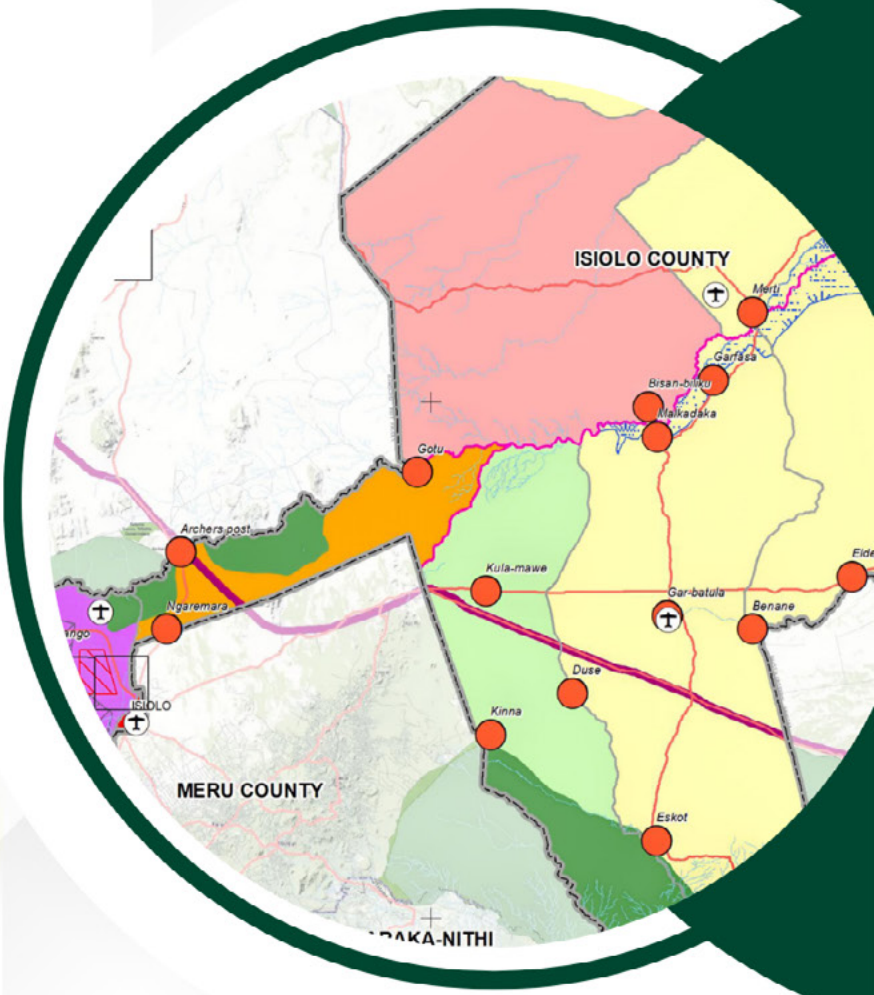
ISIOLO COUNTY PHYSICAL AND LAND USE DEVELOPMENT PLAN

PLAN REPORT

2026-2036



MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR LAND AND PHYSICAL PLANNING

DESIGN WORKS Architects & Consultants
SPACE PLANNERS LTD
SUPREME PLANS CONSULTANTS LIMITED

CERTIFICATION AND APPROVAL

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This Plan has been prepared and published as per the requirements of the Physical and Land Use Planning Act, CAP 303.

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Departmental Reference Number

C11/ISIOLO COUNTY/2024/1

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COUNTY ASSEMBLY OF ISIOLO

Approved Plan No: C11 / ISIOLO COUNTY / 2024 / 1

FOREWORD



H.E. Hon. Ibrahim Abdi Hassan, EGH

Governor

ISIOLO COUNTY

Isiolo County stands at a pivotal juncture in its development journey. The County Physical and Land Use Development Plan presented herein is more than a technical blueprint—it is a strategic instrument that embodies our collective aspirations for inclusive, climate-resilient, and economically vibrant growth.

I am honoured to introduce this framework as a foundational pillar of our county's long-term planning, governance, and transformation agenda.

This plan is anchored in the principles of Kenya's Constitution, Vision 2030, and the County Integrated Development Plan (CIDP). It provides a spatial logic for land use, infrastructure development, environmental stewardship, and socio-economic advancement. It recognizes Isiolo's unique ecological and cultural identity—situated at the heart of the Northern Corridor, rich in biodiversity, and home to diverse pastoralist communities whose mobility and traditions must be safeguarded even as we modernize. The plan reflects our resolve to harmonize development with heritage, equity, and sustainability.

Strategically, the Plan aligns with national and regional imperatives, including the LAPSSET Corridor, the National Spatial Plan, and the African Union's Agenda 2063. It integrates data and recommendations from the Kenya National Bureau of Statistics (KNBS), the Sustainable Urban Economic Development (SUED) programme, and other planning instruments to ensure that decisions are evidence-based and future-proof. It also reflects our commitment to the Sustainable Development Goals (SDGs), particularly those related to urban resilience, climate action, and inclusive economic growth.

Through this framework, we aim to guide orderly urban expansion, protect critical ecosystems, and unlock investment opportunities across sectors such as agriculture, tourism, housing, and renewable energy. It provides a roadmap for zoning, infrastructure rollout, and service delivery, ensuring that development is both equitable and environmentally sound. It also offers a platform for inter-agency coordination, donor alignment, and community-driven implementation.

The development of this plan has been deeply participatory. It is the product of extensive consultation with communities, technical experts, development partners, and government agencies. It embodies the voices of Isiolo's residents—from urban centers to remote villages—whose insights and lived experiences have shaped its priorities. We have ensured that the framework respects traditional land use patterns, pastoral mobility, and cultural heritage, while embracing innovation and modernization. This is a plan built not just for Isiolo, but with Isiolo.

I commend the County Department of Lands, Physical Planning, and Urban Development, as well as the technical teams who led this process with diligence, professionalism, and integrity. I also recognize the invaluable support of our development partners, whose expertise and resources have strengthened the quality and relevance of this framework. Their contributions reflect the power of collaboration in shaping resilient and inclusive futures.

As we move toward implementation, I call upon all stakeholders—government departments, civil society organizations, private sector actors, and community leaders—to embrace this plan as a shared vision and collective responsibility. Let us work together to ensure that every ward, every household, and every citizen benefits from spatially just and sustainable development. Let us institutionalize this framework not only as a planning tool, but as a governance standard. The County Physical and Land Use Plan is our compass—let us use it wisely, boldly, and inclusively.

Ibrahim Abdi Hassan

H.E. HON. IBRAHIM ABDI HASSAN EGH

Governor, Isiolo County.

PREFACE



Hon. Hussein Jirmo Katelo

CEC-M

Lands, Physical Planning, Roads, Transport, and Urban Development

ISIOLO COUNTY

The development of the Isiolo County Physical and Land Use Development Plan represents a significant milestone in our collective pursuit of structured, inclusive, and sustainable development. As the County Executive Committee Member responsible for Lands, Physical Planning, and Urban Development, I am deeply honored to acknowledge the collaborative efforts that have shaped this transformative document. It is a product of rigorous technical work, participatory engagement, and strategic foresight—an embodiment of our county's commitment to spatial justice, environmental stewardship, and coordinated growth.

This plan responds to the urgent need for a harmonized approach to land use, infrastructure development, and urban expansion. Isiolo's unique geographic and socio-cultural context demands a planning instrument that is both visionary and grounded in local realities and the Spatial Plan provides that balance. It offers a spatial logic that guides zoning, investment prioritization, and service delivery, while safeguarding ecological systems and respecting traditional land tenure arrangements. It is designed to support the aspirations of our communities, the mandates of our institutions, and the expectations of our development partners.

The formulation of this plan has been guided by national policy frameworks, including the Physical and Land Use Planning Act, the National Spatial Plan, and Vision 2030. It also draws from the County Integrated Development Plan (CIDP), the Urban Areas and Cities Act revised 2019, and the Sustainable Urban Economic Development (SUED) programme. These instruments have provided the technical and policy scaffolding necessary to ensure that the Spatial Plan is

not only compliant but also strategically aligned with Kenya's broader development agenda. Moreover, the integration of data from the Kenya National Bureau of Statistics (KNBS), stakeholder mapping, and geospatial analysis has ensured that the framework is evidence-based and context-sensitive.

I wish to acknowledge the tireless efforts of our technical teams—planners, surveyors, GIS specialists, and policy analysts—who have worked with precision and dedication to produce a document of such depth and clarity. Their commitment to professional excellence and public service has been exemplary. I also extend my sincere gratitude to the communities of Isiolo County, whose voices, concerns, and aspirations have been central to this process. From town hall meetings to ward-level consultations, their participation has enriched the framework and ensured its legitimacy.

Equally, I recognize the invaluable contributions of our development partners, civil society organizations, and national government agencies. Their technical support, financial resources, and strategic guidance have elevated the quality of this plan and positioned Isiolo as a model for spatial planning in arid and semi-arid regions. The spirit of partnership that has defined this process must continue into the implementation phase, where coordination, transparency, and adaptive management will be key to success.

Looking ahead, the Spatial Plan will serve as a living instrument—one that evolves with changing needs, emerging data, and community feedback. It will guide our decisions on land allocation, infrastructure investment, environmental protection, and urban governance. It will also support our efforts to attract investment, manage growth, and deliver services in a manner that is equitable, efficient, and sustainable. As a department, we are committed to ensuring that the plan is operationalized with integrity, monitored with rigor, and reviewed with openness.

In closing, I reaffirm our department's commitment to spatially informed development that

empowers communities, protects natural resources, and strengthens institutional capacity. The County Physical and Land Use Development Plan is a testament to what we can achieve when we plan together, act together, and remain accountable to the people we serve. Let this document be a foundation for transformation, a tool for resilience, and a beacon of hope for generations to come.

Hussein Jirmo Katelo

HON. HUSSEIN JIRMO KATELO

County Executive Committee Member – Lands, Physical Planning, Roads, Transport, and Urban Development | Isiolo County Government

ACKNOWLEDGEMENT



Mr. Francis Lekalasimi

Chief Officer

Department of Lands and Physical Planning

ISIOLO COUNTY

The County Physical and Land Use Development Plan for Isiolo County is a landmark achievement in our pursuit of structured, data-driven, and community-responsive urban and regional development. As the Chief Officer responsible for Urban Development and Physical Planning, I am proud to present this framework as a product of rigorous technical analysis, stakeholder engagement, and strategic alignment. It is a planning instrument that will guide our county's spatial transformation over the coming decades, ensuring that growth is orderly, inclusive, and sustainable.

This framework responds to the evolving dynamics of Isiolo County—rapid urbanization, shifting land use patterns, infrastructure demands, and environmental pressures. It provides a spatial logic for zoning, infrastructure rollout, investment prioritization, and environmental protection. It is designed to support decision-making across sectors, enabling coordinated development that respects ecological systems, cultural heritage, and community aspirations. The plan offers clarity on where and how development should occur, minimizing conflict, optimizing resources, and enhancing service delivery.

From a technical standpoint, the Spatial Plan is grounded in national and county-level planning instruments, including the Physical and Land Use Planning Act, the Urban Areas and Cities Act, Vision 2030, and the County Integrated Development Plan (CIDP). It also incorporates recommendations from the Sustainable Urban Economic Development (SUED) programme,

Kenya National Bureau of Statistics (KNBS) datasets, and geospatial mapping exercises. These inputs have ensured that the framework is evidence-based, policy-aligned, and responsive to both current realities and future projections.

The development process has been deeply collaborative. Our technical teams—planners, surveyors, GIS specialists, and policy analysts—have worked with precision and dedication to produce a framework that meets both professional standards and community expectations. Their work has involved spatial audits, land use assessments, infrastructure mapping, and stakeholder consultations. The result is a plan that is not only technically sound but also socially legitimate and operationally feasible.

I wish to acknowledge the contributions of our development partners, whose financial and technical support have been instrumental in shaping this framework. Their expertise has strengthened our capacity, enhanced our analytical tools, and ensured that the plan reflects global best practices. I also extend my gratitude to the communities of Isiolo County, whose participation has enriched the planning process. Their insights—shared through public forums, ward-level meetings, and targeted consultations—have helped us prioritize needs, validate assumptions, and ensure that the plan remains grounded in local realities. I would also like to recognize the Technical Teams, Consultants, Development partners, and the County Assembly for their input in the preparation, oversight and approval of the Isiolo CPLUDP.

The Spatial Plan will serve as a foundational tool for enforcement, investment planning, and urban resilience. It will guide the designation of growth nodes, the protection of sensitive ecosystems, and the rollout of critical infrastructure. It will also support our efforts to institutionalize planning standards, streamline development approvals, and enhance interdepartmental coordination. As a department, we are committed to ensuring that the plan is implemented with integrity, monitored with rigor, and reviewed with transparency.

Looking ahead, we recognize that the Spatial Plan is a living document—one that must evolve with changing data, emerging trends, and community feedback. We will continue to invest in spatial monitoring systems, capacity building, and stakeholder engagement to ensure that the framework remains relevant and impactful. We will also work closely with other departments, agencies, and partners to align implementation with budgetary cycles, legislative mandates, and strategic priorities.

In conclusion, the County Physical and Land Use Development Plan is a testament to Isiolo County's commitment to structured, inclusive, and sustainable development. It reflects our technical capacity, our strategic vision, and our dedication to public service. As we move into implementation, I urge all stakeholders to embrace this framework as a shared roadmap and a collective responsibility. Let us use it to shape a county that is spatially coherent, economically vibrant, and environmentally resilient.

Francis Lekalasimi

MR. FRANCIS LEKALASIMI

Chief Officer – Department of Lands and Physical Planning | County Government of Isiolo

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LIST OF ACRONYMNS

ACRONYM	FULL VERSION
ASAL	Arid and Semi-Arid Lands
CAP	Chapter
CBD	Central Business District
CBO	Community-Based Organization
CDF	Constituency Development Fund
CECM	County Executive Committee Member
CGI	County Government of Isiolo
CIDP	County Integrated Development Plan
CPLUDP	County Physical and Land Use Development Plan
ECD	Early Childhood Development
EGH	Elder of the Golden Heart
GDP	Gross Domestic Product
GCP	Gross County Product
GIS	Geographic Information Systems
GVA	Gross Value Added
H.E.	His Excellency
ICT	Information and Communication Technology
IWASCO	Isiolo Water and Sewerage Company
KDF	Kenya Defence Forces
KeNHA	Kenya National Highways Authority
KeRRA	Kenya Rural Roads Authority
KES	Kenya Shillings
KFS	Kenya Forest Service
Km	Kilometres
KNBS	Kenya National Bureau of Statistics
KOSAP	Kenya off-Grid Access Project
KPLC	Kenya Power and Lighting Company
KURA	Kenya Urban Roads Authority
KWS	Kenya Wildlife Service

ACRONYM	FULL VERSION
LAPSSET	Lamu Port–South Sudan–Ethiopia Transport Corridor
LIM	Land Information Management
M	Metres
NEMA	National Environment Management Authority
NGO / NGOs	Non-Governmental Organization(s)
NLC	National Land Commission
No.	Number
NSP	National Spatial Plan
OD	Open Defecation
PLUPA	Physical and Land Use Planning Act
RPP	Registered Physical Planner
SDGs	Sustainable Development Goals
SUED	Sustainable Urban Economic Development
SWOT	Strengths, Weaknesses, Opportunities and Threats
TVET	Technical and Vocational Education and Training
WASREB	Water Services Regulatory Board
WRA	Water Resources Authority

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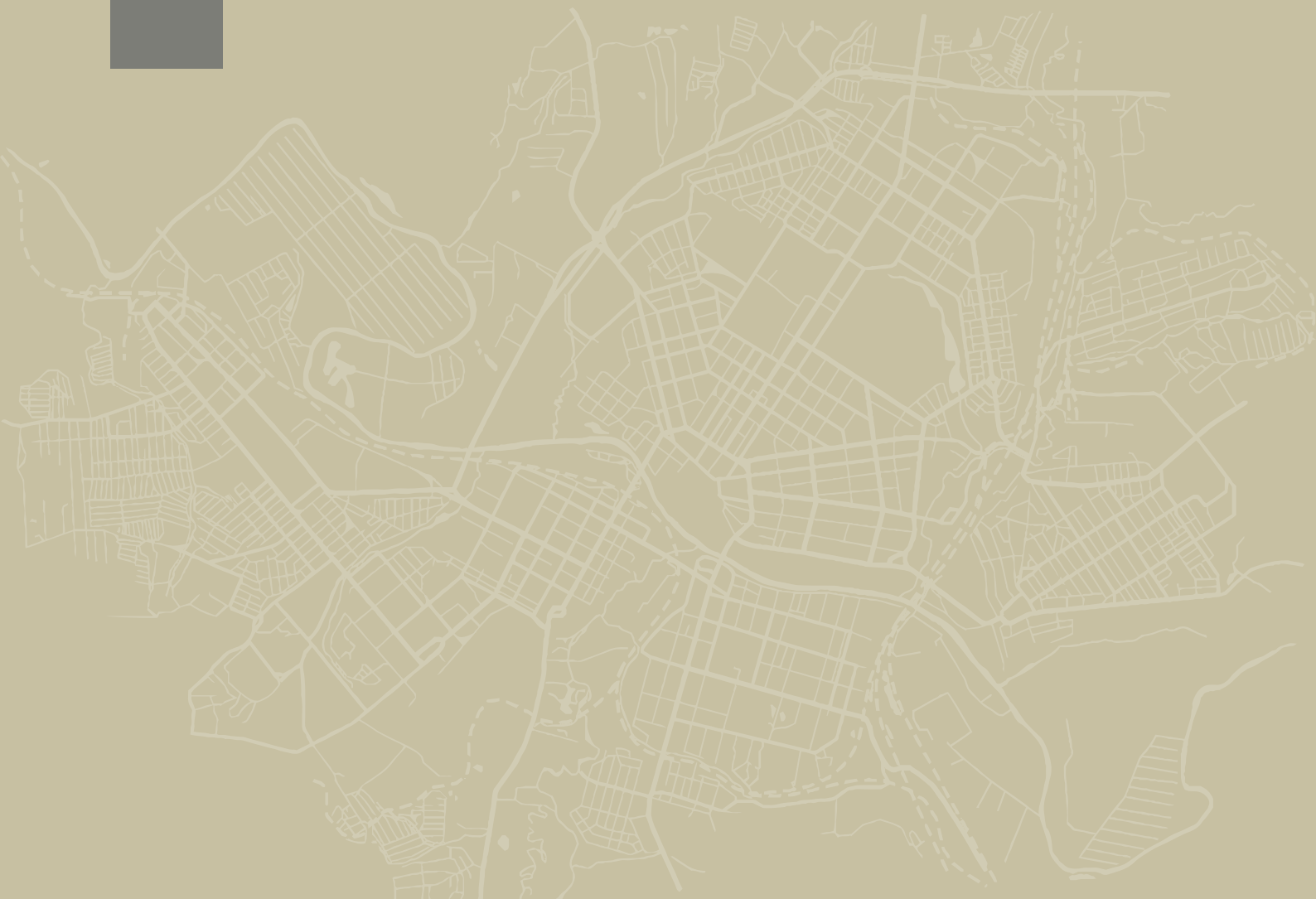


Part One

INTRODUCTION

CHAPTER 01

Introduction

1.1 OVERVIEW

The chapter discusses the project background, objectives of the consultancy and summarises the methodology employed in the preparation of the Spatial Plan.

1.2 PROJECT BACKGROUND

The County Government Act (2012) requires that all county governments prepare and implement County Physical and Land Use Development Plans (CPLUDP). The CPLUDP is a ten-year plan that is implemented through annual budgetary allocations. County Governments are responsible for coordinating the preparation of CPLUDP and must engage relevant stakeholders who either contribute to or benefit from the county's development.

The County Government of Isiolo has prepared a County Spatial (Physical and Land Use Development) Plan (CPLUDP) which will guide, harmonize and facilitate development of the county for the next 10 years while at the same time fulfilling their legal mandate.

The County Physical and Land Use Development Plan covers the full extent of the county to strategically guide development for a ten-year period and facilitate the transformation of its citizens' livelihoods. Whilst the plan has a 10-year time horizon, the plan envisions providing a basis for long-term sustainable development within the County.

1.2.1 General Objective

The objective of the project is to prepare a GIS-based Physical and Land Use Development Plan for Isiolo County that shall contain a spatial depiction of the social and economic development programs for the county as articulated in the Physical and Land Use Planning Act No. 13 of 2019.

1.2.2 Key Objectives

The County Physical and Land Use Development Plan will seek to fulfil the following key objectives:

1. Provide an overall spatial development framework that identifies zones for various land uses and provides the basis for infrastructure and service delivery in the county.
2. Guide urban, rural and human settlement development and improve transport and communication networks and linkages.
3. Enhance environmental protection and conservation and guide the use and management of natural resources.
4. Guide on proper decision-making on major economic investments in the county.
5. Prepare a GIS database for the county.

1.3.3 Specific Objectives

To achieve the above, the following shall be the specific objectives;

1. Provide a basis for the preparation of local physical and land use development plans within the County.
2. Identify key investment potential areas to attract and enhance private sector participation and investment.
3. Identify the right infrastructure and investment mechanisms to facilitate the transformation of the regional and local economy.
4. Assess the skills of the local people to facilitate their strengthening and identification of economic opportunities to tap into the county.

5. Promote stakeholder engagement for inclusive and participatory development in the county.
6. Promote the safeguarding of national security.

1.3 PROJECT SCOPE

The planning horizon for the plan is set at 10 years in accordance with the provision of the Physical and Land Use Planning Act, of 2019 which mandates that each county government shall prepare a County Physical and Land Use Development Plan once every ten years.

The plan addresses the following broad areas of concern:

1. Physical and social infrastructure development
2. Environmental management
3. Housing and settlement upgrading
4. Local and economic development
5. Urban transportation and mobility
6. Urban design and aesthetics
7. Development regulations and standards
8. Mapping the whole area under planning
9. Feasibility studies
10. Stakeholder engagement
11. Formulation of the plans.

1.4 VISION

The Plan is guided by the shared vision themed **"A well planned, secure county, with good governance, and sustainable development that promotes high quality of life for all."**

1.5 SUMMARIZED METHODOLOGY

The preparation of the Spatial Plan was phased into five major phases namely Inception, Awareness and Mobilization, Data collection and Mapping, Situational analysis and Spatial Plan Formulation. The figure below shows a summary of the methodology applied in carrying out the assignment. All the phases were participatory and involved consultation with the stakeholders and the technical team.



1.5.1 Inception Phase

This phase involved project commissioning. Preliminary discussions were held between the client and the consultants with the aim of building consensus on the plan methodology and scope. The Terms of Reference (T.O.R) were also defined to regulate the project and its outputs. Within this phase, an introductory meeting was convened to introduce the planning team to the county officers and key stakeholders within the County.

1.5.2 Awareness and Mobilization Phase

The Consultant carried out stakeholder awareness and mobilization in all the wards in Isiolo County. The stakeholders engaged were identified through consultation among various actors including the County Government. A stakeholder sensitization workshop was held to define the roles of each stakeholder.

1.5.3 Data Collection Phase

The data needed was obtained from both primary and secondary sources. Primary data was obtained through field surveys, mapping and Key Informant Interviews (KII's).

The methods applied involved: Land use surveys, where land uses were mapped from the satellite imagery. Other attributes of the land use were collected and filled in a mapping sheet during field work. The consultants also conducted key informant interviews for purpose of acquiring first-hand information. Secondary data collection was obtained through desktop survey. Secondary sources reviewed included various policy and legal documents, previous plans, maps from credible and authoritative sources.

1.5.4 Situational Analysis Phase

Following data collection, an assessment of development trends across the County was carried out to identify areas with similar physical, economic and social characteristics. This analysis helped reveal spatial patterns, highlight emerging growth zones, and pinpoint regions facing development challenges. Understanding these trends was essential for guiding strategic interventions and planning for balanced development. In addition, a detailed review of existing

physical and social infrastructure was undertaken and aligned with population projections to assess both current capacity and future demand.

1.5.5 County Spatial Plan Preparation Phase

Synthesis of the situational analysis was then conducted through trend analysis, SWOT analysis, planning implications and suitability analysis which led to the preparation of a draft Spatial Plan. The draft Spatial Plan comprises of a spatial structure, land use regulations and development strategies across various sectors.

CHAPTER 02

Planning Context

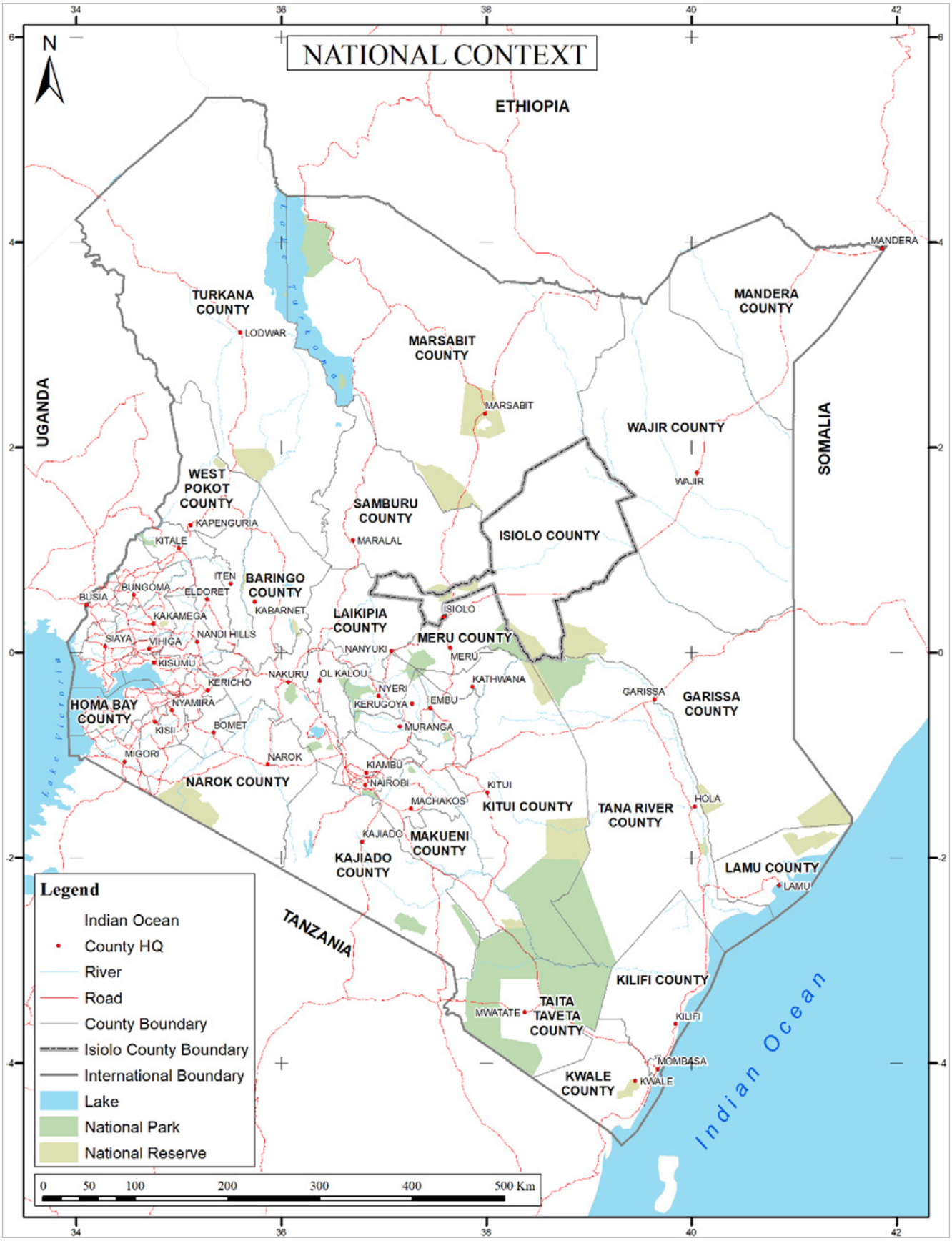
2.1 OVERVIEW

The chapter outlines the location of Isiolo County in the national and regional context and details the administrative units within the County. The section also contains a summary of the policy, legal and institutional framework that guided the plan preparation process.

2.2 LOCATION AND SIZE

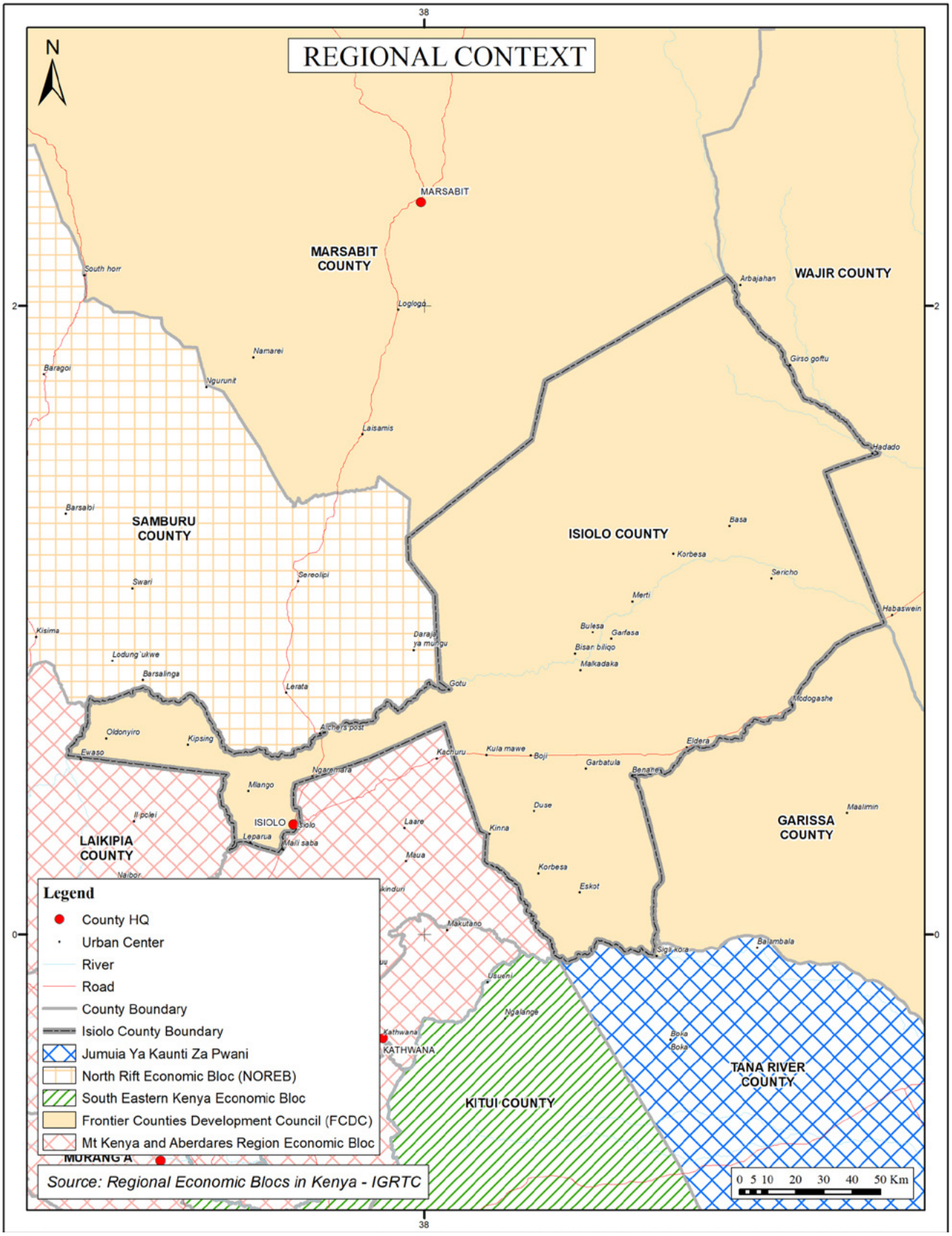
Isiolo County lies between Longitudes 36° 50′ and 39° 50′ East and Latitude 0° 05′ South and 2° North, in the Upper Eastern Region of Kenya. The County borders Marsabit County to the North, Wajir County to the East, Garissa and Tana River Counties to the South East, Meru County to the South, Laikipia County to the South West and Samburu County to the West. The Isiolo County Physical and Land Use Development Plan will cover the entire area of Isiolo County whose size is approximately 25,350.6km^2 and had a population of 268,002 people, KNBS 2019. The Maps below show the location of the County in the National and Regional Context.

Map 2-1: Locational Map - National Context



Source: Author 2025

Map 2-2: Locational Map - Regional Context



Source: Author 2025

2.3 ADMINISTRATIVE UNITS

Isiolo County is administered through 10 wards, 3 sub-counties and 2 constituencies.

CONSTITUENCY	SUB-COUNTY	NUMBER OF DIVISIONS	NUMBER OF LOCATIONS	NUMBER OF SUBLOCATIONS	WARDS
Isiolo North	Isiolo	4	16	30	5
	Merti	3	9	21	2
Isiolo south	Garbatulla	4	22	37	3

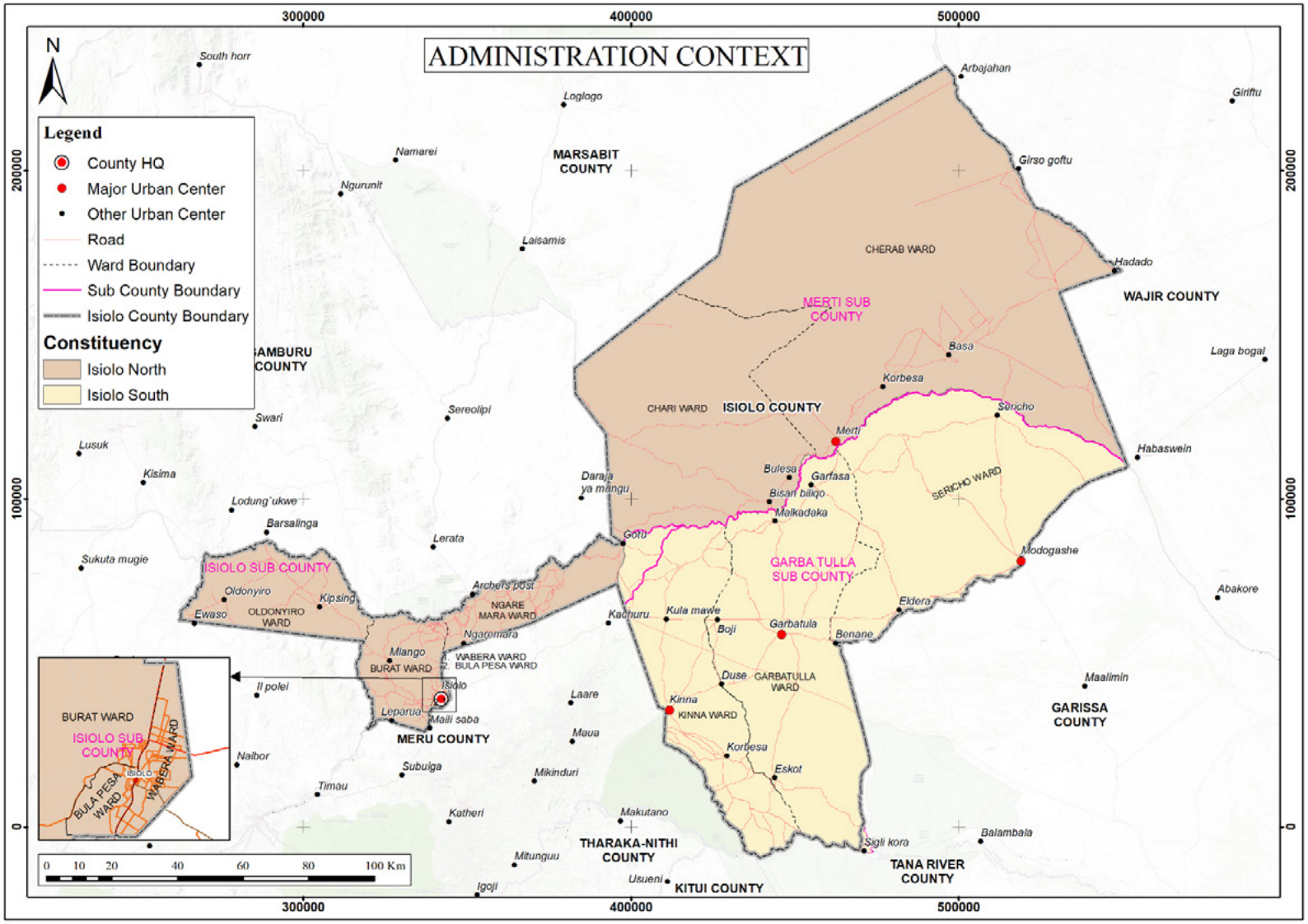
Isiolo Subcounty has 5 wards, Merti has 2 wards and Garbatulla has 3 wards. The table below shows the wards within the County.

Table 2 1: Isiolo County Administrative Units

SUB COUNTY	WARD	SIZE (KM²)
Isiolo	Wabera	13
	Bulla Pesa	8
	Burat	748
	Ngaremara	964
	Oldonyiro	1161
Merti	Chari	3761
	Cherab	8862
Garbatulla	Kinna	2181
	Garbatulla	3821
	Sericho	3816

Source: Isiolo County CIDP, 2023-2027

Map 2 3: Administrative Units within the County



Source: Author 2025

2.4 POLICY AND LEGAL FRAMEWORK

2.4.1 Policy Framework

2.4.1.1 Sustainable Development Goals, 2015

Sustainable Development Goals (SDGs), set to achieve decent lives globally by 2030. While all 17 SDGs are relevant, those significantly guiding the CPLUDP are; Ending poverty (SDG 1); Eradicating hunger (SDG 2); Ensuring sustainable management of water and sanitation (SDG 6); Availing reliable and sustainable energy (SDG 7); Economic growth (SDG 8); Building resilient and sustainable infrastructure (SDG 9); Make sites and human settlements inclusive, safe, resilient and sustainable (SDG 11) and Protection, restoration and promotion of sustainable use of terrestrial ecosystems by managing forests, combating desertification, reversing land degradation and halting biodiversity loss (SDG 15).

The CPLUDP will provide a development framework for the County aimed at eliminating poverty, rekindling the local economy, attracting investors, and creating job opportunities through the development and implementation of economic improvement strategies.

2.4.1.2 Agenda 2063

This long-term development agenda aims to transform Africa into a prosperous, peaceful, and integrated continent by the year 2063. Specifically, Agenda 2063 emphasizes on reducing inequality, promoting sustainable consumption and production patterns, combating climate change, and ensuring sustainable urban development. Consequently, the CPLUDP will align with these overarching goals by focusing on reducing inequality, promoting sustainable land use practices, addressing climate change impacts, and ensuring resilient and sustainable urban development. By integrating the principles and objectives of Agenda 2063 into the CPLUDP, Isiolo will work towards achieving a more inclusive, sustainable, and prosperous future for its residents over the next decade.

2.4.1.3 New Urban Agenda

The Agenda seeks to transform existing and emerging challenges into opportunities by leveraging the potential of urbanization for structural transformation. This will be achieved through promoting proactive and responsive planning, innovation, industrialization and sustained economic growth through high productivity, value added activities, resource efficiency and harnessing local economies and resources. This Agenda will guide the planning of urban areas in Isiolo, as it aims at the development of new towns and promotes economic growth at the county and national levels.

2.4.1.4 Kenya Vision 2030

The Kenya Vision 2030, which is anchored on three main pillars: Economic, Social and Political aims to make Kenya a middle-income country with a high-quality life for its citizens. The preparation of the CPLUDP for the county localizes the aspirations of the Kenya Vision 2030 by providing a high quality of life to all its citizens in a clean and secure environment through participatory planning.

This will be achieved through the formulation of improvement strategies for key thematic sectors in the CPLUDP such as agriculture, security, infrastructure, trade and protecting the environment from any potential adverse environmental impacts.

Kenya Vision 2030 also designates Isiolo as a Resort City apart from two other locations in the coastal region. The CPLUDP will ensure the formulation of a Land Use Development Framework and policies that are tailored to actualize the realization of Isiolo as a Resort City.

2.4.1.5 Kenya National Spatial Plan 2015-2045

The Kenya National Spatial Plan is a long-term plan that focuses on land use, socio-economic and environmental issues and aims at achieving sustainable spatial development and optimal use of land in Kenya. It provides the spatial framework for the Kenya Vision 2030. It provides comprehensive strategies and policy guidelines for dealing with issues of rural-urban development, infrastructure and sustainable human settlements.

The CPLUDP localizes the NSP by planning for sustainable human settlements, infrastructure development, industrialization, trade and conservation of natural resources within the county.

2.4.1.6 Sessional Paper No.3 of 2009 on National Land Policy

The National Land Policy advocates for sustainable land use which is also the goal of this CPLUDP. This will be achieved through careful allocation and distribution of land uses. The policy recognizes land use planning as a tool in land use management that can be used to address the current challenges and create new opportunities for sustainable human settlements.

The provisions of this policy will inform the plan development strategies, guidelines and regulations concerning the environment, housing, transportation, economy and agriculture among other sectors. These guidelines will act as the development control instruments to be used by the relevant agencies to ensure equity and sustainable land utilization.

2.4.1.7 Sessional Paper No. 1 of 2017 on National Land Use Policy

The National Land Use Policy was developed incorporating all activities that have an impact on the use of land and its resources. The overall goal of the National Land Use Policy is to provide a legal, administrative, institutional and technological framework for optimal utilization and productivity of land-related resources sustainably and desirably at the national, county, and community levels. The Policy is premised on the philosophy of economic productivity, social responsibility, environmental sustainability and cultural conservation.

This policy is of great relevance to this project since its key principles include efficiency, access to land use information, equity, elimination of discrimination and public benefit sharing. It seeks to balance land-related concerns such as food security, human settlements, environmental protection and climate change.

2.4.1.8 Integrated National Transport Policy, 2012

This policy paper is anchored on 'Moving a Working Nation'. It is centered on the basis that an efficient transport system is an important prerequisite for facilitating national and regional

integration; promoting trade and economic development; supporting other sectors of the economy; contributing to poverty reduction; minimizing the effects of climate change; and, wealth creation. Moreover, it identifies challenges besetting the transport sector in Kenya as a whole. In line with the policy's vision to achieve an integrated transport system, the Isiolo CPLUDP will seek to improve and modernize the transportation sector to achieve an efficient transport system within the county.

2.4.1.9 Sessional Paper No. 3 of 2016 on National Housing Policy

This policy recognizes land use planning and management as a critical input in housing provision. It recognizes that land-related matters have deep socio-economic and political impacts. It also recognizes that the lack of comprehensive land use planning and management is what has led to substandard settlements with inadequate infrastructure, services and open spaces. The policy aims at promoting the planning of human settlements which will include re-planning of those that have inadequate infrastructure and services.

The CPLUDP will consider those aspirations by ensuring the provision of basic infrastructure, facilities and services.

2.4.1.10 National Slum Prevention Strategy 2023

The National Slum Prevention Strategy 2023 aims to guide rapid urbanization in Kenya, focusing on upgrading and preventing slums. This strategy has been developed by the State Department for Housing and Urban Development and is spearheaded by the Kenya Informal Settlement Improvement Project (KISIP), which emphasizes improving living conditions in slums. It is designed to address challenges related to urbanization, housing, and infrastructure in Kenya's slums. The strategy, if effectively implemented, will significantly impact the CPLUDP. Isiolo County, being strategically positioned and experiencing economic growth, will benefit from the strategy by enhancing urban development, infrastructure, and housing in line with national objectives to prevent and upgrade slums. The strategy will likely influence Isiolo's urban planning, housing policies, and infrastructure development to align with the national goal of improving living conditions in slums and promoting sustainable urban growth.

2.4.1.11 Bottom-Up Economic Transformation Agenda (BETA)

The Bottom-Up Economic Transformation Agenda (BETA) is a strategic plan designed to address economic challenges, stimulate recovery, and enhance resilience in Kenya. It focuses on reducing the cost of living, creating jobs, ensuring income distribution equity, enhancing social security, expanding the tax base, and increasing foreign exchange earnings.

BETA is structured around five pillars, including Agricultural Transformation, Micro, Small, and Medium Enterprise (MSME) Economy, Healthcare, Climate Change Action Plan, and Urbanization and Housing. It emphasizes investing in smallholder agriculture and the informal sector, reforming health and social security systems, and creating a middle-class society in Kenya.

In the context of CPLUDP, BETA will play a crucial role in guiding the county's economic growth and development strategies. By aligning with BETA principles, Isiolo County can prioritize critical sectors like agriculture, MSMEs, healthcare, and climate action to drive inclusive growth and sustainable development. The BETA's emphasis on job creation, income equality, and social security aligns with the goals of the Isiolo County development plan, ensuring that resources are directed towards high-impact value chains and social sectors.

Therefore, the BETA will serve as a blueprint for Isiolo County's economic planning, budgeting, and land use decisions, fostering a conducive environment for socio-economic transformation. By implementing policies and programs in line with the BETA pillars, Isiolo County can enhance its economic resilience, create opportunities for its residents, and promote sustainable development over the next decade.

2.4.1.12 National Tourism Strategy 2021-2025

The National Tourism Strategy for 2021-2025 sets out to enhance the performance of the tourism sector, increase revenues, and amplify its contribution to the national economy, surpassing pre-pandemic levels. This strategy plays a crucial role in guiding the development of the CPLUDP. It

places emphasis on mitigating the impacts of the Covid-19 pandemic, boosting sector revenues, and augmenting its economic contribution. The strategy focuses on diversifying and refining tourism products, promoting eco-tourism, tapping into the film industry and sports tourism niches, and fostering domestic tourism.

Furthermore, it strives to safeguard wildlife migratory corridors, improve governance within the tourism sector, and effectively manage community conservancies to ensure that local communities reap the benefits of tourism offerings. These elements align with the objectives of sustainable development and integrated spatial planning, ensuring that tourism development in Isiolo County is well-coordinated, sustainable, and mutually beneficial for local communities and the economy..

2.4.1.13 Sessional Paper No. 3 of 2020 on The Livestock Policy

The Isiolo County Physical and Land Use Development Plan will align with Sessional Paper No. 3 of 2020 on the livestock policy. The policy outlines key strategies and objectives for the livestock sector. The Plan aims to achieve these goals through various initiatives. It includes efforts to enhance livestock production, such as the establishment of livestock holding grounds, feedlots, and modern abattoirs to boost meat and leather production. The plan also focuses on breed improvement, vaccination programs, and livestock nutrition to increase productivity and resilience in livestock farming. It emphasizes the promotion of value addition of livestock products, establishment of community pasture farms, and fisheries development to diversify livelihoods and enhance food security. By implementing these strategies, Isiolo County aims to revitalize the livestock industry, increase production, and contribute to economic growth and sustainable livelihoods in the region.

2.4.1.14 Isiolo County Gender Policy and Action Plan (2021-2025)

The Isiolo County Gender Policy and Action Plan (2021-2025) aims to ensure gender equality and address gender imbalances in Isiolo County by providing equal opportunities for women and men to participate and benefit from development processes. The policy focuses on

promoting gender inclusion, empowering women, youth, and girls, and eliminating all forms of violence, including Sexual Gender-Based Violence and Female Genital Mutilation (FGM). It also emphasizes on the importance of women's participation in leadership and the need for resources to support women's empowerment.

The CPLUDP will incorporate gender-responsive planning and budgeting guidelines outlined in the gender policy to ensure that development initiatives are inclusive and address gender inequalities. By aligning the physical and land use development plan with the gender policy, Isiolo County can create a framework that promotes sustainable development while actively working towards gender equality and the protection of women, girls, and youth in the region.

2.4.2 Legal Framework

2.4.2.1 Constitution of Kenya, 2010

The Constitution of Kenya (CoK) (2010) is the overarching legislation that guides the preparation of this County Physical and Land Use Development Plan. Amongst its other provisions, CoK (2010) provides that every person has the right to health care services, accessible and adequate housing, and reasonable standards of sanitation, clean and safe water in adequate quantities, social security, and education CoK (2010), Chapter 4 Bill of Rights, Part 2 Rights and Fundamental Freedoms). Article 60 (1) of CoK 2010 provides that land in Kenya shall be held, used and managed in a manner that is equitable, efficient, productive and sustainable.

For these purposes, the use of land and property shall be regulated by the State "in the interest of defence, public safety, public order, public morality, public health, or land use planning" (Article 66(1)). Development planning is inextricably linked to the ownership, use and management of land. CoK 2010 also provides for the devolution of government. With regards to development planning, CoK 2010 laid down the objects of devolution as, amongst others, "to promote social and economic development and the provision of proximate, easily accessible services throughout Kenya" (Article 174(f)).

2.4.2.2 *The Physical and Land Use Planning Act No. 13 of 2019*

It is an act of Parliament to make provision for the planning, use, regulation and development of land for connected purposes. Section 36 mandates County Governments to prepare County Physical and Land Use Development Plans in respect of the County.

The CPLUDPs are formulated for an overall physical and land use development framework for the county; guiding rural development and settlement; providing a basis for infrastructure and services delivery; guiding the use and management of natural resources; enhancing environmental protection and conservation; identifying the proper zones for industrial, commercial, residential and social developments; improving transport and communication networks and linkages; promoting the safeguarding of national security; and any other purposes that may be determined by the Planning Authority.

The Isiolo CPLUDP intends to implement a land use framework that will guide the development of the county in a bid to achieve the set-out goals and visions..

2.4.2.3 *County Governments Act No. 17 of 2012*

The County Government Act, 2012 executes Chapter Eleven of the Constitution of Kenya, 2010; which encompasses the powers, functions and responsibilities of the County Government. Section 87 of the Act also requires that the public be involved in all decisions the county makes through public participation. Section 107 outlines the types of plans to be prepared by the county and provides for the integration of economic, physical, social, environmental and spatial planning. This law therefore gives the basis and timeframe for the preparation of the GIS-based CPLUDP which will guide the development of Isiolo County for the next 10 years, subject to a revision after 5 years.

2.4.2.4 *Urban Areas and Cities Act No. 13 of 2011*

The act is a legislation that implements Article 184 of the Constitution of Kenya; which talks about urban areas and cities. Part V of the Urban Areas and Cities Act No. 13 of 2011 strives for an

integrated development plan for cities and towns. Section 36 of the act gives the local authority the mandate to control land use, land subdivision, land development, and zoning by the public and private sectors for any purpose in the interest of the proper and orderly development of the local authority within its area of jurisdiction. The CPLUDP provides for the identification of urban areas within the county and guides the preparation of lower-level plans.

2.4.2.5 Environmental Management and Coordination Act No. 8 of 1999

The Environmental Management and Coordination Act of 1999 (EMCA) was enacted to provide an appropriate legal and institutional framework for the management of the environment and for matters connected therewith and incidental thereto. Part II of the Act states that every person in Kenya is entitled to a clean and healthy environment and must safeguard and enhance the environment.

Section 74 demands that all effluent generated from the sources be discharged only into the existing sewerage system upon issuance of the prescribed permit from the County Governments. The provisions of this Act will be echoed by the environmental protection strategies of the Isiolo CPLUDP.

2.4.2.6 Land Act No. 6 of 2012

The Act provides for a wide variety of matters regarding public, private and community land and in particular provides for the sustainable administration and management of land and land-based resources. It also provides for the compulsory acquisition of land. The Act sets out the guiding values and principles of land management and administration and requires public officers and institutions to observe such values and principles.

As for land tenure, the Act specifies the following forms: (a) freehold; (b) leasehold; (c) such forms of partial interest as may be defined under this Act and other law, including but not limited to easements; and (d) customary land rights, where consistent with the Constitution. The Act will guide the allocation, conservation, conversion and management activities of land in Isiolo County.

2.4.2.7 *Community Land Act No. 27 of 2016*

This Act of Parliament gives effect to Article 63 (5) of the Constitution. It makes provision for the recognition, protection and registration of community land rights and also provides for the conversion of community land, special rights and entitlements with respect to community land, environment and natural resources management of community land and settlement of disputes relating to the community.

The Act also provides for the registration of community land rights, which helps to prevent land disputes and conflicts. The Act requires that every person dealing with community land be guided by the principles and values set out in the Constitution. Additionally, the Act provides for the role of county governments in relation to unregistered community land.

The Act also lays a foundation for majority rural land security, as affecting communities that hold, use and transact lands under their own, usually customary norms, and whose lands remain un-surveyed and untitled. Land in Isiolo County is held in various tenures including community land, where the land is held by the community, the provisions of this Act will apply regarding the registration and management of the land.

2.4.2.8 *Survey Act*

This is the principal act that guides land survey works and processes in Kenya. Section 22 of the Act states that any survey of land for the purposes of any written law for the time being in force relating to the registration of transactions in or of title to land or the Land Adjudication Act shall be carried out under and in accordance with the directions of the Director. Section 24 on boundary marks to be shown on a plan provides for every trigonometrical station, fundamental benchmark and boundary beacon erected or placed for the purpose of defining the boundaries of any holding or land shall be shown on the plan (if any) attached to, or referred to.

The Act bestows responsibility for protection of survey marks on every owner and occupier of land to protect every survey mark erected or placed on the land owned or occupied by him.

Section 30 further directs that every surveyor who executes any survey in accordance with the provisions of this Act and of any regulations made thereunder shall send to the Director of Survey all plans, field notes and computations relating thereto, and all such plans, field notes and computations shall be deposited in the Survey Office and shall become the property of the Government. This shall be duly adhered to in the preparation of Isiolo County land database.

2.4.2.9 The Land Registration Act No. 27 of 2012

The Act principally concerns the registration of interests in land. It applies to (a) registration of interests in all public land as declared by Article 62 of the Constitution; (b) registration of interests in all private land as declared by Article 64 of the Constitution; and (c) registration and recording of community interests in land. The provisions of this Act will guide the registration of the interests on land based on the approved County Physical and Land Use Development Plan.

2.4.2.10 The National Lands Commission Act No. 5 of 2012

These guidelines provide a basis for engagement between County Governments and the National Land Commission concerning monitoring and overseeing Land Use Planning and specifically provide direction on:

- The process of preparing, approving, and implementing Land Use Plans.
- The required institutional framework for preparing and implementing Urban land use plans.
- The expected outputs of the Urban Land Use Planning process.
- Indicative resources required for preparing the plan.

The preparation of this plan will provide for engagement between the NLC and the County of Isiolo for monitoring of the land use planning guidelines.

2.4.2.11 Isiolo County Civic Education and Public Participation Act, 2015

The Isiolo County Civic Education and Public Participation Act, 2015 aims to establish a legal framework for facilitating civic education and public participation in county governance, policy processes, and service delivery. This Act outlines mechanisms, processes, and procedures for civic education and public participation, emphasizing the development of a culture of civic engagement. It also focuses on coordinating civic education and public participation forums at various levels, including County Civic Education Forums, Sub-County Civic Education Forums, Ward Civic Education Forums, and Village Civic Education Forums.

To achieve the goals set by the Isiolo County Civic Education and Public Participation Act, 2015, the CPLUDP will integrate provisions for civic education and public participation by ensuring that land use decisions and development projects are inclusive and transparent. By incorporating mechanisms for public input, feedback, and engagement in the planning and implementation of development initiatives, the county can enhance community involvement and ownership of projects.

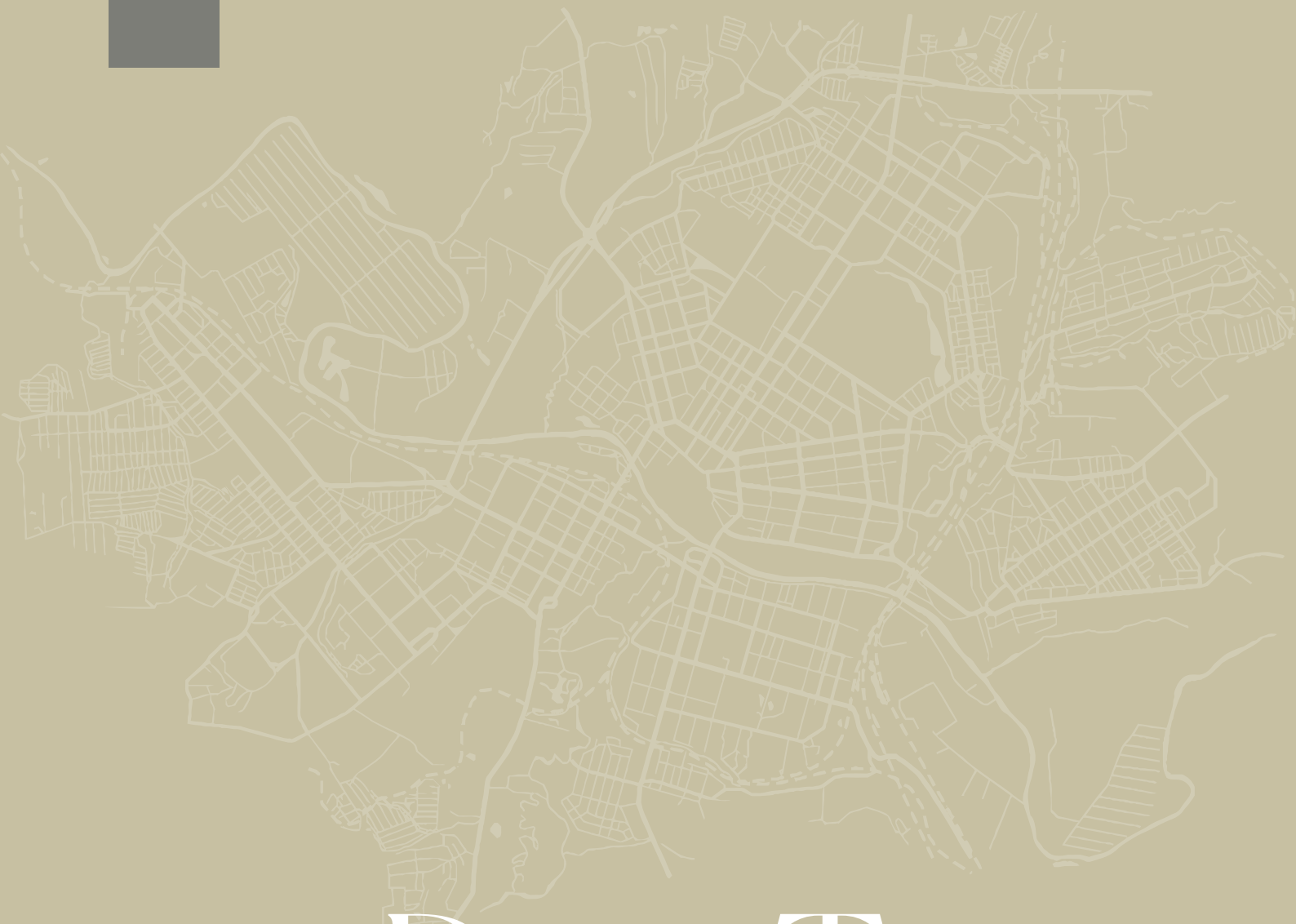
2.4.3 Institutional Framework

The following institutions have played key roles in the preparation of the CPLUDP:

Table 2-2: Key Institutions during the Preparation and Implementation of CPLUDP

CATEGORY	INSTITUTION	ROLE/RESPONSIBILITY
National Institutions	The National Department of Physical Planning	· Through the Director-General in charge of Physical and Land Use Planning, this state department is charged with the provision of policy guidelines on physical and land use planning in the country.
	The National Land Commission (NLC)	· NLC is a key stakeholder in the preparation of this CPLUDP since it is mandated to; manage public land; advise the National and County Governments on land matters; recommend a national land policy; conduct research on land and natural resources; monitor land use planning in the country among others. · The NLC is charged with the duty of alienating public land and issuance of leases.
	Department of Survey	· Approval of survey works based on approved CPLUDPs

CATEGORY	INSTITUTION	ROLE/RESPONSIBILITY
County-level Institutions	The County Executive Committee (CEC)	· Through CECM in charge of Physical and Land Use Planning is the policy head-on matters related to planning, the CEC oversees planning matters and is responsible for submitting the plan to the County Assembly for approval.
	County Department of Lands, Physical Planning & Urban Development	· It is in charge of managing the project and performing the overall supervision function during the plan's preparation. Will also oversee the plan's implementation upon approval.
	The County Assembly	· As a county law-making body, it will approve the CPLUDP upon completion. · The assembly will make decision on budget allocations for projects emanating from the CPLUDP
Local Stakeholders	Community	· Providing local planning information · Participating in decision-making, reviewing & giving feedback · Undertaking visioning exercise · Validating the project outputs and participating in implementing the plan proposals



Part Two

SITUATION ANALYSIS

CHAPTER 03

Base Map

3.1 OVERVIEW

The chapter discusses the content of the Base map for the County. The Base map has been prepared in a GIS environment and forms the basis for preparation of thematic maps.

3.2 PREPARATION OF THEMATIC BASE MAPS AND CARTOGRAPHIC DESIGN

Creating thematic maps that focus on specific areas such as administrative boundaries, transportation networks, natural resources, and settlement patterns to support targeted analysis and decision-making. Each thematic map is tailored to highlight key insights relevant to its respective subject area. Layers are carefully selected and arranged to enhance usability, making it easier for planners and stakeholders to derive meaningful conclusions.

Symbolization is guided by best cartographic practices to ensure that important features are visually distinguishable. Legends, scale bars, and north arrows are incorporated into maps to improve readability. Label placement is optimized to prevent clutter while maintaining legibility, especially for densely populated areas. Thematic maps undergo several revisions based on user feedback to improve their effectiveness.

3.2.1 Documentation and Metadata Compilation

Ensuring that all datasets are well-documented with metadata, including descriptions, sources, processing steps, and usage guidelines to facilitate future updates and applications. Metadata provides crucial context regarding the origin and limitations of each dataset, ensuring transparency in data usage. A metadata repository is maintained to allow easy retrieval of dataset details. This documentation is essential for ensuring long-term usability and seamless integration with future geospatial projects.

3.2.2 Geodatabase Structure

The geodatabase includes multiple feature datasets, each representing a specific thematic area crucial for the spatial planning of Isiolo County. Below is an overview of each thematic dataset and its composition.

3.2.3 Administration

The administration dataset consists of various administrative boundaries, including wards, sub-counties, divisions, and county limits. These boundaries define jurisdictional areas and are essential for governance, planning, and resource allocation. Additionally, points representing key administrative centers such as the county headquarters and urban centers are included to aid in spatial decision-making.

3.2.4 Cadaster

The cadaster dataset will contain land parcel data, including registered plots, property ownership details, and cadastral boundaries. This information is crucial for land tenure management, taxation, and planning for infrastructure development. The dataset ensures proper documentation and legal reference for property rights and land use.

3.2.5 Economy

The economy dataset is intended to house spatial data related to economic activities, commercial zones, and industrial areas. This dataset will support economic development initiatives by

identifying key business hubs, trade routes, and potential investment locations within Isiolo County.

3.2.6 Environment

The environment dataset will include features related to protected areas, forests, water sources, and ecological zones. This dataset is essential for environmental conservation efforts, climate change mitigation, and sustainable development planning. It will also aid in monitoring biodiversity and managing natural resources efficiently.

3.2.7 Housing

The housing dataset will include data on residential zones, informal settlements, and housing developments. This dataset is crucial for urban planning, ensuring sustainable housing policies, and addressing issues of informal housing expansion. It will also assist in predicting future housing needs based on population growth trends.

3.2.8 Industrialization

This dataset will encompass data on industrial zones, manufacturing hubs, and economic corridors. It will support efforts to attract investment and plan for industrial growth, ensuring industries are strategically located for accessibility and efficiency.

3.2.9 Infrastructure

The infrastructure dataset will include road networks, bridges, water supply infrastructure, electricity distribution, and communication networks. This dataset is fundamental for planning and upgrading essential infrastructure, ensuring connectivity and accessibility for both urban and rural areas.

3.2.10 Natural Resources

This dataset will focus on the distribution of natural resources such as minerals, forests, and water bodies. It will aid in resource management, environmental protection, and sustainable extraction practices while ensuring equitable distribution of resources.

3.2.11 Population

The population dataset will incorporate demographic data, settlement patterns, and population density maps. This dataset is essential for social service delivery, urban expansion planning, and disaster preparedness.

3.2.12 Spatial Structure

The spatial structure dataset will define the overall land use framework, zoning regulations, and planned land-use changes. It is crucial for guiding spatial development policies, balancing urban growth with conservation needs, and ensuring efficient land use.

3.2.13 Tourism

This dataset will include tourism sites, cultural heritage locations, and hospitality infrastructure. It will support tourism development initiatives by identifying potential areas for investment and enhancing the visibility of Isiolo County as a tourism destination.

3.2.14 Transport

The transport dataset will contain data on major roads, highways, airstrips, and public transportation networks. It will assist in mobility planning, road network expansion, and ensuring effective transportation systems to connect different regions within the county.

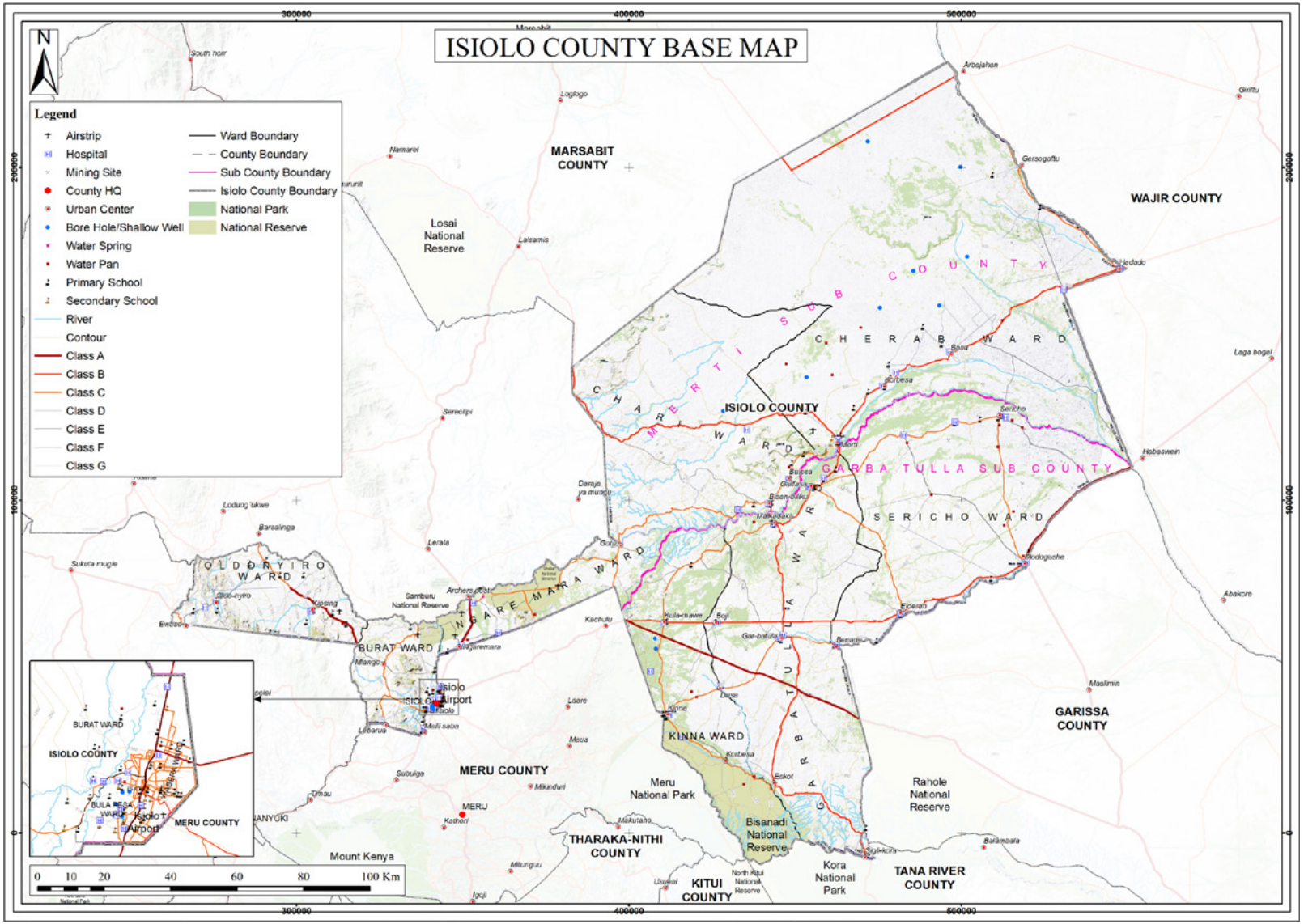
3.2.15 Topography

The topography dataset includes elevation models, slopes, and contour data. It is crucial for flood risk assessment, infrastructure planning, and agricultural suitability analysis. The dataset will also aid in identifying areas prone to erosion and landslides.

By structuring the base map with these thematic feature datasets, the spatial plan for Isiolo County can support well-informed decision-making, effective resource allocation, and sustainable development.

The map below shows Isiolo Base Map.

Map 3-1: Base Map



Source: Author 2025

CHAPTER 04

Physiographic Characteristics

4.1 OVERVIEW

The physical characteristics and natural resources of Isiolo County play a crucial role in its spatial development. Land use is primarily communal and focused on pastoralism, as most areas cannot support crop farming due to the arid conditions. The presence of perennial rivers such as the Isiolo and Ewaso Nyiro provides vital water sources that support both human settlement and biodiversity corridors. These rivers and the county's natural reserves, like Buffalo Springs and Shaba National Reserves, add significant ecological and economic value, influencing the spatial distribution of human activities, conservation efforts, and infrastructural development. Thus, the interplay of Isiolo's natural features, climate, and physical landscape shapes not only the plant community composition but also guides the spatial planning and sustainable development strategies crucial for the county's future growth and resilience.

