial Hub:** The transformation into an agro-based industrial hub will be facilitated by the existing industries in Limuru. Although it is more known as the home of Kenya Bata Shoe Company, which is the largest shoe factory in East and Central Africa, Limuru also has a significant number of factories and corporations that deal with agro-based products. These include those who deal with tea, cereals, seedlings, cheese, ghee, yoghurt, milk, feeds and horticulture products. This demonstrates an already existing supply-side market of agro-industrial goods in Limuru, providing a base for the expansion of similar activities. Moreover, raw materials such as food and other food and other cash crops which will feed into agro- industries, are available in the planning area. There are also several large and medium- scale agricultural processing units, dealers and exporters as well as support services like storage, warehousing, banking, housing, lodges and hotels as well as professional service firms. All these will support the growth of industries and flow of investments as well as promote export-bound agro-industries in Limuru.
- **Accessibility:** Limuru is situated along the Northern Transport Corridor, which is the main gateway to Mombasa and Uganda, Rwanda and South Sudan. Its proximity to Central Nairobi as well as its convenient linkages to other towns like Naivasha, Eldoret and Kisumu, will be instrumental in its economic growth. Due to this strategic location, Limuru is now attracting investors and new businesses at a paced-up rate. Limuru's accessibility will further be enhanced by transport proposals of the SPC for NMR. The proposed Trans-African Multi-modal Corridor (road & rail) will pass west of the planning area, but most likely at a distance of only about 5 kms. The planning area will, however, be traversed by two Radial Corridors, which includes R7: Nairobi-Limuru (upgrading A104) and R8: Nairobi Limuru (upgrading Limuru Road). There are also existing roads which link settlements in Ndeiya, Limuru Central, Bibirioni and Limuru East, will necessitate their redevelopment and upgrading.

This, in turn, will lead to the exponential growth and development of these areas and ascertain that centres like Nguirubi, Kabuku and Bibirioni grow into major urban nodes in the future. Growing nodes such as Kamandura, Rironi and Tigoni, will promote urban development and improvement in type and level of services in their respective wards.
- **Human resources:** Limuru planning area has a youthful and educated population which translates into the availability of quality manpower to support economic growth. The planning area generally has high education standards, especially at the basic level, given their good performance in national examinations. It is also the location of a big private university, St. Paul's University, amongst other institutions.

Map 12-2 below presents the development opportunities that can be exploited to spur growth in Limuru.

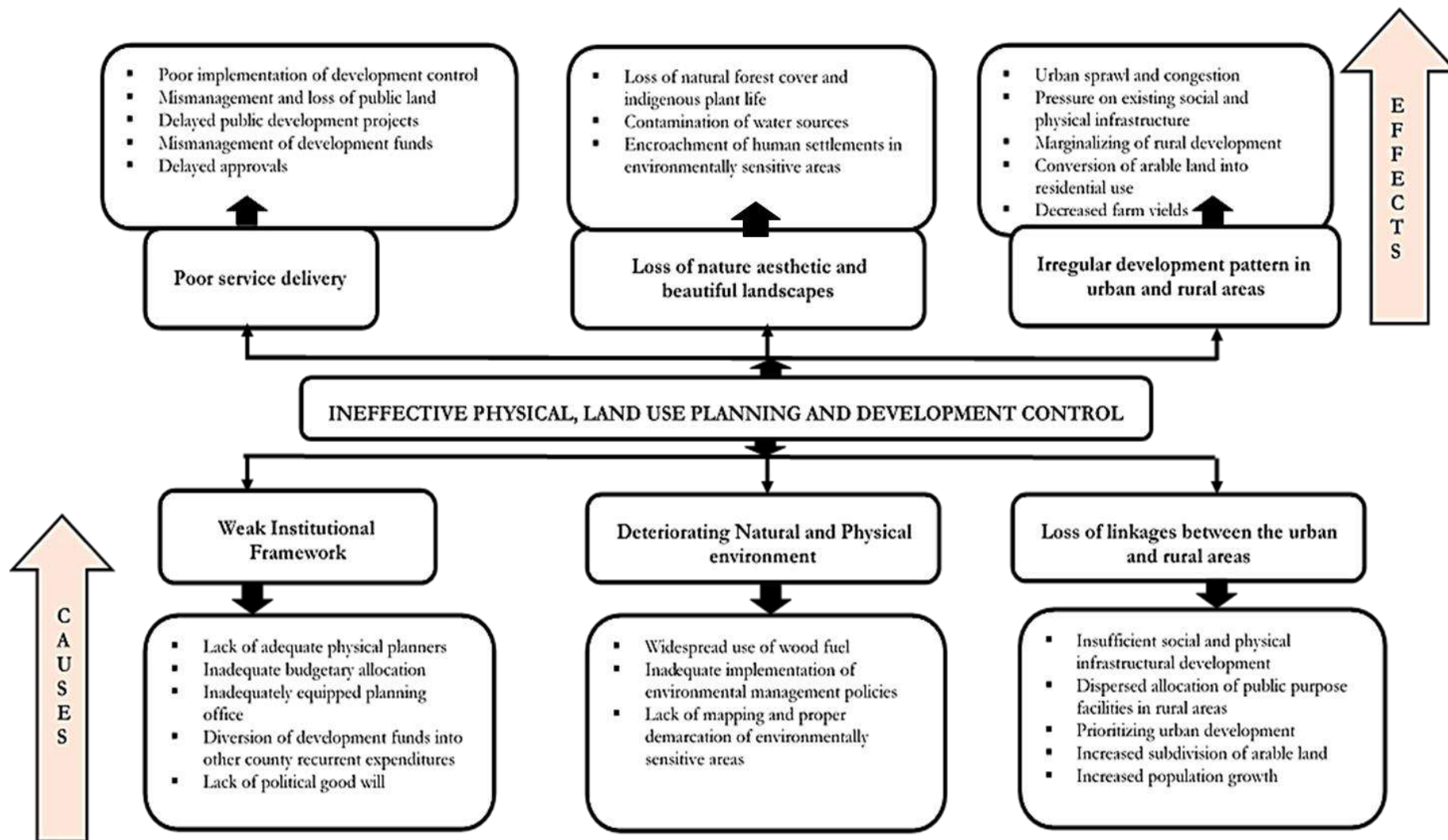
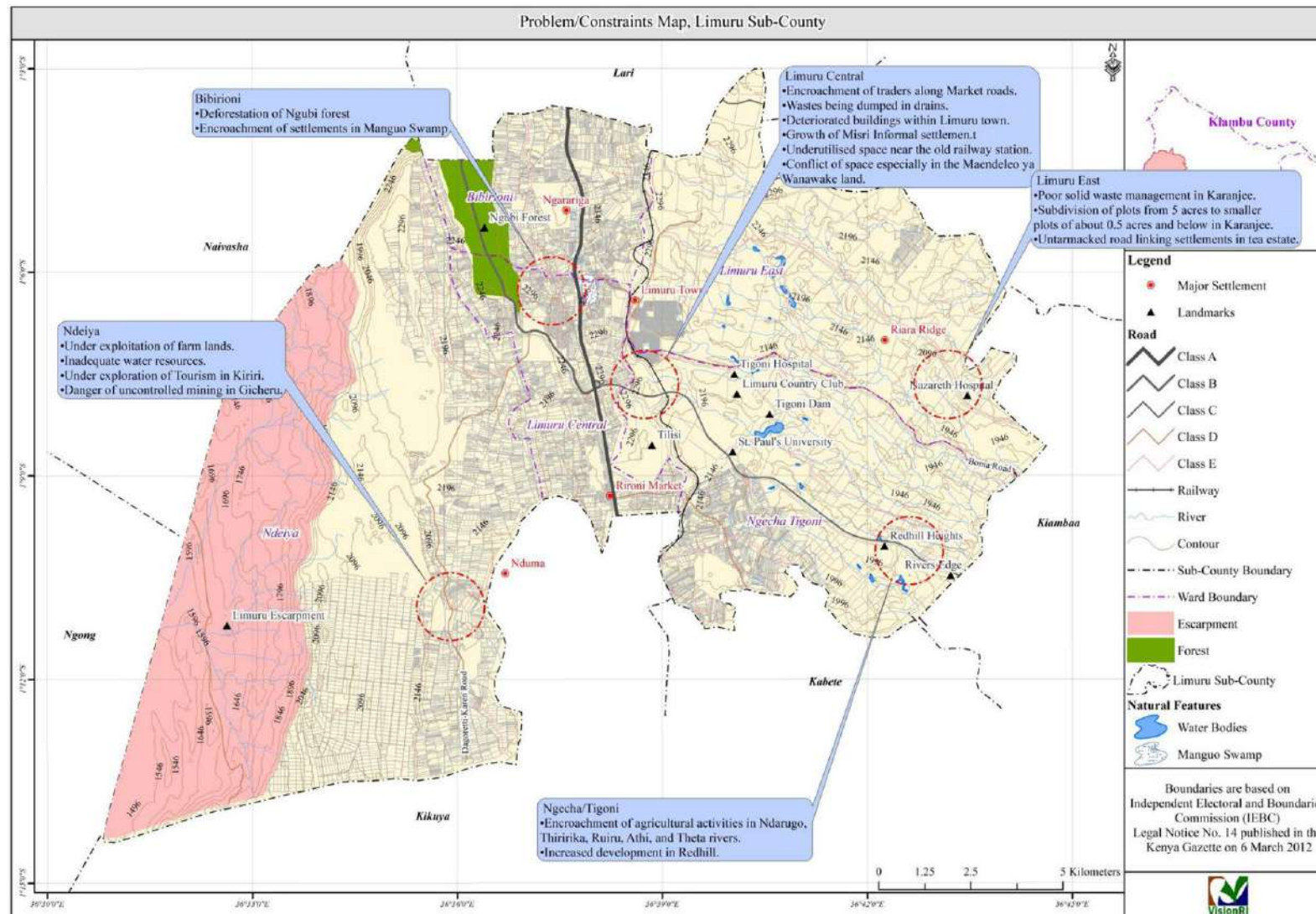
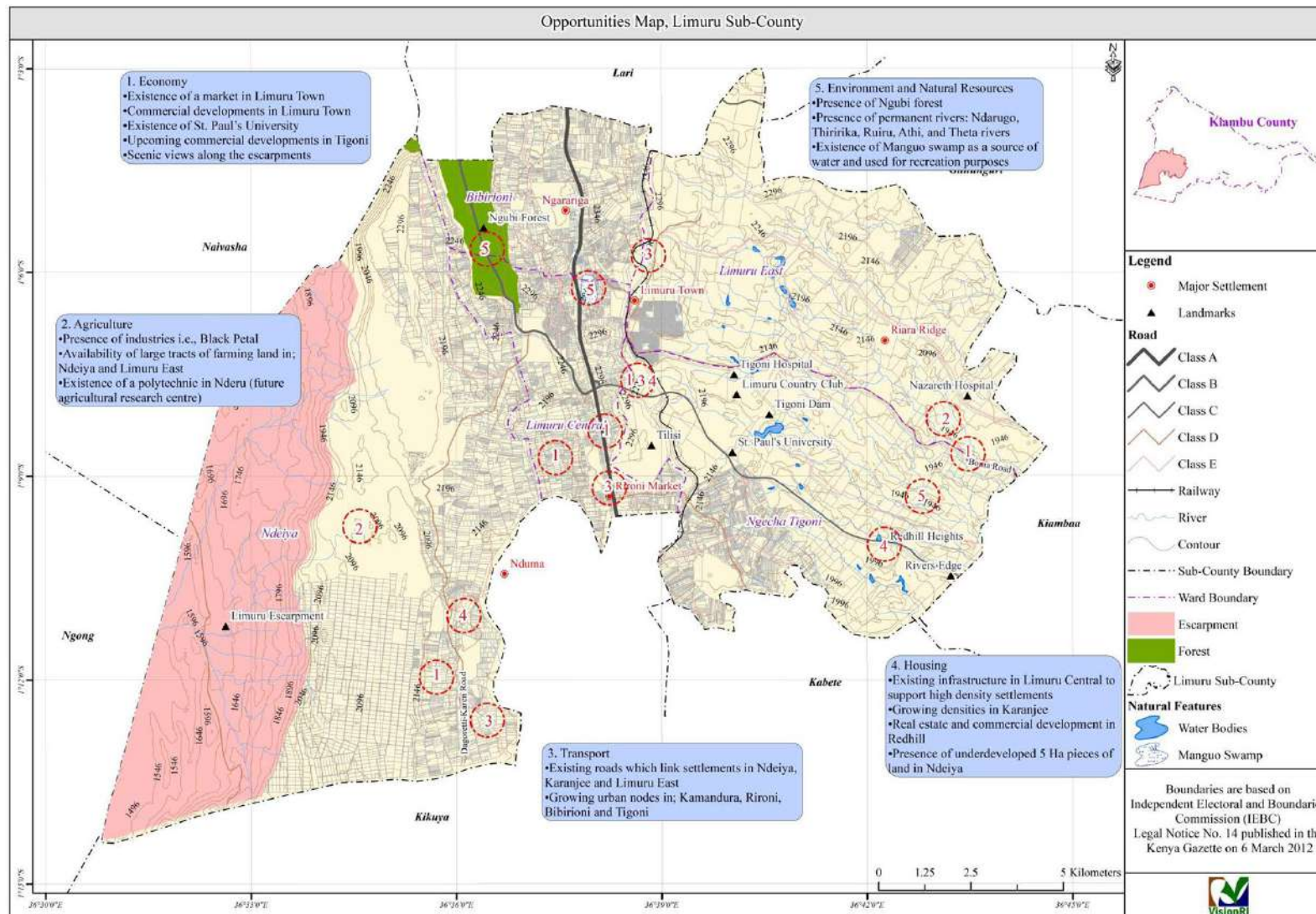


Figure 12-1: Problem Tree Diagram

Source: VisionRI



Map 12-1: Problem/Constraints Map
Source: VisionRI



Map 12-2: Opportunities Map
Source: VisionRI



REPUBLIC OF KENYA



COUNTY GOVERNMENT OF KIAMBU

PART III PLAN FORMULATION

13 SCENARIO BUILDING AND CONCEPTUAL FRAMEWORK

13.1 Overview

The spatial scenario building for the Limuru ISUDP was based on five key strategic development directions. These strategic directions were conceptualized from the prevailing development challenges, opportunities and applicable planning principles including the sustainable use of land, environmental sustainability, integration, and equity.

The strategic directions discussed that informed this Plan formulation includes, inter-alia:

- Significance of Limuru in Metropolitan Region;
- Enhance the existing Urban Growth Node;
- Protect Environmentally Sensitive Areas;
- Enhance the Comparative Advantage of Ecological Zones;
- Transport Oriented Development (TOD); and
- Conservation of Agricultural Land.

13.2 Planning Principles

13.2.1 SUSTAINABLE USE OF LAND

Promotes a balance between the consumption of resources such as energy, time and fiscal resources, with planned achievements in comfort, safety, security, access, tenure, productivity and hygiene. Sustainability principles ensure that there is an improvement.

- **Quality of Life:** The Plan aims at promoting a high quality of life, access to skills, investments, jobs and a healthy environment that will attract new businesses, retain people and connect with the surrounding community. A safe and secure inclusive environment will be provided that enables cultural identity. A diversity of units will be provided, with high levels of internal connectivity to connect the business and local community at large. A variety of interconnected open spaces close to work and local communities will facilitate social networking, civic engagement, physical activity, time spent outdoors and a healthy lifestyle.
- **Community Connectivity:** Connectivity to local communities will include an accessible sustainable transport system, green corridors, comfortable open spaces and sustainable infrastructure. This Plan will offer a unique opportunity for greening the existing infrastructure within the planning area.

- **Community Involvement:** A variety of measures have been taken to engage with all stakeholders. Regular communication will be established throughout the implementation phase to provide the opportunity to discuss the progress of the development as well as any concerns, ideas, needs and potential requirements.
- **Sound Economic Development:** Economic development and sound competitiveness has been promoted through the creation of a competitive, healthy environment that attracts investment, facilitates regeneration, increases the diversity, creates direct and indirect employment opportunities, supports education/skills and invests in green technologies.
- **Sustainable Behaviour:** The most sustainable buildings and environments are those that are understood and truly appreciated by their users. Sustainable behaviour and operation of facilities will be enabled through user engagement and implementation of sustainability awareness strategies such as ecology information boards, energy meters and live energy/water interactive display boards.
- **Climate Change Mainstreaming:** It is important to design against the potential impacts of climate change, with mitigation and adaptation measure implemented. As such, measures to reduce CO2 emissions through low carbon buildings and reduced reliance on private vehicles and landscaping to provide shading, stormwater retention and shelter from extreme weather events, for example, will be implemented.

13.2.2 ENVIRONMENTAL SUSTAINABILITY

This is the responsible interaction with the environment to avoid depletion or degradation of natural resources and allow for long-term environmental quality. Environmental sustainability helps to ensure that the needs of today's population are met without jeopardizing the ability of future generations to meet their needs. This principle is concerned with issues as shown in Figure 13-1: The Limuru Plan aims at ensuring that the proposed developments interact responsibly with natural resources without depleting them.

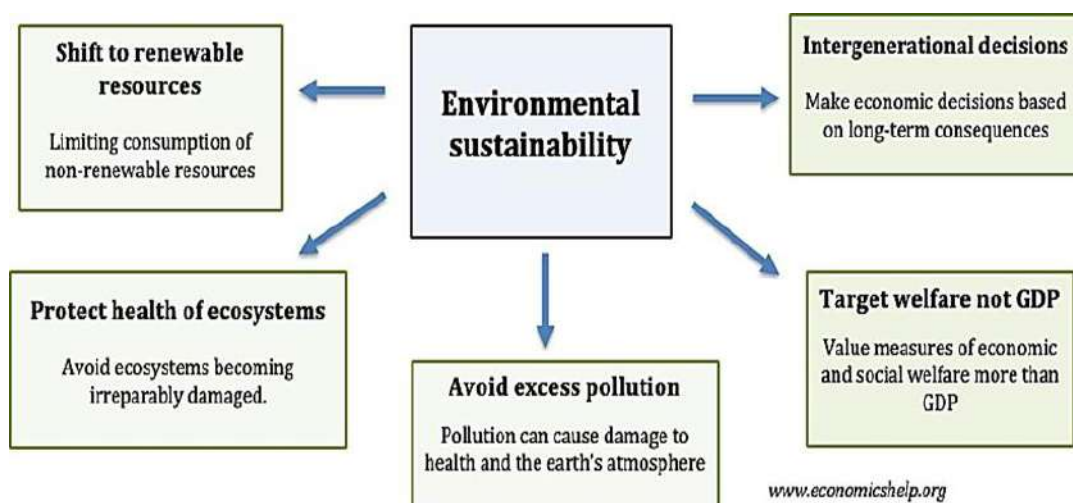


Figure 13-1: Environmental Sustainability

Source: www.economicshelp.org

13.2.3 TRANSPORT ORIENTED DEVELOPMENT (TOD)

The transit-oriented development (TOD) model attempts to maximize mixed-use, walkability, and location-efficient development that balances the need for enough density to support convenient transit service. TOD makes better use of transport infrastructure to backfill high-capacity transport corridors and support regional public transport links. TOD aims at increasing efficiency of public transport and reducing the use of private cars thus promoting sustainable urban growth. The TOD in the planning area will be based on the following principles:

- Public transport management – public transport is created to encourage high-capacity vehicles through;
- Private transport management – private vehicles are facilitated to use a park-and-ride facility;
- Road transport design; and
- Compact towns with high densification and mixed land use to deter sprawl and development control.

13.2.4 INCLUSIVITY AND EQUITY

The principle of inclusivity and equity advocates for the type of planning that promotes people-friendly and liveable places. Liveability is the sum of the factors that add up to a community's quality of life. This principle aims to increase access to shelter, health care, human resources development, enhanced employment, economic engagement, education, and recreation. It aims to increase safety and hygienic conditions. Moreover, urban areas in Limuru Sub-County will be places where residents can increase their knowledge, skills and create wealth.

13.2.5 INTEGRATION

This principle ensures the participation of all stakeholders and affected departments. Its objective is to examine all economic, social, and environmental costs and benefits, in order to determine the most appropriate option and to plan a suitable course of action. The Plan aims to develop integrated transport systems in Limuru Sub-County. A balance between different modes of movement is paramount for inter and intra-regional linkages. This is very vital for economic development.

13.3 Strategic Development Directions

13.3.1 SIGNIFICANCE OF LIMURU IN METROPOLITAN REGION

The NMR comprises of five counties, Kiambu being one of them. Limuru Sub-County is within Kiambu County and is a rapidly urbanising area. Limuru Town has established itself as the most vibrant commercial and agro-industrial area in the Sub-County. The economy of Limuru Sub-County is highly supported by the agricultural sector. The SPC for NMR designated Limuru as a Growth Centre (Level III) to perform roles such as: serving as

an intermediary town; promoting rural development by achieving a balanced distribution of urban population and providing functional linkages between the smaller towns and sub-regional centre.

13.3.2 ENHANCE THE EXISTING URBAN GROWTH NODES

Limuru's urban nodes are rapidly growing and serving key functions. The growth nodes in the Sub-County are Limuru Town (administrative and commercial), Tigoni (service centre- with limited densities, Kabuku (educational)), Rironi and Kamandura (mixed-use nodes with a range of services), Nguirubi (institutional), Makutano-Thigio (commercial), and Karanje and Bibirioni (residential). Planning for the growing urban nodes will guide and support the types of developments within them. Karanje is a growing residential node. It has the highest population in Limuru East, therefore, planning for proper residential spaces would encourage organised residential development in the area. Secondary urban nodes such as Tigoni, Rironi, Kabuku and Kamandura, are expected to have a mix-use development structure. Development control measures will encourage land use harmony and the presence of good infrastructure will link them to the main Limuru CBD. This type of linkage will ensure that the growth of the CBD and surrounding secondary urban nodes is intertwined, and development control measures are observed throughout the Sub-County.

13.3.3 PROTECT ENVIRONMENTALLY SENSITIVE AREAS

Limuru Sub-County has diverse land uses and is endowed with natural resources, for example, the Ngubi forest, escarpments, Manguo swamp and Ndarugo, Thiririka, Ruiru, Athi, and Theta rivers (creation of buffer zones). Dispersed settlements and uncontrolled human activities such as deforestation have threatened the existence of these environmentally sensitive areas as habitats of living organisms and ecological friendly areas. The rivers coursing through Limuru Sub-County should be transformed into green corridors. The riparian areas should be well-landscaped, and some sections turned into public parks along with the provision of NMT facilities. This will serve several purposes, namely, protect the riverbanks from erosion, eliminate the encroachment of illegal settlements, promote health consciousness amongst the population and serve as filters to air pollution.

13.3.4 ENHANCE THE COMPARATIVE ADVANTAGE OF ECOLOGICAL ZONES

Ecological zones are large areas which are characterised by specific species and habitats. An agro-ecological zone is a geographical area which has similar climatic conditions that determine their ability to support agricultural activities (Sebastian, 2010). Limuru Sub-County is dominated by agricultural production areas. Within the Sub-County, there are areas which support large scale tea farming, coffee farming and horticulture. The low-lying areas such as Ndeiya, have different climatic variations which hinder farming and consistent yields. Maximising agro-ecological zones within the Sub-County is set to improve and increase the farming yields.

This can be done through buffering of farms to prevent encroachment by human activities, extensive agricultural research on the best areas to conduct specialised farming so as to increase crop production, and supporting small scale farming, especially in Ndeiya ward. Other ecological zones which exist in Limuru are eco-tourism in Kiriri, mining of diatomite in Gicheru, and Manguo wetlands. The caves in Kiriri is a potential site for tourism especially since it is a short distance from the scenic views along the Rift Valley escarpments in Ndeiya. The site for diatomite mining in Gicheru can be reclaimed and protected so as to prevent future mishaps befalling the people of Ndeiya like landslides.

13.3.5 CONSERVATION OF AGRICULTURAL LAND

Over 90% of the Sub-County's total rural landmass is suitable for farming. However, agricultural activity continues to face major competition from real estate as housing, trading centres and shopping malls offer more reliable dividends to investment than farming. With the upcoming housing developments, small shopping centres such as Makutano in Ndeiya and Karanjee in Limuru East, amongst many others, have organically grown to serve the needs of the immediate and intermediate population. This conversion is mainly in response to the growing demand created by an economically thriving capital city.

The probable solution would be to incorporate agricultural specialisation in favourable arable areas to mitigate conversion of arable land. Horticulture, which has seen considerable growth in the country over the last two decades is favourable to agricultural investors as compared to the traditional tea and coffee. Areas like Limuru East at located in the higher altitudes within the Limuru Sub-County and support the growth of flowers in estates such as Black Petal Limited. Other agricultural activities include dairy farming and growing of pyrethrum and subsistence crops such as maize, beans and locally consumed vegetables.

13.3.6 TRANSPORT ORIENTED DEVELOPMENT (TOD)

The long-term scenario shows that access to and from the Limuru Sub-County will be enhanced following the SPC for NMR's transport proposals, although it will not be the site of major projects. The proposed Trans-African Multi-modal Corridor (road & rail) will pass through west of the Limuru Sub-County, but most likely at a distance of only about 5 km. The Sub-County will, however, be traversed by two Radial Corridors, which includes R7: Nairobi-Limuru (upgrading A104) and R8: Nairobi Limuru (upgrading Limuru Road). The radial corridors will be high-speed, high-capacity roads with proposed road reserves of 80-100 metres. These will have provisions for high occupancy vehicle (HOV) lanes to accommodate the bus rapid transit system (BRTS), intermediate public transport (IPT to include tuk-tuk and boda-boda⁸) as well as spaces for vehicles with high occupancy (5 or more).

⁸ A bicycle or motorcycle used as a taxi for carrying a passenger or goods.

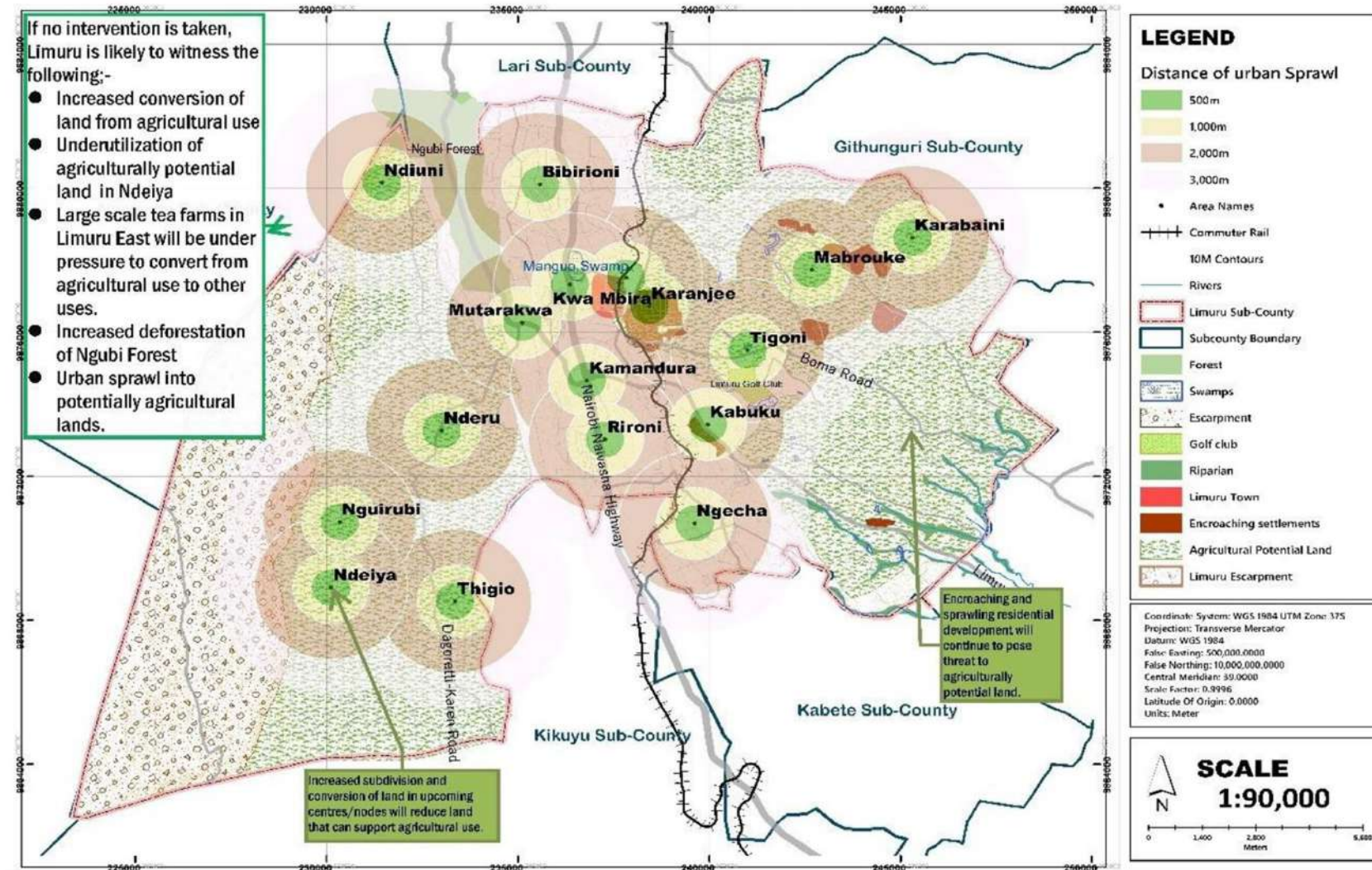
The Limuru Railway Station was established in the early 1900s. In Phase 2 of the Nairobi Commuter Rail Service Project, a commuter rail network will be developed within the existing railway corridor and extend commuter rail services to Limuru as well as Thika, and Lukenya. The new railway extension should have a 60-metre way to leave. The Limuru ISUDP plans to intensify development along road and rail transit route intersections. Some of the transport systems may require to be upgraded to modern transport designs. This is in the aim of creating mixed-use urban growth nodes, which will be interconnected by road and rail. These nodes will reduce the time taken to access public facilities and working areas, as they will be well within walking distance.

13.4 Alternative Development Models

13.4.1 NIL SCENARIO

The Nil Scenario enables stakeholders, policy and decision-makers to visualise the impacts of continued lack of any planning interventions in the next 10 years. Some of these impacts include:

- **Increased subdivision of land:** Initially, the smallest plot of land was about 5 acres. Karanjee in Limuru East Ward was a pyrethrum farm which has transformed into a residential area with average plot sizes of 0.5 ha. Misri in Limuru Central is an informal settlement which has grown to have irregular plot sizes measuring 30 by 60 metres and developed into a residential area. Karambaini in Limuru East is a settlement which has grown into a small centre within the tea farms. Many other settlements will be established, and tea farms will become extinct. Bibirioni ward has also faced unregularized land subdivision and especially around Manguo swamp.
- **Uncontrolled expansion of urban areas:** Limuru Town and Misri informal settlement in Limuru Central are expanding at very high rates. Limuru Town being the most urbanised centre in the Sub-County drives the majority of the commercial and real estate in the area. If left to dominate, it will become a polar centre, leaving the rest of Limuru to grow as unplanned areas. Expansion of Misri Informal settlement into Limuru Town may end up occupying the open jua kali field which is adjacent to the KPLC substation. As a result, transport, security and recreation will be affected.
- **There will be a deficiency of public facilities:** Population projections show a continued increase over the plan period. This implies that additional public facilities will be required.
- **Underutilised farm areas in Ndeiya:** Ndeiya Ward has faced a number of droughts and has sought external relief for food. Food insecurity will increase if better ways of utilising the arable areas is not implemented.
- **Encroachment of settlers in environmentally sensitive areas:** These include Ngubi forest in Bibirioni, Ndarugo, Thiririka, Ruiru, Athi, and Theta rivers, tea and flower plantations and also the public open spaces. These areas will continue to experience increased pollution and destruction of the natural ecosystem.