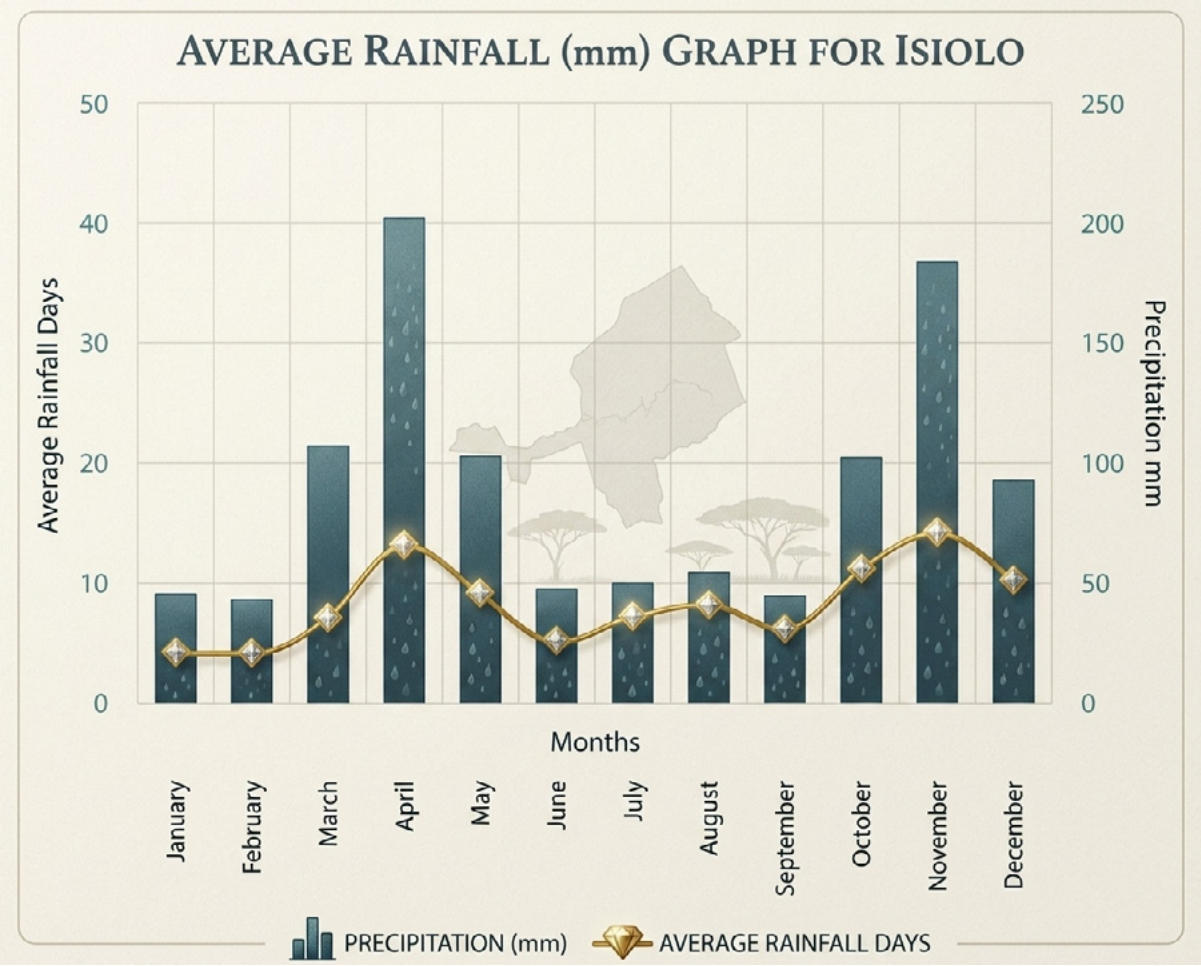
4.1.1 Climate

Isiolo County is generally an arid and semi-arid area with low-lying plains on most parts of the region. About 80% of the land is non-arable (22,000 km^2) and is used for grazing while Agro-pastoralism is practiced in a few areas.

4.1.1.1 Rainfall

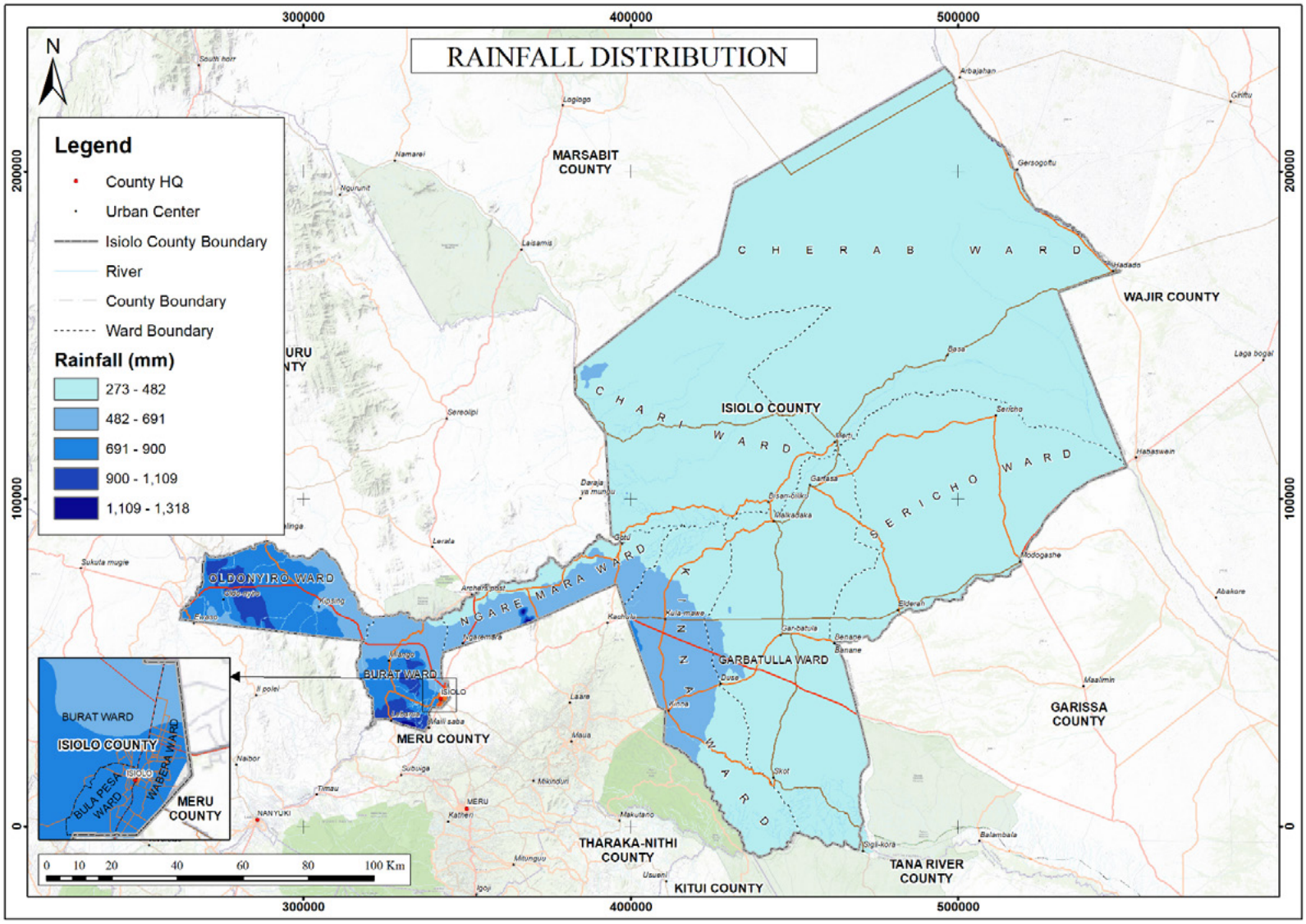
There are two main rainy seasons: the short rains from October to December, peaking in November, and the long rains from March to May, peaking in April. The landscape's topography affects rainfall distribution. On average, Isiolo receives about 278mm of rainfall annually, with significant variability ranging from 50mm to 930mm. The county's northern region (65%) is very arid, receiving 150-250mm of rain yearly. Central Isiolo, covering 30%, is arid with 300-350mm of rainfall supporting grasslands. The southern part, near Mt. Kenya, receives the highest rainfall of 400-650mm annually. The wettest months are November and April, averaging 80mm and 66mm of rainfall, respectively. The figure below gives a graphical illustration of the rainfall experienced.

Figure 4-1: Average Rainfall in Isiolo County



Source: World Weather Online

Map 4-1 Rainfall Distribution Map

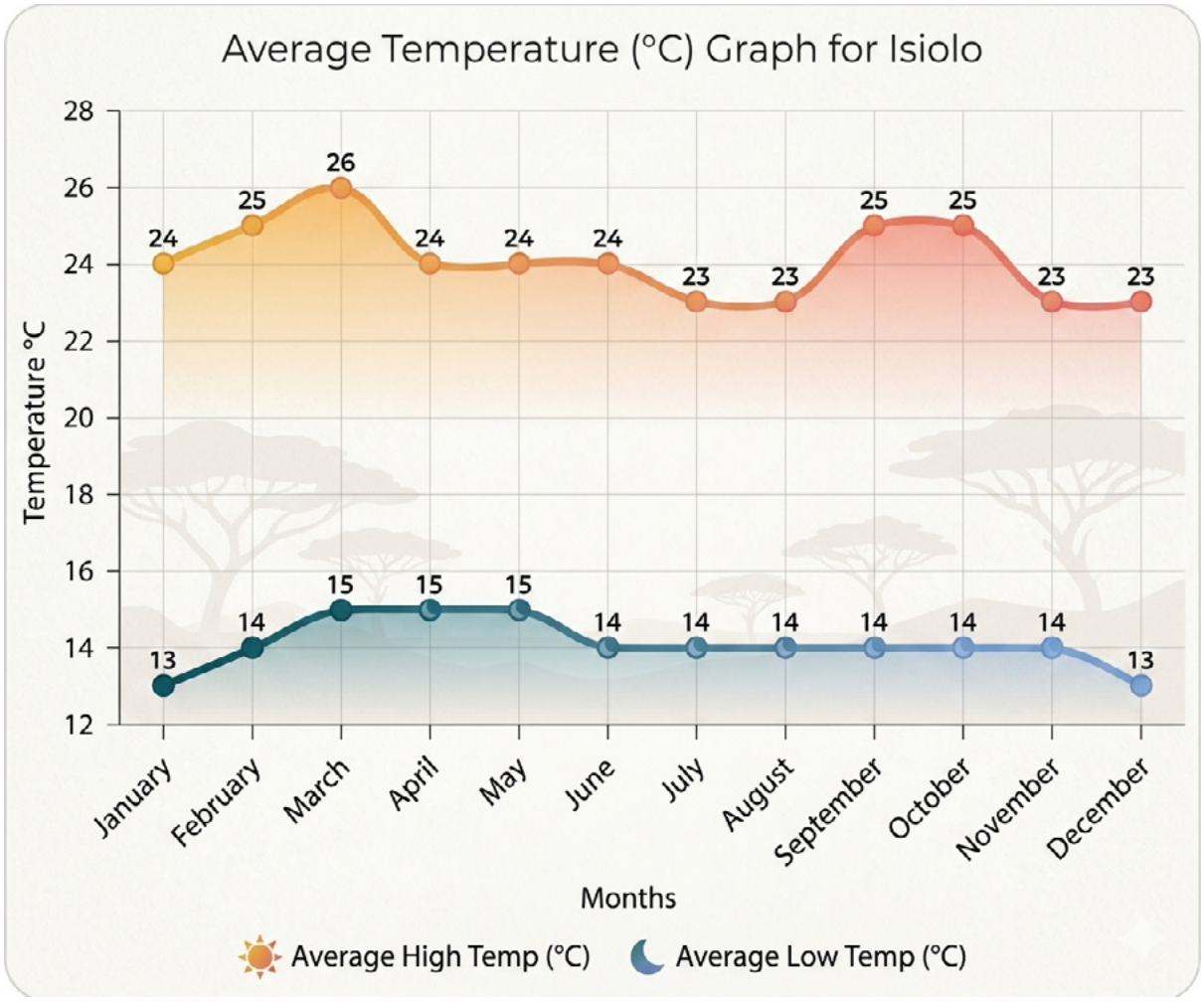


Source: Author 2025

4.1.1.2 *Temperature and Humidity*

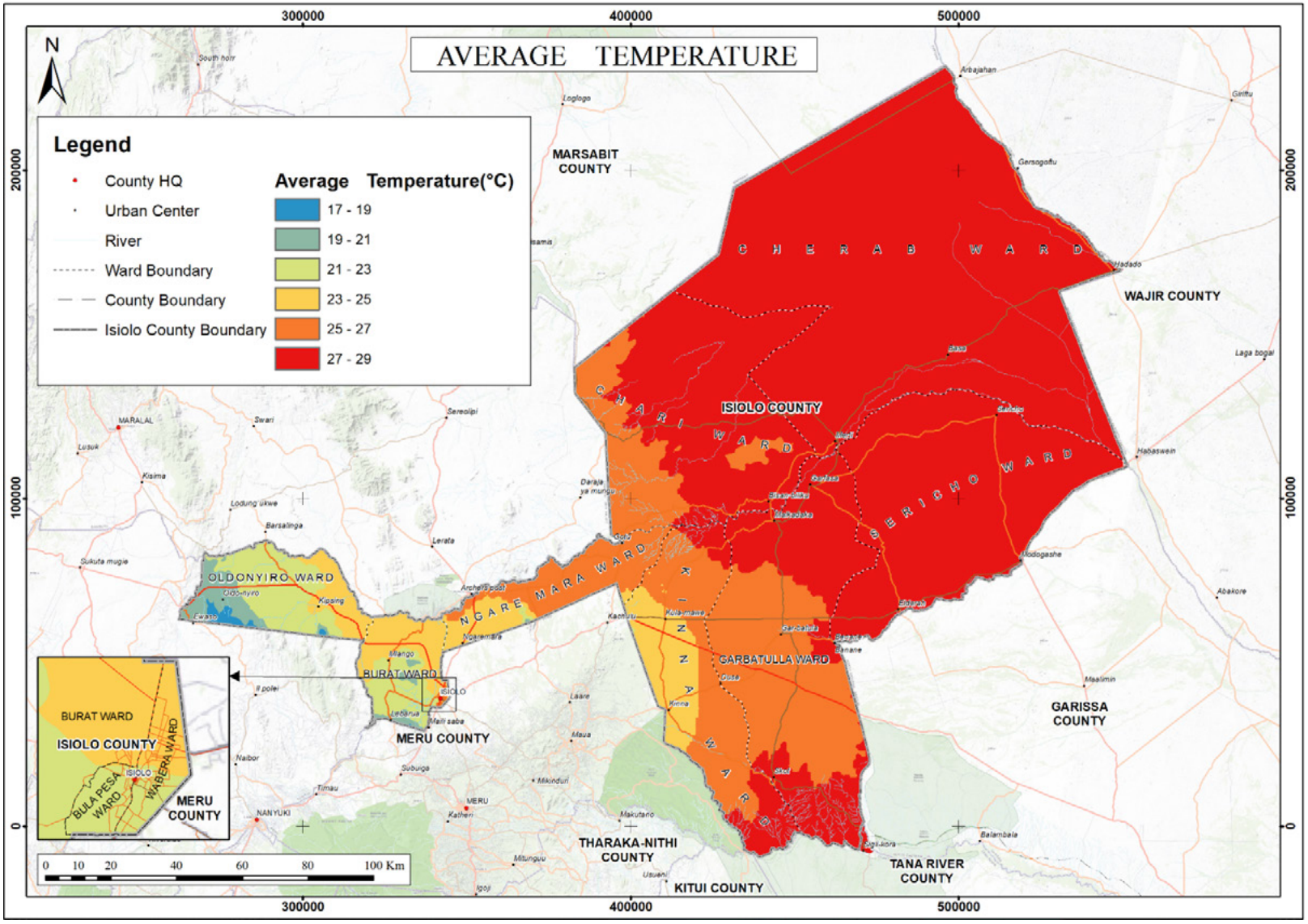
The mean annual temperature in Isiolo County is approximately 29°C, reflecting its generally hot climate. The county enjoys more than nine hours of sunshine each day, presenting a significant opportunity for harvesting and utilizing solar energy, which could be a key resource for sustainable development. High temperatures are consistently recorded throughout the year, although there are some variations in different parts of the county primarily due to differences in altitude. Isiolo is predominantly hot and dry for most months of the year, experiencing two distinct rainy seasons that bring temporal and spatial variations in rainfall patterns. These climatic conditions heavily influence the county's ecosystem, agriculture, and potential for renewable energy exploitation.

Figure 4-2 Average Temperature in Isiolo County



Source: World Weather Online

Map 4-2 Average Temperature Map

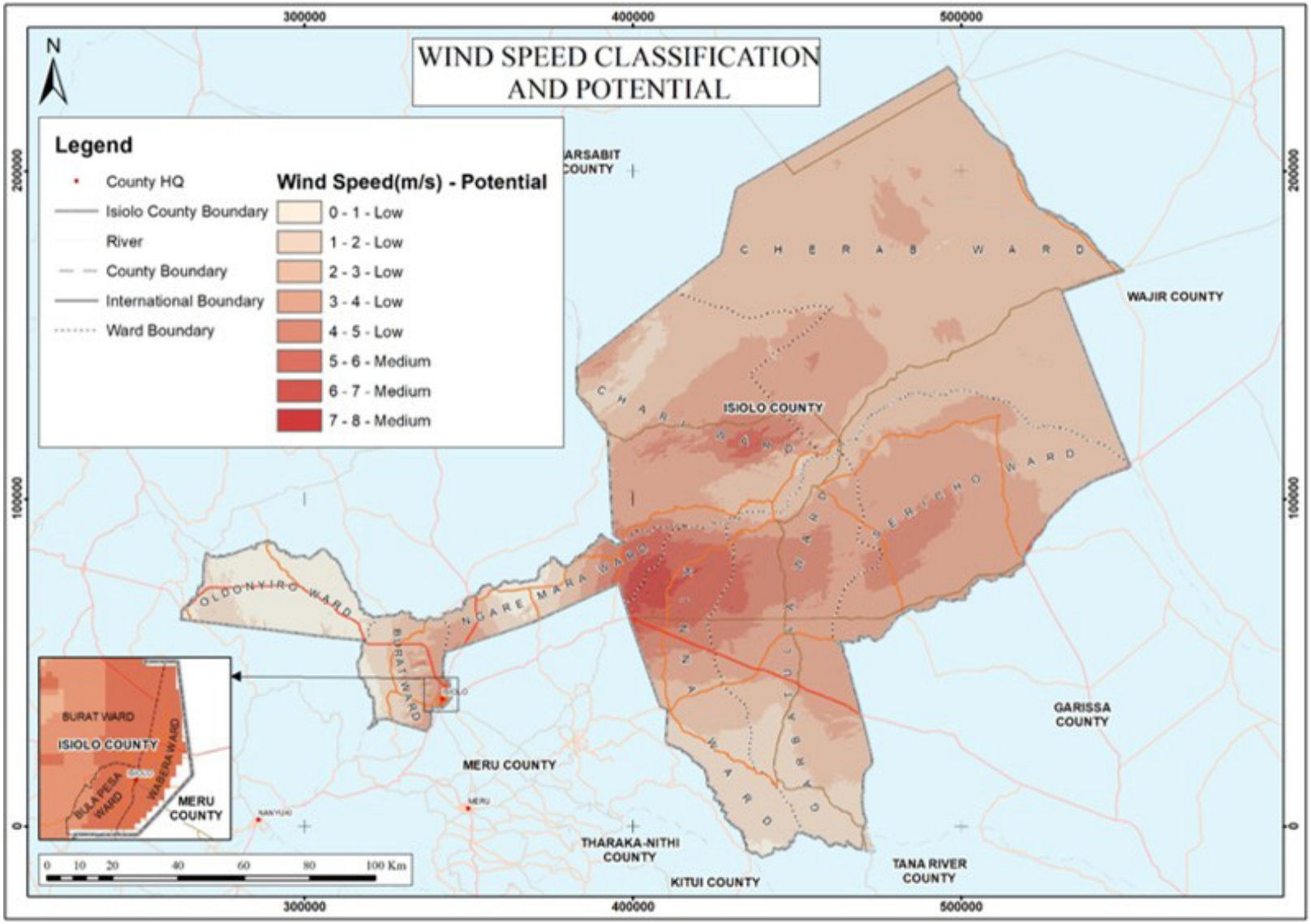


Source: Author 2025

4.1.1.3 Wind Speeds and Direction

Monsoon winds blow across Isiolo County throughout the year, with their intensity reaching a peak during the months of July and August. These strong winds play a significant role in sweeping away moisture, contributing to the county's predominantly dry climate. In addition to their climatic impact, the persistent and powerful monsoon winds present a substantial opportunity for harnessing wind-generated energy. This renewable energy potential could be developed to support sustainable energy solutions and contribute to the county's economic growth and environmental sustainability. The map below shows a graphical summary of the wind speeds that have been classified to be experienced in the County.

Map 4-3 Wind speed classification and potential map



Source: Author 2025

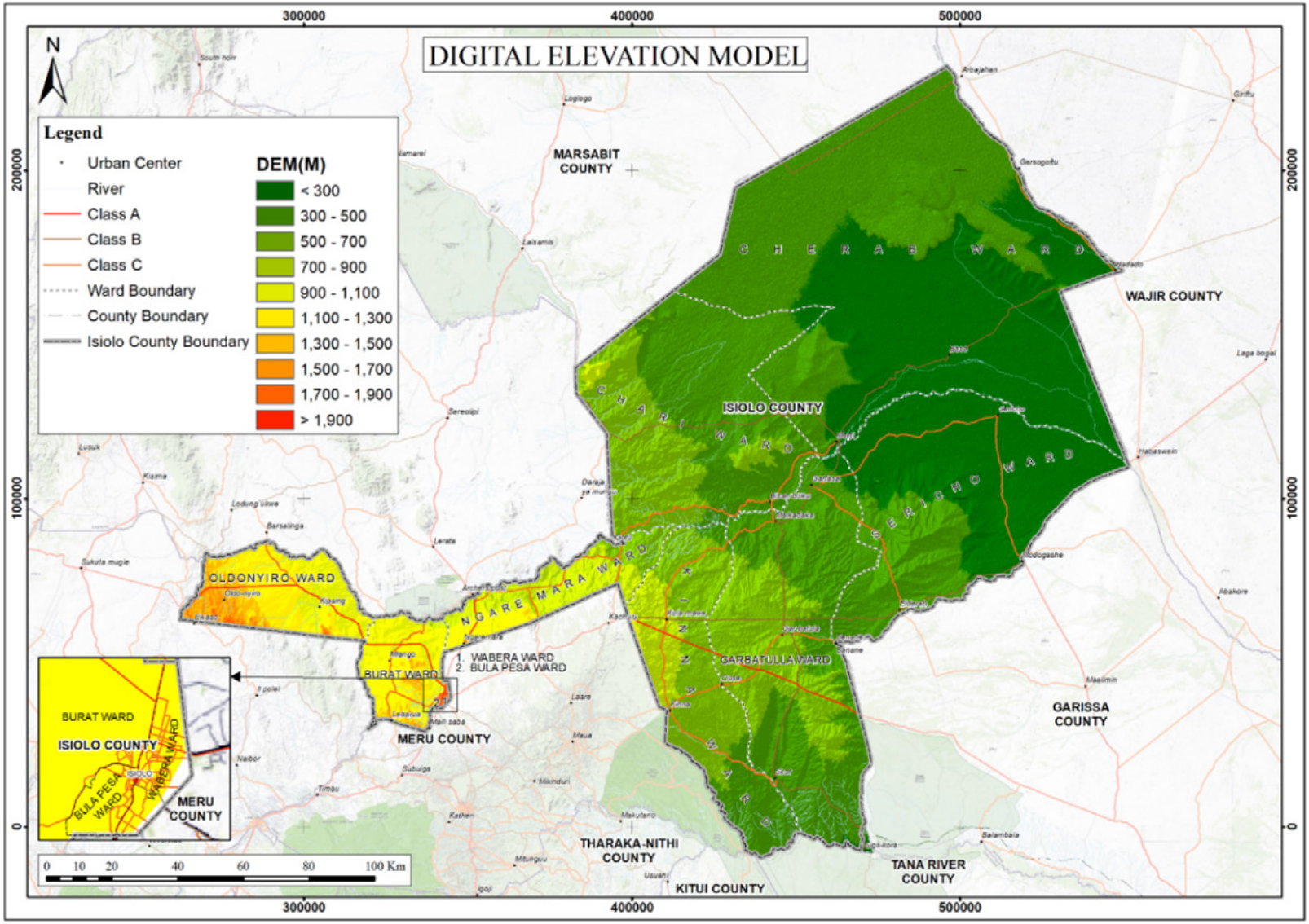
4.1.2 Topography

Topography influences drainage of soils, water resource availability, climate and human activities and is therefore a weighty pillar in spatial planning. Most of the land in Isiolo County is a flat low lying plain. The plains rise gradually from an altitude of about 200m above sea level at Lorian swamp, 300m above sea level at Merti Plateau; 1100m above the sea level at Isiolo town with the highest point occurring at Oldonyiro-Labarishereki at 2019m above sea level. Some of the notable physical features include Shaba and Sleeping Lions hills, Champagne ridge and Dakadima cliffs.

The slope is an important factor for intervention suitability studies as it influences the potential of runoff. Moreover, slope is one of the major factors determining the potential for in-stream riverbed storage methods, as well as determining erosion control measures. Isiolo County generally lies at a low altitude, due to the fact that most parts of Isiolo have sedimentary formations. Areas with slopes over 2° are mostly located in the areas with non-sedimentary formations, which can be found in the west of Isiolo. The low-lying plains of northern and eastern Isiolo are mainly a result of weathered sandstone formations and sedimentation.

There are six perennial rivers in the County namely; Ewaso Ngiro North, Isiolo, Bisan-Gurach, Bisanadi, Likiundu and Liliaba rivers. Ewaso Ngiro North River has its catchment area in the Aberdare ranges and Mount Kenya and serves as a boundary mark between Isiolo North and Isiolo South constituencies. Isiolo River originates from Mount Kenya and drains into Ewaso Ngiro River. Bisan-Gurach and Bisanadi rivers are in the southern part of the County and drain into the Tana River. Likiundu and Liliaba originate from Nyambene hills and drain into Ewaso Ngiro North River.

Map 4-4: Digital Elevation Model of Isiolo County



Source: Author 2025

4.1.3 Geology

Isiolo County geology varies largely. It has a combination of metamorphic rocks and other superficial rock deposits. In the northern and southern boundaries, volcanic formations are found respectively from Mount Marsabit and from Mount Kenya. In the south and the east of Isiolo large areas with metamorphic rocks such as gneisses and granitoids are found. Large parts of the central, northern and eastern part of Isiolo have sedimentary depositions and sandstones.

The tertiary rocks (Olive Basalt) are in the northern parts of the County, where past oil exploration has been undertaken. The areas covered with tertiary marine sediments have a high potential for groundwater harvesting. The western parts are predominantly covered by the Precambrian quartzite formation, an exceptionally hard metamorphic rock that originated from sandstone.

Alternating areas are characterized by fractured colluvial weathered rocks and loose red soils. These geological formations pose significant challenges due to their hardness, compactness, and lack of primary porosity. The geological composition in the area includes volcanic layers of basalts, trachytes, phonolites overlain by regolith. While these geological formations can retain water, basalts and trachytes have limited water storage capacity and yield water primarily when fractured.

4.1.4 Soils

Isiolo has a large variety in soils, most of which are clearly related to the underlying geology. Leptosols (grey) can be mainly found in North and Central Isiolo and are typically found on top of volcanic depositions. These soils can be shallowand where deeper, they tend to be also more-stony. In the sedimentary formations in both the East and far West of Isiolo, mainly the following soils can be found:

- **Solonetz (pink)** - saline soils due to high content of sodium and of magnesium. They can be used for extensive grazing.
- **Fluvisols (blue)** – alluvial deposits with various textures. They can be used for

agriculture and grazing.

- **Gleysoils (purple)** – soils that are often saturated for a long time. Use of these soils is difficult.
- **Vertisols (brown)** – clay rich soils that develop wide cracks when drying. Vertisols can be used, if moisture management is carried out.

In the Central part of the county planosols (orange) are present. Mature planosols have poor properties, waterlogging can occur, the soils are chemically degraded and the surface can have become acid. The metamorphic and volcanic formations in the West are covered with cambisols (dark yellow). These soils are very suitable for agriculture since they are well drained and can be very fertile. In the far West of the county luvisols (dark pink) and calcisols (bright yellow) are found. Calcisols are from calcareous depositions, and have due to that a high pH. Luvisols are soils with a washed in clay layer. Due to that they can hold moisture and nutrients quite well.

4.1.5 Hydrology

Hydrology is the scientific study of the movement, distribution, and quality of water on Earth. Hydrology in Isiolo County is defined by a combination of metamorphic rocks and other superficial rock deposits. The low-lying plains of northern and eastern Isiolo are mainly a result of weathered sandstone formations and sedimentation. The variable sedimentary formations consist of different types of lithological and soil formations. This results in various infiltration rates and permeability towards the deeper layers.

4.1.5.1 Isiolo's Hydrological Zones and Their Locations

There are three major aquifers found in the county, namely: The Merti aquifer, the Isiolo-Nyambeni-Mount Kenya aquifer, and the Kachuru-Kula-Mawe-Boji aquifer. They have the following characteristics:

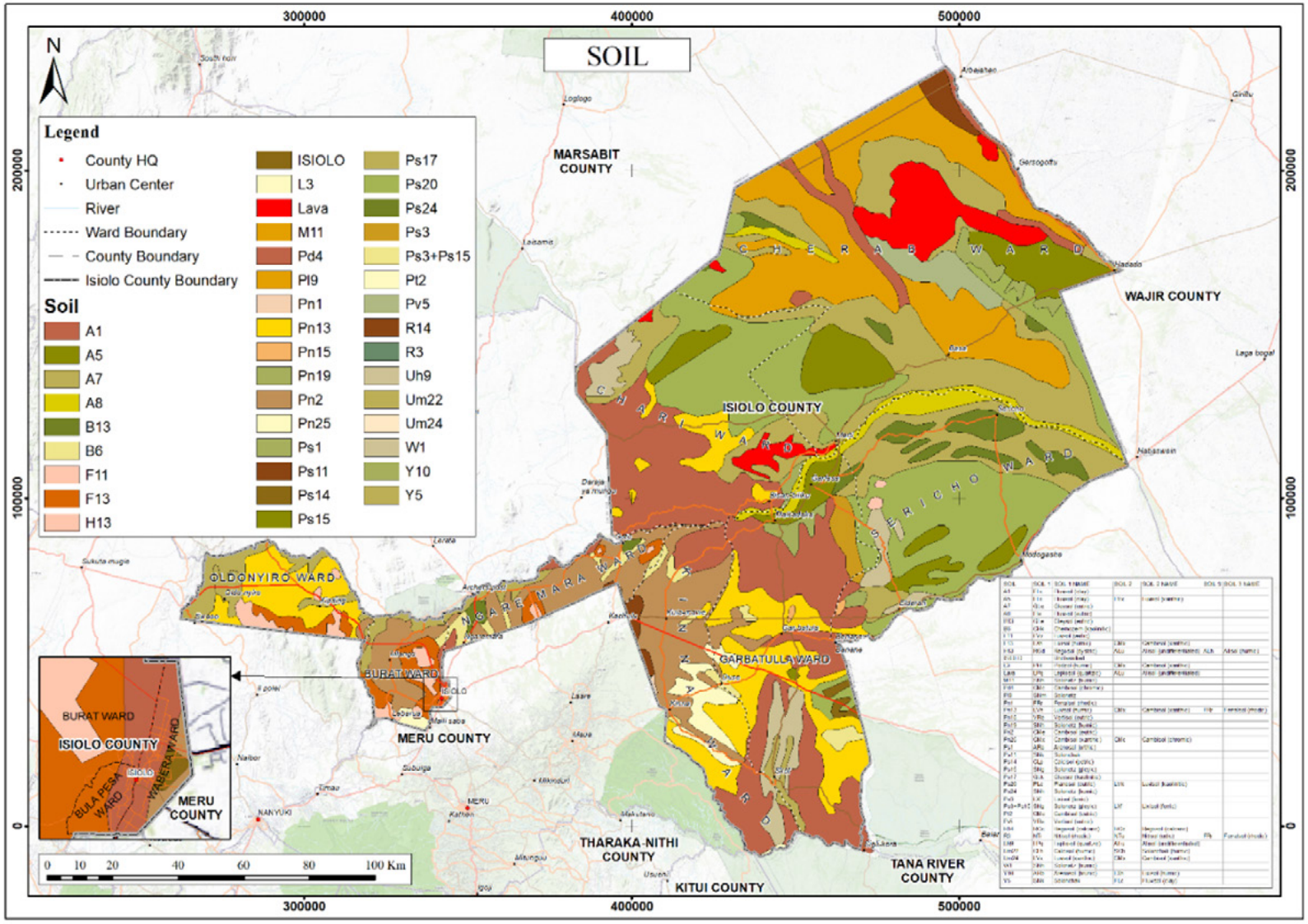
a. **Merti Aquifer Hydrology:** This type is found in the tertiary rock, such as basalts, dominated Anza Rift. It is characterized by confined groundwater at depths of 110 to

180 meters below ground level. The water is generally of good quality but can have high salinity in some areas. This is primarily fossil water which is not renewed.

b. **Isiolo-Nyambeni-Mount Kenya Aquifer Hydrology:** This type of hydrology is located in the western part of Isiolo County and the northern part of Meru County, extending towards the Nyambeni hills. It's characterized by extensive aquifers in volcanic rocks with good hydraulic characteristics. The high precipitation from Mt. Kenya leads to a significant and more sustainable recharge rate.

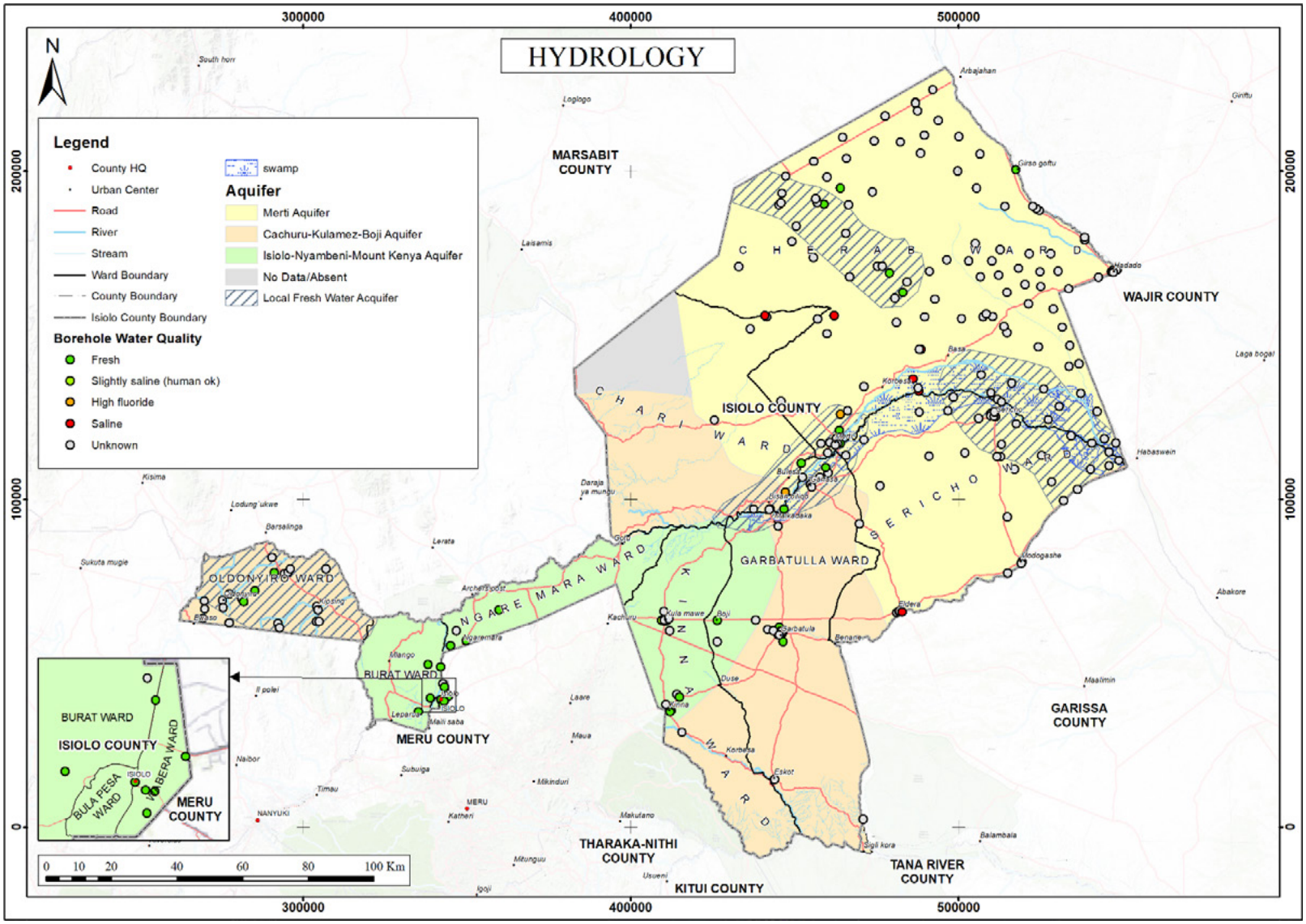
c. **Gachuru-Kula-Mawe-Bovi Aquifer Hydrology:** This type is found within the larger Garbatulla area. It consists of localized aquifer systems within a basement complex. The hydrogeological properties are limited and difficult to assess, resulting in low recharge and variations in water yield and quality, with a high probability of excessive fluoride concentrations.

Map 4-5:Soil Map



Source: Author 2025

Map 4-6: Hydrological Map



Source: Author 2025

4.1.5.2 Groundwater

Groundwater is water that exists beneath the Earth's surface, filling the spaces within soil, sediment, and rock formations. The areas covered with tertiary marine sediments in Northern Isiolo have a high potential for groundwater abstraction. Groundwater is confined and found at rather uniform depths between 110 and 180 m below ground level (m bgl). On the lower slopes of Mt. Marsabit and in the Lorian swamp in northern Isiolo, groundwater has higher potential, with many existing, good yielding boreholes present and water strikes between 50 and 100 m bgl. The water quality in the boreholes is found to be good, with some exceptions having water quality problems, mainly due to high salinity.

The volcanic rocks found in this area have good hydraulic characteristics and form extensive aquifers with a calculated safe yield of over 2.2 Mm^3/yr (30% of calculated groundwater flow) (Vreugdenhil, 2013). In combination with high precipitation rates on Mt. Kenya this leads to rather high aquifer recharge estimates. The characteristics and geology of the Gachuru-Kula-Mawe-Bovi aquifer are related to the Isiolo-Nyambeni-Mount Kenya aquifer. The total amount of recharge within this area is relatively low as it encompasses localized aquifer systems in basement complex areas. The hydrogeological properties for these kinds of groundwater systems are generally limited and difficult to assess, with strong variances in yields and quality, including high probability of excessive concentrations of fluoride (IGRAC, 2004).

4.1.5.3 Aquifer Characteristics and Water Conservation

Aquifer characteristics are the physical properties that define how an aquifer stores and transmits water. Water conservation is the practice of managing and using water efficiently to reduce waste. Based on an average aquifer thickness of 15 metres, a length of 340 km, a width of 5 to 50 km and a specific yield of 0.33 m^3 the estimated total aquifer volume in the full Merti area ranges between 84 and 110 billion m^3 (REF). This is, however, mainly fossil water which is not renewed. The groundwater recharge to the Merti aquifer, which is mainly taking place in Isiolo County, is according to conservative estimations a mere 5.0 Mm^3/yr (EWL, 2013) although GIBB (2004) calculated a recharge of 33 Mm^3.

Potential for aquifer recharge can be found at locations throughout the county. However, the widespread saline soils may locally limit this potential. Seasonal streams leading to the Ewaso Ng'iro River and Lorian swamp are particularly promising. Floodwater spreading and other soil and water conservation measures might prove to be an effective measure on the flat land of Isiolo's plains, increasing the green areas for livestock grazing and groundwater recharge. In addition, there are good opportunities to store overland flow in water pans and closed (underground) storage tanks. Construction of pans requires proper lining using impermeable natural material. Alluvium sediments in the Lorian swamp create a high potential for shallow groundwater storage, which can be enhanced by floodwater spreading. With horizontal resistance being small, the sand layers in these zones can provide good opportunities for riverbank infiltration and infiltration ponds.

4.1.5.4 Drainage

Drainage refers to the natural or artificial removal of surface and sub-surface water from an area, often through rivers, streams, and other channels. The drainage system of Isiolo District is dominated by the middle catchments of the Ewaso Ng'iro North River. The district is divided into four major drainage basins:

a. Ewaso Ng'iro, which occupies 78%
b. Tana River basin to the south (10%)
c. Galana Gof (7%)
d. Lagh Bogal (5%)

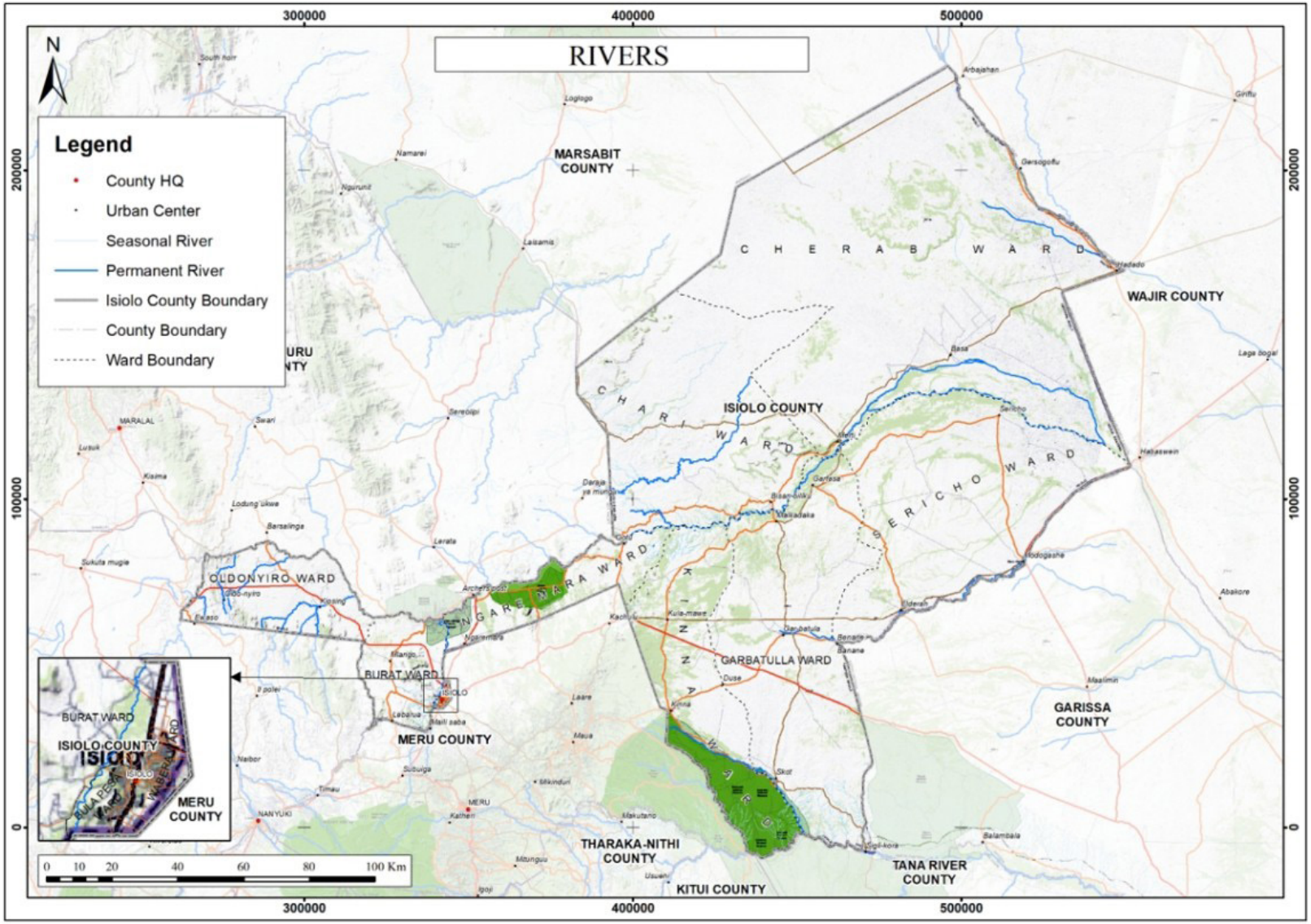
The Ewaso Ng'iro is an allochthon river, i.e., a river for which the discharge for most parts does not depend on the climate of the area. This is because the main Ewaso Ng'iro originates from the wetter Nyandarua Mountains over 200 km in the west, while most of the flow is from tributaries from Mt. Kenya.

Analysis of the rainfall and stream flow data within the Ewaso Ng'iro Basin have shown that in the lower reaches within Isiolo, dry season flows are declining with corresponding decline in rainfall. This has been attributed to the high levels of irrigation abstraction upstream, which can reach 60 percent of the river flow during the dry seasons (Gichuki et al. 1998).

There are few gauging stations within Isiolo, but records at Archers Post have shown a mean flow of 20.29 m^3 s-1 with the minimum mean monthly flow being 5.2 m^3 s-1 and the maximum mean monthly flow at 88.1 m^3 s-1 (MoWD 1991), indicating that river flows highly fluctuate between the seasons. Beyond Archers Post, the river is ungagged and perennial up to Bulesa, from where it becomes ephemeral, with less and less water from tributaries.

East of Malka Bulfayo, the river enters a wide flood plain where it loses most of its flow, and evaporation is high. The losses in this region have been estimated to be 1,000 m^3 day-1 km-2 (Lester 1985). After Malka Bulfayo, the river often changes course and meanders into ox-bow lakes. East of Merti, the river follows a more northward course, but during the rainy season, as a result of high evaporation losses, the water only reaches the Lorian Swamp at Habaswein (Bake 1993).

Map 4-7: Hydrology Map



Source: Author 2025

4.1.6 Land Forms

This section involves descriptions of Isiolo County's various natural landforms. These landforms support essential ecological functions, provide grazing land for pastoralists, and sustains local communities through vital water sources such as springs and seasonal water pans. They play a crucial role in water retention and groundwater recharge, helping to mitigate the challenges posed by its predominantly arid to semi-arid climate. These natural features collectively enhance Isiolo's potential for biodiversity, agriculture, and sustainable livelihoods.

4.1.6.1 Hills

Important hills in the county include the Nyambene Hills (or Nyambene Range) located in the southern region, which rise up to about 2,500 meters at their highest points. The Nyambene Range, in particular, is a heavily wooded and scenic hill area that forms part of the county's natural beauty and ecological diversity. Additionally, there are the Kaita and Degushi Hills near Isiolo town, which are striking features providing elevation changes in the mostly flat terrain around the airport area. These hills contribute to the varied landscape of Isiolo County, alongside its mountains and plateaus.

4.1.6.2 Inselbergs

The Isiolo County landscape features few inselbergs, which are isolated rocky hills that rise sharply from the surrounding flat plains. A prominent example is the Merti Plateau, a significant rocky outcrop that rises approximately 540 meters. This erosion-resistant feature is essential to the region's diverse environment, providing distinct ecological habitat and serving as important source of groundwater in the arid surroundings.

4.1.6.3 Mountains

Isiolo County contains more than 80 named mountains, with the most trivial being Ol Doinyo Lolgurugi, which is the highest. Other mountains and hills in the region include the Nyambene Range, Garisa mountain (at 882 meters), and local hills such as Kaita and Degushi. These features provide a dramatic visual contrast to the generally flat, semi-arid plains that define most of the county.

4.1.6.4 Plains

Flat, low-lying plains predominantly characterize Isiolo County. These plains gently rise from about 200 meters above sea level at the Lorian Swamp in the northern part of the county to around 300 meters at the vast Merti Plateau in the central area. The plains are mainly formed by weathering and sedimentation processes, creating a gentle, featureless landscape that is typical of arid and semi-arid regions.

The county includes large plains such as the Merti Plains, which extend about 160 kilometers west of Habaswein. These plains consist of a flat expanse of grey silt intermixed with rocky badlands, giving the area a harsh, desert-like appearance. The plains serve as important grazing lands for pastoralism, which is the dominant livelihood in Isiolo. Much of the county's land is communally owned and used for livestock grazing, with very limited crop farming due to the arid climate.

4.1.6.5 Plateaus

Isiolo County has plateaus, including the Merti Plateau (also known as Gaar Merti). The Merti Plateau is a distinctive geological feature rising about 540 meters above the surrounding flat plains. It is thought to be of volcanic origin and has an altitude of approximately 1,607 feet (about 490 meters) at its highest point. The plateau has steep slopes on one or more sides, often incised by streams, and stands out prominently against the surrounding peneplain country.

The Merti Plateau extends into northwestern Garissa County but is mainly situated within Isiolo. It forms an important source of potential groundwater for the arid and water-scarce areas around Merti Town and beyond. The plateau is surrounded by expansive plains known as the Merti Plains, characterized by flat expanses of grey silt and rocky badlands. The Merti Plateau not only contributes to the county's distinctive topography but also supports local livelihoods by sustaining groundwater resources and providing grazing areas, especially during dry seasons. It is a striking landmark and an ecological asset within Isiolo County.

4.1.6.6 Rivers and River Valleys

Isiolo County is characterized by several important rivers that play a crucial role in the region's ecology and livelihoods. The most significant river is the Ewaso Nyiro, which originates from the Aberdare Ranges and Mount Kenya, flowing through Isiolo before draining into the Lorian Swamp in the north. Other significant rivers include the Isiolo River, a tributary of the Ewaso Nyiro, as well as the Kinna, Bisanadi, Likiundu, and Liliaba Rivers. The Tana River, the longest river in Kenya, forms part of the southern boundary of Isiolo County, contributing notably to the county's water resources. These rivers are essential for water supply, pastoralism, wildlife, and some limited agriculture in this predominantly semi-arid to arid environment.

These rivers flow through wide river valleys formed by alluvial sediments, creating fertile ecological zones distinct from the surrounding dry plains. The Ewaso Nyiro River valley is the most expansive, dividing Isiolo into the Merti Plateau in the north and plains to the south, with the valleys of tributaries like the Isiolo and Bisanadi Rivers adding to the varied landscape. These river valleys support groundwater recharge, seasonal flooding, and provide pastures crucial for livestock grazing while sustaining wildlife habitats.

4.1.6.7 Seasonal Water Pans

Isiolo County is additionally endowed by seasonal water pans. These water pans are important water sources for communities, livestock, and wildlife, especially during the dry seasons when rivers and other water points dry up. Some notable water pans in Isiolo include Bibi Water Pan and Harr Buyo Water Pan, which are used by multiple users for drinking water and livestock watering.

Water pans in Isiolo require proper maintenance such as desilting to remain functional, and some have faced challenges like vandalism and damage due to conflicts. The county invests in water infrastructure including water pans, boreholes, and sand dams to improve water availability throughout the year and to support resilience against drought. These seasonal pans play a critical role in maintaining water supply in Isiolo's arid and semi-arid environment.

4.1.6.8 Springs

Isiolo County has several natural springs. One of the most famous being Buffalo Springs, located within the Buffalo Springs National Reserve. This natural spring provides a reliable and year-round water source emerging from an underground aquifer, creating a permanent pool that supports diverse wildlife and vegetation in the arid region. It is also a popular spot for visitors and is believed to have medicinal qualities.

Other notable springs in Isiolo include Darajani Spring in Leparua and Nomad-Esmit Spring in Nasuulu, which have been revitalized through community efforts to restore their flow and ecological health. These springs are vital water sources for both wildlife and local communities, especially in the semi-arid and arid areas where water scarcity is a challenge. Springs like these form critical water points that sustain life and biodiversity in Isiolo County.

4.1.6.9 Swamps

Isiolo County additionally has a few swamps. The most famous swamp in the county is the Lorian Swamp, which lies along the Ewaso Ngiro River in the northern part of Isiolo. The Lorian Swamp spans approximately 196 kilometers in length and up to 25 kilometers in width, covering around 231,000 hectares. It is located in an arid zone with highly variable rainfall and is fed by the Ewaso Ngiro River along with wadis from the southwest and northeast.

The swamp is ecologically important, supporting large savannah mammals and serving as a water source in the dry season, although it is not protected and is difficult to access due to hostile terrain. The swamp's area has shrunk significantly over the years due to fluctuating water levels and long drought periods. Isiolo also has other smaller wetlands, like the Oldonyiro wetlands and Laga Mogorae Swamp, which contribute to its wetland ecosystem and biodiversity. These swamps play a vital role in supporting wildlife and local pastoral livelihoods within the dry landscape of Isiolo County.

4.1.6.10 Valleys

Isiolo additionally has important valleys like the Thangathas and Mlango Valleys. Mlango Valley, located about 30 kilometers from Isiolo town, is an important grazing area with social and security significance due to occasional banditry and livestock raiding. These valleys, whether carved by rivers or shaped by geological processes, serve as essential zones for water collection, pasture, and human settlement, making them integral to Isiolo's ecological and socio-economic fabric.

4.1.7 SWOT Analysis

Figure 4-3: SWOT Analysis



CHAPTER 05

Environment and Natural Resources

5.1 OVERVIEW

This section explores the natural environment of the county and the opportunities and risks involved in protecting the natural ecosystems of Isiolo. Moreover, the section also outlines the different types of natural resources found in Isiolo County, their benefits and challenges in utilizing and protecting these resources. With careful planning and sustainable exploitation, these resources can be used for economic, social and environmental sustainability. These resources when fully utilized have an impact on both the current and future generations.

5.2 ENVIRONMENT

Isiolo County lies in Kenya's arid and semi-arid lands (ASALs). It is characterized by fragile ecosystems, erratic climatic patterns and a population largely dependent on natural resources for livelihoods. Isiolo County plays a critical ecological role as part of the Ewaso Ng'iro Basin and supports rich biodiversity through its rangelands, conservancies, and game reserves. Urbanization and population growth; especially in towns and other urban areas are contributing a lot to environmental pollution due to the fact that they lack systems to manage both solid and liquid waste. Most of the towns and other urban centers are characterized by heaps of uncollected wastes. However, environmental degradation, climate change, and other unsustainable practices such as overgrazing due to overstocking are placing significant strain on the county's

environment and ecosystems. In terms of terrain; Isiolo County is predominantly flat low-lying plains (altitude from ~200m at Lorian Swamp to ~1,100m at Isiolo town), with the highest point at Oldonyiro-Labarishereki (~2,019 m).

There are few scattered hills and escarpments in areas like Oldonyiro that provide important water catchments, unique biodiversity and scenic value. They often serve as dry-season grazing or wildlife corridors. They influence local microclimates and runoff. In these areas; the steep slopes are prone to erosion and landslides during flash floods. Cultivation or overgrazing here accelerates degradation. Some of the key environmental features include the following: -

i. **Arid and Semi-Arid Climate:** Isiolo County experiences a hot, dry climate for most of the year, with two rainy seasons that are often erratic and unreliable.

ii. **Water Scarcity:** Access to water in most parts of the County is a major constraint due to the arid nature of the region, with some areas facing challenges in accessing reliable water sources.

iii. **Climate Change Impacts:** Isiolo County is highly vulnerable to climate change, with droughts and flash floods causing damage to agriculture, infrastructure, and livelihoods.

iv. **Ecosystems:** The county is home to wildlife reserves and conservancies, such as Buffalo Springs and Shaba National Reserves, and Lewa Wildlife Conservancy, showcasing diverse ecosystems.

v. **Land Use:** Pastoralism, specifically livestock keeping is a primary livelihood, with significant areas under customary land tenure. The county is also experiencing urbanization with some major national and international infrastructure development taking place, particularly around the Isiolo town.

vi. **Urbanization:** While historically rural, Isiolo is experiencing a gradual transition to urban areas due to increased investment, massive infrastructure development leading to increased trade and the development.

vii. **Infrastructure:** Isiolo County is undergoing significant infrastructure development, particularly with the implementation of the Lamu Port South Sudan Ethiopia Transport (LAPSSET) corridor project. Other developments include the Isiolo International Airport, the Isiolo-Mandera highway, and various other LAPSSET-related projects. Flooding due to poorly maintained storm water drainage systems, particularly in the urban center, poses a significant risk to some of these infrastructural facilities.

5.2.1 Environmental Challenges

- Land degradation due to overgrazing, charcoal burning, and poor land use practices.
- Water scarcity and poor water quality e.g. boreholes water in the county have high salinity, leading to underutilization.
- Deforestation and loss of vegetation cover in catchment areas.
- Pollution from poor solid and liquid waste collection and disposal services which are limited to Isiolo town, with other urban centers lacking adequate services. There is also pollution due to agro-chemicals use in farming.
- Resource-based conflicts over pasture, water, and access.
- Climate change impacts e.g. floods and prolonged drought.
- Institutional challenges related to funding, capacity building, and governance issues in delivering environmental services.
- Overexploitation of resources e.g. papyrus reeds
- Encroachment into wetland zones
- Lack of structured markets and value chains for products.

5.2.2 County Initiatives to address the Environmental Challenges

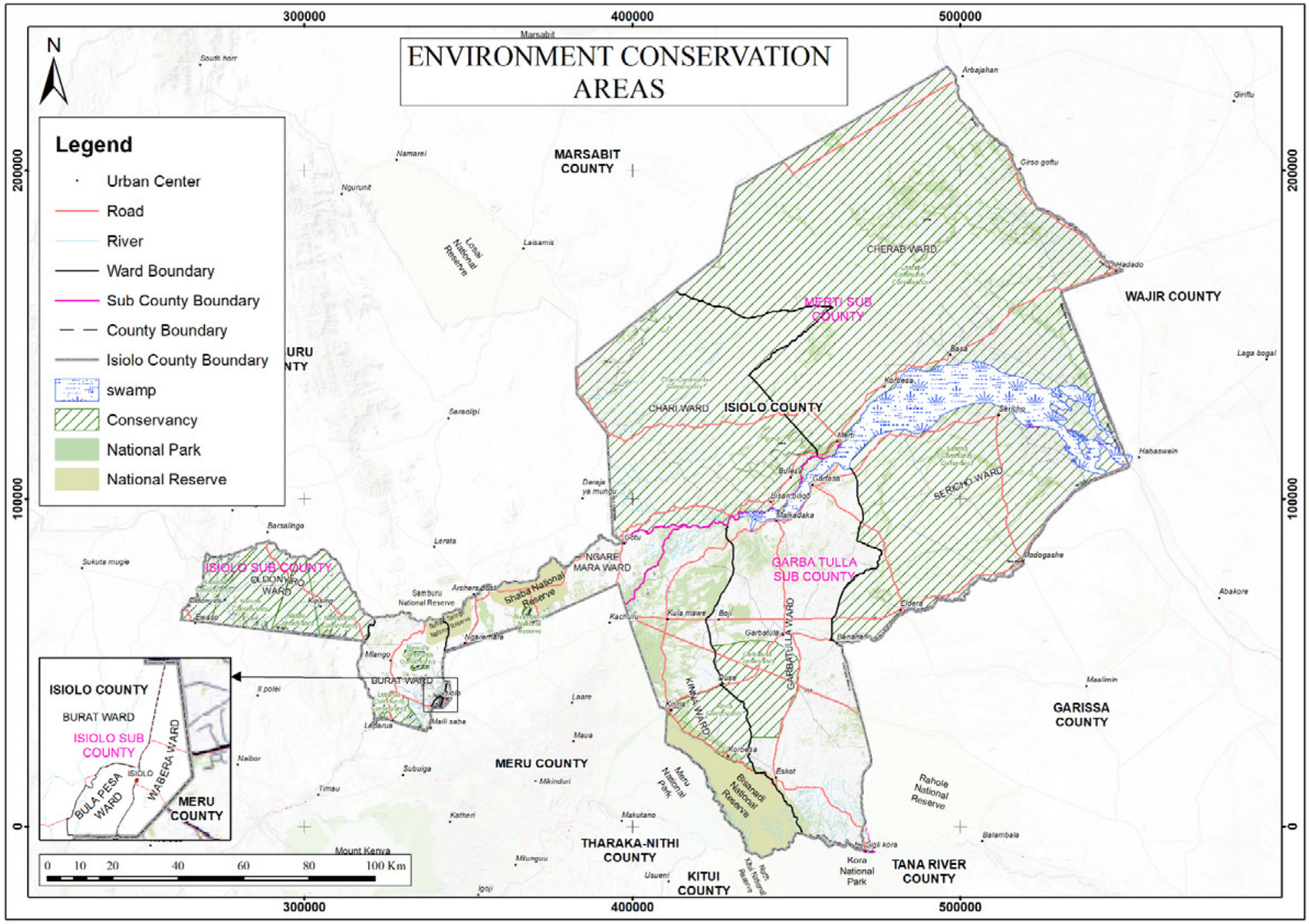
i. **Isiolo County Climate Change Fund (ICCCF) Act 2018** — One of the earliest in Kenya. It allocates approx. 1.5–2% of development budget to locally-led adaptation initiatives. Focus on resilience-building, early warning, and community projects.

ii. **Climate Change Action Plan and Participatory Climate Risk Assessments (PCRA) —** Identify hazards, vulnerabilities (especially for women, children, elderly), and priorities like rangeland restoration and water harvesting.

iii. **Water Strategy 2023–2035 —** The starategy emphasizes Integrated Water Resources Management (IWRM), storage (dams, pans, sand dams), groundwater development, catchment protection, nature-based solutions (wetland/rangeland restoration, agroforestry), and climate-resilient infrastructure (e.g., solarized boreholes, drip irrigation). Flagship projects include mega dams for flood harvesting.

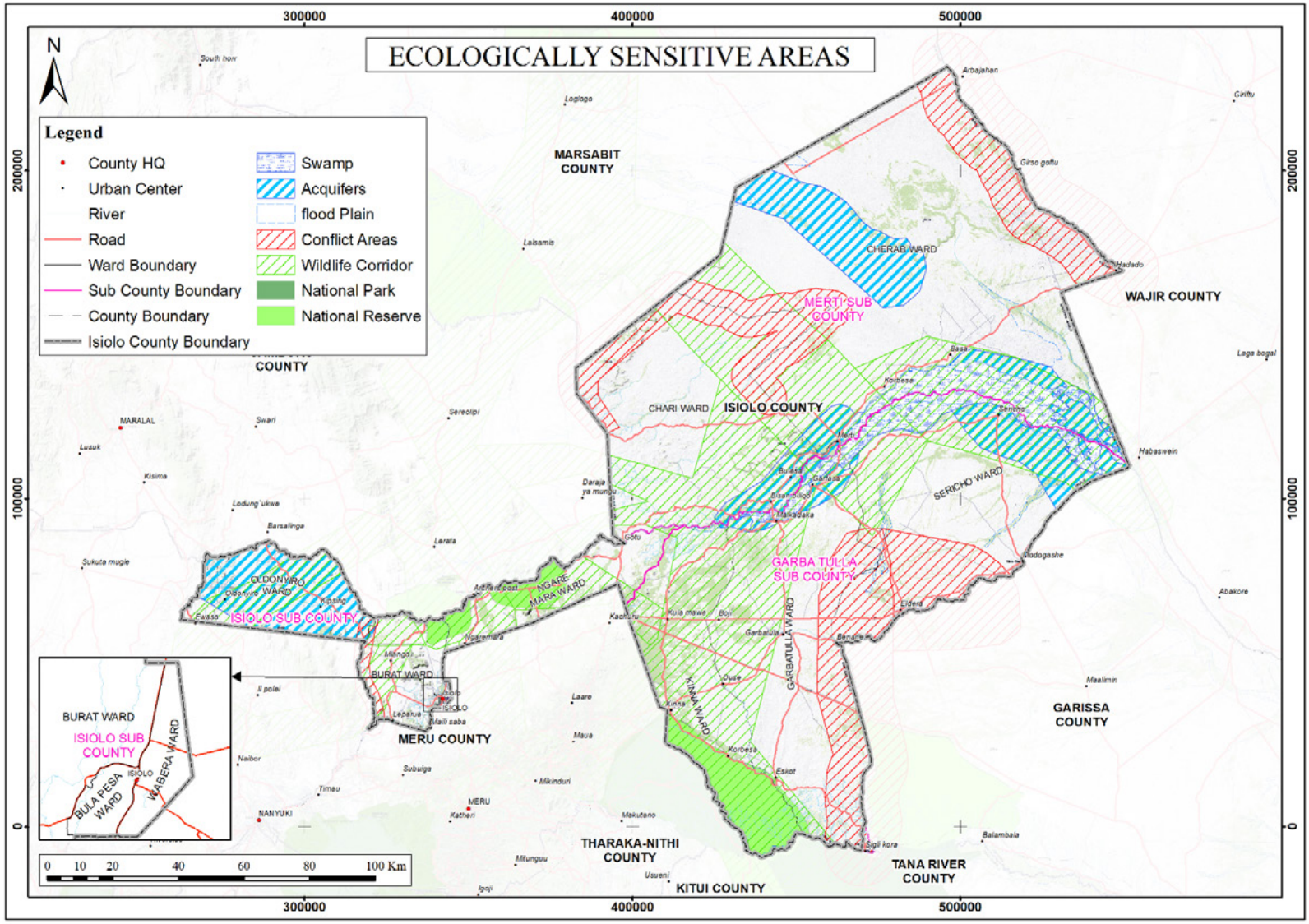
iv. **Other Efforts —** This initiative prioritises tree planting/afforestation, invasive species control, conservancy support, rangeland rehabilitation and partnerships with NGOs, national agencies (e.g., NEMA, KFS, NDMA), and donors (World Bank FLLOCA, CRS, etc.). Community-driven approaches integrate traditional knowledge (e.g., grazing management, indigenous early warning)

Map 5-1: Isiolo County Environment - Conservation areas



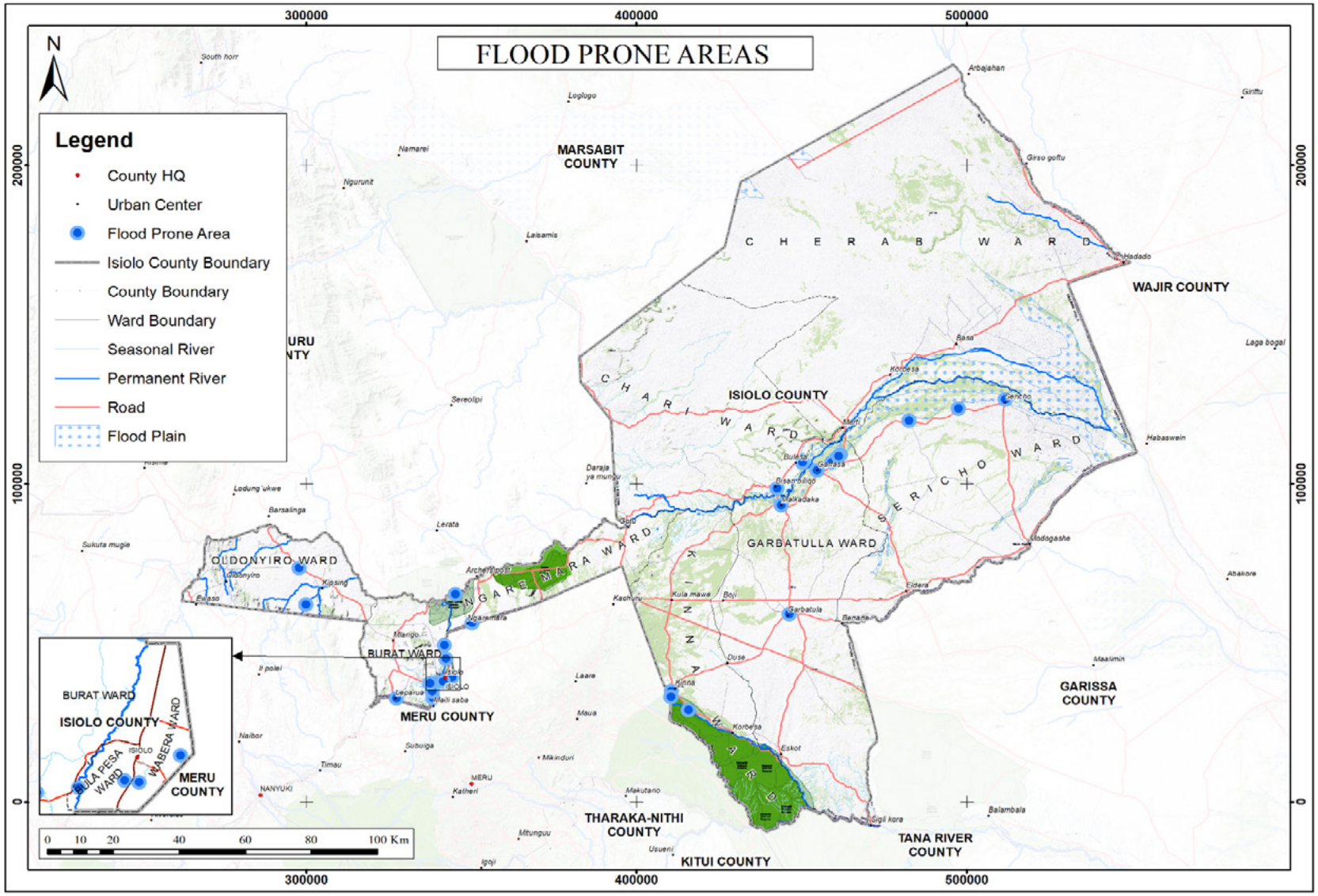
Source: Author 2025

Map 5-2: Isiolo County Ecologically Sensitive areas



Source: Author 2025

Map 5-3: Isiolo County – Flood Prone Areas



Source: Author 2025

5.2.3 Land Cover and Change

Isiolo County exhibits diverse land cover types, including built-up areas, vegetation, broadleaf vegetation, shrub and grassland, water bodies, and bare land. These land cover categories play a crucial role in supporting livelihoods, biodiversity, and ecosystem services. However, it is worth noting that the broadleaf vegetation is limited and confined to relatively humid micro-climatic zones within the County.

The below analysis examines changes in land cover over the past two decades (2004–2024) to assess trends, identify key transformations and provide insights for sustainable land use planning and resource management.

i. **Urban Expansion** - The proportion of built-up areas has increased from 0.043% in 2004 to 0.201% in 2024, indicating gradual urban growth. This expansion suggests an increasing demand for infrastructure and services, necessitating strategic planning to accommodate future urban development while minimizing environmental impacts.

ii. **Vegetation Cover Decline** - Vegetation cover in Isiolo has declined significantly from 34.865% in 2004 to 7.309% in 2024, largely due to deforestation, land conversion for agriculture and settlements, and climate-related factors. However, despite this decline, broadleaf vegetation has been increasing in some areas. Additionally, afforestation and reforestation efforts by the government and NGOs have introduced broadleaf species to combat desertification and restore degraded land.

iii. **Increase in Broadleaf Vegetation** - Broadleaf vegetation has increased from 7.378% in 2004 to 21.909% in 2024. This shift suggests changes in land management practices, possible afforestation efforts, or natural vegetation regeneration. The increase in broadleaf vegetation presents opportunities for biodiversity conservation and carbon sequestration.

iv. **Fluctuation in Shrub and Grassland Cover** - Shrub and grassland remain the dominant

land cover type. The coverage increased from 55.562% in 2004 to 78.714% in 2014, followed by a decline to 69.916% in 2024. These variations may result from land use changes, grazing patterns, and climate variability, emphasizing the need for sustainable rangeland management.

v. **Stability in Water Bodies** - Water bodies have shown minimal fluctuation, with coverage ranging from 0.115% in 2004 to 0.146% in 2024. This stability indicates no major hydrological changes; however, continuous monitoring is necessary to ensure water resource sustainability, particularly in the face of climate change.

vi. **Bare Land Variation** - Bare land has decreased from 2.037% in 2004 to 0.028% in 2014, before increasing to 0.519% in 2024. The reduction between 2004 and 2014 suggests land stabilization, while the recent increase may be linked to land degradation, infrastructure development, or extraction activities. Addressing soil erosion and implementing sustainable land management strategies will be essential moving forward.

5.2.4 Prime Agricultural Land

Agricultural land is extremely limited in Isiolo due to low and erratic rainfall (mostly <400–650 mm/year in semi-arid zones; much less in arid areas). Agriculture is mainly agro-pastoral or small-scale irrigation along rivers. These include floodplains and riverine zones along the Ewaso Ng'iro, Isiolo, and Kinna rivers which support limited crop farming (e.g., maize, vegetables) and fodder production.

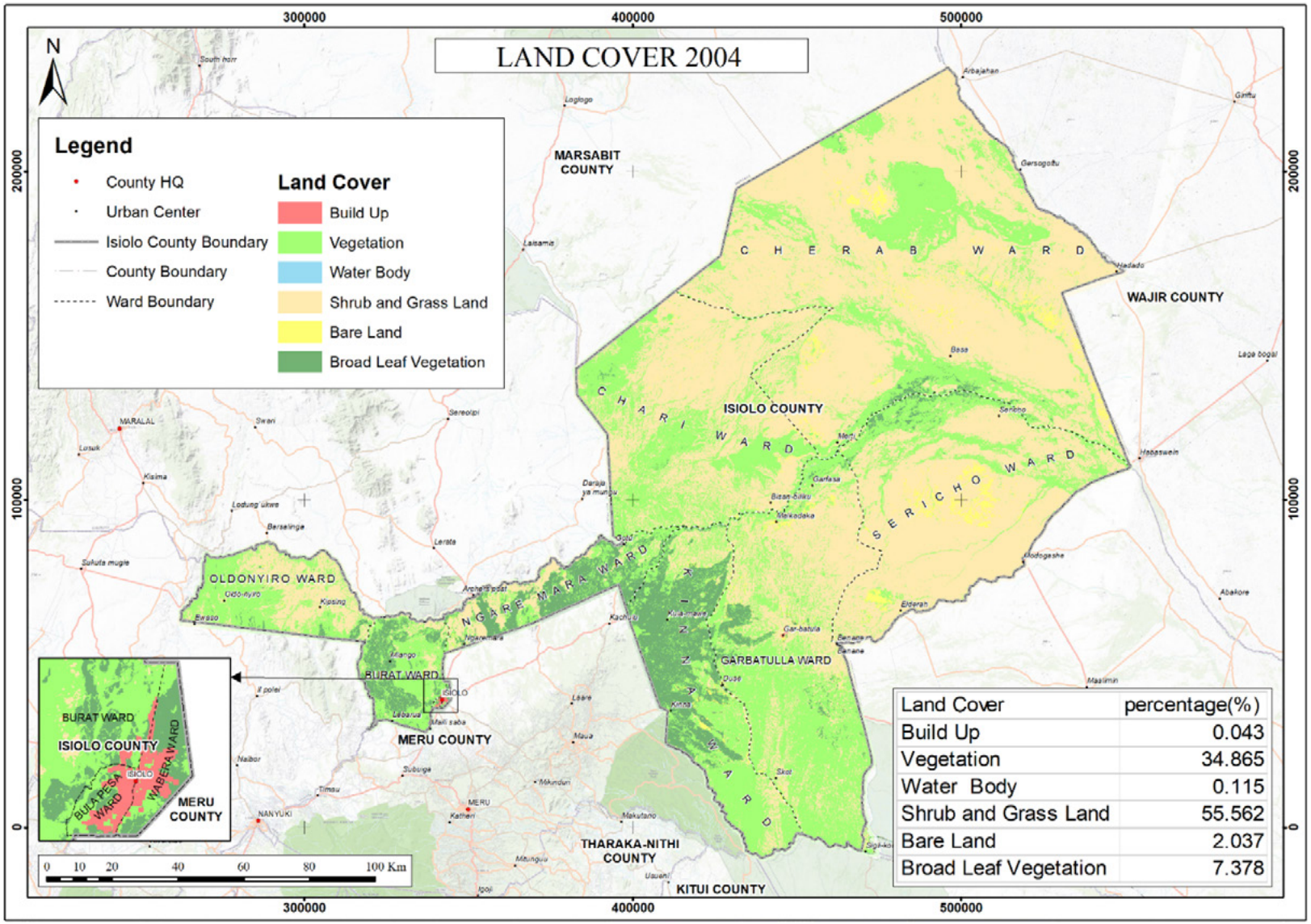
Southern semi-arid parts (e.g., parts of Wabera, Bulapesa, Burat, Kinna wards) have slightly better potential. Most of the rest of the land is suited only for livestock; cultivation on marginal or riparian lands causes erosion, siltation, and conflicts with pastoralism/wildlife. Climate change worsens crop failure risks. There is need for strict land-use planning to prevent conversion of grazing or wetland zones.

5.2.5 Green and Open Spaces/Recreational Areas

Formal parks and recreational spaces are limited and underdeveloped. Green and open spaces in Isiolo County are largely natural and ecological rather than formally planned urban parks.

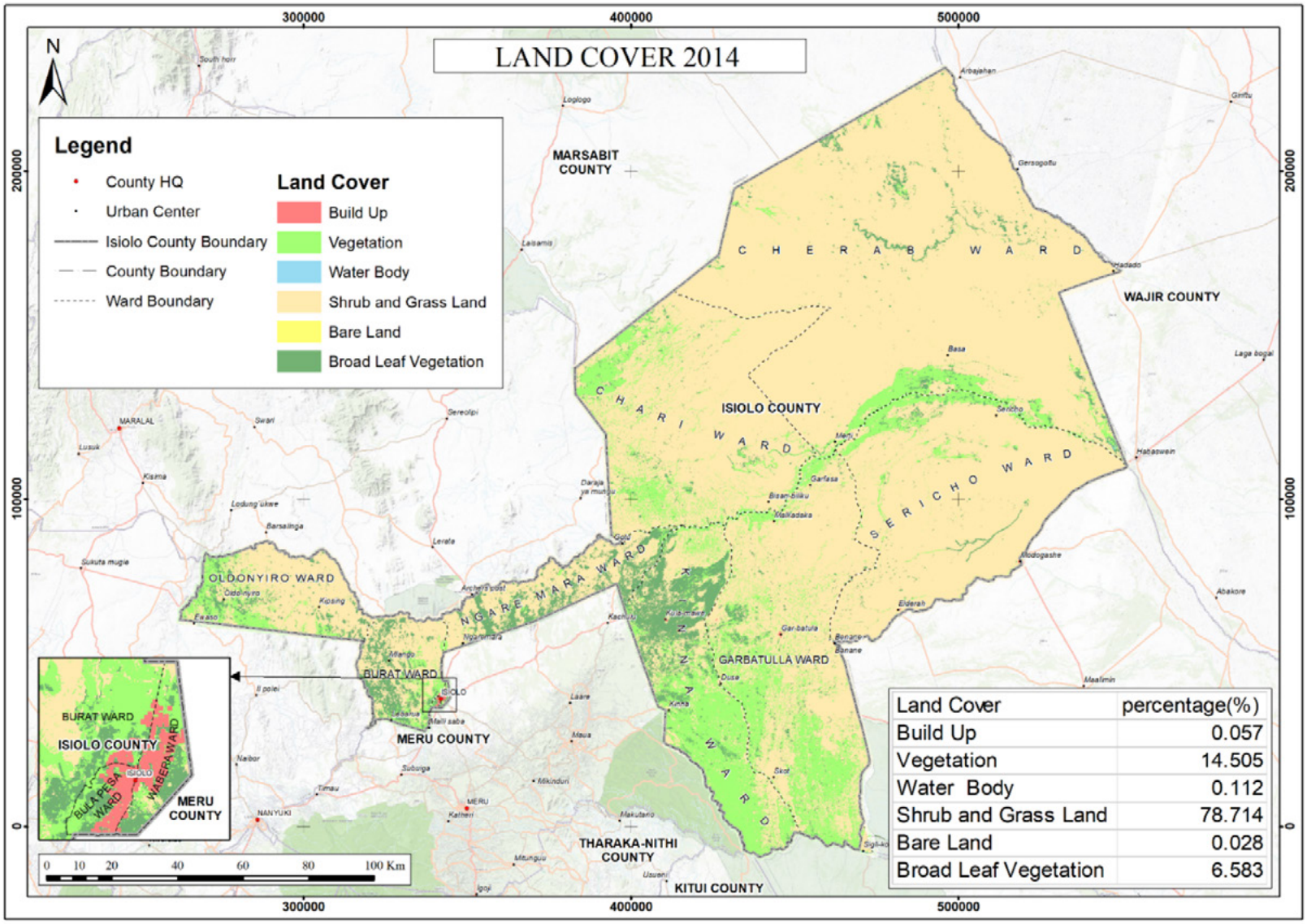
They include protected areas and wildlife reserves such as Shaba, Bisanadi and Buffalo Springs National Reserves. Others include range lands and community conservancies such as Biliqo-Bulesa Conservancy, Leparua Conservancy, Nasuulu Conservancy and Sericho Conservancy as well as Riverine and Riparian Green Corridors including Ewaso Nyiro River corridor and Isiolo River corridor. Other areas include Urban Green and Public Open Spaces majorly in towns such as Isiolo Town and emerging centres (Merti, Garbatulla, Kinna). Other existing open spaces include institutional grounds (schools, government land), Market spaces and public squares as well as informal playgrounds.

Map 5-4: Isiolo County Land Cover Analysis 2004



Source: Author 2025

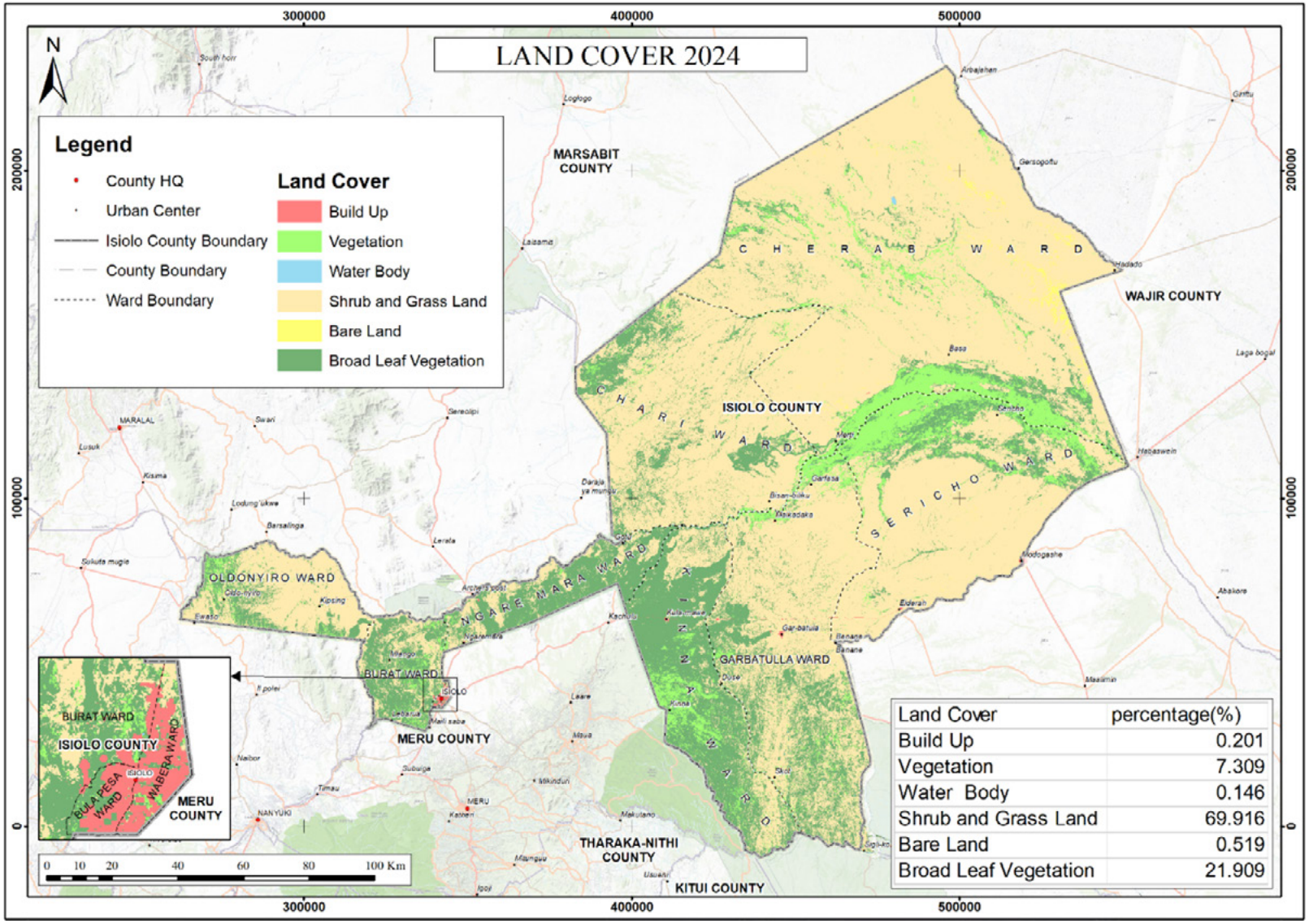
Map 5-5: Isiolo County Land Cover Analysis 2014



Land Cover	percentage(%)
Build Up	0.057
Vegetation	14.505
Water Body	0.112
Shrub and Grass Land	78.714
Bare Land	0.028
Broad Leaf Vegetation	6.583

Source: Author 2025

Map 5-6: Isiolo County Land Cover Analysis 2024



Land Cover	percentage(%)
Build Up	0.201
Vegetation	7.309
Water Body	0.146
Shrub and Grass Land	69.916
Bare Land	0.519
Broad Leaf Vegetation	21.909

Source: Author 2025

5.3 NATURAL RESOURCES

Isiolo County is endowed with diverse natural resources that are vital for the livelihoods of its predominantly pastoralist population and the ecological stability of the wider ASAL (Arid and Semi-Arid Lands) region. The County lies within some critical ecosystems such as the Ewaso Ng'iro Basin and is home to unique wildlife, forests, wetlands, and expansive rangelands. However, these resources face increasing pressure from climate change, overexploitation, and land use conflicts.

5.3.1 Water Resources

Water is one of Isiolo's most precious natural resources. Isiolo County's water resources consist of surface and groundwater. The three main rivers; Ewaso Nyiro, Isiolo, and Bisanadi, serve as key surface water sources, with Ewaso Nyiro North being the primary drainage system. Additionally, the county wields both manmade and naturally occurring water resources such as springs, dams, water pans and boreholes.

Lorian Swamp in the northern part of the county is an important wetland as it provides a water source for wildlife and pastoralists during the dry season. The groundwater potential varies, with high-yielding boreholes in some areas, such as Isiolo Central and Merti Sub-County, while other regions, such as Garbatulla and Sericho, have low groundwater potential and poor water quality. A water resource modelling suggests significant constraints due to historical reductions in river flow; associated with over-abstraction and pollution to the river.

Plate 5-1: Ewaso Ng'iro River at Shaba Game reserve



Source: Field Survey, 2024

Plate 5-2: A 'luggah' dry river bed in Garbatulla Ward



Source: Field Survey, 2024

5.3.2 Wetlands Conservation and Management

Isiolo County has a number of wetlands that are important ecosystems that provide water and food to humans, wildlife and livestock. They occur as marshes, swamps, bogs and ferns. Wetlands are very crucial in the ecosystem as they protect and improve water quality, provide fish and wildlife habitats, and control floods by holding and absorbing excess water, storing it and gradually releasing it thus controlling the impact of floods and reducing soil erosion. Moreover, they maintain the surface water flow during the dry periods which is key in Isiolo County as it is an Arid and Semi-Arid (ASAL) area. Notable wetlands in the county include the Lorian swamp, Gambella wetland, Ngaremara swamp, Gotu and Buffalo Springs.

i. Gambella Wetland

This wetland is located along the Waso Mara River in Ngare Mara ward and is approximately 121 hectares. Gambella Wetland is located within a wildlife migratory corridor connecting Shaba, Buffalo Springs and Meru National Park. It is therefore a source of water to the wildlife, farmers and pastoralists in the area.

Plate 5-3: Gambella Wetland



Source: NEMA, Ecoflash 2022

ii. Merire Wetland

Merire Wetland is located within the Fisheries Department compound at the heart of Isiolo Town, Isiolo County. The Fisheries compound covers approximately 2.7 hectares (about 7 acres), of which the wetland occupies an estimated three-quarters of an acre. Despite its relatively small size, the Merire Wetland is an ecologically important natural resource that significantly contributes to fisheries development, biodiversity conservation, and environmental sustainability within the urban setting of Isiolo.

The wetland supports a rich diversity of wetland vegetation, including water lilies, cattail vegetation (Typha spp.), sedge grasses, and other indigenous aquatic and semi-aquatic plant species. These plants play a vital role in water filtration, soil stabilization, and provision of habitat for various forms of life.

The wetland ecosystem is also home to a variety of wildlife species such as monitor lizards, wild fish species, resident and migratory birds, amphibians, and small rodents. This biodiversity highlights the wetland's role as a refuge for wildlife within an increasingly urbanized environment.

A key feature of the Merire Wetland is a natural spring, which serves as a reliable and sustainable source of water for fisheries activities within the compound. The Fisheries Department has partially developed the area, establishing 13 earthen fish ponds and 3 concrete fish holding ponds, alongside a fish hatchery unit dedicated to fish breeding and fingerling production. The wetland plays a critical role in supplying water throughout the year to these facilities, ensuring continuity of fish farming and hatchery operations even during dry seasons.

Beyond fisheries production, Merire Wetland provides important ecosystem services including groundwater recharge, flood regulation, micro-climate moderation, pollution buffering, and environmental education opportunities. As such, it contributes not only to food security and livelihoods but also to urban environmental resilience. The wetland is so significant that the World Wetlands Day national celebrations was held on 2nd February, 2026 was commemorated at the the same Wetland.

Plate 5-4: Merire Swamp



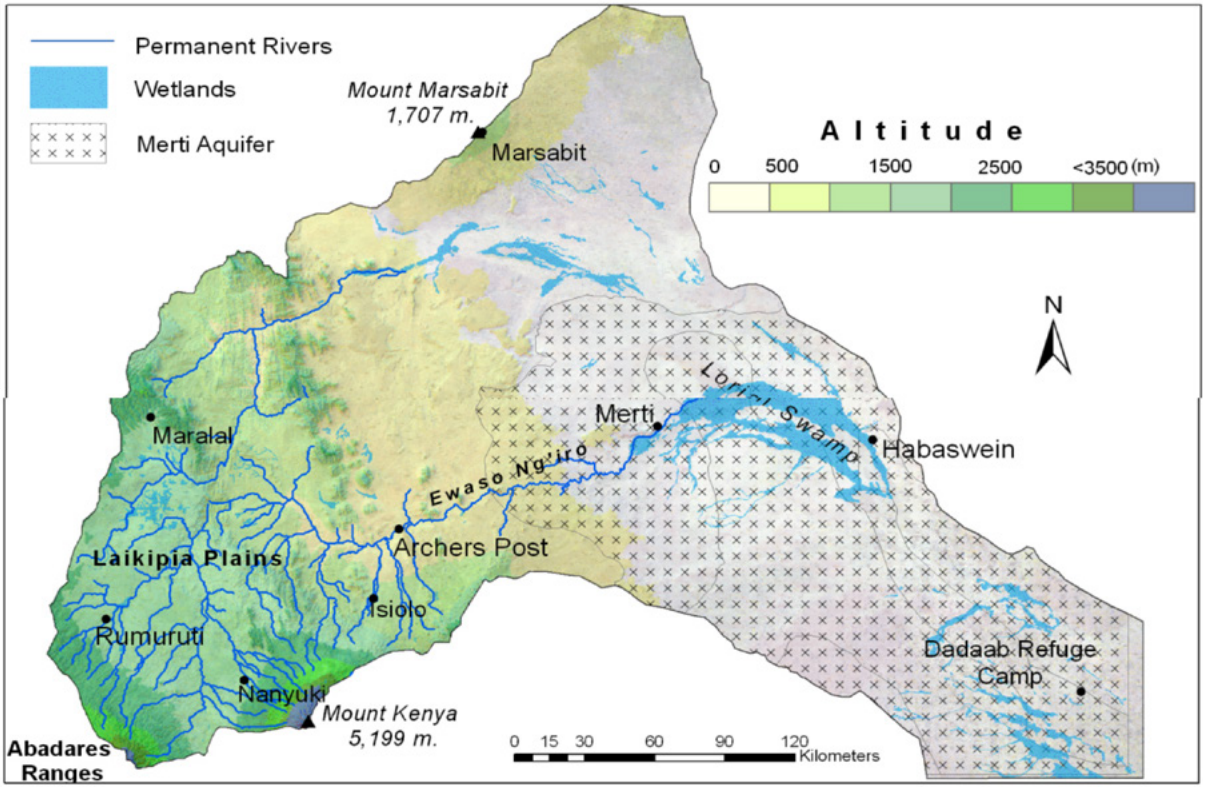
Photo Courtesy of NEMA

iii. Lorian Swamp

Lorian swamp is located along River Ewaso Ngiro in Chari ward and covers a stretch of approximately 196 kilometers and a width of 25 kilometers, occupying approximately 231,000 hectares. The swamp is also shared by Garissa and Mandera counties. It is also fed by Wadis River from the southwest and the north east.

However, the area of the swamp varies considerably depending on the prevailing weather conditions. The swamp hosts wildlife such as crocodiles and is a source of water and food for large savannah animals like elephants. These makes the swamp a dangerous place for humans hence cattle are only grazed and watered in the shallow waters especially during the dry season.

Map 5-7: Lorian Swamp



Source: ResearchGate 2012

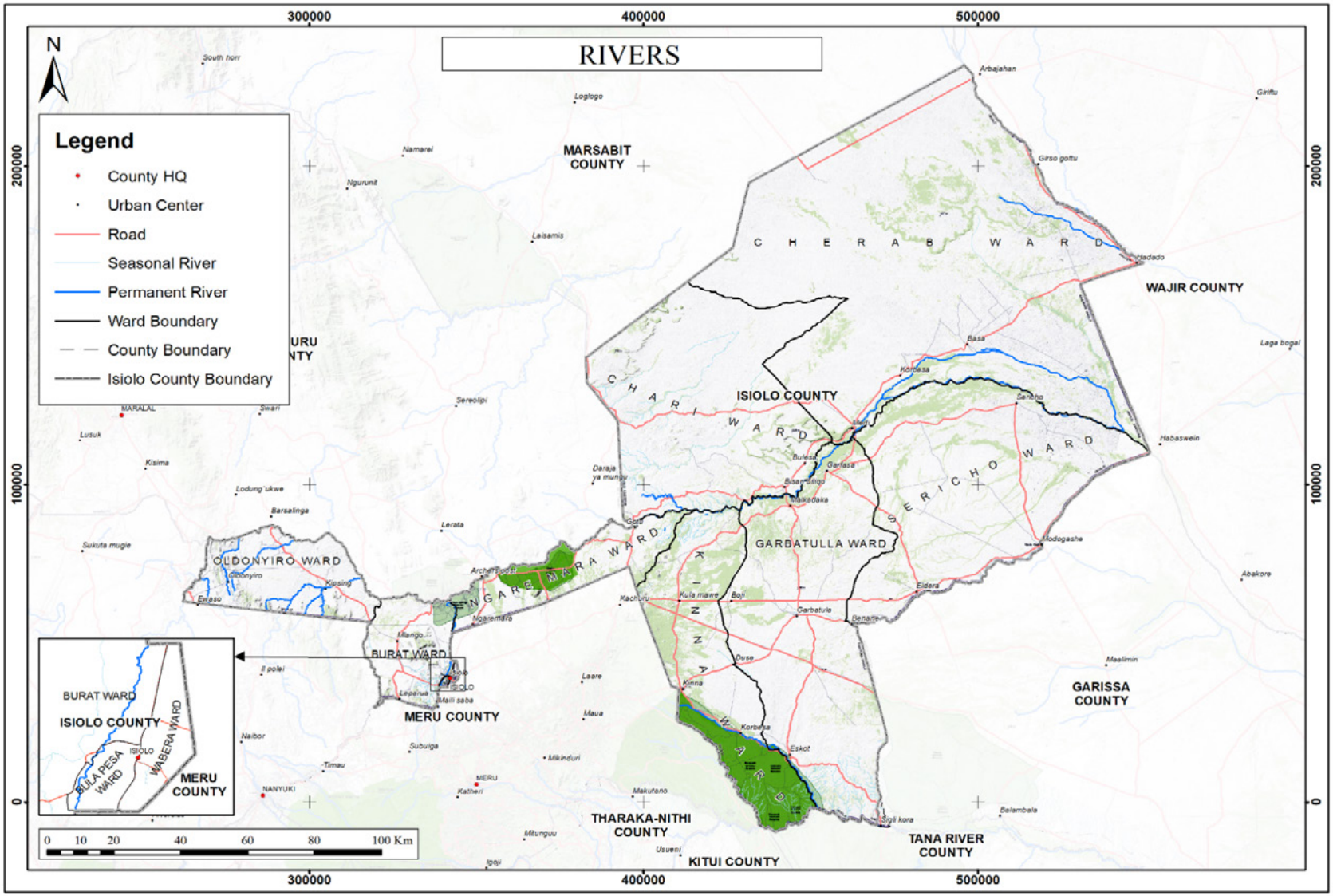
iv. Gotu and Buffalo Springs Wetland

The permanent wetland receives water from the underground springs in the Buffalo Springs National Reserve and Shaba National Reserve. This attracts wildlife especially during dry seasons.

v. NgareMara Swamp

It is also located in the Buffalo Springs National Reserve and Shaba National Reserve and attracts wildlife, especially during dry seasons. The same should be protected and riparian reserve demarcated to protect the swamp for its existence and sustainability.

Map 5-8: Isiolo County Rivers



Source: Author 2025

5.3.3 Rangelands and Forests

Isiolo County rangelands are vast areas of natural landscapes, primarily grasslands, shrublands, and woodlands, that are crucial for the livelihoods of pastoral communities. These rangelands support livestock production (pastoralism) and wildlife and provide other resources like water and wood. They are however under threat due to overgrazing and land degradation as well as wildfires that destroy large tracts of these rangelands.

In terms of forestry; the County is characterized by a small percentage of natural forest cover; with no known gazette forests. Some of the forests include Shaba National Reserve, Mukogo forest and the Buffalos Springs What we have instead are Riverine/riparian woodlands and scattered acacia savannas along rivers like Ewaso Nyiro River or in wetlands (e.g., Lorian Swamp and Gambella) these provide important ecosystem services but are not gazetted as forests.

Others areas include National Reserves (managed by Kenya Wildlife Service): Areas like Shaba National Reserve, Buffalo Springs, and Bisanadi which contain acacia woodlands and riverine vegetation. These are wildlife-protected areas, not gazetted forests under KFS. Most vegetation in Isiolo falls under rangelands or community/customary management rather than national Forest Reserves.

Prominent flora includes the following: Acacia woodlands and shrublands, invasive species e.g. Mathenge (Prosopis juliflora - highly prominent and problematic). Introduced for desertification control; it has invaded large areas in parts of Cherab ward. It outcompetes native plants, reduces biodiversity and forage, consumes large amounts of water, alters hydrology, and causes injures to livestock/wildlife with thorns, and creates mosquito breeding sites. Others include Doum palms along rivers, various grasses/shrubs in rangelands (wet-season lowlands and dry-season reserves).

SUB-COUNTY	WARD	PRIORITY AREAS FOR AFFORESTATION	SUGGESTED INTERVENTIONS
Isiolo	Wabera (Isiolo Town)	Urban & peri-urban green spaces, institutional compounds, roadsides	Urban greening (shade trees, ornamental dryland species), school compounds, windbreaks.
	Bulapesa	Riparian zones along Isiolo River, degraded rangelands	Riparian buffer planting, fodder trees, controlled grazing enclosures.
	Ngare Mara	Overgrazed rangelands, charcoal hotspots	Reseeding & fodder tree planting (Acacia, Leucaena), community woodlots.
	Burat	Wildlife corridor (Isiolo–Buffalo Springs), communal grazing areas	Habitat restoration with Acacia & Commiphora species, conservancy-based tree planting.
	Oldonyiro	Hillsides, wildlife corridors (Samburu–Shaba), heavy charcoal zones	Hilltop afforestation, wildlife corridor restoration, controlled community woodlots
Merti	Chari	Merti Plateau drylands, pastoral rangelands	Large-scale dryland afforestation (Acacia senegal for gum arabic), enclosures, fodder banks
	Cherab	Semi-arid shrublands, erosion-prone areas	Sand dune stabilization with grasses & shrubs, planting drought-tolerant species (Balanites, Tamarind)
Garba Tulla	Kinna	Ewaso Nyiro riparian areas, charcoal hotspots, degraded grazing lands	Riverine planting, fodder trees (Leucaena, Calliandra), alternative energy promotion.
	Garba Tulla	Riverbanks, peri-urban areas, communal rangelands	Riparian afforestation, community nurseries, reseeding degraded rangeland.
	Sericho	Riverbanks, peri-urban areas, communal rangelands, drylands and pastoral rangelands.	Riparian afforestation, Large-scale dryland afforestation (Acacia senegal for gum arabic), enclosures, fodder banks.

However, they face challenges like land degradation, charcoal burning and climate change impacts, necessitating sustainable management practices and community involvement. Some of the challenges faced include:

- Security of land tenure that makes the community not invest in tree planting as they are not assured of benefit from the results.

- Limited funding available to invest in forestry programs
- Climate change that is affecting forestation and deters people from taking responsibility to conserve the environment.
- Limited access to water
- Charcoal burning leading to deforestation
- Lack of awareness
- Mismanagement of funds and embezzlement

However, there exists opportunities that can increase the forest coverage and benefits derived from them:

- The new laws on Carbon Credits that have seen people derive monetary gains from conservation activities
- Land availability through regularization to determine ownership
- Presence of Ewaso Ngiro River for irrigation schemes
- Gazettement of Kinna and Merti forest (still at proposal)

5.3.4 Wildlife Resource Management

Isiolo County hosts a diverse range of wildlife in its vast grasslands making it a desired Wildlife safari destination. The county has three game reserves; Bisandi National Reserve (BNR), Buffalo Springs National Reserve and Shaba National Reserve. Major wildlife species in the area include baboons, cheetahs, lions, leopards, elephants and buffaloes. Buffalo Springs National Reserve is a gem that hosts numerous animal species including the "Special Five" (reticulated Giraffe, Somali Ostrich, Gerenuk, Grevy's Zebra and Beisa Oryx). The reserve has more than 450 species of birds including those found in riverine forests and the northern bush country such as martial eagles, African darters and great egrets which are some of the endangered species and yellow-billed hornbill, bee-eaters and grey-headed kingfishers which are more common.

Shaba National Reserve (SNR) was established pursuant to Legal Notice No. 268 of 12th October 1974 and covers approximately 239km2.

Bisandi National Reserve is adjacent to Meru National Park and is home to the lion, cheetah, elands, elephant, white rhino, African elephant and over 400 bird species such as brown-backed wood pecker and King Fisher. The reserve was established in 1979 and is located in Kinna ward.

There are approximately twelve (12) conservancies in Isiolo county which are community-oriented and are a key resolution of the dispute between wildlife protection and community interests. These conservancies have an important function in improving the population of the wildlife as well as providing the communities with a source of livelihood thus benefiting the entire community. Notable conservancies in the county include Biliqo-Bulesa Conservancy, Nakuprat-Gotu Conservancy and Leparua Conservancy. The presence of conservancies in Isiolo has seen the decrease of poaching and an increase in revenue through tourism.

The vegetation in the reserve includes Acacia woodlands, bushlands, grasslands and riverine communities dominated by Acacia and doum palm, making it suitable for the vast wildlife species it hosts. Prominent wildlife includes Gerenuk, Grant Gazelle, Oryx, Zebra, Giraffe, Cheetah, Leopard and Lion. Moreover, the reserve has permanent springs; approximately 17, at which animals congregate during the dry season.

Prominent fauna in Isiolo County include Elephants, Grevy's zebra, African wild dog, giraffe, oryx, topi, lions, leopards, and birds. Livestock include Camels, cattle, goats, sheep key to pastoral economy but affected by reduced grazing due to invasion/degradation.

Plate 5-5: Wildlife in Buffalo Springs National Park



Source: Author 2024

Plate 5-6: Wildlife-Giraffe in Sericho Ward



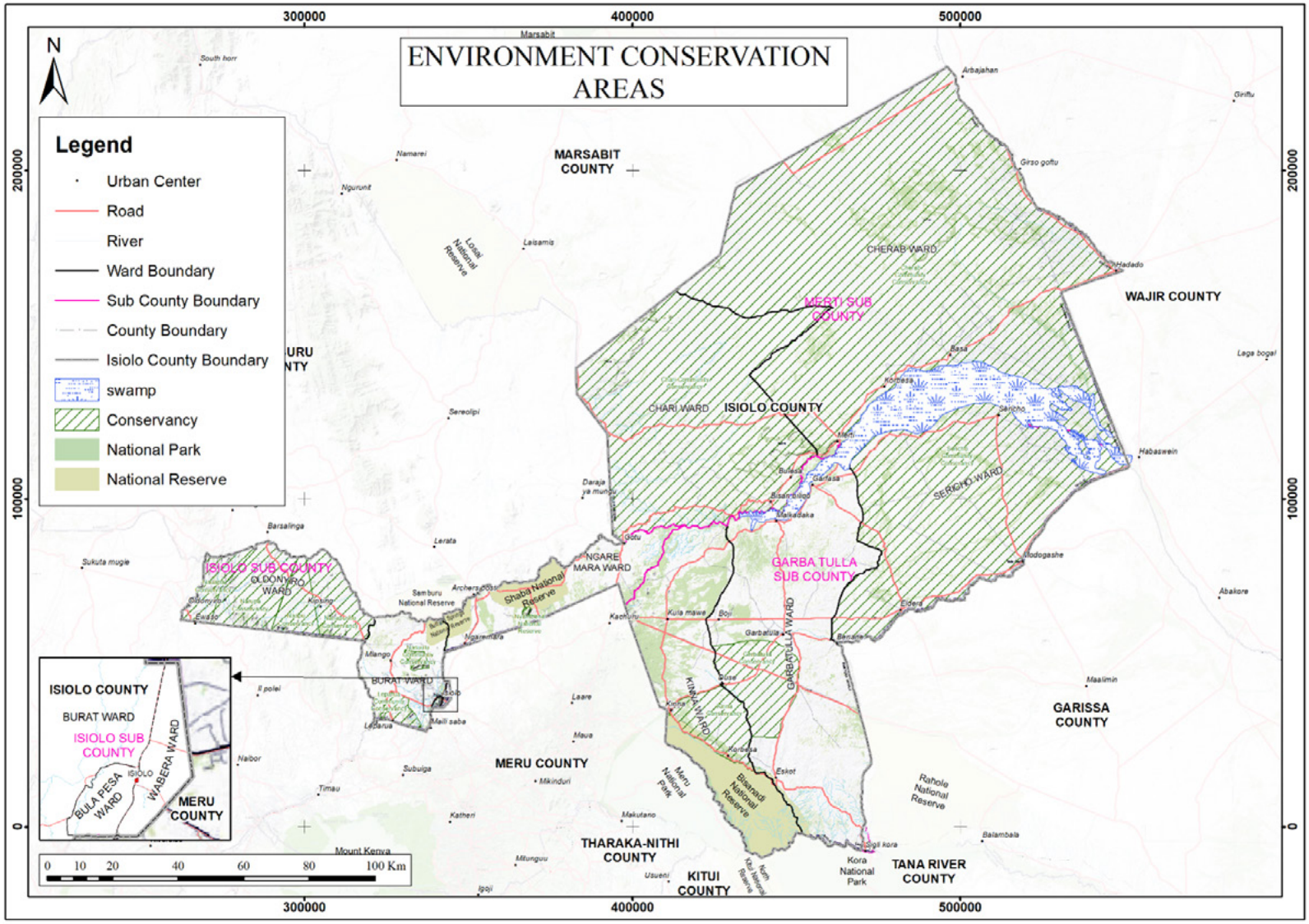
Source: Author 2024

Plate 5-7: Somali Ostrich within Oldonyiro Ward



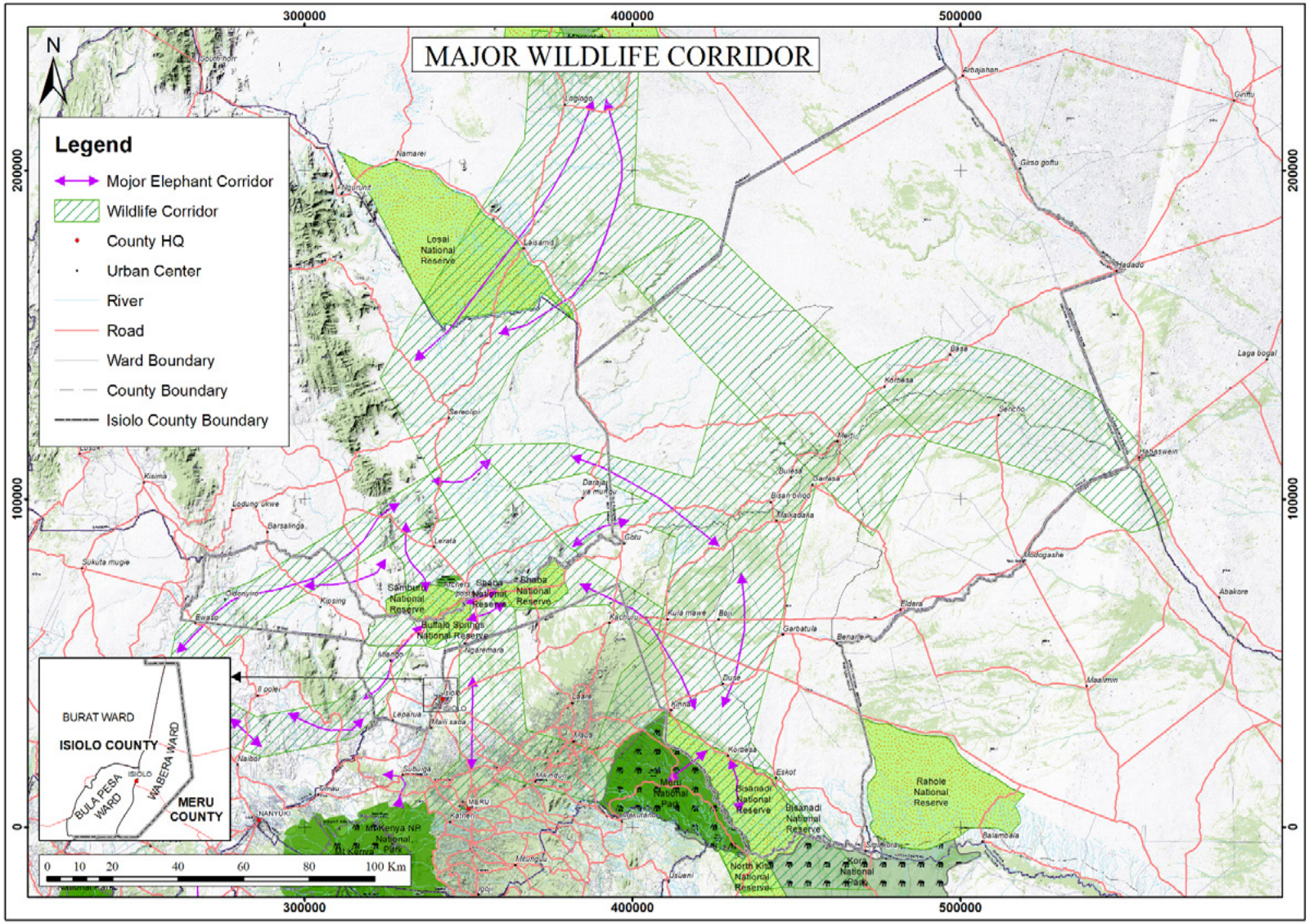
Source: Author 2025

Map 5-9: National Reserves and Conservancies



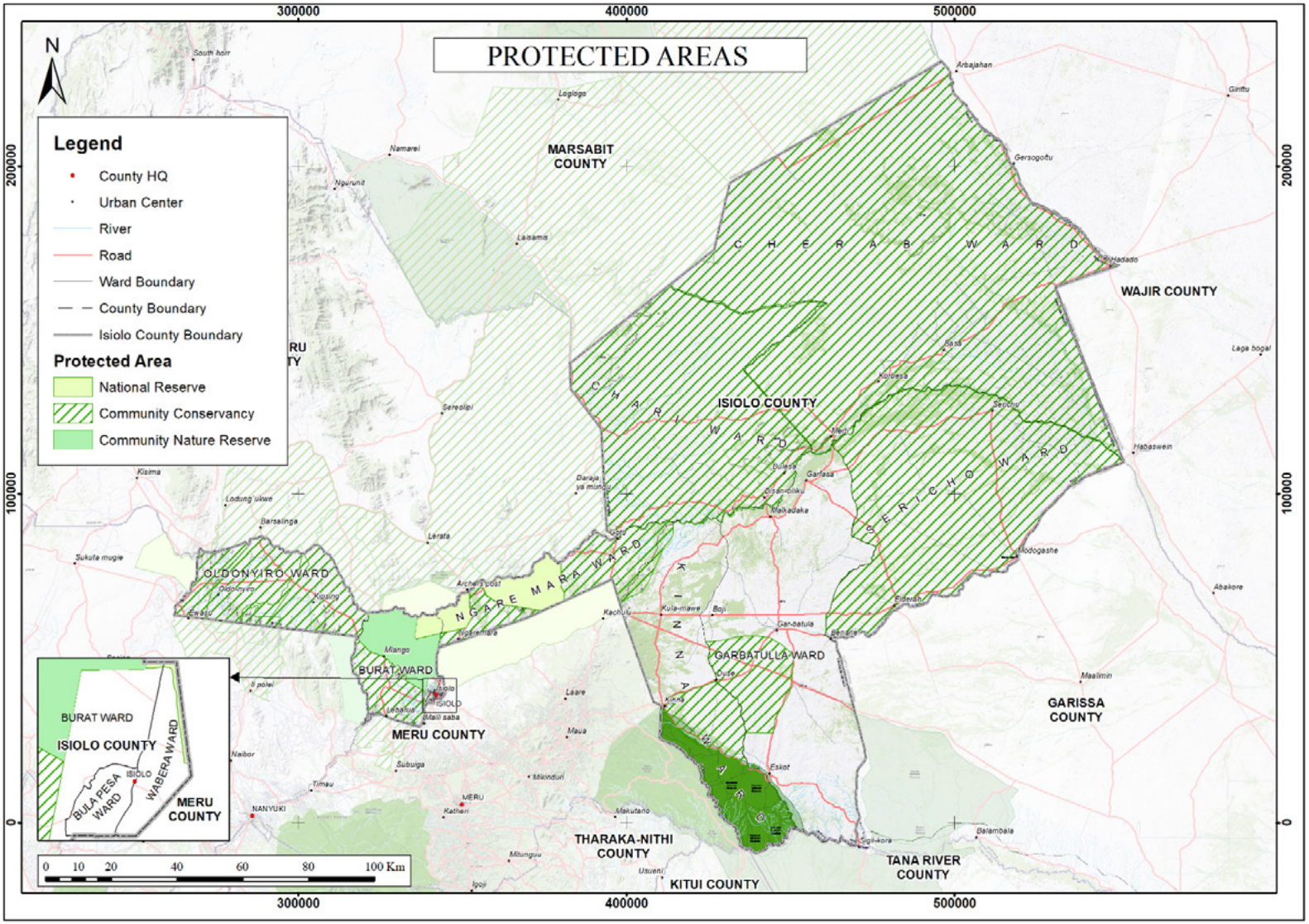
Source: Author 2025

Map 5-10: Wildlife Migratory Corridor



Source: Author 2025

Map 5-11: Protected Areas



Source: Author 2025

5.3.5 Mineral Resources

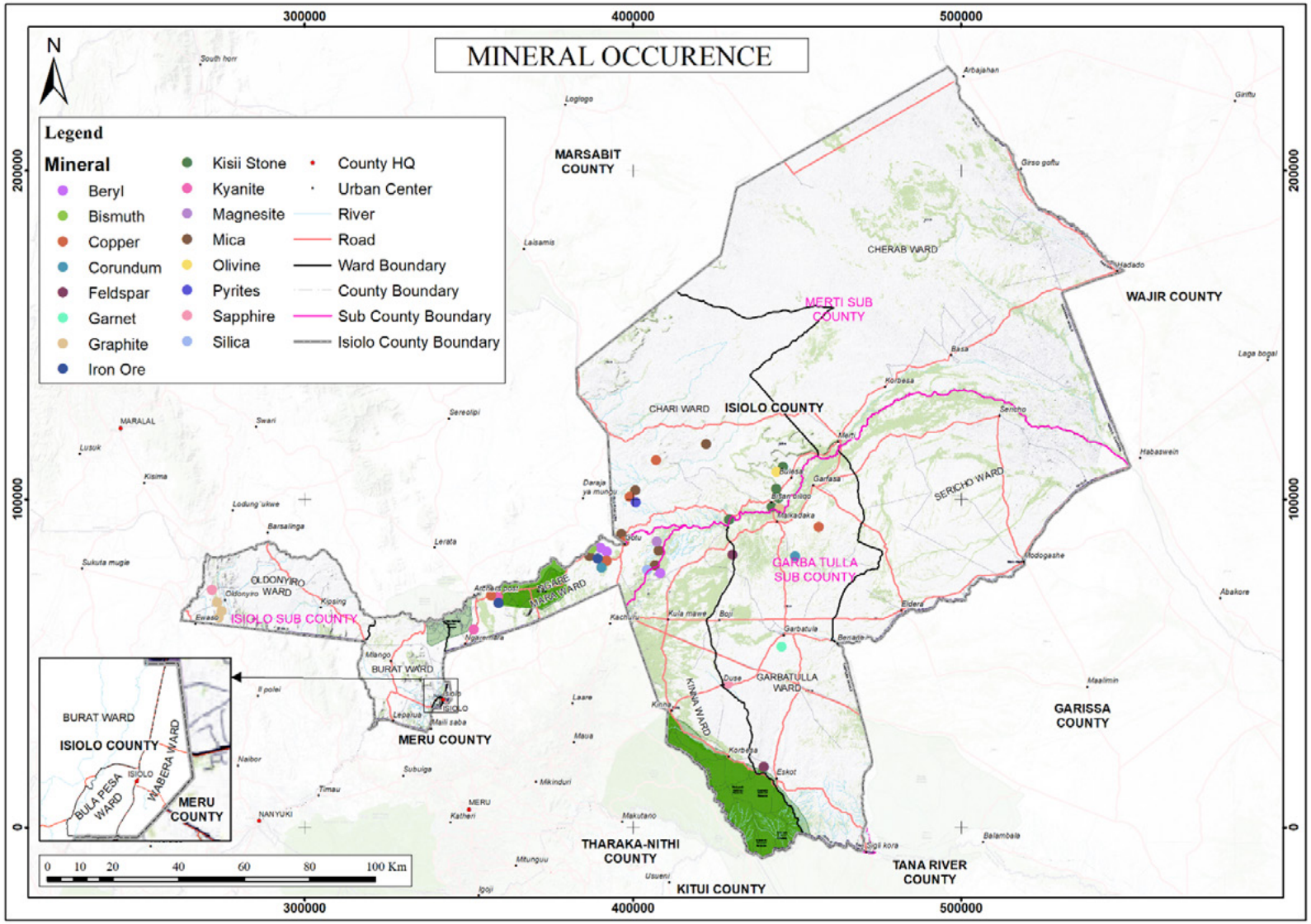
Isiolo County possesses untapped mineral potential, although large-scale commercial exploitation is still limited. Artisanal and small-scale mining occurs in various parts of the county, often informally. Isiolo County has mineral resources that are not yet fully exploited but show great potential for future economic growth. These include: -

- **Construction Materials including Sand and Ballast:** Commercial in Burat, Ngaremara, Kinna wards; haphazard in central areas). Sand is found in riverbeds such as Ewaso Ng'iro and seasonal streams. These materials are widely extracted for local construction but face environmental concerns due to unsustainable harvesting. Building Stones and Gravel in areas such as Garbatulla ward are common in areas with rocky outcrops, supporting small-scale quarrying.
- **Oil and Gas Reserves:** Potential oil and gas deposits may be found in the areas of Duse, Kom Durte, Bathan Shida, Boji, and Kulamawe. Presently, these places are under exploration, and in the near future, they may have great potential for oil extraction.
- **Gold Traces:** Small occurrences of alluvial gold have been reported through community mining, especially in areas near Garbatulla and Sericho, though unconfirmed commercially.
- **Other Minerals:** Gemstone mining (e.g., sapphires, rubies at Duse mines) and limestone occur in patches. Prospecting for petroleum/gas in Chari and Cherab wards. We also have, though at small scale; Iron Ore mining in Matule area of Burat Ward, Isiolo North Sub-County.

Challenges

- Quarrying and mining activities are localized but environmentally disruptive, especially due to unregulated practices.
- Other challenges include soil erosion, vegetation loss, dust pollution, riverbank destabilization, sedimentation of water sources, and habitat destruction.
- Sand mining in riverbeds exacerbates flooding risks and lowers water tables.

Map 5 12: MineraL Occurrence Map



Source: Author 2025

5.4 CLIMATE CHANGE AND DISASTER MANAGEMENT

5.4.1 Climate Change

Isiolo County, located in Kenya's arid and semi-arid lands (ASALs) of northern Kenya, is highly vulnerable to climate change. It experiences recurrent droughts, erratic rainfall patterns, flash floods, rising temperatures, and land degradation, which severely affect pastoralist livelihoods, water resources, food security, and ecosystems. Isiolo County's Climate Risk Profile reveals that the region is prone to a range of climate-induced risks, including droughts, flash floods, heatwaves, and land degradation. The following are the main climate related risks:

i. Rising Temperatures and Water Scarcity

The average annual temperatures in the region have been on the rise over the years thus increasing heat stress for both humans and livestock. Extreme heat contributes to higher water evaporation rates, worsening water shortages, and reducing the availability of pasture and water for livestock. Heatwaves affect the productivity of labor, contribute to livestock deaths, and degrade ecosystems. Additionally, they heighten the health risks for vulnerable populations such as children, the elderly, and those with pre-existing health conditions.

ii. Unpredictable Weather Patterns

a. Drought

Isiolo has seen a shift in rainfall patterns, with some areas receiving intense rainfall in short periods, followed by long dry spells. This erratic rainfall pattern has made it increasingly difficult to predict planting seasons for crops. The frequent droughts not only strain water resources but also trigger food insecurity, as pastoralists struggle to feed their animals, and crop farmers get poor harvests.

b. Flooding

Isiolo is predominantly dry, however, flash floods following erratic rainfall are common. These floods occur due to poor drainage systems and the natural topography of low-lying areas.

Flash floods damage infrastructure, including roads and housing, disrupt livelihoods, and contaminate water sources.

iii. Land Degradation and Desertification

Drought leads to overgrazing, deforestation and unsustainable land-use practices contributing to land degradation and desertification in Isiolo County. These processes reduce the county's capacity to support agriculture and pastoralism.

iv. Loss of Biodiversity

The county's wildlife populations, such as elephants, giraffes, and various bird species, are at risk due to habitat degradation and the depletion of water sources. Decreased soil fertility and increased erosion make it difficult to grow crops and graze livestock, further undermining food security and livelihoods.

v. Invasive plant species

Invasive plants are non-native species that can spread over long distances and out-compete native plants. They can cause a variety of problems, including:

1. Degrading soil
2. Obstructing agriculture
3. Displacing native plants
4. Increasing the risk of flooding
5. Increasing the risk of erosion.

The threat of incursion is directly linked to the rate at which the invasive species propagules are introduced and the level of disturbances that encourages their establishment (Hernández et al., 2006). Invasive plant species are plants that produce large numbers of offspring, with greater chances of spreading widely (Ratnayake, 2015). The common types of invasive species of plants in Isiolo County according to the field survey include: Prosopis juliflora (Mathenge or Msitu Mjinga), Acacia reficiens, Ipomoea purpurea, Opuntia englemanii. The Figure shows the prevalence of invasive species across the county.

5.4.1.1 Disaster Management

Disaster risk management (DRM) in Isiolo aligns with national policies, including the National Disaster Management Policy, Sendai Framework for Disaster Risk Reduction, and Ending Drought Emergencies strategy. The county emphasizes prevention, preparedness, response, and recovery rather than reactive relief.

Key elements include:

- **Early Warning Systems:** The National Drought Management Authority (NDMA) issues regular county drought early warning bulletins tracking rainfall, vegetation condition index (VCI), water sources, livestock conditions, and malnutrition. These inform migration decisions, planting, and aid. Multi-hazard contingency plans and climate information services are strengthened.
- **Institutional Structures:** County Disaster Risk Management frameworks, County Steering Groups, Ward Climate Change Planning Committees, and coordination with NDMA, NGOs (e.g., PACIDA, Red Cross), and national agencies. Youth and community involvement in DRR is growing, including school programs and child-centered approaches.
- **Emergency Funds and Response:** Operationalization of emergency funds, resource mobilization for preparedness/response, and multi-agency partnerships for rapid response to droughts and floods.
- **Recent Developments:** Efforts toward a county-specific Disaster Management Policy, integration of DRR into sector plans, and vulnerability/mapping exercises.

Challenges and Opportunities

CHALLENGES:

- Resource constraints and limited adaptive capacity.
- Frequent hazards hindering initiatives like afforestation.

- Weak enforcement, land tenure issues affecting communal pastoral systems, and coordination gaps.
- High vulnerability of marginalized groups (women, children, disabled, elderly) and urban-rural divides.

OPPORTUNITIES:

- Devolved climate finance (CCCF model, piloted successfully in Isiolo).
- Partnerships with NGOs, national government, and development partners for funding, training, and infrastructure.
- Livelihood shifts (e.g., camel rearing for drought resilience, business diversification).
- Youth engagement in DRR and integration of climate information services.
- Potential for green energy, sustainable agriculture, and eco-tourism.

5.4.2 Landscape Features

Isiolo county is an Arid and Semi-Arid land that is characterized by low-lying plains, featuring gently rolling plains with the Ewaso Ngiro River flowing through it and the lowest point being at the Lorian swamp. Spectacular physical features include Shaba and Sleeping Lion hills, Champagne ridge and Dakadima cliffs. These features provide background panoramic views, teeming with grazing wildlife and serve as observation points from which the landscape can be viewed. These areas provide visitors with opportunities for rock climbing and walking safaris.

The Merti plateau rises to an elevation of approximately 540meters with steep slopes on one or more sides. This plateau is an important source of ground water which is acquired from the aquifers within it by drilling boreholes to depths of 110-150 meters.

Plate 5-8: Merti Plateau



Source: Field Survey, 2024

Plate 5-9: Rock Outcrop in Garbatulla Ward



Source: Field Survey, 2024

Plate 5 10: Bisan-Biliqo Hill



Source: Field Survey, 2024

5.5 STATUS OF RANGELANDS

Stoddart et al (1975) defined rangeland as those areas of the world, which by reason of physical limitations (e.g low and erratic precipitation, rough topography, poor drainage, extreme temperatures) are unsuited for cultivation and which are a source of forage for free- ranging native and domestic animals, as well as a source of wood products, water and wildlife. A range ecosystem includes physiography, soil, vegetation, water, animal life and associated atmosphere. Rangelands are fragile ecosystems which need to be managed sustainably in order to continue providing a stream of benefits to the people and animals (both domestic and wild). Rangelands cover over 83% of Kenya's total land mass, supporting over 70% of the country's livestock and 85% of the wildlife population. Isiolo is one of the counties in Kenya which are characterized by arid and semi-arid (ASAL) conditions, also described as rangeland.

About 80% of the land in Isiolo County is non-arable (22,000 km2) and is used for grazing while agro-pastoralism is practiced in a few areas. The County has three agro-ecological zones (AEZs): 1) semi-arid (5 percent of the total land in the County), 2) arid (30%), and 3) very arid (65%) (Isiolo County CIDP 2023-2027).

5.5.1 Rangeland Resources

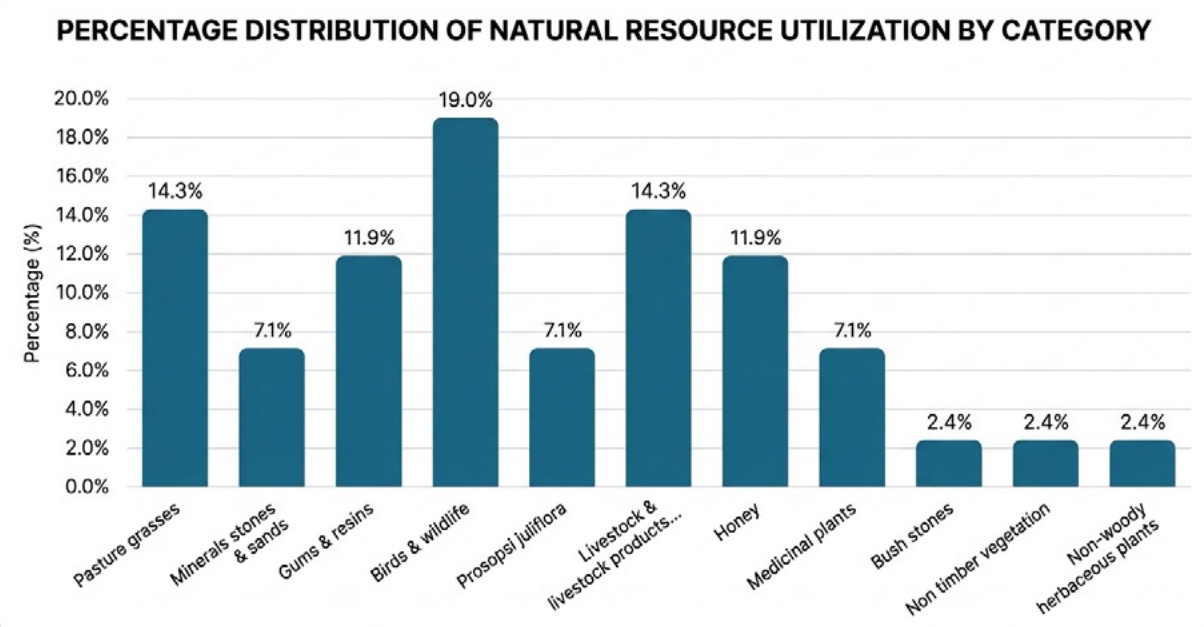
The rangelands in Isiolo County provide a range of resources/products as reported by key informants and presented in the table below.

ELECTORAL WARD	MAJOR RANGELAND RESOURCES/PRODUCTS
Wabera	Pasture grasses, honey, animal products (milk, meat, hides and skins). Birds in the middle of the town at night, non-timber vegetation.
Bulla Pesa	Pasture grasses, honey, animal products.
Burat	Wildlife especially along Kipsing gap and the game reserves, vegetation and pasture grasses for grazing, gums and resins, sand harvesting along Isiolo river, animal products as the main slaughter house in Isiolo is in Burat, honey, wildlife, construction materials such as sand and bush stones.
Ngaremara	Wildlife in Buffalo springs game reserves, Vegetation and pasture for grazing in Attan, Gotu, Ngaremara location Boji dera, Sand harvesting in Manyatta zebra area, birds and all kind of birds, medicinal plants, honey, honey, animal products, variety of birds.
Oldonyiro	Wildlife in all the four conservancies, pasture and browse, honey harvesting especially in Kawalash location, gums and resins, sand harvesting along the many seasonal streams in the ward, meat and skins from animal products, medicinal plants used in remote parts of the ward, all types of birds, four conservancies that help in rangeland conservation, honey, animal products and birds.
Chari	Pasture grasses, animal products, wildlife, Minerals (Gold).
Cherab	Pasture grasses, animal products, wildlife, gums and resins, minerals (meteorite rock)
Kinna	Pasture grasses, animal products, wildlife, birds, gums and resins (Gums and resins are obtained from species of Boswellia, Acacia and Commiphora).
Sericho	Pasture grasses, animal products, wildlife, birds, gums and resins.
Garbatulla	Pasture grasses, animal products, wildlife, birds, gums and resins, minerals (Bauxite ore).

Source: Key Informant Interviews, 2024

The figure below shows various rangeland resources in the county

Figure 5-1: Rangeland Resources



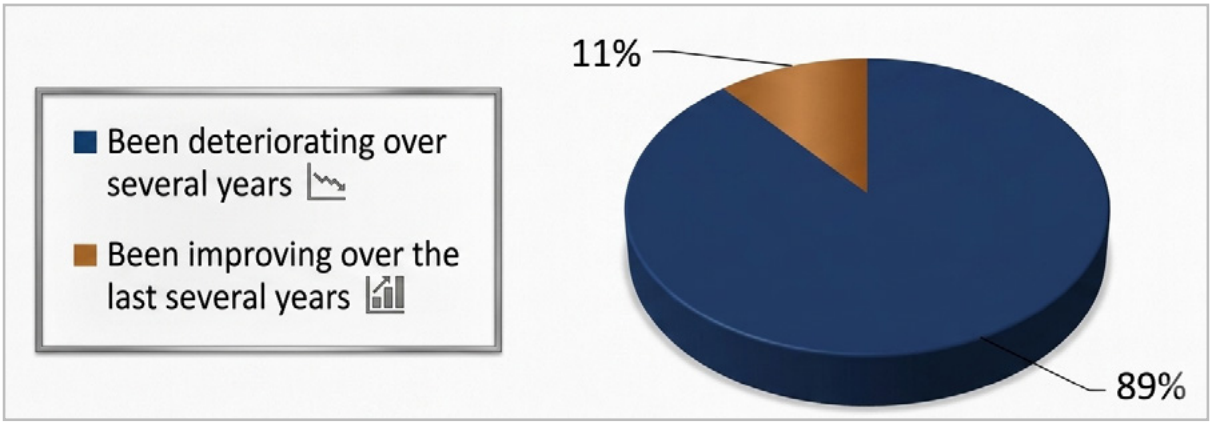
Source: Author 2024

Pasture grass is fodder for livestock. Medicinal plants such as aloe vera are also found in the county. Other products include minerals such as gold (Chari Ward), Bauxite ore (Garbatulla Ward), honey, construction materials, wildlife, livestock products, gums and resins, among others.

5.5.2 Rangeland Conditions

Rangeland condition refers to the state of health of the rangeland. The condition of the rangeland in the county has been deteriorating over time as reported by 89% of the key informants. This may be attributed to human activities such as keeping of high population of livestock that lead to overgrazing; soil erosion, mining operations, cutting of trees, presence of invasive species of plants such as Prosopis juliflora, among others.

Figure 5-2: Rangeland Conditions



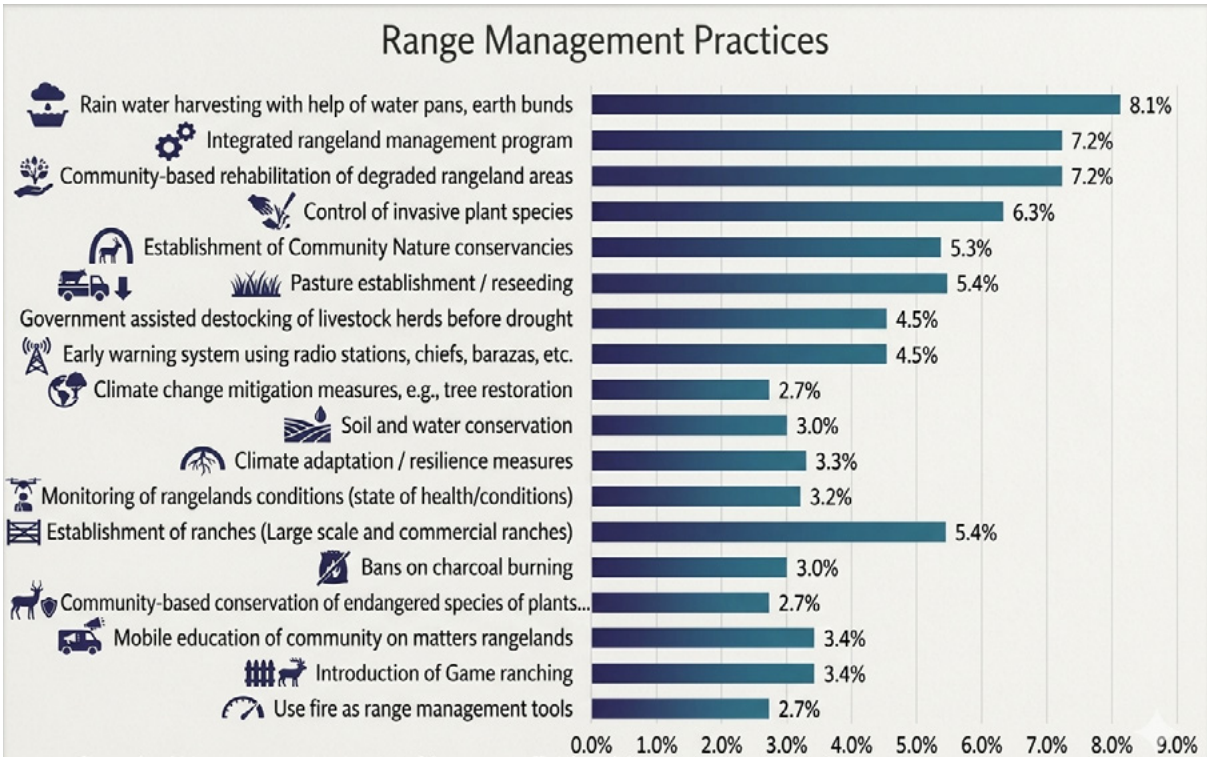
Source: Field Survey, 2024

5.5.3 Range Management Practices

The American Society of Range Management (1964) define range management as the art and science of planning and directing range use to obtain sustained and maximum animal production consistent with perpetuation of the natural resources. Stoddart et al (1975) on the other hand defined range management as the art and science of optimizing the return from rangeland through manipulation of range ecosystem. The goal of range management is to maintain the balance between the grazing animals and the ecosystem, while also ensuring the sustainability of the natural resources. Various range management practices are currently being implemented in the county according to the primary data collected from the key informants and presented in Figure 5 3.

These include: control of invasive species of plants (e.g through using fire, clearing), soil and water conservation, establishment of feedlots, rainwater harvesting with aid of earth dams and water pans, monitoring of range conditions, establishment of conservancies, destocking of livestock especially during the dry spells. The key informants also reported that livestock grazing patterns are planned and governed with the help of established committees called dedha. The figure below shows the main range management practices in Isiolo County.

Figure 5-3: Rangeland Management Practices



Source: Author 2024

Estimating the Rangeland Carrying Capacity

Carrying capacity is widely used as a tool in range management. Carrying or grazing capacity is defined as the maximum possible stocking of herbivores that rangeland can support on a sustainable basis (FAO 1988). Estimates of CC are commonly based on the assumption that livestock require a daily Dry Matter (DM) intake equivalent to 2.5% to 3.0% of their body weight. Thus, for a Tropical Livestock unit (TLU) of 300 kg of weight, 2.738 to 3.285 tons of dry feed per annum is needed. To calculate an appropriate balance between forage supply and demand three multipliers are additionally required to adjust for: grazing efficiency (the proportion of total herbage livestock can harvest forage loss due to trampling, fouling, decomposition, etc.) proper use, which is the maximum proportion of forage that can be grazed without causing rangeland deterioration (FAO 1988). The existing body of knowledge considers 50% as the maximum rate of sustainable utilization in a grassland ecosystem.

Estimating the Forage Availability Using Clipping and Weighing Method

The tools used include: a quadrat (metallic), sickle and scale balance. Data was collected from four wards (Ngaremara, Bulla Pesa, Oldonyiro and Wabera). The quadrat was thrown randomly and all the forage within it was clipped and weighed. This was repeated at five different sites per ward and the average weight calculated as shown in plate 3-8. The same exercise was done in all the four wards and the overall average (0.71kg/M^2) established as presented in the Table 5-2.

Plate 5-11: Clipping and Weighing Method



Source: Field survey 2025

	MEASUREMENT (WEIGHT OF CLIPPED GRASS IN KGS) (1M² QUADRAT) BETWEEN 4TH AND 6TH FEBRUARY, 2025						
WARD	QUADRAT 1	QUADRAT 2	QUADRAT 3	QUADRAT 4	QUADRAT 5	TOTAL	AVERAGE
Oldonyiro	0.5	0.3	0.2	0.4	0.6	1.7	0.34
Wabera	1.5	1.2	1.7	1.4	1.2	7	1.4
Bulla Pesa	0.4	0.5	0.2	0.1	0.3	1.5	0.3
Ngaremara	0.5	0.7	0.8	0.9	1.1	4	0.8

In order to avoid degradation of the ecosystem, only 50% (0.355kg/M²) of the forage is available for utilization as recommended by FAO (1988). 1000,000M²=1Km². 1Km2 is equivalent to 10 hectares (100Ha). Therefore, 1Km² (100Ha) can supply 355,000Kg of forage sustainably per annum, which is equivalent to 355 tons or 3.55 tons per Ha.

If the concept of Tropical Livestock Unit (TLU) is applied, then each TLU which is a mature zebu cow weighing 300kg will demand 3% of its body weight (3/100x300kg = 9kg) of Total Dry Matter (TDM) per day. This is equivalent to 3,285Kgs (3.285tons) per annum. Question: How many TLUs can 100Ha of rangeland support in Isiolo County? 1Ha of the rangeland can supply 355/100 which is 3.55tons of forage. Since each TLU require 3.285tons per annum, therefore, 1Ha can support 3.55/3.285 or 1.081 TLUs per annum (Approximately 1 TLU/Ha). The carrying capacity (CC) established is consistent with the standard carrying capacity of 0.8TLU/Ha for ranching zone (Physical Planning Handbook, 2024). Isiolo County occupies 25,349km² which is equivalent to 2,560,500Ha. The shrub and grassland together with bear land occupy about 70.435% of the county's total land mass which is equivalent to 18,034km² or 1,803,400Ha.

Stocking Rate Per Annum

Therefore, if 1Ha can sustainably support 1TLU per annum as established above, then 1,803400Ha can sustainably support 1.803400 TLUs per annum.

5.5.4 Common Species of Rangeland Plants in Isiolo County

The county is home to a variety of plant species which are adapted to dry land conditions. The planning team established that the planning area is home to a variety of rangeland plants, mostly those adapted to arid and semi-arid conditions as presented by ward below.

Ngaremara Ward

Primary source (Field work)	*Juglans nigra, Acacia Senegal, Solanum elaeagnifolium, Bascia coriacea Graells, Combretum collinum Fresen, Guiera senegalensis, Agave americana, Vachellia xanthophloea (Acacia xanthophloea), Hibiscus calyphyllus, Alchrnea glandulosa, Capparis tomentosa, Faidherbia albida, Balanites aegyptica, Vachellia tortilis, Ziziphus mauritiana, Vacchellia karoo, Prosopis juliflora, Heteropogan contortus.*

Burati Ward

Senegali mellifera, Sambucus nigra, Prosopis juliflora, Parkinsonia aculeata, Alternanthera sensilis, Cucumis dipsaceus, Withania somnifera, Adenia globose, Vachellia drepanolobium.

Kinna Ward

Primary source (Fieldwork)	*Senna siamea, Solanum melongena, Ricinus communis, Campusis radicans, Aloe vera, Acacia xanthphloea, Prosopis juliflora.*
Secondary source Wasonga, O, Musembi, J, Rotich, K, Jarso, I, King-Okumu, C (2016) Vegetation resources and their economic importance in Isiolo County, Kenya. IIED, London	*Aristida adscensionis, Tetrapogon spathaceous, Sporobolus fimbriatus, Pennisetum mezianum, Cenchrus ciliaris, Albizia amara, Commiphora hildebrandtii, Acacia tortilis, Prosopis juliflora, Terminalia spinosa, Albizia anthelmintica, Boscia minimifolia, Commiphora, Boswelia, Microphylla holtiziana, Grewia villosa, Cordia sinensis.*

Wabera Ward

Ricinus Cummunis, Cadaba farinose, Genista scorpius, Faidherbia albida, Editthcolea grandis, Commiphora africana, Bixa oellana, Vicia faba, Rbus ulmifolius, Ceiba pentandra, Cynoglossum amabile, Combretum collinum, Camphorosma monspeliaca, Vanchellia tortilis, Plantago major, Prosopis juliflora, Allium sativum (Grass), Pinus patula (Grass), Datura stramonium (poisonous weed).