Map 13-1: Nil Scenario

Source: VisionRI

13.4.2 AGRO-CITY MODEL

The agro-city model seeks to ensure the preservation of the farmland by focusing on improvement and maintenance of farms as well as boosting the agricultural sector as a whole. Permanently preserving agricultural land will ensure that the agricultural industry remains sustainable and thrives in the future. The four main benefits of this model are that it encourages local and national food security, employment in the agricultural industry, efficient development of urban and rural land and the protection of rural and environmental amenities (Lynch & Musser, 2018). The main components of this model are as follows:

- **Formulation of agricultural land use plans:** This will involve enforcing future agricultural policy in multiple areas. Zoning out exclusive agricultural and low-density settlement areas in Karambaini in Limuru East and Kabuku in Ngecha will be for the purpose of ensuring that settlements do not encroach into the large tea estates. Decreasing property tax rates will encourage more people to practice farmland preservation in areas, such as Redhill in Tigoni and Nguirubi in Ndeiya, where the land is being rapidly converted into residential areas. Establishment of agricultural easements is meant to buffer other areas such as the Ngubi forest and the escarpments and protect them from deterioration. Protection of encroachment of human activities into Ngubi forest will reduce deforestation, while discouraging mining of diatomite in Gicheru in Ndeiya, will reduce any foreseeable dangers which accompany mining along the rift valley escarpments.
- **Stringent development control guidelines:** The transfer of development rights is a programme which will be initiated by the County Government, especially in Limuru East and Ndeiya Ward, as they will have the largest areas under farming activities. Some areas like Georgia in the United States of America, have incorporated farmland preservation by making it a state-run programme funded from the tax levied (Lavigno, Dorfman, & Bergstrom, 2004).
- **Protect environmentally sensitive areas and prime agricultural lands:** It is imperative to protect environmentally sensitive areas such as wetlands, waterways, those with steep slopes, etc. for purposes of sustaining the viability of urban growth. Prime agricultural lands, such as those that are highly productive in Limuru East, are also important resources, especially from the vantage point of food security for the people of Limuru East.

The benefits of this model include:

- **Expands farming to potential areas:** This will require the farmers to manage and increase farming activities throughout Limuru Sub-County. It will manifest itself as promoting food crop and cash crop farming in Ndeiya and Limuru East, respectively.
- **Promotes Agro-industrial development in Ndeiya:** Intensive mechanisation and integration of ecotourism, agro-tourism and mining.

- **Preserves farming heritage:** Encroachment of medium and high-density settlements in arable areas have discouraged farming. Planning of Limuru is tied to the surrounding sub-counties like Kikuyu. Areas like Karanje in Limuru and Nachu in Kikuyu, were cash crop farms which have over time become extinct. Pyrethrum farming was halted in Karanje and cotton farming was halted in Nachu, as a result of increased human activities and unpredictable climatic conditions. The agro-city model aims to preserve the existing arable areas and encourage propulsion of agricultural activities in new areas.
- **Stabilisation of the agricultural sector and the natural environment:** Enforcement of good agricultural practices, especially those which entail controlling extent of human activities, will protect both the arable and natural environments. This type of farming will act as a buffer to itself and other environmentally sensitive areas in Limuru like Manguo Swamp and Ngubi Forest in Bibirioni, rivers in Ngecha/Tigoni and Rift Valley escarpments in Ndeiya. Preservation of tea farming in Limuru East will control the urban expansion of Limuru Town, especially Misri from further expanding into Karanje. This will stop the two settlement areas from merging into one big settlement.
- **Economic interventions** are aimed at strengthening the agro-processing sector. These range from building capacities of human resources such as farmers training on horticultural crops production and establishment of Constituency Industrial Development Centres (CIDCs). The latter will provide incubation facilities for micro and small industries. Other economic interventions that can position Limuru into a key player in the agro-processing sector are:
 - Establishment of a fruit and vegetable processing plant in Limuru district;
 - Expansion and strengthening of existing dairy factories, especially near the yoghurt and cheese factories which exist in the area; and
 - Establishment of an agricultural research centre in Nderu, Ndeiya Ward.

The demerits of integrating farmland preservation as a key driver of planning in Limuru Sub-County are as follows:

- **Dependence on the agricultural sector:** Limuru Sub-County is known to be economically driven by the agricultural sector. Majority of the people are farmers, and the rest are mainly business-people. Over-reliance on agriculture as a source of employment and livelihood will for a long period of time, lead to the negligence of developing other sources of income.
- **Slow development of other sectors in the Limuru Sub-County:** If the farmland preservation model is undertaken in large scale for a significantly long period of time, the people will neglect to promote growth and development of other sectors. Limuru Town will remain as the dominant core urban area and upcoming towns like Tigoni, Rironi and Kamandura, won't have the advantage of developing into major urban nodes.

- **Decreases land for expansion of other sectors:** Championing for farmland preservation goes hand in hand with increasing farm sizes under agriculture. Currently, almost 70% of the landmass in Limuru East is used as a tea plantation and the proposal is to buffer the tea farms and encourage farming in Ndeiya. The future of Limuru is entwined with increasing farm sizes and as a result, there will be exclusive zoning for compact development of other land uses. Expansion of towns and settlements will be under strict development control, making it a possibility that real estate investments will decrease with time.

13.4.3 MULTI-NODAL ALTERNATIVE

Nodal development is a concept which encourages intensive development within specific areas. The multi-nodal model encompasses redirecting and intensifying urban growth based on the existing functions of the main nodes. This model will involve the following:

- **Upgrading the CBD:** The objective is to improve the competitiveness of the CBD and make it a vibrant place to do business and live in. Such a strategy will entail a combination of hard and soft interventions which can be rolled into a comprehensive urban renewal programme. This programme should also harmonise with NaMSIP's TOD proposals built around Limuru's commuter railway station.

Hard interventions will come in the form of urban infrastructure such as roads, NMT facilities, landscaping, storm drainage, sewerage, water supply, market building, etc. These interventions will entail direct government action in the form of its capital investments or partnership with private business, as appropriate.

Soft interventions will come in the form of policies, laws and regulations that will seek to require and sometimes guide private sector actions to achieve the desired objectives of an urban renewal programme. These may come in the form of innovative environmental regulations, zoning codes to include increases in permissible densities, traffic rules, etc.

- **Developing alternative urban growth centres:** Limuru Town is congested and straining to expand to its surrounding environment. Nonetheless, it is observed that developments have already occurred on sloping land and encroached on Manguo swamp. If left unchecked, developments can overrun these areas causing significant adverse effects to the environment and human safety.

It is thus important that alternative urban growth centres be developed in suitable locations. One way would be to develop an agro-business centre in Nderu, having a peripheral residential area. This arrangement will be beneficial to both management of the businesses and workers due to the proximity of residence and workplace. Such a centre should, of course, be complemented by appropriate community service facilities such as for health, education, recreation, religious, etc.

- **Creating self-sustaining settlements:** Settlement concentrations outside of the CBD may be found in scattered locations, like in Bibirioni as well as Karanje. Some of them are private residential estates in

Tigoni, while others are clustered houses which are grouped with no formal arrangement in Ndeiya Ward. It is, nonetheless, important that settlements be provided with the necessary services and amenities such that efficiencies and economies will be achieved at the community level by establishing neighbourhood centres. The objective is to create a situation where community requirements, such as food, recreation, health, education, worship, etc. are within a convenient distance.

- Some of the requirements may be provided directly by the Government, such as health centres and public schools while others may be provided by the private sector such as recreational facilities and places of worship. Land, however, must be made available for these neighbourhood centres. A starting point will be to examine the location of existing settlements in relation to existing shopping centres. It is a possibility that this strategy can be put into motion by simply building-up the service capacity of the latter (Kairu, 2018).

The multi-nodal alternative will enhance the following in Limuru Sub-county:

- **Development and maintaining the primary node:** This is the present Limuru Town which functions as a commercial and administrative centre.
- **Creation of secondary nodes I or secondary nodes at the first level:** These nodes are Tigoni which will be a service centre having limited residential densities, Kabuku which will be an educational or institutional node and Bibirioni which will grow as a residential node as it already has the majority of its area used for residential purposes.
- **Creation of secondary nodes II or secondary nodes at the second level:** These nodes will act as the supporting centres for both the primary node and the secondary nodes level II. Ngurubi will be an institutional node since it has a number of both primary and secondary schools. Kamadura and Rironi will be mixed-use nodes as they are expected to grow at major junctions along the Nairobi-Naivasha road. Makutano which will grow as a commercial node at the junction of Thigio-Gitutha road and Thigio Mutarakwa (Dagoretti-Karen Road).

The merits of implementing the multi-nodal development model to drive growth in Limuru Sub- County include:

- **Protecting environmentally sensitive areas** that are gazetted by existing government statutes are automatically withheld from urban development. Innovative and strong regulations and approaches should, however, be applied to environmentally sensitive areas and prime agricultural lands that are privately-owned. These may include the outright prohibition of change of use, imposing appropriate environmental protection conditions as part of development permissions, allowing only low-impact types of developments or imposing size limits to the sub-division of agricultural plots.

- **Acts as external linkage to other centres within and outside Limuru Sub-County:** Linkages to and from urban nodes through physical networks such as road networks as well as functional linkages, lead to the growth of the proposed nodes. The growth of the primary node, Secondary Nodes Level I and Secondary Nodes Level II, will not be independent as they will also link to the surrounding towns in the nearby sub-counties. The growth of these nodes together with other nodes will bring out a physical and functional linkage of towns in Kiambu as well as the entire metropolitan region.
- **Creating new markets and providing neighbourhood facilities:** The specialised functions of towns will allow the nodes to avail a number of services to the population. High order services will be available in the primary node as well as the secondary nodes level I, while the level of the Secondary Node I will have lower order services.
- **Optimises the utilisation of resources:** The model encourages mixed-use development in Tigoni, Makutano, Thigio, Kabuku. These nodes will utilise existing resources and promote sustainable development. Tigoni will emerge as a service centre, Ngairubi and Kabuku will be an institutional centre and Limuru Town will be the main administrative centre.
- **Improved and developed infrastructure:** The physical linkages in-between the different levels of urban centres will be mainly provided through roads. The area has a number of good roads such as the Nairobi-Naivasha Road, Boma Road, Limuru Road and Nazareth road. The other roads linking the urban centres such as the Kenchic to Kiawaroga road, Mitaini to Dadas Road near the end of Karanje and Jerusalem to Kwa Njenga road, are proposed for improvement.
- **Acts as buffers for unwanted and unregulated developments:** The urban nodes themselves are concentrations of urban development. They are expected to grow horizontally and vertically. Vertical growth of towns spread development and also sprawl. These nodes will be buffered as they will have demarcated town limits. These boundaries serve as buffers which will limit urban sprawl and reduce the effects of sprawl.

The demerits of the multi-nodal development model are as follows:

- **Highly dependable on enforcement of development control policies:** In order for the towns to grow as nodes offering specialised functions, there has to be the incorporation of urban planning and policymaking, both at the national and county levels. Even after these policies are formulated, the people must be willing to implement what the policies and law state.
- **Potential accessibility problems within the nodes:** The road networks are what link nodes to other nodes. The poor state of internal roads will continue to affect the accessibility from settlements to nodes and back if they will not be upgraded in due time. This will make Limuru Sub-County develop as urban and rural areas without proper linkages.

- **Tendency to dilute focal activities or specialised functions:** The concentration of the high order facilities in the Primary and Secondary Nodes Level II will deny the opportunity of people to access simple services in these nodes. This in future will be challenged by a number of areas growing as small shopping centres which offer lower- order functions. Competition to attract a higher threshold in these nodes will eventually lead to the ultimate spread of uneven and unplanned development throughout the Limuru Sub-County.
- **Polarity:** This is where the main urban centre grows and dominates as the only urban centre which will provide higher-order services. Currently, Limuru Town is at a higher level being supported and supporting a few other nodes such as Tigoni. If the multi- nodal model is not properly implemented to ensure that the other urban areas don't grow at a steady or the same pace as Limuru Town, they will collapse and remain as small urban centres, with little functional and physical linkages to each other.

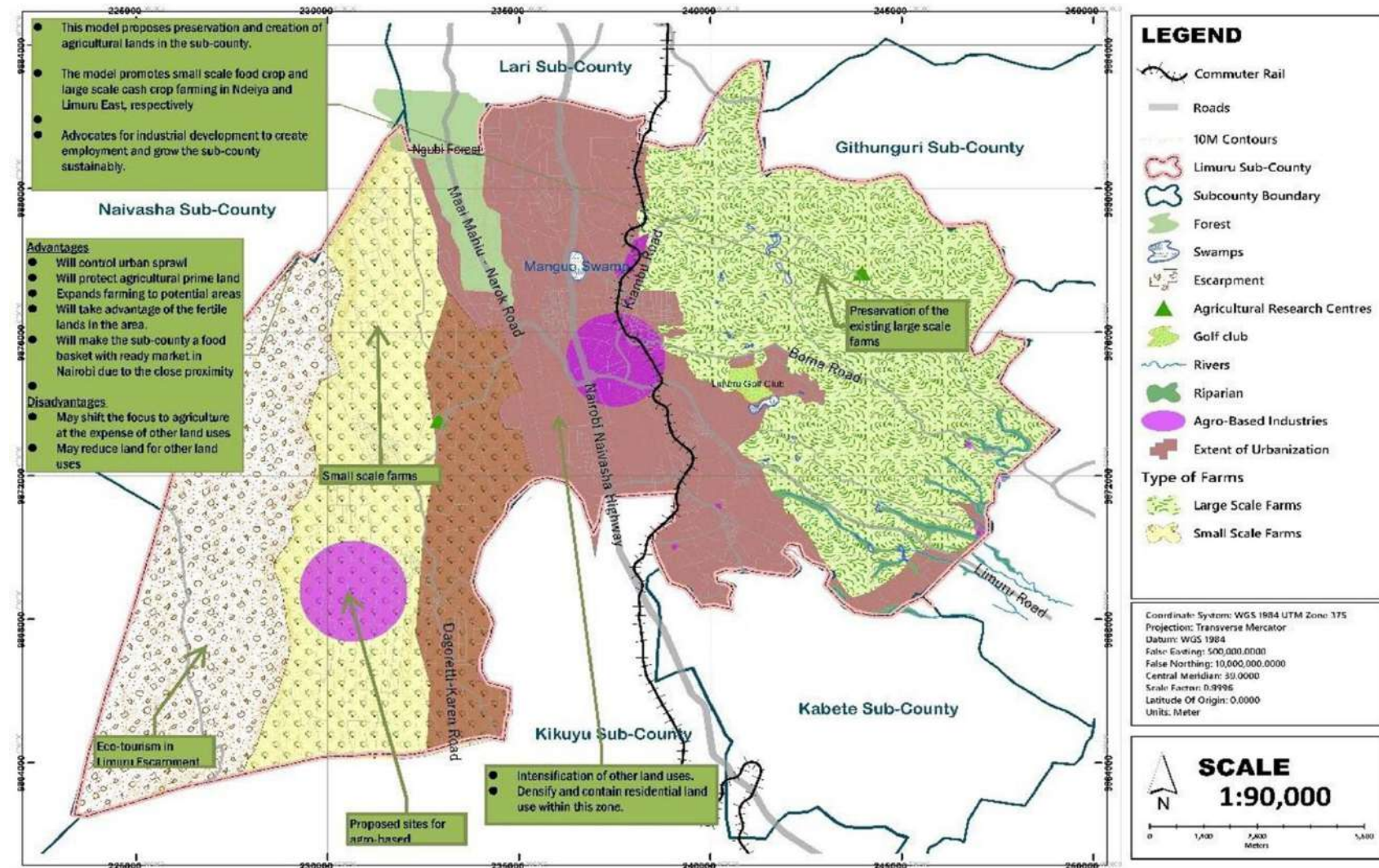
13.4.4 INTEGRATED AGRO-CITY MODEL

The Integrated Model encompasses putting together good elements of the Agro-city and multi-nodal models. The Integrated Model will enhance the quality of planning in Limuru Sub-County using the two models. The key components of this model are as follows:

- **Farmland preservation:** The arable and agriculturally productive areas are to be protected. These areas contribute the largest share of Limuru Sub-County's economy. Buffering of the agriculturally productive areas and the potential arable areas will be a sure sign for a secure future for the farmers of the area. In order to sustain agriculture, the plan extension of the use of 10% of land to allow mix-use development which will supplement far tea and coffee farmers while retaining the dominant land use under agriculture.
- **Specialisation of nodal functions:** The urban areas within Limuru Sub-County have been categorised into two distinct levels, namely, the primary and secondary nodes. Limuru Town is the only primary urban node in the area. The secondary nodes are grouped into the Secondary Node I and Secondary Node II. These nodes function co- dependently and are linked to each other by roads.
- **Linkages between the rural and urban areas:** The rural areas in Limuru Sub-County have embraced the practice of agriculture. Preservation of arable areas and promotion of specialised urban areas delegates different functions to different parts of Limuru. This ensures that all areas perform their maximum intended functions while supporting each other through physical and functional linkages.
- **Zoning and development control:** Segregating land for specific functions, limits the effects of sprawl and encroachment of incompatible land uses. Development control is a tool for planning that ensures growth and urbanisation are balanced.

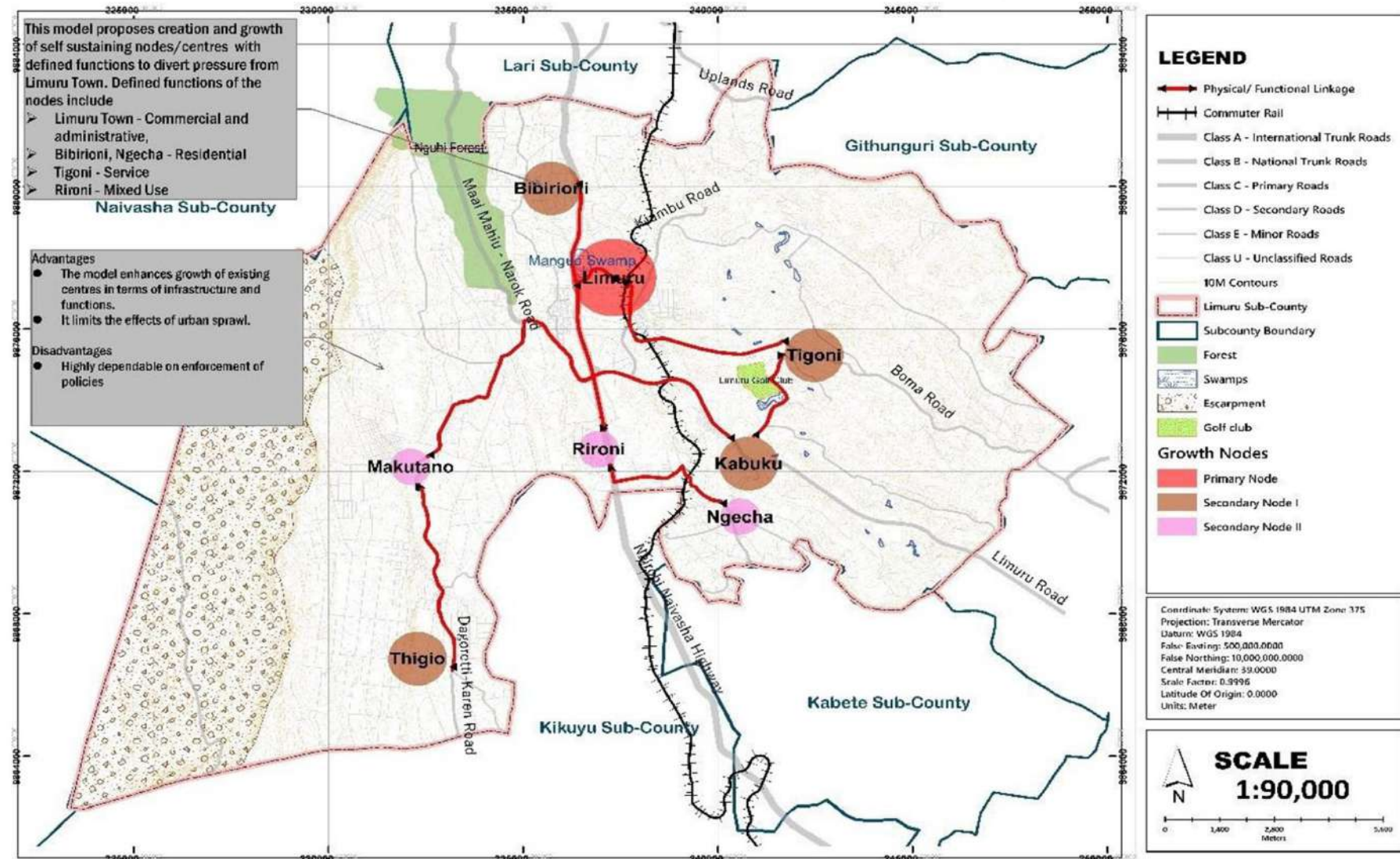
13.4.5 ANALYSIS OF THE MODELS

The goal achievement matrix was used as a tool to evaluate the three models, so as to come up with the most preferred model. The stakeholders evaluated each model against the overall goals. The assigned weight for each objective was used to calculate the subtotal of each alternative. The Integrated Model was the most preferred model as it had the highest total score of 4.8 (Table 13-1). This model has informed the physical development plan and land use plan for this ISUDP.

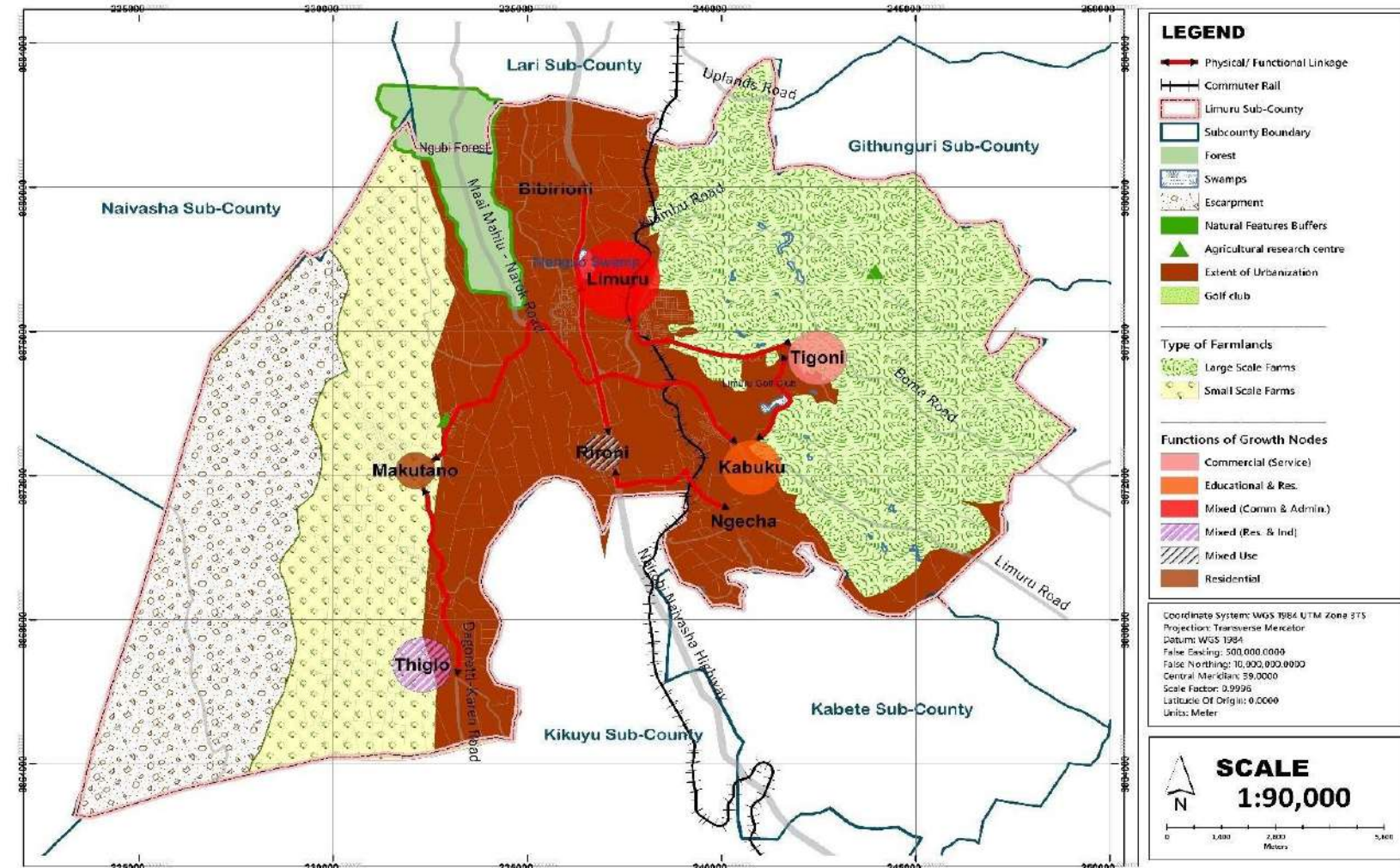


Map 13-2: Agro-City Model

Source: VisionRI



Map 13-3: Multi Nodal Model
 Source: VisionRI



Map 13-4: Integrated Agrocity Model
 Source: VisionRI

Table 13-1: Goals Achievement Matrix (GAM)

Goals		Assigned Weight	Alternative Development Proposals					
			Alternative 1		Alternative 2		Alternative 3	
			Farm	Sub-Total	Multi- Nodal	Sub-Total	Integrated 1 & 2	Sub-Total
1.	Clean, healthy, and sustainable environment	0.20	2.4	0.48	1.8	0.36	2.8	1.344
2.	Favourable agro-industrial policies	0.20	2.2	0.44	2.4	0.48	2.6	1.144
3.	Safe and efficient transportation systems	0.20	2	0.4	2.4	0.48	2.2	0.88
4.	Quality, accessible, and affordable social facilities and services	0.20	1	0.2	1.8	0.36	1.8	0.36
5.	Effective county service delivery system	0.20	2.4	0.48	2	0.4	2.2	1.056
Total Score		1.00		2		2.08		4.784
Rank (Position)				3		2		1

14 PHYSICAL DEVELOPMENT PLAN

14.1 Overview

This chapter provides a detailed analysis of the proposed land uses and outlines the development regulations in terms of density, minimum plot size, allowable developments, plot ratio, ground coverage and other relevant details for land uses. The Limuru Sub-County land use plan is characterised by the following land use categories; residential (0), industrial (1), educational (2), open spaces and recreation (3), public purpose (4), commercial (5), public Utilities (6), transportation (7), conservation (8), agricultural (9) and mixed use (10).

The land-use allocation was informed by the current development trends in the Sub-County, the vision of Limuru as an Agro-City based on the following key principles; farmland preservation: specialisation of nodal functions: linkages between the rural and urban areas: zoning and development control and the views the stakeholders.

14.2 Land Use Plan for Limuru Sub-County by 2020–2030

The proposed land-use plan delineates Limuru Sub-County into various as illustrated in Table 14–1 and Map 14–1 which the zoning and development guidelines.

The mainland-use categories include residential, educational, industrial, public purpose, commercial, agricultural, recreational and transportation. The land use zones are described below:

- **Residential land use:** The current residential land use occupies a total land area of 6.2%. The residential use of land is expected to increase as the population in the Sub- County increase by 37.29%. The land-use plan proposes compact developments sand promotes vertical development in the CBD and high-density zones. Residential land uses are categorised into three within the plan (high, medium and low residential densities development) as described below:
 - **High-Density Residential:** These are areas within commercial zones and major transportation hub. The residential development will be up to eight to ten-storey buildings. The existing areas zone of high residential development includes part of Limuru CBD, Karanjee, Mutarakwa, Kamirithu, parts of Bibirioni, Kabuku, Manjiri (and other high-density zones within the Limuru Highlands), parts of Ngecha, parts of Nderu, and Mungetho, amongst others.
 - **Medium Density Residential:** The medium residential density includes some of the following areas e.g., Kamandura, Rironi, parts of Ngecha, and parts of Thigio, amongst others.
 - **Low-Density Residential:** Low residential development areas mainly within Limuru Highlands which include Red Hill, Tigoni, Kentmere and Nazareth/Riara.

- Mixed-Use Development within and around Tilisi area.
- **Industrial Land Use Plan:** Industrial land uses include BATA Shoe Company, Proctor and Allan, dairy processing, and several tea processing factories within the tea farms. The current industrial area in the Sub-County is 118.5 ha and there is an expected increase to 416 ha.
- **Education use:** The current population of the Sub-County stands at 159,314 and it is expected to increase to 197,447 by 2030. This will result in a demand for more educational facilities. The current total land for education is 138 ha and the expected demand by 172.5 ha which means there will be a deficit of 34.5 ha
- **Public purpose:** In the proposed Plan, the total area allocated for a public purpose is 132.47. However, this is expected to increase gradually as subdivision surrenders public spaces and reservation areas are enforced through development control mechanism.
- **Recreation Use:** The Sub-County has various recreation ground including private and public. The public ones include Limuru stadium and others within the satellite centres while the private ones include Limuru Country Golf Club and BATA stadium, amongst others. The Plan proposes to increase open spaces and recreational facilities through subdivision surrenders and reservations in compliance development control mechanisms.
- **Commercial use:** High-density and compact commercial areas are proposed at the major nodes in Limuru CBD and other satellite towns such as Ngecha, Kabuku, Bibirioni and Thigio. The proposed land allocation to commercial is relatively low compared to other land uses as the commercial areas are expected to be densified in line with the compact and multi-nodal concepts.
- **Transportation:** The current transportation land use stands at 3.5 % and is expected to increase to 6.0% by the year 2030. The increase will be attributed to the strategies on road widening, clearing of encroachments and opening up of new roads and missing links. The major developments in the roads' subsector will be expansion and upgrading of key road links and maintenance of other smaller roads.
- **Conservation Area:** The escarpments in Ndeiya, water bodies and wetland like the Manguo swamp among others have been allocated 20.79 ha.
- **Agriculture:** Currently, agriculture occupies approximately 65% of the total land use and this is expected to reduce gradually due to urbanisation happening mainly on the southward side. However, to contain and slow down uncontrolled urbanization, some interventions such as densification and compact development, containment and buffering will be essential.

As discussed in earlier sections, in order to make agriculture sustainable and competitive in the backdrop of urbanisation, the Sub-County needs to embrace the "Green Agricultural Concepts and Farm Systems⁹" by promoting agriculture based on high-value crops supported value addition such as local processing and packaging, right logistics, storage and marketing.

In order to forestall the threats of decline in large scale farming such as tea, this Plan also proposes a combination of land uses which allow selected clustered high density and high-value non- agricultural development such as agro-tourism hospitality and conferencing, agro-based industrial processing, clustered and compact retreat, and holiday homes.