Oldonyiro Ward

Desmidorchis acutangula (Euphobiaceae family), Solanum incanam (common name Adam's aple), Acacia refficiens, Acacia senegal (local Samburu name Itergesi), Euphorbia heterospina (local Samburu name – Mpopongi), Aloe vera (Local Samburu name Sukuroi) (Medicinal), Cissus rotundafolia (local Samburu name - Raraiti), Opuntia englemanii (Invasive species, Euphorbia magnicapsula, Acacia mellifera, Vachellia tortilis (Umbrella acacia), Prosopis juliflora (msitu mchinga or Mathenge).

The Plate below shows some of the plant species in Oldonyiro Ward.

Plate 5-12: Sample Plant Species in Oldonyiro Ward



Source: Field study 2024

Cherab Ward

Balanites aegyptiaca, Vachellia famesian, Asaparagus albus, Prosopis juliflora.

Sericho Ward

Vachellia seyal, Acacia reficien, Commiphora mollis, Salvadora persica, Phillyrea, angustifolia, Ziziphus spina christi, Vachellia nilotica, Calotropis procera, Prosopis juliflora

The plate below shows some of the common shrubs and trees in Sericho Ward.

Plate 5-13: Sample Plant Species in Sericho Ward



Source: Field study 2024

Garbatulla Ward

Aloe maculate, Solanum melongena (Eggplant), Datura stramonium, Polo verde, Black hawthorn, Sweet thorn, Acacia melifera, Shittimwood, prosopis julifora, Setaria verticillate, Bristle grass.

Bulla Pesa Ward

Lippia origanoides, Solanum incanum, Balanites grabra, Parkinsoniaaculeata, Xanthium strumarium, Parthenium hysterophorus, Prosopis juliflora, umberal thorn acacia, Hyphaene petersiana, Azadirachta indica (neem tree), Adansoniadigitata (Baobab tree or Odha tree in Borana local nama).

The plate below shows some of the plant species common in Bulla Pesa Ward.

Plate 5-14: Sample Plant Species in Bulla Pesa Ward



Source: Field study 2024

5.5.4.1 Invasive Plant Species

Invasive plants are non-native species that can spread over long distances and out-compete native plants. They can cause a variety of problems, including:

1. Degrading soil: Invasive plants can degrade soil quality.
2. Obstructing agriculture: Invasive plants can make it difficult to farm.
3. Displacing native plants: Invasive plants can replace native trees and vegetation.
4. Increasing the risk of flooding: Invasive plants can make land more prone to flooding
5. Increasing the risk of erosion.

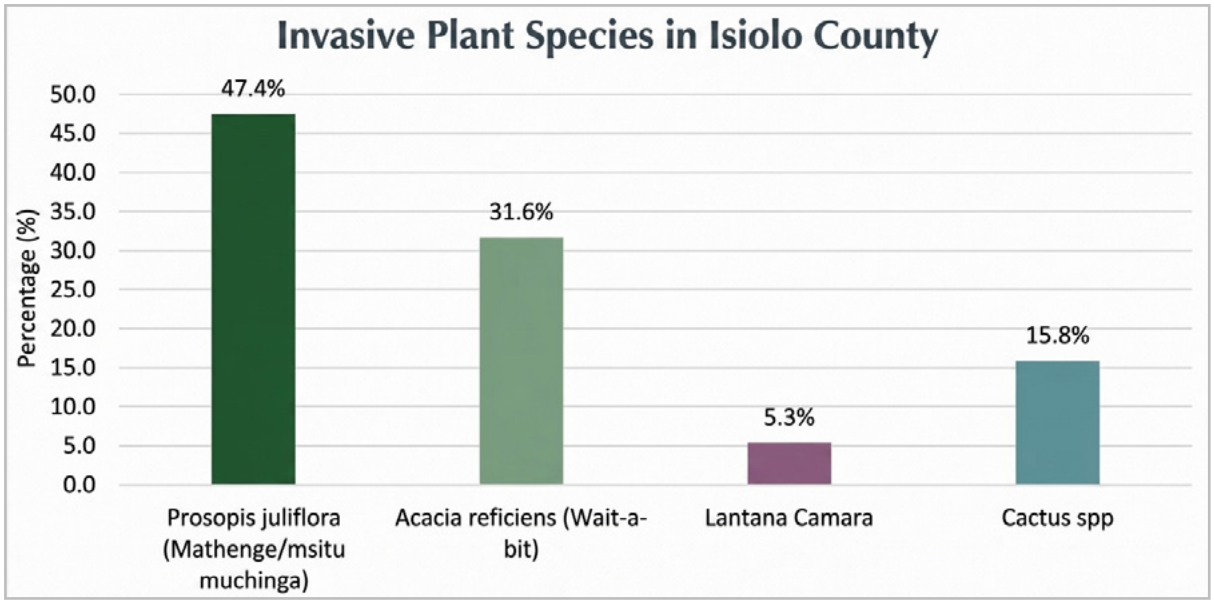
Invasive species are a major threat to global human well-being, biodiversity, and economies. The threat of incursion is directly linked to the rate at which the invasive species propagules are introduced and the level of disturbances that encourages their establishment (Hernández et al.,

2006). Invasive plant species are plants that produce large numbers of offspring, with greater chances of spreading widely (Ratnayake, 2015). The common types of invasive species of plants in Isiolo County according to the field survey include:

Prosopis juliflora (Mathenge or Msitu Muchinga), Acacia reficiens, Ipomoea purpurea, Opuntia englemanii.

The figure below shows the prevalence of invasive species across the county.

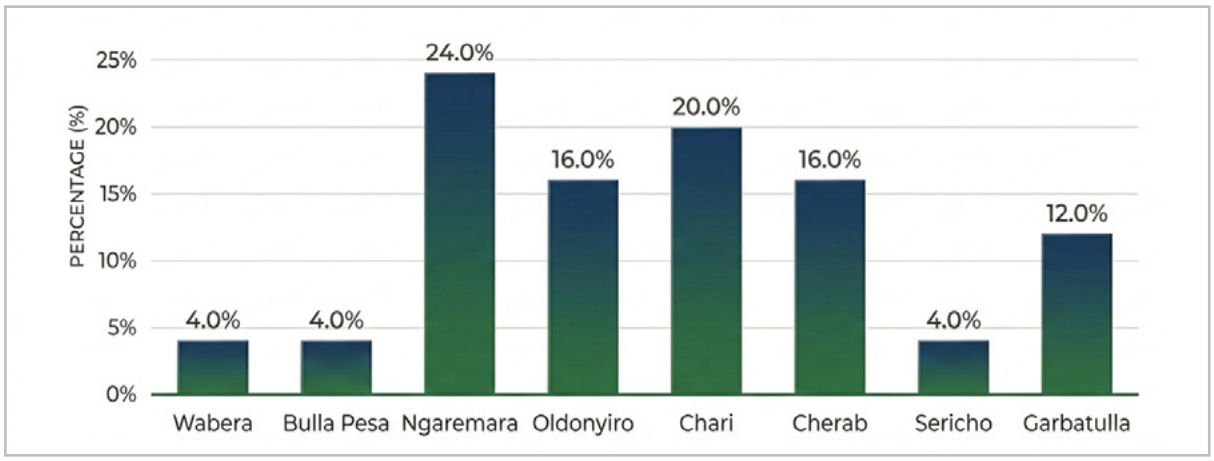
Figure 5-4: Invasive Plant Species



Source: Author 2024

The electoral wards mostly affected by invasive plants species are Wabera, Ngaremara, Oldonyiro, Garbatulla, Chari, Bura-Pesa, Sericho, Cherab, Burati as shown in the figure below.

Figure 5-5: Invasive Species Spread



Source: Author 2024

Its evident, therefore, that invasive species are all over the county and therefore require an elaborate program for their control and management.

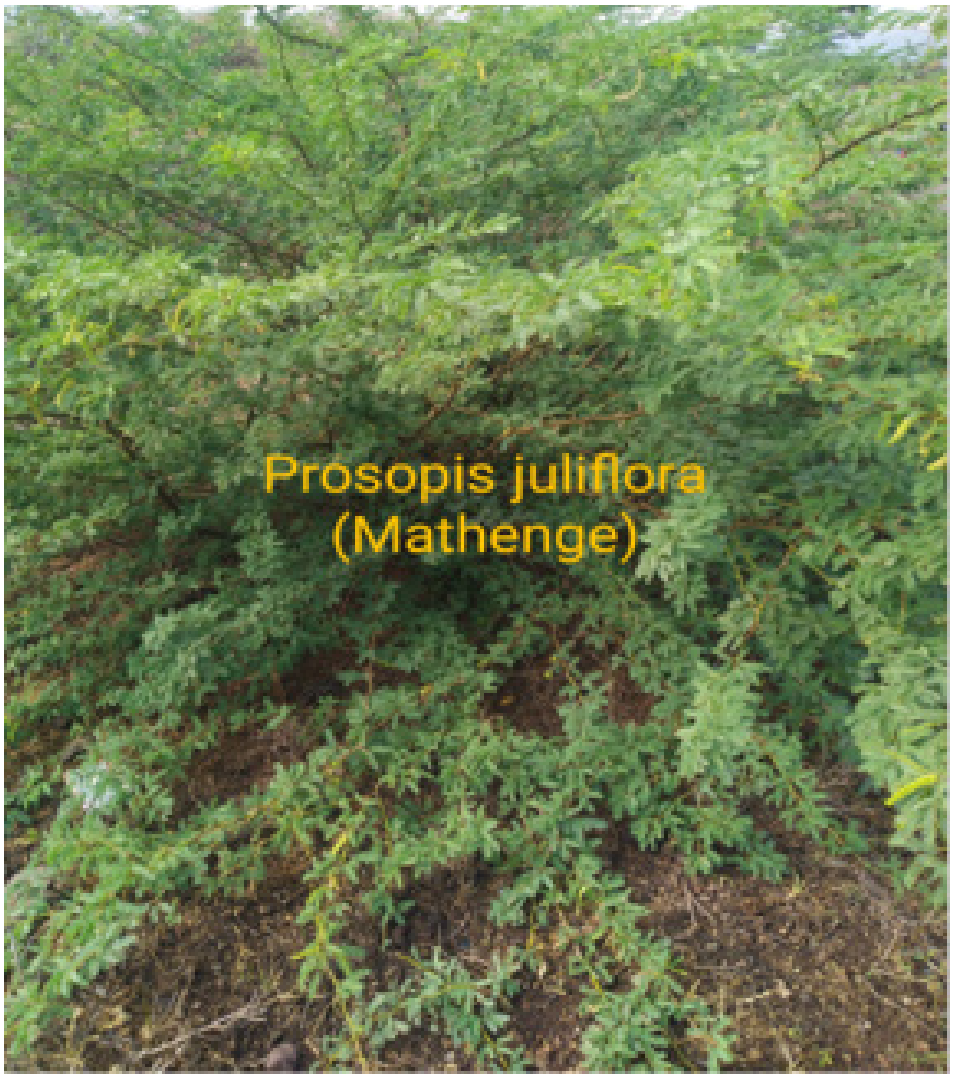
i. Prosopis juliflora

Prosopis juliflora also known as Mathenge in Kenya is a thorny shrub 3-5 m or tree growing up to 15 m in height. It has a thick, rough, grey-green bark that becomes scaly with age. The plants are often multi-stemmed and furnished with abundant, large and very sharp thorns measuring up to 5 cm. The tree is deeply rooted. The stems are shaped in a "mild zigzag" way with one or two stout thorns at each turn of the stem. This plant species is very well adapted to arid and semi-arid lands. It originated from South America and was introduced in Kenya in good faith to rehabilitate degraded rangelands. Unfortunately, it has become a major threat to the ecosystem and is very difficult to control. It's mainly spread by animals (birds and farm animals) that feed on its pods and deposit undigested seeds elsewhere. Some of the negative effects of this invasive species include:

1. Out-competing fodder plants/grass for livestock.
2. Its seeds contain chemicals which cause the teeth of farm animals to fall off.
3. Its sharp thorns are a threat to the health of human beings and farm animals.

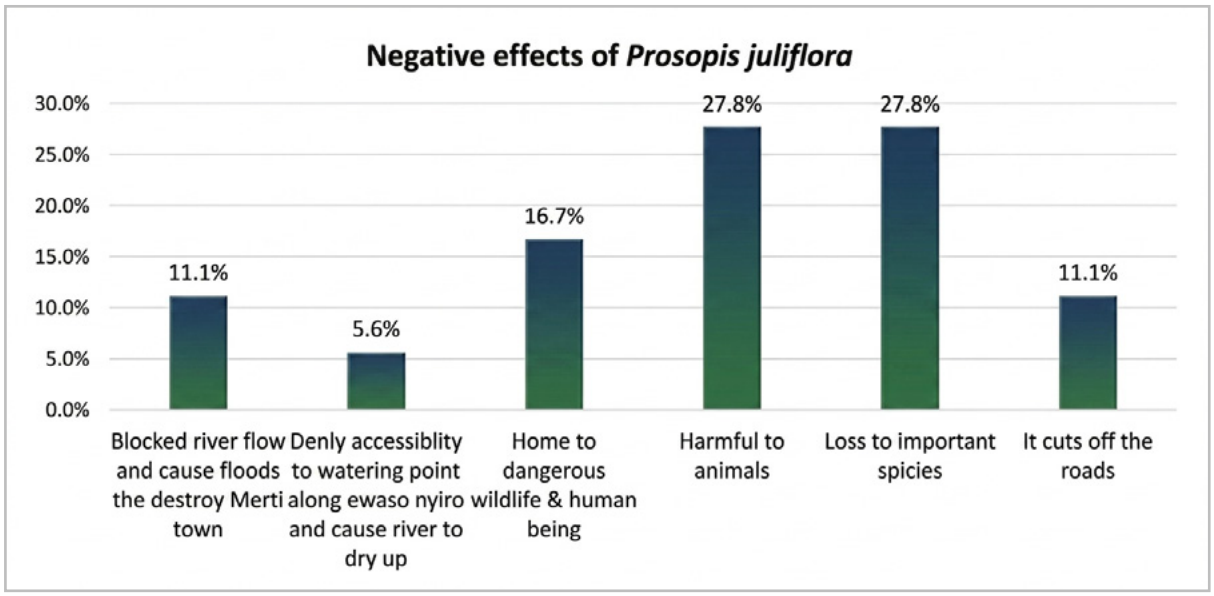
The plate below shows Prosopis Juliflora branches, leaves, thorns and flowers.

Plate 5-15: Invasive Species – Prosopis juliflora



Source: Field Survey, 2024.

Figure 5-6: Impacts of Colonization of Prosopis juliflora



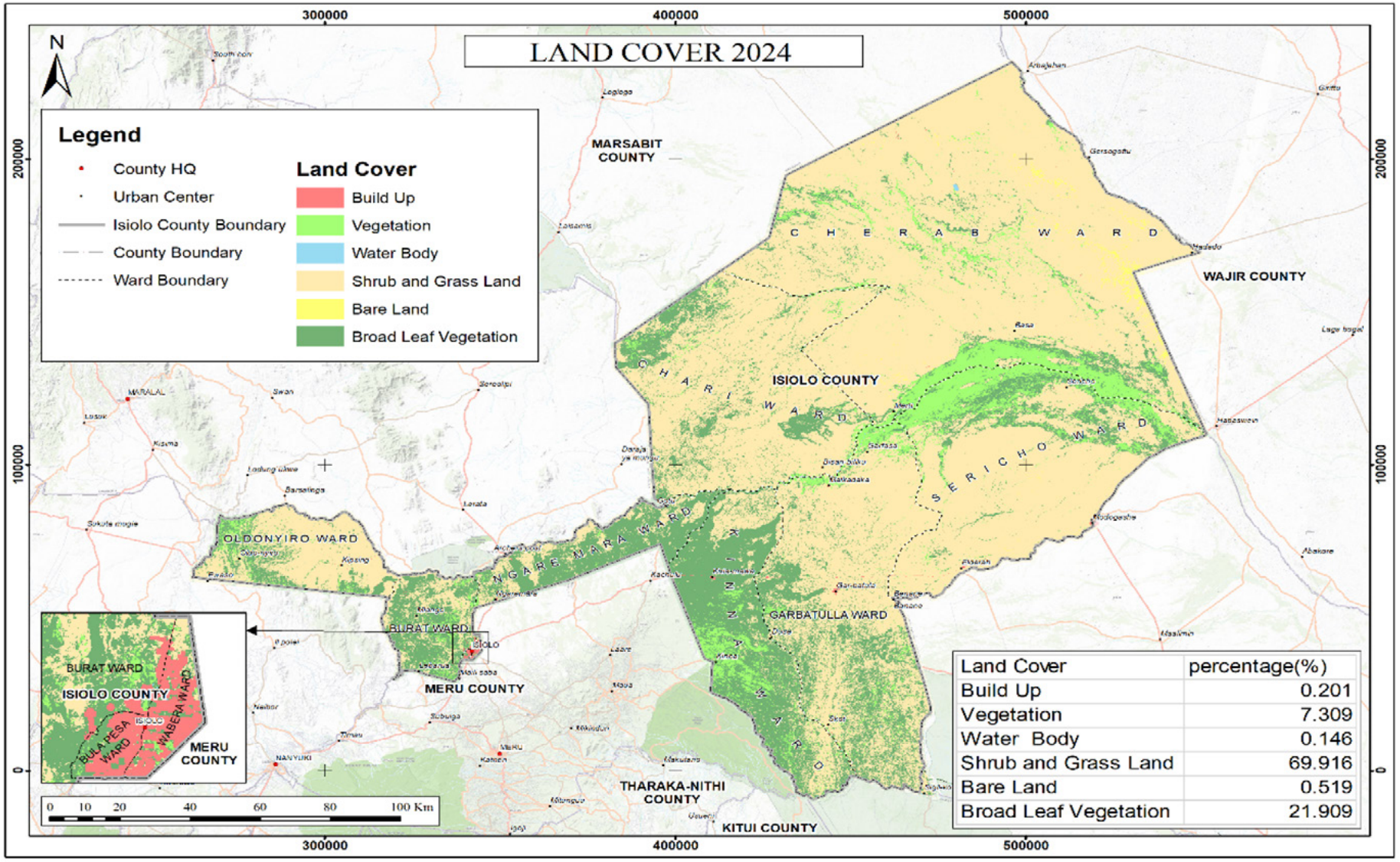
Source: Field Survey, 2024.

Prosopis juliflora, locally known as **Mathenge**, or **msitu mjinga** was introduced to Isiolo County in the mid-1980s to rehabilitate degraded rangelands as a result of soil erosion. This invasive species is adapted to the rangeland conditions as it has very deep roots and very small leaves which greatly reduce the rate of evapotranspiration. The species has become a menace in the drylands across the country, and Isiolo county in particular.

Its rapid spread has negatively impacted the environment and local livelihoods by encroaching on grazing lands, riverbanks, and water pathways. It has also contributed to livestock health issues, such as tooth decay, and facilitated disease outbreaks like Kalazaar due to houseflies breeding on its vegetation. Figure shows the land cover in the county. The plant species thrives even in areas where other species of plants can't thrive because of high adaptability to dry, hot and low fertility levels.

Figure shows the vegetation cover in the planning area. Invasive species form part of the vegetation. Prosopis julifora is a dominant species in some parts of the planning area such as Ngaremara, Merti, Wabera.

Map 5-13: Ecologically Sensitive Areas



Land Cover	percentage(%)
Build Up	0.201
Vegetation	7.309
Water Body	0.146
Shrub and Grass Land	69.916
Bare Land	0.519
Broad Leaf Vegetation	21.909

Source: Author 2025

Prosopis julifora has both positive and negative impacts. For instance, it can be used in manure production through composting and anaerobic digestion. When composted, the plant material, including the pods, can be a valuable addition to soil, improving its structure and fertility. Additionally, Prosopis juliflora can be co-digested with other organic matter in anaerobic digesters to produce biogas and a nutrient-rich digestate that can be used as manure. The table below shows the negative and positive impacts of Prosopis juliflora according to recent studies

Table 5-3: Negative and Positive Impacts of Prosopis Juliflora

POSITIVE IMPACTS	NEGATIVE IMPACTS
· Prosopis juliflora wood mixed with red soil (anthill soil) to make charcoal briquettes (ecologically friendly renewable energy) · Source of fuelwood and charcoal · Used for fencing and construction · Livestock fodder -especially the pods due to high protein value and fibre content · Used for soil stabilization · Used in agroforestry practices · Soil nutrient elevation (addition of biologically fixed nitrogen, addition of carbon by leaf litter fall, nutrient pumping from sub-soil · Ecological benefits (nesting sites for birds, pollen/nectar provision of pollinating insects) · Production of manure which is then used to enhance soil fertility	· Alteration of ecosystems including allelopathic suppression · Causes tooth decay in animals · Loss of fodder as the shrub colonizes more grazing land and displacing fodder grass · Physical obstruction (blockage of water ways, storm drainage, roads of access) · Health effects (physical injury by thorns, cattle poisoning, teeth injury, and as habitat for animal and human disease vectors), sharp poisonous thorns that cause injuries to farm animals and human beings, provide breeding ground for insect vectors such as mosquitoes and houseflies. This in turn lead to wide spreading of insect vector-borne diseases such as malaria and kalazaar · Competition for resources (space, light, water, nutrients · Depletion of aquifers through deep root acquisition of water

Source: Author, 2025

i. Ipomoea Spp

Ipomoea spp. can be referred to as an ornamental plant or pervasive weed depending on the context. Ipomoea spp. inhabits disturbed areas such as crop fields and lawns, roadways, and waste sites across the world. There are approximately 600 species belonging to the Ipomoea genus; but the most common weedy species include Ipomoea hederacea, Ipomoea lacunosa, and Ipomoea purpurea. The plates below show the invasive species in Oldonyiro Ward.

Plate 5-16: Invasive Species - Ipomoea Spp



Source: Field Survey, 2024

ii. Cactus opuntia

Opuntia, also known as prickly pear cactus, is an invasive species in many regions, including parts of Kenya, where it negatively impacts ecosystems and livelihoods. While it has some uses, its rapid spread and ability to outcompete native plants and hinder livestock grazing make it a significant problem.

Plate 5-17: Invasive Species - Cactus opuntia



Source: Field Survey, 2024.

iii. Acacia reficiens

Acacia reficiens, also known as false umbrella thorn, is considered an invasive species, particularly in arid and semi-arid regions of Kenya and other parts of Africa. It is native to Ethiopia, Somalia, Kenya, Namibia, Sudan, Uganda, and Angola. Its aggressive growth and ability to displace native vegetation make it a concern for ecosystems and livelihoods.

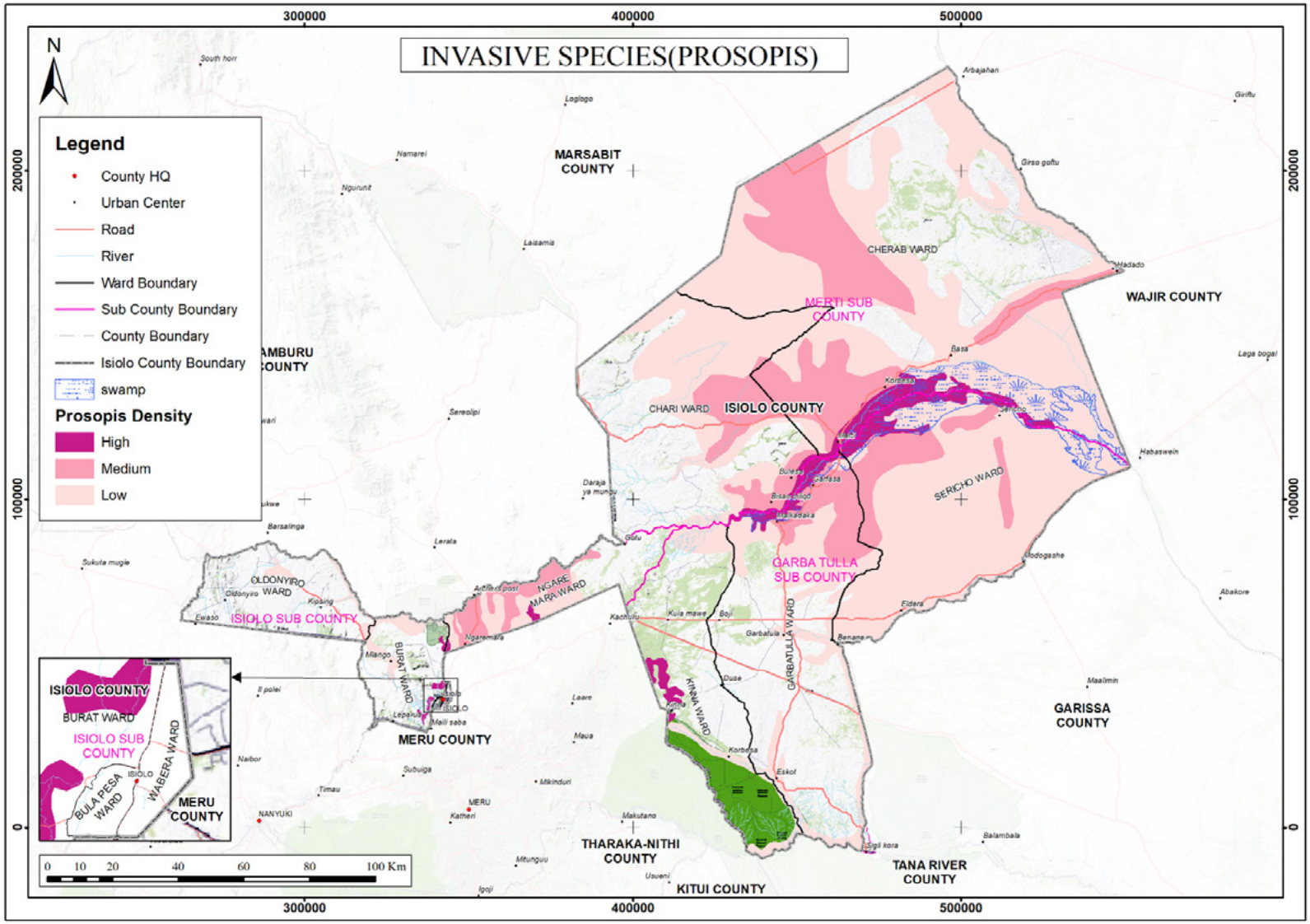
It grows into a thorny obconical multistemmed shrub or small tree in the seasonally dry tropical savannas of Africa. A shallow-rooted nitrogen-fixing species, it can dominate several semi-desert or dry scrub vegetation types on sandy, saline or clay alluvium soils. It is very variable and divided into two subspecies which have a disjunct distribution in Africa.

Plate 5-18: Invasive Species - Acacia Reficiens



Source: Field Survey, 2024

Map 5-14 Invasive Species



Source: Author 2025

5.5.5 Management of Invasive Species

Managing invasive plant species is complex because they tend to spread fast through various means. They spread through various natural and human-driven pathways. Natural dispersal mechanisms include wind, water currents, and animal movement. Human activities, both intentional and unintentional, play a significant role in the spread of invasive species, often accelerating the process

Management of these species involves implementing strategies to control or eradicate them to minimize their negative impacts on the environment, economy, and human health. This can include preventing new introductions, early detection and rapid response to new infestations, and implementing control measures like manual removal, chemical treatments, or biological control agents.

Prosopis julifora is one of the invasive species of plants in the Kenyan rangelands. Although it was introduced intentionally for purposes of rehabilitating degraded areas, it has become difficult to control. Studies are ongoing by various universities and research institutions on how the invasive species can be managed.

Effective management of **Prosopis juliflora** requires a combination of strategies, including physical containment, chemical, use of fire, mechanical, and biological control methods, as well as economic utilization and restoration of invaded land. Success depends on location-specific factors and the perceived impacts of the invasion. Prevention is the best way of controlling invasive species but it's also not easy since most of them are spread by animals which ingest the pods and deposit them elsewhere as dung/waste.

Controlling invasive Opuntia species, like prickly pear cactus, often involves a combination of methods, with biological control being a particularly sustainable and effective approach. Mechanical removal and herbicide treatments can also be used, but biological control using

cochineal insects (specifically, **Dactylopius opuntiae)** is often preferred due to its long-term impact and reduced environmental harm

Controlling invasive Ipomoea species, like Common Morning Glory, often involves a combination of physical and chemical methods. Consistent follow-up is crucial for effective long-term management. Manual removal, such as hand-pulling, is effective, especially in less dense infestations, and should be done before the plant flowers or sets seed. Chemical control, using herbicides like glyphosate, can be applied to cut stems or as a foliar spray in dense infestations. The cut-and-stump method, where stems are cut and the exposed surface treated with herbicide, is also effective.

Controlling the invasive **Acacia reficiens** involves a combination of manual, chemical, and potentially biological control methods, along with strategies to prevent further spread and promote native vegetation. Effective management often requires a multi-faceted approach tailored to the specific environment and the extent of the infestation.

5.6 SWOT ANALYSIS

Table 5-4: SWOT Analysis

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
1. Rich Biodiversity: Isiolo County hosts diverse wildlife, including the "Samburu Five," and numerous bird species, offering ecological value. **2. Water Resources:** Isiolo has perennial rivers like Ewaso Ng'iro and various wetlands that are vital for agriculture, livestock, and wildlife. **3. Topographical Diversity:** Isiolo's varied terrain, including hills, plateaus, and river valleys, supports grazing, groundwater recharge, and offers scenic beauty. **4. Wildlife Conservation Areas:** Isiolo's national reserves and conservancies play a crucial role in wildlife conservation and provide revenue through tourism. **5. Geological Diversity:** Isiolo's diverse geology, including volcanic formations and sedimentary rocks, contributes to water storage, agriculture, and mineral resources. **6. Ecological Features:** Natural features like the Lorian Swamp and Nyambene Hills contribute to the region's ecological diversity and provide natural resources.	**1. Invasive Species:** The spread of Prosopis juliflora and other invasive plants degrades ecosystems and competes with native vegetation. **2. Soil Degradation:** Overgrazing, deforestation, and land mismanagement contribute to soil erosion and desertification. **3. Arid Climate:** Much of Isiolo's land is non-arable, with 80% of the land being used for grazing, limiting agricultural expansion. **4. Inadequate Infrastructure:** Limited infrastructure in rural areas hinders access to markets, education, and healthcare. **5. Poor Waste Management:** Poor solid and liquid waste Management. **6. Limited Water Conservation Infrastructure:** Challenges with the maintenance of seasonal water pans, boreholes, and other water resources hinder effective water management.	**1. Renewable Energy Potential:** Strong wind patterns, particularly during the monsoon seasons, provide opportunities for wind energy development. **2. Eco-Tourism:** The game reserves, conservancies, and natural springs provide opportunities to expand eco-tourism, boosting the local economy. **3. Groundwater Potential:** The presence of aquifers like Merti and Isiolo-Nyambeni-Mount Kenya aquifer provides opportunities for sustainable water extraction. **4. Aquifer Recharge and Storage**: Seasonal streams and floodwater spreading offer opportunities for enhancing groundwater recharge and improving water availability. **5. Carbon Credit Programs**: Legislation on carbon credits presents opportunities for communities to earn from conservation and sustainable land management. **6. Restoration Projects:** Opportunities for large-scale restoration projects, such as afforestation and reforestation, to combat desertification and improve land productivity.	**1. Climate Change:** Rising temperatures, erratic rainfall, and droughts threaten agriculture, pastoralism, and water resources. **2. Water Scarcity:** Increasing water demand and declining rainfall lead to competition for limited water resources, affecting both people and wildlife. 3. **Human-Wildlife Conflict:** Increasing human settlements and infrastructure development threaten wildlife corridors, leading to conflicts. **4. Land Degradation:** Unsustainable land use practices, including excessive livestock grazing and deforestation, contribute to rangeland degradation and desertification. **5. Flooding:** Flash floods due to irregular rainfall patterns and poor drainage infrastructure threaten settlements and agricultural productivity. **6. Resource Conflicts:** Competition for land and water resources, exacerbated by climate change, leads to inter-communal conflicts and displacement.

Source: Author 2025

CHAPTER 06

Population and Demographics

6.1 OVERVIEW

The chapter discusses the population dyanamics and demographics within Isiolo County. Population and demographic dynamics form a critical foundation for understanding spatial development patterns, socio-economic conditions, and the demand for infrastructure and services.

6.2 POPULATION SIZE AND GROWTH RATE

According to the 2019 Population and Housing Census, Isiolo had a population of 268,002 persons. This population was comprised of 139,510 males, 128,483 females and 9 intersex. The County had a crude death rate of 27.9, a crude birth rate of 10.6 and a natural population increase of 1.7%. The County experienced an intercensal growth rate of 6.3 between 2009 and 2019, KNBS,2019.

6.3 POPULATION DENSITY

Population density in Isiolo County is generally low, reflecting its expansive land area and predominantly arid and semi-arid conditions. The county covers approximately 25,350.6km^2 and, according to the Kenya National Bureau of Statistics 2019 Census, has a population of about

268,002 persons, translating to an average density of roughly 10 persons per square kilometre. Settlement patterns are highly uneven, with relatively higher concentrations in and around Isiolo Town and along key transport corridors, while vast rural hinterlands remain sparsely populated due to limited water availability, pastoral land use practices, and infrastructural constraints.

This low and dispersed population density presents both challenges and opportunities for service delivery, land use planning, and sustainable development, particularly in balancing mobility of pastoral communities with emerging urban growth.

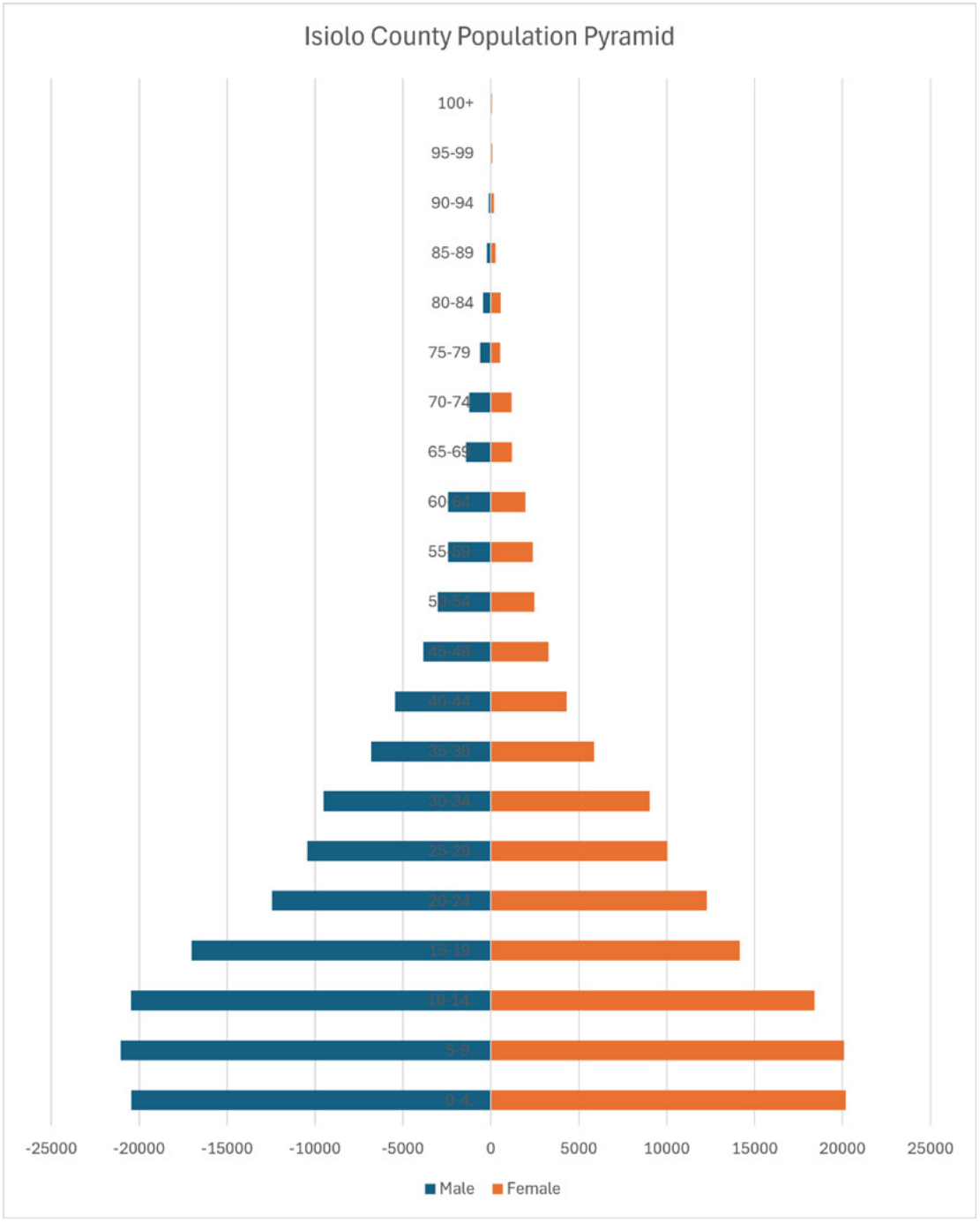
6.4 POPULATION STRUCTURE

Population within the County is comprised of slightly more males than females. Males comprise 52.06% of the population while females comprise of 47.94%. The County has a youthful population with a projected Youth population (15-29 Years) of 83,988 making up 27% of the total population. A young population puts great demands on the provision of health services, education, and maternal health services.

The projected current economically active population (15 – 64 Years) is 153,123. With a labour force rate at 52%, the County should maximize on this huge labour potential through investing in job creation programs, creating a conducive environment to attract investors and further leverage on Public Private Partnership and collaborations to aborb the currently working population and the projected population.

The aged population comprising of citizens over 65 years makes up 3% (8438) of the Isiolo population in 2024. This vulnerable cohort needs close attention from both the county and national government with interventions including social protection, health insurance, cash transfers and other social subsidies. The figure below shows the poupation the age sex structure of the County.

Figure 6-1: Isiolo County Age-Sex Structure



Source: KNBS 2019

Table 6-1: Projected Ages Sex Structure

	2019		2020		2025		2026		2030		2035		2036	
AGE COHORT	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
0-4	20,445	20,172	21,733	21,443	29,498	29,104	31,356	30,937	40,036	39,502	54,340	53,614	57,763	56,992
5-9	21,069	20,076	22,396	21,341	30,398	28,965	32,313	30,790	41,258	39,314	55,998	53,359	59,526	56,721
10-14	20,489	18,425	21,780	19,586	29,561	26,583	31,423	28,258	40,122	36,081	54,457	48,971	57,888	52,056
15-19	17,008	14,146	18,080	15,037	24,539	20,410	26,085	21,695	33,306	27,701	45,205	37,598	48,053	39,967
20-24	12,442	12,281	13,226	13,055	17,951	17,719	19,082	18,835	24,364	24,049	33,069	32,641	35,152	34,698
25-29	10,436	10,040	11,093	10,673	15,057	14,485	16,005	15,398	20,436	19,661	27,737	26,685	29,485	28,366
30-34	9,506	9,044	10,105	9,614	13,715	13,048	14,579	13,871	18,615	17,710	25,266	24,038	26,857	25,552
35-39	6,803	5,884	7,232	6,255	9,815	8,489	10,434	9,024	13,322	11,522	18,081	15,639	19,221	16,624
40-44	5,454	4,327	5,798	4,600	7,869	6,243	8,365	6,636	10,680	8,473	14,496	11,501	15,409	12,225
45-49	3,847	3,276	4,089	3,482	5,550	4,727	5,900	5,024	7,533	6,415	10,225	8,707	10,869	9,256
50-54	3,023	2,455	3,213	2,610	4,362	3,542	4,636	3,765	5,920	4,807	8,035	6,525	8,541	6,936
55-59	2,435	2,395	2,588	2,546	3,513	3,455	3,734	3,673	4,768	4,690	6,472	6,366	6,880	6,767
60-64	2,441	1,960	2,595	2,083	3,522	2,828	3,744	3,006	4,780	3,838	6,488	5,209	6,897	5,538
65-69	1,399	1,212	1,487	1,288	2,018	1,749	2,146	1,859	2,740	2,373	3,718	3,221	3,953	3,424
70-74	1,237	1,185	1,315	1,260	1,785	1,710	1,897	1,817	2,422	2,321	3,288	3,150	3,495	3,348
75-79	589	523	626	556	850	755	903	802	1,153	1,024	1,565	1,390	1,664	1,478
80-84	457	555	486	590	659	801	701	851	895	1,087	1,215	1,475	1,291	1,568
85-89	225	245	239	260	325	353	345	376	441	480	598	651	636	692
90-94	129	165	137	175	186	238	198	253	253	323	343	439	364	466
95-99	47	75	50	80	68	108	72	115	92	147	125	199	133	212
100+	28	42	30	45	40	61	43	64	55	82	74	112	79	119

Source: KNBS 2019

6.5 POPULATION DENSITY AND DISTRIBUTION

The vastness of the County makes its population density of 11 persons per square kilometre relatively small compared to the national population density figure of 82 persons per square kilometre. The table below, presents population density and distribution per sub-County.

Table 6-2: Population Density and Distribution Per Sub-County

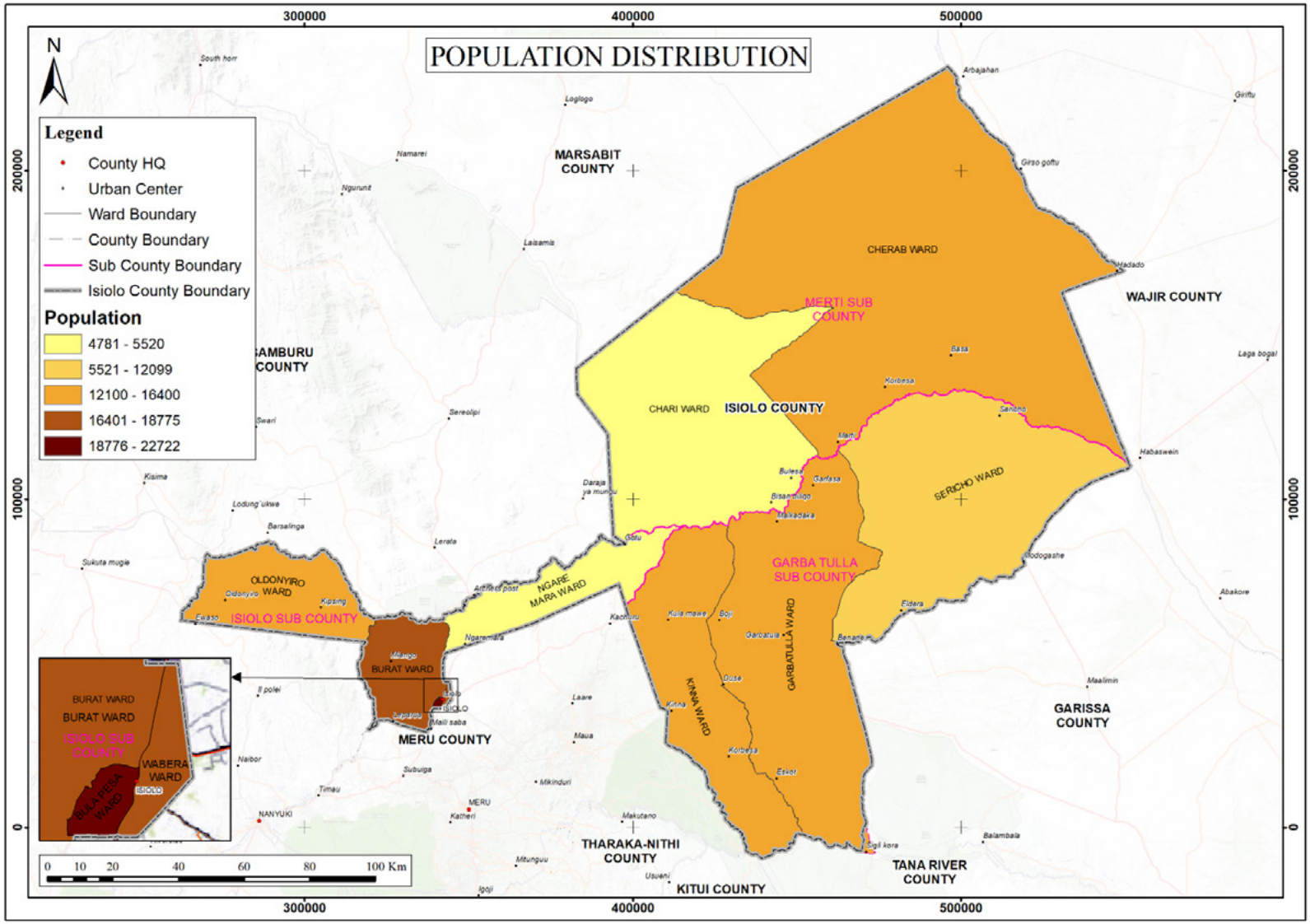
SUB COUNTY	2019 CENSUS			2024 PROJECTIONS		2034 PROJECTIONS	
	AREA KM²	POPULATION	DENSITY	POPULATION	DENSITY	POPULATION	DENSITY
Isiolo	2,691	121,061	45	149,159	55	165,885	62
Garbatulla	9,902	99,729	10	114,180	12	122,172	12
Merti	12,757	47,203	4	54,043	4	57,826	5

Source: KNBS 2019

The total projected population will surpass the current KNBS projections of 345,871 by 2034. This is as a result of ripple effect of the national projects such as the LAPSSET corridor subsidiary projects, the Resort City and the upgrading of Isiolo Airport International Airport.

Apart from the big five communities (Borana, Somali, Turkana, Samburu and Ameru), the population also consists of indigenous marginalized communities of Wata, Ndorobo, Nubians and a considerable number of other immigrant communities from other parts of the country, such as Agikuyu and Rendille, who mostly reside in Isiolo central doing business and small-scale farming.

Map 6-1: Isiolo County Population Distribution



Source: Author 2025

6.6 URBAN AND RURAL POPULATION

The County has slightly more rural population than urban population. During the 2019 National and Housing Census the County recorded 142,627 persons in rural areas and 125,645 in urban areas representing 53.1 % and 46.9 % of the total population in the County respectively. The County is rapidly urbanizing and thus the need to provide the necessary infrastructure within the urban areas to support the increasing population. The rural areas also need to be provided with the requisite infrastructure and services to support the rural population and their livelihoods.

6.7 GENDER INEQUALITIES

Women in the County are more vulnerable to poverty than men. They spend most of their time searching for water and firewood. In addition, they do not own or control assets like livestock and rarely take part in decision making as it is a preserve of men. It is also notable that men benefit more from formal education, as young girls remain at home to help in household chores and herding. Because of this, women are not able to develop skills that enable them to find gainful employment or engage in business.

They are therefore not able to compete with men in many spheres of life. There is minimal recognition of the role of women in development across a number of communities in the county. Primary school dropout rates are higher among girls than boys. Most girls never complete primary education or secondary education, get married at an early age and perform domestic chores while the boy child is more valued among the pastoralists.

In order to address the prevailing gender disparities, the county government should prioritize capacity building initiatives and take deliberate efforts at empowering women to enhance their status. In addition, girl child education should be mainstreamed in development, with great emphasis on the improvement of girl child enrolment and increased focus given to retention of girls in schools. Efforts should be directed towards strengthening and supporting existing women groups to initiate income generating projects.

Investment should be made in the provision of potable water for the purpose of reducing the distances and time taken by women and girls in fetching water and involvement of women in peace and conflict resolutions in the County should be intensified. Sensitization should be done of community members to discard negative cultural attitudes and practices towards women and to encourage gender balanced development.

6.8 DEMOGRAPHY

6.8.1 Fertility Rate

The Total Fertility Rate (TFR)—defined as the average number of children a woman would have over her reproductive lifespan—indicates that the County records a higher number of children per woman compared to the national average. Specifically, the County's fertility rate stands at 4.5 in contrast to the national figure of 3.4.

While family planning initiatives within the County have delivered notable benefits, with women having an average of three to four children, significant disparities persist across different areas. These variations are largely driven by cultural practices and beliefs that directly influence fertility patterns. A major concern remains the persistently high fertility level, reflected in the 45% rate, alongside a growing proportion of the population under 15 years of age.

Given these trends, it is essential for the County to prioritize interventions aimed at reducing the dependency ratio and harnessing the demographic dividend to support economic transformation. This will require strategic investment in integrated planning and population-focused initiatives, particularly in key interconnected areas such as demographic transition, education, healthcare, economic reforms and job creation, as well as governance and accountability.

6.8.2 Human Development Indicators of Well-Being

The human development index (HDI) is normally reported in the UNDP Human Development Reports (HDR) and in Country HDR Reports. It is a composite index measuring average achievement in three basic dimensions of human development health and longevity (as measured by life expectancy at birth), education (measured by adult literacy and combined

primary, secondary, and tertiary enrolments), and living standard (measured by GDP per capita in purchasing power parity terms). Achievement in each area is measured by how far a country has gone in attaining the following goal: life expectancy of 85 years, 100 percent adult literacy and enrolments, and real GDP per capita of $40,000 in purchasing power parity terms.

This approach examines broader human development issues and is concerned with both building up human capabilities and with using those human capabilities fully. It underlines the expansion of opportunities so that the disadvantaged can do more for themselves through economic, social and political empowerment. It recognizes that there is no automatic link between economic growth and human development. Economic growth is necessary but not sufficient to enlarge human choices. Economic growth provides resources to support health care and education. In turn, achievements in human development make a critical contribution in assuring quality human capital to spur economic growth via productivity gains.

National human development reports provide a tool for analysis, reflecting people's priorities, strengthening national capacities, engaging national partners, identifying inequities and measuring progress at country level. The basic objectives of human development reports are to raise public awareness and trigger action on critical human development concerns, strengthen national statistical and analytic capacity to assess and promote people-centred development; and shape policies and programmes by providing options and broad recommendations based on concrete analysis.

One of the main objectives under the Kenya's economic blue print, Vision 2030, is to provide a high quality of life for all Kenyans. Article 27 of the Constitution of Kenya (2010) recognizes that measures should be put in place to encourage affirmative action programmes and policies to address past inequalities. Economic and social rights to all are also recognized in Article 43. These include the right to health care services, adequate housing, and sanitation, adequate food of acceptable quality, clean and safe water and appropriate social security to vulnerable groups in society.

The major development challenges in the county include poor infrastructure, general insecurity, unsecure land tenure, poor education, unemployment and drought. These basic enablers of development are holding the back the county and deterring investment, undermining productive potential and frustrating local development initiatives. The table below compares national human development indicators with those of the county.

Table 6-3: Human Development Indicators

INDICATORS	ISIOLO COUNTY VALUES			NATIONAL VALUES
	MALE	FEMALE	ALL	
Life Expectancy at Birth (Years)	54.3	60.9	57.6	65.33
Literacy (%)	52.6	47.1	49.0	85.9
School Enrollment Rate (%)	51.8	46.1	49.0	74.8
GDP Per Capita (USD)			316	1,678

Source: KNBS 2019

6.8.2.1 Literacy

Literacy levels in the county are very low as 85% of the community members can neither read nor write. Of the male adult members, only 48% are literate. There are 63 adult literacy classes in the entire county with an enrolment of only 1,835 students out of which 649 are males and 1,186 are females. There is therefore a dire need to increase the number of adult literacy classes in the entire county and undertake campaigns to influence enrolment.

There are 240 ECDE centers, 156 primary schools of which 116 are public and 40 are private, 38 secondary schools, 2 operational youth polytechnics in the county (St. Joseph Polytechnic which is privately owned and Uhuru Youth Polytechnic), 3 tertiary institutions (Kenya Medical Training College, St. Mary's Secretarial College and Isiolo ECD Training center), 2 Technical and Vocational Colleges (Karma Training institute and Prasol College of Professional Studies) and 2 vocational training centers (Uhuru in Isiolo and Merti in Merti Sub-County).

6.8.2.2 Life Expectancy

The life expectancy of Isiolo County at birth at age 60 is as follows;

Table 6-4: Life Expectancy

INDICATOR	MALE	RANK	FEMALE	RANK
Life Expectancy at Birth (Years) 2019	54.3	15	60.9	45
Life Expectancy at 60 (Years) 2019	15.7	14	15.4	47

Source: KNBS 2019

6.8.2.3 Fertility and Mortality Rates

The fertility rate in Isiolo is well defined in the table below drawn from population census of 2019.

Table 6-5: Population Projection

INDICATOR	YEAR 2019	RANK
Total Fertility Rate	3.3	28
Infant Mortality Rate (per 1,000 live Births)	35.1	19
Under 5 Mortality Rate (per 1,000 live Births)	56.6	18
Maternal Mortality Rate (100,000 Live Births)	451	14

Source: KNBS 2019

6.8.2.4 Morbidity

The five most prevalent diseases in the county are: malaria, diarrhea, stomach ache, respiratory diseases and flu respectively. Majority of the diarrhea and stomach ache cases are associated with the use of contaminated water especially during the wet seasons.

6.9 SOCIAL ANALYSIS

Isiolo consists of a dynamic and multicultural society that provides a number of opportunities. Precisely due to its diverse society, Isiolo has highlighted the importance of social inclusion as a strategic priority. Health levels demand in general have increased in Isiolo, where by many private health facilities have mushroomed in the recent years. An increased number of Town residents with HIV /Aids are registered for antiretroviral treatment (ART) at the Isiolo General Hospital and other clinics with the town, which means that they live longer lives. The social amenities within Isiolo are still low. More investment is required in order to rise the Isiolo town standard to the required urban and cities standards. However, the following is a glimpse of the current social situation in Isiolo.

6.9.1 Culture and Heritage

Isiolo County is a multi-ethnic and multi-cultural region in Kenya, with diverse cultures from the Turkana, Borana, Meru, and Somali people. The county is also home to the Ameru, Samburu, and Rendille tribes, as well as some Indian shopkeepers.

Isiolo County is also known for its natural beauty and wildlife, including the reticulated giraffe, Biesa oryx, Gerunuk, Somali Ostrich, and the Grevy Zebra. The county's tourist attractions include nature and wildlife, culture, heritage, community-based tourism, adventure, and eco-tourism.

6.9.2 Religion

Isiolo County in Kenya is known for its religious diversity, with Islam being the most prominent religion. According to the 2019 census, approximately 69.12% of the population identifies as Muslim. Catholicism, Protestantism, and other Evangelical churches also have a presence in the county, with smaller percentages of the population adhering to these faiths.

6.9.3 Community Groups

Community groupings found in Isiolo are but not limited to; cooperative societies, civil societies, non-governmental organizations, community-based organizations and self-help groups.

6.9.3.1 Cooperatives Societies

There are 28 Co-operative Societies in the county. Some of these include: Deedha Multipurpose Cooperative Society, Elbote Sacco which deals with miraa trade, Kinna Livestock Marketing Cooperative. Garfasa Farmers' Cooperative engages in crop farming and the Isiolo camel milk cooperative society trades camel milk.

6.9.3.2 Non-Governmental Organizations/ Civil Societies

Some of the NGOs operating in the County include: Action Aid, Mid-P, Action against Hunger (ACF), KRCS, African Muslim Agency, Alfalah, UNICEF, World Vision, Food for the Hungry (FH) and CCK, Kenya Red Cross, WFP, NDMA, Catholic Relief Services and Merti Integrated Development Programme (MeDP).

6.9.3.3 Self Help, Women and Youth Groups

There are 60 active women self-help groups, 345 community-based organizations and 280 youth groups registered and operating in the county. Most women groups operate revolving funds. The level of activity of women and youth groups in the county depends on funding from various donors and government-funded initiatives.

6.10 EMERGING ISSUES, CHALLENGES AND OPPORTUNITIES

Under the new project proposals, there are plans to: Establish a business incubation and innovation hub at ATC. The objective is to improve institutional capacity for efficient and effective service delivery. The source of funding is the National Government, the Isiolo County Government and development partners. Also, there are plans to establish an ICT innovation and technological center at Isiolo town. The objective is to promote technological innovation. The source of funding is the National Government, the Isiolo County Government and development partners.

Apart from the two above, the following are some of the emerging planning issues realized in the process of engaging stakeholders and county staff:

Table 6-6: Development issues, causes and Strategies

DEVELOPMENT ISSUES	CAUSES	STRATEGIES
Low education levels particularly post primary education	· Low staffing levels · Lack of prioritization of education · Lack of relevant education system for nomadic lifestyle	· Increasing staffing and education facilities · Expand sensitization strategy on the importance of education Development of a strategy for education of mobile populations
Low staffing in health facilities	· Lack of development in Isiolo County has resulted in inability of the county to attract and retain health care professionals · The county is considered a hardship area with respect to the working environment	· Staff recruitment and retention drive · Strategy to compensate workers for hardship conditions · Improving infrastructure and security in the county
FGM among young girls	· Enforcement of cultural practices	· Sensitization and advocacy against FGM
Water insecurity	· Low rainfall · Lack of water storage and management practices	· Integrated approach towards water management
Food insecurity	· Low capacity for crop farming · Lack of adequate storage strategies to sustain County during droughts · Low area under irrigation	· Increase the scope of Irrigation schemes on viable land · Develop strategies to monitor and sustain food reservoirs for the County population · Increase physical storage capacity for food
Poor access to markets for livestock and farm products	· Poor Road Network · Lack of marketing strategy for agricultural produce · Poor market knowledge among pastoralists and farmers	· Implement Plans for road upgrades · Link local produce with suitable market · Increase awareness among pastoralists and farmers · Use of mobile phone technology to access prices in local and international markets

DEVELOPMENT ISSUES	CAUSES	STRATEGIES
Low levels of disaster preparedness	· Low levels of staff allocated to disaster management · Lack of integrated management of conflict	· Prioritize disaster management both natural and anthropogenic by allocating staff to adequately deal with the issues · Develop an integrated approach for disaster management including key stakeholders and taking the lead instead of allowing CSOs to take the lead themselves
Poor diversification of livelihood strategies	· Over dependence on livestock · Failure to maximize on alternatives such as crop farming, trade, industry and cultural and wildlife tourism	· Behavioral change communication strategies to be targeted at diversification of economic activities in the County · Invest in other viable alternative livelihood strategies and create awareness of the strategies among community members
Gender inequality	· Cultural and Community attitudes which discriminate against women · Lack of affirmative action to empower women. · Persistence of FGM issue	· Advocacy for equal opportunities for all genders to be prioritized · Step up initiatives against FGM to secure reproductive health for all women · Implement affirmative action for women in employment and access to other opportunities
Overall human resource capacity	· Low literacy levels in the County meaning that few locals are eligible to form the human capital in the County · Poor staffing levels across all sectors in the County	· Investment in development of homegrown human capital over the long-term period · Increased incentives for pursuing tertiary education in the short- and medium-term period

Table 6-7: Challenges and Opportunities

CHALLENGES	OPPORTUNITIES
• Low levels of infrastructure development especially lack of access roads in most parts of the county and region; • Water scarcity, low accessibility to safe drinking water and inadequate sanitation facilities; • Inadequate health and educational facilities in the region that fall far below the national average; • High poverty levels, characterized by inequitable access to resource and wealth creation opportunities; • Recurrent famine, floods and droughts resulting to loss of livestock and poor agricultural yields; • Environmental degradation; and • Inter and intra-regional conflicts and spillover effects of conflicts from neighboring counties. • Diversification of economic activities and livelihoods • Gender imbalance and inclusion of women in the development process	• Vast land for investment opportunities; • Unexploited mineral resources which can promote industrial development; • Ewaso Ng 'iro river which can be utilized for hydro-power generation and irrigation; • On-going oil exploration; • Potential for alternative energy sources in terms of solar and wind power; • National game reserves for tourism development; • Abundant livestock resources which can promote industrial development; • Abundant gum and resin resources to promote industrial development; • Availability of human resource; • Rich cultural diversity to promote cultural and eco-tourism; • Abundant building materials to promote modern improved local housing technology. • Construction of Isiolo International Airport which gives an opportunity for the county to pursue an export led growth strategy.

Source: Author, 2025

CHAPTER 07

Land Analysis

7.1 OVERVIEW

This sector presents an analysis of land tenure, land use, land values, and land suitability in Isiolo County. It also identifies emerging planning issues, opportunities, and challenges in the sector.

7.2 LAND TENURE

The Land Act, No. 6 of 2012 defines land tenure as the manner in which land is held or owned. Land tenure in the Isiolo is either private or public or Community Land. In Isiolo County, land is categorized into three main tenure systems:

i. **Community Land (approximately 80%)** - Predominantly used for pastoralism and governed under customary systems. Most of this land remains unsurveyed and unregistered, limiting tenure security.

ii. **Public Land (approximately 10%)** - Includes government institutions, infrastructure corridors, and conservation areas.

iii. **Private Land (approximately 10%)** – Land under freehold and leasehold tenure. It's concentrated within urban centers such as Isiolo Municipality.

Land registration has been undertaken in parts of Ngaremara and Oldonyiro Wards, but coverage remains limited.

7.2.1 Existing Land Use

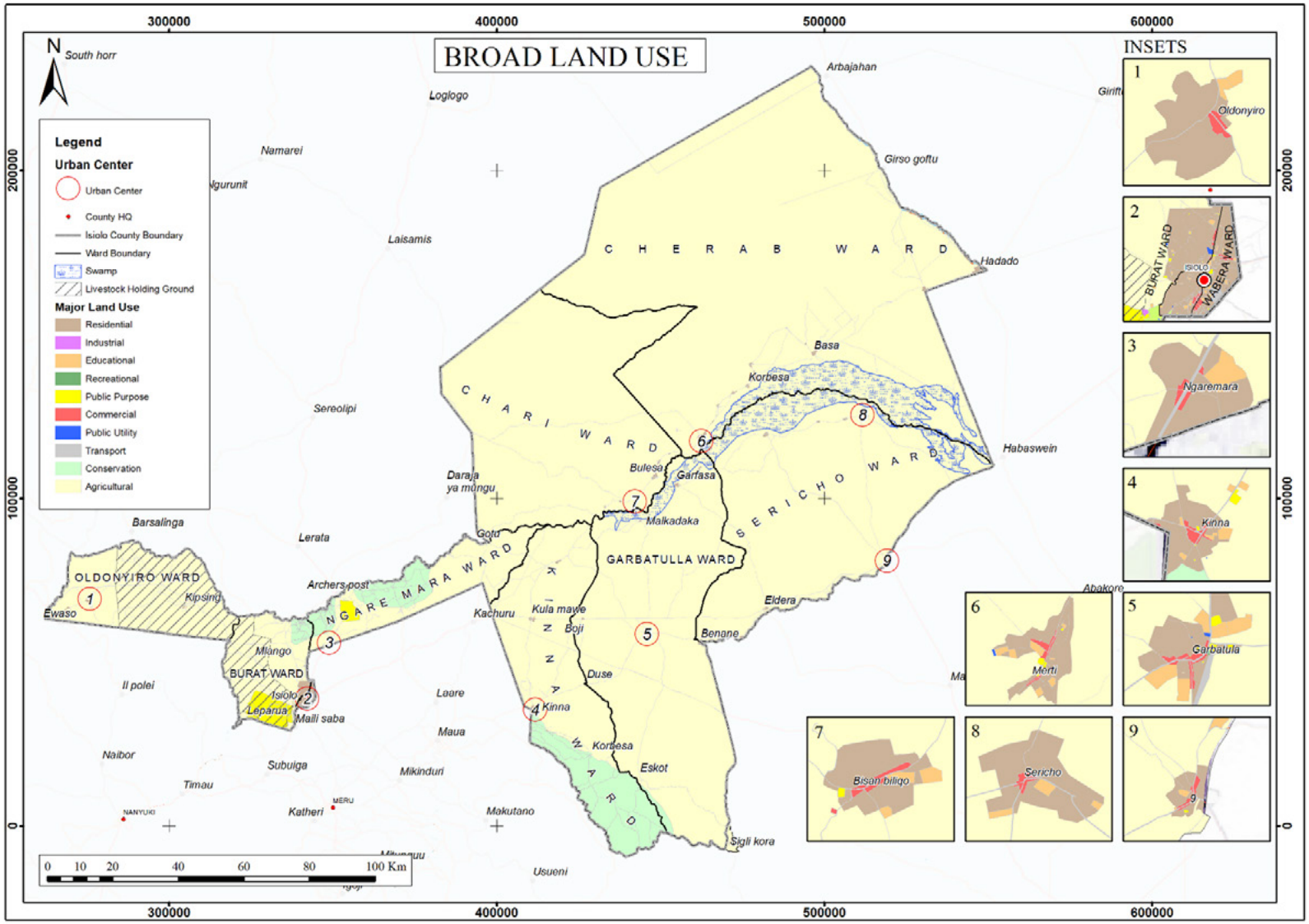
The dominant land use within Isiolo County is agricultural land use which covers approximately 99% of the land. This can be attributed to the fact that the county has various rangelands. Built-up uses (residential, commercial, industrial, and public utilities) occupy a very small portion and are concentrated in urban centres. The proportion of prevailing land uses is shown in the table below while the map below gives a spatial distribution of the existing land uses.

Table 7-1: Existing Land Uses – Isiolo County

LAND USE	AREA (KM²)	%
Residential use	79.26	0.313
Industrial	0.27	0.001
Educational	8.97	0.035
Recreational	0.05	0.001
Public Purpose	1.16	0.005
Commercial	4.44	0.018
Public Utility	0.27	0.001
Transportation	67.21	0.265
Agriculture	25,188.97	99.362
TOTAL	**25,350.60**	**100.000**

Source: Field Survey, 2024

Map 7-1: Existing Land Use Map



Source: Author 2025

7.2.2 Land Values

Land values in Isiolo County are highest within Isiolo Township and other urban centers such as Kinna, Garba Tulla, Oldonyiro, Modogashe, Merti, and Kula Mawe. The establishment of Isiolo Municipality in December 2018 has been a key driver of urban development and increased property values in Isiolo Township. Additionally, the ongoing construction of the LAPSSET Corridor Highway is spurring growth along its route, further influencing land prices in connected areas. Land values tend to decline towards the hinterlands.

The County has not yet prepared a valuation roll for any part of Isiolo County. In the absence of a valuation roll, land values are currently guided by market forces (demand and supply), infrastructure proximity, land tenure status and speculative activities along growth corridors.

7.2.3 Land Suitability

The county is divided into three agro-ecological zones: very arid (65%), arid (30%), and semi-arid (5%). (CADP 2023)

i. **The semi-arid zone (Zone V)** covers part of Wabera Ward, Bulla Pesa Ward, and some parts of Burat Ward in Isiolo North Constituency, and southern parts of Kinna Ward in Isiolo South Constituency. This zone receives between 400 and 650 mm of rainfall annually10 and the vegetation mostly consists of thorny bush with short grass. The main crops grown in this zone are Maize, beans, cowpeas, green grams, onions, tomatoes, mango and pawpaw.

ii. **The arid zone (Zone VI)** covers Oldonyiro, Ngare Mara, some parts of Burat Wards in Isiolo North Constituency, the entire Garba Tulla Ward, and northern parts of Kinna Ward in Isiolo South Constituency. Rainfall ranges between 300 and 350 mm annually and supports grassland and few shrubs. Crops grown in this zone are mainly maize, beans, cowpeas and green grams.

iii. **The severe arid zone (Zone VII)** covers Chari, Cherab, parts of Oldonyiro Ward in Isiolo North Constituency, and Sericho Ward in Isiolo South Constituency. The area is barren, very hot, and dry most of the year, with annual rainfall averaging 150-250 mm. Such harsh climatic conditions do not favor crop growth in this zone.

7.2.4 SWOT Analysis

Table 7-2: SWOT Analysis

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
Vast land area with low population density	Unregistered community land leading to tenure insecurity and disputes	LAPSSET and related infrastructure projects offer chances for structured land use planning	Land and resource-based conflicts, especially over access to grazing land and water
Strategic location along the LAPSSET Corridor	Lack of ownership documents	Implementation of the Community Land Act (2016) to secure communal land rights	Climate change and environmental degradation threaten rangeland sustainability
Rich rangelands supporting pastoralist livelihoods	Unplanned urban and rural developments causing incompatible land uses	Access to climate finance and donor-supported land and rangeland initiatives	Land speculation and grabbing near infrastructure corridors could displace or exclude local communities
Growing land policy awareness among communities and county actors	Outdated land use plans (e.g., 2007 Isiolo Municipality Plan)	Growing urban centers present opportunity for planned development and land value capture	Institutional overlap and fragmentation between national, county, and customary land governance systems
Unique ecological and tourism assets (e.g., national reserves, conservancies)	Most of the land is unsurveyed — limiting accurate planning, zoning, and environmental protection	GIS and digitization tools can improve land information management	Encroachment on public and environmentally sensitive land due to poor enforcement
Community land inventory completed as a step toward formal registration	Limited institutional capacity and resources within the county's land governance structures	Safeguarding land for future public use through zoning	Invasive species such as Prosopis juliflora (mathenge) limiting land productivity
Social cohesiveness among the communities within Isiolo County		Preparation of the County Physical and Land Use Development Plan	

Source: Author, 2025

CHAPTER 08

Human Settlements and Urbanization

8.1 OVERVIEW

The chapter discusses human settlement dynamics and urbanization trends within the County. Human settlements and urbanization are key drivers of socio-economic development in the County.

8.2 HUMAN SETTLEMENTS

Human settlements within the County can be categorised as either rural settlements or urban settlements. Human settlements in the County comprise a network of rural and urban communities that provide spaces for habitation, economic activities, and social interaction. The settlement pattern is largely influenced by the county's arid and semi-arid conditions, pastoral production systems, availability of water resources, transportation networks, and access to social services.

The distribution and growth of human settlements play a significant role in shaping land use patterns, service delivery, resource utilization, and overall socio-economic development within the county.

8.2.1 Rural Settlements

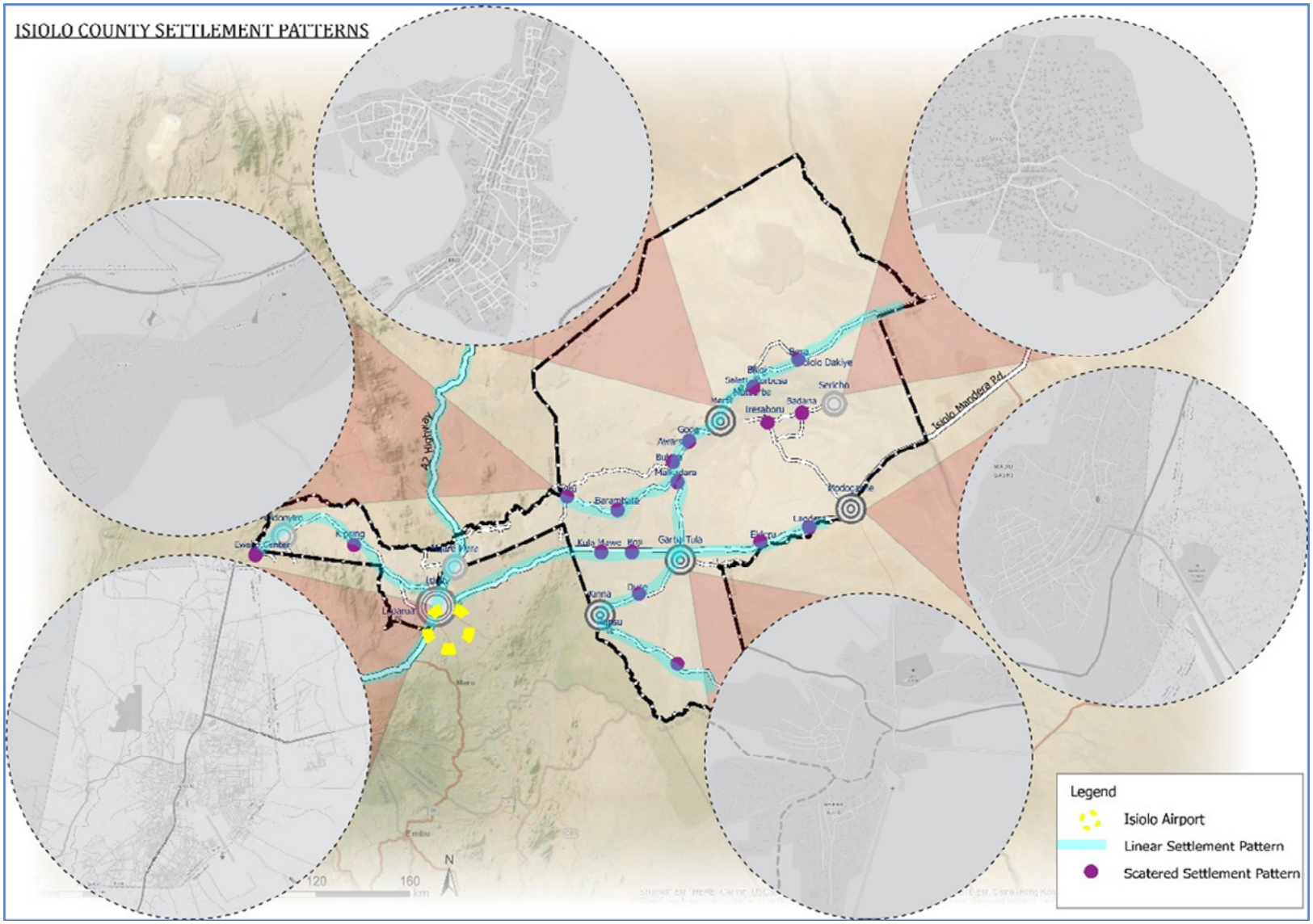
he rural areas within the County are characterised by clustered dispersed settlements. The nomadic lifestyle practised within the rural areas discourages the development of permanent settlements as the herders are always on the move in search of pasture and water for their livestock.