As shown in the goal achievement matrix, the preferred development model is the Integrated Model. This spatial model will lead to increased productivity in the agricultural sector, which will in 9 Green Agricultural Concepts and Farm Systems is an integrated set of activities that farmers perform in the farms under their resources and circumstances to maximize the productivity and net farm income on a sustainable basis. – www.agriclinics.net. (accessed on 3rd December 2020) turn lead to an improved economy and increase in the employment rates in Limuru. The nature of the development of this model prioritises conservation, preservation, and protection of farmlands with a more controlled core urban area. The spatial model also seeks to create a conducive environment for urban development within the secondary nodes earmarked for specialised services.

The land use budget provides a summary of various land uses. The predominant land use will be residential which represent 45% of the requirement. The justification of the proposed land uses has been based on population projection, urbanisation trends, environmental conservation and the preferred Integrated Model.

Users	Existing		Proposed		
	Area in Hectares (Ha)	Percentage (%)	Area in Hectares (Ha)	Percentage (%)	
0	Residential				
	Residential - High	62.73	0.22%	3,719.56	13.04%
	Residential - Medium	922.82	3.23%	3,825.89	13.41%
	Residential - Low	788.67	2.76%	3,092.30	10.84%
	Total	1,774.22	6.22%	10,637.76	37.29%
1	Industrial	118.51	0.42%	416.69	1.46%
2	Educational	551.85	1.93%	551.85	1.93%
3	Recreational	165.55	0.58%	165.55	0.58%
4	Public Purpose	132.47	0.46%	132.47	0.46%
5	Commercial	195.92	0.69%	100.35	0.35%
6	Public Utility	31.23	0.11%	31.23	0.11%
7	Transportation	1,021.00	3.58%	1,628.62	5.71%
	Conservation Areas				
	Escarpment	5271.66	18.48%	5271.66	18.48%

8	Forest	570.24	2.00%	570.24	2.00%
	Water bodies	88.23	0.31%	88.23	0.31%
	Total	5,930.13	20.79%	5,930.13	20.79%
9	Agriculture	18,450.84	64.67%	8,757.22	30.69%
10	Mixed-Use	158.95	0.56%	178.95	0.63%
Total		28,530.67	100%	28,530.67	100%

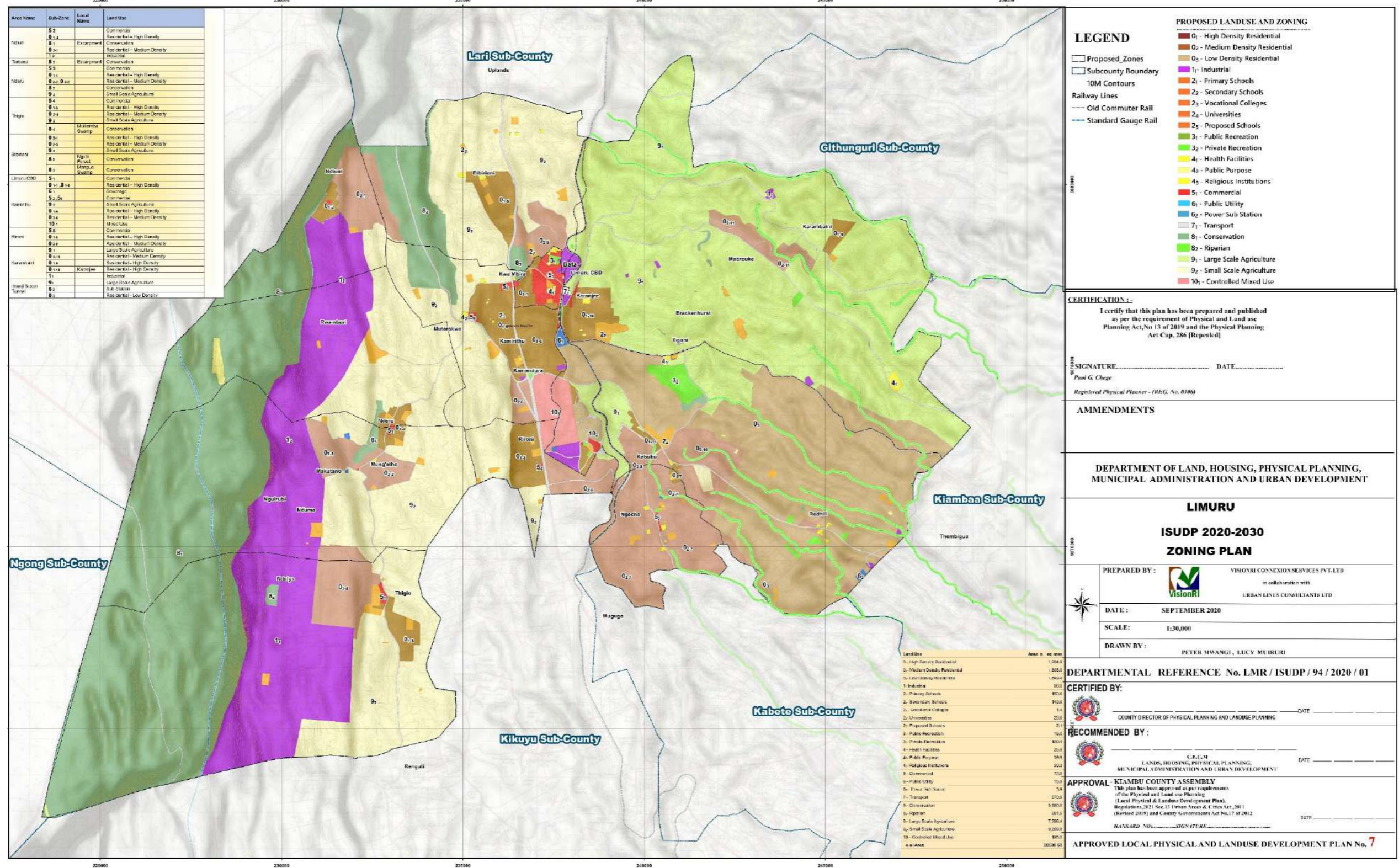
Source: VisionRI

14.3 Zoning and Development Control Guidelines

The basic purpose and function of zoning is to delineate residential, commercial, industrial, recreational, and agricultural transport, public purpose, and public utility land use in the sub-county. Zoning has been done to control the physical development of the land and the types of uses that each individual space shall be put to use and thereby ensuring proper planning of Limuru to achieve the desired built urban environment. Map 14.2 below shows the proposed land use zoning while Table 14.2 below shows the zoning and permitted land use in each zone.

Map 14-1: Limuru Zoning Plan;

LIMURU INTEGRATED STRATEGIC URBAN DEVELOPMENT PLAN 2020-2030



Source: VisionRI

PLANNING STANDARDS AND DEVELOPMENT CONTROL GUIDELINES

LIMURU MUNICIPALITY

Land Use	Zone No.	Location	Permitted Use	Minimum Plot size (Ha)	Ground Coverage (%)		Plot Ratio (PR)		No. of Floors	Building line (Metres)	Setbacks Front; Side; Rear (Metres)		Minimum road width (Metres)	Special conditions/Notes	
					S	U	S	U			Front	Side			Rear
(0)	HIGH DENSITY														
	LMU0 ₁₋₁	Limuru CBD	Permitted: Highrise apartments; studios; bedsitters; Hostels; event gardens; Parks; residential hotels Conditional: Light Industrial, colleges; churches; schools Prohibited: Heavy industry	All plots of 0.045ha – 0.07Ha	70	60	5.6	4.8	G+7	3	3	1.2	2.4	9	Single-room units developments shall not permitted For plots of 0.2ha and above, the proposal shall provide for social amenities e.g. recreational; shopping; green areas; kindergarten; security; power; circulation & other utilities according to needs assessment A service lane of 6m to be provided/surrendered for plots fronting 18m road and above. Pent house shall not be more than 30% of the typical floor plan Parking spaces/slots shall be provided as follows: 1 slot for every two- bedroom unit; 1 slot for two (2) one-bedroom units; 1.5 slot for three- bedroom dwelling unit. Minimum Subdivision Level is 0.045Ha
				All plots of 0.06Ha - 0.08Ha	70	60	6.3	5.4	G+8	4.5	3	1.2	2.4		
				All plots of 0.08Ha and above	70	60	7	6	G+9	6	4.5	1.2	2.4		
	LMU0 ₁₋₂	Ndiuni	Permitted: Highrise apartments; studios; bedsitters; Hostels; event gardens; Parks; residential hotels Conditional: Light Industrial; colleges; churches; schools Prohibited: Heavy industry	All plots above 0.045Ha	70	60	5.6	4.8	G+7	3	3	1.2	2.4	9	The skyline is capped at 8(Ground plus 7) except for Karambaini (Ground plus 1) A service lane of 6m to be provided/surrendered for plots fronting 18m road and above. Pent house shall not be more than 30% of the typical floor plan Parking spaces/slots shall be provided as follows: 1 slot for every two- bedroom unit; 1 slot for two (2) one-bedroom units; 1.5 slot for three- bedroom dwelling unit. Parcels of 0.1ha and above to provide minimum 4.5 front setback Minimum Subdivision Level is 0.045Ha
	LMU0 ₁₋₃	Thigio													
	LMU0 ₁₋₄	Nderu													
	LMU0 ₁₋₅	Bibirioni													
	LMU0 ₁₋₆	Kamirithu													
	LMU0 ₁₋₇	Kabuku													
	LMU0 ₁₋₈	Rironi													
	LMU0 ₁₋₉	Karambaini													
	LMU0 ₁₋₁₀	Karanjee													
	LMU0 ₁₋₁₁	Manjiri													
	MEDIUM DENSITY														
	LMU0 ₂₋₁	Ndiuni	Permitted: Single family houses; townhouses; semi-detached; duplexes Conditional: Convenient shops; club house; gym; nature trails; low level clinics/health centres; event gardens; schools; church	0.045	50	40	1	0.8	G+1	6	4.5	1.2	3	9	One Single-Dwelling only per plot. Typology: Maisonettes & Bungalows; townhouses One (1) DSQ shall be allowed. Not more than 15% GC of ground floor plinth of the main house. Attic house shall not be more than 30% of the typical floor plan Provide for min 10% greenery/tree cover. Provide at least one fruit tree Provide for alternative green energy use e.g. solar, wind power Provide for recycling of wastewater through adoption of new technology Designated refuse collection points Provide for parking -2 private vehicles
	LMU0 ₂₋₂	Mung'etho													
	LMU0 ₂₋₃	Makutano													
	LMU0 ₂₋₄	Thigio													
LMU0 ₂₋₅	Bibirioni														
LMU0 ₂₋₆	Kamirithu														
LMU0 ₂₋₇	Ngecha														
LMU0 ₂₋₈	Manjiri														
LMU0 ₂₋₉	Rironi														

Land Use	Zone No.	Location	Permitted Use	Minimum Plot size (Ha)	Ground Coverage (%)		Plot Ratio (PR)		No. of Floors	Building line (Metres)	Setbacks Front; Side; Rear (Metres)			Minimum road width (Metres)	Special conditions/Notes
					S	U	S	U							
	LMU0 ₂₋₁₀	Thande Rd	Single family houses; Townhouses	0.1	50	40	1	0.8	G+1	6	4.5	1.2	3	9	One Single-Dwelling only per plot. Typology: Maisonettes & Bungalows; townhouses One (1) DSQ shall be allowed. Not more than 15% GC of ground floor plinth of the main house. Attic house shall not be more than 30% of the typical floor plan Provide for min 10% greenery/tree cover. Provide at least one fruit tree Provide for alternative green energy use e.g. solar, wind power Minimum Subdivision Level is 0.1Ha
	LMU0 ₂₋₁₁	Karambaini													
LOW DENSITY															
	LMU0 ₃	Ithanji	Permitted: Single family houses; townhouses; Conditional: Convenient shops; club house; gym; nature trails; low level clinics/health centres; event gardens; schools; church	0.2	30	30	0.6	0.6	G+1	9	6	1.2	3	12	One Single-Dwelling only per plot. Typology: Maisonettes & Bungalows One DSQ shall be allowed of not more than 50 Square Meters. A single-storey, two-bedroom guest house shall be permitted, provided it does not exceed 20% GC of the main house's ground floor plinth. Provide for min 10% greenery/tree cover At least one fruit tree Provide for alternative green energy use e.g. solar, wind power Provide for recycling of wastewater through adoption of new technology Provide for parking -2 private vehicles In areas where tea cultivation is already established, a minimum of 50% of the land must be retained for tea production when proposing a single dwelling development. This ensures the preservation of existing agricultural activity and landscape character.
INDUSTRIAL	HEAVY INDUSTRIAL														
(1)	LMU1 ₁	(Thigio/ Nguirubi)	Permitted: Heavy processing; manufacturing ; quarrying; vehicle assembly plant; power generation; recycling plant; Distillery; concreting; bulk storage of hazardous substances; slaughterhouses; oil & natural gas processing; technological engineering	4	35	30	0.7	0.6	G+2	9	12	6	6	15	Clear indication of entry and exit Loading docks to be located to the rear of the building Loading area to be screened from residential users No outdoor storage Provide 3m – 6m green zone as a buffer.
	LMU1 ₂	(Ndiuni/ Rwamburi)													
MEDIUM INDUSTRIAL															
	LMU1 ₁	(Thigio/ Nguiribi)	Permitted: Agro-based millers; meat & milk processing plants; Brewery; Bakery; Bottling & canning; Food & Beverage; Coffee roaster: Honey processing	0.4	50	50	1.2	0.9	G+2	9	12	6	6	12	Clear indication of entry and exit Loading docks to be located to the rear of the building Loading area to be screened from residential users No outdoor storage Provide 3m buffer all round
	LMU1 ₂	(Ndiuni/ Rwamburi)													

Land Use	Zone No.	Location	Permitted Use	Minimum Plot size (Ha)	Ground Coverage (%)		Plot Ratio (PR)		No. of Floors	Building line (Metres)	Setbacks Front; Side; Rear (Metres)			Minimum road width (Metres)	Special conditions/Notes	
					S	U	S	U								
LIGHT INDUSTRIAL																
		Along transit routes	P S S	Permitted: Parking; garages; warehouses; go-downs; indoor storage; workshops; jua-kali; petrol service & filling stations; cottage industries; carwash; minor automotive repair shops	0.2	40	30	1.6	1.2	G+3	12	6	3	3	15	Ancillary services allowed, minimart, ATMs, Chemist
		Within CBD			0.1	40	30	1.6	1.2	G+3	9	6	3	3	15	To comply with ERC requirements.
		Within CBD	P F		0.045	35	30	1	1	G+2	9	3	3	3	12	Office block & service-related stations allowed. Not allowed-residential, public purpose, institutions, bars
		Along Transit Routes	S		0.045	35	30	1	1	G+2	9	3	3	3	12	Plot orientation a determinant-30m for PFS & 50m for PSS All Petroleum and Gas Products to align with EPPRA, Road Agencies Standards, Regulations and Recommendations
		Along transit corridors/CBD		Electrical Vehicle Charging (EVC)	0.25	35	30	1.4	1.2	G+3	9	6	3	3	15	To comply with ERC requirements Fire safety considerations All Petroleum and Gas Products to align with EPPRA, Road Agencies Standards, Regulations and Recommendations
		Along transit corridors/CBD		Gas Station	0.2	35	30	1.4	1.2	G+3	9	6	3	3	15	All Petroleum and Gas Products to align with EPPRA, Road Agencies Standards, Regulations and Recommendations
		Along transit corridors/CBD		Hybrid 1 (Fuel +EVC)	0.4	35	30	1.4	1.2	G+3	9	9	3	3	15	
		Along transit corridors/CBD		Hybrid 2 (Fuel +Gas)	0.4	35	30	1.4	1.2	G+3	9	9	3	3	15	
				Storage/Packaging Go-downs	0.1	50	40	1.5	1.2	G+2	6	6	3	3	12	
EDUCATIONAL (2)																
		Daycare (Below 3 Yrs)		Single	0.1	50	40	1	1	1Storey	6	4.5	1.2	3	9	
		Pre-Primary (Playground, PP1; PP2)		Single	0.1	40	30	1	1	G+2	6	4.5	2	3	9	
			Double	0.2	40	50	1	1	G+2	6	4.5	2	3	9		
			Triple	0.4	40	30	1	1	G+2	6	4.5	2	3	9		
		Primary School		Single	0.8	40	30	2	1.5	G+4	6	4.5	2	3	9	Other facilities that take up the remaining land are Soccer field (medium); Netball; Athletic track (cricket); Swimming; Hockey field; Gymnasium; Tennis court, Circulation and other supporting infrastructure
			Double	1.6	40	30	2	1.5	G+4	6	4.5	2	3	9		
			Triple	2.4	40	30	2	1.5	G+4	6	4.5	2	3	9		
		Junior Secondary School		Single	0.4	40	30	2	1.5	G+4	6	4.5	2	3	9	
			Double	0.8	40	30	2	1.5	G+4	6	4.5	2	3	9		
			Triple	1.6	40	30	2	1.5	G+4	6	4.5	2	3	9		
		Senior Secondary School		Single	0.8	40	30	2	1.5	G+4	6	4.5	2	3	9	For boarding schools, additional land requirement of 50% of the minimum land requirement
			Double	1.6	40	30	2	1.5	G+4	6	4.5	2	3	9		
			Triple	2.4	40	30	2	1.5	G+4	9	4.5	2	3	9		
			Quadruple	3.0	40	30	2	1.5	G+4	9	4.5	2	3	12		
		Youth Polytechnic /TVETS			0.3	40	30	2	1.5	G+4	6	4.5	2	3	9	
		College			2	40	30	3.2	2.4	G+7	6	4.5	2	3	12	

Land Use	Zone No.	Location	Permitted Use	Minimum Plot size (Ha)	Ground Coverage (%)		Plot Ratio (PR)		No. of Floors	Building line (Metres)	Setbacks Front; Side; Rear (Metres)			Minimum road width (Metres)	Special conditions/Notes
					S	U	S	U							
		University		20	40	30	3.2	2.4	G+7	10	4.5	2	3	15	
RECREATIONAL															
(3)	LMU3 ₂	Limuru Golf Club		-	-	-	-	-	-	-	-	-	-	-	-
		Stadium		2	30	20	1.2	0.8	G+3	9	9	6	6	18	Preserve and incorporate natural elements Provide shaded areas (e.g., trees, pergolas, or gazebos) Use safe materials and equipment, especially in playgrounds (e.g., soft surfaces, rounded edges, and non-toxic materials) Adequate parking and access to public transportation
		Playground		0.2	20	10	0.4	0.2	G+1	6	9	6	6	9	
		Recreational Garden		0.4	20	10	0.8	0.4	G+3	6	9	6	6	12	
		Park		0.4	20	10	0.8	0.4	G+3	6	9	6	6	12	
		Private Zoo		4	20	10	0.6	0.3	G+2	9	9	6	6	12	
		Amusement Park		0.2	30	20	0.9	0.6	G+2	9	9	6	6	12	
		Amphitheatre		0.2	40	30	2	1.5	G+4	6	9	1.2	3	9	
		Botanical Garden		0.4	10	10	0.3	0.3	G+2	6	9	1.2	3	9	
		Driving Range		0.4	15	10	0.45	0.3	G+2	6	9	1.2	3	9	
		Campground		0.8	10	5	0.3	0.15	G+2	6	9	1.2	3	9	
		Shooting Range		2	15	10	0.6	0.6	G+3	6	9	1.2	4.5	9	
		Exhibition Ground		2	20	10	0.8	0.4	G+3	6	9	1.2	4.5	9	
	Golf Course/Mini Golf		10	15	10	0.6	0.4	G+3	9	9	2	3	15		
PUBLIC PURPOSE															
(4)		Level 6 - National Referral & Teaching Hospitals		20	40	30	8.4	8.4	G+14	15	15	5	10	25	Preserve and incorporate natural elements Provide shaded areas (e.g., trees, pergolas, or gazebos) Adequate parking and access to public transportation
		Level 5 - County Referral Hospitals		8	40	30	4.4	4.4	G+9	9	9	5	5	18	
		Level 4 - Hospitals		1.6	40	30	2.4	2.4	G+7	6	9	3	5	15	
		Level 3 - Health Centres with Maternity wing		1	40	30	4.4	4.4	G+7	6	6	2.5	5	12	
		Level 2 - Dispensaries & clinics		0.1	40	30	2	2	G+3	6	6	2.5	3	9	
		Specialized clinics with inpatient wing e.g. palliative care		0.2	40	30	4.4	4.4	G+7	4.5	6	2.5	5	12	
		Level 1 - Community facilities/Health		0.1	40	30	1.5	1.5	G+3	4.5	3	2.5	3	9	

Land Use	Zone No.	Location	Permitted Use	Minimum Plot size (Ha)	Ground Coverage (%)		Plot Ratio (PR)		No. of Floors	Building line (Metres)	Setbacks Front; Side; Rear (Metres)			Minimum road width (Metres)	Special conditions/Notes
					S	U	S	U							
		clubs/Rehab centres													
Other Public Purpose Facilities															
		Police Station		1.2	40	30	3.2	2.4	G+7	9	9	6	6	12	
		Police Post		0.1	50	40	2	1.6	G+3	6	6	2.5	2.5	9	
		Patrol Base		0.045	50	40	2	1	G+3	6	6	2.5	2.5	9	
		High Court		1.2	50	40	4	3.2	G+7	9	9	6	6	15	
		Magistrate Court		0.4	50	40	2	1.6	G+3	6	6	6	6	9	
		Prisons		16	40	30	2	1.5	G+4	20	20	20	20	15	
		Religious Institutions		0.1	50	40	2	1.6	G+3	4.5	4.5	2.5	2.5	9	
		Cultural Centre		0.2	40	40	1.6	1.6	G+3	6	6	6	6	9	
		Fire Station		0.4	40	30	3.2	2.4	G+7	6	6	2.5	4.5	12	
		Library		0.1	50	40	4	3.2	G+7	6	6	2.5	4.5	9	
		Museum		0.8	30	20	2.4	1.6	G+7	6	6	1.2	3	12	
		Home for the Elderly		0.2	40	30	1.6	1.2	G+3	6	9	6	6	9	
		Funeral Homes/crematorium		0.2	30	20	1.2	0.8	G+3	6	9	6	6	9	
		Social Hall		0.1	40	30	2	1.5	G+4	6	9	6	6	9	
		Youth Centre		0.2	50	40	2.5	2	G+4	6	6	1.2	3	9	
		Private Clbs & Lodges		0.2	50	40	2.5	2	G+4	6	6	1.2	3	9	
		Cemetery		1	20	10	0.2	0.1	G	6	9	6	6	9	
		Children's Home		0.2	50	40	2.5	2	G+4	6	9	6	6	9	
		Innovation Hub		0.045	60	50	3	2.5	G+4	4.5	9	6	6	9	
		Abattoirs		1	40	30	1.6	1.2	G+3	6	9	6	6	9	
		Slaughter slab		0.2	40	30	1.2	0.9	G+2	6	9	6	6	9	
		Administration Offices		0.4	60	50	3	2.5	G+4	6	9	6	6	9	
COMMERCIAL															
(5)	LMU5 ₁	LIMURU CBD	Shopping mall	0.8	60	50	3.6	3	G+5	9	9	6	6	15	Double volume in heights 1 parking lot per 100sm Additional parking in basement or top floor Shall create space for recreational amenities e.g. kids playing area Lift & ramp Min frontage 30m (plot orientation-width) Acceleration & deceleration lanes 6m
			Mini mart/Bakery	0.1	70	60	5.6	4.8	G+7	9	6	2.4	1.2	15	1 parking lot per 100sm
			Supermarkets	0.4	60	50	2.5	2.5	G+4	9	9	3	3	15	Maximum 5 floors Loading & offloading zone Mechanical ventilation for the building Lift & ramp

Land Use	Zone No.	Location	Permitted Use	Minimum Plot size (Ha)	Ground Coverage (%)		Plot Ratio (PR)		No. of Floors	Building line (Metres)	Setbacks Front; Side; Rear (Metres)			Minimum road width (Metres)	Special conditions/Notes
					S	U	S	U							
														Min frontage 30m (plot orientation-width) Acceleration & deceleration lanes 6m 1 parking lot per 100sm	
			Hotels	0.2	70	60	4	3.2	G+10	9	4.5	2.4	1.2	15	Must have support facilities 1 parking lot per 100sm For Serviced Apartments provide for parking as follows: 1 slot for every two- bedroom unit; 1 slot for two (2) one-bedroom units; 1.5 slot for three- bedroom dwelling unit.
			Motels	0.4	40	30	3.2	2.4	G+7	9	4.5	1.2	3	15	
			Hostles	0.2	70	60	7	6	G+9	6	4.5	1.2	3	15	
			Open Air Markets	0.2	40	30	1.2	0.9	G+2	3	3	2.4	1.2	15	
			Modern Storey Markets	0.4	50	40	3	2.4	G+5	3	3	1.2	3	15	
			Serviced Apartments, Office Blocks, Retail Shops, Banks, ICT. Conditional: Light industry; colleges; churches; schools	All plots of 0.045ha - 0.07Ha	70	60	5.6	4.8	G+7	3	4.5	2.4	1.2	15	
				All plots of 0.06Ha - 0.08Ha	60	60	5.4	5.4	G+8	3	4.5	2.4	1.2	15	
				All plots of 0.08Ha and above	60	60	6	6	G+9	3	4.5	2.4	1.2	15	
	LMU5 ₂	Ndiuni	Shopping mall	0.4	70	60	2.1	1.8	G+2	6	3	1.2	3	15	For Commercial Cum Residential
	LMU5 ₃	Nderu	Supermarket/Wholesale	0.1	70	60	4.2	3.6	G+5	6	3	1.2	3	15	Floor occupancy ratio of commercial: Residential at 40:60%
	LMU5 ₄	Thigio	Open Air Market	0.1	70	60	2.1	1.8	G+2	3	3	1.2	3	15	Commercial to occupy lower-level floors
	LMU5 ₅	Rironi	Modern Storey Market	0.2	60	50	3.6	3	G+5	6	3	1.2	3	15	Provide for parking as follows: 1 slot for every two-bedroom unit; 1 slot for two (2) one-bedroom units; 1.5 slot for three- bedroom dwelling unit.
	LMU5 ₆	KwaMbir	Serviced Apartments, Hostles, Office Blocks, BCR, public facilities, Banks, ICT	All plots of 0.045Ha & above	70	60	5.6	5.4	G+7	3	3	1.2	3	15	BCR to front a minimum road width of 12m.
	LMU5 ₇	Ngecha													
	LMU5 ₈	Mutarakwa													
PUBLIC UTILITIES (6)															
	LMU6 ₁	Limuru Sewarage Plant		-	-	-	-	-	-	-	-	-	-	-	-
	LMU6 ₂	Ndenderu Sub Station		-	-	-	-	-	-	-	-	-	-	-	-
			Power Sub-Station	0.1	20	10	0.8	0.4	G+3	6	9	6	6	12	Wayleave approvals-property owners' consent, NLC, WRA, 3m Buffer all round Fire Safety
			Data Centres	0.4	60	50	2.4	2	G+3	6	9	6	6	12	
			Telecommunication facility	0.2	60	50	3	2.5	G+4	6	9	6	6	12	
			BTS Communication masts	0.045	80	60	2.4	1.8	G+2	4.5	9	6	6	9	
			Solid Waste Transfer Stations	0.4	30	20	1.8	1.2	G+5	6	12	6	6	12	
			Solid waste recycling centers	0.2	40	30	1.6	1.2	G+3	6	9	6	6	12	
			Scrap/Junk Yard	0.2	40	30	1.6	1.2	G+3	6	9	6	6	12	
			Waste Treatment Plant	0.2	20	10	0.8	0.4	G+3	6	12	6	6	12	
			Water Towers	0.045	30	20	0.9	0.6	G+2	4.5	12	6	6	12	
			Water Hydrants	0.045	50	40	0.5	0.4	G	4.5	12	6	6	9	
TRANSPORTATION (7)															
	LMU7 ₁	Proposed Bus Park		-	-	-	-	-	-	-	-	-	-	-	-
			Weighbridge	0.2	20	10	0.8	0.4	G+3	9	9	6	6	15	Focus on user-friendly design and amenities

Land Use	Zone No.	Location	Permitted Use	Minimum Plot size (Ha)	Ground Coverage (%)		Plot Ratio (PR)		No. of Floors	Building line (Metres)	Setbacks Front; Side; Rear (Metres)			Minimum road width (Metres)	Special conditions/Notes
					S	U	S	U			Front	Side	Rear		
			Parking Silo	0.2	80	60	6.4	4.8	G+7	9	9	6	6	12	Incorporate smart systems (e.g., automated ticketing, real-time monitoring). Use eco-friendly materials, energy-efficient lighting, and renewable energy sources.
			Bus Parks/Stage	1.6	30	20	1.2	0.8	G+3	6	9	6	6	15	
			Boda-Boda sheds	0.045	60	50	2.4	2	G+3	3	6	1.2	3	12	
			BRT Stations	1.6	30	20	1.2	0.8	G+3	9	9	6	6	15	
			Parking lot for bicycles	0.045	60	50	2.4	2	G+3	3	6	1.2	3	12	
			Railway Station	1.6	30	20	0.9	0.6	G+2	6	9	6	6	15	
			Parking Yard for Trucks	1.2	30	20	0.9	0.6	G+2	6	9	6	6	18	
			Airstrip	10	30	20	1.2	0.8	G+3	12	9	6	6	18	
CONSERVATION															
(8)	LMU8 ₁	Escarpment	-	-	-	-	-	-	-	-	-	-	-	-	Not to be Developed
	LMU8 ₂	Ngubi Forest - Bibirioni	-	-	-	-	-	-	-	-	-	-	-	-	
	LMU8 ₃	Manguo Swamp	-	-	-	-	-	-	-	-	-	-	-	-	
	LMU8 ₄	Muikamba Swamp	-	-	-	-	-	-	-	-	-	-	-	-	
	LMU8 ₅	Nderu Swamp	-	-	-	-	-	-	-	-	-	-	-	-	
AGRICULTURAL															
(9)	LMU9 ₁	Mabrouke, Karambaini, Brackenhurst, Ithanji (Buxton Tunnel)	Large Scale Permitted: All agricultural uses; farm houses; storage for produce; animal pens; forestry; urban agriculture; housing for workers; low density residential developments; water pans, dams; cottage and agro-industries	0.4	-	-	-	-	-	-	-	-	-	-	Farm houses & housing for workers allowed at max 5% of land size Value addition e.g. agro-processing industries permitted Controlled transition to low density residential development with commensurate public utilities evenly distributed.
	LMU9 ₂	Bibirioni Kamirithu, Nderu, Thigio, Rironi	Small Scale All land within the sub-county that can support horticulture & early maturing crops e.g. maize, beans grown at peasant scale	0.045	-	-	-	-	-	-	-	-	-	This applies mostly to urban agriculture for horticulture	
MIXED USE															
(10)	LMU10 ₁	Kamirithu	Highrise apartments; studios; bedsitters; Hostels; event gardens; Parks; residential hotels; commercial; offices; public facilities Light Industrial; colleges; churches; schools; cottage industry	0.045	70	60	5.6	4.8	G+7	3	3	1.2	2.4	9	To have at least two land uses. For BCR : Floor occupancy ratio of commercial: Residential at 40:60% Commercial to occupy lower-level floors Provide for parking as follows: 1 slot for every two-bedroom unit; 1 slot for two (2) one-bedroom units; 1.5 slot for three- bedroom dwelling unit.