8.2.2 Urban Settlements

The Urban settlements within the County exhibit a clustered type of settlement with some areas displaying linear development along major transport corridors.

The urban population is distributed within eight major urban areas namely Isiolo Municipality, Garbatulla, Modogashe, Kinna, Merti, Kulamawe, Ngaremara, Oldonyiro among others. The map below shows urban settlements within the County.

Map 8-1: Settlement Pattern within Urban Areas



Source: Author, 2025

8.2.3 Core Functions of Human Settlements

Human settlements within the County play a critical role in shaping socio-economic development, spatial organization, and environmental sustainability. The settlement pattern is characterized by dispersed rural pastoral settlements alongside emerging urban centres along the major transport corridors. These settlements function as hubs of human activity, facilitating administration, economic development, service delivery, and social interaction, with their roles evolving alongside demographic growth, infrastructure expansion, and regional development dynamics.

8.2.3.1 Residential Function

The primary function of human settlements in Isiolo County is to provide shelter and living spaces for the population. In rural areas, particularly within Merti and Garbatulla sub-counties, settlement patterns are predominantly dispersed and low-density. These settlements mostly consist of temporary and semi-permanent structures.

The urban centres exhibit increasing residential densification driven by changing lifestyle from nomadism to sedentary lifestlyles. The infrastuctural investment being carried out within the county is promoting the growth of permanent residential areas. Areas of residential development within the County are as outlined in the legal notice 150 of 2019.

8.2.3.2 Economic Function

Human settlements in Isiolo County serve as centres of economic production and exchange, closely linked to the County's pastoral economy and emerging urban markets. Rural settlements support livestock keeping, which forms the backbone of local livelihoods, alongside small-scale trade and limited agro-pastoral activities. Urban centres such as Isiolo Town and Garbatulla, Kinna, Oldonyiro, Modogashe function as key commercial and livestock marketing hubs, facilitating trade within the County and with neighbouring regions. Additionally, Modogashe plays a strategic role in cross-border trade, enhancing regional economic integration. However, these economic functions are constrained by inadequate infrastructure, weak market systems,

and limited value addition, which reduce the overall productivity and competitiveness of settlement-based economies.

8.2.3.3 Service Provision Function

Settlements in Isiolo County act as focal points for the delivery of essential services, including education, healthcare, water supply, sanitation, security, and administrative services. These services are largely concentrated in urban centres, particularly Isiolo Town as the County headquarters, Merti, Oldonyiro, Kinna, Modogashe and Garbatulla as sub-county and local service centres. However, the dispersed and sparsely populated nature of rural settlements limits access to these services, resulting in spatial inequalities and increased travel distances for many communities. This uneven distribution highlights the importance of integrated settlement planning and decentralized service delivery mechanisms to enhance accessibility and efficiency.

8.2.3.4 Social and Cultural Function

Human settlements provide important spaces for social interaction, cultural expression, and community cohesion. In Isiolo County, settlements host key social institutions such as schools, religious centres, markets, and community gathering spaces that foster social networks and cultural identity. Urban centres like Isiolo Town serve as convergence points for diverse communities, promoting integration and cultural exchange. However, rapid urban growth and limited planning have led to challenges such as inadequate provision of public spaces and social infrastructure, which constrain opportunities for social engagement and community development.

8.2.3.5 Administrative and Governance Function

Settlements in the County serve as centres for governance and administrative functions, supporting the coordination and implementation of development initiatives. Isiolo Town functions as the County headquarters, hosting key County and National Government offices. Merti operates as a sub-county headquarters, facilitating decentralized administration, while Kinna, Garbatulla and Modogashe serve as important local administrative and security centres.

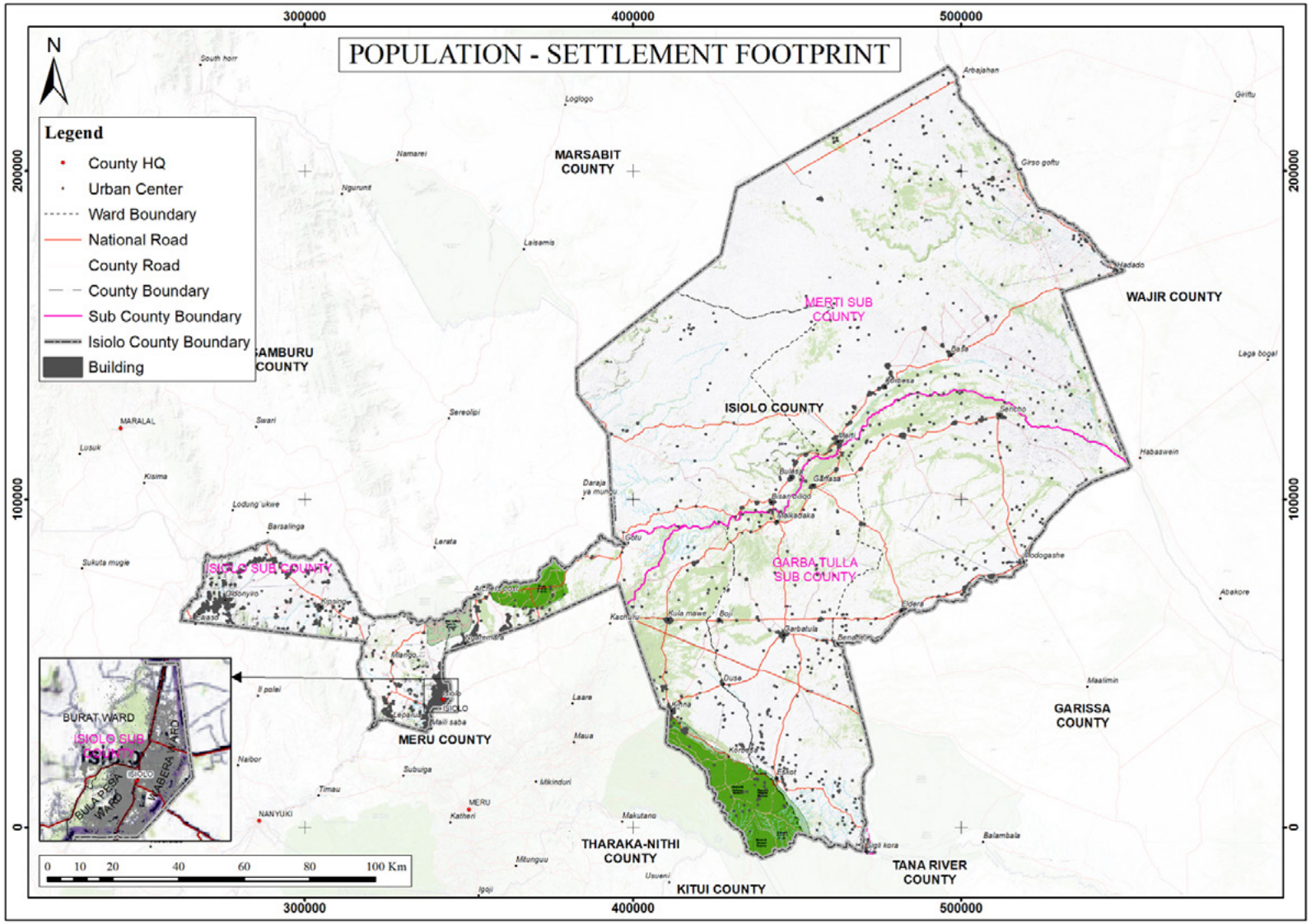
8.2.3.6 Infrastructure and Connectivity Function

Human settlements in Isiolo County function as nodes within broader infrastructure and transport networks, facilitating the movement of people, goods, and services across the region. Isiolo Town serves as a key transport and logistics hub linking northern Kenya to other parts of the country, while centres such as Merti and Garbatulla provide essential connections to surrounding rural areas. However, infrastructure development remains uneven, with many areas experiencing poor road networks, limited water and sanitation services, inadequate energy supply, and weak digital connectivity. Unplanned and dispersed settlement patterns further increase the cost of infrastructure provision and reduce efficiency. Addressing these challenges through coordinated infrastructure investment and integrated spatial planning will be essential to enhancing connectivity and supporting sustainable development across the County.

8.3 PATTERNS AND TRENDS OF HUMAN SETTLEMENTS

The spatial distribution of settlements within a planning area determines the distribution of resources and provision of services which influence economic development. The settlements patterns have been influenced by transit routes, human activities and natural environmental factors. Classification of urban settlements is conventionally based on resident population and recommended services as provided for in Urban Areas and Cities Act, CAP 275.

Map 8-2: Isiolo Human Settlement Footprint



Source: Author, 2025

8.4 URBANIZATION

Isiolo County had a total of 125,645 persons, representing 46.9% of the total population in the County. The County is ranked the 7th Urbanized County after Nairobi, Mombasa, Machakos, Kiambu and Nakuru Counties. The urban population within the County is distributed in five major urban areas. The table below shows the urban areas within the county and their urban population.

Table 8-1: Urban Areas within the County

URBAN AREA	POPULATION (2019)	2025	2030	2034	2035	2036
Isiolo Town	78,650	92,823	106,567	119,013	122,346	125,038
Garbatulla	17,443	20,586	23,634	26,395	27,134	27,731
Modogashe	11814	13,943	16,007	17,877	18,378	18,782
Kinna	11175	13,189	15,142	16,910	17,384	17,766
Merti	10,990	12,970	14,891	16,630	17,096	17,472

Source: Adopted KNBS, 2019

8.4.1 Categorization of Urban Areas

The Urban Areas and Cities Act, 2011 revised 2022 categorises urban areas based on population. Based on this the urban areas within the County can be categorised into municipality and towns. The table below shows the categorization of the urban areas within the County.

Table 8-2: Categorization of Urban Areas

URBAN AREA	POPULATION (2019)	CURRENT CATEGORIZATION	2025
Isiolo Town	78,650	Municipality	92,823
Garbatulla	17,443	Town	20,586
Modogashe	11814	Town	13,943
Kinna	11175	Town	13,189
Merti	10,990	Town	12,970

Source: KNBS, 2019

Table 8-3: Services Provision per Urban Centre

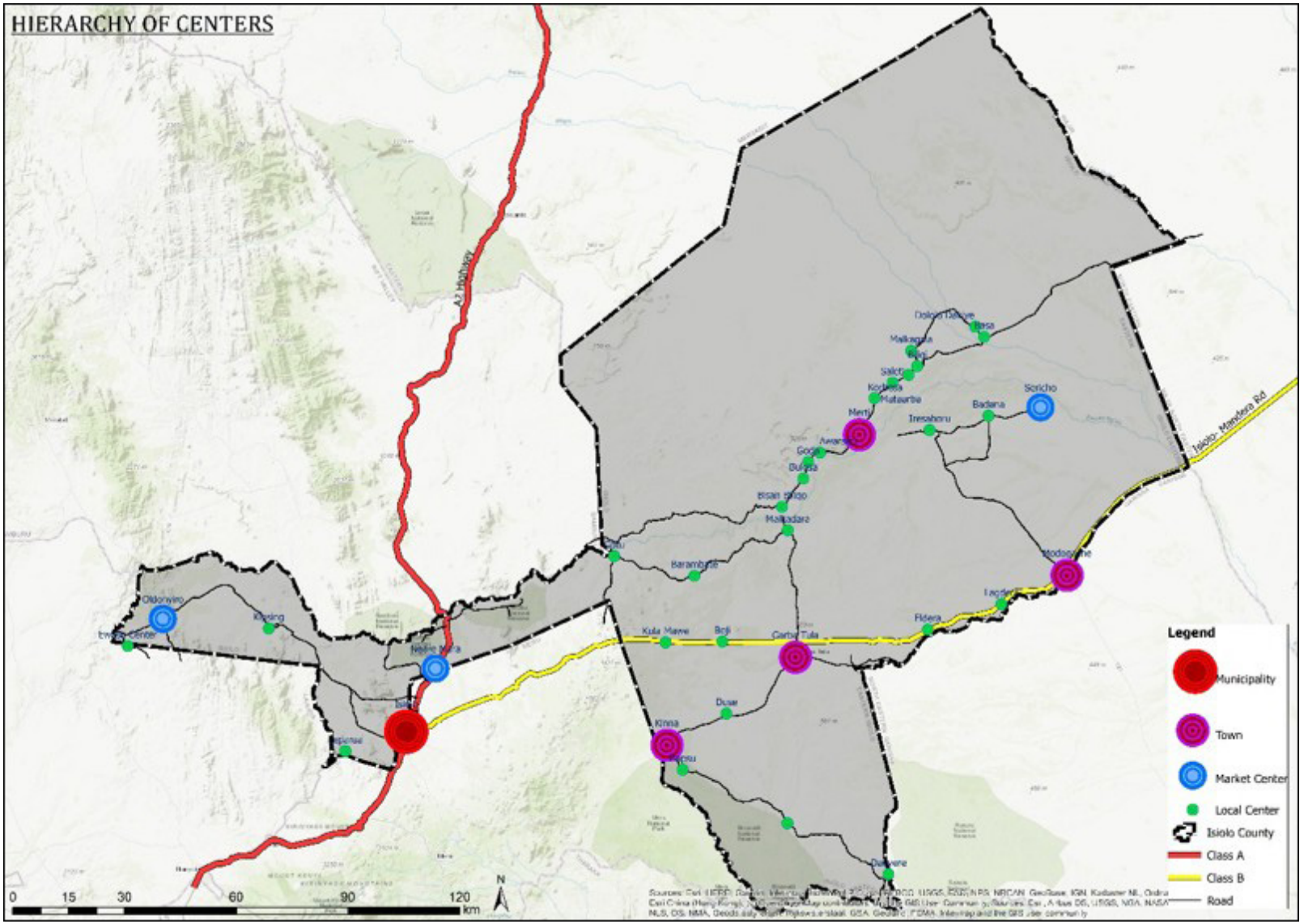
URBAN AREA	LIQUID WASTE MANAGEMENT			SOLID WASTE MANAGEMENT		ROADS	
	SEWER	SEPTIC	PIT LATRINES	PUBLIC DUMP SITE	PRIVATE ENTITIES	TARMAC	EARTH
Isiolo Municipality	Available	Available	In use	Available	Available	Available	Available
Kinna	None	Available	In use	None	Available	Available	Available
Garba Tulla	None	Available	In use	None	Available	Available	Available
Oldonyiro	None	-	In use	None	-	Available	Available
Modogashe	None	-	In use	None	-	Available	Available
Merti	None	-	In use	None	-	None	Available
Kulamawe	None	-	In use	None	-	None	Available
	None	-	In use	None	-	Available	Available

Source: Field Survey, 2024

8.5 URBAN PRIMACY

Isiolo Municipality is the dominant urban area within the County with a primacy ratio of 4.5. The urban area being the County headquarters attracts a lot of activities which stimulate its growth. The Map below shows the Hierarchy of urban areas within the County.

Map 8 3: Hierarchy of Urban Areas within the County



Source: Author, 2025

8.6 URBANISATION TRENDS

The areas where urbanization is taking place within the County can be categorised into three corridors.

8.6.1 Primary Growth Corridor

Major development is along the A2 Road that connects Isiolo to other regional centres like Marsabit, Meru, Nanyuki and Nairobi.

8.6.2 Secondary Growth Corridor

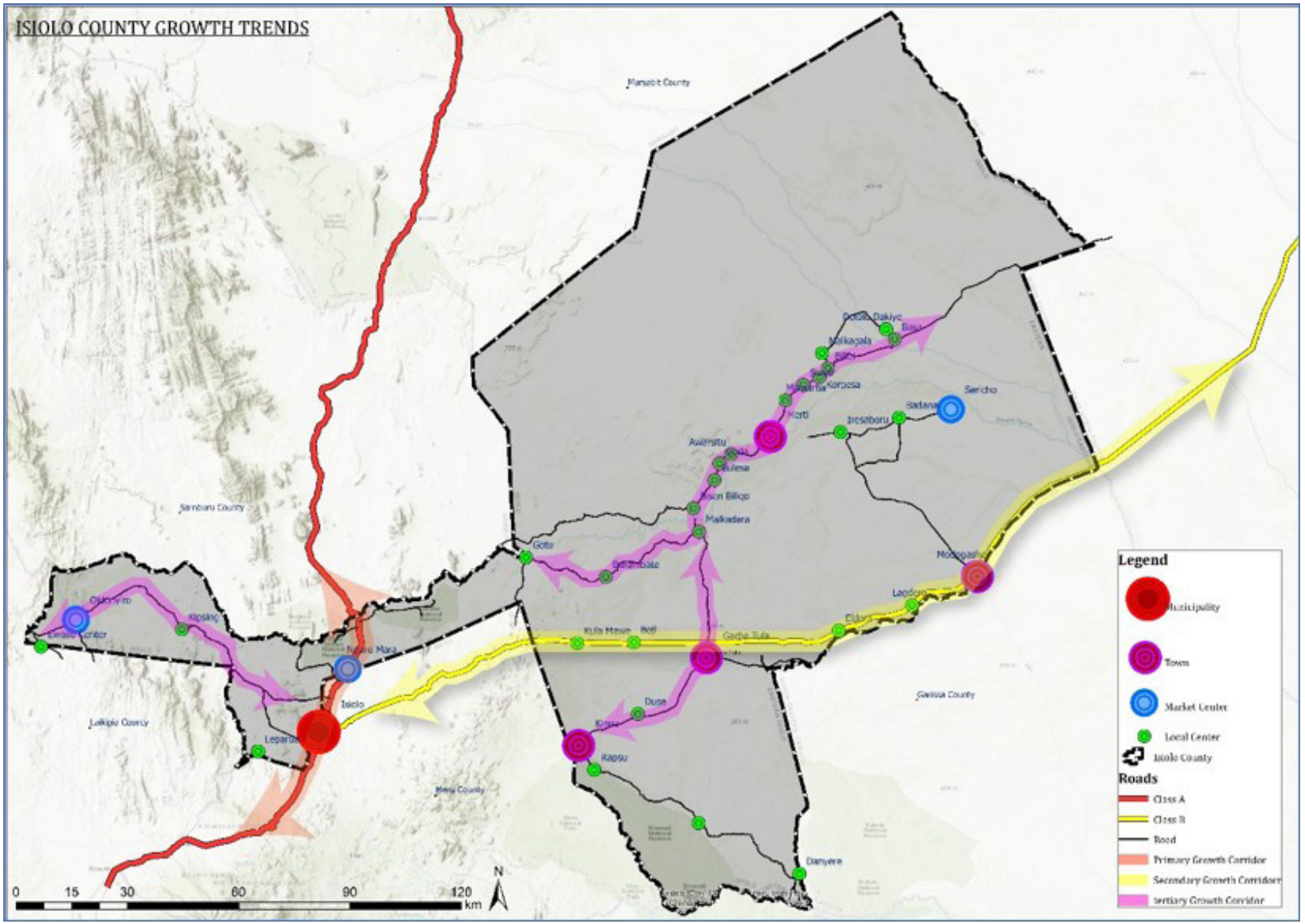
The secondary growth corridor connects Isiolo municipality – Garbatulla and Modogashe. The transport route connecting Isiolo Municipality to the urban areas of Modogashe and Garbatulla has influenced the growth of urban areas along it. The tarmacking of Isiolo – Kulamawe – Modogashe road will open up the area thus there is anticipated rapid growth within this corridor.

8.6.3 Tertiary Growth Corridor

The County has 3 tertiary growth corridors, Oldonyiro – Kipsing – Isiolo Corridor, Gotu-Barambate-Malkadaka-Biliqo-Bulesa-Merti-Basa Corridor and Kinna – Duse – Garbatulla - Malkadaka Corridor. Along these corridors are villages, trading centres and market centres. The growth of the settlements along these corridors is inhibited by poor road infrastructure.

The map below shows the urbanisation growth trends within the County.

Map 8-4: Urbanization Trends



Source: Author, 2025

8.7 HOUSING

The County is characterised by various housing types. The housing within the rural areas differs with those in the urban areas.

8.7.1 Rural Housing

The rural housing within the county is characterised by semi-permanent structures. The nomadic lifestyle of the majority of the rural population encourages the development of temporary structures. The housing typologies are mainly Manyattas and row housing.

Plate 8-1: Semi-Permanent House



Source: Field Survey, 2024

Plate 8-2: Temporary Structures



Source: Field Survey, 2024

8.7.2 Urban Housing

The housing within the urban areas can further be categorized into commercial housing, residential housing, institutional housing and religious housing. The commercial housing is characterized by high-rise buildings within the major urban area of Isiolo municipality and row housing within the minor urban centers.

Plate 8-3: High-Rise Commercial Structures



Source: Field Survey, 2024

Plate 8-4: Religious Structures



Source: Field Survey, 2024

Plate 8-5: Institutional Structures

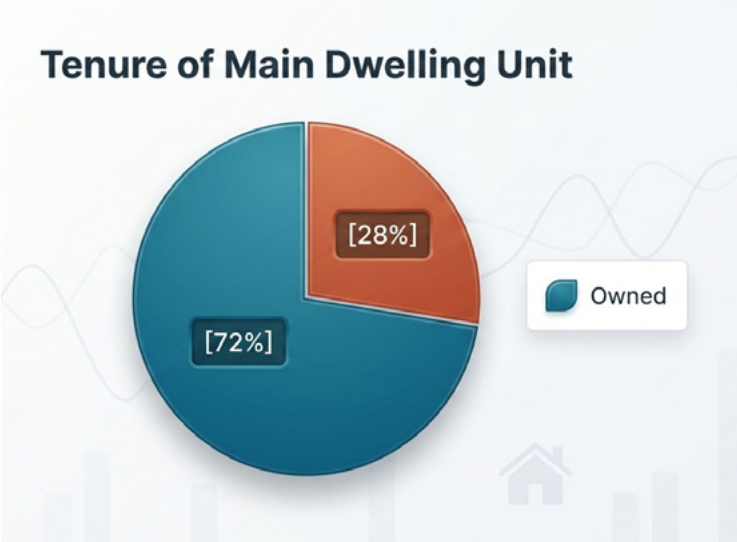


Source: Field Survey, 2024

8.7.3 Tenure of Dwelling Units

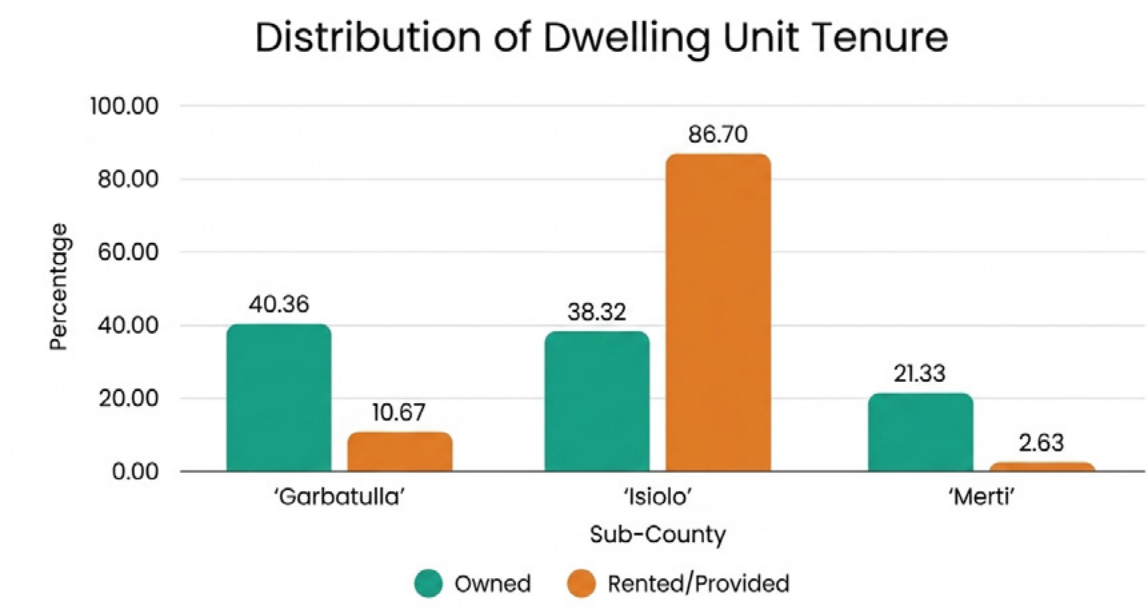
The majority of housing units within the County are privately owned. The analysis of the 2019 housing census shows that 72 percent of all housing units within the County are owned with 28 percent being rented or provided. The rented housing units are mostly within the urban areas.

Figure 8-1: Housing Units Tenure



Source: KNBS, 2019 Kenya Population and Housing Census Report, Volume IV

Figure 8-2: Distribution of Housing Units by Tenure



Source: KNBS, 2019 Kenya Population and Housing Census Report, Volume IV

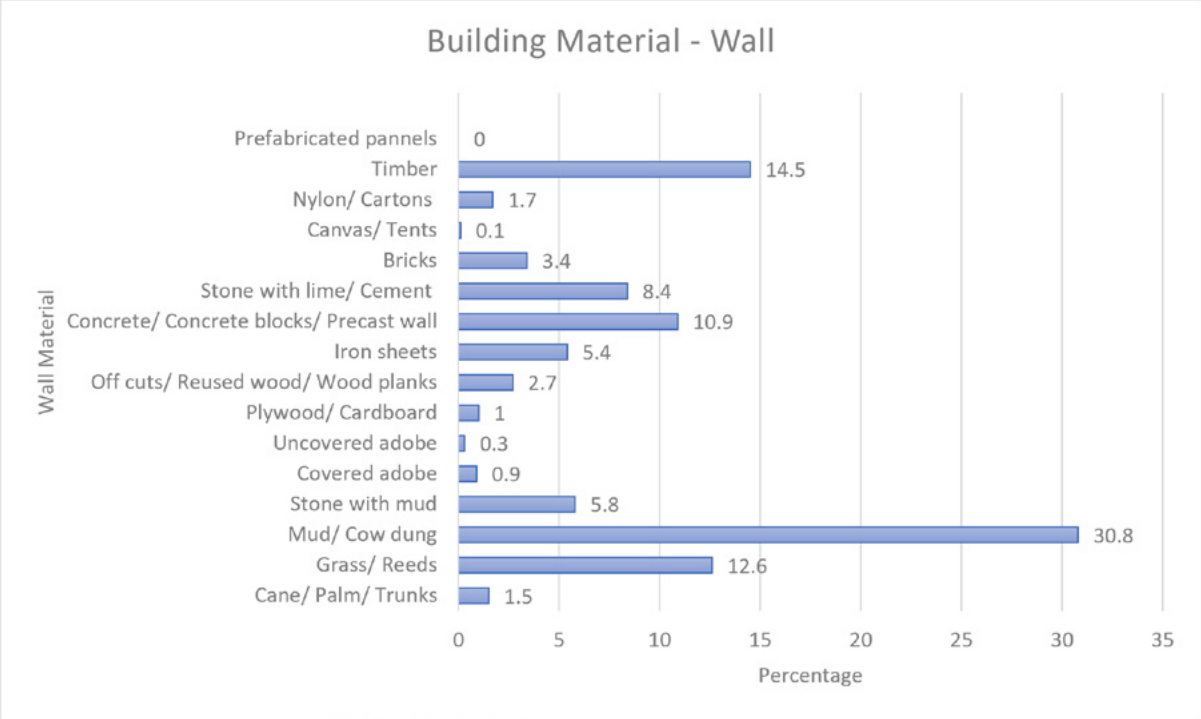
8.7.4 Building Material

Housing within the County is characterized by permanent, semi-permanent and temporary structures. The nature of the building material determines the nature of housing.

8.7.4.1 Wall Building Material

The Majority of the houses within the County are constructed using semi-permanent materials. The figure below shows the type of wall material used in the construction. Approximately 30% are constructed using mud/cow dung,14% using timber while 19% are constructed using stone.

Figure 8-3: Wall Material

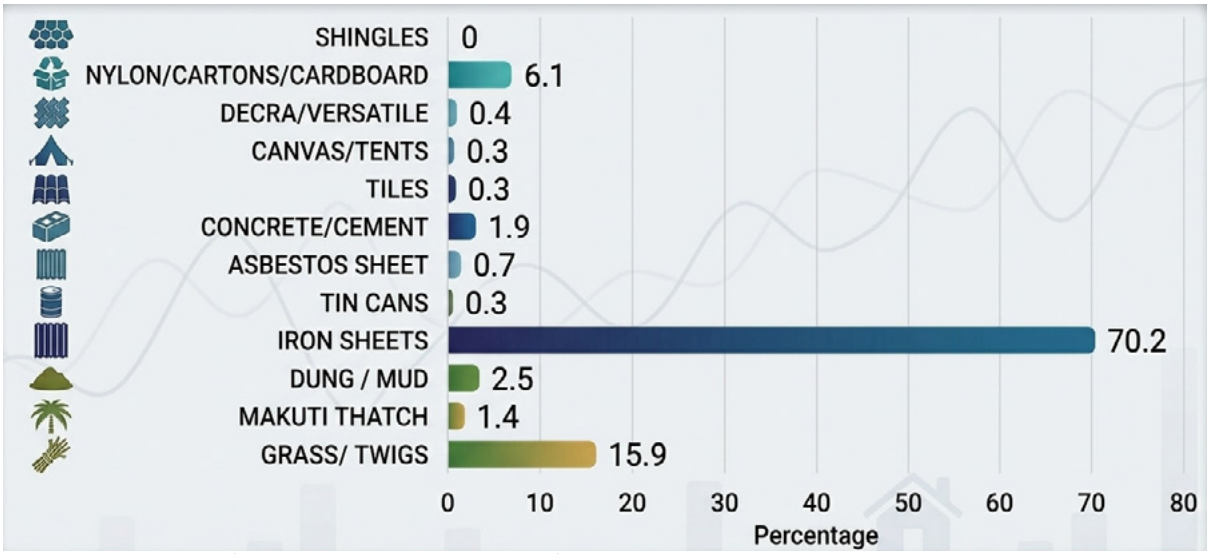


Source: Field Survey, 2024

8.7.4.2 Roofing Material

The commonly used roofing material within the County is iron sheet with over 70% of structures being roofed using this material. The figure below shows the roofing material of structures within the county as reported during the 2019 housing census.

Figure 8-4: Roofing Material

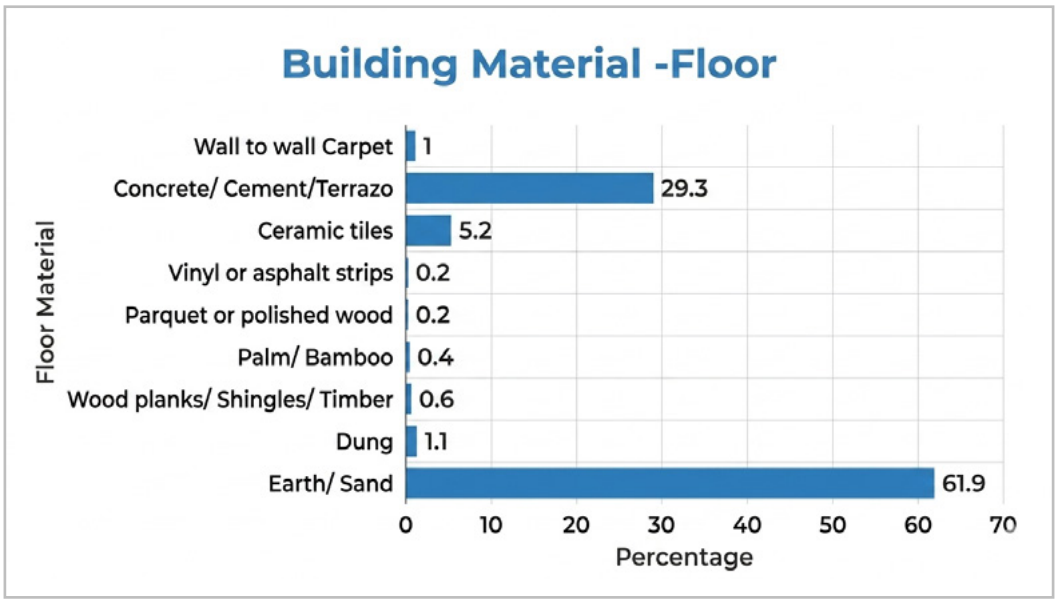


Source: KNBS, Kenya Population and Housing Census Report, Volume IV

8.7.5 Floor Material

Approximately 62% of the houses have earthen floors while 35% are cemented, tiled or concrete. Most of the houses within the County have earthen floors. This depicts that the majority of the structures are temporary and semi-permanent. The figure below summarizes the floor material of houses within the County.

Figure 8-5: Floor Material



Source: Field Survey, 2024

8.8 EMERGING ISSUES, CHALLENGES AND OPPORTUNITIES

i. Change from Nomadic to Sedentary Lifestyle

The gradual change of the nomadic lifestyle is slowly contributing to the development of permanent settlements and growth of urban centers. This is characterized by clustered villages and growth of urban centers along major transport routes.

ii. Rapid Urbanization

The county is facing rapid urbanization owing to opening up by the provision of road infrastructure. There is thus the need to carry out detailed planning of the urban areas along these transport corridors to ensure coordinated development.

iii. Remoteness and Vastness

Some urban areas are located far away from the main centre and are not connected to reliable transport networks.

Key Strategic Projects

The county is designated to house key strategic projects under the LAPSSET Corridor. the implementation of the projects for instance, the Resort City, will spur development and urbanization within the County.

Table 8-4: SWOT Analysis

STRENGTHS	WEAKNESS	OPPORTUNITIES	THREATS
· Vast amount of land available for urban growth · High Rural population compared to Urban population	· The nomadic lifestyle encourages the development of temporary structures · The Nomadic nature of most of the residents inhibits urbanisation	· The increase in urban population promotes the growth of permanent structures. · Development of planned LAPSSET Corridor Projects · Controlled Urbanization within the growth corridor through planning	· Insecurity threatens growth of human settlements · Poor infrastructure making acquisition of building material expensive.

Source: Author, 2025

CHAPTER 09

Infrastructure and Services

9.1 OVERVIEW

Infrastructure and services are important components for the socio-economic development and functionality of Isiolo County. The quality and efficiency of these systems directly impact the quality of life, economic development, and sustainability of the county. This chapter provides a detailed analysis of Isiolo's infrastructure, focusing on transport, water and sanitation, energy and Information and Technology.

9.2 TRANSPORT

Isiolo County is strategically located to serve as a hub connecting Northern Kenya to other parts of the country. Transport in the county is vital for economic activities such as trade, tourism and access to essential services. The current transport system in the County is primarily road-based, comprising both motorized and non-motorized modes of transport.

The proposed Lamu Port - South Sudan - Ethiopia Transport Corridor (LAPSSET) project is one of the flagship projects on Kenya's Vision 2030. It is set to pass through Isiolo County which means that the county will realize numerous benefits that emanate from regional connectivity. The project will boost the economy of the county through job creation, tourism, energy security (transportation of oil and gas), and overall connectivity.

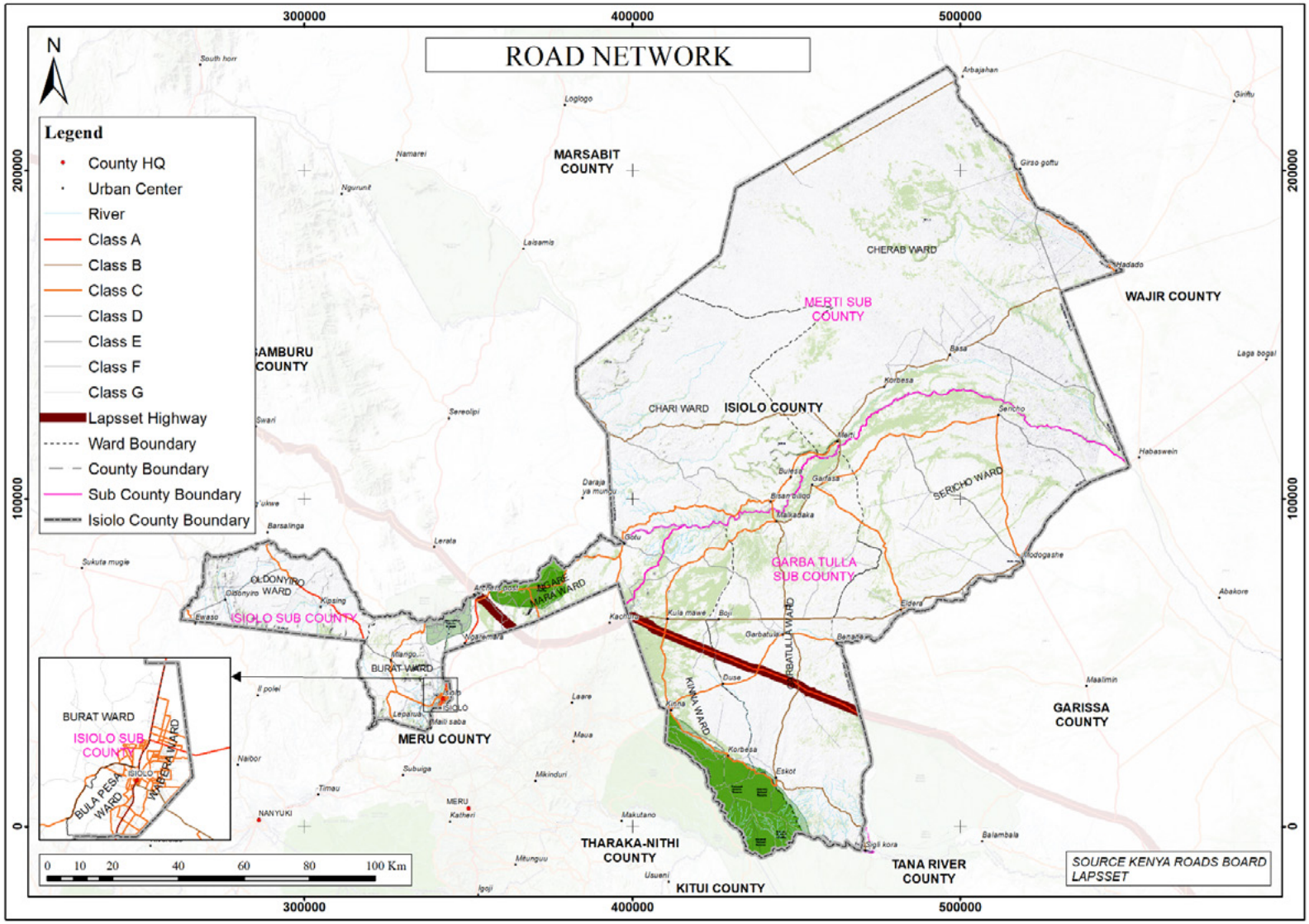
The corridor includes an airport, an oil pipeline, a highway and a railway line that will pass through Garba Tulla, Kinna, Ngare Mara, Burat and Oldonyiro wards. The realization of this project necessitates proper planning to address potential environmental impacts and ensure sustainable development.

9.2.1 Road Transport

Road transport in Isiolo County is characterized by a mix of classified and unclassified roads that connect urban centres, rural areas and the neighbouring Marsabit, Samburu, Laikipia, Garissa, Wajir, Tana River, Kitui, Meru and Tharaka Nithi counties.

Overally, the county has a road network of over 1275.5km. Key roads include the A2 highway, linking Isiolo to Nairobi and Marsabit, and the Isiolo- Moyale road which is part of the Trans-African Highway. These roads facilitate trade and movement but require regular maintenance to withstand the region's climatic challenges. The map below shows the road network across the administrative wards and the county as a whole.

Map 9-1: Road Network Classification Map



Source: Author, 2025

9.2.2 Road Surface and Condition

Key roads such as the A2 highway have sections that are tarmacked and in relatively good condition. However, many secondary and tertiary roads are untarmacked which leaves them vulnerable to harsh weather conditions. Gravel and earth surface roads account for 22% and 75% of the total road surface respectively. Major transport challenges emerge during rainy seasons, which are associated with flooding, rendering the earth's surface roads impassable. Also, poor road conditions and long distances between key locations contribute to high transportation costs.

Plate 9-1: All Weather Road (L) Dry Weather Road (R)




Source: Field Survey, 2024

The poor condition of roads in Isiolo bring out the need for upgrading and maintenance of roads. This will enhance durability and resilience against climatic impacts. It will significantly reduce the costs and time of travelling and transporting goods.

Plate 9-2: Poor Road Conditions



Source: Field Survey, 2024

9.2.3 Public Transport

Public transport in Isiolo County is limited, with matatus, buses, and motorcycles being the primary means of transport. Matatus and buses are concentrated in urban centers, while motorcycles are commonly used in rural areas for short distances. Public transport faces challenges such as insecurity and inadequate regulation.

9.2.4 Terminal Facilities and Parking Lots

Designated bus parks and parking areas are found in Isiolo Town for use by public service vehicles. However, these spaces are insufficient which has led to congestion and the emergence of informal parking. This informal parking has encroached on roads and pedestrian spaces, contributing to traffic and safety concerns for road users. The town lacks enough parking spots for private vehicles as well.

The development of terminal facilities and parking lots are necessary for private car owners and the public transport sector. They will not only create order and safety, but also contribute to the economy through collection of parking fees.

9.2.5 Storm Water Drainage

The storm water drainage system in Isiolo County is inadequate. Blocked drainage channels, particularly in urban areas, result in flooding during heavy rains, which worsens the road conditions and affects transportation.

Plate 9-3: Poor Road Drainage



Source: Fieldwork, 2024

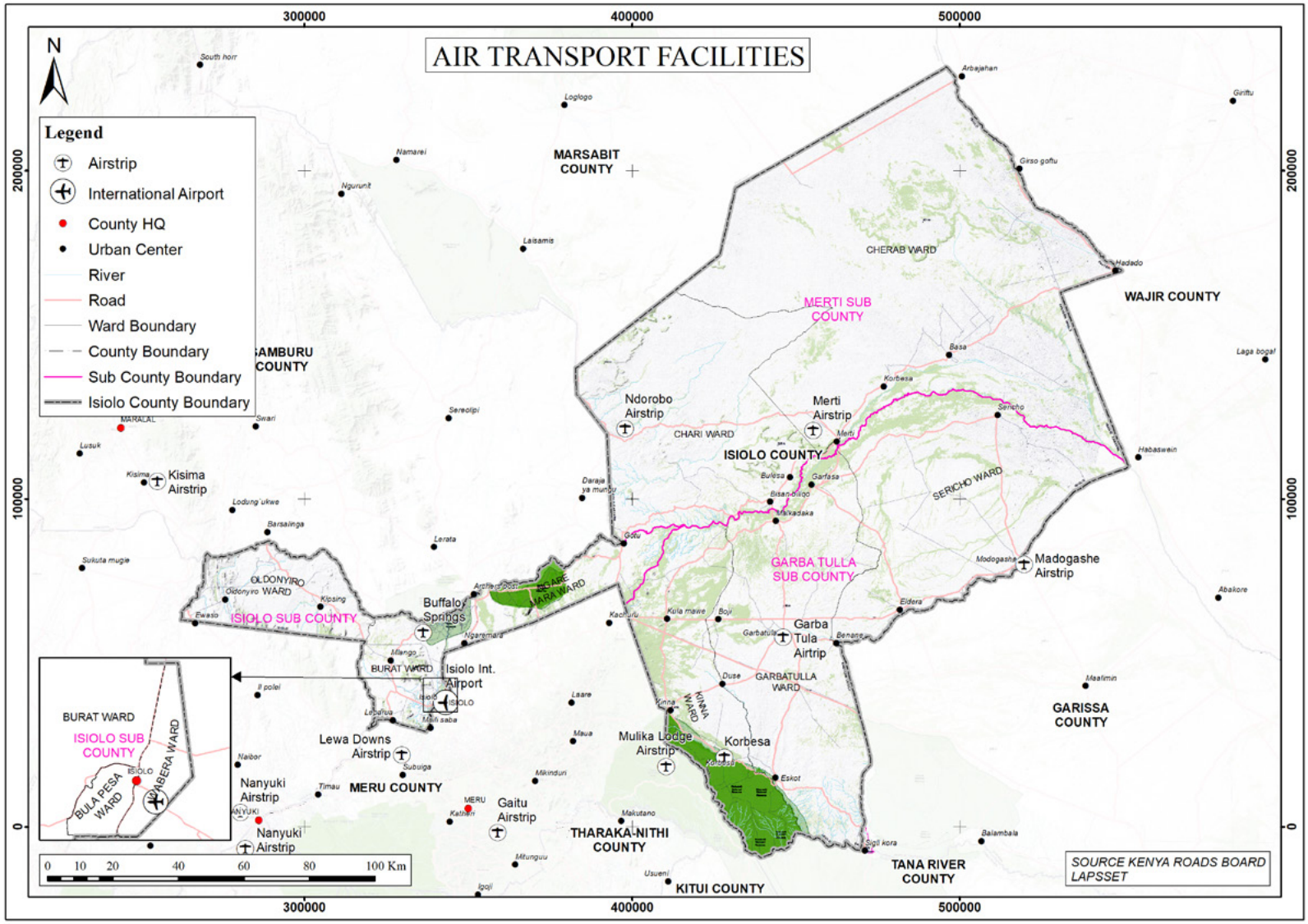
9.2.6 Non-Motorized Transport

Walking is the most common mode of transport in the county, with pedestrians accounting for a significant portion of daily travelers. There is need for the development of pedestrian walkways, crossings, and dedicated cyclist lanes to enhance non-motorized transport.

9.2.7 Air Transport

The County has several air transport facilities. These include Isiolo International Airport, Ndorobo Airstrip, Merti Airstrip, Garba Tula Airstrip, Korbesa Airstrip and Buffalo Springs Airstrip. Isiolo International Airport is strategically positioned as part of the LAPSSET Corridor project. The airport is being upgraded to international standards with a runway of 2.5km, capable of handling large aircraft. The airport serves both domestic and international travel needs, supporting regional connectivity. The map below shows the air transport facilities within the County.

Map 9-2: Airport and Airstrips within the County



Source: Author, 2025

9.3 WATER

Water availability is a major concern in Isiolo due to its arid and semi-arid climate. The county relies heavily on groundwater, particularly boreholes, but the water supply is often inconsistent and of low quality.

9.3.1 Water Sources

Water supply is undertaken by the Isiolo Water and Sewerage Company (IWASCO), a limited liability company established under the water sector reforms in the Water Act of 2016. The company is tasked with providing high quality water and sewerage services to the people of Isiolo County and its environs. The county has also enacted the Water Act of 2020 and Water Tariff Regulations to govern the use and development of water resources. There are three main water resources in Isiolo County as shown below:

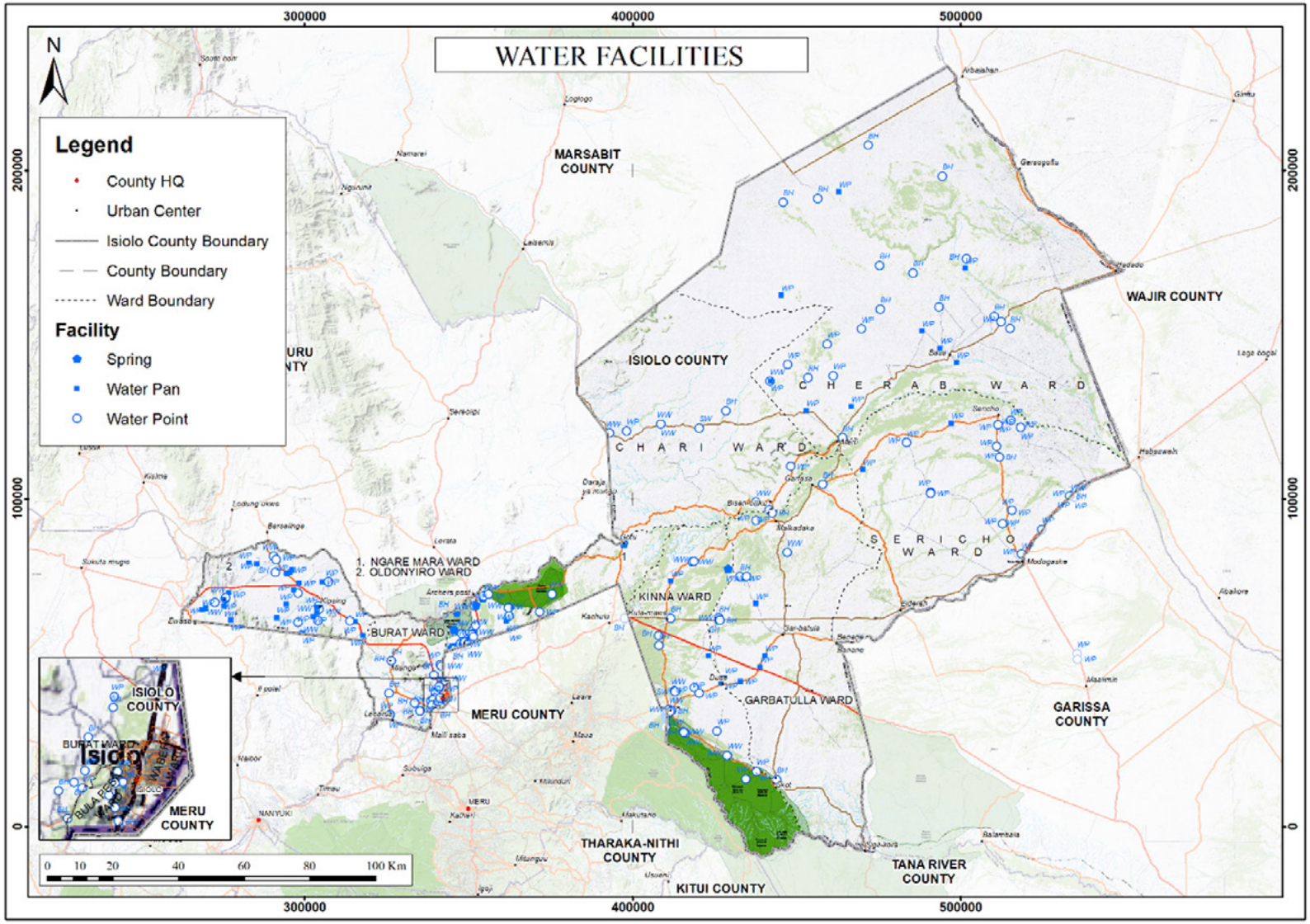
Table 9-1: Main Water Resources in Isiolo County

WATER RESOURCES	NAMES
Rivers	Ewaso Nyiro River, Isiolo River, Bisan Adhi River
Aquifers	Isiolo-Nyambeni-Mount Kenya Aquifer, Merti Aquifer, Garbatulla- Modogashe Aquifer, Kachuru-Kula Mawe- Boji Aquifer, Waso Basin Aquifer
Surface Water	The main surface water source is the Ewaso Nyiro North River

Source: Isiolo County Water Strategy 2023- 2035

Water from the alluvial aquifers is obtained using water supply technologies that include boreholes, shallow wells, springs, sand dams, water pans and rock catchments.

Map 9-3: Distribution of Water Facilities Across Isiolo County



Source: Author, 2025

Boreholes are the most common source of water in the county, as shown above. This is the case for majority of the residents in Cherab, Chari, Sericho, Garbatulla and Ngare Mara wards. These wards receive rainfall that is below 500m annually, necessitating the use of boreholes for water supply. However, there are a number of challenges associated with borehole water. Firstly, boreholes are very costly to construct and maintain, meaning that there are not enough boreholes in the county to meet the demand for water.

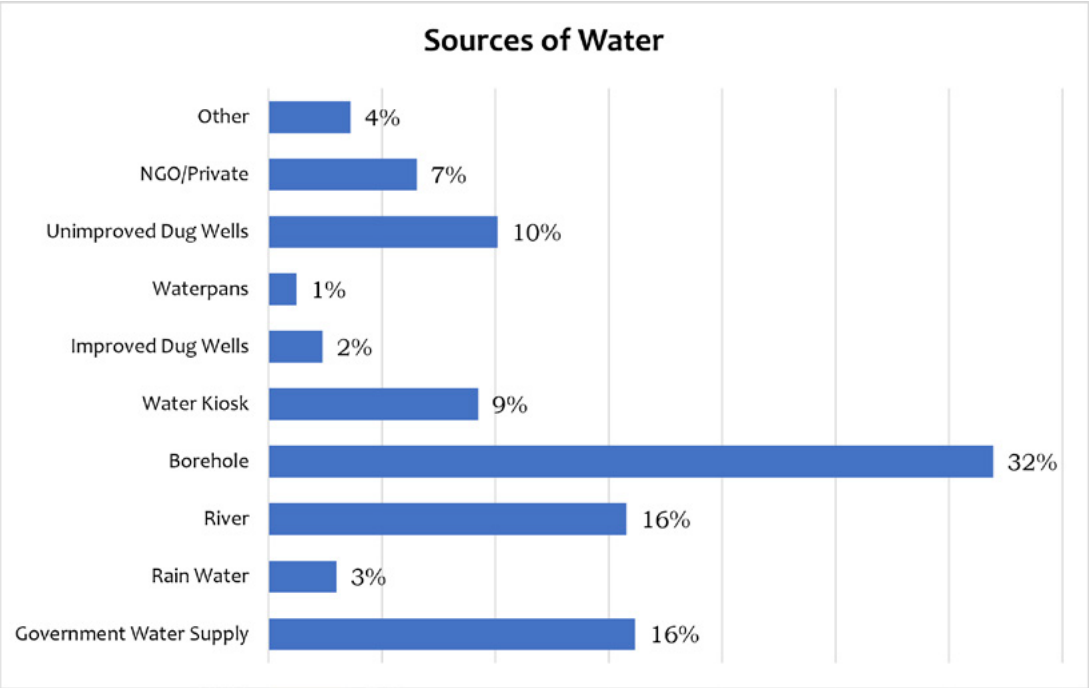
This has often led to conflicts among the people over ownership and control of the boreholes, especially in the grazing zones. Secondly, water from the boreholes has been known to cause health problems among the people because it has high fluoride levels and is often saline. In addition to that, the water runs high risk of contamination.

With poor waste management practices such as open dumping and open defecation being carried out, there's a chance that contaminants seep into groundwater and eventually end up in the boreholes. Also, over-reliance coupled with long droughts and unpredictable rainfall patterns in the county have led to a reduction of water in the boreholes, because the rate of groundwater recharge is significantly low.

Residents residing near the major urban centers such as Isiolo Town have access to water that is supplied by the county government. This is the case for residents in Wabera ward, who are served by IWASCO. However, challenges of high costs of water, rationing and inconsistent water supply have been reported.

Other sources of water are rivers, which are common in Burat ward, water kiosks in Cherab ward, improved dug wells in Sericho ward, water pans in Kinna, undeveloped dug wells in Oldonyiro ward and NGO/private sources in Bulapesa ward.

Figure 9-1: Sources of Water in Isiolo County

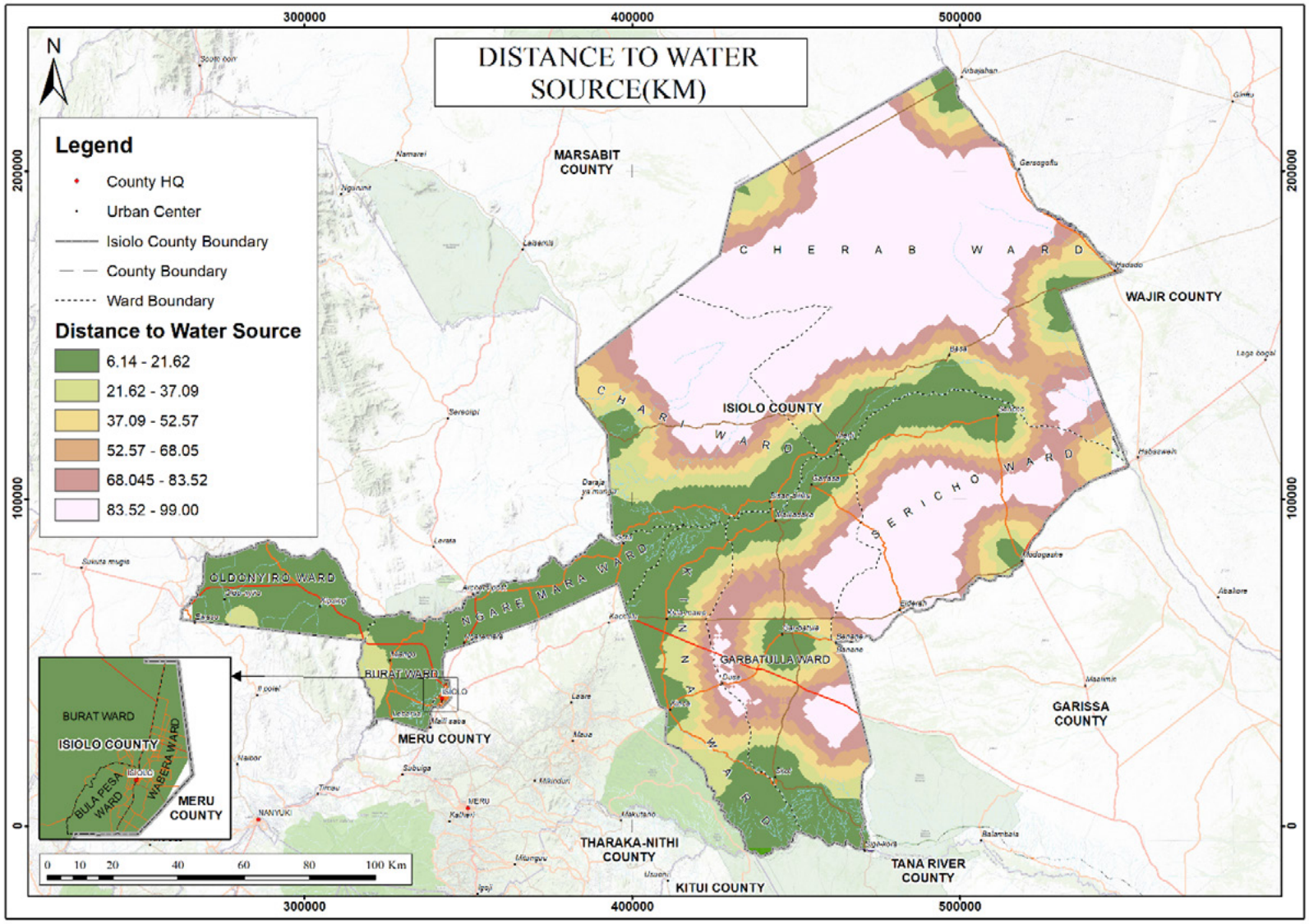


Source: Field Survey, 2024

It is important to note that the residents utilize multiple sources of water, depending on the cost and the availability. During instances of low water supply, the residents cope by borrowing water from neighbours or walking for long distances to fetch and purchase water. Others have invested in storage facilities such as tanks to store rain water. Overally, water from all the sources is boiled before it is used in the households, to make it safe for drinking. Aside from climate and rainfall patterns, several factors come into play in regards to the distances travelled to access water in the county. Firstly, the number and distribution of water facilities, particularly boreholes, varies for every ward. For instance, Cherab and Sericho wards have few boreholes that are widely spaced. This has increased the distance that a resident from either of these wards has to travel, to obtain water. The situation is different in wards such as Wabera, where most residents are connected to piped water and do not require to travel to access it. Secondly, the regular movement of pastoral communities, especially in Garbatulla and Sericho, has discouraged the establishment of permanent water infrastructure. This forces them to travel for long distances to access the nearest water point. Lastly, intercommunal conflicts over grazing land and water have been seen to cause residents to abandon nearby water points and travel farther.

Map below shows the distance to water sources.

Map 9-4: Distance to Water Sources



Source: Author, 2025

9.3.2 Water supply versus demand

The water demand in the county is for domestic use, industrial use, irrigation, livestock, and wildlife and fisheries. According to the Isiolo County Water Strategy 2023- 2035, about 93% of the county area lacks access to safe and clean water within 5km of reach. Over 175 villages rely on water sources that are unsafe and beyond 5km reach. In addition to that, about 58% of the water sources are saline, therefore limiting the availability of potable water. This situation has impacted the health of the residents due to the prevalence of waterborne diseases and malnutrition. It has also affected education, especially among the girls, who are tasked with fetching water while they should be in school.

Some of the strategies that have been explored to address these challenges include rainwater harvesting, borehole development, construction of water storage infrastructure (dams and pans), provision of water treatment facilities at Kambi Juu and Mwangaza, and policy and capacity building to strengthen the governance and management of water resources.

9.3.3 Projected Water Demand

Water demand in the county is expected to rise due to rapid urbanization, driven by the growth of emerging urban settlements. There is high water demand for irrigation, domestic use, industrial use, livestock and wildlife and fisheries. According to the Isiolo County Water Strategy 2023-2035, the projected water demand in million cubic meters for 2040 is as follows:

Table 9-2: Projected Water Demand for 2040

WATER USE	WATER DEMAND (MCM/A)
Irrigation	4.6
Domestic/Industrial	56.2
Livestock	32.4
Wildlife & Fisheries	2.4
TOTAL	**95.6**

Source: Isiolo County Water Strategy 2023-2035

9.3.3.1 Water Projects

There are ten major water supply schemes, 1 urban and 9 rural, serving approximately 60,000 and 2,500 to 6,000 inhabitants respectively. They include, Isiolo Water and Sewerage Company (IWASCO), Garbatulla town water supply, Sericho water supply, Eresaboru water supply, Kulamawe water supply, Kina water supply, Gafarsa water supply, Merti water supply, Dadachabasa water supply, Bisan Biliqo water supply, Bulesa water supply project and KOBIRSAMA water supply project. Flagship water projects in the county 2023-2027 include:

Table 9-3: Flagship Water Projects for 2023-2027 in Isiolo County

PROJECT NAME	LOCATION	OBJECTIVE	DESCRIPTION OF KEY ACTIVITIES
Isiolo Mega dam	Oldonyiro	To harvest flood water upstream from Ewaso-Nyiro river	· Construction of the multipurpose dam
Kubi Qallo dam	Biliqo Marara	To harvest flood water downstream from the Ewaso Nyiro River	· Construction of a multipurpose dam
Modogashe Water Project	Modogashe	To provide water to Modogashe town centre	· Drill and equip boreholes · Lay a pipeline to Modogashe town Booster pumping Construct storage tanks · Set up a water governance structure for Modogashe · Water supply
Relocation of the Isiolo town water sewerage treatment plant to a suitable site downstream of the town	Isiolo Town	To increase connectivity to sewerage services in Isiolo town	· Securing land · Construction of new sewerage treatment ponds · Construction of offices and laboratory · Lay new sewer lines to cover the underserved area · Increase connectivity
Kenya off-Grid access project (KOSAP)	Countywide	Provision of clean and renewable energy	· Equipping public facilities with solar systems · Provision of affordable power · Provision of clean cooking solutions to residents. · Provision of alternative sources of energy for boreholes

Source: Isiolo County Water Strategy 2023- 2035

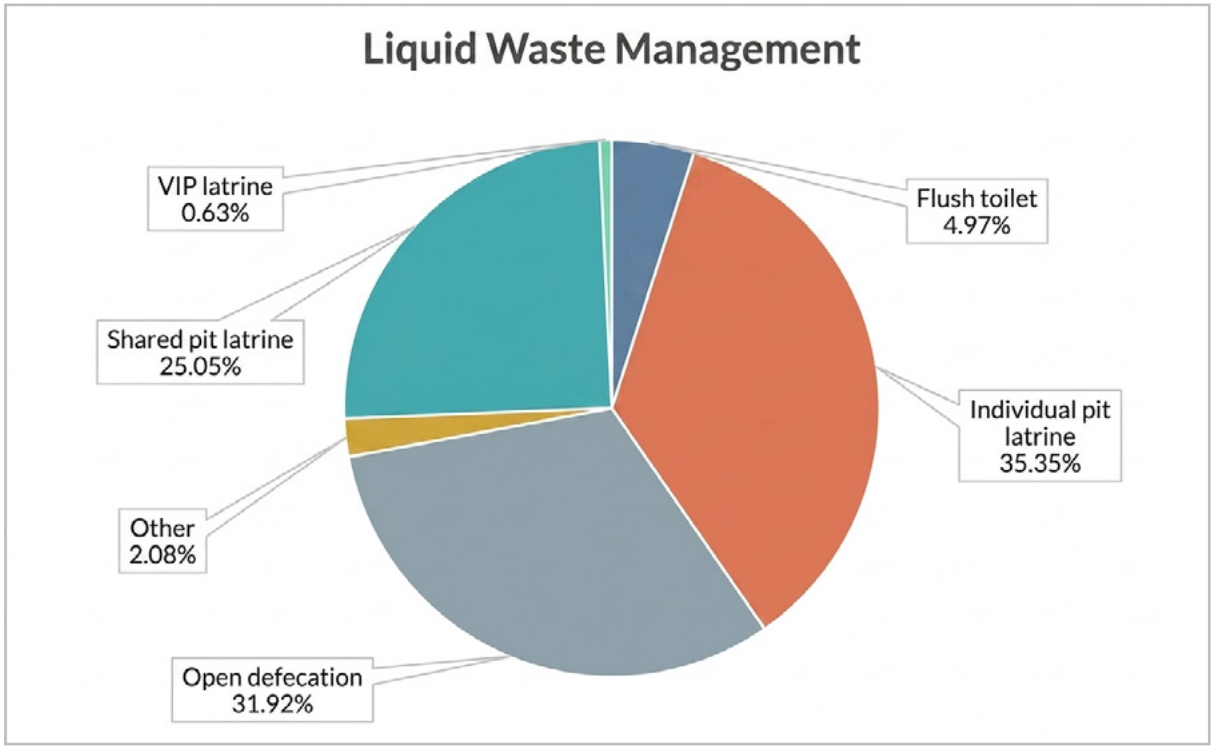
9.4 SANITATION AND WASTE MANAGEMENT

Sanitation services are important for the health, social and economic well-being of communities. In Isiolo County, these services are inadequate due to the shortage of water supply and the occurrence of hazards such as floods and droughts.

9.4.1 Liquid Waste Management

A significant percentage of the population in the county uses open defecation especially in the rural areas, while others use improved, shared and unimproved toilets. There are inadequate sanitation facilities in the urban areas with most households not being connected to the sewer system. These households utilize on-site sanitation facilities such as latrines and septic tanks. For those that are connected to the sewer system, the domestic sewage is channeled to sewerage treatment ponds. Figure 9-2 shows the various ways in which residents handle liquid waste, as reported from the field survey.

Figure 9 2: Liquid Waste Management



Source: Field Survey, 2024

As shown above, individual pit latrines are the most commonly used facilities. This is the case for most residents in Burat, Chari, Garbatulla, Kinna and Sericho wards. Open defecation is mostly common in Cherab, Ngare Mara and Oldonyiro wards. Shared pit latrines are mainly used in Bula Pesa and Wabera.

Human and animal wastes are identified as the main pollutants of water in the county. In addition to that, storm floods often mix with sewage from overflowing latrines and sewers, causing pollution and problems associated with increased risk of waterborne diseases. Residents using shared facilities also reported issues of congestion and conflicts.

The residents reported that they employ various coping strategies to handle these challenges, depending on the type of facility they use. To handle the issue of flooding and sinking of toilets, the residents place sand bags near the location of the toilet which works effectively. Those using shared facilities carry out routine cleaning which ensures that they maintain high hygiene standards, mitigating the spread of infections and waterborne diseases. When blockages occur, the residents reported that they unblock the toilets themselves or have a plumber do it at a fee. Others dig trenches that redirect the waste elsewhere.

Within urban centers such as Isiolo Town, the residents have access to exhauster services that remove waste from septic tanks and sewers. Other residents reported that they are forced to use alternative facilities when theirs are out of order, such as their neighbors' toilets and in some cases resort to open defecation. Composting was also reported as a coping strategy, allowing for the use of waste as manure for their farms.

There is need for a centralized waste water treatment facility in the county that will have the capacity to handle liquid waste produced. Smaller treatment plants should be located in the distant rural areas, to serve the regions that are far from the major urban centres. There is also a need for maintenance of the existing sewer lines and their expansion into underserved areas. This

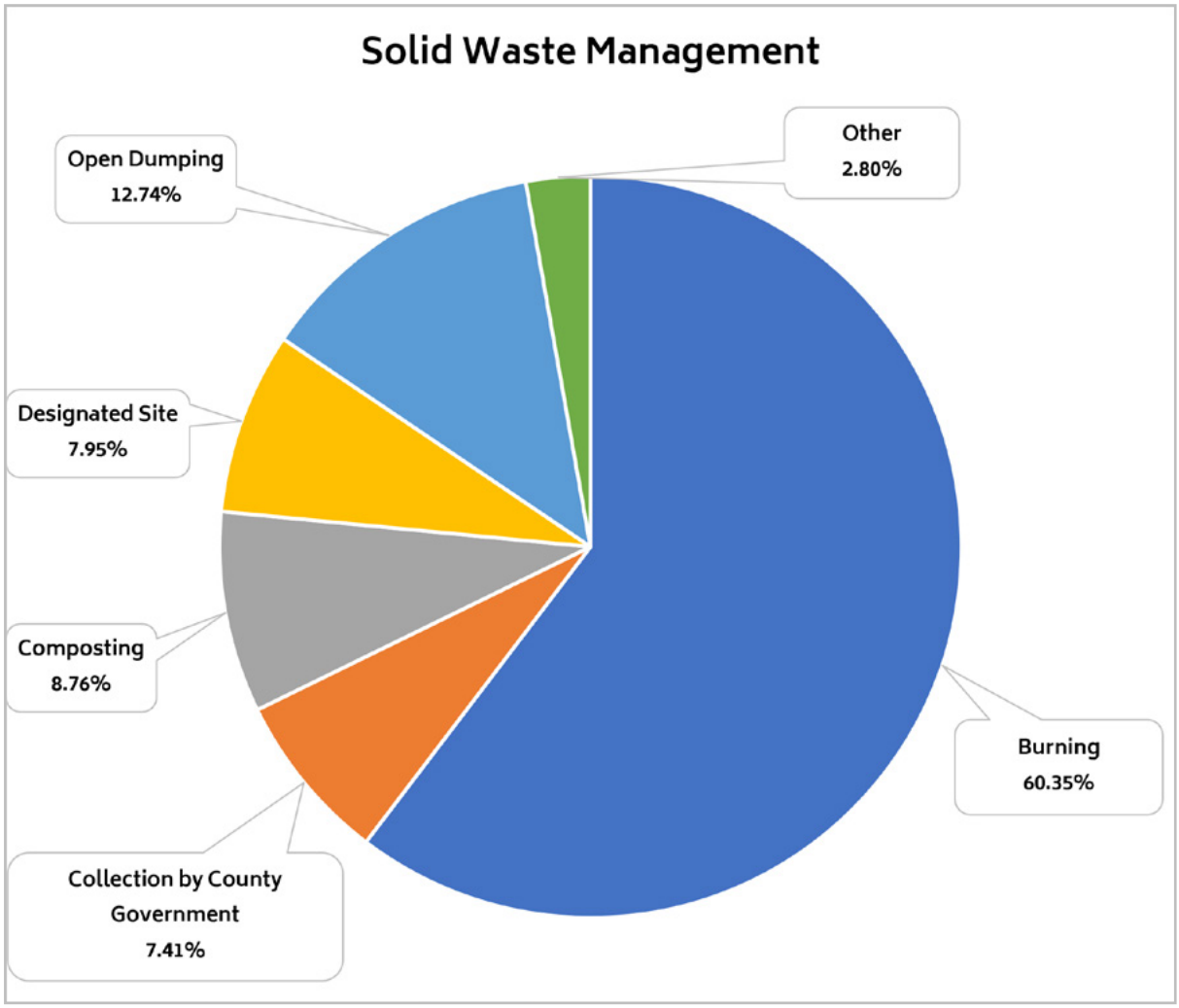
will promote public health and prevent the contamination of water resources. Effective drainage systems and rain harvesting initiatives will play a vital role in preventing flooding and sinking of toilets and ultimately avoiding the mixture of stormwater with waste water. The upgrading and construction of toilets and pit latrines for places without will allow for proper management of liquid waste in Isiolo County.