Land Use	Zone No.	Location	Permitted Use	Minimum Plot size (Ha)	Ground Coverage (%)		Plot Ratio (PR)		No. of Floors	Building line (Metres)	Setbacks Front; Side; Rear (Metres)			Minimum road width (Metres)	Special conditions/Notes
					S	U	S	U							
	LMU10 ₂	Tilisi	Master Plan	-	-	-	-	-	-	-	-	-	-	As per Approved Master Plan	

GENERAL STANDARDS FOR COMPREHENSIVE DEVELOPMENTS

All development proposals on land size 8ha (20 acres and above) constituting at least 2 principal land uses will be considered as comprehensive developments. The applications will be required to indicate permitted use, densities, access roads, plot coverage, plot ratio and building heights, and shall include 3D models. Each comprehensive development should provide detailed standards and guidelines to be considered by the county for advice/approval. Land allocation shall take into account compatibility of adjoining land uses and conform with long-term plan proposal for the area (existing plans and policies)

All comprehensive development proposals must surrender adequate land for public purpose to the relevant authority. Land Uses and sizes to be surrendered for public use in a comprehensive development should be as per the planning standards in specific ISUDP and will be based on expected population and distances of access to these facilities. A needs assessment will be required for all comprehensive development proposals. Surrendered land will be forwarded to the relevant authority for development.

Minimum land requirements for the principal land uses will be dependent on the general vision of the subcounty which is Agriculture/Tourism

NB: Review/amendment of comprehensive developments will not be done before the expiry of 3 years.

Other general considerations for comprehensive developments

- a) Use of green energy (at least 30% of total energy needs)
- b) provide 10% of the area for forestry/tree planting
- c) provide solid waste disposal mechanism (transfer stations)
- d) for residential units on less than 0.1ha to provide common onsite liquid waste treatment
- e) recycle of grey water
- f) provide for water harvesting
- g) civil works to be completed to county standards before development
- h) 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)
- i) indicate construction materials
- j) NMT: provision of friendly pedestrian walkways, cycling lanes, footbridges, pick and drop points, etc

PROPOSALS FOR COMPREHENSIVE DEVELOPMENTS IN RESIDENTIAL LOW & MEDIUM ZONES.

No.	Zone Subdivision level (ha)	Allowable density (ha)	Minimum land size (ha)	Special conditions
1	0.045	0.0375	1	Common liquid waste management
2	0.1	0.045	1.5	-
3	0.2	0.1	2	-

NB: No comprehensive developments allowed in Agricultural zone subdivision level of 0.4Ha

APARTMENTS IN COMPREHENSIVE DEVELOPMENTS

- a) Minimum land that allow for comprehensive (apartments) will be 1.2ha (3 acres)
- b) Allowable ground coverage 40% (ground+9floors)
- c) Parking requirement as provided in the ISUDP
- d) Provide recreational/children play area (or floor area for play area), preprimary, laundry area, corner shop/minimart, mechanical sewer space, alternative water source.

Development Control Ordinances

In essence, zoning is the creation of zones within which permitted and specialized uses are then established and clearly defined. Basically, it seeks to control the physical development of land by defining the intended character of an area by creating harmonic zones knitted up by compatible land uses. The planning authority may from time to time amend/revise these by considering overall land use.

To efficiently carry out this mandate, the approving authority herein being the County's Planning Department shall consult the relevant agency or department, where and if it appears that the development is likely to: adversely affect any land in the area; create or attract traffic which may result in a material increase in the volume of traffic entering or leaving the main road or using a level crossing over a river; adversely affect adjacent riparian areas, or adversely affect the environment and adversely affect adjacent water resources.

As a rule, the key planning zones are residential, commercial, industrial, educational, open space, recreational areas, transportation, agricultural, heritage conservation, and public uses.

a) Residential Use Zone: The residential use zone can be subdivided into either low, medium, or high density. The activities allowed in residential zones include:

- Residences – bungalows, multi-family dwellings (multi-storey flats/apartments), detached, semi-detached units.
- Hostels, rental houses, old age homes, community halls, police posts, and guesthouses
- Daycare centres and kindergartens;
- Corner shops, small shopping centres, and health facilities (dispensaries, nursing home, etc.); and
- Educational buildings, religious premises, library, gymnasium, park, technical training centres, exhibition and art galleries, clubs, banks/automated teller machines, matatu stops/boda-boda stands (not exceeding 100 sq. M in floor area), post offices, hostels of non-commercial nature.

The activities prohibited in the residential zone include:

- Heavy, large, and extensive industries: noxious and hazardous industries;
- Warehousing, storage go-downs of perishables, hazardous and inflammable goods;
- Workshops for motor vehicles - matatu/boda-boda/buses, amongst others;
- Slaughterhouses, hospitals treating contagious diseases (e.g., tuberculosis);
- Wholesale market, sewage treatment plant/disposal works, and water treatment plant;
- Solid waste dump, outdoor games stadium, indoor games hall, and shooting range;
- Courts, sports training centre, reformatory (prisons) and garrisons (barracks); and
- Commercial use zone: commercial use zone includes (retail shopping zone), general business and commercial, sub-CBDs, wholesale shops, warehousing and regulated markets.

b) Commercial Zone: The activities allowed in commercial zones include:

- Assembly halls, colleges, reading rooms, higher educational technology and research institutions, petrol filling stations, automobile showrooms, service stations and automobile workshops with permission of parking vehicles occupying a site area not exceeding 200 sq.m.;
- Commercial and business uses including all shops, stores, markets and uses connected with the display and sale of merchandise, either wholesale or retail excluding explosive obnoxious products and other materials likely to cause health hazards not exceeding an area of 1000 sq.m.;
- Business offices, banks and other commercial and financial institutions occupying a floor area not exceeding 1000 sq.m.;
- Warehouses, repositories, and other uses connecting with storage or wholesale trade occupying a floor area not exceeding 1000 sq. but excluding storage of explosive or products, which are either obnoxious or likely to cause health hazards; and
- Manufacturing and service establishments and commercial uses using electric motors not exceeding 20 horsepower (hp) and/or employing not more than 20 workers excluding those that are obnoxious or hazardous nature by reason or odour, effluent, dust smoke, gas, vibration, noise etc. or otherwise likely to cause danger or nuisance to public health or amenity.

The uses permitted under the special sanction of the Sub-County/restricted uses include:

- All commercial and business uses including all shops, stores, storages, markets, shopping centres and uses connected with the display and sale of merchandise, either wholesale or retail but excluding explosives, obnoxious products and other materials likely to cause health hazards without limitation of floor area;
- Government offices, business offices and other financial institutions without limitations of floor area;
- Warehouses and other uses connected with storage or wholesale trade, but excluding storage of products which are either obnoxious or likely to cause health hazards;
- Commercial and entertainment centres, sports stadium, recreation complexes, research experimental or testing laboratories not involving danger of fire explosive or health hazards;
- Organized parking lots, multi-storey parking, bus terminal and depot, transport terminals, motor garage and workshops, educational, technical and research institutions;
- Garment industries irrespective of the number of persons employed where authority is satisfied with its non-objectionable nature based on its performance characteristics;
- Hotels, lodges, cold storage, food courts, informal market, and informal retail shopping;
- Weekly markets on identified locations, service, and repair centres, building materials markets, old and new car showrooms; and
- Convention centres, trade centres, market centre, travel agencies, and agro-tourist centres.

All uses not specifically mentioned above are prohibited in this zone.

c) Industrial Zone: The activities allowed in the industrial zone include:

- All uses permissible in the commercial use zone with the special sanction of the authority except residential uses;
- Residential buildings for security and other essential staff required to be maintained in the premises; and
- All industries using electrical power utilising machinery not exceeding 100 hp or with employees not exceeding 100 number but excluding all industries of obnoxious and hazardous nature by reasons or odour, effluent, dust, smoke, gas, vibration, etc. or otherwise likely to cause danger or nuisance to public health or amenity.

The uses permitted under the special sanction of the Sub-County/restricted uses include:

- Storage of petroleum, timber, explosive, and inflammable and dangerous materials; and
- All industries up to 200 hp. Where sufficient precautions have been taken to the satisfaction of the authority to eliminate noxious or dangerous effluents.

All uses not specifically permitted as mentioned above shall be prohibited.

d) Open Space and Recreational Zone: The activities allowed in open space and recreational zone include:

- All public and semi-public, parks and open spaces, parks and playgrounds, zoological and botanical gardens, nurseries, waterfront development, museums, and memorials; and
- Installation of electric motors not exceeding 5 hp May be permitted for pumping water for gardening purposes.

The activities/uses permitted under special sanction by the authority:

- Transportation terminals, restaurants, motels, auditoriums and open-air theatres, exhibition, circus, fairs and festival ground, and public utilities;
- Incidental residential uses for essential staff required to be maintained in the area;
- All activities incidental to recreational use as may be decided by the authority;
- Installations that may be necessary for the uses mentioned above;

- All agricultural uses outside the municipal area;
- Burial and/or burning grounds or crematorium;
- Gymnasium, police post, water sports training Centre and swimming pool; and
- Spot zoning for a specific activity and high commercial corridor development along the major transportation routes.

The activities/uses prohibited:

- All uses not specifically permitted as mentioned above shall be prohibited;
- For the buildings/structure ancillary to the above uses can be permitted not more than the 2 % of the total area; and
- Transportation zone: the activities/uses allowed in transportation zone include - roads, goods shed terminals, bus stops, bus depot, bus terminals, truck terminals, airport, airstrip, helipad, port and shipping, ferry stations, jetties, fishing port, cruise landing port, yards, warehouses, storage, container freight stations, petrol filling and service station.

The activities permitted under special sanction by the authority include:

- All related uses incidental to the development of the roads and other transport modes including essential housing; and
- Hotels, exhibition ground, and convention Centre inter alia.

All uses not specifically permitted as mentioned above shall be prohibited.

e) Agricultural Zone: The activities allowed in the agricultural zone include:

- All agriculture uses;
- Farmhouse and building for agricultural activities;
- Dairy and cattle farms, and fish farms;
- Poultry farms and stud farms;
- Forestry;
- Storing and drying of fertilizers incidental to the agricultural activities; and
- Petrol pumps.

The uses permitted under the special sanction of the Sub-County/restricted uses include:

- Parks and playground, camping sites and other recreational uses;
- Sewage farms and garbage dumps, burial grounds; and
- Utility services may be permitted without spoiling the natural features.

All uses not specifically permitted as mentioned

14.4 Action Area Plans

The Plan has identified one action areas namely; Limuru CBD. This action area requires special attention in terms of the town's pivotal role in the Sub-County's administrative and commercial hub.

14.4.1 ACTION AREA: LIMURU TOWN CBD

Limuru Town is characterized by a vibrant CBD located amidst next to vast tea plantations and rural areas. The town has bustling commercial, residential and institutional areas. Limuru is home to the Bata Shoe Factory.

The town is hemmed in by surrounding sloping areas which have somehow arrested extensive growth. The result is inward and intensive compact urban growth resulting in a vibrant central business district. However, the town has grown outward, capturing settlements such as Misri informal settlement and without properly defining the town's boundary, the urban activities will encroach the arable farms and derail the economic progression of the local economy.

14.4.1.1 *Challenges:*

- Constrained expansion due to location;
- Traffic congestion and inadequate NMT facilities;
- Decaying CBD with old, dilapidated buildings;
- Narrow streets causing traffic and pedestrian conflict;
- Dysfunctional railway line;
- Lacks a defined CBD delineation;
- Poor physical state of roads and stormwater drainage channels; and
- Inadequate parking spaces.

Goal: To create a vibrant agro city that is well-planned, and with integrated urban spaces and transportation links.

14.4.1.2 *Objectives:*

To achieve the above goal, the following objectives will be implemented:

- To delineate the extent of the CBD to contain unplanned urban sprawl;
- To have an efficient, transportation system that integrates all and modern public amenities and services to meet the needs of the people; and
- Modern social service infrastructures that support a liveable town.

14.4.1.3 Proposed CBD Extension:

The extent of the new CBD has been defined by the Nairobi-Nakuru Highway, the link between Kiambu Road and Nairobi-Nakuru Highway and the upper part to extend to Limuru stadium as shown in Map 14-3 below.

Table 14-3 illustrates the spatial expanse of the proposed land uses which will lead to the redevelopment of Limuru Town into a modern CBD.

Table 14-1: Proposed Redevelopment Land Uses

Zone	Proposed Redevelopment
Zone 5(1-A)	<ul style="list-style-type: none"> • CBD core • Pedestrian bazaar • Commuter centre (railway station, existing and proposed bus park)
Zone 51(B)	
Zone 51(C)	<ul style="list-style-type: none"> • Modern corporate (commercial and offices)
Zone 41(D)	<ul style="list-style-type: none"> • Administrative zone/district
Zone 51(F)	<ul style="list-style-type: none"> • Extension of CBD
Zone 0(E)	<ul style="list-style-type: none"> • High Density

14.4.1.4 Proposed Interventions:

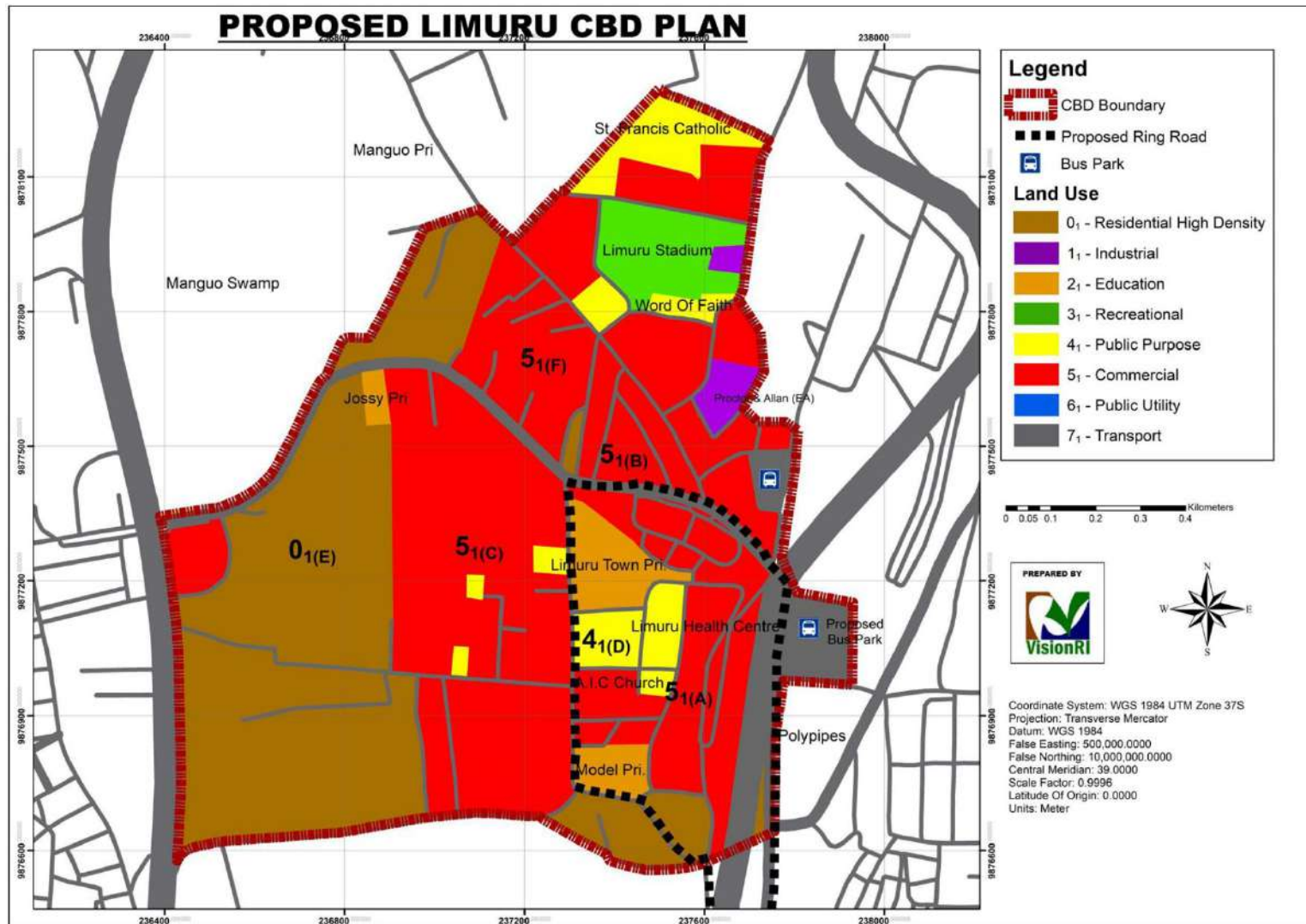
The following interventions will modernise the CBD and ensure that the town is more efficient by:

- Having an integrated transportation system consisting of the commuter rail station, a new modern bus park and the existing matatus park;
- Allow densification within the CBD by promoting compact development with compatible mixed land uses; and
- Creating a pedestrian bazaar/commercial area defined by the railway station, County offices, the new market and Limuru Model Primary School.

Table 14-2: Strategic Interventions

Intervention	Activities
Decongestion of CBD	Regular and frequent enforcement of development control by the County staff.
	Move traders into the markets upon completion of construction works of the new markets.

	Create multi-storey parking slots to discourage on-street parking which is a big contributor to the congestion within the CBD.
Movement, accessibility and circulation within the CBD	Introduce pedestrian-friendly facilities along Manguo Road, Hospital Road, Rongai Market Road, Biashara street and Gitungo roads within the CBD. This can be achieved by: <ul style="list-style-type: none"> • Provide sidewalks on all roads within the CBD; • Create cycle lanes where the terrain allows; • Having pedestrian-only streets; and • Integrating proper transport designs into the already existing roads to enhance the functionality and efficiency of the roads.
	Upgrade pavements to bitumen standards.
	Provide drainage channels.
	Provision of appropriate parking spaces.
	Rehabilitation of the railway line.
	Integrate bus park with the railway station.
General land use of the CBD	Encourage densification by allowing developers within the CBD to build up to 8 floors.
	Encourage mixed-use land uses within the CBD.
	Redevelopment of the area next to the bus terminus to allow densification of the buildings.
	Reclaim all public land together with respective deed plans. This will allow the county government to have land where it can provide community facilities.
Aesthetics of the CBD	Activate green spaces/open spaces to improve the aesthetics of the town for purposes of recreation and leisure.
Markets	Densify fresh-produce markets.
	Create a footbridge linking the fresh-produce and clothes markets.
	The relocation of traders to designated market spaces.



Map 14-2: Proposed Land Use Plan for Limuru CBD

Source: VisionRI

15 SECTORIAL STRATEGIES AND MEASURES

This chapter provides different strategies and measures which are required for different sectors plans.

15.1 Natural Resources & the Environment

Limuru lies within the lower highland zone and is characterised by hills, plateaus, and high elevation plains. It has rich well-drained volcanic soils good for farming. Some of the natural features in the area include Ngubi Forest to the North, Ndeiya Escarpments to the west, Manguo Swamp, rivers and hills. All these contribute to the ecosystem of the area and measures should be put in place to conserve them for future generations.

15.1.1 GOAL:

- To nurture a clean, healthy and sustainable environment.

15.1.2 OBJECTIVES:

- To protect and conserve environmentally sensitive areas;
- To ensure effective solid waste management;
- To assess, monitor and regularise the effects of the industrial zones; and
- To ensure optimal utilisation of natural resources.

15.1.3 STRATEGIES:

- The protection and conservation of ecologically sensitive areas through strict enforcement by the County Government of Kiambu. This should include ensuring upcoming developments do not interfere with these zones;
- Put in place a proper waste management system that manages waste from point of production, collection to the destination/landfill. Also, ensure that industries come up with a tailor-made waste management system for their industrial effluents. This will improve the quality of air and water in Limuru; and
- Utilise sustainably the natural resources within Limuru. This will generate revenue for the area and the county at large. A portion of the proceeds can be channelled back to conservation of these resources. This can be done by promoting tourism in Ndeiya Escarpment, exploit ways on tapping wind energy at “Mwanya wa Ruhuhu” and promoting tourism to “Ihiga ria Guoya”.

15.2 Climate Change

15.2.1 GOAL

To build resilience to the impacts of climate change through the following objectives:

15.2.2 OBJECTIVES

- Improve the ability of people to cope with drought.
- Improve the ability of people to cope with, and infrastructure to withstand floods.
- Build the capacity of institutions to respond to climate change.
- Develop the necessary policy and regulatory framework for climate change adaptation.

15.2.3 STRATEGIES

- Improve drought early warning systems including the promotion of people-centred systems at the county level.
- Capacity development of the existing Water Resources Users Associations (WRUA), which are community-based organisations that are rights-based groups with female and male membership.
- Develop standards and regulations, including social and environmental safeguards, for sustainable forestry management.
- Develop guidelines and standards for the establishment of green zones as required by the 2016 Forest Act.
- Mainstream climate change into environment audits, environmental impact assessments and strategic environmental assessments.
- Build the capacity of county-level institutions for the efficient transfer and implementation of climate change adaptation strategies.
- Reduce deforestation and forest degradation reduced through enhanced protection of forests.

15.2.4 ACTIVITIES

- Increase water harvesting and storage practices.
- Use mobile technology to disseminate early warning information on floods and droughts.
- Implement existing integrated flood management plans such as on water storage, drainage networks, reforestation and rehabilitation of riparian areas, construction of dams, and land-use restrictions.
- Improve water and flood control infrastructure including dikes, drainage systems, and water storage.
- Develop alternative technologies to reduce demand for biomass (such as clean cooking and efficient charcoal production).

15.3 Resilience Adaptation

15.3.1 STRATEGIES

15.3.1.1 Water Management;

- Water Recycling
- Use of Grey water
- Improved Storm and runoff water
- Alternative source of water
- Expand storage facilities

15.3.1.2 Food Security;

- Support Urban and Peri-urban agriculture
- Improve efficiency of markets
- Access of cheaper food
- Cash transfer measures
- Alternative food sources

15.3.1.3 Housing: Improved through;

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

15.3.2 ACTIVITIES

- Use of Solar/renewable energy to tap the solar energy
- E-mobility/Walkable neighborhoods/ to address carbon emissions through compact and mixed-use developments to reduce car ownership and usage
- Retrofit buildings to make them adaptable with weather changes
- Rain harvesting during rainy seasons and smart agriculture
- Identification and mapping ecosystems prone to climate related disasters
- Incorporate climate adaptation strategies during preparation of physical and land use development plans

- Loss of Biodiversity can be mitigated through identification and mapping of areas at high risk of biodiversity loss, prepare special area plan for biodiversity management and designate sites for biodiversity research reserves/ farms
- Flooding mitigation through prohibiting development on areas prone to flooding and water sheds, develop appropriate flood management plans for river basins, designate sites for water collector tunnels, water recharge basins, dams, water pan and construction of flood protection structures such as dykes, canals and identify and map flood prone areas
- Environmental degradation mitigation through identification and map environmental degradation areas conducts an Environmental Social Impact Assessment.
- Soil erosion should be mitigated through identification and map areas prone to soil erosion, encourage greening, afforestation and agroforestry.
- Resource conflicts should be mitigated through prepare a land use plan for sustainable use of the resource, provide buffer zones between different uses, integrate participatory planning approaches in preparation of plans and management of resources, promote alternative livelihoods, sensitization on sustainable use of resources.
- On Fire outbreaks; there is need to get mitigation measures through Identify and map fire prone areas, develop appropriate fire management plans, introduce fire breaks, designate sites for fire stations, water hydrants, fire engine routes, evacuation sites and routes and other appropriate fire management related facilities.
- Deforestation should be mitigated through identification and delineation of forest boundaries, prohibit developments in forest areas except for the purpose of eco-tourism, research and physical infrastructural developments, provide buffer zones around forests, encourage agroforestry and conservation of forests.

15.4 Social Infrastructure

Limuru began as a small market centre surrounded by large farms of cash crops with a small population working in those farms. Due to the nature of the terms of employment, most had come to work in the area from other areas, priority was not on building permanent houses. Therefore, standards were neglected for a long time. This explains the emergence of Misri slums next to Karanje, which was a pyrethrum farm. However, with the expanding real estate, people have sought to construct modern houses ranging from maisonettes and bungalows. This should go hand in the provision of social infrastructure for residents and workers.

15.4.1 GOAL:

- Improve and enhance the quality of life of people through social development.

15.4.2 OBJECTIVES:

- To provide affordable and adequate social facilities;
- To consider equity and accessibility when distributing social infrastructure;
- To promote a sense of ownership for the infrastructure by community members; and
- To uplift communities through social development.

15.4.3 STRATEGIES:

- Encourage public and private investments when it comes to the provision of social infrastructure e.g. schools, health and utilities. The private sector has proved to be effective in bridging this gap and measures should be put in place to encourage such investments. However, there should be input from the public sector to ensure such facilities are affordable to members of the public;
- Influence the distribution of social infrastructure within reasonable and accessible distances to communities meant to be served by the same facilities;
- Encourage public participation of community members. This will ensure the outcomes of the projects set up are embraced by community members and the residents feel a sense of ownership towards them. It will also ensure that the projects brought forth address their specific challenges;
- Prioritise efficient provision of social infrastructure by all relevant agencies as a way of uplifting the lives of the residents; and
- Regular repair and maintenance of worn-out social infrastructural facilities.

15.5 Economy

Limuru is widely known in Kenya for the large amounts of tea it produces. The tea plantations established around Limuru from 1903 onwards were the foundation of Kenya's largest export industry, which produces some of the world's highest quality tea. Limuru is also home to Bata Shoe Company which is the biggest shoemaker in East and Central Africa. There are also small-scale traders trading in vegetables, retail shops and other fast-moving goods. This is a sector that needs to be revitalised so as to continue growing the economy of the town.

15.5.1 GOAL:

- To achieve a vibrant, efficient and stable economy.

15.5.2 OBJECTIVES:

- To provide linkages to the high potential economic areas of the metropolitan region;
- To provide centralised modern commercial spaces with good infrastructure;

- To ensure optimal resource allocation and utilisation;
- To promote employment with economic growth; and
- To ensure efficiency and equity.

15.5.3 STRATEGIES:

- Prioritise physical linkages from high potential nodes in Limuru to high economic areas of the metropolitan region. These linkages should also connect to the underutilised opportunity areas in Limuru. These linkages can be in form of road or rail transport. Infrastructural investments in the nodes of Limuru Town, Bibirioni, Rironi, Kabuku, Thigio, Nderu, and Nguirubi;
- Have economic nodes for better provision of infrastructure and services to rejuvenate the economic sector;
- Integrate the formal and informal sector within Limuru to improve the livelihoods of the residents;
- Encourage agriculture in Ndeiya and Limuru East; and
- The County Government to simplify and hasten the approval process to encourage more investments to the economy.

15.6 Agriculture and Food Security

No other sub-county is best confronted by the challenge of tea farming in Kenya more than Limuru. The high rate of urbanisation in the NMR as witnessed today leave no doubt that Limuru requires to re-strategize in order to retain and sustain its agricultural economic potential and advantage.

15.6.1 GOAL:

- To make Limuru an agro-city that has the potential to create wealth and provide jobs, opportunities and livelihoods based on agriculture and industrial sectors.

15.6.2 SPECIFIC OBJECTIVES:

- Create an enabling environment for agricultural development;
- Increase productivity and outputs in the agriculture sector;
- Promote urban agriculture and enhance national food and nutrition security;
- Improve market access and trade;
- Strengthen institutional capacity of agricultural-related agencies; and
- Enhance the role of youth in agriculture through access to land, training, access to credit.

15.6.3 STRATEGIES FOR AGRICULTURE:

The Plan proposes a total paradigm shift that will promote agriculture as a business under the popular theme Kilimo Biashara. Under this concept, the Plan proposes agriculture as a business with innovative ideas and concepts. The main strategies to actualise these are:

- Identification of viable enterprises that can do well in Limuru, focusing on high-value crops such as broccoli, berries, tea, dairy, among others;
- Agribusiness service establishment. This will be done through:
 - Establishing a communication framework including online platforms to ensure farmers receive relevant information in a timely manner;
 - Setting up of an agricultural institute that trains farmers and especially young people; and
 - Setting up of networks including cooperatives to access credit, marketing outlets, and linkages with services providers and experts in management and farming services.
- Promote value addition of agricultural produce by setting up services such as processing plants, storage facilities, packaging, transport and logistics and business groups to mitigate the effects of surplus production plus give farmers new avenues to make money;
- Sustainable agriculture and resource management taking into account the balance between available natural resources, environment, agriculture and business; and
- Strengthen the partnership between the farmers, government, private sector, international organisations, and other entities.

15.6.4 PROPOSED ACTIVITIES:

The proposed activities involve the actualisation of the “Green Agricultural Concepts and Farm Systems”. The activities include:

- Growing of high-value crops;
- Value addition;
- Promote agri-businesses through training, innovative marketing, farmers training, and timely information sharing;
- Integrate alternative land uses to enhance income and cushion farmers against fluctuating agricultural produce market prices;
- Promote smart agriculture and drought resistance crops;
- Promote drip irrigation agriculture; and
- Implement the right logistics, storage, treatment and marketing.

15.7 Urban and Rural Land Development

With the ever-growing urbanisation needs in the Sub-County due to the booming real estate sector, agricultural lands in Limuru are still under threat. Bearing in mind that Limuru generates significant revenue from the sale of cash crop, i.e., tea there is a need to protect such agricultural lands from this invasion. This ISUDP proposes preservation of agricultural lands to the east (Ndeiya) and west (Mabroukie) of the Sub-County.

15.7.1 GOAL:

- An effective and well linked rural-urban fabric.

15.7.2 OBJECTIVES:

- To improve the economy of rural areas and urban areas;
- To provide infrastructural development for rural areas;
- To link the rural and urban areas;
- To ensure optimal resource utilisation; and
- To protect and conserve the rural fabric for sustainability.

15.7.3 STRATEGIES:

- The major links between rural hinterlands and urban areas ought to be prioritised so as to promote the already existing mutual relationship that is yet to be fully exploited. These include improving feeder roads that lead to rural areas. It is through these roads that products and services get to and from rural areas. Currently, the feeder roads are in a poor state hence unreliable;
- Allow for extension of the use of 10% of the agricultural land as recommended in the County Spatial Plan;
- Strictly enforce zoning guidelines so as to preserve the rural fabric in the Sub-County. Further subdivision of rural land affects agricultural productivity of the land, yet agriculture is the backbone of the economy in this area. This should be in line the County Spatial Plan;
- Limit urbanisation within defined boundaries; and
- Fostering public-private partnerships to increase extension services for agricultural land use. This will ensure these services get to the client and will create jobs as there is already existing demand for these services.

15.8 Urban Design

Principles of urban design can be applied in Limuru to promote safety, security and protection of residents, provide an environment free of pollution, noise, accidents, and crime; foster a conducive social environment bringing in a sense of community, bring about an appropriate image and prestige, heighten creativity and self-

expression in neighbourhoods and finally boost the aesthetical appeal and pleasantness of the proposed action areas.

The principles of urban design will serve to ensure that the future development of the Limuru meets the desired character, vibrancy, comfort and convenience necessary to attract residents and businesses. Some of the immediate benefits include economic empowerment by creating employment opportunities, enhancing comparative advantage of ecological zones by enabling agriculture to remain the backbone of Limuru, ease of movement and pedestrian comfort through, environmental conservation and sustainability.

15.8.1 GOAL:

- An aesthetically pleasing, effective and sustainable environment designed to meet the physical, socio-cultural and economic needs of different segments of people.

15.8.2 OBJECTIVES:

- To incorporate high standards of urban design in planning works and processes;
- To provide feasible transport designs and regulations;
- To contribute to a sustainable urban environment; and
- To maintain urban fabric and unique neighbourhoods.