9.4.2 Solid Waste Management

Isiolo County faces major challenges in managing solid waste, attributed to limited infrastructure and resource constraints. With the growing population, more waste is being produced, which is more than the county can collect and properly manage. This situation is worse in the urban centres than in the rural areas. For instance, Isiolo Municipality alone currently produces an estimated 23,500 tonnes of waste annually.

There are difficulties in coordinating proper solid waste collection which is carried out using open trucks, hand carts and donkey carts. There are few waste disposal and collection sites across the county, which has resorted in the common practice of open dumping. There is only one designated dumpsite in the county that is located in Isiolo Town. Poorly handled waste ends up in water drainages causing blockages, and in water resources such as rivers, contaminating the water. Figure 9-3 shows how the residents handle solid waste from their households, as reported during the field survey.

Figure 9-3: Solid Waste Management



Source: Field Survey, 2024

The majority of the residents burn their waste which is associated with air pollution, soil and water contamination, and respiratory issues. Other ways of handling solid waste include open dumping, composting, taking it to designated sites, collection by the county government and private collection.

Plate 9-4: Poor Waste Management along the Roads and Drainage Channels



Source: Field Survey, 2024

It was reported that there are no waste collection services by the county government in Chari, Cherab, Garbatulla, Kinna, Ngare Mara and Sericho. These services are mainly concentrated in Wabera ward.

There is need for solutions that focus on reducing waste generation and promoting sustainable waste management. The establishment of waste collection points in the major urban centers is vital for the segregation of waste and recycling initiatives. Effective solid waste management is crucial for the conservation and protection of the environment, and addressing these issues is essential for improving public health and sustainability in the region. Developing well-managed landfills will ensure safe disposal of non-recyclable waste. There is a need to strengthen county and local government waste management policies, which will ensure regular waste collection services.

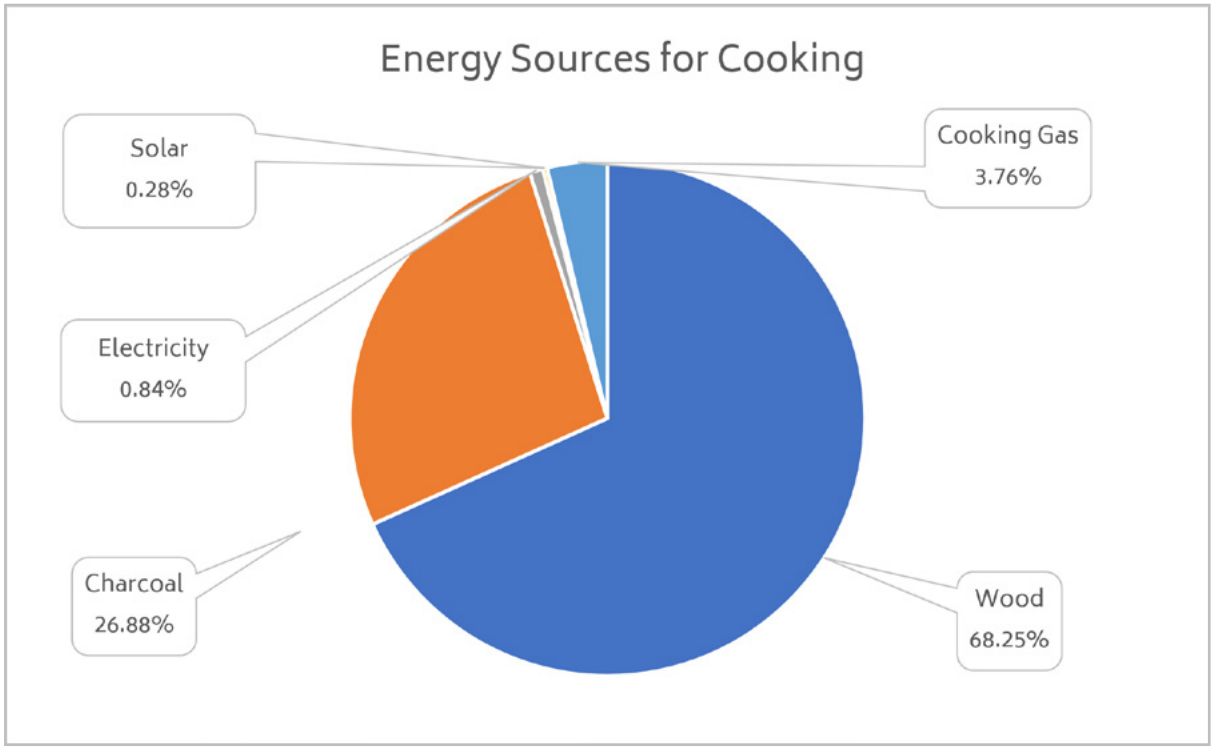
9.5 ENERGY

The main sources of energy available in Isiolo County are wood, charcoal, solar, electricity and petroleum products. With an average of 12 hours of sun in the county, there's high potential for solar energy that can be used for cooking and lighting.

9.5.1 Cooking

The predominantly used source of energy for cooking in the rural areas is wood and charcoal, which has contributed to health issues among the people and the decline in tree cover. Furthermore, many livelihoods depend on charcoal burning and firewood collection. Petroleum products are more common in the urban areas, where residents have more disposable income to afford them and also because they are widely available in comparison to the rural areas. Electricity is underutilized as a source of energy for cooking in the county due to high costs, unreliable supply and limited grid coverage. Like the petroleum products, electricity is mainly used in urban areas. Figure 9-5 shows the usage of the various sources of energy for cooking.

Figure 9 5: Energy Sources for Cooking



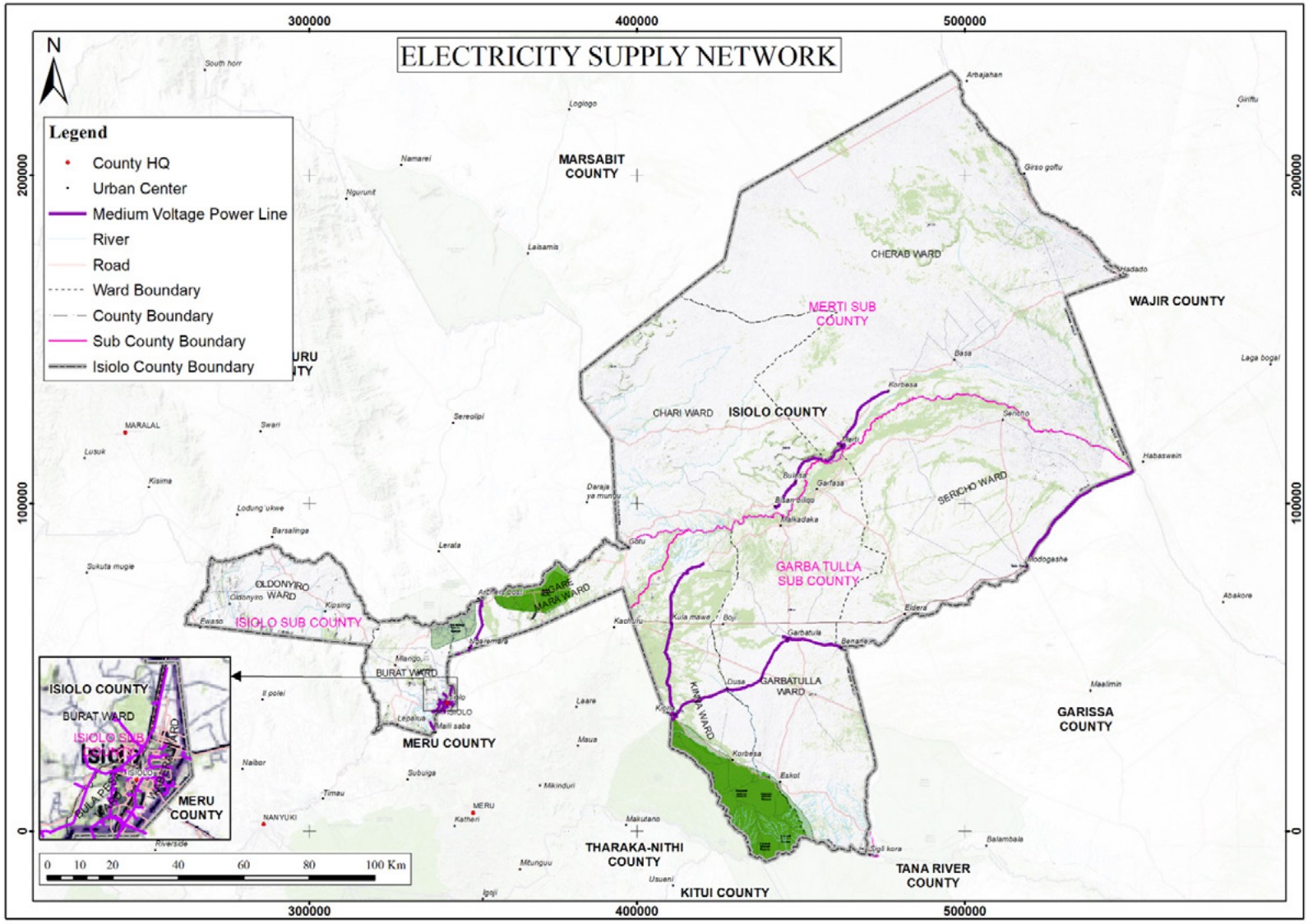
Source: Field Survey, 2024

Wood fuel is commonly used in Cherab, charcoal in Bulesa, cooking gas in Wabera, and electricity in Sericho wards. About 83% of the residents who reported using wood collected it on their own and the remaining 17% purchased it.

9.5.2 Lighting

For lighting, electricity, petroleum products, wood fuel and solar energy are used. Electricity connection has been done in a number of households, trading centres, schools, health facilities and other institutions especially in urban areas. However, there is need for the exploration of green energy in the county, to promote sustainable energy use.

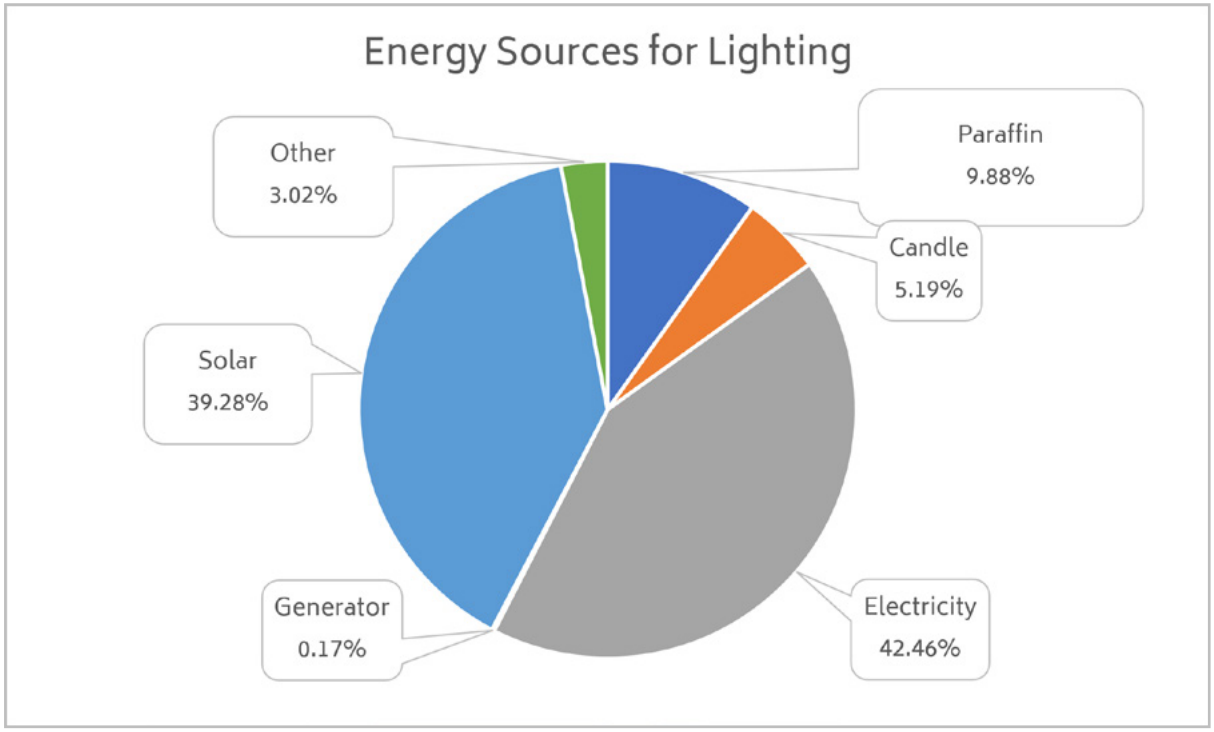
Map 9-5: Electricity Supply Network



Source: Author, 2025

As illustrated in Map 9-4 above, a large portion of the county is not connected to the electric grid network in the county. Wabera and Bulapesa are the only wards that are fully supplied with electricity in the county. However, wards such as Cherab, Chari, Sericho and Oldonyiro are not supplied with electricity at all.

Figure 9-6: Electricity Supply Network



Source: Field Survey, 2024

Despite the inadequate supply, electricity is the most commonly used source of energy for lighting, followed closely by solar energy. Aside from candles and paraffin, other sources of energy for lighting include torches and firewood. Solar energy is predominantly used in Chari, Cherab, Kinna, Ngare Mara, Oldonyiro and Sericho wards. Electricity is mainly used in Wabera, Bula Pesa and Garbatulla wards. The majority of the residents from Bula Pesa reported that they use candles for lighting.

Heavy reliance on wood and charcoal in the county has led to deforestation and subsequently caused the loss of biodiversity and desertification. The unsustainable harvesting of wood has significantly reduced rainfall retention and exacerbated drought conditions on an already arid region.

Air pollution is a major concern, especially in the wards where wood and charcoal are primarily used. The gases and fumes released from burning charcoal, and indoor and open-fire cooking are detrimental to human health and the environment. There is limited adoption of renewable energy alternatives in the county, particularly solar energy and biogas. With the arid and semi-arid climatic conditions and an average of 12 hours of sun a day, solar energy has great potential to meet the demand for energy in the county.

The development and expansion of energy infrastructure is necessary, especially in the rural areas, to ensure equity in access of energy for both cooking and lighting. Such infrastructure includes electric grids, transmission lines, transformers, street lighting, biogas plants and solar farms. There is also need for environmental conservation and sustainability, which can be achieved by promoting the use of clean energy in place of firewood and charcoal.

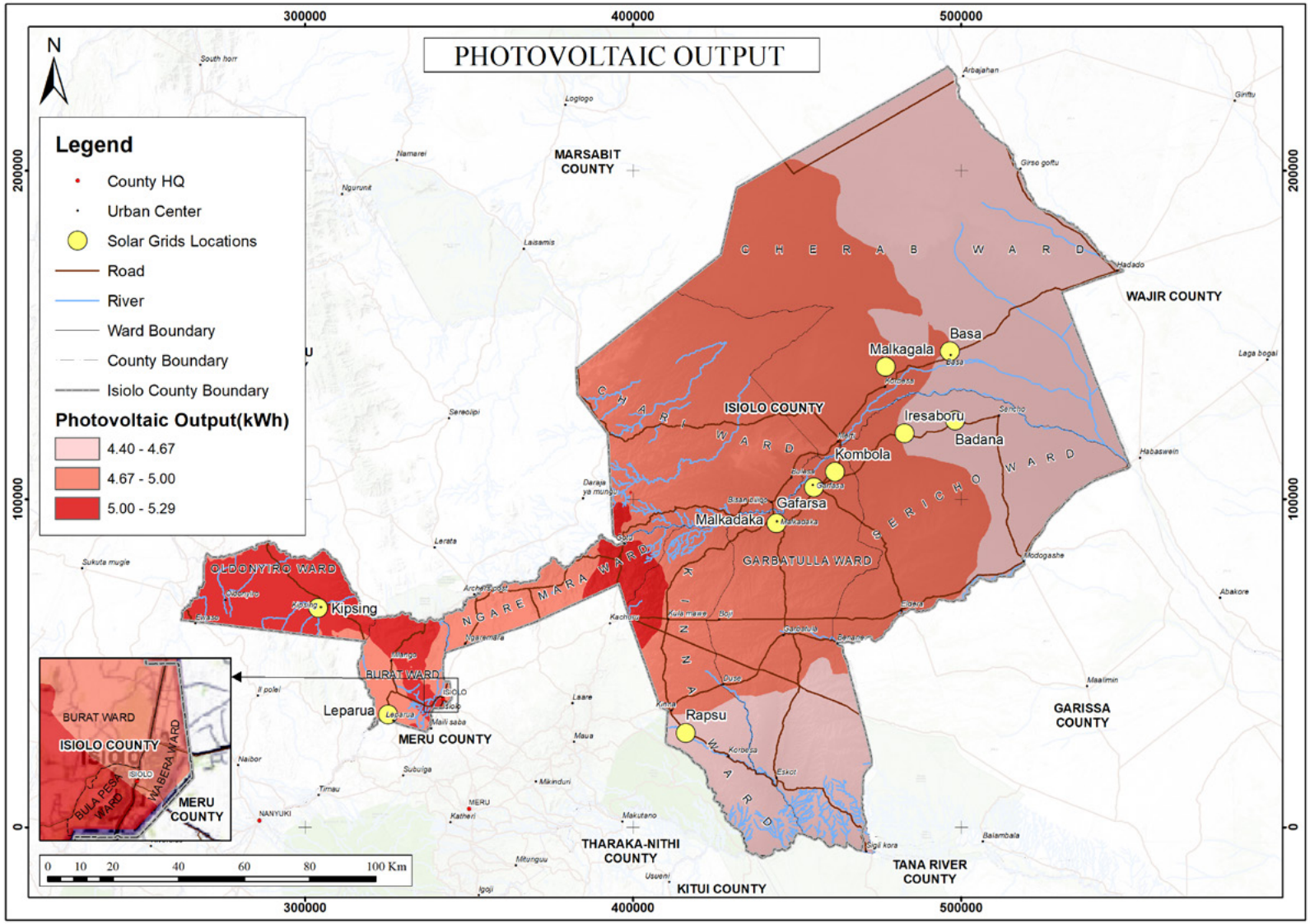
9.5.3 Solar energy

According to the Kenya Off-Grid Access Project (K-OSAP), Isiolo County is among the 14 marginalised counties that are targeted for off-grid solar electrification because of its high renewable energy potential and low conventional electricity coverage. Specifically, Isiolo's high solar resource availability, sparse settlement patterns, and high demand for alternative energy in pastoral and remote settlements make it favourable for investing in decentralised solar energy systems. Among the areas that have been earmarked for solar electrification interventions include Dadachabasa, Sirbdhe, Gafarsa, and Kipsin. KOSAP promotes solar-powered boreholes and water pumping systems in these arid and semi-arid areas which heavily depend on boreholes, lack reliable water infrastructure, and whose livestock production requires dispersed access to water. At the same time, these areas rely on diesel pumping which is expensive and environmentally unsustainable. It is estimated that Isiolo, Samburu, and Marsabit collectively have about 29 mini-grids, serving about 2,364 customers (Table 9-4).

Table 9-4: Numbers of mini-grids and customer base

NUMBER OF MINI-GRIDS	CUSTOMERS	DEMAND (MWH/ YEAR)	PEAK DEMAND (KW)	ARRAY CAPACITY (KW)	BATTERY SIZE (KWH)
29	7,364	1,892	740	1,957	5,512

Map 9-6: Solar Energy Potential in Isiolo County



Source: Author, 2025

9.6 INFORMATION AND TECHNOLOGY

Information, Communication and Technology (ICT) is crucial in facilitating economic growth, governance and access to essential services. Communication is the primary way in which people in a community can interact and collaborate. Isiolo County Government aims to bridge the digital divide in the county, by integrating ICT into sectors such as education, governance and commerce.

9.6.1 ICT Infrastructure

There have been efforts to develop ICT infrastructure in Isiolo County, especially in schools and government services. Implementation of digital literacy programs in public primary schools is ongoing to facilitate e-learning. The county government has also strived to digitize its operations to enhance efficiency and transparency in service delivery. In addition to that, there are plans to establish ICT centers in various parts of the county, that can be easily accessed by the residents.

9.6.2 Communication Infrastructure

Isiolo County currently has one post office that is situated in Isiolo Town and a sub-post office situated in Garbatulla. About 8% of the county has mobile network coverage provided by Safaricom, Airtel and Telkom, leaving about 98% of the county without. Local radio stations also play a major role in dispensation of information, especially in remote areas.

High costs for expanding telecommunication infrastructure in the remote areas of the county, limited last-mile connectivity and the digital skill gap among the local people are the major challenges in this sector. Addressing these issues will foster digital inclusion, enhance access to online resources and ultimately boost socio-economic activities in the county.

9.7 EMERGING ISSUES, CHALLENGES AND OPPORTUNITIES

9.7.1 Challenges

i. Poor road infrastructure, especially secondary and tertiary roads that connect remote areas to major highways characterized with limited public transport options.

ii. High fluoride (high salinity) levels of water from boreholes have been known to cause health problems among the people.

iii. Limited infrastructure and resource constraints in appropriate management of solid waste.

9.7.2 Opportunities

i. Construction of centralized Waste Water Treatment facility in the county that with the capacity to handle liquid waste produced.

ii. Establishment of waste collection points in the major urban centers and central waste collection points.

Table 9-5: SWOT Analysis

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
Strategic location with the LAPSSET corridor enhancing connectivity.	Poor road infrastructure, especially in secondary and tertiary roads.	Potential for solar energy projects to provide affordable power.	Climate change leading to unreliable rainfall and reduced water availability.
Isiolo International Airport upgraded to international standards.	Inadequate road surface conditions, with a high percentage of untarmacked roads.	Development of centralized wastewater treatment facilities.	Over-reliance on wood and charcoal for cooking, leading to deforestation and environmental degradation.
Emerging urban settlements driving infrastructural development.	Limited access to clean and safe water, especially in rural areas.	Expansion of transport infrastructure through the LAPSSET project.	Insecurity in rural areas hindering transportation and access to services.
Ongoing water projects aimed at improving supply.	Inconsistent water supply, with some areas relying on unsafe water sources.	Growth of e-learning and digital literacy programs improving access to education.	Over-extraction of groundwater leading to reduced borehole yields.
Availability of solar energy due to the county's sunny climate.	High fluoride and salinity levels in borehole water causing health issues.	Establishment of waste collection points to improve solid waste management.	Risk of contamination of water sources due to poor sanitation practices (open defecation, waste dumping).
ICT infrastructure development in schools and government services.	Limited mobile network coverage (only 8% of the county has coverage).		

Source: Author, 2025

CHAPTER 10

Social Infrastructure

10.1 OVERVIEW

This chapter focuses on the social facilities and amenities within Isiolo County. The amenities include; educational, health, stadia, theatres, social halls, home for the elderly, orphanages, courts and prisons, cemeteries and crematoriums among others.

10.2 EDUCATION

Education is an important pillar for local and regional development, as it influences economic growth, social cohesion among the people, governance and innovation to address challenges faced by the people.

10.2.1 Early Childhood Development (ECD)

ECDE plays an important role in setting a foundation for children's overall development. In Isiolo County, there are 240 ECDE centres (165 public and 75 private). According to the ECDE Department Report of 2022, the eligible population projection for age 4-5 years for ECDE enrolment is 29,607 but only 22,768 are attending school. Out of this population, 15,418 are attending public ECDEs while 7,350 are attending private ones. This disparity is contributed by

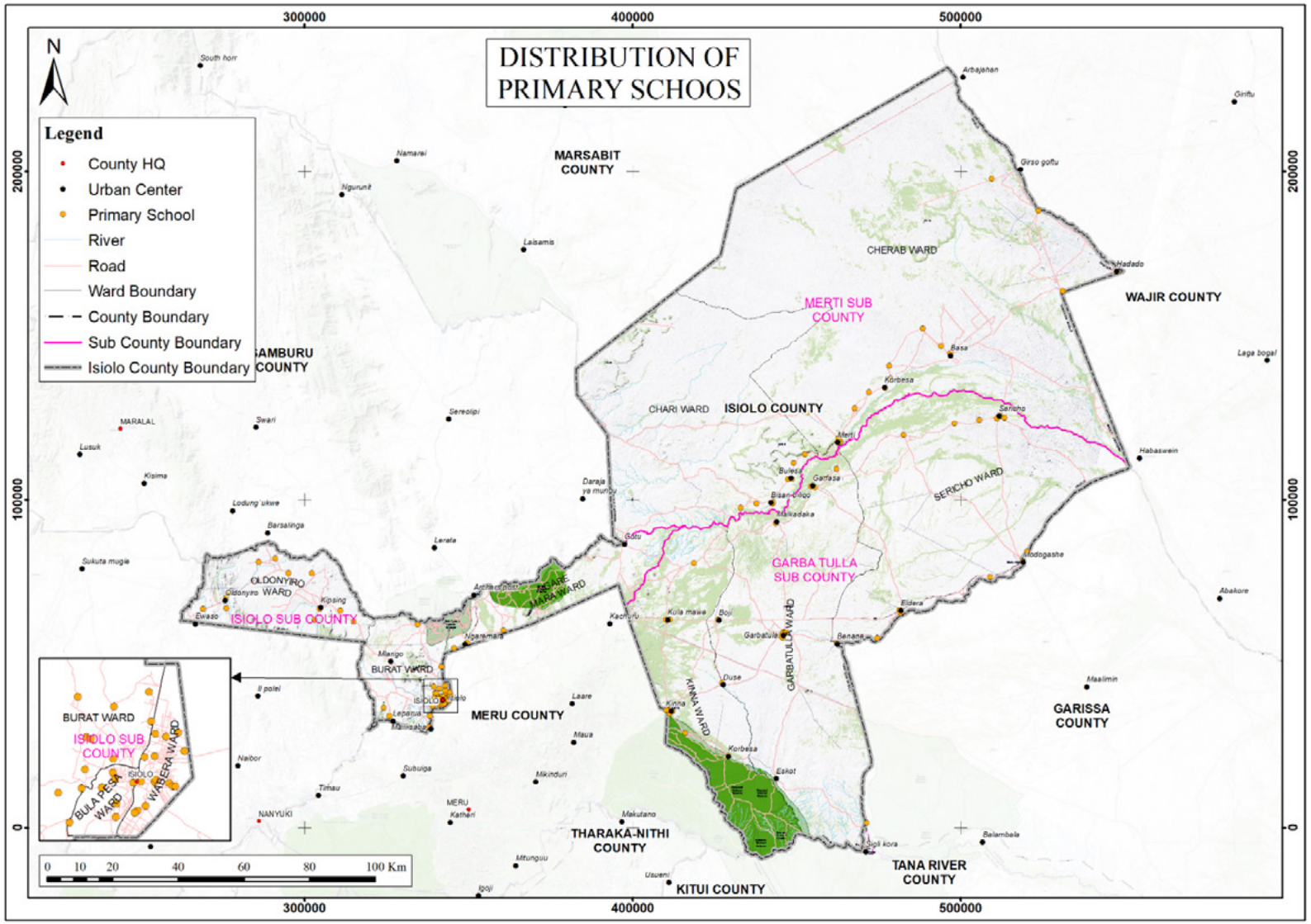
the nomadic way of life of the people, inadequate ECDE infrastructure and pre-school meals, effects of climate change, poverty, poor parental engagement and insecurity. ECDE teachers in the county stand at 566 with 356 teaching in public schools and 210 in private schools. Teacher pupil ratio in public ECDE schools is 1:43, which is higher than the required ratio of 1:25.

10.2.2 Primary Schools

There are 156 primary schools in the county, out of which 116 are public and 40 privates. The number of primary school-going children (Age 6-13) in Isiolo as of 2022 was 70,585. However, only about 70% were attending school.

The remaining percentage was out of school due to the nomadic way of life of the people, early marriages especially among the girls, insecurity, drug abuse, climate related issues such as drought and floods, inadequate school feeding programs and religious radicalization. There are 1,036 primary school teachers which translates to a teacher: pupil ratio of 1:48. This is in contrast with the required teacher: pupil ratio of 1:35.

Map 10-1: Distribution of Primary Schools in Isiolo County



Source: Author, 2025

Map 10-1 shows that the distribution of primary schools across the county is uneven, with most schools being concentrated in certain areas.

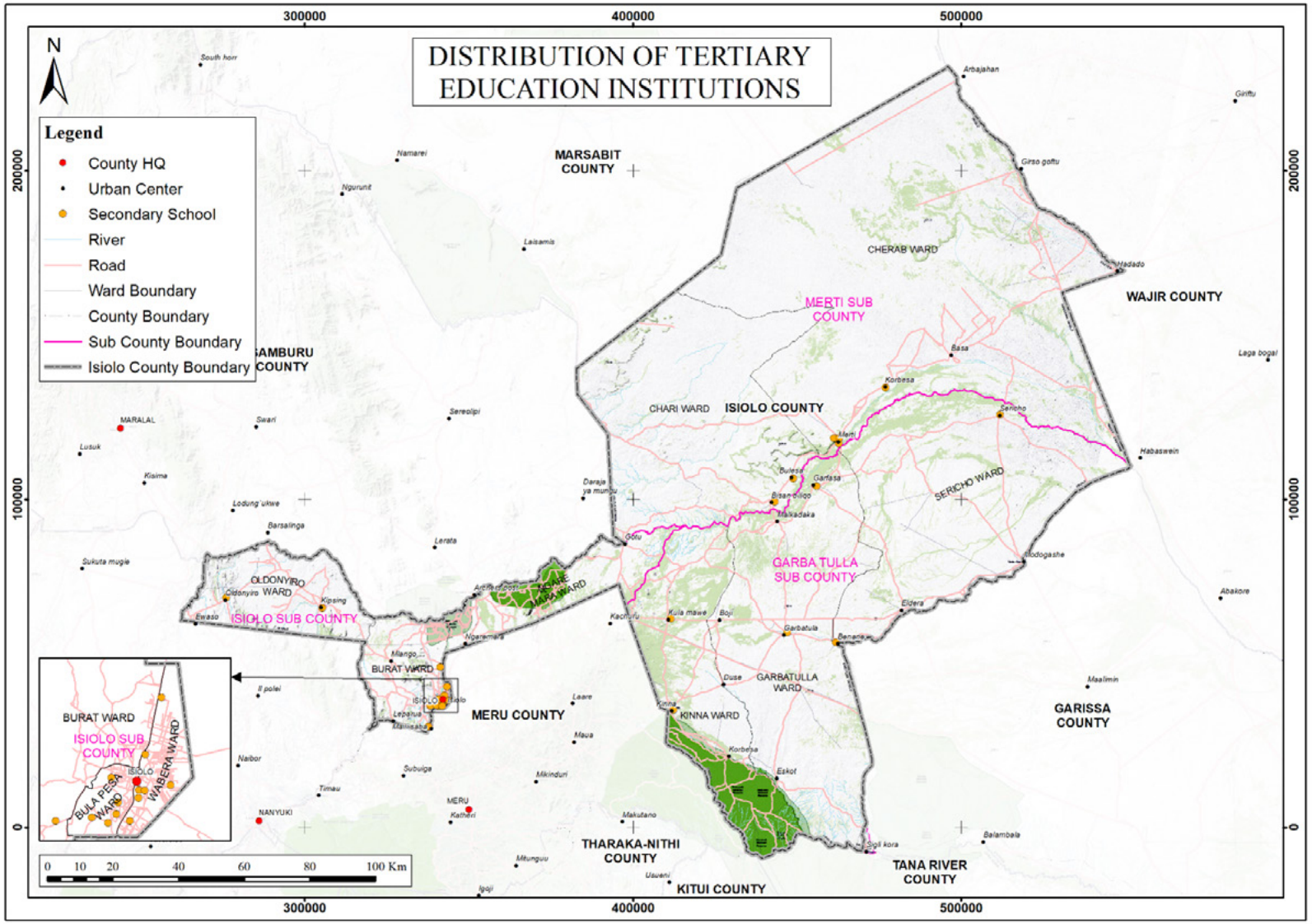
10.2.3 Secondary Schools

Isiolo County has a total of 38 secondary schools out of which 32 are public and 6 private. There are only four public boarding secondary schools in the county. The teacher population in secondary schools stands at 405 (262 males, 143 female) with a teacher/student ratio of 1:21 which is better than the required teacher-student ratio of 1:30. There's a student enrolment of 17% in the county, which is quite low. This is the case due to inadequate schools and also because majority of the parents prefer schools from other counties because they post better results. A great number of students have to walk/travel for 5km and more to reach the nearest secondary school.

Map 10-2 shows the distribution of secondary schools in the county. The number of secondary schools in the county is hardly adequate and their distribution has left big parts of the county unserved.

Challenges such as poor facilities, insecurity, poor roads, floods and long travel distances have adversely affected secondary education in Isiolo County. Again, the nomadic way of life of the people, early marriages especially among the girls, drug abuse, inadequate school feeding programs and religious radicalization has affected school attendance.

Map 10-2: Distribution of Secondary Schools



Source: Author, 2025

10.2.4 Technical/Vocational Training Institutions

The County has 5 vocational training centres, 4 public and 1 private. Vocational enrolments are still low. For instance, enrolment at County technical facilities was 352 students as of 2022. There are only 6 instructors resulting to an instructor: student ratio of 1:59. There is need for the establishment and operationalization of more vocational training centres in the County.

10.2.4.1 Isiolo Youth Innovation Centre

The center was established through a partnership between the Isiolo County government, Kenya School of Government, United Nations Development Programme (UNDP), Department for International Development (DFID) and the Norwegian Embassy in 2020. Huawei Kenya equipped the center with high internet connectivity. Young people interested in drawing income online receive training on mobile and computer applications, film making among other fields. The Kenya School of Government (KSG) offers trainings at Isiolo Youth Innovation Centre (IYIC).

The Joint UN Devolution Programme (Consolidated Gains and Deepening Devolution in Kenya project), which is funded by the Governments of Sweden, Finland and Italy. Norway funds also supported the activities in IYIC through Strengthening Devolved Governance in Kenya project. To establish the Youth Innovation Centre, the County Government provided space which was refurbished by KSG while UNDP provided the ICT equipment and furniture and the Centre's branding. The Centre was formally launched in October 2020. The center activities include Computer Literacy Courses, Film production classes, Certified Hydroponic Farming Training and Computer Networking and Security Training.

10.3 HEALTH

The health sector in Isiolo services play a critical role in enhancing human capital, population stability, social equity, economic growth and resilience of a community to health crises. Well-developed health systems should have adequate facilities, personnel, equipment and drugs to handle a wide array of health challenges. In Isiolo County, the health sector has three key strategies that include the elimination of communicable diseases, the provision of essential healthcare and the provision of adequate and appropriate health infrastructure.

The table below shows the number of health facilities in operation in the county

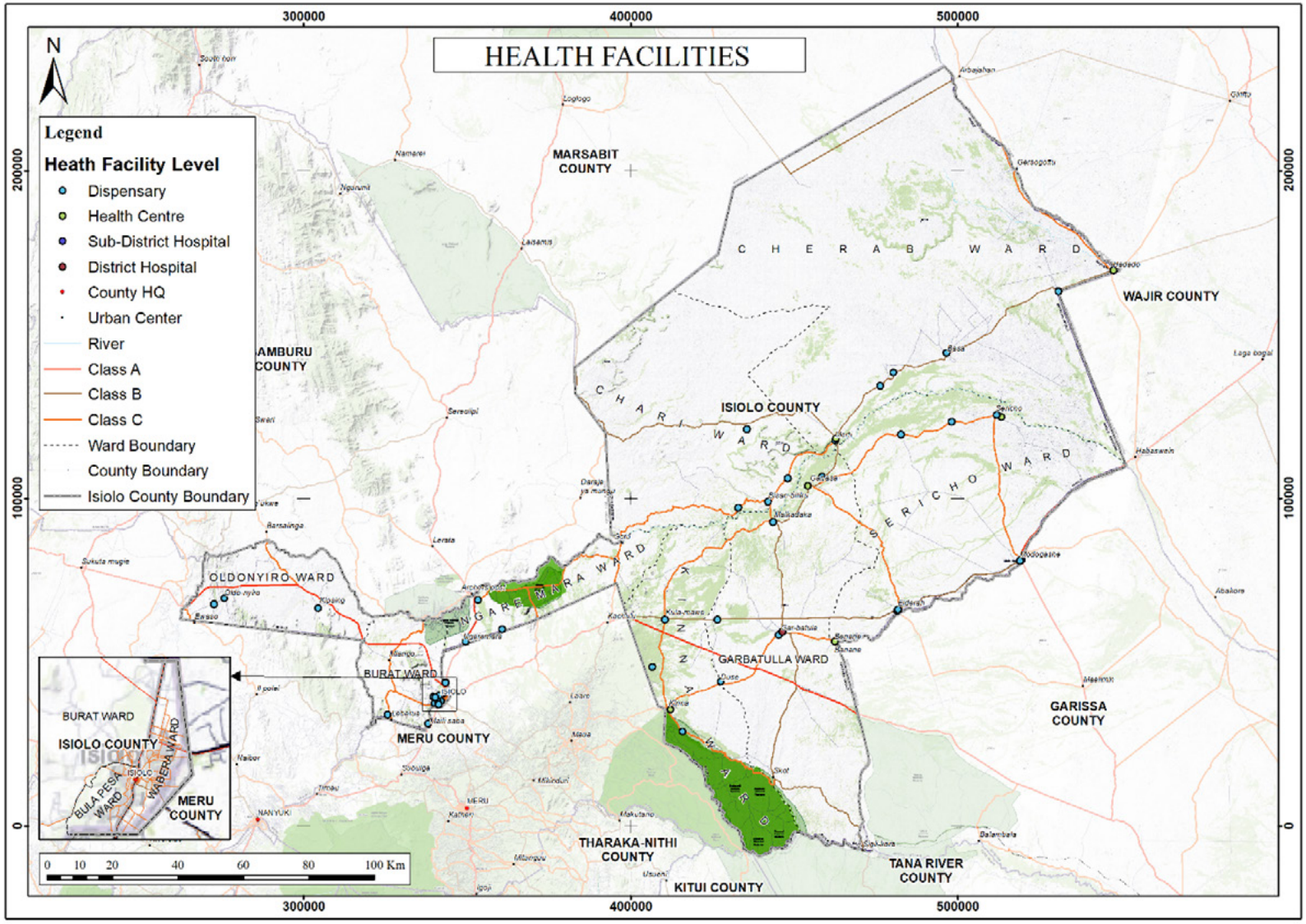
Table 10-1: Health Facilities in Isiolo County

HEALTH FACILITIES	NO. OF PUBLIC FACILITIES	NO. OF PRIVATE FACILITIES
Level 5/6	1	0
Level 4	2	2
Level 3	5	7
Level 2	40	19

Source: Author, 2025

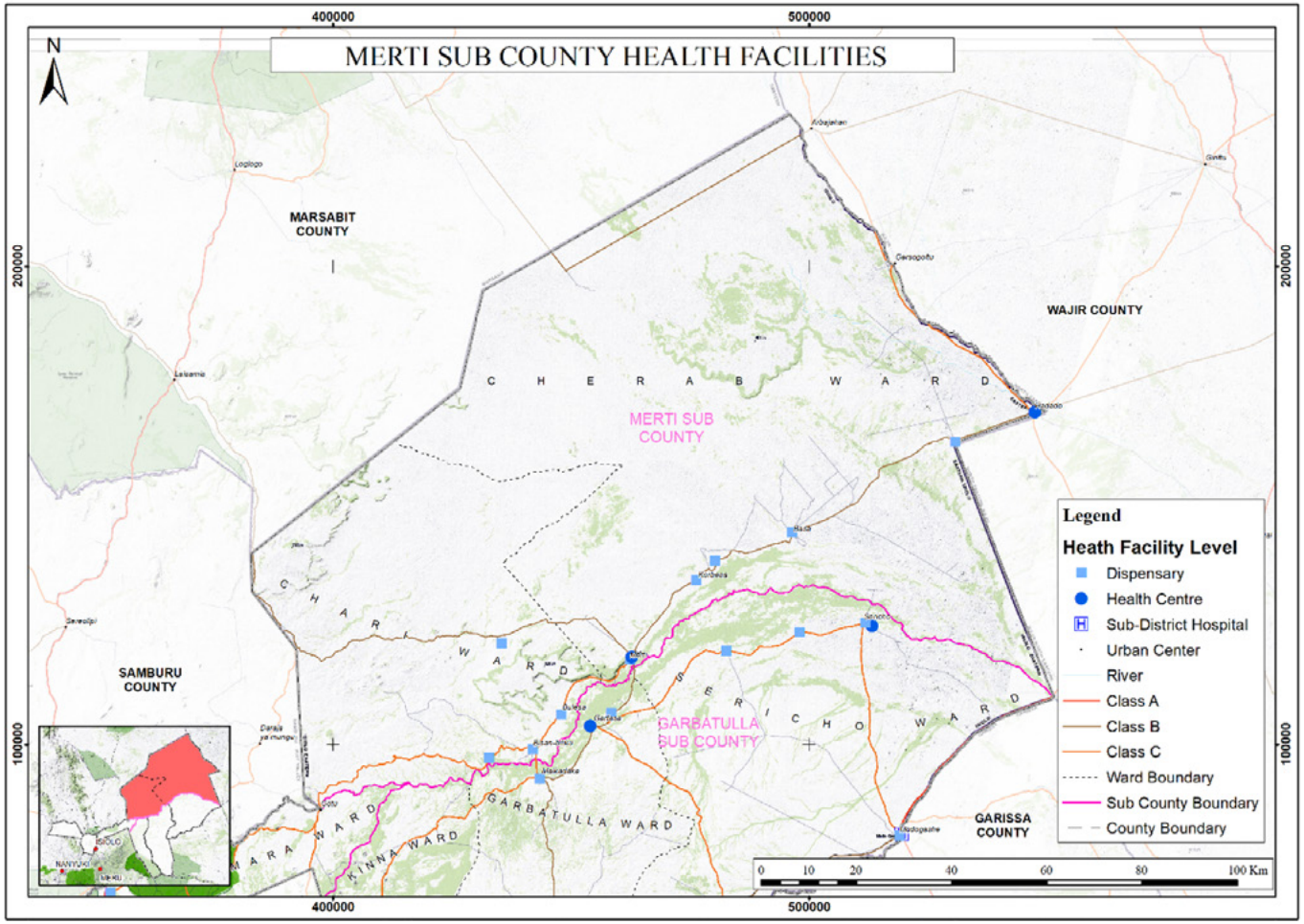
Map 10-3 displays the distribution of health facilities across the county. As shown, the health facilities are concentrated in a few urban centers, while rural and remote areas remain underserved.

Map 10-3: Health Facilities Distribution in Isiolo County



Source: Author, 2025

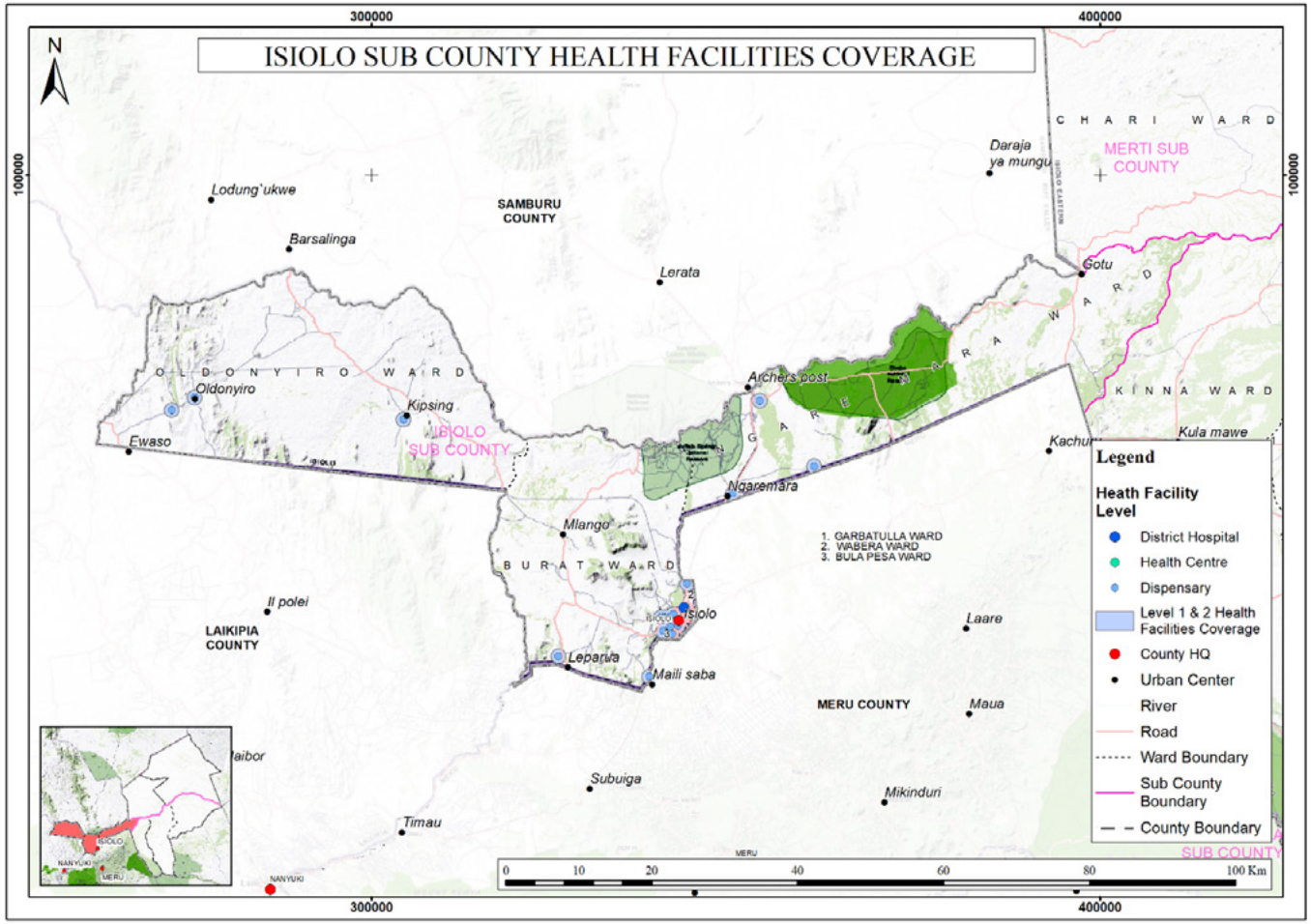
Map 10-4: Health Facilities Distribution in Merti Sub-County



Source: Author, 2025

In Merti Sub- County, health facilities are located along the roads, serving mostly Sericho and Garbatulla wards as shown in Map 10-4. Residents from Cherab have to travel for long distances reach the nearest health facility.

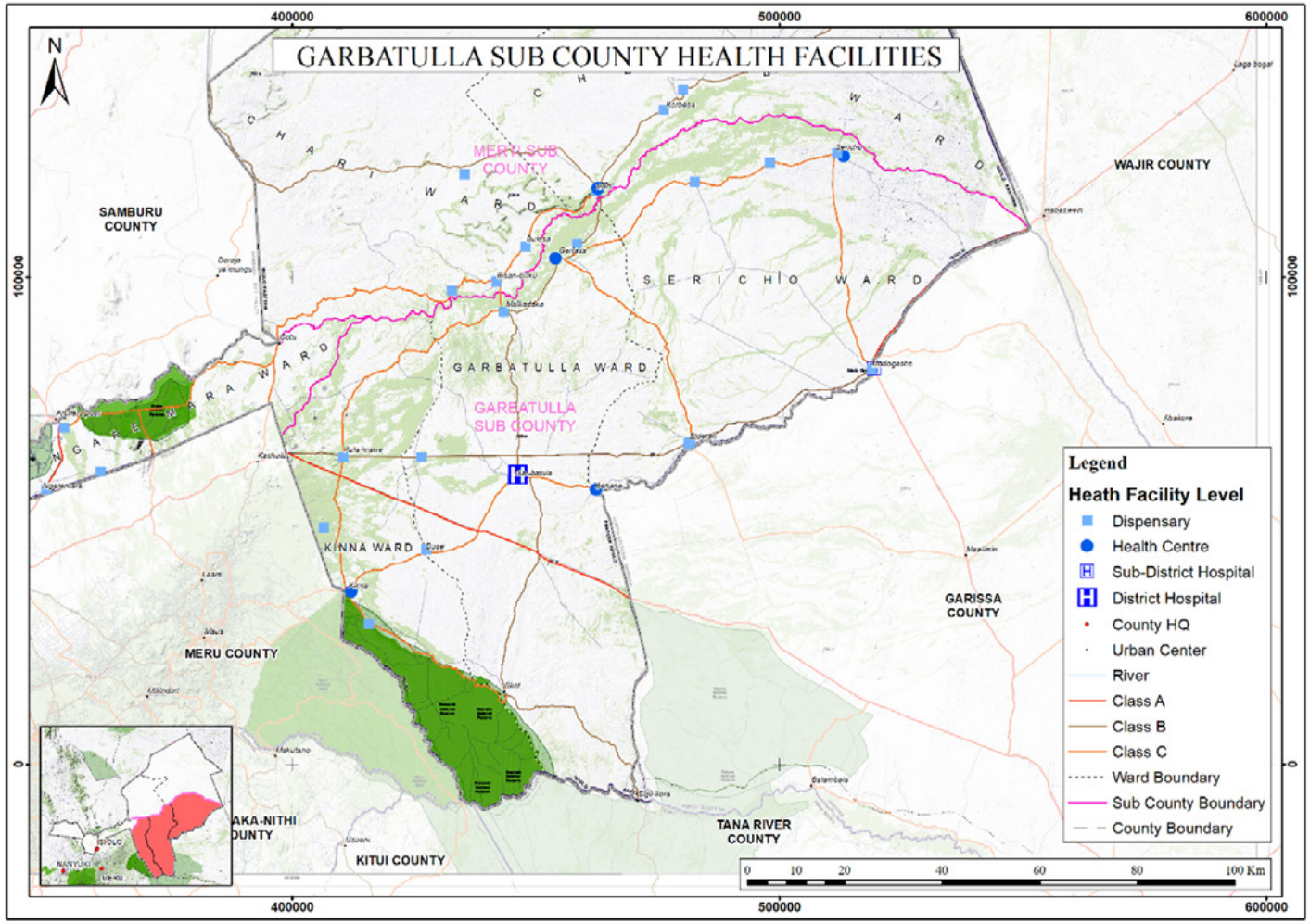
Map 10-5: Health Facilities Distribution in Isiolo Sub-County



Source: Author, 2025

For Isiolo Sub-County, the health facilities are more spread out compared to Merti Sub- County, especially outside isiolo town. This requires the residents to travel long distances to access health services as depicted in Map 10-5 above.

Map 10-6: Health Facilities Distribution in Garbatulla Sub-County



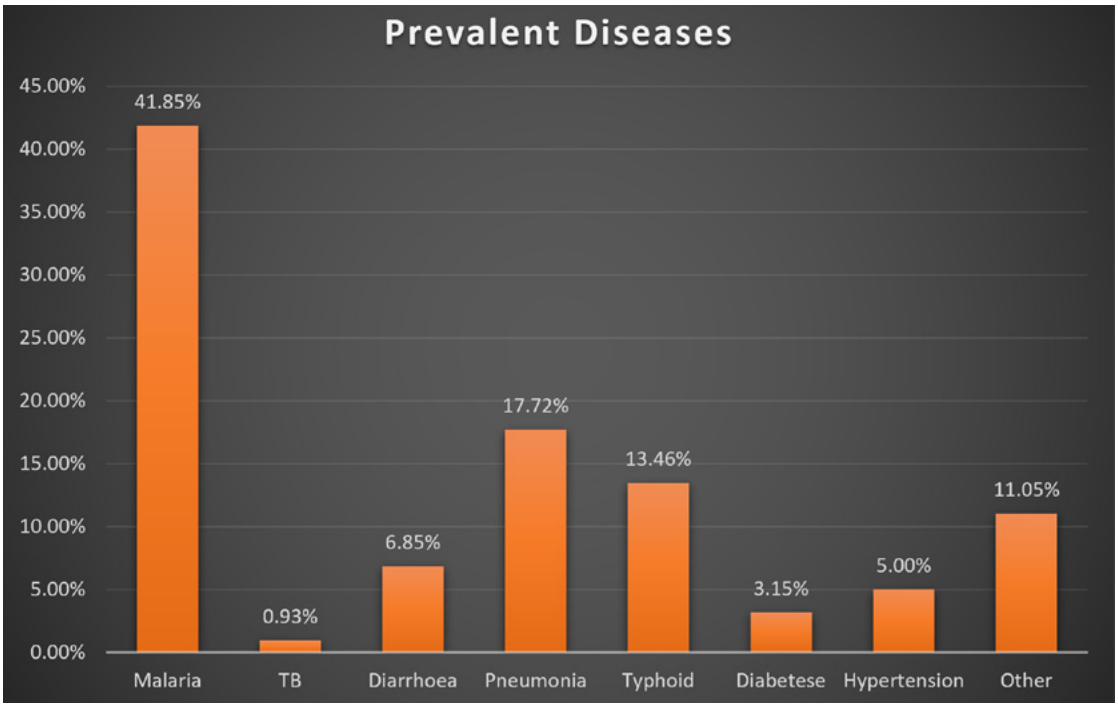
Source: Author, 2025

Same as the other sub-counties, health facilities in Garbatulla are widely apart as shown in Map 10-6. However, there are more facilities in this sub-county.

The concentration of health facilities in a few urban centers has left the rural and remote areas underserved. As a result, patients travel for long distances and this is especially problematic during emergencies, maternal care and disease outbreaks. Overcrowding in the few operating hospitals leads to long waiting times and ultimately overwhelms the hospital facilities and staff.

According to Isiolo's CIDP 2018-2022, the doctor: population ratio for the county is about 1: 5000 and the nurse: population ratio is 1: 1500. The five most common diseases in the general population are Malaria, Pneumonia, Tuberculosis, Typhoid, Diabetes and Hypertension. Figure 10-1 shows the prevalence of diseases as reported during the field survey. Malaria is the most common disease among people. This is because flooding and inadequate stormwater management have created breeding grounds for mosquitoes. In addition to that, traditional housing in rural areas lacks proper ventilation and mosquito-proofing. The high number of people suffering from malaria has been seen to burden the health facilities, which means that the patients are subjected to substandard treatment. Other diseases include upper respiratory problems such as the flu, and minor accidents.

Figure 10-1: Prevalent Diseases in Isiolo County



Source: Field Survey, 2024

The majority of the primary healthcare facilities in the county lack adequate personnel and equipment. About 50% of the population in the county live in rural areas where health facilities are inadequate, sparsely distributed and understaffed. Challenges also arise from the lack of adequate financing, which has greatly affected the quality of health services, especially in public hospitals. This is evidenced by the lack of adequate drugs and equipment, hospital infrastructure such as wards and utility vehicles such as ambulances. Another challenge is that there is limited use of IT and technology in the health facilities which again affects service delivery.

A lot is still done manually, such as patient records, billing services and even patient referrals. In terms of accessibility, most residents are unable to reach the health facilities due to the poor condition of roads, especially during the rainy seasons when it's flooded. Insecurity concerns in some parts of the county have also been a major hindrance in accessing health facilities, especially at night. Lastly, social-cultural and religious factors have been known to discourage the uptake of essential services, especially among women, denying them maternal and child health care services.

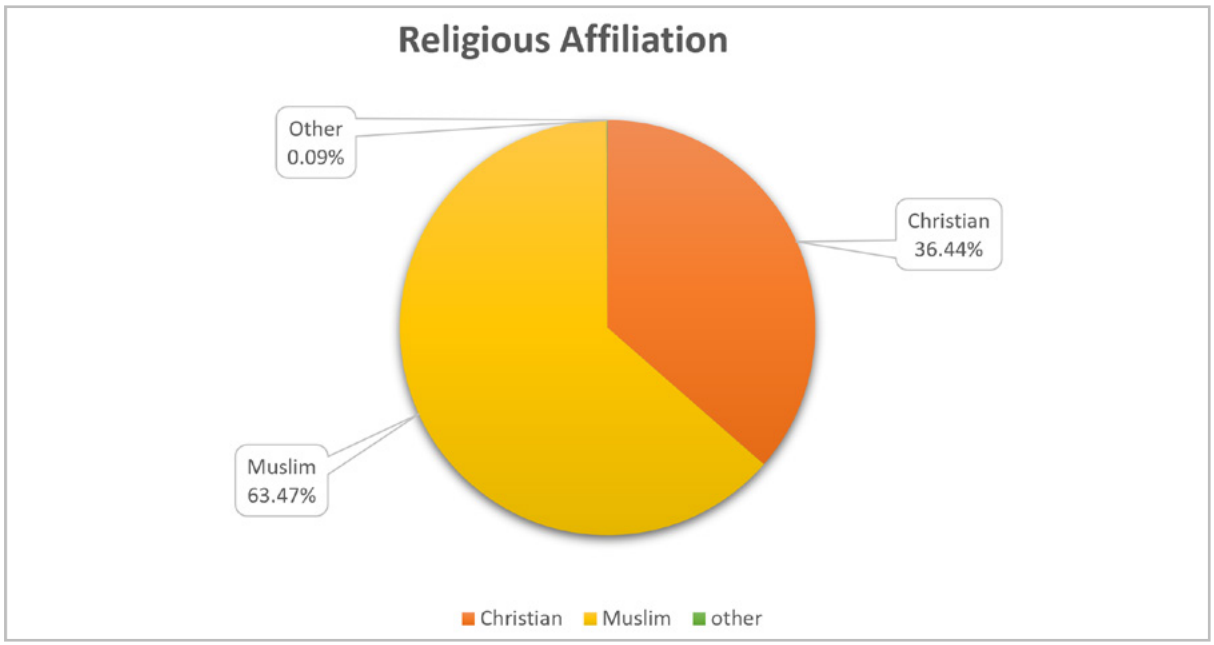
There is a need to enhance the capacity of these health facilities by fair allocation of funds, provision of better equipment, training of health workers and incorporation if IT systems into the hospital operations. There is also a need for infrastructure development, such as improved housing, proper waste management, construction and upgrading of roads and hospitals. This will allow the residents to reach the hospitals, especially during emergencies, and curb the security concerns.

10.4 CULTURAL AND RELIGIOUS FACILITIES

Residents in Isiolo County are affiliated with a number of faiths which include Islam, Christianity, Traditionalism and Hinduism and Atheism. According to the Kenya Population and Housing Census, the predominant faiths are Islam (62.12%) and Christianity (23%). The same resulted from the field survey as shown in Figure 10-2, with Muslims being the majority, followed by Christians. Others reported that they were pagans. In terms of ward distribution, Muslims were

predominant in Chari, Cherab, Garbatulla, Kinna and Sericho wards, while Christians were predominant in Bula Pesa, Burat, Ngare Mara, Oldonyiro and Wabera wards.

Figure 10-2: Religious Affiliations in Isiolo County



Source: Field Survey, 2024

The faith-based organizations and facilities not only provide places of worship and community gatherings, but also places where residents can obtain education, health and other services.

10.5 LAW AND ORDER FACILITIES

Isiolo County faces significant security challenges, including inter-ethnic conflicts, land disputes, and armed gang activities. The county has a limited distribution of police stations and posts, mostly concentrated in urban centers. The key police stations are in Isiolo Town, Garbatulla, Merti, and several smaller towns. Additionally, there are security infrastructure gaps, especially in rural areas, which leaves the residents vulnerable to security threats. The major crimes in the county include burglary, stock theft, robbery, petty theft, and armed gangs.

Key Facilities:

i. Police Stations: Isiolo, Garbatulla, Merti

ii. Police Posts: Kulamawe, Kambi ya Juu, Ngaremara, Oldonyiro, Kipsing, Modogashe, Sericho, Barambate, Boji, Merti Headquarters

iii. Other Law and Order Facilities: One magistrate court in Isiolo Central, Kadhi courts in Merti, Garbatulla, and Isiolo Central, one prison and probation department in Isiolo Town, and a single prosecution office in Isiolo Town.

Needs:

i. There is a need to improve the management of land disputes, which can be resolved through transparent land adjudication processes.

ii. Adequate planning and resource allocation for police stations, courts, and other security infrastructure, especially in rural and conflict-prone areas, would enhance the security situation in the county.

iii. The establishment of additional police posts, better infrastructure such as streetlights, and improved roads in rural areas would facilitate the rapid deployment of security personnel during emergencies.

10.6 OTHER FACILITIES

Isiolo County requires significant investments in infrastructure development to improve access to social services. Facilities such as hospitals, schools, social halls, and public toilets are either lacking or need upgrading to accommodate the growing population.

10.6.1 SWOT Analysis

Table 10-2: SWOT Analysis

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
· Availability of police stations and posts in key urban areas. · Ongoing plans to upgrade health and social facilities. · Presence of community policing through peace committees. · Potential for tourism to boost economic development. · Government support for security and infrastructure improvements.	· Inadequate police infrastructure in rural and conflict-prone areas. · Lack of essential social amenities such as homes for the elderly, orphanages, and social halls. · Limited capacity in existing facilities, such as hospitals and courts. · High levels of insecurity due to banditry, cattle rustling, and armed gangs. · Poor maintenance and underfunding of existing social infrastructure.	· Construction of new social infrastructure (hospitals, schools, etc.). · Upgrading of existing health facilities (Merti and Garbatulla). · Establishment of tourist attraction sites to boost tourism. · Expansion of sewerage and drainage systems in key areas. · Construction of social halls and polytechnics in key wards.	· Rising insecurity due to increased small arms possession. · Displacement and loss of lives due to inter-ethnic conflicts and insecurity. · Climate-related disasters like drought and floods causing displacement and loss of livelihoods. · Environmental degradation due to uncontrolled development and poor waste management. · Limited access to social infrastructure due to long distances and insufficient resources.

Source: Author, 2025

CHAPTER 11

Economic Base

11.1 OVERVIEW

This section provides an overview of the current economic size of Isiolo County. The estimates are critical when assessing the county's revenue potential, attracting investment in sectors with a considerable competitive advantage, and reviewing economic progress over time. The analysis also forms the basis upon which recommendations for economic improvements are based.

11.2 COUNTY GDP (SECTOR CONTRIBUTIONS)

Isiolo County's gross county product (GCP) has grown significantly over the last few years. In 2023, the GCP was reported at KES 37.64 billion representing only 0.3% of national GDP. Although the county is the least GDP contributor among Kenyan counties, Isiolo has shown significant growth over the last five years. Between 2019 and 2023, the county's GCP grew from KES 25.05 billion to KES 37.640, representing a total increase of 50.25%. During that period, the average compounded annual growth rate was 10.71% (See Table 11-1).

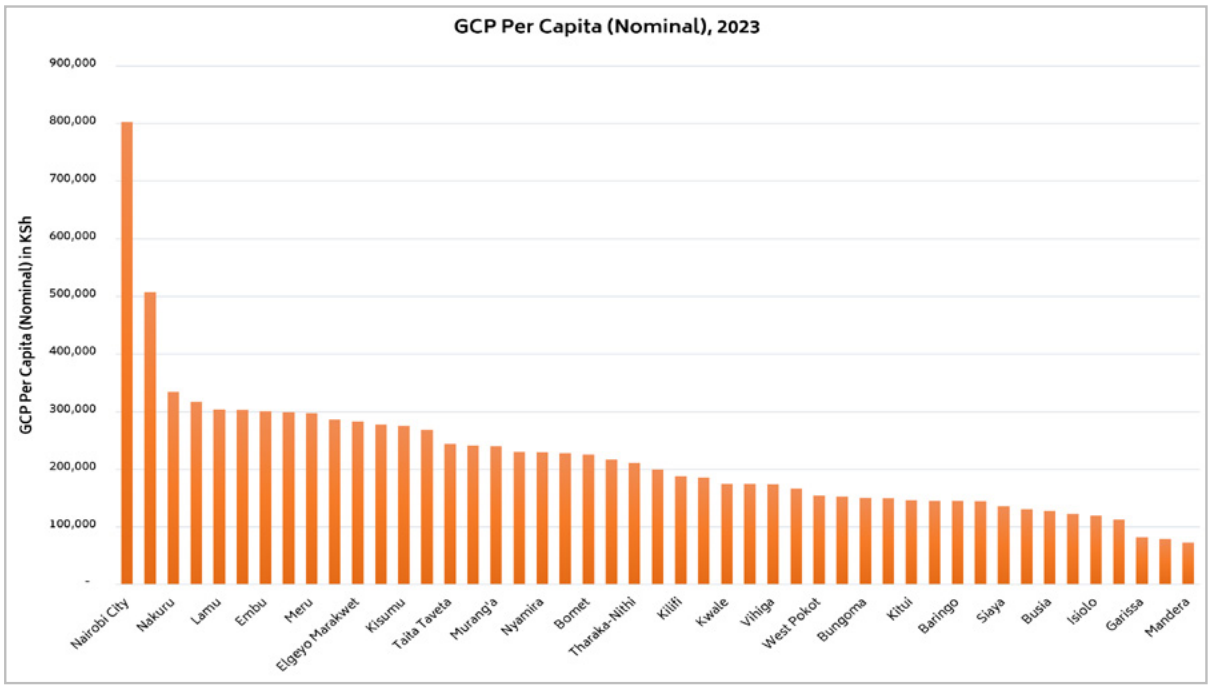
Table 11-1: Isiolo County GCP

ISIOLO COUNTY GCP (2019-2023)						
	2019	2020	2021	2022	2023	Average
CGP (KES million)	25,051	26,555	29,600	32,526	37,640	30,274.4
Contribution to National GDP	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
Year-on-Year Growth		6.00%	11.47%	9.89%	15.72%	10.71%

Source: KNBS

Although Isiolo County is ranked last in its contribution to the GCP, it outperforms several ASAL counties in GCP per capita. GCP per capita expresses the GCP as a ratio of the population. The economic indicator is considered very critical in assessing development because it measures the average income generated by residents in a county. The measure is used alongside poverty and inequality rates to gauge the economic wellbeing of a region and its residents. In 2023, Isiolo County had a GCP per capita of KES 119,139. It was ranked 43rd among counties, ahead of Samburu, Garissa, Wajir, and Mandera. The GCP per capita was significantly lower than the national average of KES 293,229 (2024 GCP). Figure 11-1 shows how different counties performed that year.

Figure 11-1: GCP Per Capita, 2023



Source: KNBS

Isiolo County's GCP is a product of multiple economic activities, with varying contributions. Table 11-2 compares the different contributions made by each economic activity in the last three years, and the average over that period. Each sector and economic activity showed positive growth during this period, explaining the positive growth in total GDP over the period.

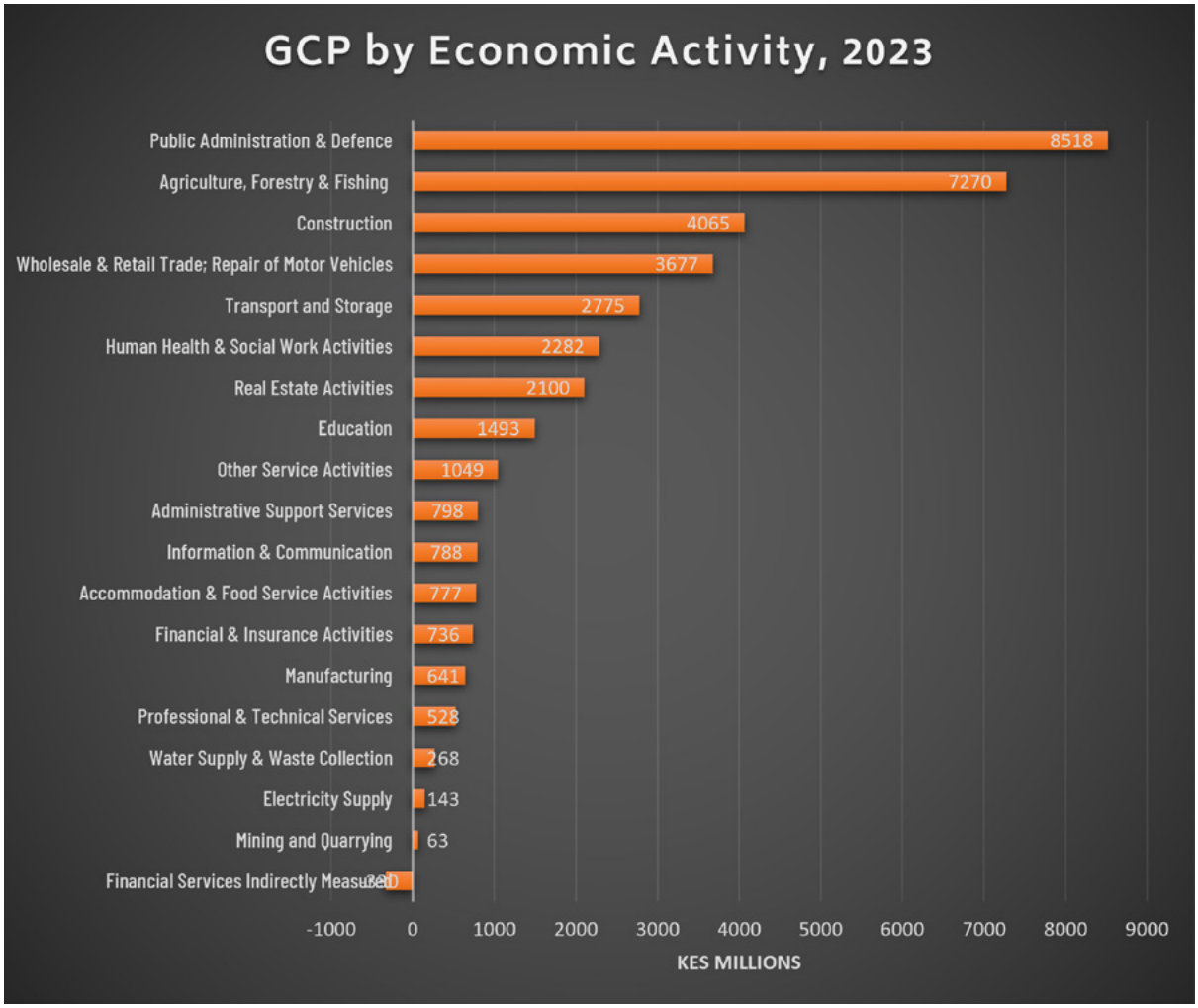
Table 11-2: GCP by Economic Activity at Current Prices, 2021 – 2023 (KES Million)

ECONOMIC ACTIVITY	YEAR			AVERAGE
	2021	2022	2023	
Agriculture, Forestry & Fishing	4,543	4,567	7,270	5,460
Mining and Quarrying	56	72	63	64
Manufacturing	532	582	641	585
Electricity Supply	266	128	143	179
Water Supply & Waste Collection	275	267	268	270
Construction	3,437	3,862	4,065	3,788
Wholesale & Retail Trade; Repair of Motor Vehicles	2,941	3,314	3,677	3,311
Transport and Storage	1,840	2,328	2,775	2,314
Accommodation & Food Service Activities	544	594	777	638
Information & Communication	674	738	788	733
Financial & Insurance Activities	524	620	736	627
Real Estate Activities	1,795	1,929	2,100	1,941
Professional & Technical Services	459	483	528	490
Administrative Support Services	545	674	798	672
Public Administration & Defense	7,892	8,224	8,518	8,211
Education	1,201	1,404	1,493	1,366
Human Health & Social Work Activities	1,442	2,035	2,282	1,920
Other Service Activities	882	969	1,049	967
Financial Services Indirectly Measured	(249)	(265)	(330)	(281)
Total GCP	**29,599**	**32,526**	**37,640**	**33,255**

Source: Author

In 2023, three economic activities accounted for over half (52.74%) of the total GCP. They included public administration and defense (22.63%; agriculture, forestry and fishing (19.31%); and construction (10.8%). Other economic activities that were major contributors included retail and wholesale trade (9.77%); transport and storage (7.37%); human health and social work services (6.06%); and real estate activities (5.58%). Other economic activities individually accounted for less than 5% of the total GCP. Figure 11-2 illustrates the proportionate contribution of different economic activities.

Figure 11-2: GCP by Economic Activity, 2023



Source: Author

11.2.1.1 Major Drivers of Economy in The County

The economy of Isiolo County is pegged on multiple economic activities that employ and provide livelihood to residents and revenue for the government. The three main economic drivers in the county are agriculture, tourism, and commerce. Agriculture is the most influential economic activity within Isiolo, accounting for approximately 20% of the GCP and 80% of employment.

Isiolo is classified as an ASAL region due to the low annual rainfall it receives. Livestock production dominates the agricultural sector within the county. On the other hand, crop production only represents a small proportion of farming, with only 20% of the county's land being arable. Crop production is primarily at the subsistence level and irrigation-fed.

Tourism and hospitality is also a major industry driving economic development in Isiolo County. The county is home to three national game reserves: Buffalo Springs, Shaba, and Bisanadi game reserves.

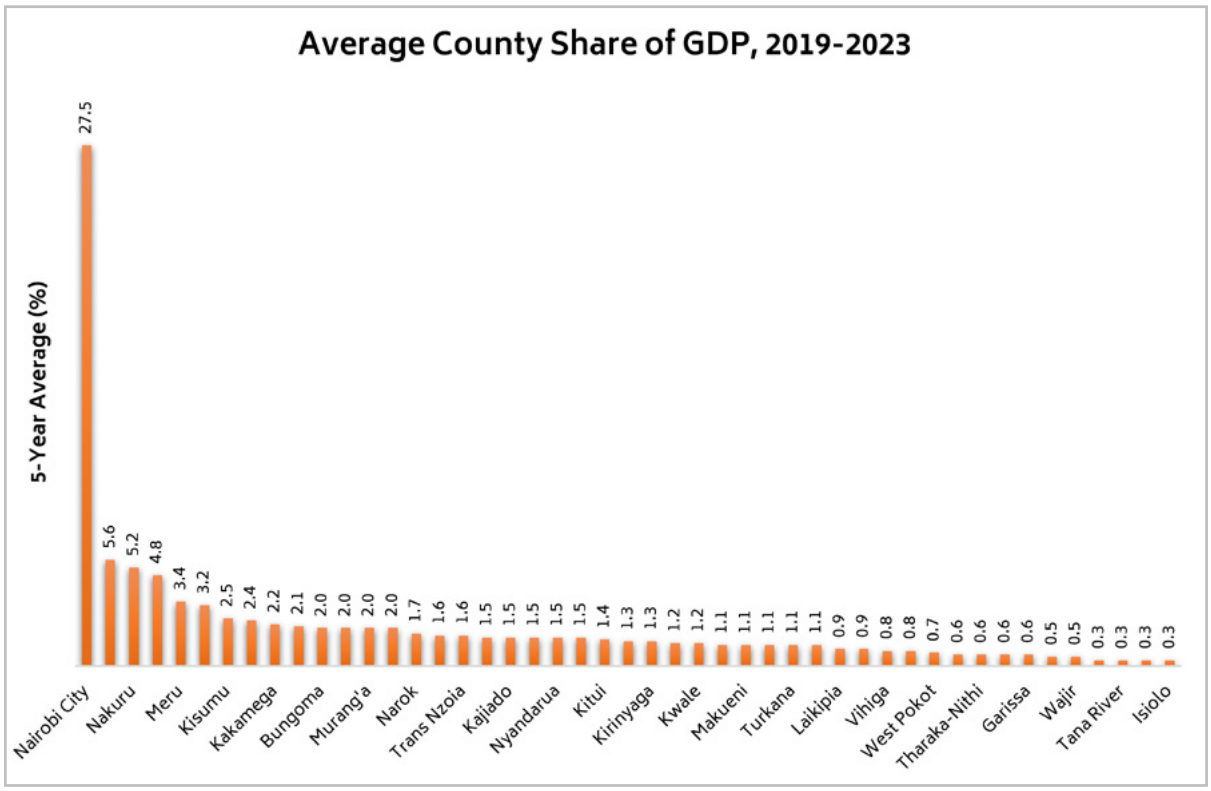
The third major economic activity within the county is commerce. In particular, micro, small and medium enterprises are major contributors of economic output, value addition, and employment within the county. Most registered enterprises are classified as MSMEs. Apart from creating employment, especially in urban areas, SMEs are also a major contributor to county revenues through taxes, fees, and levies.

11.2.2 Contribution of The County to The National GDP

According to the Kenyan Bureau of Statistics, there are significant disparities in the economic might of counties across Kenya. Counties with significant urbanization and economic development, such as Nairobi, Kiambu, Nakuru, and Mombasa account for the lion share of the country's GDP. On the contrary, most rural counties, especially in ASAL regions, contribute significantly less to the national GDP. Isiolo County falls under the ASAL category and among the least contributors to the national GDP.

During the previously five recorded years (2019-2023), Isiolo County was the least contributor to the average national GDP, accounting for only 0.3% of the total. The poor performance is attributed to multiple factors, including a small population under employment (48,293 persons; third lowest in the country), high poverty headcount rate (55.6% in 2022; 10th highest in the country), minimal urbanization, and low agricultural production.

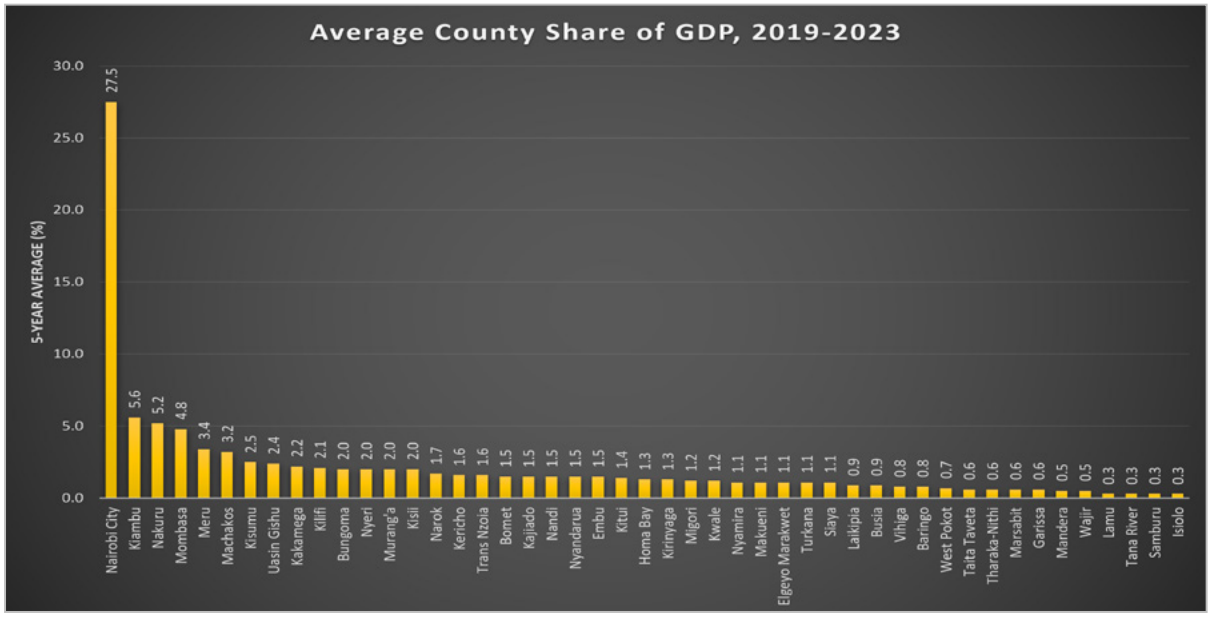
Figure 11-3: Average County share of national GDP (2019-2023)



Source: KNBS

Isiolo County's poor subpar performance as a contributor to the national GDP is largely attributed to the low gross value addition (GVA) in all the main economic sectors: agriculture, forestry and fishing; manufacturing; secondary sector activities; and services. GVA is a productivity indicator measuring the different between outputs and inputs. Between 2019 and 2023, agriculture accounted for 21.6% of the national GDP. Counties that had environments favoring agricultural production were generally ranked highly than those relying on alternative sectors. Unfortunately, Isiolo County was ranked second-last in GVA in the sector, accounting for only 0.2% of the national share (See Figure 11-4).

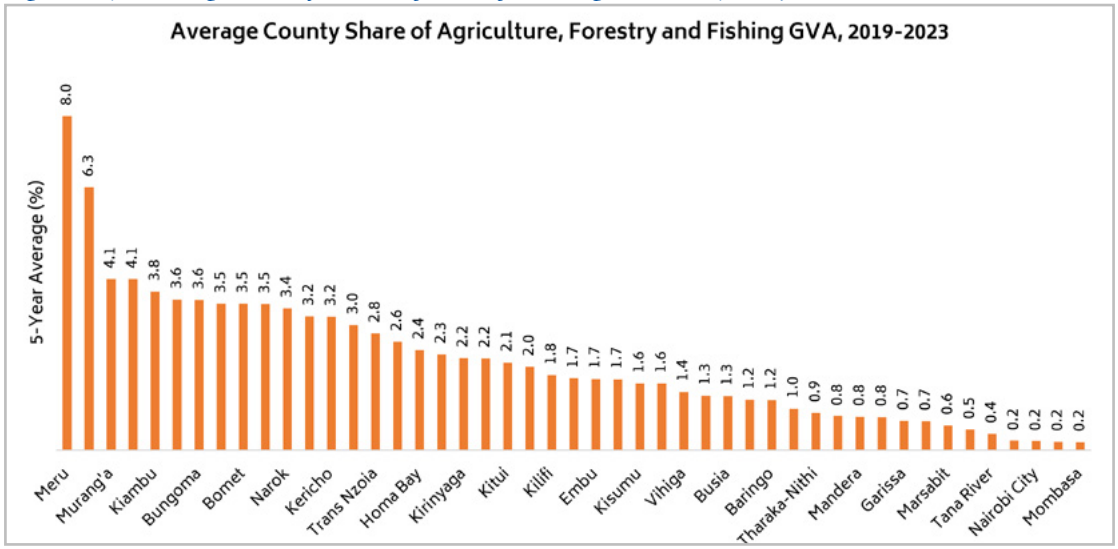
Figure 11-4: Average County Share of Agriculture, Forestry, and Fishing GVA (2019-2022)



Source: KNBS

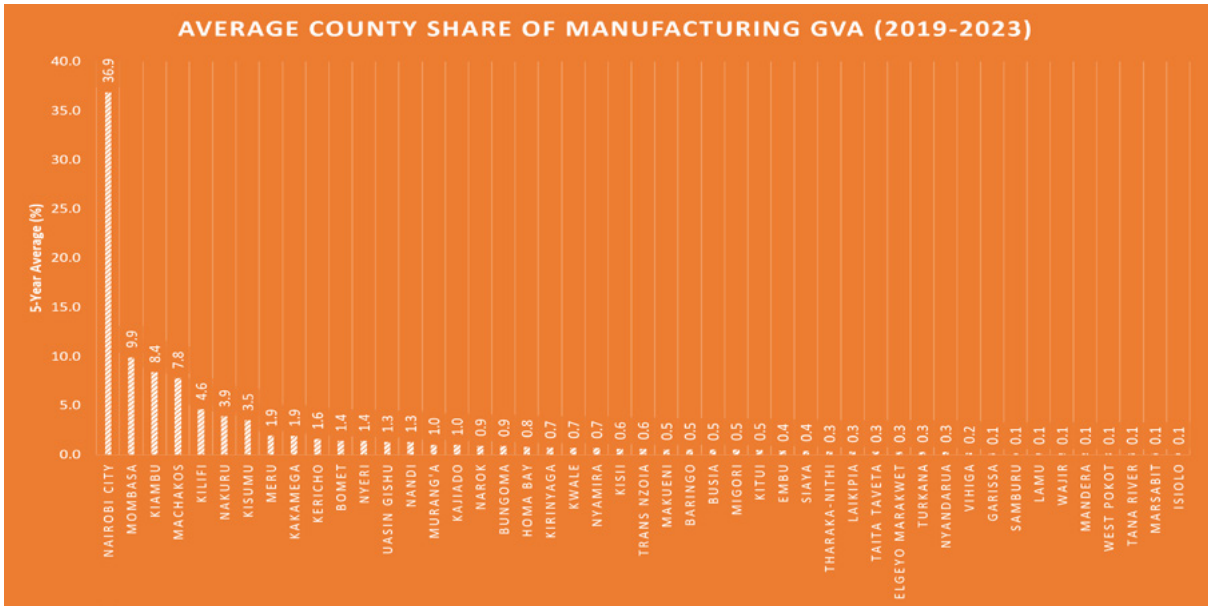
Isiolo County's low economic contribution recorded in agriculture, forestry and fishing over the last five years is duplicated in the manufacturing sector. Between 2019 and 2023, Isiolo County was the least performing in the manufacturing sector, accounting for only 0.1% of GVA in the sector (See Figure 11-5). The measure indicates the poor performance of the county in both formal and informal manufacturing activities. Similarly, the county only contributed to 0.3% of GVA in the service sector (See Figure 11-6).

Figure 11-5: Average County Share of Manufacturing GVA (2019-2023)



Source: KNBS

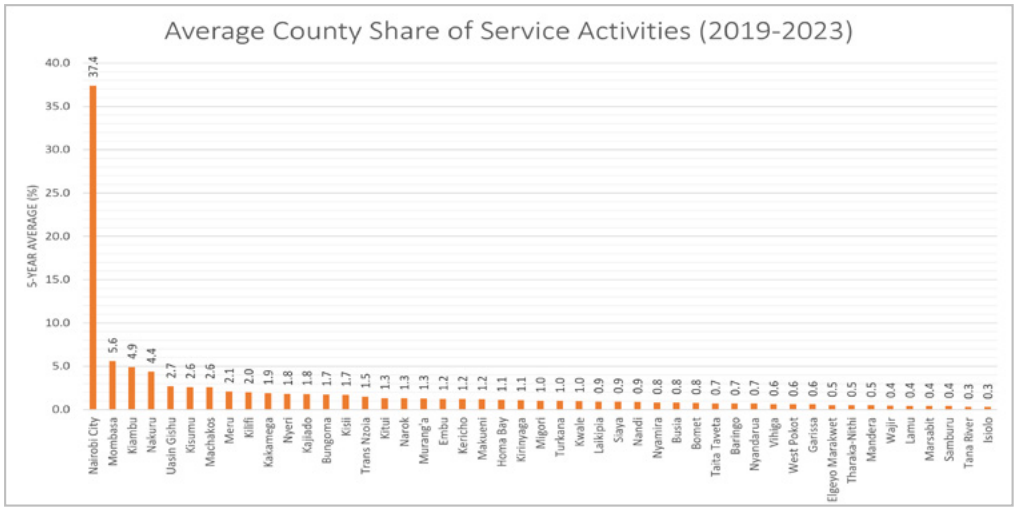
Figure 11-6: Average County Share of Service Activities (2019-2023)



Source: KNBS

Isiolo County performed slightly better in secondary sector economic activities, although it was still under the top 10 least performing counties. The sector includes key support activities, including mining and quarrying, electricity and gas generation, water and waste management, and construction. Between 2019 and 2023, Isiolo contributed 0.3% in secondary sector activities, ranking 40th among counties countrywide (See Figure 11-7).

Figure 11-7: Average County Share of Secondary Sector Activities (2019-2023)



Source: KNBS

11.3 TOURISM AND HOSPITALITY

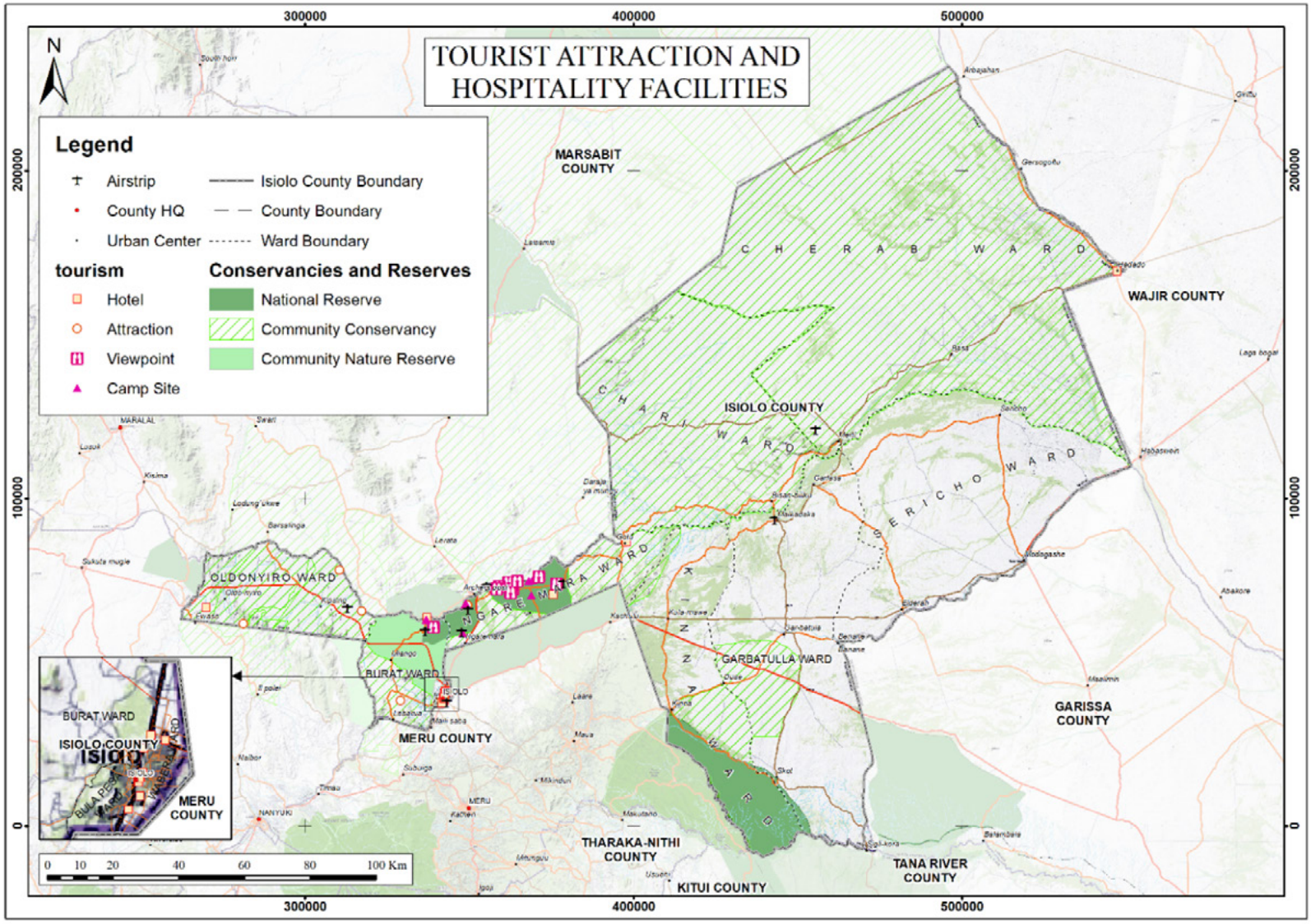
Isiolo County is located on a tourism belt shared by three counties: Isiolo, Samburu, and Meru Counties. The County has three national game reserves: Shaba, Buffalo Springs and Bisanadi. The county also borders Samburu and Meru national parks to complete northern tourist circuit. The national reserves are rich in different plant species and wildlife, making them ideal for game drives.

In particular, national reserves in Isiolo County are home to four of Kenya's big five – lions, elephants, leopards, and buffalos – and the "special five" – reticulated giraffe, Biesa oryx, gerunuk, Somali ostrich, and the Grevy zebra. Other wildlife species found in the reserves include hippopotamuses, the African wild dog, the lesser kudu, monkeys, antelopes, impalas, and over 300 bird species.

Apart from the game reserves, Isiolo County has 12 community conservancies, where the local communities coexist with nature. These conservancies provide tourist with a chance to enjoy different tourist attraction categories, including nature and wildlife; culture, adventure, and ecotourism.

Tourism in the county is also complemented by hospitality facilities, including one five-star hotel with a bed capacity of 34; three four-star hotels with a total bed capacity of 361; three 3-star hotels with a bed capacity of 250; one 2-star hotel with a bed capacity of 311; and three 1-star hotel with a bed capacity of 348. There are also multiple unclassified hotels and restaurants.

Map 11-1: Tourist Attraction and Hospitality Facilities



Source: Author, 2025

11.3.1 National Reserves

11.3.1.1 Shaba National Game Reserve

Shaba National Reserve (SNR) was established in October 1974 and covers and area of 239 km2. The reserve is largely arid, with the main vegetation being acacia woodlands, bushlands, grasslands, and riverine communities dominated by acacia and doum palm. The primary wildlife in the reserve are gerenuk, Grant gazelle, Oryxs, zebras, giraffes, cheetahs, leopards and lions. The reserve has one 4-star lodge (Sarova Shaba) and several campsites, including Robin Hurt, Funan, Bodich, Acacia, Dudubatu, Challage Beach, and Hereri campsites. The reserve is highly preferred by tourists due to its scenic landscapes, riverine forests, wildlife, and springs. The 17 permanent springs on the reserve provide suitable areas for animal viewing, especially during the dry season.

11.3.1.2 Buffalo Springs National Game Reserve (BSNR)

BSNR was established in 1992 and covers approximately 131km2. Similar to SNR, BSNR is largely arid, consisting primarily of a bushed grassland, scrubland, acacia woodlands, and a riverine forest of acacia and doum palm. The primary wildlife in the reserve are elephants, zebras, reticulated giraffes, Oryx, cheetahs and crocodiles. The reserve has one 5-star hotel (Surana Buffalo Springs) and two 4-star hotels – Simba Lodge and Ashnir Samburu Camp. Odha Camp is also located within the reserve, though it is not yet operational.

11.3.1.3 Bisanadi National Reserve (BNS)

BNS was established in 1979 and covers an area of 606km2. Despite being the largest national reserve in the County, BNS is not operational. The reserve is located at the far-end of county and is largely inaccessible. Consequently, it largely acts as a migratory zone connecting national reserves and game parks in Isiolo, Meru, and Samburu counties. There are no tourism activities currently taking place in BNS. The Kenya Wildlife Service (KWS) and the county government are in talks to operationalize the attraction site to make it easily accessible to tourists, attracting investors.

11.3.2 Hotels and Hospitality Facilities

Hotels and other hospitality facilities are critical infrastructure to support the tourism industry in Isiolo County. In particular, hotels located in the national reserves provide tourists with dining and accommodation services to make their visits seamless. There are four hotels currently located in Shaba and Buffalo Springs national reserves as follows:

Table 11-3: Hotels in National Reserves in Isiolo County

HOTEL	CLASSIFICATION	BED CAPACITY	CONFERENCE CAPACITY	EMPLOYEES
Sarova Shaba	4-star	170	80	90 (59 skilled; 31 non-skilled)
Simba Lodge	4-star	172	150	68 (28 skilled; 40 non-skilled)
Ashnir Samburu Camp	4-star	19	-	63 (39 skilled; 24 non-skilled)
Surana Bufallo Springs	5-star	17	-	53 (34 skilled; 19 non-skilled)

Source: KNBS

Apart from the hotels located within the game reserves, there are an additional 592 facilities distributed across the county. They include restaurants, bars, nightclubs, and small hotels as classified in the table below.

Table 11-4: Additional Accommodation and Catering Facilities in Isiolo

ACCOMMODATION AND CATERING FACILITIES	NUMBER
Medium high-standard lodging house/hotel D-class	11
Small high-standard lodging house/hotel D-class	8
Large lodging house with restaurant and/or bar B/C class	2
Medium lodging house with restaurant and/or bar B/C class	5
Small lodging house with restaurant and/or bar B/C class	11
Large lodging house B/C class	3
Medium lodging house B/C class	16
Small lodging house B/C class	37
Large restaurant with bar/membership club	5
Medium restaurant with bar/membership club	13
Small restaurant with bar up to 10 customers	37
Large eating house, snack bar, tea house "hotel"	3
Medium eating house, snack bar, tea house "hotel"	13
Small eating house, snack bar, tea house "hotel"	164
Butchery with roasted meat and/or soup kitchen	101
Medium bar/traditional beer seller	30
Small bar/traditional beer seller	93
Large night club/casino	1
Medium night club/casino	5
Small night club/casino	22
Other catering and accommodation businesses	12
Total	**592**

Source: Author, 2025

11.3.3 Community Conservancies

A community conservancy is a community-based institution on a community land that support management of the complementary land use in the areas of livestock, agriculture, ecotourism and wildlife management for the benefit of livelihoods. They are legally registered entities, governed by a representative Board of Directors and run by a locally-staffed management team.

Isiolo County hosts 12 Community Conservancies supported by Northern Rangeland Trust in accordance to; subsection 39 of the Wildlife Conservation and Management Act, 2013 that recognizes the establishment of conservancies or sanctuary in line with the provision of the Act. Community Conservancies serve as wildlife dispersal areas to the National Reserves and also play a role in protecting wildlife corridors that interconnect wildlife to different ecosystems. Table 11-5 summarizes the 12 conservancies in Isiolo County.

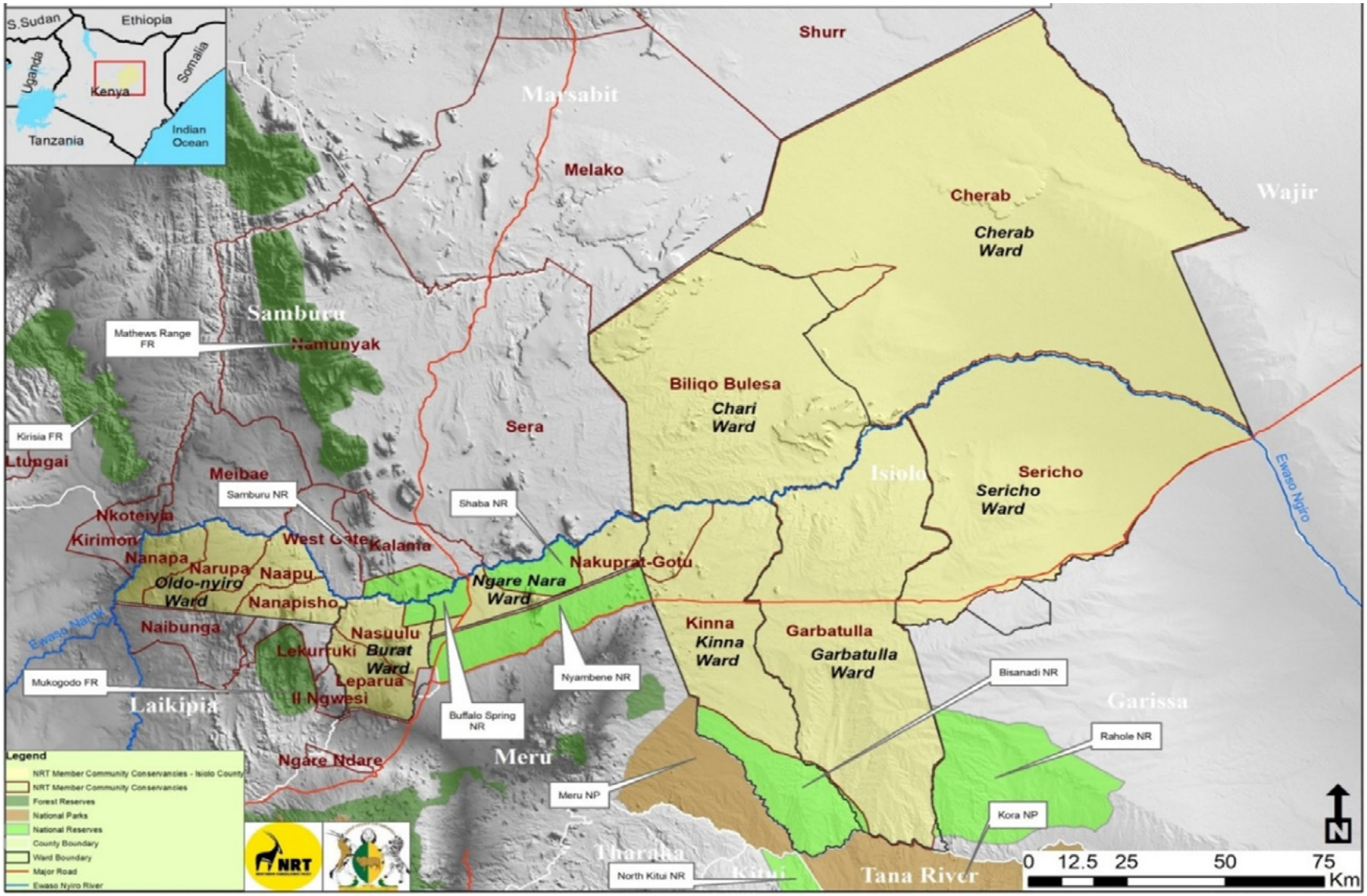
Table 11-5: Community Conservancies in Isiolo County

NAME	YEAR ESTABLISHED	AREA (HA)	POPULATION	STAFF	KEY SPECIES
Biliqo –Bulesa	2007	376,657	7,665	36	· Elephants
Cherab	2021	905,584	7,276	22	· Elephants · Giraffes · Ostriches · Zebras · Oryx · Sand grouses · Saddle-billed storks.
Garbatula	2021	381,512	6,798	22	· Elephants · Giraffes
Kinna	2021	245,492	26,600	22	· Elephants · Cheetahs · Buffaloes · Leopards · Lesser kudu · Generuks
Sericho	2021	387,621	7,001	22	· Elephants · Vultures · Ostriches · Grants · Gazelles
Leparua	2010	33,550	11,000	21	· Reticulated giraffes

NAME	YEAR ESTABLISHED	AREA (HA)	POPULATION	STAFF	KEY SPECIES
Naapu	2018	28,143	3,378	15	· Elephants · Giraffes · Generuks · Lions · Cheetahs · African Wild dogs · Gravy zebras · Plains zebra
Nanapisho	2018	24,873	4,646	14	· Elephants · Giraffes · Generuks · Cheetahs · African wild dogs
Nannapa	2018	25,471	6,907	16	· Elephants · Eland · Generuks · Lions · Cheetahs · African Wild dogs · Gravy zebras · Plains zebra · Buffalo
Narupa	2018	37,031	5,206	14	· Elephants · Eland · Generuks · Cheetahs · African Wild dogs · Gravy zebras
Nasuulu	2011	34,568	3,885	26	· Elephants · Giraffes, Generuks · Grevy zebra · Beisa Oryx
Nakuparat-Gotu	2010	72,418	7,425	31	· Beisa Oryx · Elephants · Giraffes · Buffalo

Source: Author, 2025

Map 11-2: Community Conservancies



Source: Author, 2025

Community conservancies play a critical economic role, providing an essential revenue source for communities living within them and Isiolo County Government. The conservancies are part of the Northern Kenya Rangelands Carbon Project (NKRPC), which generates funds through the sale of carbon credits. In 2023, each community conservancy participating in NKRPC projects received KES 42.5 million (USD 324,000). The county government received a 5% levy from the revenue. The rest of the funds are directed to community development following a 60-40 rule; 40% of the total revenue to the community conservancies is used for recurrent expenditures, while 60% funds development. The money allocated to development is used in a wide range of projects and programs, including bursaries for learners in the community.

The breakdown of the community conservancies in Isiolo County is discussed in the next section.

11.3.3.1 Biliqo-Bulesa Community Conservancy

Biliqo Bulesa Community Conservancy, the first conservancy established in Isiolo County in 2007, was formed by bringing together two communal locations within Merti Sub- County Biliqo and Bulesa. The Conservancy's vast community land is managed by the traditional Dedha grazing system. The community takes great pride in its scenic beauty, particularly in Baballa, Kismittir, Kuro hot springs, and the great Kom. The Conservancy, known for elephant conservation and healthy rangelands, serves as an important corridor and dispersal area for diverse wildlife species, including elephants, gerenuk, lions, cheetah, buffalo, wild dogs, oryx, and large populations of game birds such as sandgrouse and guinea fowl.

11.3.3.2 Nasuulu Community Conservancy

Nasuulu Community Conservancy came into existence when four warring communities laid down their arms and formed the Conservancy to foster peace and cohesion among them. The Conservancy's establishment reduced poaching, led to the resolution of livestock-related conflicts, and brought harmony, benefiting all. The Ewaso Nyiro River runs along the Conservancy's northern border, providing water to community members, livestock, and

wildlife. Pastoralism is the main source of livelihood in Nasuulu, which has been at the forefront of rangeland management for several years. As a result of the successful implementation of grazing plans, pasture is abundant in Nasuulu, which also serves as a traditional grazing area, attracting herders and livestock from other communities and prompting the Conservancy's management to play a vital role in peacekeeping.

11.3.3.3 Leparua Community Conservancy

Leparua Community Conservancy, located in Isiolo's Burat Ward, is home to five ethnic communities: Somali, Samburu, Turkana, Borana, and Maasai. The Conservancy is an important wildlife corridor that connects Samburu National Reserve, Buffalo Springs, and other northern Kenya conservancies. With livestock keeping being the primary source of income for the communities, the Conservancy was established to conserve natural resources for community development, improve wildlife protection, promote peace among the Conservancy's inhabitants, and secure wildlife corridors. Its vision is to integrate community development and environmental conservation. Since the Conservancy's inception, the community's livelihoods have improved, their sources of income have been diversified, and the potential of tourism as a revenue source has grown. Poaching and cattle-raiding incidents have also decreased. Over time, the Conservancy has seen increased social interaction and peace among its community members.

11.3.3.4 Nakuprat-Gotu Community Conservancy

Nakuprat-Gotu Community Conservancy provides a special migratory wildlife route, connecting the Shaba, Buffalo Springs, and Samburu National Reserves to Sera Community Conservancy. The Conservancy consists of pastoralists from both the Borana and Turkana communities. In the past, there would be conflict between these two communities. Today, through the Beisa Oryx Project, they are working together to protect and establish a haven for the Beisa Oryx population in collaboration with other conservation partners including the Northern Rangelands Trust (NRT), County Government of Isiolo, and Kenya Wildlife Service (KWS). The Conservancy, a vast area of arid bushland with little rainfall, is home to one of Kenya's largest herds of Beisa Oryx,

accounting for at least 10% of the country's population (following a July 2020 count in which an estimated 880 individuals were recorded). The species is listed as 'endangered' by the IUCN due to declining numbers across much of Africa as a result of hunting and habitat loss.

11.3.3.5 Sericho Community Conservancy

Sericho Community Conservancy is situated in Isiolo South Constituency. It borders Wajir and Garissa Counties. Communities in the Conservancy practice livestock keeping. The Conservancy, which consists primarily of arid terrain, was founded to facilitate development, foster peace in the region, and preserve the traditional wildlife migration routes that connect Marsabit National Park to Meru National Park. A multi-disciplinary team of researchers drawn from NRT, the University of Nairobi, the National Museums of Kenya, and the Wildlife Research and Training Institute visited Sericho and Cherab Conservancies in February 2022 to conduct a rapid biodiversity assessment of the adjacent Lorian Swamp, and a needs assessment on the impact of human-wildlife conflict on community livelihoods in Isiolo County. The experts established that the area was endowed with numerous bird species that run the gamut from passerines, such as kingfishers, cuckoos and woodpeckers, to raptors, some of which have been red-listed by the International Union for Conservation of Nature (IUCN), such as the Egyptian vulture and the Steppe eagle. In their report, the research team propounded that due to the area's rich assemblage of biodiversity, it highly qualifies to be classified as both a key biodiversity area (KBA) and an important bird area (IBA).

11.3.3.6 Cherab Community Conservancy

Cherab borders the Biliqo Bulesa Community Conservancy and is predominantly inhabited by the Borana community. Cherab was established to secure a wildlife corridor between Meru-Bisanadi-Kora Park and Reserves and Marsabit National Park and Reserve through the Lorian Swamp. The Conservancy focuses on managing the Lorian Swamp as it is an important dry season grazing area for livestock and wildlife. NRT is working in collaboration with the Connected Conservation Foundation (CCF) to harness the power of satellite imagery to capture information on the extensive Lorian Swamp. This technology ensures that vital data on the

Swamp is gathered unobtrusively, eliminating the risk of disturbing the surveyed species and habitats. By mapping this water resource and its ecosystem, NRT researchers can develop more informed plans and conservation activities to deal with evolving climate-driven events and changing natural resources.

11.3.3.7 Kinna Community Conservancy

Kinna Community Conservancy was established to improve community resilience and livelihoods and restore ecological connectivity between northern and central Kenya by preserving the biodiversity of the territories between Marsabit and Meru National Parks. The Conservancy is located in Kinna Ward in Isiolo South Constituency and serves as an important wildlife corridor and dispersal area. Due to its proximity to the Meru National Reserve, cases of human-wildlife conflict (HWC) are common in the area. However, the Conservancy is working to reduce such incidents. Kinna Conservancy is dedicated to improving and securing the health of wildlife, rangelands, and the local population, by creating wealth through eco-friendly activities geared toward wildlife conservation, implementing comprehensive grazing plans, and preserving progressive Borana culture.

11.3.3.8 Garbatulla Community Conservancy

Garbatulla Community Conservancy was established in Isiolo South Constituency to prevent interethnic conflict and promote peaceful coexistence between the community and herders from neighboring Garissa County. The Conservancy strives to protect the region's natural vegetation, and serves as an important elephant corridor connecting Marsabit and Meru National Parks. Garbatulla experienced an increase in human-wildlife conflict as a result of the prolonged drought caused by five consecutive failed rainy seasons. The Conservancy is mainly inhabited by the pastoralist Borana community.

11.3.3.9 Oldonyiro Community Conservancy

Ol Donyiro Community Conservancy is located is home to four community conservancies (units): Nannapa, Nanapisho, Naapu, and Narupa. The Conservancy was established in 2016 and

consists of public and community land. It is home to the Samburu and Turkana communities, who practice livestock keeping as their main source of livelihood. Rivers, water pans, springs, sand dams, boreholes, and rock catchment areas are the primary sources of water in Oldonyiro Consevancy.

Community members used to travel nearly 10 kilometers to fetch water from the Ewaso Nyiro River. The construction of sand dams on the River has made it easier to access water. In 2018, due to its extensiveness, the community was split into four community conservancies, Nannapa, Nanapisho, Naapu, and Narupa.

11.3.3.10 Nannapa Community Conservancy

Nannapa Community Conservancy is one of the four units that formed after Oldonyiro Community Conservancy split into four units in 2018. The Conservancy borders Naibunga Upper Community Conservancy to the south and the Ewaso Nyiro River, which separates it from Meibae Conservancy to the north. The Conservancy serves as a link between the Laikipia and Samburu ecosystems and experiences high elephant traffic. Due to its proximity to other conservation areas such as Loisaba, Olmalo and Sabuk, it is home to unique wildlife species such as the pancake tortoise and black panther leopard. Tough terrains, steep slopes, and thickets dominate Nannapa Community Conservancy. Community members from this Conservancy practice pastoralism as their main source of livelihood.

11.3.3.11 Nanapisho Community Conservancy

Nanapisho Community Conservancy is a pastoralist community comprising the Turkana and Samburu. It borders four other community conservancies: Lekurruki to the south, Nasuulu to the south-east, Westgate to the north-east, and Naapu to the north. The Conservancy is strategically located and serves as a wildlife migration route connecting to other conservancies. These routes are critical for the survival of wildlife, particularly elephants. For the longest time, the Samburu and Turkana were adversaries who frequently clashed over livestock and grazing land. The formation of the Conservancy brought these two tribes together, and they now coexist

peacefully as they seek to drive their development. Nanapisho plays a critical role in climate change mitigation by promoting renewable sources of energy such as solar power and biogas.

11.3.3.12 Naapu Community Conservancy

Naapu Community Conservancy is registered as a community-based organization under the Ministry of Gender, Social Services, and Sports. The Conservancy serves as an important wildlife corridor and is home to large populations of endangered wildlife species. Camping investors are drawn to Naapu's beautiful camping sites and curvy hills. The Conservancy seeks to propel its socio-economic growth using readily available natural resources. It strives to increase the resilience of its communities and empower them to be self-sufficient through training and partnership engagement.

11.3.3.13 Narupa Community Conservancy

The Narupa Community Conservancy landscape connects the Laikipia and Samburu ecosystems. It occupies the largest portion of the elephant corridor within the four Ol Donyiro units. Home to the Samburu and Turkana, the Conservancy was established to curb poaching and protect wildlife. As one of its lands uses, it was formed to pave way for development to improve the livelihoods of the community members in the area. The Conservancy strives to foster peaceful coexistence between people and wildlife.

11.3.3.14 Emerging Issues, Challenges and Opportunities

Challenges

1. **Climate change** – Isiolo County receives very little rainfall per year. In recent years, the county has experienced long droughts, which lead to high wildlife mortality rates. Adverse weather conditions also fuel human-wildlife conflicts as wild animals wander away from the protected areas to human settlements.
2. **Human-wildlife conflict** – Wildlife and humans coexist in different regions across the county. However, conflict often occurs when wild animals attack and kills livestock or community members. KWS compensate community members when such incidents

occur.

3. **Development in protected areas** - Recent infrastructural development in Isiolo County harming wildlife by encroaching on protected areas. For instance, the LAPSSET project has led to high population growth and urbanization around national reserves. Recently constructed infrastructure, especially roads also interfere with wildlife migration by blocking routes. In 2024, there were five documented cases of animal kills (2 cheetahs, 1 lion, 1 zebra, and 1 wild dog) along the Ngaremara-Ololokwe road stretch.

4. **Inter-community conflicts** – Tourism development in Isiolo County is often hurt by inter-community conflicts that create insecurity. Resource-based conflicts involving grazing areas, minerals, and resource-sharing create hostilities.

5. **Community land tenure system** – The majority of land in Isiolo is owned and managed under the community land tenure system. Although the model is intended to protect communal rights and livelihoods, it often hampers investment in tourism and hospitality. In particular, disputes over ownership and boundaries can deter potential investors from investing. Besides, communities often resist large-scale land acquisition for projects in fear of displacement and loss of livelihood. For instance, in January 2025, the Environment and Land Court, ruled in favor of community members who had challenged the established of two community conservancies – Bulesa Biliqo and Cherab – under NRT. The ruling may set back future investments in these communities and may set a precedence for the nullification of the registration of other community conservancies.

6. **Deforestation** – Charcoal burning in Isiolo County accelerates deforestation. Deforestation harms the ecosystem and contributes to droughts, which may further hurt wildlife.

7. **Negative publicity** – Isiolo County is often portrayed as an insecure place, which destroys its image as tourist destination. Although the county faces some security issues, insecurity incidents are rare. Nonetheless, investors in the tourism sector and

tourists are dissuaded from investing and visiting the county.

8. **Flooding** – Hotels located within national reserves are often affected by flooding because they are situated next to rivers that burst their banks when it rains. In 2023, Ashnir Samburu Camp and Sarova Shaba were flooded, affecting their operations for months.

Opportunities

1. **Revival of Bisanadi National Reserve** – BNR is the largest national reserve in Isiolo County but has not attracted any investors in tourism due its remote location and poor access.
2. **Partnerships in conservation** – Isiolo County currently partners with multiple conservation organizations, including the Gravy Zebra Trust, Save the Elephant, Ewaso Lions, Action for Cheetahs, NRT, and the KWS in conservation efforts, ensuring that wild animals and wildlife ecosystems are managed sustainably. These efforts are critical to preserving the main tourist attraction in the county – wildlife.
3. **Partnerships in tourism development** – Isiolo County can partner with actors in tourism and hospitality to promote tourism. Currently the Tourism Regulatory Authority (TRA) is involved in offering short courses in tourism and hospitality in the county. The county is also in the process of signing an agreement with the Kenya Tourism Board (KTB) to market Isiolo County as a tourism destination. The UNDP is also a critical development partner in the sector, engaging in programs that offer grants to community-based organizations (CBOs) and NGOs to engage in sustainable activities within community conservancies. The grant amounts range from $30,000 to $100,000 depending on the strategic partnership.
4. **Regulatory frameworks to streamline the tourism and hospitality industry** – Multiple legislation aimed at providing a legal framework for the industry are in different approval stages. In particular, the Tourism Bill, the Wildlife Conservation and Management Bill, and the Community Conservancy Bill are awaiting approval. Once

passed, these laws will offer a framework for addressing issues in tourism, allocating money to conservancies, and protecting wildlife.

5. **Expanding the tourism offerings in national reserves** – The reserves in Isiolo County are expansive and have significant unexploited potential. The County government should partner with more private entities to expand the current tourism sites. In particular, the reserves have multiple camping sites dotting the reserves. For instance, the multiple water springs (27 in SNR; 12 BSNR) provide suitable sites for campers.
6. **Tourism marketing** – Isiolo County has engaged in concerted efforts to market itself as a tourism destination. Tourism marketing still holds significant potential in local and international markets. Multiple movies and documentaries, including Survivor series, Born Free, and Waving Flag, were filmed in Isiolo, providing an opportunity to market to the international audiences.
7. **Isiolo International Airport** – The airport presents a significant opportunity for the tourism and hospitality industry in the county. The development enhanced the county's accessibility to both local and foreign visitors. If well harnessed, the airport would have a multiplier effect on the number of tourists visiting the county annually.

11.3.4 Trade and Commerce

11.3.4.1 Number, Categorization and Distribution of Businesses

Trade and commerce play a critical role in Isiolo County's economy by providing a market for products, creating employment, offering support services, improving population wellness, and generating income and government revenue. In 2024, the county had 8,512 registered businesses in different categories. General trade, wholesale, and retail stores constituted the majority of businesses within the county, representing about three-quarters of all businesses (75.19%; 6,400 businesses). Industrial plants, factories, and workshops (11.47%; 976 businesses) constitute the second-largest business category, followed by accommodation and catering businesses (6.95%; 592 businesses). Other business categories make individually make up less than 2% of all registered businesses as illustrated in the table below.

Table 11-6: Registered businesses per category

BUSINESS CATEGORY	REGISTERED BUSINESSES	PERCENTAGE
General trade, wholesale, retail, stores	6,400	75.19%
Industrial plants, factories, workshops	976	11.47%
Accommodation and catering	592	6.95%
Informal sector	138	1.62%
Professional & technical services	130	1.53%
Transport, storage, and communications	119	1.40%
Private education, health and entertainment	98	1.15%
Agriculture, forestry, and natural resources	59	0.69%
Total	**8,512**	

Source: KNBS

The majority of businesses enterprise registered businesses in all categories are classified as MSMEs. For instance, only 393 (6.14%) businesses out of the 6,400 enterprises categorized under general trade, wholesale, and retail stores are classified as large, while the rest fall under the MSMEs category.

In some categories, such as industrial plants, workshops, and factories, there are no businesses that qualify in the large category. The small nature of businesses implies that the county can only charge low fees and levies to ensure sustainability. Table 11-7 categorizes businesses based on size and specialization.

Table 11-7: Business categorization by size and specialization

BUSINESS TYPE	NUMBER
GENERAL TRADE, WHOLESALE, RETAIL, STORES	
Medium store, hypermarket	141
Large trader, shop, retail store, or personal service	393
Medium trader, shop or retail service	936
Small trader, shop or retail service	3,963
Kiosk	941
Other wholesale, retail traders, stores, shops and services	26
INFORMAL SECTOR	

BUSINESS TYPE	NUMBER
Hawker with motor vehicle (1 person)	13
Hawker without vehicle (1 person)	7
Small informal sector trader/service provider	2
Semi-permanent informal sector trader	113
Other informal sector operation	3
TRANSPORT, STORAGE, AND COMMUNICATIONS	
Medium transport company	6
Small transport company	44
Independent transport company	13
Large petrol filling station	9
Medium petrol filling station	4
Small petrol filling station	11
Large cold storage facility	1
Medium cold storage facility	2
Small cold storage facility	3
Large storage facility	2
Medium storage facility	4
Small storage facility	3
Medium communication company	1
Small communication company	6
Other transport, storage, and communications companies	10
AGRICULTURE, FORESTRY, AND NATURAL RESOURCES	
Main agricultural producer/processor/dealer/exporter	4
Small agricultural producer/processor/dealer	36
Medium mining or natural resources extraction operation	2
Small mining or natural resource extraction operation	1
Other agricultural, forestry, and natural resource businesses	16
ACCOMMODATION AND CATERING	
Medium high-standard lodging house/hotel D class	11
Small high-standard lodging house/hotel D class	8
Large lodging house with restaurant and/or bar B/C class	2
Medium lodging house with restaurant and/or bar B/C class	5
Small lodging house with restaurant and/or bar B/C class	11
Large lodging house B/C class	3

BUSINESS TYPE	NUMBER
Medium lodging house B/C class	16
Small lodging house B/C class	37
Large restaurant with bar/membership club	5
Medium restaurant with bar/membership club	13
Small restaurant with bar up to 10 customers	37
Large eating house, snack bar, tea house "hotel"	3
Medium eating house, snack bar, tea house "hotel"	13
Small eating house, snack bar, tea house "hotel"	164
Butchery with roasted meat and/or soup kitchen	101
Medium bar/traditional beer seller	30
Small bar/traditional beer seller	93
Large night club/casino	1
Medium night club/casino	5
Small night club/casino	22
Other catering and accommodation businesses	12
PROFESSIONAL & TECHNICAL SERVICES	
Small professional service firms	18
Independent technical operator	10
Medium financial services, including SACCOs	15
Small financial services, including SACCOs	17
Money points/ATMs/Money machines separate from bank branch	1
Large Cyber Cafes/Bureau	1
Small Cyber Cafes/Bureau	8
Other Cyber Cafes/Bureau	6
Other Professional and Technical Services	54
PRIVATE EDUCATION, HEALTH AND ENTERTAINMENT	
Private higher education institution	2
Large private education institution	11
Medium private education institution	14
Small private educational facility	4
Medium private health facility	1
Small private health facility	3
Health clinic/Doctor's surgery	20
Traditional health services, herbalist, traditional healer etc.	6

BUSINESS TYPE	NUMBER
Small entertainment facility	3
Other education, health, and entertainment services	34
INDUSTRIAL PLANTS, FACTORIES, WORKSHOPS	
Small industrial park	1
Medium workshop/service-repair contractor	72
Small workshop/service-repair contractor	568
Other manufacturer, workshop, factory, contractor	335

Source: Author, 2025

1.1.1.1 *Markets*

Isiolo County has multiple markets that sell different products and merchandise. Currently, there are three major fresh food markets, seven livestock markets, two mixed merchandise markets, and a hawkers' market. Traders in the fresh-food markets source their products from Meru County and other neighbouring counties. On the other hand, livestock is sourced from local farmers in the livestock markets. Merchandise in the mixed markets originates from multiple places, including Meru County, Nairobi County, and locally. Locals are the primary customers in the fresh-food and mixed markets. On the contrary, customers in the livestock market come from diverse regions, with some coming from as far as Nairobi. Table below outlines the markets and their respective categories.

Table 11-8: Markets in Isiolo County

CATEGORY	EXISTING MARKETS	MAIN ITEMS SOLD
Fresh food markets	· Kasarani · Westgate · Baraza Park	· Fruits · Vegetables · Cereals

CATEGORY	EXISTING MARKETS	MAIN ITEMS SOLD
Livestock Markets	· Isiolo town · Garbatulla (Belgesh, · Kinna) · Duse · Modogashe · Merti · Eskot · Oldonyiro	· Cattle · Goats · Sheep · Camels
Mixed Markets	· Oldonyiro · Soko Latune	· Food items · Jua-kali items · General wares (mali-mali)

Source: Author, 2025

11.3.4.3 Emerging Issues, Challenges and Opportunities

Challenges

1. Poor access to capital for business expansion.
2. Low competitiveness of businesses in the county against traders from other counties.
3. High cost of doing business.
4. Inadequate government support.
5. Inadequate training of business operators.
6. Limited value addition, contributing to low returns.

Opportunities

1. Construction of Isiolo Modern Market will solve most of the challenges facing traders operating in markets in Isiolo town.
2. Training opportunity in collaboration with the national government and other trading partners.
3. Multiple raw materials that can support industrial development, including livestock products, crop products, and minerals.

11.3.5 Industrialization

11.3.5.1 Number and Distribution of Industries

Isiolo County has limited industrialization currently but the sector is growing. The county government has made efforts to grow the industry by investing directly and inviting private entities. In 2023, the county had 14 industrial processers, a sharp increase from the two industrial processors in 2018. In 2025, the county also launched the construction of the Isolo County Aggregation and Industrial Park, which will provide the necessary facilities to process and add value to agricultural products. The project is expected to employ approximately 5,000 people directly. Besides, it will increase the value of products from the county.

Apart from the industrial processors, Isiolo County has small- and medium-sized industrial plants, factories, and workshops that produce industrial products at a small scale. Most of these businesses are operated by jua-kali artisans and other semi-skilled operators. A summary of these operations is provided in table below.

Table 11-9: Industrial Plants, Factories, and Workshops Registered in Isiolo County

INDUSTRIAL PLANTS, FACTORIES AND WORKSHOPS	NUMBER
Small industrial park	1
Medium workshop/service-repair contractor	72
Small workshop/service-repair contractor	568
Other manufacturer, workshop, factory, contractor	335

Source: Author, 2025

Isiolo has one the special economic zone (Meat City) that aims to transform the county's economy. The SEZ focuses on the livestock production industry, focusing its operations on value addition to livestock products. The land set aside for the project will host an abattoir, a leather park, and bioenergy production. The SEZ will also provide a market for livestock in the area, with a targeted capacity of slaughtering 10,000 cows, 15,000 goats and sheep, and 5,000 camels daily. The abattoir is already completed although its operationalization is still underway. The abattoir targets the export markets, particularly Europe, China, and the Middle East. Apart from the SEZ, the county has set aside land for an industrial park and aggregation zone.

11.3.5.2 Industrial Capacity

Current industrial production in Isiolo County is largely small-scale. Industrial operations focus mainly on agro-products and support services. In particular, there are small agro-processors operated by cooperatives and private owners. These plants engage in the value addition of milk, honey, and other agricultural products. Industrial operations in major urban centres are more largely informal. They include wood and metal workshops and repair services.

11.3.6 Mining Activities

11.3.6.1 Types and Distribution of Minerals

Isiolo County is a mineral-rich region, with multiple metallic and non-metallic elements being extracted currently. The current mineral deposits in the county can be classified into three main categories: sand and ballast; metallic minerals; and non-metallic minerals. Sand and ballast are the most extracted mineral deposit in the county. Sand is currently harvested in Ngaremara Ward along River Ewaso Nyiro and Burat Ward. On the other hand, ballast/murram is extracted from quarries situated in most wards in the county.

Most of the ballast is obtained from Burat Ward. Currently, there are multiple sites for quarrying and sand harvesting that are not yet explored. In particular, there are significant sand deposits on the lower parts of the Archers Bridge along River Ewaso Nyiro. There are also significant sand deposits in Loruko Sub-Location and Leparua Location. Sand harvesting in these locations is hampered due to security concerns, long distance from Isiolo Town, and bad road conditions leading to harvesting sites. Ballast is mainly quarried in Burat Ward. There is a large rock deposit in Ngaremara. The lack of proper equipment (crashers) is the main obstacle to ballast quarrying.

Other minerals found in Isiolo County include gold, gemstones (blue and yellow sapphires), silicon, peridot/chrysolite, mica and meteorite. Gold deposits are found in Kom-Durte gold mines near the Merti/Garbatula border. Gemstones (blue and yellow sapphires) are largely found in Duse Mines. Silicon is mined in Garbatula, peridot/chrysolite in Boji, and Meteorite near Merti. Despite the significant value of the minerals, mining activities are poorly regulated are

largely artisanal. Table11-10 lists the current location of minerals in Isiolo County.

Table 11-10: Minerals in Isiolo

CATEGORY	AVAILABLE MINERALS	AVAILABILITY/LOCATIONS
Quarry Aggregates	· Sand · Ballast	· Ngaremara Ward along River Ewaso Nyiro · Burat Ward
Minerals	· Gold · Gemstones (Blue and yellow sappires) · Copper · Meteorite · Peridot/Chrysolite · Sapphire · Silicon · Mica	· Duse mines, blue and yellow sapphires, Kom-Durte gold mines, Bathanshiitha precious metal, quarries

Source: Department of Mining, Isiolo

Despite the significant role played by the mining sector in Isiolo County, the artisanal nature and minimal regulation of mining and quarrying activities often result in negative impacts. Most businesspersons in the industry violate the environmental laws in mining. In particular, quarries pits are often abandoned without proper land rehabilitation measures. These pits pose an environmental, safety, and economic challenge to residents. In particular, they contribute to flooding, they are physical safety hazards to community members and the pits occupy valuable space that would otherwise be used for other economic activities, such as grazing.

11.3.6.2 Mineral Capital Assessment

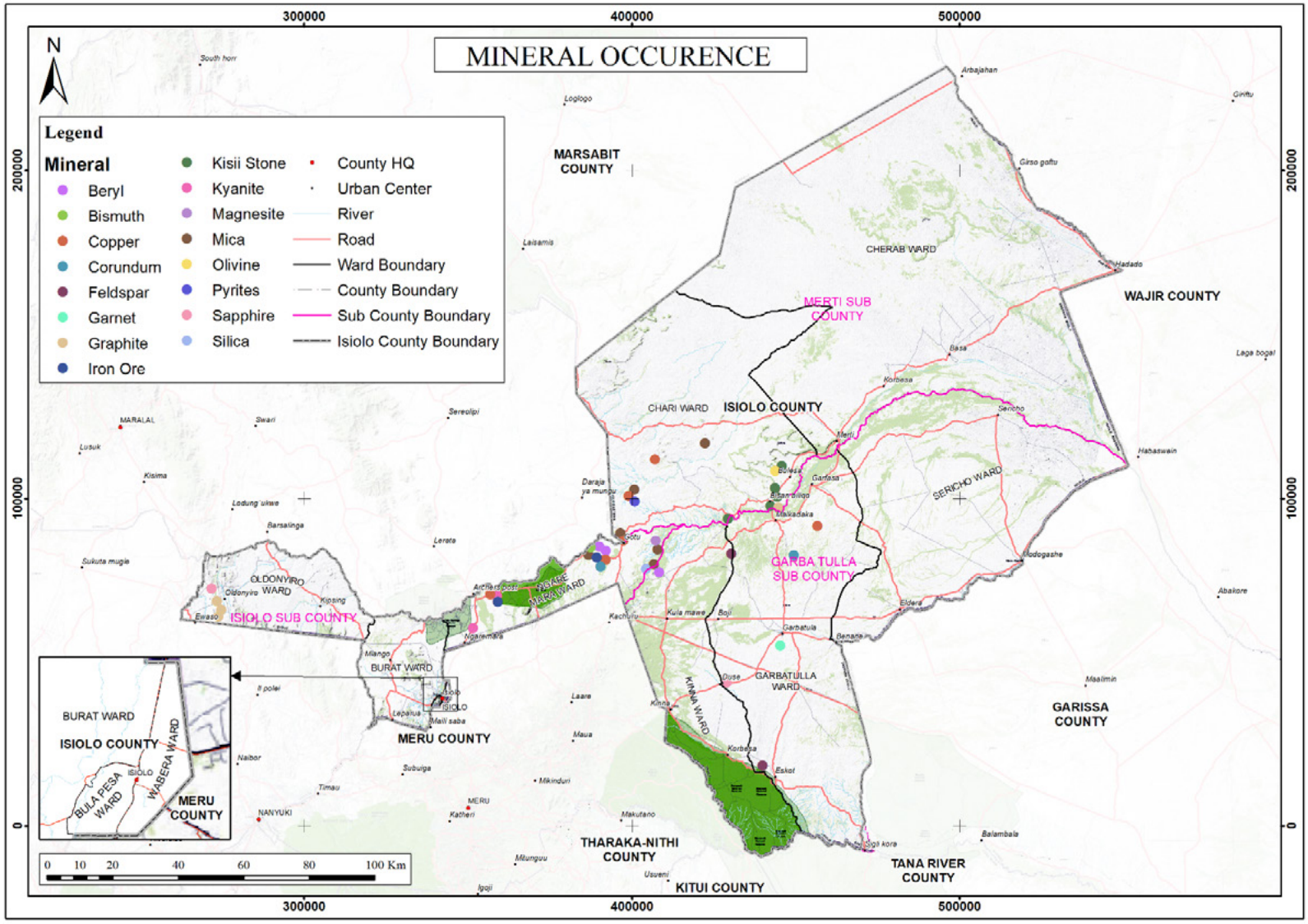
Mining activities in Isiolo County have significant economic value. In particular, mining and quarrying activities are significant source of employment and income for residents within the county. However, mining is primarily done at the artisanal level. Consequently, the number of people employed in the sector and the resultant revenue generated is limited. There is significant potential for investment in the industry to harness the large mineral deposits, increasing efficiency and overall revenue generation. According to a survey conducted by the Ministry of Mining, Blue Economy, and Maritime Affairs, Isiolo County ranks among 15 counties with the

largest mineral endowments. The main minerals whose potential remains largely unexplored are Gold, Aluminum, and Mable stones.

The Kom area is endowed with large gold quantities with the potential for large-scale mining. However, current miners employ rudimentary techniques, which pose a significant danger to the environment. The lack of modern machinery poses a major obstacle in making the resource financially feasible. Apart from Gold, there are large deposits of bauxite ore (aluminum's primary source) in the Belgesh area. Aluminum has a ready market locally and abroad because of its wide use in making utensils, bottling cans, foils, window frames, and airplane parts.Oldonyiro Ward is home to large quantities of Mable stoneswhich can be excavated in economically viable ways, increasing revenue generation for the County and local communities.

Mining activities also present large strategic value in the county. The high potential for large-scale mining and investment in the industry is likely to spur the growth of other industries. In particular, large-scale mining is likely to generate raw material for different industrial activities, such as metal smelting. Besides, minerals are likely to incentivize the county and national governments, as well as other development partners, to invest in support infrastructure that would benefit local communities and businesses. Mining activities would also growth the county gross product of the county. Additional county revenue from mining activities would fund other development projects and programs to the benefit of local communities. Map 11-3 below shows Mineral Occurrence in Isiolo County.

Map 11-3: Mineral Occurrence in Isiolo County



Source: Author, 2025

11.3.6.3 Emerging Issues, Challenges and Opportunities

Challenges

1. Insecurity in areas rich in minerals
2. Poor road connections that limit accessibility to mineral-rich areas
3. Lack of surveys to support the financial feasibility of large-scale mining operations
4. Lack of a legal framework guiding mining operations in the county
5. Limited value addition for mining products

Opportunities

1. Multiple minerals are identified across the county, showing potential for large-scale mining operations.
2. Vast areas with potential for quarrying activities.

11.3.7 Employment

11.3.7.1 Distribution

Isiolo County faces high unemployment rates despite having a large youthful population. In 2025, the county had approximately 187,610 persons aged 15-64 years in the labour force. This figure accounts for about 56.8% of the entire population during the year. The figure is expected to increase to 219,102 (59.4%) and 250,713 (61.4%) by 2030 and 2035, respectively (KNBS, 2025). Despite the county having a low dependent ratio, most people in the labour market are not formally employed.

Currently, wage-earners account for only 14.5% of the county population. The public sector and the hotel industry are the largest employers in the county. Most people in formal employment work in urban areas, with Isiolo town accounting for the largest percentage. The informal sector is the largest employer overall. Approximately 60% of the population in rural areas are self-employed. Livestock keeping and crop farming are the major enterprises in the rural areas. On the other hand, about 15% of the population in urban areas are self-employed in various enterprises, engaging in retail trade, the service sector, and other enterprises.

11.3.7.2 Municipal Enterprises

Most enterprises that provide employment in the county are located within Isiolo Municipality. The municipality is home to the major hotels in the county, including one five-star hotel, two four-star hotels, and three three-star hotels. There are also multiple unclassified hotels and restaurants. These facilities are supported by small eateries and butcheries located throughout the municipality.

The municipality has a livestock market, an open-air market, and the upcoming Modern Isiolo Market. Apart from livestock, other products traded in these markets include livestock products (meat and milk), fruits and vegetables, cereals, and general merchandise. Besides, there is an informal jua kali sector within the municipality. The sector includes blacksmiths, dressmaking, artifacts, and woodworking among other informal trades. Other notable businesses in the municipality are retail and wholesale traders, who make up the majority of enterprises.

11.3.7.3 Emerging Issues

Challenges

1. **Limited employment opportunities** – There are limited investments in Isiolo County, especially in rural areas. This limit employment opportunities for residents.
2. **High illiteracy levels** – Isiolo County has high illiteracy levels, which limits the employability of residents.
3. **Lack of skills** – There is a low level of skills among workers due to few technical and vocational training institutions.
4. **Lack of capital** – Private business owners often lack to capital to expand their operations and employ more people.

Opportunities

1. **A young population** – More than a quarter of the population in Isiolo County is aged 15-29 years. The energetic population can transform the employment sector if they are

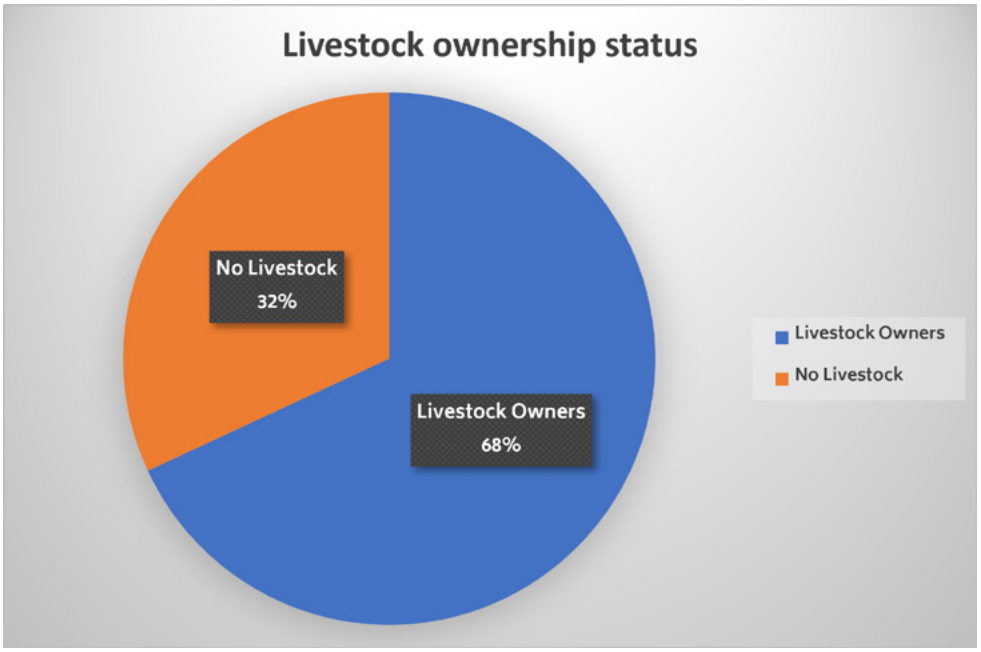
accorded more opportunities for education and skill development.

2. **Upcoming industries** – The county and national governments have invested heavily in commerce and industrialization as a way to create employment. Projects such as the Isiolo Modern Market, the Meat City SEZ, and the proposed County Aggregation and Industrial Park will create thousands of jobs for residents.

11.4 LIVESTOCK PRODUCTION

The livestock sector remains the biggest economic activity with approximately 80% of the population directly and indirectly relying on it (4Impact Foundation, 2021). The majority (68%) of the respondents (and by extension, the people of Isiolo County) keep livestock.