15.8.3 STRATEGIES:

- Bring in concepts of urban design to enhance the physical appeal of Limuru. This can also take advantage of the rural and urban interface within the area;
- Come up with a well-informed transport design that addresses the challenges the sector faces. This should also spur development in the sector. Nairobi-Naivasha Highway, one of the major transport corridors passes through Limuru. This can be exploited for the benefit of the area;
- Protection of environmentally sensitive areas with designs that promote optimal utilisation while at the same time conserving these areas; and
- Implement the urban design and management framework that will cater to the growth of markets and other economic nodes.

15.9 Transport Strategies

15.9.1 GOALS:

- To ensure sustainable integration of all transportation modes within the Limuru planning area.

15.9.2 OBJECTIVES:

- To ensure ease in movement by identifying missing corridor links and narrow roads hence reduced travel time;
- To decongest the roads especially within CBD and market centres within the Sub- County;
- To revive the old railway line traversing Limuru CBD for mass transit; and
- To promote an efficient public transport system for the Sub-County.

15.9.3 STRATEGIES:

- Provision of transit-oriented development centred on important transit hubs like bus terminals and railway stations by creating compact, walkable, pedestrian-oriented, mixed-use communities;
- Increasing the productivity and efficiency of existing transportation facilities through transportation system management practices;
- Promoting and increasing access to multimodal transportation modes within the planning area; active transport (NMT; dedicated walking and bike lanes), and mass transit;
- Establishing road reserves complete with NMT, pedestrian pathways and appropriate stormwater drains;
- Establishing transit stations like Traffic and Transit Management Centres (TTMC) along with parking facilities for private vehicles for Park and ride along the bus routes and concentrate housing near these stations to maximise accessibility, convenience, and employment opportunities;
- Provision of Boda-Boda sheds at strategic locations within the nodes/centres;
- Reviving commuter rail transport and modernise the station at Limuru;
- Establishing dedicated bus routes;
- Preventing encroachment on road reserves through regular inventory survey, beaconing, engineering and enforcement;
- Reduction of conflict points through design strategies such as channelised intersections, roundabouts, signalised intersections, grade separation and protected lanes;
- All season maintenance of roads;
- Improving signage on all roads;
- Providing wayfinding information at convenient points in the urban areas;
- Promoting sustainable land uses along transport corridors,
- Discourage direct access of plots onto main arterial, sub-arterial and collector roads;
- Develop a comprehensive transportation mobility plan for the entire Sub-County;
- Open missing link roads in Limuru East;

- Enforcement of traffic management guidelines through retraining road users and enforce set traffic laws and regulations;
- Construction of parking bays and spaces for both on-street and off-street parking;
- Expand to 9 meters all roads below through reclaiming encroached roads and negotiating setbacks;
- Enforcement of development control guidelines on all roads to reduce encroachment and to ensure subdivisions are providing adequate road reserves, permitting nothing below 9 meters;
- Upgrading roads in Limuru to bitumen and gravel standards placing priority on roads that lead to important facilities e.g., hospitals, fire stations, industries, education facilities and into residential areas in case of emergencies;
- Upgrading and maintenance of feeder roads; and
- Streetlighting at key Sub-County roads and in all urban centres.

Functional Classification of Roads

Functional classification groups streets according to the character of the service they are intended to provide. Higher function highways place more emphasis on mobility for through traffic, and lower function highways and roads place more emphasis on land access. B.C. highways are classified into five groups:

- i. International trunk roads (A & S); typically, highways and expressways.
- ii. National trunk roads (B); Secondary Highways.
- iii. Primary Highways (C); Arterials. Class H urban.
- iv. Major Roads (typically arterials but may include). Class D, J-urban; principal bus routes.
- v. Minor Roads (typically collectors but may include some arterials) Classes E, F, G, K, L, and M.
- vi. Special Purpose Roads.
- vii. Local Roads (typically Access roads for residential areas/farmland) Class N, and P.

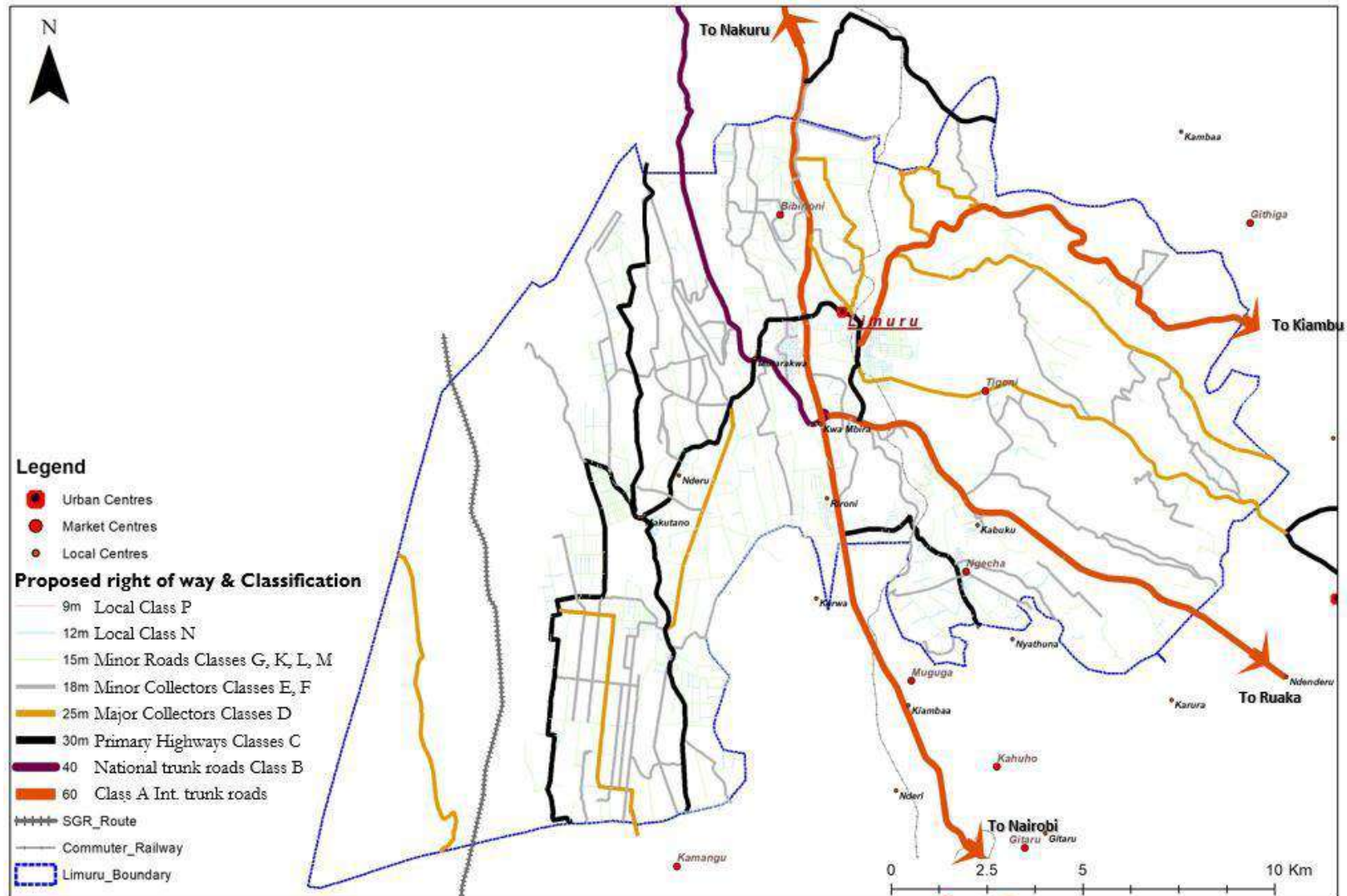
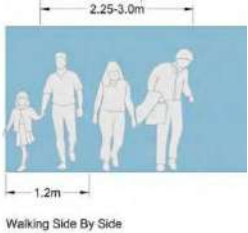

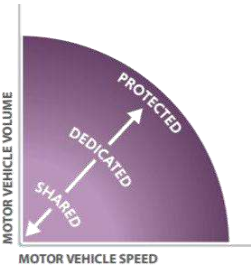
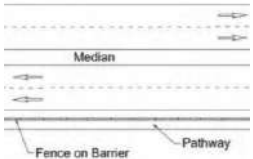

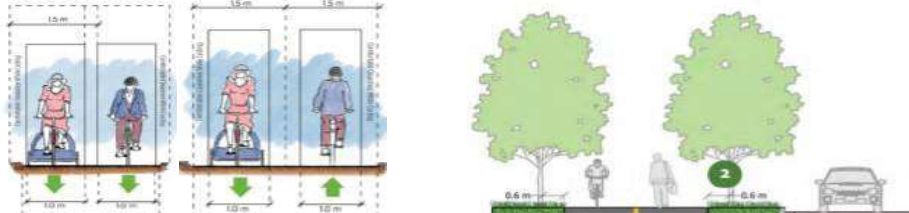



Figure 15-1: Proposed right of way and challenges
Source: VisionRI

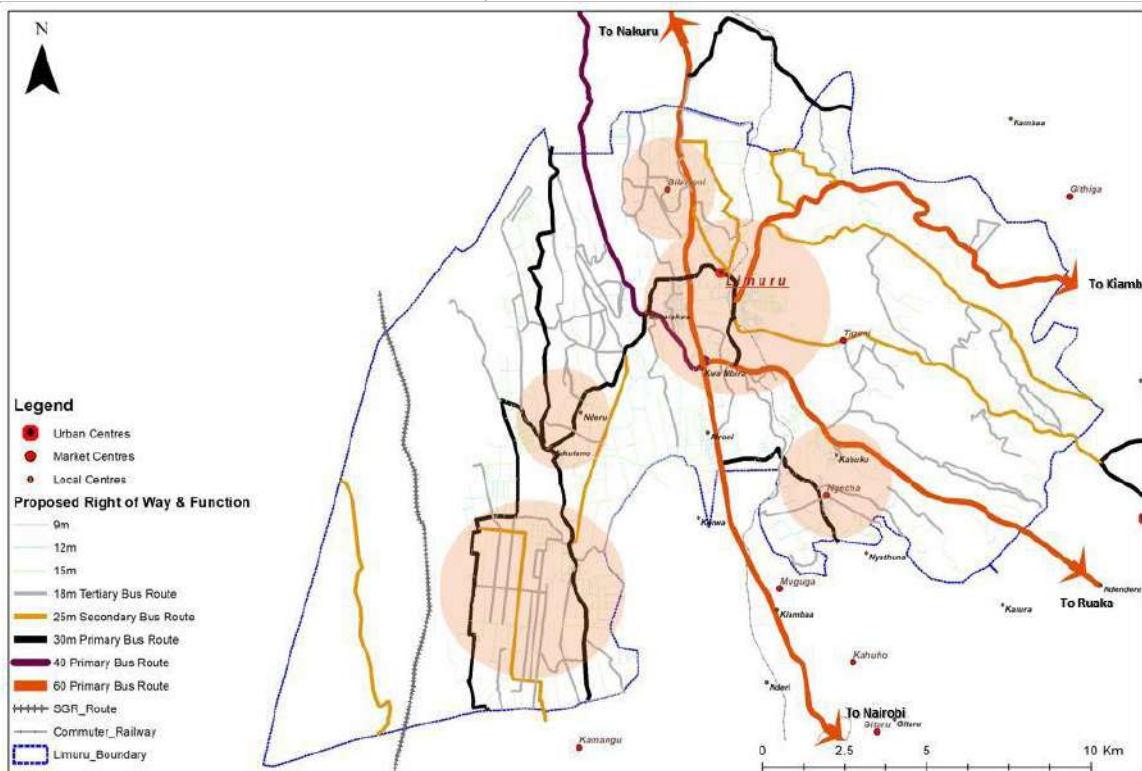
Parameter	Primary/Highway/ Arterial Roads (Classes A, S, B, C)	Major/Secondary/Collector Roads (Classes C, D, E, J)	Tertiary/Minor Roads Classes E, F, G, K, L, M)	Local/Access Roads (Class N, and P)
Design Speed	60-110kph	60-80kph	≤ 50kph	<30kph
Width of Traffic Lane	3.75m	3.5m	3.25m	3m
Shoulder Width	2.5m -3m	1.5m-2.5m	1m	0.5m
Width of Parking Lane	none	2.5m	2.5m	-
Streetlight requirements and spacing	Base on the applicable road/street Luminaires and spacing guidelines.			
Road Gradient	Minimum slope: 0.5% to facilitate drainage Maximum slope: 10% for long stretches and 15% for stretches not exceeding 100 meters. Cross slopes: 1 in 100 for paved roads and 1 in 50 for unpaved roads.			
Visibility at Junctions: Splay Angle and distance	30 degrees; >5m Truncation standards to be observed	30 degrees; >4m Truncation standards to be observed	45 degrees; >3m Truncation standards to be observed	45 degrees: >2m Truncation standards to be observed
Traffic Calming Strategies	Where applicable with consultations: Speed humps/bumps; table-top crossings, raised crosswalks; median islands and bulb-outs/curb extensions, traffic circles, speed limits (designated areas e.g.: community areas, school zones, certain public facilities)			
Pedestrian walkways: Sidewalk placement and crossings	Off-Street pathway or enhanced separated sidewalk; overpass crossings	Separated sidewalk or enhanced separated sidewalk; table-top crossings, raised crosswalks	Separated or non-separated sidewalk: table-top crossings, raised crosswalks	Shared space; marked crossings
Pedestrian walkways widths (Area of high pedestrian activity >2.4m)	1.8m	2.4m	>2.1m	1.8m
Maximum Longitudinal Grade	Preferably less <5.0% else, > 5.0% to 8.3% Landings should be provided every 9.0 meters, > 8.3% Alternative accommodations recommended (railings, rest areas, adding switchbacks, accessible ramps, circulating shuttle, ladder sidewalks, stairways, escalators, etc.)			
Pedestrian walkways Surface	Asphalt (long stretch, rural areas, and parks); Brick (high pedestrian volumes; brick may not be a comfortable surface			

Parameter	Primary/Highway/ Arterial Roads (Classes A, S, B, C)	Major/Secondary/Collector Roads (Classes C, D, E, J)	Tertiary/Minor Roads Classes E, F, G, K, L, M)	Local/Access Roads (Class N, and P)
<p>Materials</p>  <p>Walking Side By Side</p>	<p>for people using mobility devices); Decorative paving materials (cobblestone, unit pavers, exposed aggregates, exposed glass); Decorative paving materials may be used to enhance the visual aesthetic; Permeable pavement (Permeable pavement can include permeable concrete or porous unit pavers). The pavement should be raised 150mm from the road.</p> <p>Note: The Sub-County shall formulate a strategic approach to managing footpath obstructions; i.e by hawking activities, parking, advertising, improperly placed street furniture, dumping and surface degradation.</p> <p>Crossings: ensure clearly marked crossing and placement of curb ramps.</p>			
<p>Furnishing Zone</p> 	<p>0.9 meters is the absolute minimum required for streetlights and utility poles, street trees 1.2 meters minimum, roads with transit stops require the desired width of 3.0 meters for passenger landing pads, benches, and bus shelters.</p> <p>Road Hardware: road lighting, traffic signals, pedestrian and cycling push buttons, traffic signage, utilities, fire hydrants, parking metres, and/or bollards, fences, or other barriers.</p> <p>Pedestrian Amenity: Coloured and/or textured surface materials, benches, tables, and chairs, other seating amenities, waste receptacles, mailboxes and newspaper corrals, drinking fountains, bicycle parking, transit stops and shelters, wayfinding signage, public art (sculptures, murals, fountains, clocks, and other decorative features), road banners, flags, and other graphics, and public washrooms/restrooms.</p>		<p>Basic (0.6m to 2.0m) Enhanced (3.0m to 5.0m)</p>	
<p>Cycling Facilities</p> 	<ul style="list-style-type: none"> - Protected Bicycle Lanes - Bicycle pathways/highways 	<ul style="list-style-type: none"> - Protected Bicycle Lanes - Painted and Buffered Bicycle Lanes - Advisory Bicycle Lanes 	<ul style="list-style-type: none"> - Protected Bicycle Lanes - Painted and Buffered Bicycle Lanes - Advisory Bicycle Lanes - Bicycle Accessible Shoulders - Shared Street 	<ul style="list-style-type: none"> - Bicycle Accessible Shoulders - Shared Street
<p>Dedicated cycling lane width</p>	<p>2.5m Uni-directional</p>	<p>3m Bi-directional</p>	<p>Multi-use pathway (cyclist and pedestrians= 3 to 4m)</p>	

Parameter	Primary/Highway/ Arterial Roads (Classes A, S, B, C)	Major/Secondary/Collector Roads (Classes C, D, E, J)	Tertiary/Minor Roads Classes E, F, G, K, L, M)	Local/Access Roads (Class N, and P)
				
Bicycle and Pedestrian Accessible Shoulders for rural areas	2.0m- 3.0m	2.0m – 3.0m	1.5m – 2.0 m	1.5m – 2.0 m
Bicycle and Pedestrian Accessible Shoulders for Urban areas	-	-	1.5 – 1.8 m	1.5 – 1.8 m
Cycling lane desired paving material	The preferred material for a bicycle pathway is asphalt; may add oxides to differentiate with traffic lanes. Rough surfaces are uncomfortable, smooth surfaces are comfortable.			
Cycle parking racks 	Offer short- and long-term bicycle parking areas/racks in urban areas; shopping centres, malls, markets, and other public spaces and facilities which must be convenient, accessible, safe/secure, functional, and supportive.			
Drainage	Drainage and maintenance should be considered upfront in the design process to ensure that issues can be avoided. The gradient should not be less than 0.5%. This is to facilitate drainage in flat terrains.			
Lighting	Roads and ways should be well lit at night especially at crossings, urban centres, institutions, bridges, major conflict spots, alleys, tunnels and underpasses, and intersections.			
Signage and Wayfinding	A seamless, predictable, consistent, and easy-to-understand system of wayfinding, signage, and trip planning tools for vehicles, walking and cycling is important as well as to consider that many residents and visitors may not be familiar with certain locations. This should include but not limited to centres, local neighbourhoods, major attractions, local destinations, road names, traffic signs, information booths, fingerposts, monoliths, etc.			
Other Guidelines				

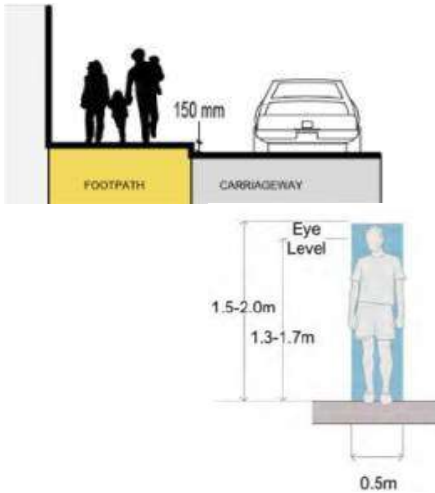
Parameter	Primary/Highway/ Arterial Roads (Classes A, S, B, C)	Major/Secondary/Collector Roads (Classes C, D, E, J)	Tertiary/Minor Roads Classes E, F, G, K, L, M)	Local/Access Roads (Class N, and P)
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Other Road Systems
 Cul de Sacs: When a cul-de-sac is used in residential development it should be provided with a curved turning circle of sufficient width to facilitate easy access and the turning of not only cars but trucks and other heavy vehicles. The recommended minimum radius is 12 metres. The cul de sac should serve no more than 20



Travel Demand Strategy

- Increasing public transport modal shares, additional demand management interventions need to be implemented i.e.:
 - Congestion pricing - mobility management strategy to reduce traffic congestion.
- Restricted parking supply or imposing restriction of vehicles

Parameter	Primary/Highway/ Arterial Roads (Classes A, S, B, C)	Major/Secondary/Collector Roads (Classes C, D, E, J)	Tertiary/Minor Roads Classes E, F, G, K, L, M)	Local/Access Roads (Class N, and P)
Pollution reduction and mitigation	<ul style="list-style-type: none"> - Improving transport options (walking, cycling, ridesharing, public transit, carsharing, etc.), more fuel- efficient vehicles tend to reduce energy consumption, pollution emissions and fuel cost. - Streets to be lined with trees to enhance sequestration of pollutants. 			
Pedestrian facilities, people walking and using mobility devices 	General Design Guidance <ul style="list-style-type: none"> - Preferred 2m-3m; - Physical separation from other road users; - Firm, smooth, and even surfaces; - The Pedestrian Through Zone should be straight and unobstructed; - Enough pedestrian crossing opportunities; - Short distances between destinations; - Continuous and direct routes between destinations that reflect pedestrian desire lines; - Buildings that are oriented towards the road, creating an engaging environment; - Diverse land uses that create a varied and interesting walking experience; - Wayfinding that makes it easy to navigate between destinations; - Street trees and other vegetation; - Weather protection elements to provide refuge from the rain; - Adequate lighting for safety, security, and visibility; - Enough benches and rest areas; - Pedestrian amenities including landscaping, water fountains, washrooms, garbage and recycling receptacles, public art, and street furniture; and - Well-maintained pedestrian facilities in all seasons. 			
Maintenance	<ul style="list-style-type: none"> - Follows the road classification guidelines and related legislations; and - Maintenance of private driveway access within the public right-of-way shall be the responsibility of the property owner and well as adjoining drainage improvements. 			
Providing loading and unloading zones	<ul style="list-style-type: none"> - Loading zones shall be provided within the urban centres on main streets and back streets; and - Loading bays along roads may be provided in rural areas. 			

Recommendations:

- i. **Provide non-motorised transport:** Enhance and expand active transportation, aided mobility, walking, and cycling.

Based on both the current and projected modal split, the majority of the Limuru residents will be walking. Since the infrastructure provision need does not match the need. There is a need for making walking and cycling safe and attractive for all users including the elderly, children, and persons with disabilities. NMT provides basic mobility, affordable transport, access to public transport, as well as health and recreation benefits.

In order to achieve a walkable urban area in Limuru, complete street designs need to be articulated. Complete street designs ensure that all streets have dedicated spaces for non-motorized transport modes, designated cycle parking facilities, traffic calming with at-grade crossing facilities for pedestrians, well maintained NMT facilities with smooth surface conditions and with ramps at grade changes to enhance universal accessibility, provision of shade, street furniture and landscaping to enhance attractiveness and comfort of pedestrians and cyclists. The facility may also be provided by creating space for street vendors so that they may not lose their lively hood. All intersection needs to provide at grade pedestrian crossings to enhance the comfort and convenience of pedestrians especially the elderly and children. Where space allows, street furniture such as benches, trees, flowers/landscaping should be provided. The county government need to put strict measures to ensure that parking is prohibited in pedestrian facilities as well as street vending.

- ii. **Public transport:** Build a comprehensive regional rapid transit/bus network.

Being the second most common mode of transport in Limuru, public transport needs major improvement in order to meet the need of the current commuters as well as the projected growth. The Limuru Town bus terminal needs to be enhanced in order to accommodate the volume of buses. This can be developed close to the railway station. In other urban areas within the Sub-County, land needs to be acquired to build terminal facilities in order to reduce the current menace of operating along the road shoulders and other undesignated areas. Some of the key facilities that need to be incorporated in the new terminals include toilets encompassing those of the persons with disabilities and baby changing stations, ample passengers sitting area with shelter, luggage storage facilities, customer information on the route and fare. Bus stops or lay-bays must have shelters more so, provided at appropriate intervals and on need basis.

- iii. **Boda Boda:** This sector plays a key role for last-mile connectivity especially in areas where public transport is not readily available. The sector remains largely unregulated. To improve the sector, the following needs to be put in place:

- a. Regular training of boda boda operators.
- b. Regulation mechanisms for example insisting that all operators be members of SACCOs.

- iv. **Parking management:** Effective parking management is an essential tool to facilitate the efficient use of road space and to ensure the mobility of public transport, pedestrians, and cyclists. In addition, appropriate parking fees can act as a lever to manage the use of personal motor vehicles and ensure that personal motor vehicle users compensate the County for the use of valuable land on which they park their vehicles. Limuru Sub-County administration needs to define both on-street and off-street parking areas in order to prevent encroachment of parking into other areas including footpaths.
- For a parking system to succeed, users need clarity on where they can and cannot park. This requires the physical definition of spaces for parking, protection of pedestrian spaces from encroachment through physical barriers such as bollards, signages and strict enforcement. Secondly, customer information is key to ensuring successful parking management. On-street parking, charges should vary by location, with higher fees levied in areas with high demand. This results in a high turnover of parking slots as it discourages motorists from unnecessary long parking. At locations where there is a demand for long term parking, the County Government can identify land for off-street parking with parking charges on a weekly or monthly basis. This will increase revenue generation by the County Government. Higher parking fees encourage people to use sustainable modes of transports including walking, cycling and public transport. Finally, enforcement is a key to ensure that parking rules and regulation are maintained, and offenders are penalised.

15.10 Housing and Informal Settlements Upgrading

Limuru began as a small market centre surrounded by large farms of cash crops with a small population working in those farms. Due to the nature of the terms of employment and most had come to work in the area from other areas, priority was not on building permanent houses. Therefore, standards were neglected for a long time. This explains the emergence of slums like Misri next to Karanjee, which was a pyrethrum farm. However, with the expanding real estate, people have sought to construct modern houses ranging from maisonettes and bungalows. This should go hand in the provision of social infrastructure for residents and workers.

15.10.1 GOAL:

- Urban renewal and slum upgrading.

15.10.2 OBJECTIVES:

- To provide a decent housing environment within the informal setting;
- To provide affordable and clean water suitable for consumption;
- To provide effective, affordable and alternative sources of energy;
- To ensure a clean, healthy and habitable environment for the people;

- To provide public utilities to serve the informal settlement; and
- To improve transport and infrastructure in the informal settlements.

15.10.3 STRATEGIES:

- Provide affordable water to informal settlements residents. Ways that this can be achieved include abolition of standing charges for the water supplied to the residents. Another alternative is the introduction of community water points;
- Encourage the use of energy-saving technologies for lighting and heating;
- Segregate accessible solid waste transfer and sorting stations for the informal settlement to cater for the solid waste accrued in the settlement as well as providing employment to the people through value addition of solid waste in the informal settlements;
- The County Government of Kiambu should prioritise the provision of public utilities such as streetlights along the transport routes and floodlights to enhance security. This will also serve the population conducting businesses overnight for income generation;
- Provision of public purpose facilities in the settlement such as; cemeteries, educational facilities, hospitals, playing grounds and lavatories. The County Government of Kiambu through funding and public-private partnerships should prioritise the provision of these facilities to the informal settlement; and
- The presence of narrow roads inhibits the people ability to move with ease. Expansion of roads and integration of properly designed transport systems by the County Government of Kiambu should be made a priority.

15.11 Physical Infrastructure Strategies

Some of the key physical infrastructures in Limuru include water, sewer system, mobile services, and ICT and waste collection systems. With the growing demand due to population growth, these physical infrastructure facilities need to be rejuvenated to operate efficiently.

15.11.1 GOAL:

- Equity provision of infrastructure services to enhance development.

15.11.2 OBJECTIVES:

- To improve the infrastructure network;
- To provide adequate infrastructure along the transportation corridors; and
- To link high-potential economic areas.

15.11.3 STRATEGIES:

- The County Government should coordinate with other agencies such as KENHA, KURA and private institutions in the upgrading of facilities; and
- The transport infrastructure systems should be well served with the accompanying sewerage and stormwater drainage systems, electricity and street lighting. This can be done through public-private partnerships for the provision of these services.

15.12 Strategies on Revenue Enhancement

This ISUDP proposes several strategic measures to enhance and stabilise revenue collection at both the County and Sub-County level. These measures will help the County run sustainably. Below are measures the County can implement to increase the revenue collection internally:

- i. **Automation:** This means making it possible for the public to honour their financial obligations to the County via electronic means and online platforms. Examples include mobile applications, web-based applications and Unstructured Supplementary Service Data (USSD⁹). Currently, Kiambu County has rolled out USSD code *419# for parking, quarrying, markets, livestock and cess. The County has also made it possible to pay for building development application through the bank or their respective agents. The Physical Planning Department has also embraced automation through the introduction of electronic development application through Kiambu-E DAM. This has resulted in an increase in the number of development application done within the County. However, there is a need to expand this to other departments for example health. This will increase efficiency and minimise losses.
- ii. **Incentives:** Incentives are measures that governments can undertake to encourage members of the public to do in order to stimulate greater output. One area that Kiambu USSD is a real time mobile phone communication protocol that makes it possible for users to communicate with the mobile network computer/server. County has not fully exploited is the payment of land and property rates. The County can offer incentives to the public to encourage them to comply. Some of the incentives the County can affect include: waiver on penalties imposed on land rate defaulters to encourage them to pay up and discounts to those who comply before a specified period of time.
- iii. **Enforcement:** The County can enhance revenue collection by ensuring compliance. According to the Kiambu County Budget Review and Outlook Paper (2018), the lack of compliance in building plan approval and land rate payments was identified as a major reason for underperformance in revenue generation. To remedy this, the County can do the following:
 - a. Conducting regular and random checks, and impose penalties on defaulters;

⁹ USSD is a real time mobile phone communication protocol that makes it possible for users to communicate with the mobile network computer/server.

- b. Increase the human and capital capacity for enforcement; and
 - c. Outsource to the private sector to undertake the enforcement.
- iv. **Create public awareness:** A good number of the public are not properly sensitised on revenue matters within the County. Some are not aware of their financial obligations to the County Government. There is a need to create awareness on the need to honour their financial obligations regularly and in time to the counties. Some of the ways the County can achieve this is by adopting an electronic system e.g., SMS to notify people on impending charges, advertise on media, public forums and churches on the existing revenue streams and financial obligations, and hold regular public forums to notify people of their fiscal obligations.
- v. **Royalty payments:** These are payments that counties get whenever the National Government or a permitted party exploits natural resources found within the respective county. Normally, these are percentages of the net revenues collected upon sale of these resources. The major mineral that the National Government can explore in this county is diatomite in Ndeiya, Limuru and pay royalties to the County Government of Kiambu.
- vi. **Better fiscal management:** This calls for prudent measures to manage the funds that have been collected. These measures can be rolled out at the point of collection, accounting, auditing and allocation to various expenditures. Some of these measures include:
 - a. Analyse budgets and expenditure to check on affordability;
 - b. Ensure value for money for goods and services rendered;
 - c. Monitor spending habits by only spending allocated funds for intended and priority purposes;
 - d. Ensuring transparency and tight spending controls;
 - e. Avoiding unnecessary wastage on expenditure;
 - f. Regular and consistent auditing of financial records;
 - g. Reduce the handling of money by officers by encouraging online payment; and
 - h. Encourage compliance by those living or working in the counties to fulfil their financial obligations regularly and in time.
- vii. **Introduction of Development levy:** These are fees which can be imposed on those intending to put up developments. The charges may vary depending on the size, location and type of development. The funds collected can then be channelled to servicing upcoming developments and upgrading of the existing physical infrastructure including roads, sewer trunks, drainage channels and extension of water services.
- viii. **Other sources:** Other sources include introducing charges on use of public cemeteries, county parks, and tourist sites. The funds collected can then be channelled to maintaining these facilities.

16 INTEGRATION OF STRATEGIC ENVIRONMENTAL AND SOCIAL ASSESSMENT

The preparation of this ISUDP was done together with a Strategic Environmental and Social Assessment (SESA). The purpose of SESA is to integrate environmental and social considerations into policies, plans, and programmes. It involves an evaluation of the environmental and social consequences of a proposed policy, plan or programme in order to ensure that they are fully included and appropriately addressed at the earliest appropriate stage of decision making in line with economic and social considerations. Section 57A of Environment Management and Coordination Act (EMCA) (amendments) 2015, all policies, plans, and programmes for implementation shall subject to Strategic Environmental Assessment.

In this light, this Plan has included a SESA on the potential impacts from the strategies, formulate alternatives, and develop mitigation strategies. SESA is complemented by an Environmental and Social Management Framework (ESMF), which establishes the principles, guidelines, and procedures for reducing, mitigating, and/or offsetting potential adverse environmental and social impacts, enhancing positive impacts and opportunities, and otherwise guiding potential investments towards compliance with relevant safeguards.

The SESA shall integrate social and environmental considerations into planning, leading to more sustainability of the expected outcomes of this Plan. Table 17-1 below summarises the key social and environmental impacts on various projects identified in the plan.

S. No.	Impacts	Sources of Impact	Suggested Mitigation Measures in the SESA	Interventions
1.	Impacts on air quality (emissions expected at construction sites)	<ul style="list-style-type: none"> Industrial uses, chemicals, mineral extractives, improper waste management, automobiles, construction sites, etc. 	<ul style="list-style-type: none"> SESA has indicated that the Environmental and Social Management Plan (ESMP) has provided adequate mitigation measures; and The Plan should ensure maintenance and enhancement of green zones to sequester carbon from emissions. Furthermore, this Plan can develop an air quality policy that binds developments within the planning area (such as the industrial sector) to control pollution and adhere to air quality regulations. 	<ul style="list-style-type: none"> Continuous monitoring has been identified in the implementation plan; and Preparation of Environmental and Social Impact Assessment (ESIA) to be carried out on specific projects.

S. No.	Impacts	Sources of Impact	Suggested Mitigation Measures in the SESA	Interventions
2	Noise and vibrations impact on activity sites	<ul style="list-style-type: none"> Excavators, mixers, and delivery trucks. 	<ul style="list-style-type: none"> Land-use planning should encourage the location of noisier activities (such as industrial and commercial uses) near main roads or peripheral areas, and the residential, recreational, educational uses inwards in the more serene areas; Establishment of buffer zones between different land uses will attenuate noise, further reducing the potential impacts; and Adherence to noise ordinances such as the Environmental Management and Coordination (Noise and Excessive Vibration Pollution Control) Regulations, 2009 and employment of noise attenuation mechanisms for point sources will mitigate the impact. 	<ul style="list-style-type: none"> The plan recommends the integration of Environmental Impact Assessment to be part of plan approval change of use approval to ensure compliance; and There is a need for the county to do continuous monitoring to ensure compliance.
3.	Impact on energy resources	<ul style="list-style-type: none"> The proposed development and project activities will result in higher demand for energy resources both during the execution of the planned developments and operation phases. 	<ul style="list-style-type: none"> Institute energy conservation measures in proposed developments while at the same time taking advantage of the renewable energy opportunities that the site and proposed developments provide, including solar energy, green buildings, etc 	<ul style="list-style-type: none"> County to promote green and renewable energy; Building plans to be approved subject to compliance to provision for solar energy; and Promote green building technologies and designs.
4.	Impact on soils and geology	<ul style="list-style-type: none"> Activities such as landscaping, excavation, quarrying, and carting away soil may lead to soil degradation from compaction and soil sealing leading to increased surface runoff and soil erosion; and Spillage of materials (such as oils, fuel, grease, paints, solvents, curing compounds, adhesives, acids, soil stabilisers and binders etc.) may also lead to soil contamination while the importation of soil in landscaping and fill activities may lead to the introduction of invasive species/ noxious weeds and pathogens such as bacteria, fungi and nematodes. 	<ul style="list-style-type: none"> It is considered that these impacts can be mitigated and should be adequately addressed in ESMPs developed. Impact on soils and geology is expected to be moderate. This is because the planners have taken adequate measures to ensure re-vegetation and management of stormwater in all cleared sites, landscaped areas and farmlands. 	<ul style="list-style-type: none"> Compel miners and landscapers to ensure revegetation to reduce soil erosion; The Plan has identified steep slopes, fragile areas as unsuitable for development activities. Care should also be taken in mining in such areas; and Mining companies to submit compliance certificates to the County.

S. No.	Impacts	Sources of Impact	Suggested Mitigation Measures in the SESA	Interventions
5.	Impact on water resources	<ul style="list-style-type: none"> ● The development is likely to lead to increased demand on water resources; and ● Generation and disposal of wastewater/effluent from the proposed developments have the potential to cause ground/surface water pollution and health hazards to human and aquatic life. 	<ul style="list-style-type: none"> ● Include measures to ensure adequate water supplies for the envisioned developments by the proposed ISUDPs need to be established in the project/site-specific ESMPs to ensure the conservation of water resources; and ● Management of construction wastewater, spill control mechanisms, and treatment of effluent will be required to ensure the protection of water resources. 	<ul style="list-style-type: none"> ● These proposals have been integrated into the water resource and supply strategies.
6	Solid Waste Generation	<ul style="list-style-type: none"> ● All proposed developments and land uses will generate a substantial amount of solid and liquid waste. During development phase materials (soil, rocks, vegetation) packaging materials (e.g., paper, polythene, plastic and metallic packaging), reject materials (including damaged bricks, concrete and mortar, plastics), wastewater, used oil among others will be generated. 	<ul style="list-style-type: none"> ● Adequate waste management measures are required since dumping/careless disposal both on-site and off-site may cause environmental pollution, interfere with aesthetics and lead to the creation of breeding grounds for vermin. 	<ul style="list-style-type: none"> ● Solid waste management strategies have been incorporated into the Plan.

S. No.	Impacts	Sources of Impact	Suggested Mitigation Measures in the SESA	Interventions
7.	Impacts on flora	<ul style="list-style-type: none"> ● An upsurge in catchment degradation through the clearing of vegetation may lead to loss of economically significant flora and degradation of environmentally important areas; ● Habitat alteration may include fragmentation of forested and other wildlife habitats through bush clearing, disruption of watercourses, the establishment of non-native invasive plant species, creation of barriers to wildlife movement and visual and auditory disturbance due to the presence of machinery, construction workers, associated equipment and development operations; and ● Environmental degradation on change of land use from agricultural land to a built environment was identified as a concern by the stakeholders. 	<ul style="list-style-type: none"> ● Some of the key management strategies include carrying out landscaping of different zones and maintaining the proposed green spaces as per the Plan; and ● The Plan should also ensure the protection of the riparian environment and establishment of a riparian reserve management plan. Based on the precautionary measures to be put in place, this impact is expected to be moderate. 	<ul style="list-style-type: none"> ● This has been identified as a challenge in the situational analysis and provided for in the strategies.
8.	Impacts on fauna	<ul style="list-style-type: none"> ● There would be visual and auditory disturbance due to the presence of machinery, construction workers, and associated equipment. There is also the likely loss and fragmentation of wildlife habitats. Some of the natural forests which act as habitat for wildlife are likely to be cleared to pave way for the proposed development. This will result in habitat loss and fragmentation. Changes that may alter the existing natural conditions are known to impact negatively on wildlife. 	<ul style="list-style-type: none"> ● A wildlife management plan can be developed in collaboration with the Kenya Wildlife Service (KWS) to determine the carrying capacity of the conservation area, translocations and/or introduction of any new wildlife species. Since the Plan has recommended preservation of areas ecosystems, this impact will be moderate. 	<ul style="list-style-type: none"> ● Collaboration between the County Government, KWS, KFS in management of areas with flora and fauna.
9.	Impacts on the socio-economic environment	<ul style="list-style-type: none"> ● Weak inclusion of hawkers and small-scale business operators in the local economy. 	<ul style="list-style-type: none"> ● Social inclusion in business planning by including hawkers and other small-scale business operators to cushion them from the uncompetitive business environment. 	<ul style="list-style-type: none"> ● The Plan has identified the need to engage with the business operators to increase their participation in the local economic activities.



REPUBLIC OF KENYA



COUNTY GOVERNMENT OF KIAMBU

PART IV

IMPLEMENTATION, MONITORING, EVALUATION AND REPORTING

17 PLAN IMPLEMENTATION FRAMEWORK

17.1 Overview

The new planning approach under devolution provides counties with the statutory duty with the considerable widening of the scope and thread running through both plan-making and implementation by establishing structures and networks that influence strategies and investment. This chapter addresses the need for the concerned authorities with functions in the county to consider conformity to this Plan by joining-up across all sectors and provide opportunities for promoting or improving the economic, social and environmental well-being of the county and to the achievement of the sustainable development in Kenya. All in all, spatial planning, under county governance institutional context, is a tool for coordinating spatial equity and integrating balanced redistribution of resources through explicit and agreed policy framework.

17.2 Role of the County Planning Unit (CPU)

The County Planning Unit (CPU) as provided in the County Governments Act, 2012, clause 105 has the strategic role and duty of integrating and coordinating all County sectors and provide a degree of certainty and consistency across the entire planning and implementation cycles. However, this unit is rarely functional in most Counties. For the successful implementation of this Plan, this unit needs to be strengthened to play this useful role.

The CPU is headed by the County Director of Physical and Land Use Planning. This is to enable all sectors to be informed by the spatial framework as reflected in the ISUDPs amongst other spatial plans. Figure 18-1 provides a detailed representation of the role of the CPU from an institutional and governance framework in line with their power relations.

Under this Plan, the role of the CPU will include coordinating the implementation and monitoring. The CPU will ensure that the processes, mandates, and implementation and monitoring are well coordinated. In carrying out their role, the CPU will use the Results-Based Management (RBM) system, in order to compliance and timely delivery of the programmes and projects. The CPU will ensure that the proposed programme and project execution cycles are broken into 5-year County Integrated Development Plans (CIDPs) and further cascaded into Annual Action Plans, that feed into individual performance targets and deliverables.

17.3 Plan Implementation at Decentralised Units

Under Part VI Section 48 of the County Governments Act, 2012 on Decentralised Units, No.13 of 2011, each County Government shall be decentralised to urban areas and cities (City or Municipality) established in accordance with the Urban Areas and Cities Act, 2011; sub-counties equivalent to the Constituencies and Wards within the county established under Article 89 of the Constitution of Kenya and Section 26; as well as

villages as outlined in the County Governments Act. The objective of this is to transfer sovereign authority for decision-making, resource allocation and management to quasi-autonomous units.

The Executive and Legislative arms of the County Government have complementary roles in executing the recommendations in the County Plans. Some functions handled by the National Government are translated into the County planning and implementation framework through the County Inter-Governmental Forum provided for in Section 54 of the County Governments Act, that is chaired by the County Governor.

As the head of the County Government, the Governor occupies the pivotal role of executive authority through the County Executive Committee and as the symbol of political sovereignty in the County Assembly for the execution of County functions and oversight, respectively. Both arms of the government must operate within established processes and deploy the tools of performance appraisal. The implementation mechanisms should be sufficiently flexible to adapt to rapid change without adverse impacts.

17.4 Priority Programmes Framework

17.4.1 CORE PILLARS OF FRAMEWORK

The CPU, as per the County Governments Act 105(2), should set into motion the translation of ‘abstract concepts’ to ‘real development’ through an implementation plan with clear outcomes, provisions for monitoring and evaluation and clear reporting mechanisms. Figure 17-1 illustrates the core pillar and the three branches that make up this fundamental plan implementation framework:

- The core pillar is the internal governance mechanism through capacity building that ensures better inter-and intra-sector engagement so that public, private and third sector service providers can work together for optimum solutions;
- Premised to the core pillar are three branches defining the aligned programmes that address the different needs of different people and places informed by the plan; and
- Each branch has specific projects and services that ensure public investment is made at the relevant places and services where most needed.

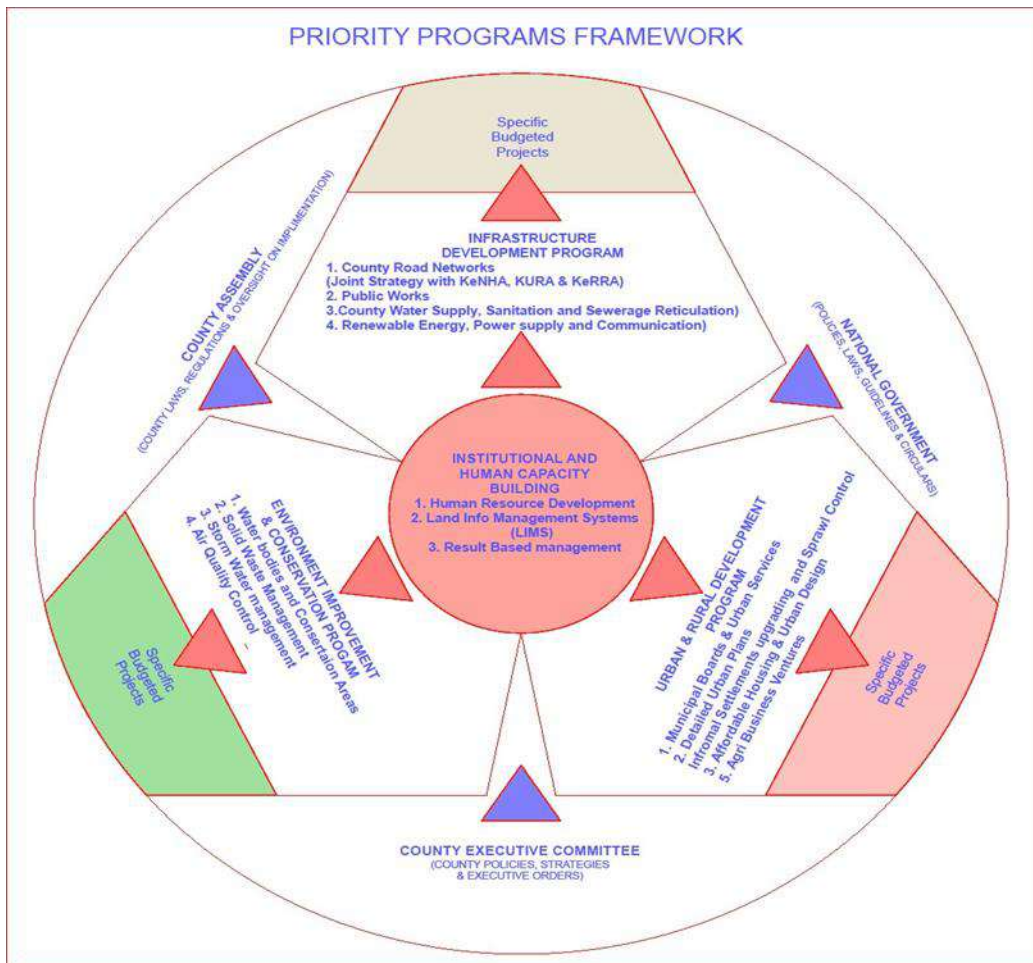


Figure 17-1: Priority Program & Projects Framework

Source: VisionRI

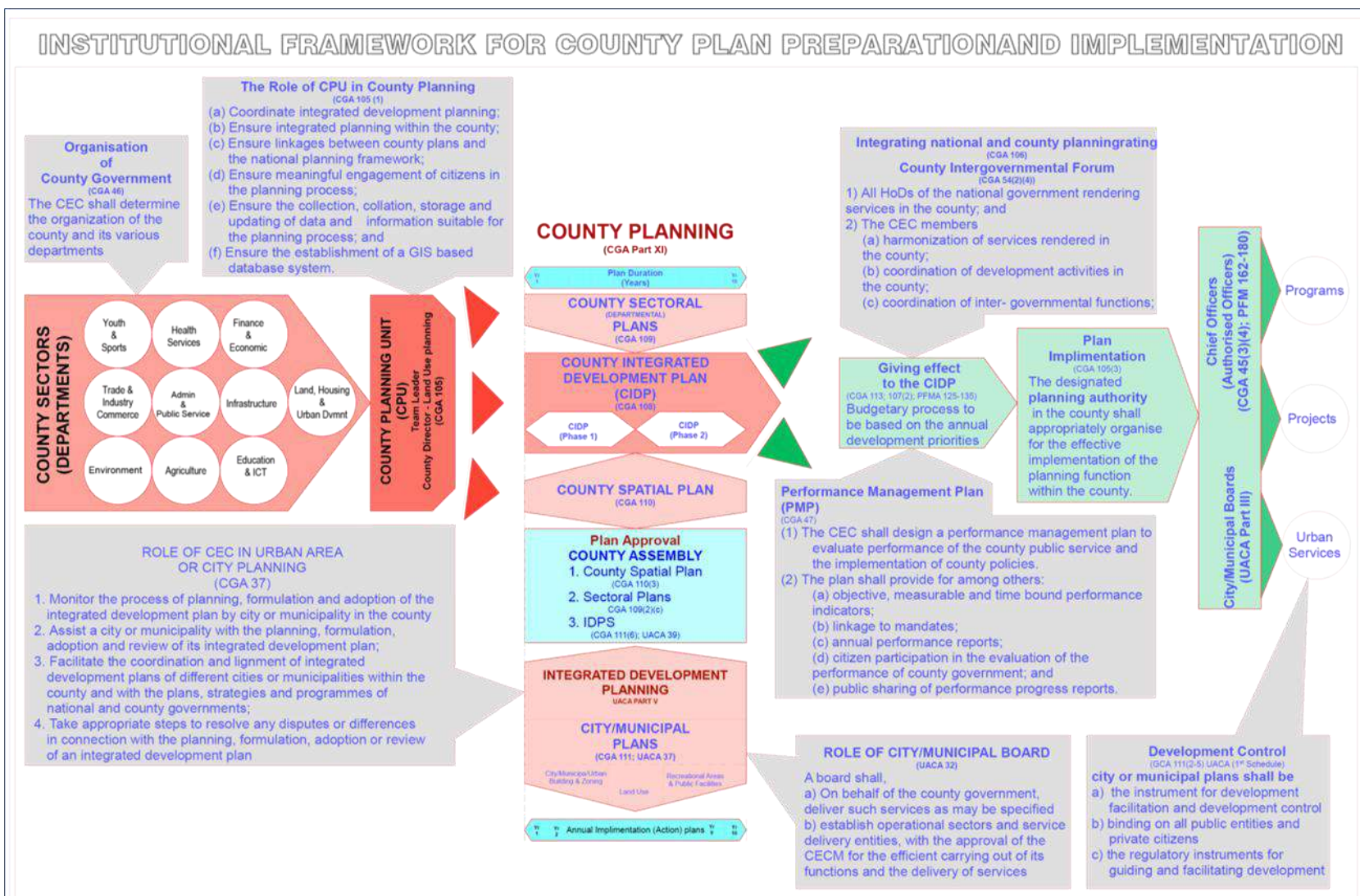


Figure 17-2: Framework for Plan Preparation and Implementation
 Source: VisionRI

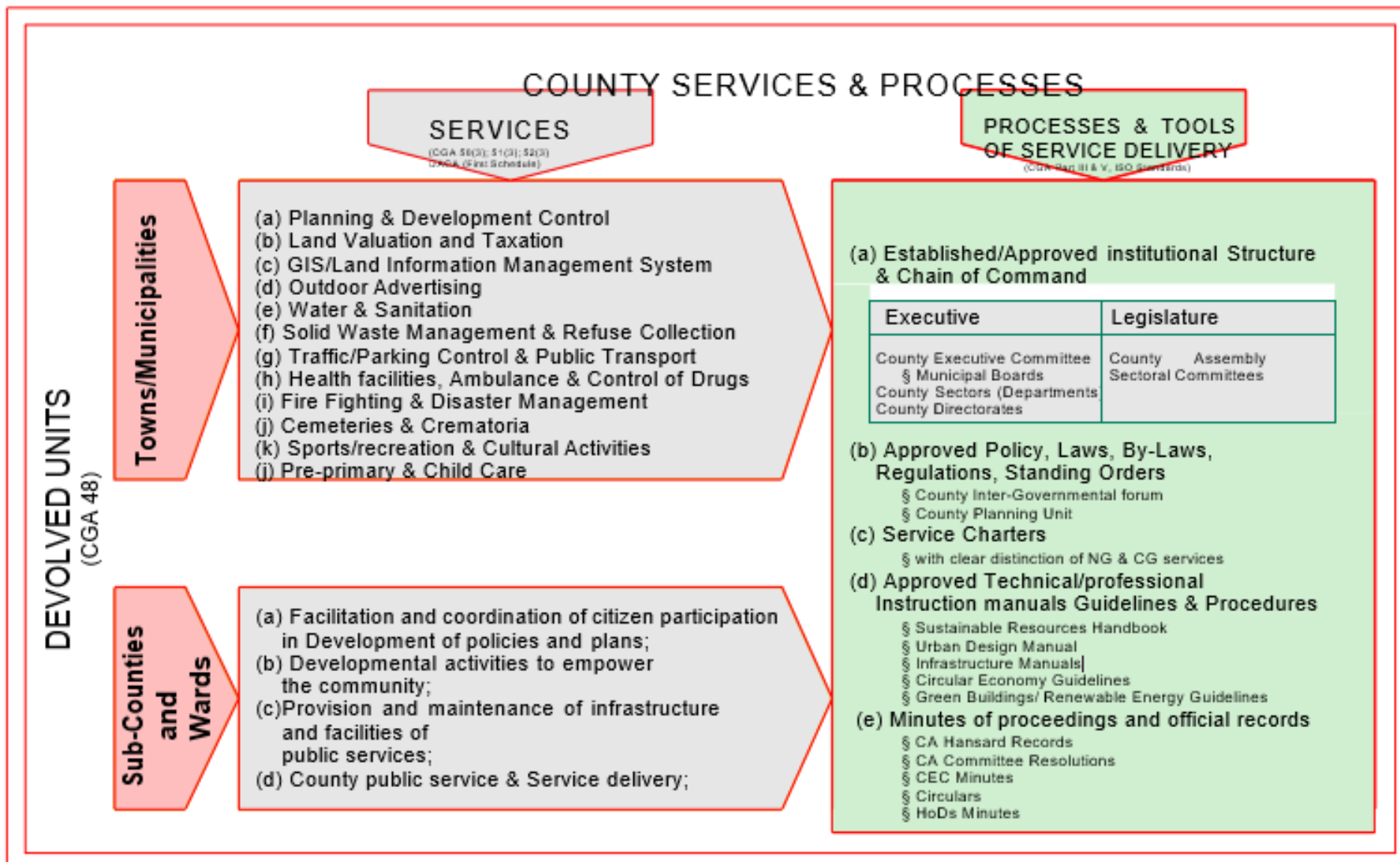


Figure 17-3: County Services & Processes

Source: VisionRI

17.4.2 INSTITUTIONAL AND HUMAN RESOURCE CAPACITY BUILDING

This will require structuring under the RBM guidelines, recruiting, training and retaining professionals in all technical and managerial skills capable of setting up and running ICT systems, including a land information management system, exercise a clear chain of command and reporting methods and active stakeholder engagement, partnerships and feedback.

17.4.3 HUMAN RESOURCE FRAMEWORK

The County from the Joint Capacity Assessment and Rationalisation Report of 2015 came up with a human resource framework for its Legislative and Executive arms. The Executive comprises ten ministers who are in charge of various County departments.

The organogram below shows the proposed organisational structure both at the macrostructure and the departmental structure.

The Report also proposed the optimal staffing level which will ensure that no department is understaffed. The table below outlines the staffing proposed for the Department of Planning. The department should, however, work closely with other departments such as the Environment Department.

Table 17-1: Existing Human Resources and Proposed Levels

Resource categories	Results of the analysis	County proposed an optimal staffing level
County Executive Member – Physical Planning		
Chief officer	0.6	1
Director	2.5	3
Planners	18.6	19
Development control officer	4.7	5
Enforcement officer	12.3	12
Secretary	14	14
Driver	14	14
Support staff	30	30
Planning clerks	24	24
Accountant	3	3
Procurement officer	3	3
Stores personnel	3	3
Subtotal	129.7	131

Source: Kiambu County Joint Capacity Assessment and Rationalization Report of 2015

17.4.4 PUBLIC/COMMUNITY PARTICIPATION FRAMEWORK

This framework is underpinned by Part VIII on Citizen Participation of the County Governments Act No.17 of 2012 and, The Kiambu County Citizen Petition and Participation No. 9 of 2016. The two Acts generally highlight the principles of the citizens’ participation in the counties.

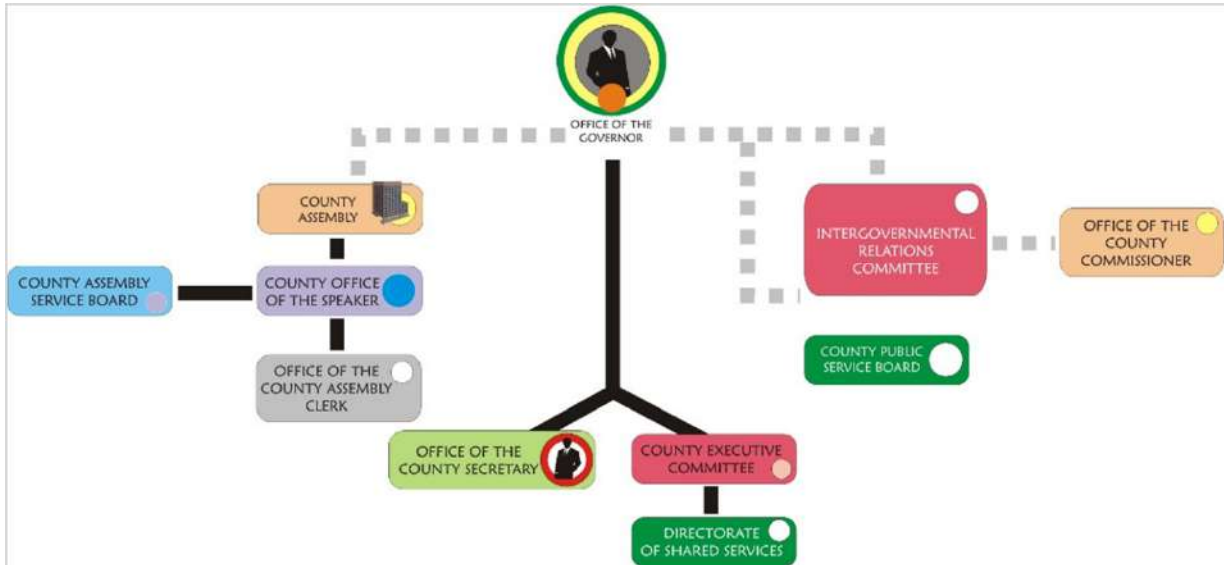


Figure 17-4: Human Resource Framework for Kiambu County’s Housing lands and physical planning Ministry

Source: Kiambu County Joint Capacity Assessment and Rationalization Report of 2015

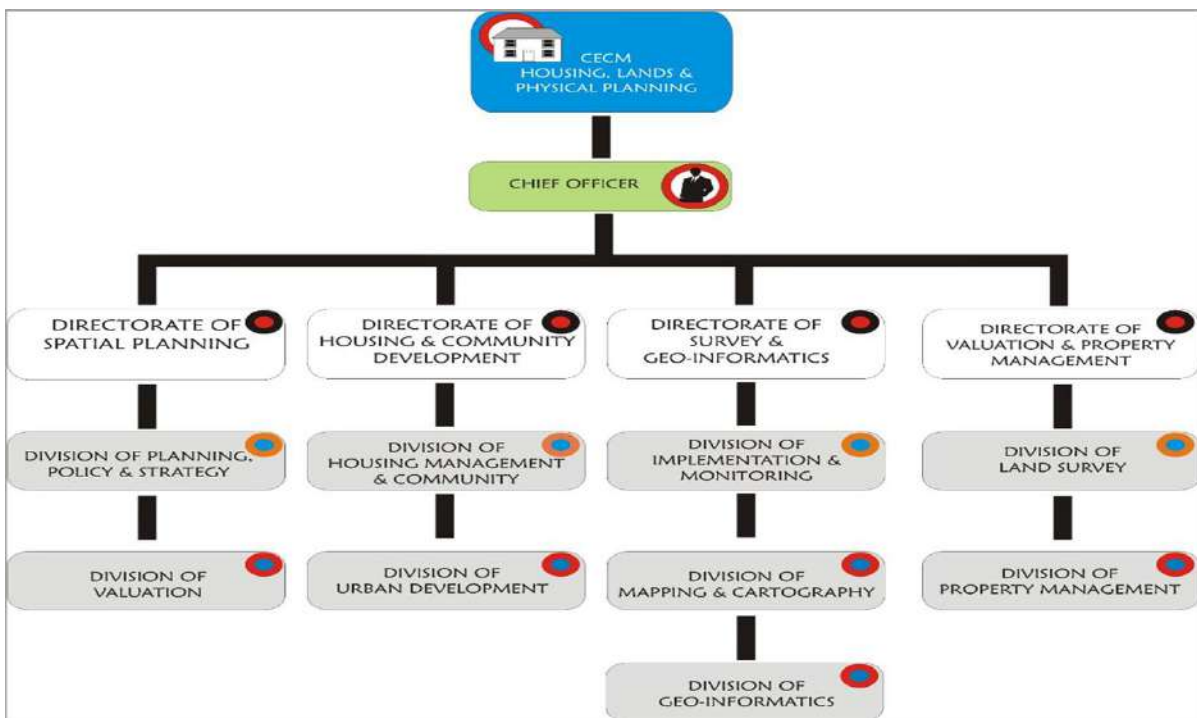


Figure 17-5: Human Resource Framework for Kiambu County’s Housing Lands and Physical Planning Ministry

Source: Kiambu County Joint Capacity Assessment and Rationalisation Report of 2015

17.5 Proposed Quick-Win and Sectoral Projects

The projects to be implemented under the Plan is based on two approaches i.e., the Quick-Win and Sectoral Projects. The quick wins projects are based on the Action Area Plans or other priority projects while the sectoral projects have been identified based on the different thematic areas and sectors. Below Table 17-2 is a summary of Quick-Win Projects.

Sectors	Projects	Approx. Cost (Ksh.)	Lead Agency
Solid waste management	Provision of solid waste bins major urban centres at a strategic location.	20M	CGK
	Provide waste receptacle within residential and commercial areas.	30M	CGK
	Construct one transfer station.	To be determined	CGK
Decongestion of CBD	Complete construction new market and relocate traders and hawkers.	50M	CGK
	Provide appropriate parking spaces Construct multi-storey parking slots.	150M	CGK and Private sector
Movement, accessibility and circulation within the CBD	Provide NMT facilities along Manguo Road, Hospital Road, Rongai Market Road, Biashara street and Gitungo.	120M	CGK
	Upgrade pavements to bitumen standards.	300M	CGK
	Provide drainage channels.	50M	CGK
	Rehabilitation of the railway line Integrate bus park with the railway station.	250M	CGK
Densification of CBD	Encourage densification by allowing developers within the CBD to build up to 8 floors.	10M	CGK
	Planning to promote mixed-use land uses within the CBD.	10M	CGK
	Detailed planning for the redevelopment of bus terminus to allow densification of the buildings.	20M	CGK,
	Reclaim all public land together with respective deed plans to provide land for community facilities.	2M	CGK, NLC
Aesthetics of the CBD	Green spaces/open spaces to improve the aesthetics of the town for purposes of recreation and leisure.	5M	CGK
	Create a footbridge linking the fresh-produce and clothes markets.	10M	CGK
	Relocate traders to designated market spaces.	3M	CGK

Source: VisionRI & Urban Lines Consultants

Below Table 17-4 shows the Sectoral Programmes and Projects Implementation matrix

Time Frame	County Government Departments	National Govt. and Agencies	Score	Locality
1-2 yrs. Short term (ST)	<ul style="list-style-type: none"> Public Service & Admin; Roads, Public Works & Infrastructure; Health Services; 	<ul style="list-style-type: none"> KIWASCO; Kenya Power KPLC; KeRRA; 	(Score)	WARDS
3-5 yrs Medium- term (MT)	<ul style="list-style-type: none"> Education, Vocational Training & ICT; Youth, Sports & Culture; Agriculture, Livestock & Fisheries; 	<ul style="list-style-type: none"> KeNHA; KURA; ERC; 	1 Actor	
6-10 yrs. Long term (LT)Land	<ul style="list-style-type: none"> Trade, Tourism, Industry, Cooperatives; Land, Housing, Physical Planning & Urban Development; Health Services; Finance & Economic planning; and Environment, Water & Sanitation. 	<ul style="list-style-type: none"> WRA; NEMA; NLC; KEMSA; KRC; NACADA; National Government; and Development partners. 	2 Actors	
			3 Actors	
			4 Actors	
			5 Actors	

Table 17-2: Programmes Implementation Matrix

Programme	Project	Timeframe	Driving Department	Other Implementing actors	Number of Actors	Benefiting Ward/Towns/Market	Approx. Cost
Physical Infrastructure							
Water supply	Extend piped water in underserved areas including Karanjee, Kamirithu, Bibirioni, and Industrial Area.	ST	Water, Environment, Energy and Natural Resources	WRA NEMA	4	Karanjee Zone – 350 Connections Kamirithu – 200 Connections Bibirioni – 250 Connections Industrial Area – 100 connections	200M
	Construct water pans in strategic regions in Ndeiya ward.					Ndeiya	100M
	Carry out a safety audit of existing dams and water reservoirs.					All Wards	20M
	Review existing water company policy in line with pro-poor strategies i.e., affordability.						15M
	Adopt modern technology to support in monitoring unaccounted water due to illegal connection, spillage and vandalism.	MT	Water, Environment, Energy and Natural Resources	KIWASCO Development Partners		All Wards	150M
Sanitation and wastewater	Improve and extend sewer networks in urban and peri-urban areas.	ST	Water, Environment, Energy and	WRA NEMA Private Sector	4	Industrial Area, Kwa Mbira, Mistri, Limuru Town, Karanjee	200M

Programme	Project	Timeframe	Driving Department	Other Implementing actors	Number of Actors	Benefiting Ward/Towns/Market	Approx. Cost
	Promote affordable and sustainable sanitation technologies at both household and commercial areas e.g., bio-digesters, etc.		Natural Resources			Thigio, Rironi, Kerwa, Tigoni, Ngecha, Kabuku, Bibirioni, Kamirithu	80M
Solid Waste Management	Establish waste incinerators for hazardous waste e.g., medical and other biochemical waste.	ST	Water, Environment, Energy and Natural Resources Health Services	NEMA	3	Limuru Town, Tigoni, Thigio, Ngecha, Kabuku, Rironi, Bibirioni, Kamirithu and Rwambiri	200M
	Provide transfer stations in towns and market centres i.e., Limuru town, Kabuku, Kamirithu, Bibirioni, Thigio, Ngecha, Tigoni, and Rironi.	MT					250M
	Provide waste receptacles and waste bins.						
	License small scale waste collectors in hard-to-reach areas including informal settlements.						
	Creating awareness on waste management practices.						5M
	Review and enforce environmental laws and regulations.						2M

Programme	Project	Timeframe	Driving Department	Other Implementing actors	Number of Actors	Benefiting Ward/Towns/Market	Approx. Cost
Energy	Test and select between integrated solar PV and conventional on-grid street lighting options.	ST	Roads, Public Works & Infrastructure Land, Housing, Physical Planning & Urban Development	ERC NEMA Kenya Power PLC	4	Limuru Town – CBD Other Town Centres	5M
	Promotion of solar/biomass, wind (renewable energy) options.	ST					5M
	Domestic power last-mile connection.	ST					
	Establish 50 MW wind power plant on a 210 acres land parcel at (Mwanya wa Ruhuhu) through PPA arrangement.	MT					Ndeiya Ward Uncovered settlements
ICT Infrastructure	Connect all TVET Institutions to ICT infrastructure to promote innovations.	ST	Youth Affairs, Sports, ICT & Communication	Land, Housing, Physical Planning & Urban Development Roads, Public Works & Infrastructure Development Partners	5	All wards	150M
	Connect all Government facilities with ICT infrastructure to enhance service delivery and efficiency.	ST					100M
	Expand internet coverage and access using fibre optic lines	MT					300M

Programme	Project	Timeframe	Driving Department	Other Implementing actors	Number of Actors	Benefiting Ward/Towns/Market	Approx. Cost	
	across the Sub-County.							
Roads and Transport	Prepare transportation master plan for the entire Sub-County.	MT	Land, Housing, Physical Planning & Urban Development Roads, Public Works & Infrastructure	KeRRA KeNHA KURA Police NLC	3	Limuru East	200M	
	Open up missing link roads in Limuru East and Ndeiya.						2B	
	Establish road reserves complete with NMT, pedestrian pathways and appropriate stormwater drains.	ST					Limuru town, Karanjee, Bibirioni, Tigoni, Kabuku, Kamandura, Ngurubi and Makutano roads	500M
	Enforcement of traffic management guidelines through Retrain Road users and enforce set traffic laws and regulations.	MT			KeRRA KURA Police	4	Limuru town and all market centres	5M
	Construction of parking bays and spaces.	ST						60M
	Expand roads below 9 metres by reclaiming encroached roads (Estimated Kms 150).	ST						Rironi, Ngecha, Kabuku, Manjiri, Karanjee, Bibirioni, Kamirithu
	Carry out assess and enforcement of development control (Physical Planning) guidelines on all roads to	MT						50M

Programme	Project	Timeframe	Driving Department	Other Implementing actors	Number of Actors	Benefiting Ward/Towns/Market	Approx. Cost	
	reduce encroachment and to ensure subdivisions are providing adequate road reserves. Permit nothing below 9 m.							
	Upgrade roads in Limuru to bitumen and gravel standards placing priority on roads that lead to important facilities e.g., hospitals, fire stations, education facilities and into residential areas in case of emergencies.	LT		KeRRA KeNHA KURA NLC	4	Entire Sub-County	3B	
	Upgrading and maintenance of feeder roads.	ST	Roads, Public Works & Infrastructure County Gov. of Kiambu	KeRRA KPLC KURA	3	Ndeiya Ward	800M	
	Strengthen key Sub-County roads and market centres.	MT						
	Construction of NMT.	MT			KURA	2		
	Revive commuter rail transport and modernise the station at Limuru.	MT			KRC	2	Limuru Town, Tilisi halt	1B
	Road expansion to 12-meter carriageway and rehabilitation.	LT	Roads, Public Works & Infrastructure	KeRRA KeNHA KURA	3	Limuru, Bibirioni, Rironi, Kabuku, Thigio, Nderu, Nguirubi	2B	
Stormwater drainage	Mass sensitisation on rainwater harvesting and	ST	Roads, Public Works &	County Government of	2	All wards	700M	

Programme	Project	Timeframe	Driving Department	Other Implementing actors	Number of Actors	Benefiting Ward/Towns/Market	Approx. Cost
	storage.		Infrastructure	Kiambu KURA			
Social Infrastructure							
Education	Enhancement of education facilities in the Sub-County through encouraging investment in the sector.	MT	Education, Vocational Training & ICT	National Government Development Partners	2	Entire Sub-County	200M
	Increase the number and enhance the performance of ECDEs, Primary, Secondary and Tertiary Institutions.	MT				In all Wards	500M
	Equip and establish new village Polytechnics and TVETS.	ST				Kamirithu, Ngarariga /Bibirioni, Thigio, Nderu, Karanje, Ndiuni, Rironi	800M
Housing	Develop a housing masterplan and strategy for the Sub-County.	ST	Land, Housing, Physical Planning & Urban Development	Roads, Public Works & Infrastructure UN-Habitat Development partners	2	All wards Thigio, Bibirioni, Limuru CBD, Rironi, Ngecha	20M
	Map out and establish public/social housing in the Sub-County.	ST					20M
	Promote densification in high-density residential areas.	MT					5M
	Development of social housing within Limuru and putting up 12,500 housing units under an	LT					25B

Programme	Project	Timeframe	Driving Department	Other Implementing actors	Number of Actors	Benefiting Ward/Towns/Market	Approx. Cost
	affordable rent-to-own scheme.						
	Adoption of appropriate and affordable building technologies.	MT					5M
	Improve the housing standards for low-income settlements.	MT					100M
	Review the housing approval process in terms of time and cost.	ST					-
	Upgrade County houses to modern residences.	MT				Ngecha, Tigoni and Limuru Central	500M
Health Services	Enhancement of Tigoni Level 4 Hospital and morgue.	MT	Health Services	KEMSA	2	Serving the entire Sub-County	20M
	Provision of extra ambulances.	ST					
	Construct a health centre in Limuru Eastward.	MT					Limuru East
	At least 1 ambulance in every health centre.	MT		Ministry of Health	2	All health centres	30M
	Establishment of rehabilitation centres for drugs controls at Bibirioni.	MT		NACADA	2	Bibirioni	15M
Cemeteries	Identify land set aside for cemeteries, and where necessary acquire land.	ST	Land, Housing, Physical Planning & Urban Development	Health Services KEMSA	2	At least one in Ward	5M

Programme	Project	Timeframe	Driving Department	Other Implementing actors	Number of Actors	Benefiting Ward/Towns/Market	Approx. Cost
	Establishment of a cemetery and crematorium at Kiawaroga.	MT	Land, Housing, Physical Planning & Urban Development	Health Services NEMA	3		20M
Social amenities and facilities	Rehabilitation of Limuru stadium.	ST	Youth, Sports & Culture	Development Partners	1		300M
	Construction of community centres - Social halls, Theatre, Library.	LT	Youth, Sports & Culture	Development Partners	1	Each Ward	700M
	Establishment of a Town Library.	LT	Education, Vocational Training & ICT	Youth, Sports & Culture Development Partners	2	Limuru, Bibirioni, Kamandura, Ndeiya and Thigio	25M
	Construction of a performance Arts theatre at Kabuku.	LT	Youth, Sports & Culture	Education, Vocational Training & ICT Development Partners	1	Kabuku, Limuru Town	10M
	Construction of a Cultural Museum and a historical monument within Limuru.	LT	Youth, Sports & Culture	Education, Vocational Training & ICT Development Partners	1	Kamirithu, Limuru Town, Buxton Tunnel	10M
Local Economy							
Abattoirs	Relocate hide and skins processing (at Manguo Area).	MT	Agriculture, Livestock & Fisheries	Trade, Tourism, Industry, Cooperatives Development Partners	2		2M
	Expansion of the slaughterhouse at	ST			1		30M

Programme	Project	Timeframe	Driving Department	Other Implementing actors	Number of Actors	Benefiting Ward/Towns/Market	Approx. Cost
	Limuru.						
Tourism and Hospitality industry	Promote and support events grounds.	ST	Trade, Tourism, Industry, Cooperatives	Youth, Sports & Culture Development Partners	1		2M
	Promote hotels, guest houses and homestays.	LT	Trade, Tourism, Industry, Cooperatives	Private developers	2		3M
	Conference facilities.	LT	Trade, Tourism, Industry, Cooperatives		1		
	Revival of Buxton Tunnel as a tourist attraction.	ST	Trade, Tourism, Industry, Cooperatives	Roads, Public Works & Infrastructure KRC	2	Limuru Central	5M
Promote trade, commerce and cottage industries	Construct market sheds for farm produce.	ST	Trade, Tourism, Industry, Cooperatives	Agriculture, Livestock & Fisheries	2	All major markets	200M
	Construct Curios/handicraft.	ST	Trade, Tourism, Industry, Cooperatives	Agriculture, Livestock & Fisheries	2	Tigoni, Kabuku	10M
	Construct Jua-kali sheds.	ST	Trade, Tourism, Industry, Cooperatives	Youth, Sports & Culture	1		50M
	Development of agri-business cooperative societies in all wards.	ST	Trade, Tourism, Industry, Cooperatives	Agriculture, Livestock & Fisheries	2		8M
	Provision of agricultural extension services to the rural population in all	ST	Agriculture, Livestock & Fisheries	Development partners	2	All wards	5M

Programme	Project	Timeframe	Driving Department	Other Implementing actors	Number of Actors	Benefiting Ward/Towns/Market	Approx. Cost
	wards.						
Urban Development Management							
Urban Services	Preparing detailed urban plans markets in Limuru.	ST	Land, Housing, Physical Planning & Urban Development	Private Consultants		Bibirioni, Rironi, Kabuku, Thigio, Nderu, Nguirubi	30M
	Informal settlements upgrading through planning, surveying and titling and provision of basic infrastructure.	ST	Land, Housing, Physical Planning & Urban Development	Development partners			50M
	Data capture for Land Information Management System (land administration, valuation and development control).	ST	Land, Housing, Physical Planning & Urban Development				-
	Strengthen Municipal board structures as defined in UACA.	ST					50M
	Institutionalise urban services in Limuru Sub-County as defined in the UACA Schedule 1.	ST	Land, Housing, Physical Planning & Urban Development	Public Service & Admin			-
	Data capture for Land Valuation and Taxation.	ST	Land, Housing, Physical Planning & Urban Development				10M
	Equipping development control and enforcement	ST	Land, Housing, Physical Planning		1		5M5

Programme	Project	Timeframe	Driving Department	Other Implementing actors	Number of Actors	Benefiting Ward/Towns/Market	Approx. Cost
	section in each ward.		& Urban Development				
	Capacity enhancement through staffing, skills training and performance management.	ST	Public Service & Admin	National Government Land, Housing, Physical Planning & Urban Development Development partners	4	Sub-County	5M
	Municipal buildings, furniture and equipment.	MT	Public Service & Admin Land, Housing, Physical Planning & Urban Development	Development partners	3	Sub-County	50M
Urban Design							
Urban Public Spaces and recreational grounds	Improvements of public parks, streetscape, outdoor furniture, monuments and heritage sites.	MT	Environment, Water & Sanitation	Corporate entities	1	Sub-County/Sub-County	20M
Regulation of Outdoor adverts and trade promotional activities	Develop a comprehensive policy on outdoor advertisements and signage.	ST	Land, Housing, Physical Planning & Urban Development		1	Sub-County/Sub-County	2M
Street Naming	Develop guidelines on	MT	Public Service &	Development	4	Sub-County	

Programme	Project	Timeframe	Driving Department	Other Implementing actors	Number of Actors	Benefiting Ward/Towns/Market	Approx. Cost
and Address Systems	street naming and identify zones for street address systems in partnerships with the neighbourhood associations.		Admin	partners			
			Land, Housing, Physical Planning & Urban Development				2M
			Roads, Public Works & Infrastructure				
Environment & Conservation							
Natural Resources	Preparation of an inventory of all ecologically sensitive areas.	ST	Environment, Water & Sanitation	Development partners NEMA	3	Sub-County	3M
	Protection of environmentally sensitive areas.	ST	Environment, Water & Sanitation	NEMA KFS	2	Sub-County	
	Beautification through tree planting and shrubs.	MT	Environment, Water & Sanitation	Development partners	3	Sub-County	10M
	Delineate and gazette natural forests and other key resource features e.g., dams & historical		Land, Housing, Physical Planning & Urban Development				10M

Programme	Project	Timeframe	Driving Department	Other Implementing actors	Number of Actors	Benefiting Ward/Towns/Market	Approx. Cost
	sites.						
	Delineate riverine systems, wetlands reserves.	ST	Environment, Water & Sanitation	WRA NEMA National Government Development partners	5	Sub-County	15M
	Identify, map and develop policy on sustainable extraction of natural resources e.g., diatomite natural construction stones, sand harvesting, forests, etc.	MT	Public Service & Admin Land, Housing, Physical Planning & Urban Development Finance & Economic planning Environment, Water & Sanitation	NEMA Development partners	6	Sub-County	10M
Disaster Risk Reduction	Carry out a safety audit of all buildings and issue a compliance certificate.	ST	Public Service & Admin		1	Sub-County	5M

Programme	Project	Timeframe	Driving Department	Other Implementing actors	Number of Actors	Benefiting Ward/Towns/Market	Approx. Cost
	Periodic inspection of public, institutions and industrial facilities for fire and occupational safety.	ST	Public Service & Admin Trade, Tourism, Industry, Cooperatives Land, Housing, Physical Planning & Urban Development Environment, Water & Sanitation	WRA, NEMA, National Government	7	Sub-County	
	Rehabilitation of firefighting equipment (fire engines, hydrants etc.)	ST	Roads, Public Works & Infrastructure	National Government	3	Sub-County	50M
				Development partners			
	Routine inspection of dams.	ST	Roads, Public Works & Infrastructure	National Government	4	Sub-County	2M
			Environment, Water & Sanitation	Development partners			
Noise, water and air Pollution	Noise pollution control in construction sites, public places and residential neighbourhoods	ST	Public Service & Admin	NEMA	4	Sub-County	
			Environment, Water & Sanitation	Development partners			2M

Programme	Project	Timeframe	Driving Department	Other Implementing actors	Number of Actors	Benefiting Ward/Towns/Market	Approx. Cost
	Water quality monitoring.	ST	Environment, Water & Sanitation	Water & Sanitation Utility Company, WRA, NEMA, Development partners	4	Sub-County	2M
	Air quality monitoring in public places (transport termini, industries etc.).	ST	Environment, Water & Sanitation	WRA NEMA Development partners	4	Sub-County	2M
Protection of agricultural lands	Delineation of tea plantation zones and regions within Limuru Sub-County Recognition of Neighbourhood Associations and operational zones Development of Limuru Highlands Zonal Spatial Plan.	ST	Ministry of Lands and Physical Planning	Development Partners Private Sector	4	Limuru Highlands	5M

17.6 The Priority Sectoral Programmes and Projects

For ease of implementation, the final out outputs of the Plan are specific projects and urban services based on the specifics thematic and sectoral areas. The projects can be grouped into three broad programme areas:

- Infrastructure development programme: Comprising the roads networks, public works, water supply networks and sewerage reticulation and renewable energy, power supply and communication improvement;
- Urban and rural development programme: Setting up of municipal board structures, detailed urban plans for towns and market centres to manage urban sprawl, services systems, development control and enforcement, affordable housing and community development services; agricultural extension and agri-business cooperative support to rural-based economic activities; and
- Environmental improvement and conservation programme: Water bodies and conservation activities, stormwater drainage and solid waste management and air quality control activities.

17.7 Proposed Capital Investment Financing

The proposed programmes and projects will be financed using the following approaches:

- Preparation of detailed sectoral plans for each programme and secure budgetary allocation through the CIDP process;
- Financing by National Government and agencies in major infrastructure such as roads, energy, water supply and sanitation;
- Factor specific projects within the bilateral funding programmes such as Kenya Urban Support Programme (KUSP), Kenya Informal Settlement Improvement Programme (KISIP) and NaMSIP; and
- Direct private sector investment and partnership with the County in housing, education, industrial, health, etc.

18 MONITORING, EVALUATION AND REPORTING

18.1 Procedure for Monitoring

The purpose of monitoring and evaluation is to assess the effectiveness of the implementation of the Plan. A fully functional M&E system is important for the implementation and review of the plan to ensure it delivers the intended results.

An effective M&E requires inter-agency/departmental coordination to ensure inclusiveness which reflects the multi-sectoral framework of the Plan.

M&E verifies whether the activities of each county's priority project or programme are happening according to planning timelines and targets presented in the County Integrated Development Plan (CIDP); and whether resources are being used correctly and efficiently.

On matters of physical and land use planning, the CoK (2010) requires the Department of Physical Planning and National Land Commission (NLC) to work in concert. The National Spatial Plan has spelt out the need to develop performance indicators to facilitate the monitoring of the plan.¹⁰

NLC has developed the Urban Land Use Planning Monitoring and Oversight Guidelines to "provide a lawful basis for engagement between the County Governments as planning authorities responsible for preparing, approving, implementing and reviewing Urban Land Use Plans and the National Land Commission as a monitoring and oversight agency over land-use planning."¹¹

The guidelines provide for:

- Systematic, purposeful and regular checking of the plans;
- Documenting and providing feedback on land use planning activities undertaken by planning authorities;
- Ensure the quality of the planning outputs and outcomes;
- Adherence to the Constitution, relevant policies, legislation, planning standards and guidelines;
- Take remedial actions to mitigate inappropriate practices, and hold the planning authorities accountable for their actions so as to enhance performance; and
- Guide and systematise the practice of preparing, implementing and reviewing Urban Land Use Plans in the country.

¹⁰ Government of Kenya, 2016:254

¹¹ Republic of Kenya (2016), Urban Land Use Planning: Monitoring and Oversight Guidelines – National Land Commission

18.2 The M&E Role

M&E process for the programs and projects is best bound within the County Planning Unit to reflect the spatial, social, and economic development programmes and projects in the County to ensure that the ideals of the ISUDP are funded, completed and commissioned.

18.3 Planning Indicators of Progress

An effective physical and land use planning M&E system should be domiciled within:

- National policies such as Vision 2030, National Land Use Policy, Urban Policy, Housing policy, etc.;
- County planning and development framework as provided in the County Government Act, 2012, UACA, Physical Planning and Land Use Act 2019, etc.;
- Public participation with an emphasis on grassroots aspirations; and
- Effective partnerships to ensure inclusivity, resource mobilization and timely delivery of programmes and projects.

Table 18–1 below defines the physical planning indicators.

Table 18–1: Physical Planning Indicators

Physical planning indicators	Means of verification
Targets Indicators	
1. Legal and Policy Compliance	Compliance with ISUDP and Urban Dev. Sector with Vision 2030.
	Compliance with Urban Agenda and National Spatial Plan.
	Compliance with relevant legislation.
	Compliance with relevant policies.
	Compliance with NLC guidelines.
	Compliance with other national agenda.
2. Physical Planning process	% of entities using the ISUDP.
	% of applications in compliance with the plan.
	% of planning areas defined as problem areas.
	Number of reviews of the ISUDP.
	Number of projects/initiatives completed per year.
	% of functional planning committees in accordance with the Act.
	Integration with other plans.
3. Institutional framework	Effectiveness of Municipal Boards in Plan implementation.
	Effectiveness of the relationship between the Municipal Board and County.

Physical planning indicators	Means of verification
	Functionality of the physical planning liaison committee.
	Technical staff capacity of the Sub-County.
	Technical equipment capacity at the Sub-County.
	Number of committees constituted as per the legal requirements.
4. Community participation	Level of resident consultation on physical and land use planning issues.
	Number of neighbourhood associations engaged in planning issues.
	Number of planning clinics on awareness held per year.
	Responses on public notices on plans and planning intention adverts.
	% of participation in planning forums.
5. Monitoring and evaluation	Number of Departments/Units reporting well functional M&E.
	Number of annual physical planning needs assessments carried out.
	Number of staff trained and applying M&E tools.
	Availability of M&E tools.
6. Resource Mobilisation	Number of partners/agencies supporting ISUDP implementation.
	Revenue generated by physical planning activities.

Source: VisionRI

The implementation of programmes and projects shall be monitored and reviewed annually. This shall be done through annual accomplishment reports to be submitted by concerned County Government Departments to the CPU. The list of programmes and projects shall be updated annually and amended along with the full review of the ISUDP.

18.4 Existing M&E Situation

The M&E system in the Urban Land Use Planning recognises the present veracities which include:

- Lack of an effective M&E system: Currently, the system is mainly used on how funds are used and not in programme/project planning;
- M&E activities at the County level are limited due to lack of capacity and backstopping role from NLC, National Physical Planning Department;
- Lack of clear indicators and tools to guide tracking of changes at all levels;
- Most sectoral (infrastructure, social and economic) plans are not synchronised with the physical development plans;
- Most of the planning activities are on development control with little emphasis on plan preparation and reviews, leading to development happening in unplanned areas;

- Low appreciation of physical and land use planning by policymakers; and
- Inadequate resources availed for land use planning at the county level.

18.5 Financial Monitoring

CoK 2010 requires all county governments to plan and budget for the delivery of goods and services under their mandate. The Constitution requires counties to prepare the following plans to guide expenditure and investment programmes within their areas. These include:

- i. County Integrated Development Plan (CIDP).
- ii. County Sectoral Plans.
- iii. County Performance Management Plans.
- iv. County Spatial Plan.
- v. Cities and urban area plans.

Annual budgets are based on the approved plans by the respective county assemblies. Related guidelines are mainly directed to the monitoring and implementation of programmes and projects that outline the CIDP, Constituency Development Fund (CDF) and other devolved funds as well as priority government and private sector priority investment programmes being undertaken within the county¹².

¹² Kenya's County Integrated Monitoring and Evaluation System (CIMES 2016)

19 RECOMMENDATIONS AND CONCLUSION

This chapter summarises key recommendations for consideration in the implementation of this Plan. Limuru is a rapidly urbanising and its strategic location in the County within the NMR means that it accrues benefits of an enhanced socio-economic development with the implementation of the Plan. It is, therefore, prudent to consider the following areas:

19.1 Establishment and Enhancing the Role of the County Planning Unit

At the core of demonstrating planning, processes are the need to have an efficient CPU as provided under clause 105 of the County Governments Act (2012). The head of the CPU is the County Director of Physical and Land Use Planning. This unit has the strategic role and duty of integrating and coordination of all county sectors and MDAs, across the entire planning and implementation cycle. It will facilitate the integration of this ISUDP with sectoral strategies. The sectoral strategies would operate within a spatial framework, and in turn, this would reflect the socio-economic analysis across the entire Sub-County.

Figure 19-1 provides a detailed understanding and translation with the role of the CPU from institutional and governance structures and their power relations.

19.2 Enhanced Human Resource

The implementation of this Plan will require an enhanced human and technical capacity based on a Result Based Management, a Land Information Management System and unremitting M&E framework that provides a consistent measure of success, emerging opportunities and mitigating challenges.

19.3 Enhancing the Municipality Status of Limuru

Limuru is urbanising fast and this calls for sound urban management to ensure sound planning and implementation of development activities to avoid the poor status of planning and service delivery. In accordance with the provisions of the Urban Areas and Cities Act, towns having surpassed the 75,000 thresholds need to be elevated to municipal status. The essence of transforming urban areas into towns, municipalities and cities is important in enhancing urban management and service provision. Limuru has reached this crossroad having surpassed the threshold extent of 75,000 residents. The current population of the Sub-County is currently standing at 159,314 (2019 census and is projected to reach 197,447 by 2030. Therefore, there is a need for delineating the municipal boundaries of Limuru Town.

The current municipal boundaries covering both rural and urban areas in Limuru and Lari Sub- Counties need to be revisited to ensure that there are properly defined boundaries which will guide urban development. The process of defining each Sub-County's jurisdiction shall be in accordance with the provisions of the Urban Areas and Cities Act.

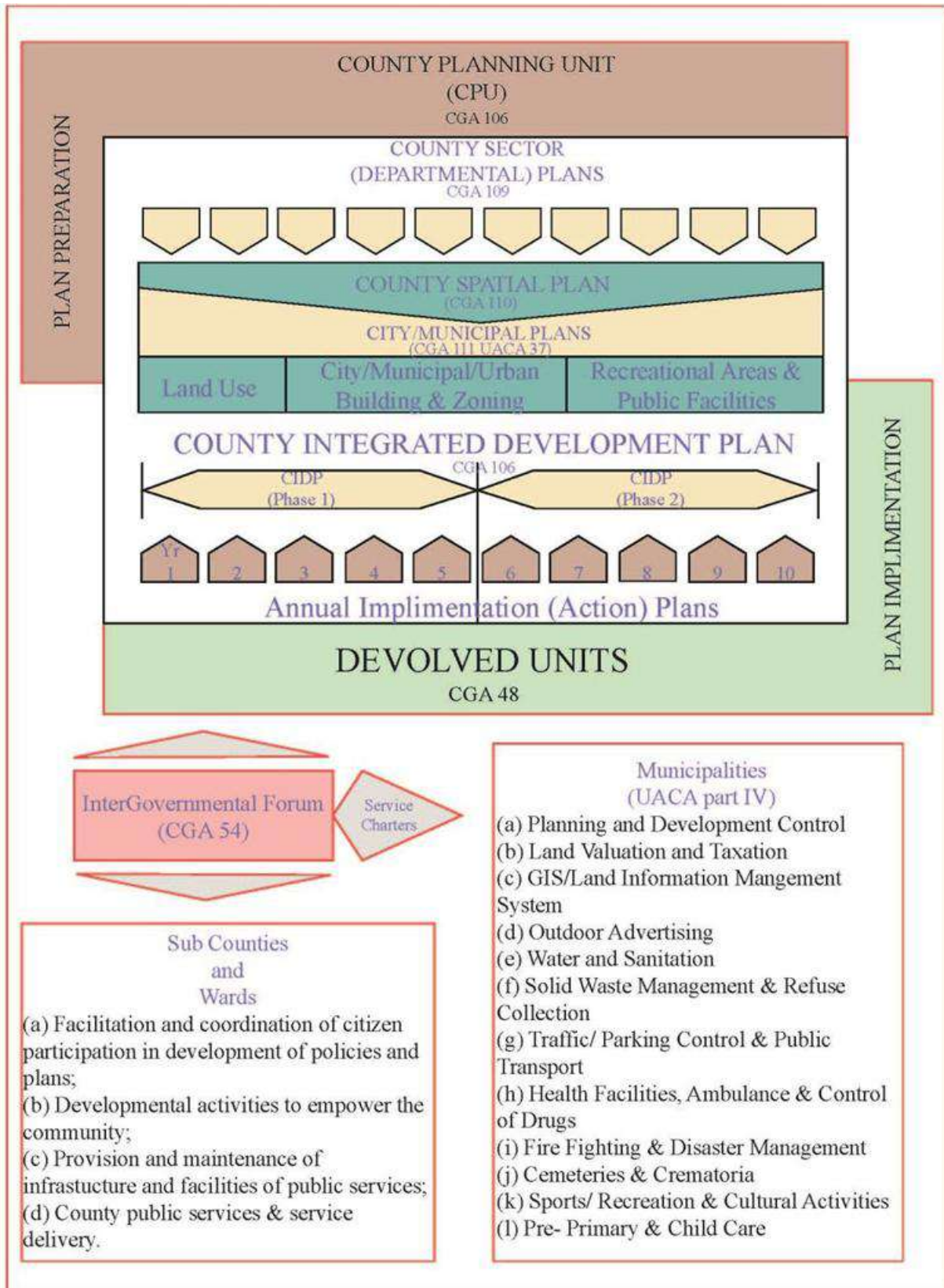


Figure 19-1: County Services & Processes

Source: ULS Ltd

19.4 Neighbourhood Governance for Plan Mitigation and Adaptation

This is in furtherance to the County Governments Act (Section 48, Parts VII and X), the Urban Areas and Cities Act (Section 22) and Kiambu County Community and Neighbourhood Engagement Act, 2016. The neighbourhood plans should be on clearly delineated sub-zones derived from this Plan and driven under legally constituted Neighbourhood Associations. The purpose of the Neighbourhood Plans is to re-frame the detailed neighbourhood mitigation issues and appropriate adaptation actions that extend to this Plan or any other statutory governance action.

In furtherance to promoting continuous community engagement and enablement, it is necessary to cascade the benefits of this Plan with a neighbourhood focus to mitigate and adapt structured and detailed measures to deliver particular forms of services and resources. This includes awareness creation through identification and utilisation of effective communication systems and modes on the importance of land use planning and management at all levels.

19.5 County Affordable Housing Strategy

The growth of Limuru is highly impacted by its proximity to Nairobi. Under the Big Four Agenda, affordable housing is a complex challenge and major public policy issue that requires wholesale articulation in Limuru by putting it to test for both land use and physical development that attracts investment in affordable housing. The Kiambu County Affordable Housing Strategy has the potential to improve the efficiency, priority and equity of housing markets, if well designed and implemented. The Housing Project Strategy will enable Kiambu County to undertake the following in provision of housing in Limuru and other towns:

- Developing a framework that aligns house funding and scheme development structures;
- Enabling legislation that minimises transactional costs around land transfer;
- Developmental framework that focuses on providing qualitative guidance on affordable housing;
- Facilitating value chain efficiencies by providing information on required inputs (reliable forecasts) to guide investments, standardising inputs for housing projects, and providing incentives for investment; and
- Allowing for public participation in the affordable housing programme.

In Limuru, the County proposes to provide strategic guidelines and incentives to private investors to enable them to support in the delivery of affordable housing.

19.6 Infrastructure Master Plans

This Plan recommends the preparation of detailed master plans in relation to the following areas:

- **Wayleaves/Easement Master Plan and Storm Water and Flood Management Strategy:** Pursuant to the provisions in the PLUPA Third Schedule Section 12, there is a need to develop a master plan for wayleaves and easements for the management of bulk infrastructures such as telecommunications, electrical power supply, water and sewerage networks, fibre optics and ICT base transmission stations.
The wayleave and easement masterplan should further support the expansion and continuous improvement of other infrastructure including roads, water and sanitation, sewerage expansion, energy supply, solid waste management, and ICT to support the envisaged development programmes in the Sub-County.
- **Transportation Master Plan:** As mentioned in sections 8.1 (transport situational analysis) and 15.7 (transportation strategies) above, this Plan recommends the preparation of a detailed comprehensive master plan including a Ring Road Circuit, BRT and commuter rail transport that integrates urban, peri-urban and rural roads across the Sub-County and incorporates and traffic management systems will enhance travel demand management.

19.7 Protection of Agricultural through Innovative Land Use Zoning

Currently, the agriculturally rich areas of Limuru Highlands are experiencing a decline in returns from agriculture against a backdrop of desire to explore alternative land uses. Though the Draft Kiambu County Spatial Plan had recommended a 10% extension of the user, this recommendation was not informed by detailed planning in terms of type and nature of development, provision of social facilities, densities and the overall transformation of the landscape.

This Plan recommends the preparation of a detailed zoning plan with compatible land uses that would not negatively impact on agriculture. This will review the proposed blanket of 10% extension of use which did not take into consideration the size of land and the alternative land use options other than real estate development. Other options such as hospitality, light agro-based industries, education can be taken into consideration. The alternative land use must be informed by a detailed master plan that promotes clustered compact developments through a process that engages the residents, their associations and the County, amongst others.

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APPENDICES

Appendices 1.1: Notice of Intention to Plan

43

DAILY NATION
Wednesday October 28, 2015

ACTED VACANCY ANNOUNCEMENTS

ACTED is looking for experienced self-driven and self-motivated professionals to fill the following posts:

1. HEAD OF OFFICE - REGIONAL DEVELOPMENT (Mombasa Area)

Under the authority of the Country Director, he/she specifically shall include:

- Project Quality Management and Reporting
- Facilitate the development and implementation of project quality management
- Substantive Review
- Act as a Reviewer/Checker at the central office regularly updated with appropriate and relevant external and internal resources
- Collaborate with other internal stakeholders through the internet and the regional office

Regional Development and External Relations and Zoning Strategy

- Develop and deliver a comprehensive and coherent funding strategy for the region
- Act as a lead of clients for all donor communication, including the organization of and leading of donor visits in the field

External Communication

- Ensure compliance of PR activities, including formal presentations, engaging media for coverage of national strategic planning results and regional PR shows, and developing publications featuring ACTED in the media

Required Profile

- Master's level education in International Relations, Development Studies, International Aid or a related field
- Minimum 10 years of professional experience in a similar position
- At least 5 years of field experience in the humanitarian field, donor relations, project development, management and monitoring systems, preferably in NGOs as required

1.2 HEAD OF OFFICE

Under the authority of the Country Director, he/she specifically shall include:

- Coordinate with Country Director and REACH Regional Managers, design and implement REACH assessment strategy and methodology within the region
- Coordinate and ensure timely data collection, analysis and, in partnership with GPO, work, reporting of datasets, ensure that all relevant data are geo-referenced
- Supporting the development/revision of assessment / programme strategies, reports, or other outputs
- In coordination with REACH Regional Managers, external representation of REACH with donors, partners and the wider Aid Community through various and selected working groups

Required Profile

- Graduate academic qualifications, including a Master's degree in International Relations or related discipline
- Excellent analytical skills of qualitative, quantitative and geospatial data
- At least 5 years of relevant working experience in humanitarian settings

Application Procedure

Qualified persons are invited to submit their applications accompanied by detailed curriculum vitae to hr@acted.org and received on or before 5.00pm on 07. Nov 2015. Please note that only the shortlisted candidates will be contacted. ACTED is an Equal Opportunity Employer.

Kenya Power

CLARIFICATION AND EXTENSION OF TENDER CLOSING DATE

Kenya Power wishes to inform firms participating in the tender below, that clarification and extension of the tender closing date has been deemed necessary, calling for addendum 1 to the tender.

TENDER NO.	DESCRIPTION OF GOODS	PREVIOUS CLOSING DATE	NEW CLOSING DATE
KPL/MAA-3/PT/7/ICT/15-18	Supply, Installation and Commissioning of 220/48 VDC Battery Systems	29.10.2015	05.11.2015 at 10.30 a.m.

Tender Security should therefore be valid from the new closing date shown above.

Addendum 1 detailing the requirements of the above tender may be obtained from Kenya Power's E-Procurement Portal available on Kenya Power's website (www.kplc.co.ke) from Wednesday 28th October, 2015.

Prospective bidders should register for E-Procurement to enable them access the Kenya Power portal under "New Supplier Registration" found under the "Tenders" tab.

All other terms and conditions of the tender remains the same.

**GENERAL MANAGER
SUPPLY CHAIN**

www.kplc.co.ke

GIMCO LIMITED
Real Estate & Managing Agents
Real Development Consultants

PROPERTY FOR SALE - BY WAY OF BID-

Under the instructions from our principals, the following property situated in Nairobi is on sale by way of Bid by the Agent listed above:

L. E. NO. 7333/2 NAIROBI UNIT 5, BEING PART OF THE DEVELOPMENT "THE PARK OFF TREE LANE" IN THE KAREN AREA OF NAIROBI

A prime residential property sitting on approximately 0.78 acres comprising of a six bedroomed executive mansion with staff quarters in a gated community within the prestigious development, "The Park off Tree Lane" in the leafy Karen suburb.

Bid packs are available from the above listed agent in both soft or hard copies at a non-refundable fee of Kshs. 2,000 payable in Banker's Cheque.

The pack shall contain a description of the property, legal documentation and form of bidding.

The bids must be addressed to:
GIMCO LIMITED
GIMCO CENTRE,
67 KIAMBERE ROAD, UPPER HILL
NAIROBI

The deadline for the receipt of bids shall be at 11.00 Hrs on 12/11/2015.

The vendor does not warrant any particulars and reserves the right to accept or reject any bid and shall not be called upon to assign any reason therefor.

Viewing is strictly by appointment through the offices of the agent.

REPUBLIC OF KENYA

MINISTRY OF LAND, HOUSING AND URBAN DEVELOPMENT
DIRECTORATE OF URBAN AND METROPOLITAN DEVELOPMENT
PROJECT NAME: NAIROBI METROPOLITAN SERVICES IMPROVEMENT PROGRAMME (NAMSIP)
CREDIT No: IDA 31928-KE

PUBLIC NOTICE

COUNTY GOVERNMENT OF MACHAKOS

Commencement of preparation of Integrated Strategic Urban Development Plans for Mombasa, Tala-Kangundo and Nairobi-Pikaa Transport corridor (1 km, either side).

Contract No: MOLA/UD/DOH/ID/ID/NAMSIP/TA-15/2813-2015

Pursuant to articles 4, 10 (2), 40, 66, 47, 184, 186 and the first and fourth schedules of the Constitution of Kenya, 2010; the National Land Commission Act, County Government Act, Urban Areas and Cities Act, Physical Planning Registration Act and other enabling legislations.

Notice is hereby given that the Machakos County Government has commenced the preparation of Integrated Strategic Urban Development Plans (ISUDP) for three (3) towns in 3 clusters: Nambo, Haribo Transport Corridor and Tala-Kangundo.

The ISUDP planning areas shall comprise the existing boundaries of the towns and municipalities in addition to the extent of urbanising area while the planning area for the transport corridor shall be a kilometer on either side of the transport corridor.

The purpose of the ISUDP is to provide a framework for detailed development policies and proposals for towns, indicate action areas for immediate development or redevelopment and provide a coordinated basis upon which various implementing agencies can develop their individual programs for work for which they have executive responsibility for example housing, transportation, water supply, electricity supply, sewerage development among others. The plan preparation process is expected to be completed in April, 2016.

It is a constitutional and statutory requirement that stakeholders and members of the general public participate in the plan preparation process. Any person or institution that wishes to participate in or has comments on the planning project can reach or may forward any such comments to the County Director of Physical Planning at the address below.

**COUNTY SECRETARY
MACHAKOS COUNTY GOVERNMENT
P.O. BOX 361 - 80119
MACHAKOS**

REPUBLIC OF KENYA

MINISTRY OF LAND, HOUSING AND URBAN DEVELOPMENT
DIRECTORATE OF URBAN AND METROPOLITAN DEVELOPMENT
PROJECT NAME: NAIROBI METROPOLITAN SERVICES IMPROVEMENT PROGRAMME (NAMSIP)
CREDIT No: IDA 31928-KE

PUBLIC NOTICE

KIAMBU COUNTY GOVERNMENT

Commencement of preparation of Integrated Strategic Urban Development Plans for Kiambu, Uthman, Karuri, Jitani and Nairobi. This Transport corridor 11 km either side.

Contract No: MOLA/UD/DOH/ID/ID/NAMSIP/TA-15/2813-2015

Pursuant to articles 4, 10 (2), 40, 66, 47, 184, 186 and the first and fourth schedules of the Constitution of Kenya, 2010; the National Land Commission Act, County Government Act, Urban Areas and Cities Act, Physical Planning Registration Act and other enabling legislations.

Notice is hereby given that the Kiambu County Government has commenced the preparation of Integrated Strategic Urban Development Plans (ISUDP) for six (6) towns in 3 clusters: Jitani, Karuri and Nairobi. This Transport corridor and Uthman, Karuri and Nairobi.

The ISUDP planning areas shall comprise the existing boundaries of the towns and municipalities and in addition to the extent of urbanising area while the planning area for the transport corridor shall be a kilometer on either side of the transport corridor.

The purpose of the ISUDP is to provide a framework for detailed development policies and proposals for towns, indicate action areas for immediate development or redevelopment and provide a coordinated basis upon which various implementing agencies can develop their individual programs for work for which they have executive responsibility for example housing, transportation, water supply, electricity supply, sewerage development among others. The plan preparation process is expected to be completed in April, 2016.

It is a constitutional and statutory requirement that stakeholders and members of the general public participate in the plan preparation process. Any person or institution that wishes to participate in or has comments on the planning project can reach or may forward any such comments to the County Director of Physical Planning at the address below.

**COUNTY SECRETARY
KIAMBU COUNTY GOVERNMENT
P.O. BOX 154 - 20000 KIAMBU
Tel: +254 87 8388168
Mobile: +254 798 395 288**

REPUBLIC OF KENYA

MINISTRY OF LAND, HOUSING AND URBAN DEVELOPMENT
DIRECTORATE OF URBAN AND METROPOLITAN DEVELOPMENT
PROJECT NAME: NAIROBI METROPOLITAN SERVICES IMPROVEMENT PROGRAMME (NAMSIP)
CREDIT No: IDA 31928-KE

PUBLIC NOTICE

KIAMBU COUNTY GOVERNMENT

Commencement of preparation of Integrated Strategic Urban Development Plans for Kiambu, Gatanga, Githunguri, Kinooia, Wajir and Karungu.

Contract No: MOLA/UD/DOH/ID/ID/NAMSIP/TA-15/2813-2015

Pursuant to articles 4, 10 (2), 40, 66, 47, 184, 186 and the first and fourth schedules of the Constitution of Kenya, 2010; the National Land Commission Act, County Government Act, Urban Areas and Cities Act, Physical Planning Registration Act and other enabling legislations.

Notice is hereby given that the Kiambu County Government has commenced the preparation of Integrated Strategic Urban Development Plans (ISUDP) for six (6) towns in 4 clusters: Ngungu, Kinooia, Wajir and Karungu.

The ISUDP planning areas shall comprise the existing boundaries of the towns and municipalities in addition to the extent of urbanising area while the planning area for the transport corridor shall be a kilometer on either side of the transport corridor.

The purpose of the ISUDP is to provide a framework for detailed development policies and proposals for towns, indicate action areas for immediate development or redevelopment and provide a coordinated basis upon which various implementing agencies can develop their individual programs for work for which they have executive responsibility for example housing, transportation, water supply, electricity supply, sewerage development among others. The plan preparation process is expected to be completed in October, 2015.

It is a constitutional and statutory requirement that stakeholders and members of the general public participate in the plan preparation process. Any person or institution that wishes to participate in or has comments on the planning project can reach or may forward any such comments to the County Director of Physical Planning at the address below.

**COUNTY SECRETARY
KIAMBU COUNTY GOVERNMENT
P.O. Box 154 - 20000 KIAMBU
Tel: +254 87 8388168
Mobile: +254 798 395 288**

REPUBLIC OF KENYA

MINISTRY OF LAND, HOUSING AND URBAN DEVELOPMENT
DIRECTORATE OF URBAN AND METROPOLITAN DEVELOPMENT
PROJECT NAME: NAIROBI METROPOLITAN SERVICES IMPROVEMENT PROGRAMME (NAMSIP)
CREDIT No: IDA 31928-KE

PUBLIC NOTICE

COUNTY GOVERNMENT OF KAJIADO

Commencement of preparation of Integrated Strategic Urban Development Plans for Ngungu, Ongata Rangali and Kajinooia.

Contract No: MOLA/UD/DOH/ID/ID/NAMSIP/TA-15/2813-2015

Pursuant to articles 4, 10 (2), 40, 66, 47, 184, 186 and the first and fourth schedules of the Constitution of Kenya, 2010; the National Land Commission Act, County Government Act, Urban Areas and Cities Act, Physical Planning Registration Act and other enabling legislations.

Notice is hereby given that the Kajinooia County Government has commenced the preparation of Integrated Strategic Urban Development Plans (ISUDP) for three (3) towns in 1 cluster: Ngungu, Ongata Rangali and Kajinooia.

The ISUDP planning areas shall comprise the existing boundaries of the towns and municipalities in addition to the extent of urbanising area while the planning area for the transport corridor shall be a kilometer on either side of the transport corridor.

The purpose of the ISUDP is to provide a framework for detailed development policies and proposals for towns, indicate action areas for immediate development or redevelopment and provide a coordinated basis upon which various implementing agencies can develop their individual programs for work for which they have executive responsibility for example housing, transportation, water supply, electricity supply, sewerage development among others. The plan preparation process is expected to be completed in April, 2016.

It is a constitutional and statutory requirement that stakeholders and members of the general public participate in the plan preparation process. Any person or institution that wishes to participate in or has comments on the planning project can reach or may forward any such comments to the County Director of Physical Planning at the address below.

**COUNTY SECRETARY
KAJADO COUNTY GOVERNMENT
P.O. Box 11 - 01118
KAJADO**

KIGUMO BENDERA HIGH SCHOOL
P.O. BOX 50-10200 KIGUMO TEL: 0114291835 email: kbschool@yahoo.com

INVITATION TO TENDER - YEAR 2016

Tenders are invited for the supply and delivery of the following items as at 1st January, 2016 to 31st December, 2016.

- K.B.H.50110016 Lab equipment & chemicals
- K.B.H.50120016 Staff & students uniforms
- K.B.H.50130016 Games equipment & uniforms
- K.B.H.50140016 Stationery
- K.B.H.50150016 Supply of cartidges and toners
- K.B.H.50160016 Turbines & binding
- K.B.H.50170016 Power transformers
- K.B.H.50180016 Baking flour and ingredients
- K.B.H.50190016 Fresh Meat
- K.B.H.50200016 Fresh Meat
- K.B.H.51100016 Fresh Halls (bananas, mangoes, etc)
- K.B.H.51110016 Pineapples (201)
- K.B.H.51120016 Cabbages & onions
- K.B.H.51130016 Dry food & cereals (maize and beans)
- K.B.H.51140016 Manufactured food (iron, sugar, salt, tea leaves)
- K.B.H.51150016 Insurance (comprehensive) cover for school vehicles
- K.B.H.51160016 Insurance cover (theft/damage, staff and school property)
- K.B.H.51170016 Electrical appliances
- K.B.H.51180016 Detergents & disinfectants
- K.B.H.51190016 Maize flour
- K.B.H.51200016 Exercise books
- K.B.H.52100016 Supply of fire fighting equipment & servicing
- K.B.H.52110016 Supply of new mobile decoder levels
- K.B.H.52120016 Provision of security services

A complete set of tender documents may be obtained from the Accounts Office from Monday-Friday during working hours upon payment of a non-refundable fee of Kshs. 1,000 per item code.


Questions should include cost of delivery and V.A.T.

Completed forms in plain sealed envelopes marked "Tender No." should reach the undersigned on or before 11th November, 2015 at 9:00 a.m. Tenders will be opened the same day in the school library. Interested tenders or their representatives are welcome to attend.


The school reserves the right to accept or reject any tender either in whole or in part and it is not bound to give reason for the same.

Chairman - Procurement Committee, Kigumo Bendera High School,
P.O. BOX 50-10200, KIGUMO

Appendices 1.2: Notice of Completion



REPUBLIC OF KENYA
State Department for Housing and
Urban Development



COUNTY GOVERNMENT
OF KIAMBU

PHYSICAL AND LAND USE PLANNING ACT, 2019

NOTICE OF COMPLETION OF DEVELOPMENT PLANS

Names of Developments Plans:-

1. Juja Integrated Strategic Urban Development Plan, JJ/ISUDP/457/2020/01
2. Ruiru Integrated Strategic Urban Development Plan No. RRU/ISUDP/53/2020/01
3. Kikuyu Integrated Strategic Urban Development Plan No. KKY/ISUDP/43/2020/01
4. Limuru Integrated Strategic Urban Development Plan No. LMR/ISUDP/94/2020/01
5. Kiambaa Integrated Strategic Urban Development Plan No. KBA/ISUDP/605/2020/01
6. Nairobi-Thika Transport corridor Integrated Strategic Urban Development Plan No. NTTC/ISUDP/022/2020/01.

NOTICE is hereby given that preparation of the above Development Plans was completed on **11th September, 2020**.

The Development Plans relate to the Plans situated in Kiambu County.

Copies of the plans as prepared have been deposited for public inspection at the office of **Kiambu County Director of Physical Planning**, located in Red Nova Building, Kiambu Town, and respective Sub county Physical Planning offices of **Juja, Ruiru, Kikuyu, Limuru and Kiambaa Sub-Counties**.

The copies so deposited are available for inspection free of charge by all persons interested at the above-mentioned address between the hours of 0800hrs and 1700hrs.

Any interested person(s) who wishes to make any representation in connection with or objection to the above Development Plans may send such representations in writing to be received by the Kiambu County Director of Physical Planning, P. O. Box 340-00900 Kiambu not later than 14 days from the date of this Notice and any such representation or objection shall state the grounds on which it is made.

Dated the **11th day of September, 2020**.

MUGO KIMANI
County Executive Committee Member
Land, Housing, Physical Planning, Municipal Administration and Urban Development
KIAMBU COUNTY

Appendix 1.3: Gazette Notice

3664

THE KENYA GAZETTE

18th September, 2020

NOTICE is given that the preparation of the above Development Plan was on 20th August, 2020 completed.

The Development Plan relates to the land situated in parts of Nairobi City, Machakos and Makeni Counties.

Copies of the Development Plan as prepared have been deposited for public inspection at the offices of Nairobi Metropolitan Service at KICC, 24th floor, Machakos County Government at the Lands and Physical Planning Offices, Machakos Town, opposite County Commissioner's office and Director of Physical Planning, Makeni County, Wote.

The copies so deposited are available for inspection free of charge at the offices of Nairobi Metropolitan Service at KICC, 24th floor, Machakos County Government at the Lands and Physical Planning Offices, Machakos Town, opposite County Commissioner's office and Director of Physical Planning, Makeni County, Wote, between the hours of 0800 to 1700 Monday to Friday.

Any interested person(s) who wishes to make any representation in connection with or objection to the above Development Plan may send such representations or objections in writing to be received by the following offices not later than fourteen (14) days from the date of this Notice and any such representations or objections shall state the ground on which it is made:

Secretary, Lands and Physical Planning,
Nairobi Metropolitan Service,
P.O. Box 40530-00100,
Nairobi.

Director of Physical Planning,
Machakos County Government,
P.O. Box 1996-90100,
Machakos.

Director of Physical Planning,
Makeni County Government,
P.O. Box 78-90300,
Wote.

AUGUSTINE K. MASINDE,
MR/1324611 *National Director of Physical Planning.*

GAZETTE NOTICE No. 7095

THE PHYSICAL AND LAND USE PLANNING ACT

(No. 13 of 2019)

COMPLETION OF DEVELOPMENT PLANS

PDP No. JJ/ISUDP/457/2020/01 – Juja Integrated Strategic Urban Development Plan.

PDP No. RRU/ISUDP/53/2020/01 – Ruiru Integrated Strategic Urban Development.

PDP No. KKY/ISUDP/43/2020/01 – Kikuyu Integrated Strategic Urban Development.

PDP No. LMR/ISUDP/94/2020/01 – Limuru Integrated Strategic Urban Development.

PDP No. KBA/ISUDP/605/2020/01 – Kiambaa Integrated Strategic Urban Development.

PDP No. NTT/ISUDP/022/2020/01 – Nairobi-Thika Transport Corridor Integrated Strategic Urban Development.

NOTICE is given that preparation of the above Development Plans was on 11th September, 2020 completed.

The Development Plans relate to the Plans situated in Kiambu County.

Copies of the plans as prepared have been deposited for public inspection at the office of Kiambu County Director of Physical Planning, Red Nova Building, Kiambu Town, and respective Sub-county Physical Planning offices, Juja, Ruiru, Kikuyu, Limuru and Kiambaa Sub-Counties.

The copies so deposited are available for inspection free of charge by all persons interested at the above mentioned address between the hours of 0800 and 1700.

Any interested person(s) who wishes to make any representation in connection with or objection to the above Development Plans may send such representations in writing to be received by the Kiambu County Director of Physical Planning, P.O. Box 340-00900 Kiambu not later than 14 days from the date of this Notice and any such representation or objection shall state the grounds on which it is made.

Dated the 11th September, 2020.

MUGO KIMANI,
CECM,
Land, Housing, Physical Planning, Municipal Administration
and Urban Development, Kiambu County.
MR/1324611

GAZETTE NOTICE No. 7096

THE ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION ACT

(No. 8 of 1999)

THE NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY

ENVIRONMENTAL IMPACT ASSESSMENT STUDY REPORT FOR THE PROPOSED REHABILITATION OF THIKA-NANYUKI METRE GAUGE RAILWAY (MGR) AND FOR THE CONSTRUCTION OF NEW CHAKA STATION FOR KENYA RAILWAYS CORPORATION FROM THIKA TO NANYUKI THROUGH KIAMBU, MURANG'A, KIRINYAGA, NYERI, LAIKIPIA COUNTIES

INVITATION OF PUBLIC COMMENTS

PURSUANT to regulation 21 of the Environmental Management and Co-ordination (Impact Assessment and Audit) Regulations, 2003, the National Environment Management Authority (NEMA) has received an Environmental Impact Assessment Study Report for the above proposed project.

The proponent, Kenya Railways Corporation, is proposing rehabilitate the 178Km long Thika Nanyuki Metre Gauge Railway (MGR) and for the Construction of New Chaka Station for Kenya Railways Corporation traversing through Kiambu, Murang'a, Kirinyaga, Nyeri and Laikipia Counties.

The following are the anticipated impacts and proposed mitigation measures:

Impact	Proposed Mitigation Measures
Solid waste generation	<ul style="list-style-type: none"> Special attention should be given to minimizing and reducing the quantities of waste produced during all the sites preparation and rehabilitation. Materials to be reused or recycled where possible. Wastes generated during the renovation and construction phase will be disposed of as stipulated in the EMCA (Waste Management) Regulations 2006. Conduct training for waste management, such as waste disposal and segregation practices. Comply with Waste Management Regulations, 2006.
Asbestos Roof Removal	<ul style="list-style-type: none"> Dispose all Asbestos Containing Materials according to WBG/IFC EHS Guidelines NEMA Guidelines/ requirements. Use recommended PPE. Conduct Risk Assessment before removal of ACMs. Notify the authority by filling in the notification form.

Appendix 1.4: Registration Form

20 th FEBRUARY 2020			
NAME	ID NUMBER	ISA OR	SIGN
Everlyne Amile	2514018		
JARNELINE KAIRA	24106		
Josephat NSOGA	201220		
Judith W. Komau	666602 ZY/!		
STELLA KIANIRA	2949242		
MAUREEN KAHIGA	212203/1		
JOHN KAMAU	214121/12		
ABIGAIL GACHERU	20209800		
MOSES MABINDA	33207524		
David Kallavi	0102323		
MARTIN NYONGERA	24322501		
KIMANI ELIZABETH	72074445		
ENRICO LYOMU	10856905		
Mwai Kimani	10425212		
CLAUDIO OTENO	6181104		
Kennedy Mwangi	27405574		
George W Muchai	7129324		
Wallace Mochu	23390581		
GEORGE MUTINDA	11645584		
ERIC MUKHI KIRAU	8707101		
John Kamau	1906410		
Irene Wanjiku	13218335		
Joseph M. Kyua	5470906		
Kenny N. NENE	7094058		
Agnel Wanjiru	3198814		

2ND STAKEHOLDERS WORKSHOP- LIMURU

2orn FEBRUARY 2020

	NAME	ID NUMBER	ORGANISATION	SIGN
1	Flex bell	29415716	ACAC	[Signature]
2	Hon. DADO KIN GANDA	0352882	Administration	[Signature]
v3	John K. Mwarua	7485210	W/Admin	[Signature]
4	DAVID NDUNGU	10974482	J.P. PAULI UNIVERSITY	[Signature]
5	Kevin C. Mwachira	26907359	Limuru Municipal Council	[Signature]
6	Clement K. Kinani	7250073	D.O.P INTERIOR	[Signature]
7	GEORGE G. KUDEN	16002582	VISIONARY	[Signature]
8	Paul Chelge	8864810	S.C.A - LIMURU	[Signature]
9	M. M. ASDI	8760044	L.S. Com	[Signature]
10	Samuel W	23909826	Limuru Town	[Signature]
11	James Njumbi	2092649	RKRA	[Signature]
12	Judith Mwangi	1853371	ICJ-KA	[Signature]
13	Kier Njumbi	1090950	L.B.P. TRADER	[Signature]
14	SAMMY KAGATH	12818199	L.B.T chairman	[Signature]
15	KEVIN NJUGUAD	23165105	LBT Secretary	[Signature]
16	Apho Adigiso	25734667	Disabled Group	[Signature]
17	JOSEPHINE K. KIGURU	12521328	LIMURU HIGHLAND	[Signature]
18	NIROKE NKAISI	6442748	LBT	[Signature]
19	Richard Waki	8227312458	LBT	[Signature]
20	Reed Maita	31898952	KIAMBU	[Signature]
21	MILLICENT FOWETT	31855162	L.K.A.M.B.	[Signature]
22	Paul Kibuye	7488763	L.K.A.M.B. SACCO	[Signature]
23	VA CEFICA ONGETHA	11092429	LIMURU	[Signature]
24	FRANCIS N. MUYA	4356654	ACAL	[Signature]
25	Michelle Kibwo	28600513	Kenya	[Signature]
26	Elizabeth Mwangi	0715362	27 LG	[Signature]
27	EVANSON KARANJA	10345595	Mwaka Mwakani	[Signature]
28	James Njumbi	1863927	Mwaka Mwakani	[Signature]
29	Peter M. Mburu	3137568	L.K.A.M.B. SACCO	[Signature]
30	Joseph Mwangi	5708670	L.K.A.M.B. SACCO	[Signature]

2.2 STAKEHOLDERS WORKSHOP-LIMURU20TH FEBRUARY 2020

	NAME	ID NUMBER	ORGANISATION	SIGN
1	N. SAGOO	740842	AMBROSIAL	[Signature]
2	N. SAGOO	249672	u	[Signature]
3	Margaret Njaisimi	2748271	RKRA	[Signature]
4	Patricia Karuki	9704165	RKRA	[Signature]
5	FRANCIS MUKHT	9861762	RKRA	[Signature]
6	Luwe Obale	912550	Vision R1	[Signature]
7	Njoki Wainani	34476092	RKRA/LHESP	[Signature]
8	David Muriu	5209045	LIMURU	[Signature]
9	Minnie Ngugi	14567440	LIMURU	[Signature]
10	Moses Njiru	4342839	Waley 9	[Signature]
11	MOSES NJIRAU	10211554	Limuru	[Signature]
12	Jamas Matara	0721588903	Kenya Nepal	[Signature]
13	Margaret Nwaniki	12760255	Intervis	[Signature]
14	JACQUELINE MUKARI	29067092	W.C.A	[Signature]
15	Tane Njenga	0720213	Demune	[Signature]
16	Lucas M. Ndungu	487714	WATER DEPT	[Signature]
17	STEPHEN KURIA	3070198	CHIEFMAN LIMURU MARKET FOOD	[Signature]
18	HEDDIE WANERU	20168470	COUNTY GOV. KIMURU	[Signature]
19	MARTIN THIRU	1028458	MARANG COUNTY	[Signature]
20	JOHN M. KUMAM	8207857	O.D.P.	[Signature]
21	Peterson Njiru	999589	Sovereign help	[Signature]
22	Joseph Njiru	202660	Kenya per category	[Signature]
23	Muthia Kimani		EVA'S GARDEN	[Signature]
24	J. Kahaya K.	2854122	MCA	[Signature]
25	Samuel Wanjau	29735607	Limuru	[Signature]
26	Peninah Njiru	28523821	Vision R1	[Signature]
27	Joseph Njiru	21899897	RESIDENT	[Signature]
28	Miriam Njiru	22560178	LINGANA SACCO	[Signature]
29	Jane Njiru	27610992	P.A. of NEMA	[Signature]
30	SEGEM NGETI	1550268	GP	[Signature]

2nd STAKEHOLDERS WORKSHOP- LIMIJRU

20th FEBRUARY 2020

NAME	ID NUMBER	ORGANISATION	SIGN
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