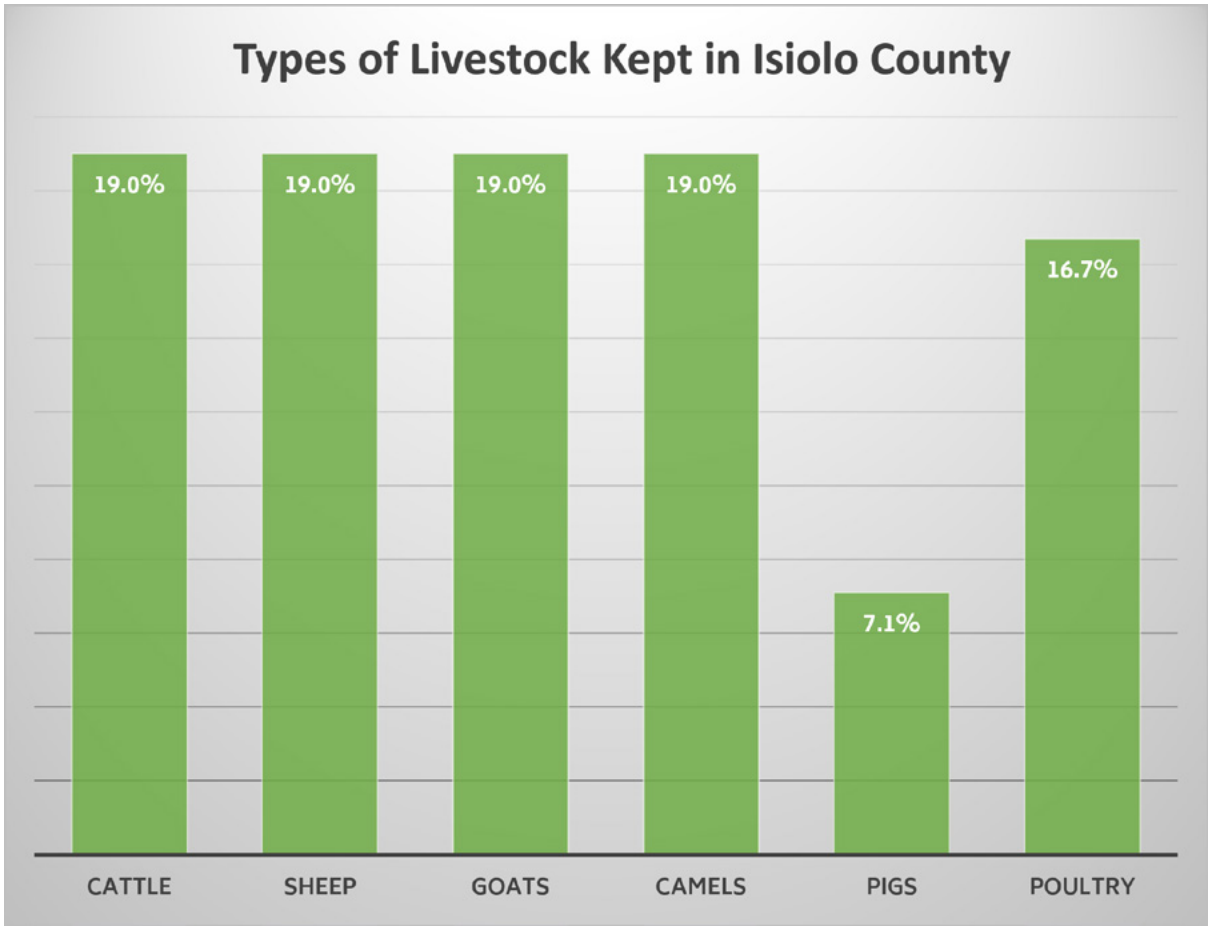
Figure 11-8: Livestock Ownership



Source: Field Survey, 2024

The key respondents reported that various farm animals are kept in Isiolo County including cattle, sheep, goats, camels, donkeys, rabbits, and poultry (chickens, turkeys, and ducks) as presented below.

Figure 11-9: Types of Livestock kept in Isiolo County



Source: Field Survey, 2024

It's important to note that the county is mainly inhabited by people of the Muslim faith who do not keep pigs. However, some non-Muslim herders keep pigs especially in Ngaremara Ward. Bee-keeping is also practiced across the county, especially outside the urban areas.

The information provided by the key informants was further corroborated by the results of the household survey as presented in the table and figure below.

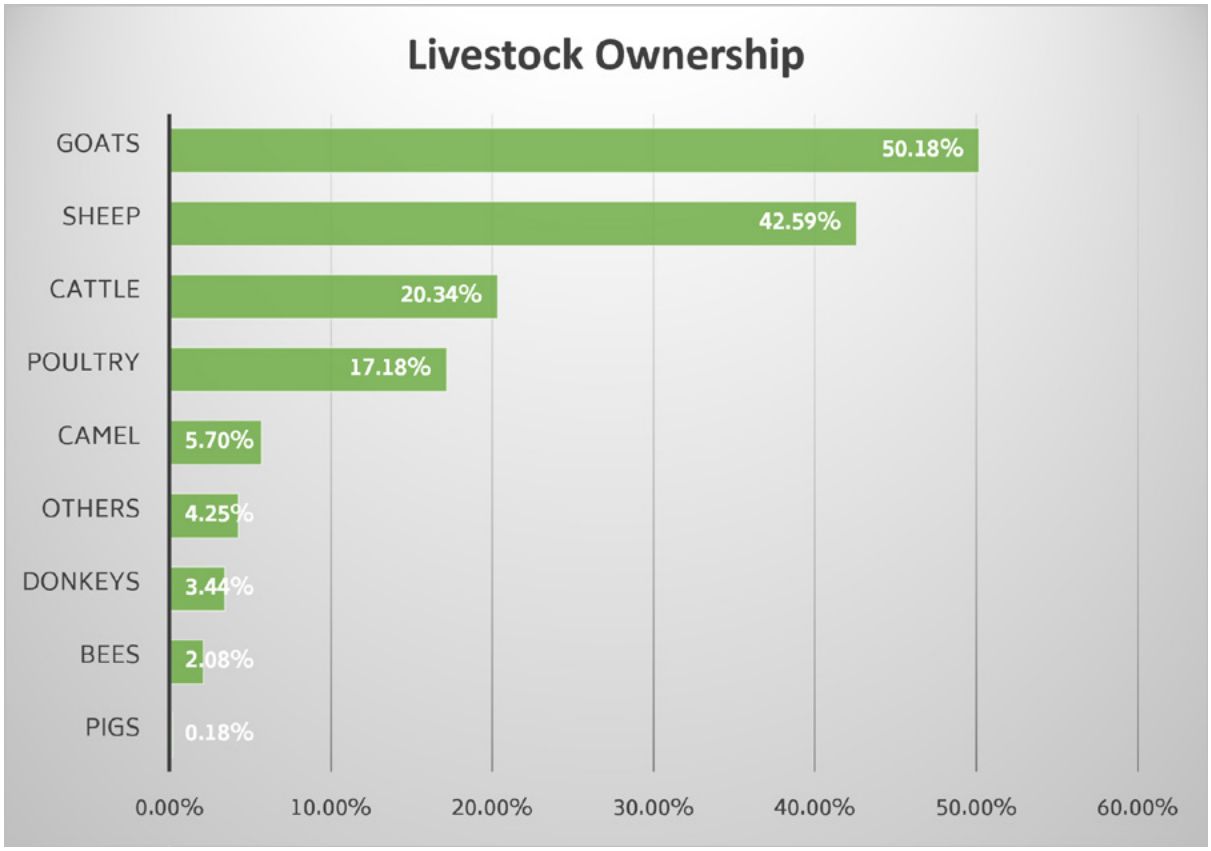
Table 11-11: Type of Animals Owned and Percentage in Population

TYPE OF ANIMAL	NUMBER OF HOUSEHOLDS OWNING IT	PERCENTAGE
Goats	555	50.18%
Sheep	471	42.59%
Cattle	225	20.34%

TYPE OF ANIMAL	NUMBER OF HOUSEHOLDS OWNING IT	PERCENTAGE
Poultry	190	17.18%
Camel	63	5.70%
Donkeys	38	3.44%
Bees	23	2.08%
Pigs	2	0.18%
Others	47	4.25%

Source: Field Survey, 2024

Figure 11-10: Percentage of Types of Animals Owned in Isiolo County



Source: Field Survey, 2024

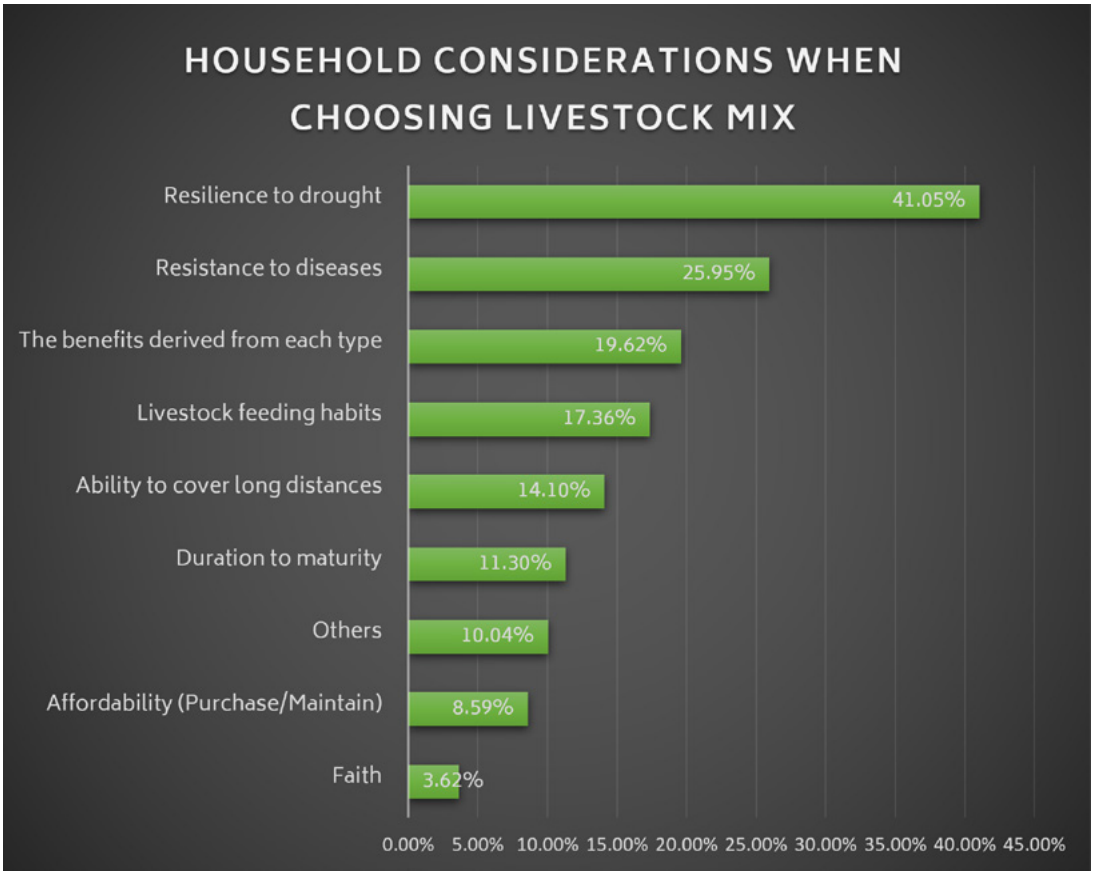
Households in the county prefer to keep more than one type of livestock. The factors taken into consideration while choosing the livestock mix are presented in table and figure below.

Table 11-12: Factors Considered by Farmers when Choosing Livestock Mix

FACTOR	HHS (FREQUENCY)	PERCENTAGE
Resilience to drought	454	41.05%
Resistance to diseases	287	25.95%
Livestock feeding habits	192	17.36%
Ability to cover long distances	156	14.10%
The benefits derived from each type	217	19.62%
Duration to maturity	125	11.30%
Affordability (Purchase/Maintain)	95	8.59%
Faith	40	3.62%
Others	**111**	**10.04%**

Source: Field Survey, 2024

Figure 11-11: Household Considerations when Choosing Livestock Mix



Source: Field Survey, 2024

It's evident that the livestock keepers are rational people who make informed decisions about their livestock mix. They take many factors into consideration while choosing the type and quantity of farm animals to keep. The four most important factors are resilience to drought

(41%), resistance to diseases (26%), benefits derived from each type (19.6%) and livestock feeding habits (17.4%).

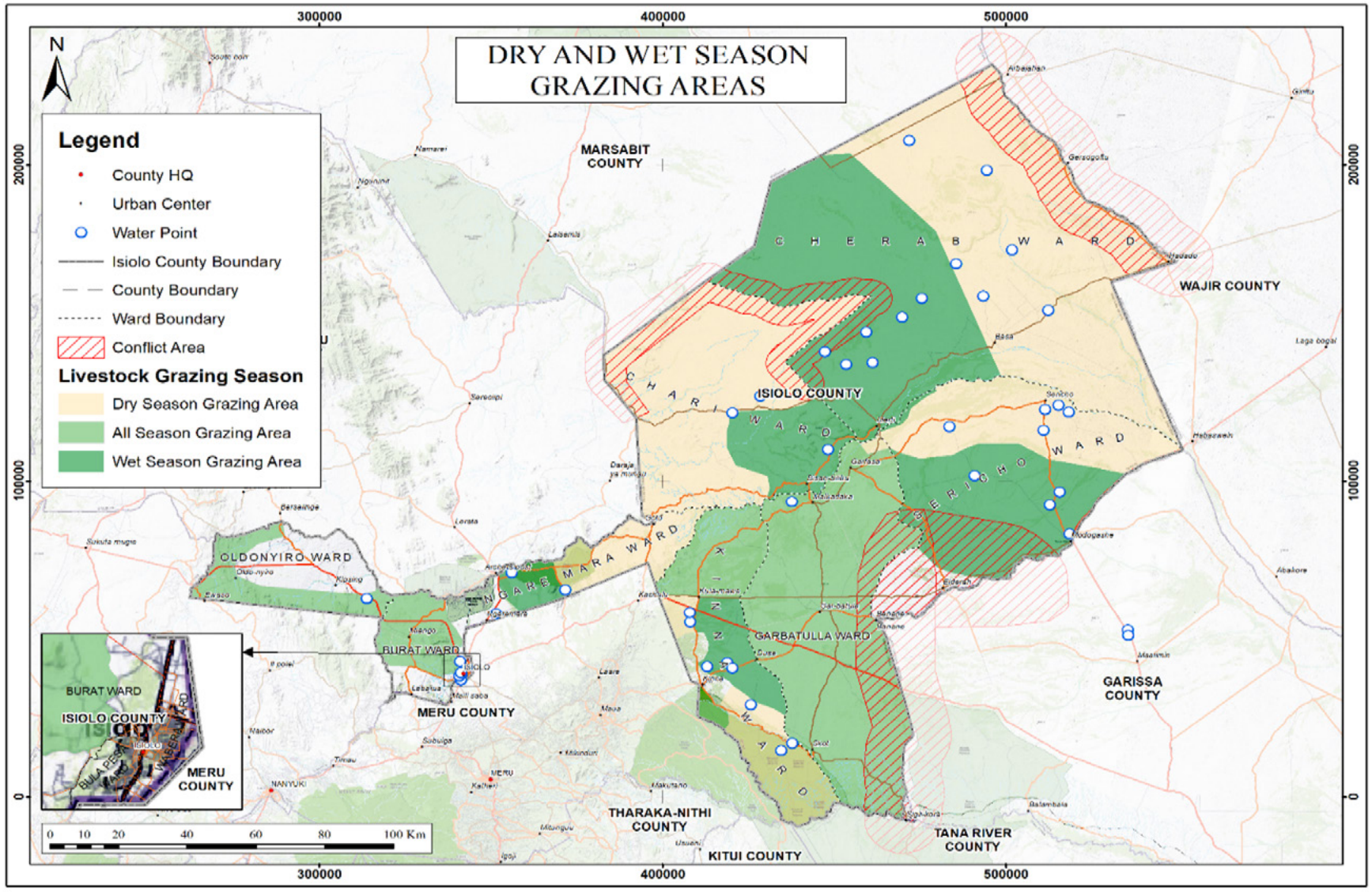
11.4.1 Livestock Production Systems

Being and arid and semi-arid area, Isiolo County is characterized by a livestock economy. Pastoralism is the main system of livestock production. Pastoralism is defined as a subsistence lifestyle where people primarily rely on raising livestock, often moving across large areas of land (like grasslands) to find pasture and water for their herds, adapting to changing environmental conditions through strategic mobility and utilizing the animals for milk, meat, and other products for their livelihood; essentially, a way of living centered around animal husbandry with a focus on seasonal movement to access resources in diverse environments. Pastoralists are typically nomadic or semi-nomadic, moving their herds to different grazing areas depending on seasonal changes in vegetation and water availability. Pastoralism — characterized by low external input livestock production — is the dominant land use system in the vast arid and semi-arid rangelands, often referred to as pastoral ecosystems. The pastoral production system is deliberately designed to conform to the uneven distribution of forage and water resources in space and time (Wasonga, Musembi, Rotich, Jarso and King-Okumu, 2016).

This system of livestock production is ecologically viable as it allows grazed and degraded areas to rejuvenate while domesticated areas move to other areas. All the communities (The Borana, the Turkana and the Samburu) are livestock keepers. Map 11-4 below shows the areas utilized for grazing during the wet and dry seasons as mapped with the help of key informants.

Water is a key input in livestock production. Since Isiolo is an arid and semi-arid area, water pans, springs and rivers are the main sources of water for livestock. It's worth pointing out that water availability is a key factor influencing the spatial distribution of livestock. Since areas near sources of water are always characterized by high population of livestock (leading to overgrazing), location of boreholes should take this into consideration to avoid degradation of the otherwise fragile ecosystem. The map shows Livestock Grazing Areas, water points and conflict areas within Isiolo County.

Map 11-4: Livestock Grazing Areas



Source: Author, 2024

11.4.2 Livestock Grazing Pattern

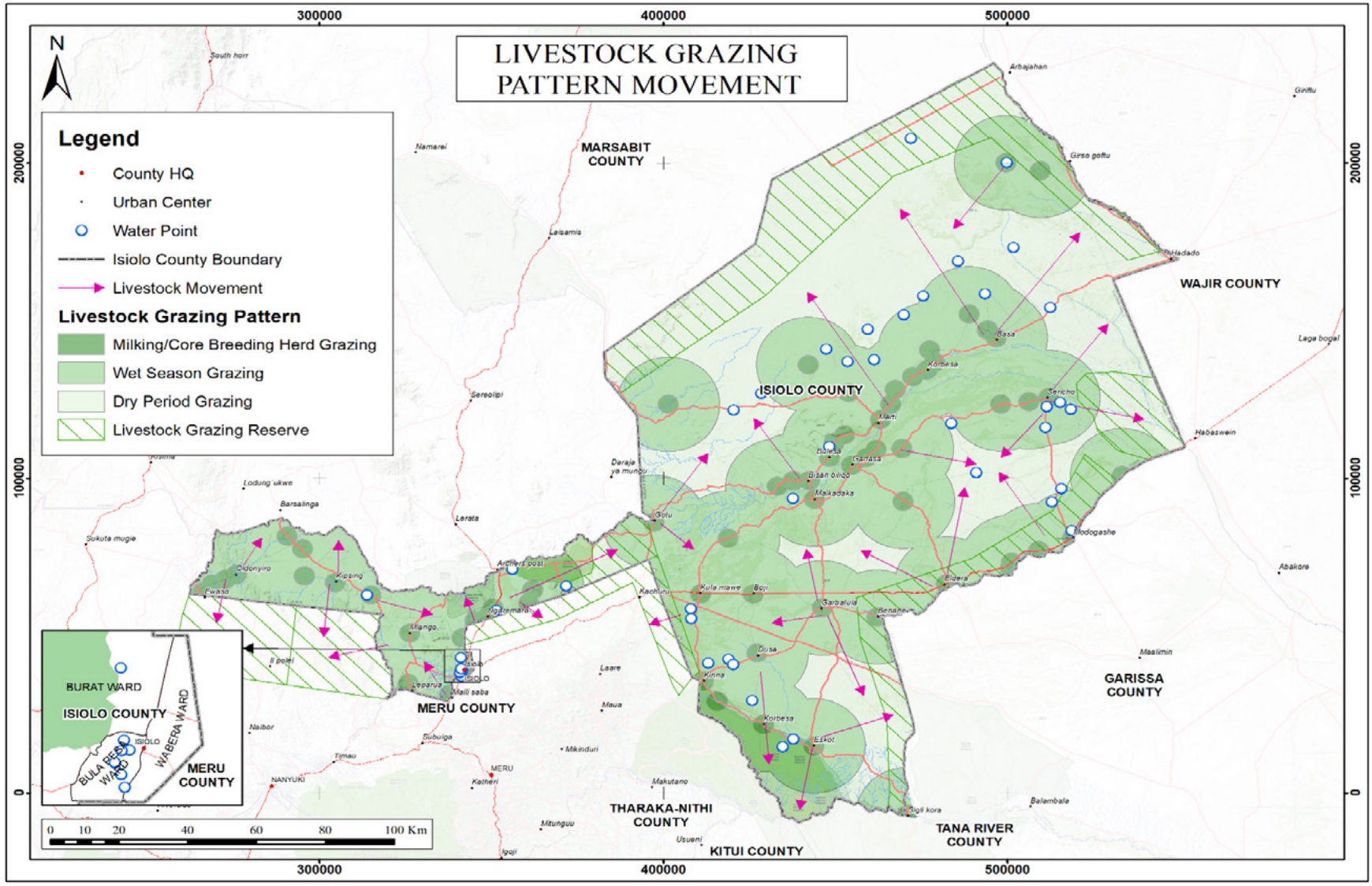
Pastoralism is the main system of livestock production in Isiolo County. Pastoralists move with their livestock in search of water and pasture. The expansive rangeland is spatially zoned into wet season grazing areas, dry season grazing areas, all-season grazing areas and grazing reserves. The people live in clustered settlements along the transport routes.

Over the years, the livestock keepers have implemented grazing plans with the help of locally established and recognized grazing committees. Only the milking herd (wet cows) and their young ones are allowed to graze near the settlements while the rest of the heard is only allowed to graze more than 15 kilometres from the settlements. Ewaso Nyiro River is a key defining feature as it influences the livestock grazing pattern.

The river corridor serves as the dry season grazing zone and therefore animals are not allowed in this zone during the wet season. During the wet season, they move with their animals to other areas that are known to have water and forage. During the dry season, they move to the area with sufficient forage and available water to sustain their livestock. The grazing reserves are located along the borders.

These areas are associated with resource use conflicts are therefore not preferred for grazing. However, during severe droughts when there is lack of forage everywhere, they have no alternative other than move with their animals to the high-risk grazing reserves. The map below shows the grazing pattern the county. The map was developed with the help of the County Director of Livestock Production.

Map 11-5: Livestock Grazing Areas



Source: Author, 2024

11.4.3 Resource Use Conflicts

Resource use conflicts arise when different individuals, groups, or sectors have competing needs and demands for the same natural resources, leading to disputes over access, control, and management. Competition for resources occur due to scarcity of the resource. Pasture and water are scarce resources in the arid and semi-arid areas yet the population of animals has been increasing over time. These conflicts can escalate from disagreements to public disputes, and even to violence, if not addressed effectively.

Resource use conflicts are very common in Isiolo County because the different communities of pastoralists compete for water and pasture for their livestock. Information obtained during field survey and in-depth discussions with key informants revealed that the conflicts are common along the orders with neighbouring counties of Samburu, Wajir, Laikipia. Internally (within the county), conflicts are also witnessed in resource-rich areas where pasture is available especially during the dry seasons.

For instance, the Kipsing valley, Ngare Ndare and Mlango are some of the areas where resource-use conflicts occur internally. The key informants also reported that open water pans are also characterized by water-use conflicts due to their open access as opposed to boreholes which can be closed when pastoralists move with their animals to other places. Map 11-5 above shows dry and wet season grazing areas and the areas prone to conflicts. Grazing Areas Dry Season: Pastoralists move to areas with reliable water sources like Garba Tula; Wet Season: Livestockare relocated to regenerating pastures. Conflict Zones Human-Human: Resource conflicts occur along the Isiolo-Meru border; Human-Wildlife: Disputes arise near conservancies over pasture and water.

11.4.4 Livestock Population

According to data from the 2019 Kenya National Bureau of Statistics (KNBS) population census, Isiolo county had a million goats, 854,725 sheep and 248,577 heads of cattle. The county had just about fifty thousand indigenous chickens with about twenty thousand exotic birds reared for

eggs and meat. The population of camels was 148,859 camels and a total of 2,227 beehives as reported by 4Impact Foundation (2021).

The secondary data obtained from the Department of Livestock in Isiolo County headquarters shows that the population of various types of livestock has been increasing over the years as presented below.

Table 11-13: Livestock Population

	TIME IN YEARS							
LIVESTOCK TYPE	2009 CENSUS	2015	2016	2017	2018	2019 CENSUS	2020	2021
Cattle	198,424	253,355	265,907	263,847	277,039	258,698	261,006	274,055
Sheep	361,836	551,355	573,864	636,246	687,146	854,725	923,103	1,009385
Goats	398,903	586,119	633,009	716,192	773,487	1,030,005	1,111,246	1,200,147
Camels	39,084	45,309	46,669	49,015	50,485	148,859	153,325	307,011
Chickens	35,137	44,495	51,170	53,742	61,803	71,087	81,751	98,499
Donkeys	22,189	25,310	26,070	25,298	26,057	33,692	34,703	38,174

Source: Department of Livestock, Isiolo County

The data presented in the table contradicts the information obtained from 78% of the key informants which indicated that the population of livestock has been decreasing over the years due to frequent droughts which led to the loss of livestock while only 11% reported that the population of livestock has been increasing over time.

The livestock population (Cattle, sheep, camel, Goats, chickens, and Donkeys) grew from 1,876,017 in 2018 to 2,928,716 in 2022 (CIDP 2023-2027). These achievements were attributed to the construction and equipping of 6 pasture storage facilities; production and distribution of 500metric tons of local feeds; introduction of 10,000 improved livestock; co-management of 8 markets; recruitment of 26 technical staff; and technological transfer through capacity building of staff and pastoralists (Isiolo County CIDP 2023-2027). The achievements were through collaboration with development partners including DRIC, WFP, NAWIRI, LVIA, VSF Suisse, SNV, FAO, CRS, Action Aid (Isiolo County CIDP 2023-2027).

11.4.5 Livestock Marketing

Livestock marketing is the process of raising, promoting, and selling livestock to meet consumer demands and maximize profit. It involves buying, selling, or exchanging livestock, milk, wool, and hides for cash or goods. Livestock markets are spread across the county. There are seven major livestock markets in the county, namely Isiolo town, Garbatulla (Belgesh, Kinna), Duse, Modogashe, Merti, Eskot and Oldonyiro as documented in the Agriculture, Livestock and Fisheries Sector Plan 2018-2027. However, a key informant from the County Veterinary Department reported that some of the livestock markets (e.g., Kinna and Eskot) are currently not operational due to insecurity. Active livestock markets according to the County Veterinary Department are Isiolo Town, Ngaremara, Duse, Boji, Barambate, Merti, Oldonyiro. Modogashe livestock is also not very active but serves the neigbouring couties. A study by Masake, Mukhebi, Mwangi and Mesa (2020) in Isiolo County revealed livestock are sold to meet household needs. These are sold at the household level, in local markets, and at regional markets such as Isiolo town and Maua in the neighboring county (Masake et al, 2020). The plate below shows the famous Oldonyiro Livestock Market which takes place every Tuesday of the week.

Plate 11-1: Oldonyiro Livestock Market

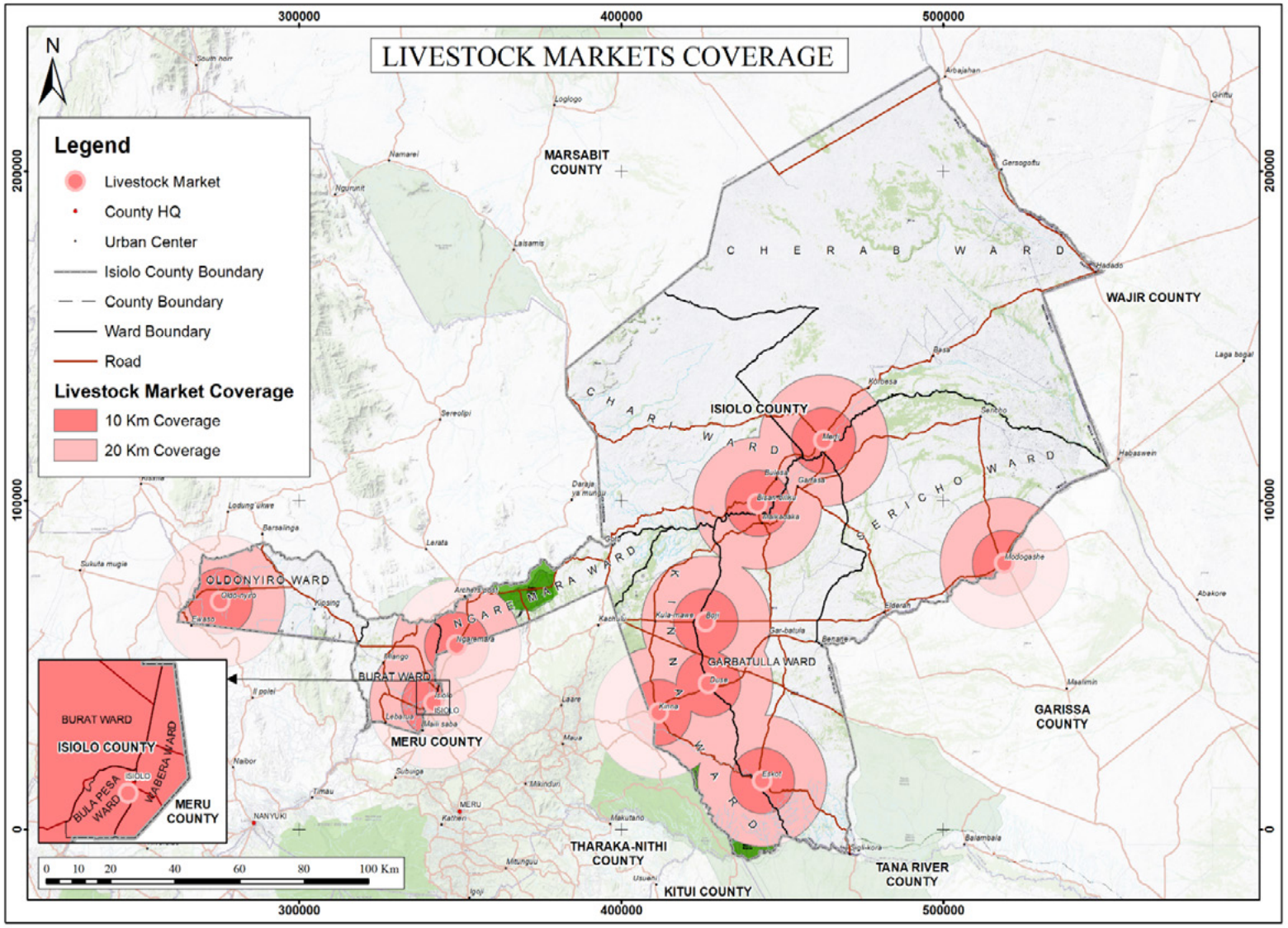


Source: Field Survey, 2024

The main livestock traded are cattle, goats, sheep and camels. Buyers come from Nairobi, Meru, and as far as the coastal region of Kenya. The commercialization of livestock products like camel milk is gaining economic importance through value addition, installation of cooling plants, deep freezers and refrigerated transport systems.

The milk is sourced from producers across the county and shipped to the main market in Nairobi. The county also has the potential to produce huge amounts of honey with improved production and value addition through the construction and equipping of a honey processing plant. The map below shows the spatial distribution of livestock markets and their coverage.

Map 11-6: Spatial Distribution and Coverage of Livestock Markets



Source: Author, 2024

It's evident from the spatial coverage of the livestock markets that some areas are not well served by the existing livestock markets. These include Chari, Sericho and Cherab Wards.

11.4.5.1 Prices of Livestock in Isiolo County

Livestock prices are critical variables in the livestock sector since dealers in this industry are in business therefore must make rational decisions. Livestock prices fluctuate based on animal weight, age, sex, health, distance from the major urban centres, and season. External factors also have significant influence on the prices of livestock and livestock products. A case in point is the on-going conflict between America and Iran which has significantly disrupted the livestock market. The Middle-East is the single most important market for Kenya's livestock and livestock products.

However, the conflict between America and Iran has dealt a major blow to the market due to high cost of transportation occasioned by long detours, high cost of fuel due to scarcity, among other factors. Locally, the prices of livestock plummet during prolonged dry spell which contribute to loss of livestock. However, during festivities such as Christmas season and Muslim holidays such as Alamadhern" (Eid al-Adha also known as Idd-ul-Adha, Eid-ul-Azha, or the "Festival of Sacrifice), the prices of livestock and livestock products tend to soar up.

Months such as January of every year are also associated with relatively low livestock prices because most parents tend to sell their farm animals to raise school fees and money for other associated expenses. Remote parts of the country are associated with low prices as opposed to major urban centres where accessibility say to Nairobi is guaranteed. For instance, during the month of February, 2026, the average price of a mature cow in Oldonyiro Livestock Market was Ksh 30,000.00 while a similar cow could fetch as high as Ksh 45,000.00. The average price was Ksh 37,700.00.

Available information revealed that a mature female camel was sold at an average price of Ksh, 97,143. 00. Based on market data for early 2026, the price of a mature breeding male camel in Kenya (including arid regions like Isiolo) ranges from KSh 150,000 to KSh 300,000. For mature

male camels specifically sold for slaughter or in local Isiolo markets, the prices are typically influenced by body size and weight: Breeding Males (Mature fetched KSh 150,000 to KSh 300,000. A mature camel bull sold to slaughterhouses generally commands a price of not less than KSh 80,000 to over KSh 100,000, depending on size.

It's important to note that livestock for export market is normally graded (Grade 1, 2 and 3) and therefore the prices vary according to the grade. The same concept applies to meat, one of the most important livestock products. (Appendix shows the average prices of mature Boran cows in Isiolo, Mert, Oldonyiro and Ngaremare livestock markets (2021-2022)

LIVESTOCK MARKET	SEX	GRADE	NO. OF ENTRIES	TOTAL COST KSH	AVERAGE PRICE PER HEAD
Isiolo	Male	1	26	1,590,000	61,153.00
		2	24	1,106,000	46,083.00
		3	11	366,000	33,272.00
	Female	1	15	845,000	56,333.00
		2	13	610.000	46,923.00
		3	6	176000	29,333.00
Ngaremare	Male	1	-	-	-
		2	11	250,000	22,727.00
		3	4	80,000	20,000.00
	Female	1	-	-	-
		2	-	-	-
		3	-	-	-
Oldonyiro	Male	1	-	-	-
		2	-	-	
		3	1	38,000	38,000.00
	Female	1	-	-	-
		2	-	-	-
		3		22,000.00	22,000.00
Merti	Male	1	-	-	-
		2	2	70,000	35,000.0
			-	-	-

Source: Compiled from data provided by NIPFSN, 2026 NIPFSN (2026) https://nipfn.knbs.or.ke/isiolo/download/livestock-statistics-2021-2022

11.4.6 Livestock Cooperatives

Livestock cooperatives are member-owned and controlled organizations that enable livestock producers to pool resources and efforts to achieve common goals, such as increased market access, better prices, and improved production practices. These cooperatives are crucial for enhancing the livelihoods of farmers, promoting sustainable farming, and ensuring the quality and safety of livestock products.

The benefits of cooperative movement in livestock subsector include: market access and bargaining power, improved production practices, improved access to resources and services, risk management and promotion of sustainability. There are several livestock cooperatives in Isiolo County

Table 11-14: Livestock Cooperatives

S/ NO	NAME OF COOPERATIVE	WARD	YEAR REGISTERED	GENDER		MAIN ACTIVITIES	STATUS (ACTIVE OR DORMANT)
				M	F		
1	Morulem Livestock Traders Cooperative Society	· Isiolo (Akadeli Area) · Burat Ward	2024			· Livestock Trade, Member Loaning, Fodder Production · Agribusiness · Leather Value Chain · Production Of Concrete Fencing Posts	Active
2	Isiolo Livestock	Isiolo	2003			Livestock Traders	Dormant
3	Anolei W. D. Camel	Bula Pesa	2010	94	9	Camel Milk	Active
4	Merti Livestock	Cherab	2005		64	Livestock Trading	Active
5	Kambi Ya Juu	Bula Pesa	2011			Dairy Goats	Dormant
6	Isiolo Dairy Camel		2009			Camel Milk	Dormant
7	Gaadiss F.C.S Ltd	Isiolo	2014		155	Livestock Traders	Active
8	Isiolo Tawakal	Bula Pesa	2016	38	2	Camel Milk	Active
9	Kinna Livestock	Kinna	2007			Livestock Traders	Active
10	Wadagheti Hormata	Kinna	2015		210	Livestock Traders	Dormant
11	Gotu Livestock	Kinna	2014		345	Livestock Traders	Active
12	Kulamawe Detha	Kinna	2008		280	Livestock Traders	Active
13	Ibsemo	Sericho	2014		410	Livestock Traders	Dormant
14	Oldonyiro Livestock Sacco	Oldonyiro	2016	60	35	Livestock Traders	Active
15	Lilah Fatah Livestock Sacco	Burat	2018	45	0	SACCO (Livestock Market Traders)	Active
16	Isiolo Market Livestock Sacco	Burati	2018		181	SACCO (Livestock Market Traders)	Active

S/ NO	NAME OF COOPERATIVE	WARD	YEAR REGISTERED	GENDER		MAIN ACTIVITIES	STATUS (ACTIVE OR DORMANT)
				M	F		
17	Tesogara Sacco	Kinna		124	96	F (Camel Milks)	Dormant
18	Burat Ekeunos F.C.S	Burat	2019			Marketing (Farming Tomatoes, Onions, Cereals, Horticulture And Milk Production	
19	Walqabana Dairy Camel Milk Marketing	Kinna	2020			MARKETING (Camel Milk)	Active
20	Isiolo Juakali Marketing Co-Op	Isiolo	2020		24	MARKETING (Camel Meat)	Active
21	Lbene Lang Sacco	Oldonyiro	2020			Livestock Traders	Active
22	Ngaremara Livestock Mkt Sacco	Ngaremara	2021			Sacco (Livestock Traders)	Active
23	Chari Camel Milk Marketing	Chari	2021			Marketing (Camel Milk)	Active
24	Naibunga Poultry	Oldonyiro	2021			MARKETING (Poultry Keeping)	Active
25	Kobawa Livestock	Sericho	2022			MARKETING (Livestock Traders)	Active
26	Isiolo Nyirinyiri	Bula Pesa	2022			MARKETING (Camel Meats)	
27	Rapsu Farmers	Kinna	2023			MARKETING (Livestock Traders)	Active
28	Tokkuma Livestock Marketing	Kinna	2024			Marketing((Livestock)	Active
29	Maku Livestock Market	Cherab	2024			Marketing (Livestock)	Active
30	Qosedina Marketing	Sericho	2024			Marketing (Livestock)	Active
31	Masterslices Marketing	Bula Pesa	2024			Marketing (Livestock)	Active
32	Kombola Livestock		2024			Marketing (Livestock)	New
33	Walgabana Dairy Camel Milk Marketing Cooperative					Marketing (Camel Milk)	Active

Source: Isiolo County Cooperative Office, 2025

11.4.7 Livestock Value Chains

Value addition in the livestock subsector refers to the process of transforming raw livestock products into higher-value goods that can command better prices in the market. This involves various methods like processing, packaging, branding, and marketing to enhance the product's appeal and increase its value. By focusing on value addition, livestock producers can increase their income, improve their competitiveness, and contribute to the overall sustainability of the livestock production system. The table shows value addition in Isiolo County.

Table 11-15: Fodder and Livestock Value Addition in Isiolo County

FODDER/LIVESTOCK/ LIVESTOCK PRODUCT	ACTIVITIES INVOLVED	VALUE ADDITION FACILITIES REQUIRED	STATUS
Fodder value addition	· Inputs provision · Fodder production · Aggregation, processing and marketing · Onboarding of partners	· Reliable supply of certified pasture seeds · Water supply infrastructure · Aggregation center/hay stores	· Partners onboarded e.g World Food Program, Action Aid, ACDI=VOCA, ILRI · Agregators/resellers in place · Techical support from University of Nairobi · Extension services provided by Ministry of Agriculture and Livestock · Suport provided by Kenya Climate Smart Agriculture · Women groups and cbos established
Livestock improvement	· Livestock production practices	· Construction of feedlots · Animal feeds plant	· 2 feedlots established and 1 Feed processing plant constructed for existing groups, e.g., women group and community-based organization

FODDER/LIVESTOCK/ LIVESTOCK PRODUCT	ACTIVITIES INVOLVED	VALUE ADDITION FACILITIES REQUIRED	STATUS
Meat value chain	· Transforming whole carcasses into cut-ups, deboned cuts, or portions like wings, legs, and breasts · Development of business models	· Abattoirs-complete with cold storage, refrigerated vehicles, sufficient water and sanitation infrastructure & holding ground · Well trained personnel · Transport logistics for animals	· Ultra-modern export abattoir in Burati Ward is 70% complete. Not yet operation · Development of business models underway · 2 meat processing plants and cold chain systems for women group · 2 Poultry slaughterhouse constructed
Milk Value chain	· Milk processing into products such as cheese, yogurt, butter, and ghee	· Milk processing facilities	· 2 camel milk bulking and cold chain systems for women group,2 camel milk processing plants,2 dairy processing plants · 2 of cold chain systems and refrigerated vehicle to women groups · 4 Cooperatives involved in small-scale processing of yoghurt
Honey value chain	· Promotion of bee-keeping across the county · Processing of honey for local and export market	· Establishing of honey processing plants at strategic locations with support from partners	· Bee-keeping and by extension honey production taking an upward trajectory in the county. There is great potential in the county
Wool value chain	· Promotion of keeping of sheep for wool · Shearing and processing wool	· Establishing facility for shearing and processing wool to high value with support from partners	· Wool value addition not taken off yet in the county
Animal byproducts value chain	· Converting hides and skins into leather goods or other valuable items	· Tanneries across the county	· Currently there is no tannery in the county. Lost opportunity for livestock farmers to earn more income

FODDER/LIVESTOCK/ LIVESTOCK PRODUCT	ACTIVITIES INVOLVED	VALUE ADDITION FACILITIES REQUIRED	STATUS
Promotion of livestock breeds improvement initiatives	· Animal breeding practices with a view to improving productivity and resilience · Creating awareness among livestock farmers · Targeting dairy and beef cattle, shoats, poultry and camels	· Establishing a livestock breeding centre · Capacity building of county livestock staff · Onboarding partners	· Improved poultry given to 10 groups with the support of partners · 50 improved dairy breeds (Toggenburg, Saanen, German alpine) distributed with the support of partners
Marketing of livestock and livestock products	· Involves selling, purchasing, or exchanging live farm animals, milk, and other livestock products for cash or goods	· Establishing marketing channels for livestock and livestock products	Currently the livestock market is not well developed. 7 major livestock markets exist. Challenges include: · Insecurity, market information, vandalism of infrastructure, poor roads.

Plate 11-2: Isiolo Export Abbattoir in Burat Ward



Source: Field Survey, 2024

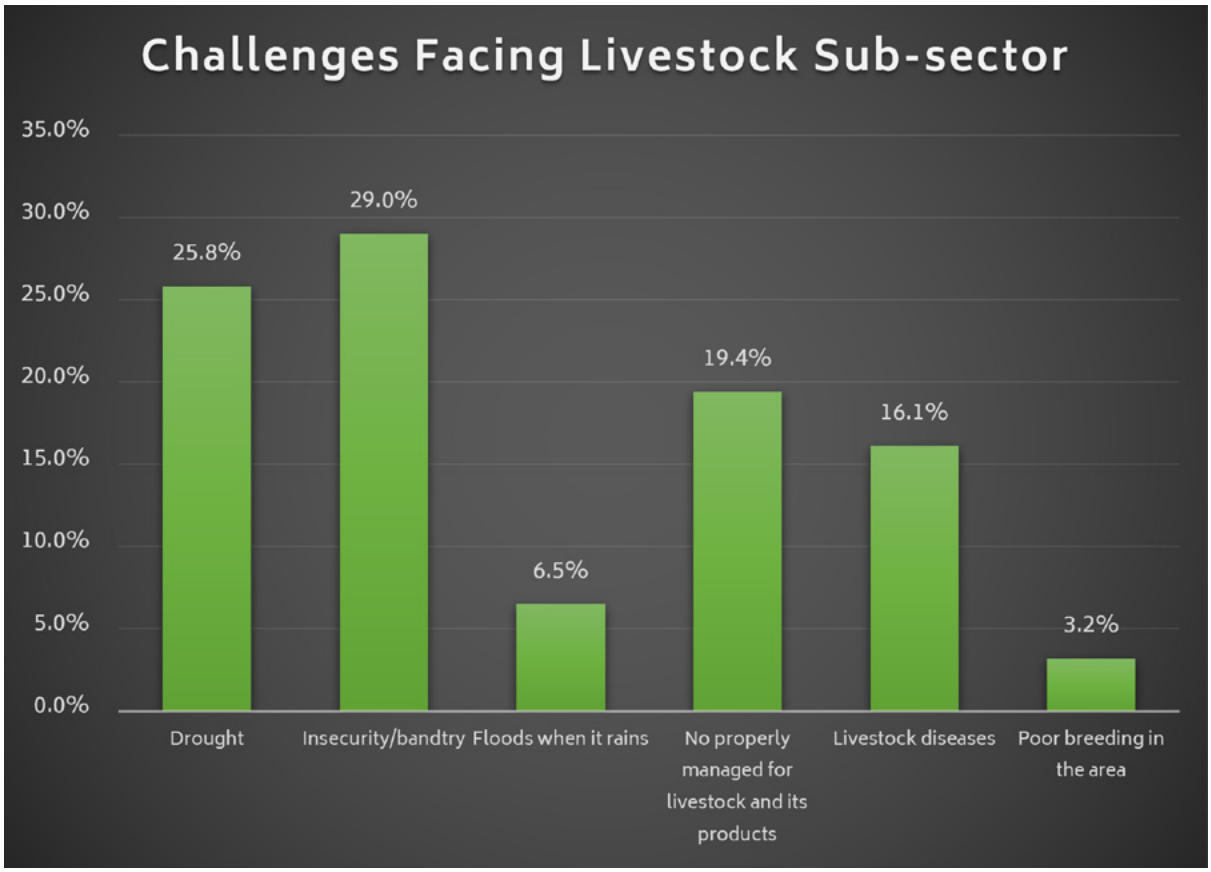
The ultra-modern slaughter house will be used to slaughter all farm animals (camels, cattle and shoats). The concept of circular economy is integrated in the design and operations of the facility and therefore no wastes shall be released into the environment since wastes (e.g blood, hooves, horns, bons etc) from one process are used as inputs (raw materials) to produce other high value products (upcycling).

The meat processed at the modern slaughter house shall be for export and local market as reported by the Manager of the facility. Its worth observing that the other slaughter houses across the county do not meet the required standards of public health and hygiene as they are characterized by run-down infrastructure and wastes (skins and hides, blood, bons, hooves and horns) are released into the environment (linear economy) where they contribute to environmental degradation.

11.4.8 Challenges Facing Livestock Production

The survey revealed that livestock production in is characterized by a myriad of challenges. The challenges reported by key informants are presented in figure below.

Figure 11-12: Challenges Facing Livestock Production



Source: Field Survey, 2024

Majority (29%) of the key informants reported that insecurity (banditry) is a major problem facing livestock production while about 26% felt that drought which contribute to lack of water and fodder is a serious challenge to livestock keeping. Other challenges include livestock diseases (16%), floods and lack of properly managed grazing system (19.4%). Insecurity is mainly due to the culture of the neigbouring Samburu community which allow young people (Samburu Morrans) to raid other communities and steal livestock (cattle, shoats and camels) to meet certain obligations such as paying pride prize, source of livelihood, as proof of "being a man", among others.

A young Samburu man (Morran) is not respected in the society until he steals livestock (wealth) from another community. For example, the key informats reported that Samburu Morrans attached a homestead in Ngare Mara Ward on the Saturday night 9th November, 2024, killed four people and sole cattle.

Wildlife (especially hyenas, leopards, lions) are also a major threat to livestock production in the county.

11.4.9 Common Livestock Diseases in Isiolo County

Livestock diseases are also common in the county which lead to loss of livestock, and by extension, loss of the local people's means of livelihood. The table below shows the common diseases of livestock as reported by Department of Veterinary Services.

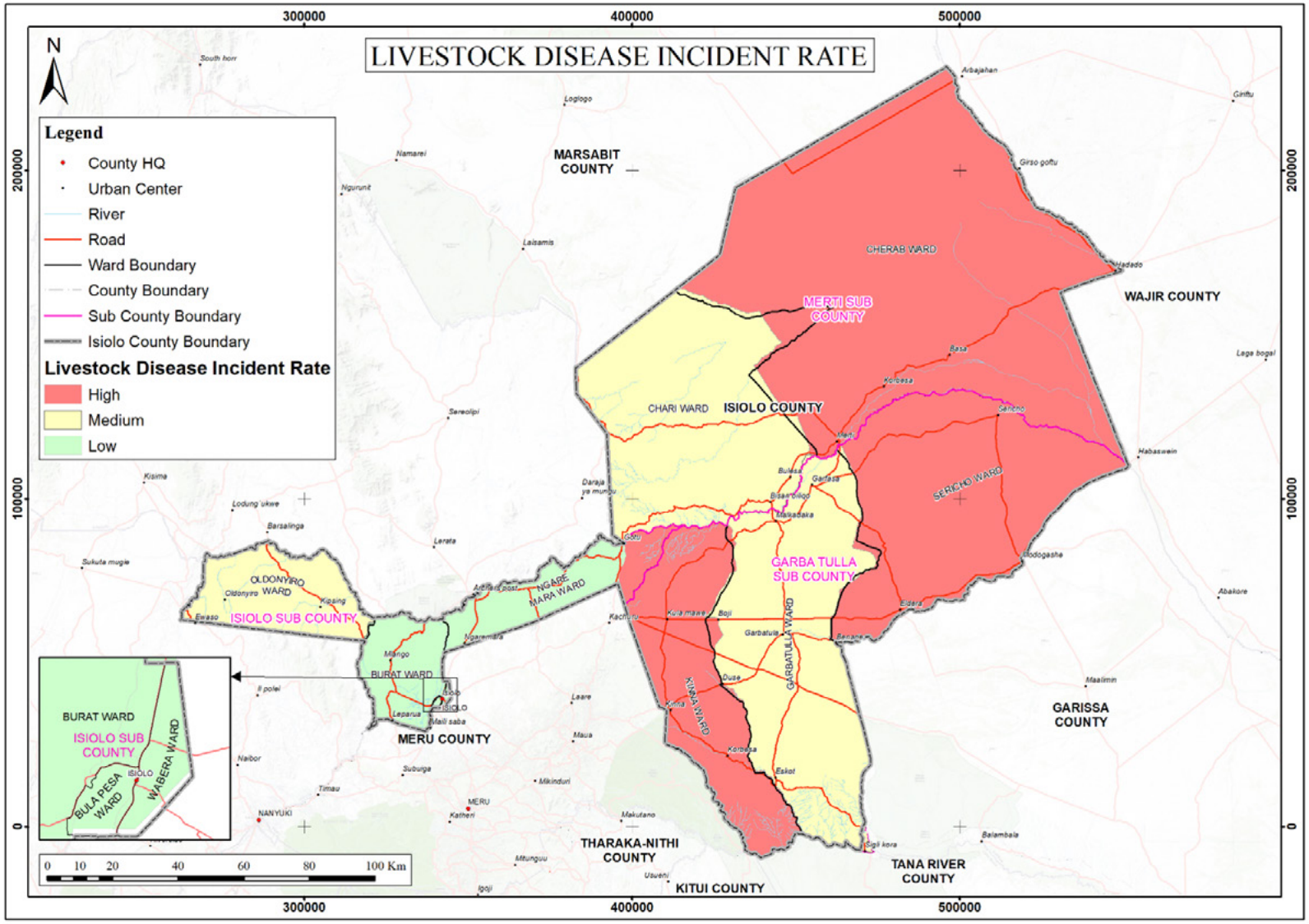
Table 11-16: Livestock Diseases

CAMELS	CATTLE	SHOATS
· Trypanosomiasis- surra · Mange · Wry neck · Mastitis · Camel pox · Skin abscesses · Orf · Hemorrhagic septicemia · Brucellosis · Camel Respiratory Diseases-Pneumonia · Diarrhea-Scours (Condition rather)	· East Coast fever · Foot and Mouth Disease · Bovine Mastitis · Brucellosis · Babesiosis · Lumpy skin disease (LSD)	· Contagious caprine pleuropneumonia (ccpp) · Enterotoxemia · Anaplasmosis · Sheep and goat pox · Heart water · Peste des petits (PPR) · Infectious keratoconjunctivitis (Pink eye)

Source: Isiolo County Veterinary Department, 2025

Map 11-7 below shows the spatial distribution of livestock disease incidences in the county. It's evident that it's the lowlands that are most affected by livestock diseases. This is possibly because these communally owned areas are mainly used by pastoralists to graze their farm animals.

Map 11-7: Livestock Disease Incident Rate



Source: Author, 2024

Isiolo County is characterized by frequent droughts which cause loss of livestock and hence the local people's means of livelihood. Prolonged dry spells lead to lack of fodder and water for livestock. The table below shows the occurrence of severe droughts experienced in Kenya since 1983. Isiolo County is one of the regions severely affected. The table below shows the occurrence of drought in Kenya over the years.

Table 11-17: Droughts in Experienced in Kenya

YEAR(S)	OBSERVATION
1983–1984	Widespread droughts in Eastern Kenya, and a severe drought in 1984 after an El Niño event
1981–1985	An extreme drought that severely affected the planting season and led to food imports in 1984
1991–1992	Droughts in the ASALs in Northeastern, Eastern, and Rift Valley regions
1997:	A severe drought that threatened the livelihoods of 2 million people
1999–2000	A severe drought that resulted in loss of human life and livestock, and heavy government expenditure
2000:	Kenya's worst drought in 37 years, with 4 million people in need of food aid
2004:	A crop failure left more than 2.3 million people in need of assistance
2005:	A famine affected 2.5 million people in northern Kenya
2007–2009	A three-year period of severe drought
2010–2011	The worst drought in 60 years, affecting 13.3 million people in Kenya, Ethiopia, and Somalia

Source: Oxfarm, 2006, Ngaira, 2004

Table 11-18 shows the number of people affected during the severe droughts experienced in Kenya

Table 11-18: Number of People Affected During the Severe Droughts Experienced in Kenya

YEAR	NUMBER OF PEOPLE AFFECTED IN KENYA
1975	16,000
1977	20,000
1980	40,000
1984	200,000
1992	1.5 Million
1995-1996	1.4 Million
1999-2000	4.4 Million
2004-2006	3.5 Million

Source: Oxfarm, 2006, Ngaira, 2004

The county is also characterized by a dysfunctional livestock market as reported by key informants. The Barambata livestock market which used to be very active is currently not operational. The market infrastructure is vandalized due to lack of ownership. A modern livestock market was developed with the support from DRSLP (Drought Resilience and Sustainable Livelihood Project). However, the local community failed to own the market terming it a DRSLP Market (Possibly due to a supply-driven approach instead of a demand-driven approach).

The livestock market at Kinna is also not operating at an optimal level as its underutilized. The livestock market used to be very vibrant (15-20 years ago) as reported by key informants. It was built with support from FH (Food for Hungry) but, it has collapsed due to negative politics and was characterized by blame games. The herders with fewer livestock blame herders with large number of animals while those with large her also blame those with fewer number of animals. Brokers are also having their share of the blame. Potential livestock buyers from urban areas such as Nairobi, Isiolo etc fear purchasing livestock from Kinna for fear of being attacked by goons (politicians inciting local people).

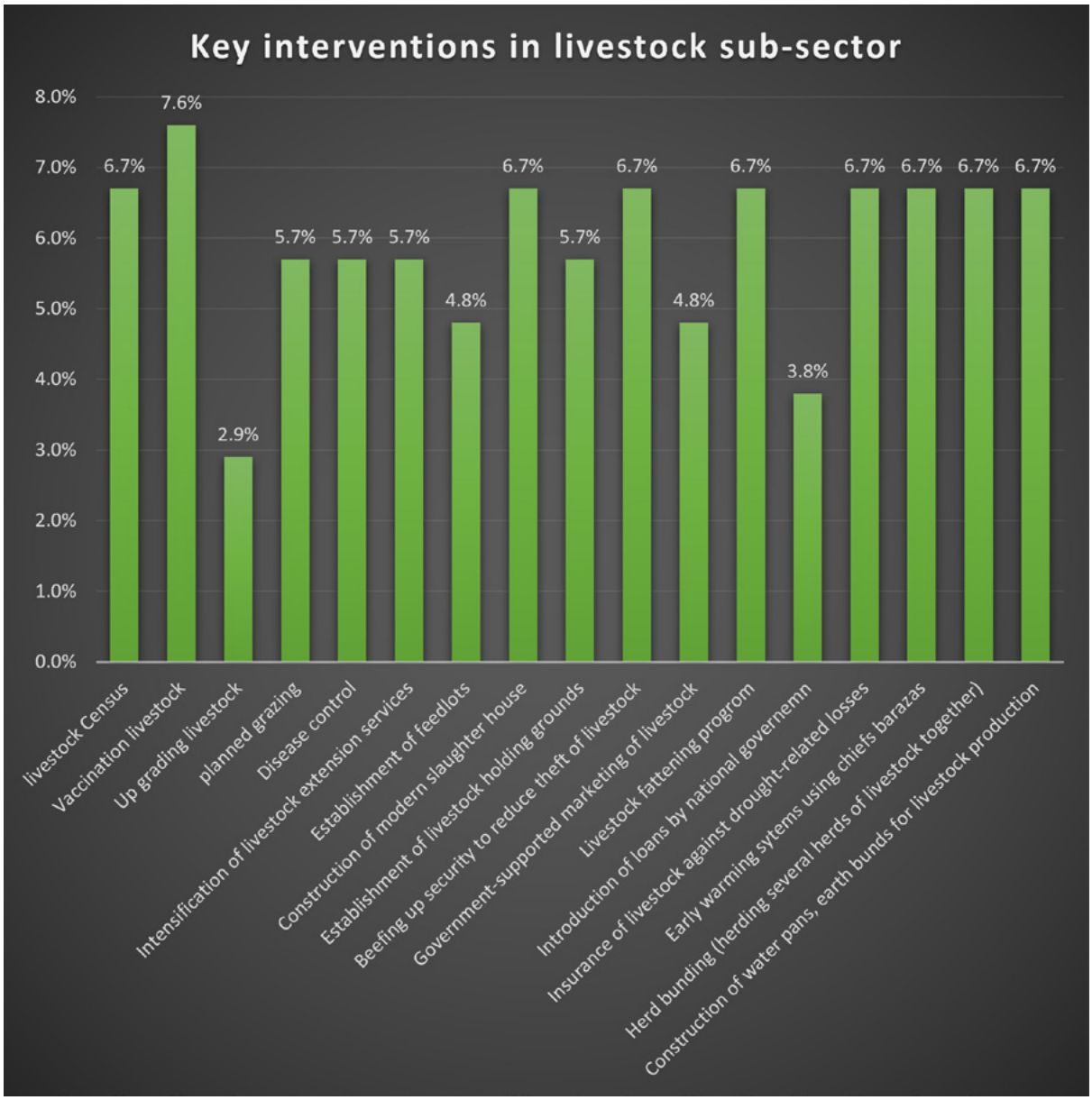
The livestock holding grounds were functional a few decades ago but the situation is different now. The grounds are not functional and they face the risk of being grabbed by unscrupulous people keen to meet their selfish ends.

Poor distribution of livestock due to insecurity implies that some parts of the planning area cannot be utilized even if they may have pasture and water. Difficult terrain (e.g steep slopes) also makes it impossible for livestock to utilize some areas as reported by the County Government of Isiolo (Isiolo County CIDP 2023-2027).

11.4.10 Key Interventions Implemented in the Livestock Sector

The survey revealed that various interventions have been implemented in the livestock sector over the last five years, as presented in the figure below.

Figure 11-13: Key Interventions in the Livestock Sub-sector



Source: Field Survey, 2024

In the 2018-2022 plan period the veterinary subsector targeted to improve livestock health by controlling diseases and pests as reported in the Isiolo CIDP (2023-2027). Specifically, the programme aimed at reducing livestock disease prevalence from 60% in 2017/18 to 42% at the end of the plan period. The sub sector managed to improve livestock health by reducing livestock disease prevalence to 38.2 percent at the end of CIDP II (2018-2022) plan period. This over achievement was attributed to: Sustained livestock vaccinations across the County; adoption of one- health approach to disease outbreak management.

The Key informant from MID-P reported that the organization is working with the livestock farmers to upgrade local breeds of goats by crossing them with the toggenburg milk goat with a view to boosting milk production in the county.

A greater part of the land in Isiolo County is communally owned while livestock is under private ownership. This scenario leads to the tragedy of the commons as postulated by Garrett Hardin (1968). To ensure proper management of the communal rangeland, a traditional/indigenous community-based unit called Dedha is established in every Location for the purpose of coordinating pastoralism activities in the rangelands. The Dedha comprises of rangeland scouts who are employees of the county government and other community leaders. They are responsible for planned grazing. There are also conflict management committees. They work closely with the national government security organs.

11.4.11 Emerging Issues, Challenges and Opportunities

a) Emerging Issues

i. Poor distribution of livestock in time and space due to insecurity and rugged topography.

ii. Inadequate animal feeds due to frequent and prolonged drought.

iii. Inadequate water for livestock.

iv. Banditry

v. Lack of market for livestock.

vi. Poor governance/management of livestock market infrastructure- Kinna Ward.

vii. Livestock diseases across the county.

viii. Pests and livestock parasites.

ix. Threat from wildlife- especially in areas bordering the conservancies, national parks and game reserves

x. Non-functional livestock holding grounds.

xi. Encroachment on livestock holding grounds -currently occupied by the other unrelated land uses such as the military, human settlements

xii. Competition for pasture and water with livestock from neighboring counties of Laikipia, Meru, Marsabit, Wajir and Samburu.

xiii. Limited livestock extension services – officers are not facilitated to move out of their offices to visit livestock herders.

xiv. "Mathenge" threat – when farm animals feed on the pods of the invasive Prosopis juliflora, their teeth become brittle and fall off.

xv. Pastrolism as a system of livestock production makes it difficult for the government and development partners to provide certain services since the herders keep migrating with their livestock.

xvi. Installed water projects and even cattle dips get vandalized when left behind as the herders move to other places.

b) Opportunities

i. Availability of land for grazing.

ii. Abundance of livestock in the county.

iii. Fertile soils.

iv. Many existing water pans.

v. Existence of Ewaso Nyiro River.

vi. High potential for beekeeping.

vii. High potential for Poultry keeping- especially the local and improved chickens. Availability of livestock market.

viii. There is potential for livestock keeping and other domestic animals like poultry and rabbits.

ix. Livestock products such as Hides, skins and bones provide a ready market.

x. The existing Slaughterhouse- especially the ultra-modern slaughterhouse located in Burat Ward.

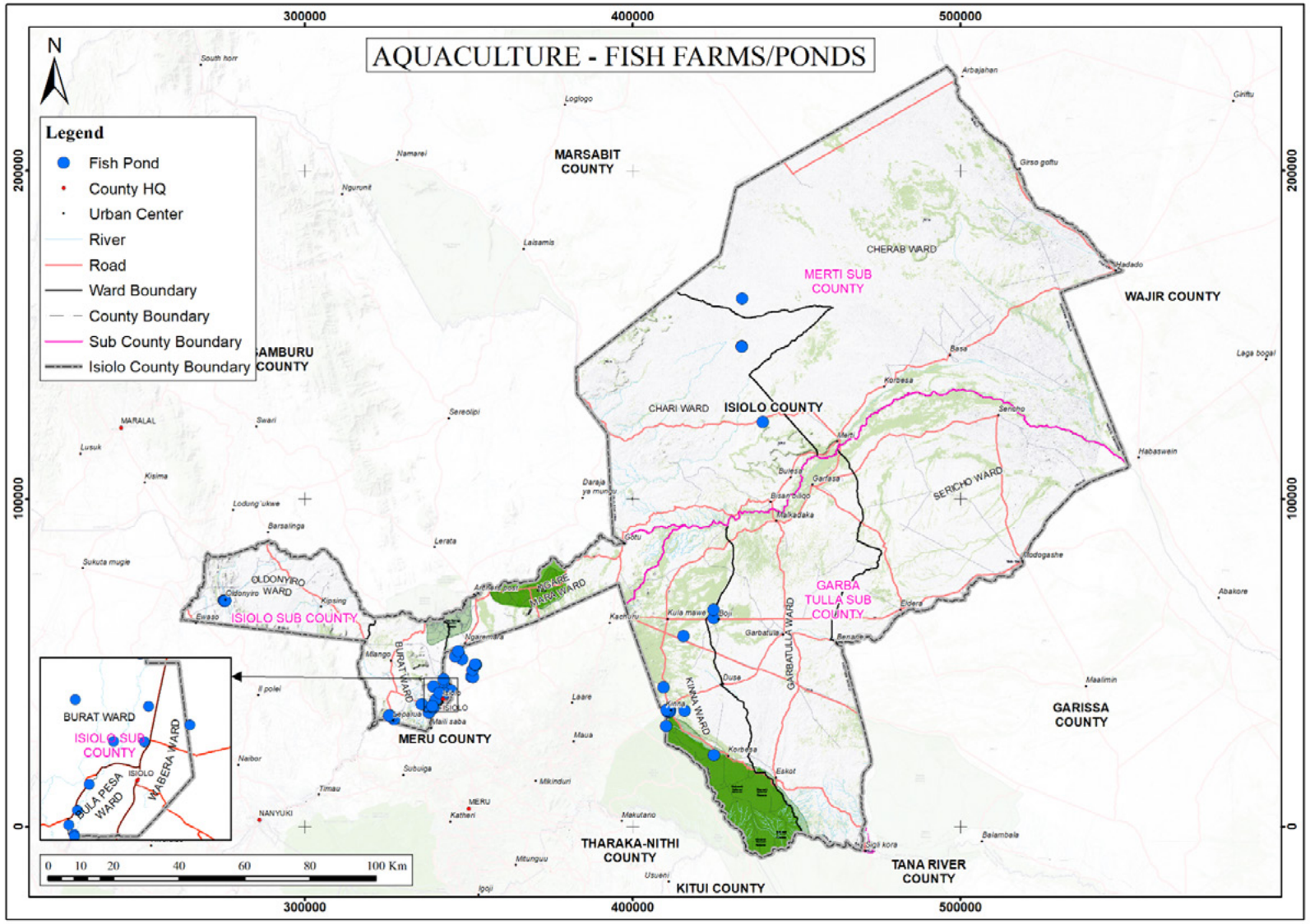
11.4.12 Fisheries

The fisheries sub-sector in Isiolo County is at infancy stage since most of the people are pastoralists. However, the sub-sector has continued to exhibit steady growth since the recent past and more and more farmers are participating in the fish value chain. Planned interventions in fish value chain is a sure way of contributing towards food security and poverty reduction in the county.

There are two main divisions of fisheries production which are practiced in Isiolo county i.e. aquaculture and river line capture fisheries. In aquaculture the commonly cultured fish are tilapia and African catfish. For river line capture fisheries, the main activity is along river Ewaso Ngiro that include Cherab, Chari, Garbatulla and Sericho ward. Specifically, the target areas include; Awristu, Saleti, Matarba, Mallkagalla, Korbesa, Garfasa, Muchuro, Bandana, Esrsaboru and Sericho areas. The main types of fish caught are, clarias, common carp, lung fish, tilapia, barbus and labeo. (Isiolo County Integrated Development Plan, 2018-2022).

The county is currently producing about 35 tons of fish against an estimated potential of 200 tonnes per year according to the rapid assessment study carried out in 2018. Fish farming is practiced in varous parts of the county. The Aquaculture Map of Isiolo County highlights the distribution of fish ponds and fish farms, showcasing areas where aquaculture activities have been established to enhance food security, nutrition, and livelihoods. Though traditionally arid, Isiolo has seen increased interest in small-scale fish farming, especially near perennial rivers, water pans, and boreholes. These aquaculture sites contribute to income diversification, promote climate-smart agriculture, and support youth and women empowerment. Mapping fish farming areas aids in resource planning, extension services delivery, and investment targeting to grow the aquaculture sector in Isiolo County.

Map 11-8: Fish Farming



Source: Author, 2024

Challenges Facing the Fisheries Sub-Sector

The sub-sector is characterized by the following challenges as documented in the Rapid Assessment Study Report of 2018

i. Lack of fishing tools such as seine nets

ii. Inadequate fish market and market linkages

iii. Lack of funds to buy fingerlings. This includes unavailability of inclusive financial services.

iv. Low-capacity building efforts

v. Limited knowledge on vegetation/weed control as demonstrated by ponds that have overgrown grass.

vi. Unreliable means of transportation of the live fish. The equipment that are currently used are mainly tents and plastic containers

vii. Poor roads that are impassable during the rainy season

viii. Lack of storage facilities for harvested fish such as cold rooms, deep freezers, nets, coolers among others.

ix. Limited technical knowhow on fish farming

x. High cost of feeds and inaccessibility of fish feeds. Feeds are bought from Kisumu, Mombasa and Sagana

xi. This is an emerging market in Isiolo, and therefore the communities have not fully adopted fish meat as one of the sources of white meat proteins.

xii. xii. Predation especially due to unfenced fishing grounds

xiii. High costs of transportation of fish. Fish mongers must use motorcycles, hand carts then lorries to get our harvest to the market. They charge an average of KES. 50,000 to transport fish from Merti along the Ewaso Nyiro River to Isiolo Town. The fish producers thus must accumulate fish for three days to minimize transport costs.

xiv. Lack of water reservoir that can be used during the dry periods.

xv. Small fish ponds whose capacity of fish cannot meet the market demand.

Challenges associated with transportation of fish

Fish are perishable commodities which require a conducive condition during storage and transportation. However, the following challenges were established during a recent (2018) rapid assessment study of the sub-sector

i. Poor roads which are impassable during the rainy season. Most of their vehicles get punctures hence delaying the period of transportation.

ii. For live fish, post-harvest losses were encountered due to poor transportation equipment that entailed use of tents filled with water in plastic and aluminum containers.

iii. Death of fish due to shock due to high temperatures and long distances out of their natural ecosystem.

iv. Post-harvest losses due to overcrowding for live fish.

v. Lack of proper transport facilities for the processed fish i.e. the intestines are removed. Plastic containers are used for transportation, and there is no refrigeration. This results to the rotting of fish during transportation.

vi. Transportation materials not durable such as the canvas which burst open during transportation

vii. Lack of enough water for transportation of fish from Merti and for rearing fish.

viii. Lack of fish transporting licenses leads to harassment by security enforcers.

ix. High transport costs (Between KES. 50,000 to 60,000 from Merti to Isiolo Town and Meru) limits their profit margin.

11.5 CROP PRODUCTION

Crop production is one of the key components of the agricultural pillar in Kenya's National Vision 2030 and the Bottom-Up Economic Transformation Agenda (BETA) of the government. While livestock production remains the leading economic sector in Isiolo County—accounting for the bulk of livelihoods and economic activity for approximately 80% of the population—crop production nevertheless plays an important role in the County's economy. It contributes to the Gross County Product (GCP) through employment creation (self-employment and casual labour), income generation, trading activities for fresh produce, purchasing of agricultural inputs (seeds, fertilizers, and equipment), and in many other ways along the value chain. Isiolo County's GCP stood at approximately KSh 46.2 billion in 2024 (at current prices), representing only about 0.3% of Kenya's national GDP of KSh 16.22 trillion.

This highlights the relatively small scale of the county's overall economy compared to the national level. Land is a major factor in crop production, and Isiolo is well endowed with abundant land whose potential has not been fully harnessed. Crops require well-drained soils and suitable climate; however, the County being mostly arid and characterized by low rainfall and high temperatures throughout the year significantly limits the extent of crop production activities.

11.5.1 Agroecological zones

Crop production in Isiolo County is shaped by varying ecological conditions across its wards, with farmers prioritizing drought-tolerant and early-maturing crop varieties together with climate-smart practices such as rainwater harvesting, conservation agriculture (minimum tillage, mulching, and tied ridges), furrow or drip irrigation where feasible, intercropping, crop rotation, agroforestry, zai pits, and the use of improved drought-resistant seeds to enhance resilience against erratic rainfall.

In the semi-arid areas (covering Wabera, Bulla Pesa, southern parts of Burat, and southern parts of Kinna wards), farmers grow a more diverse range of crops including maize, beans, cowpeas,

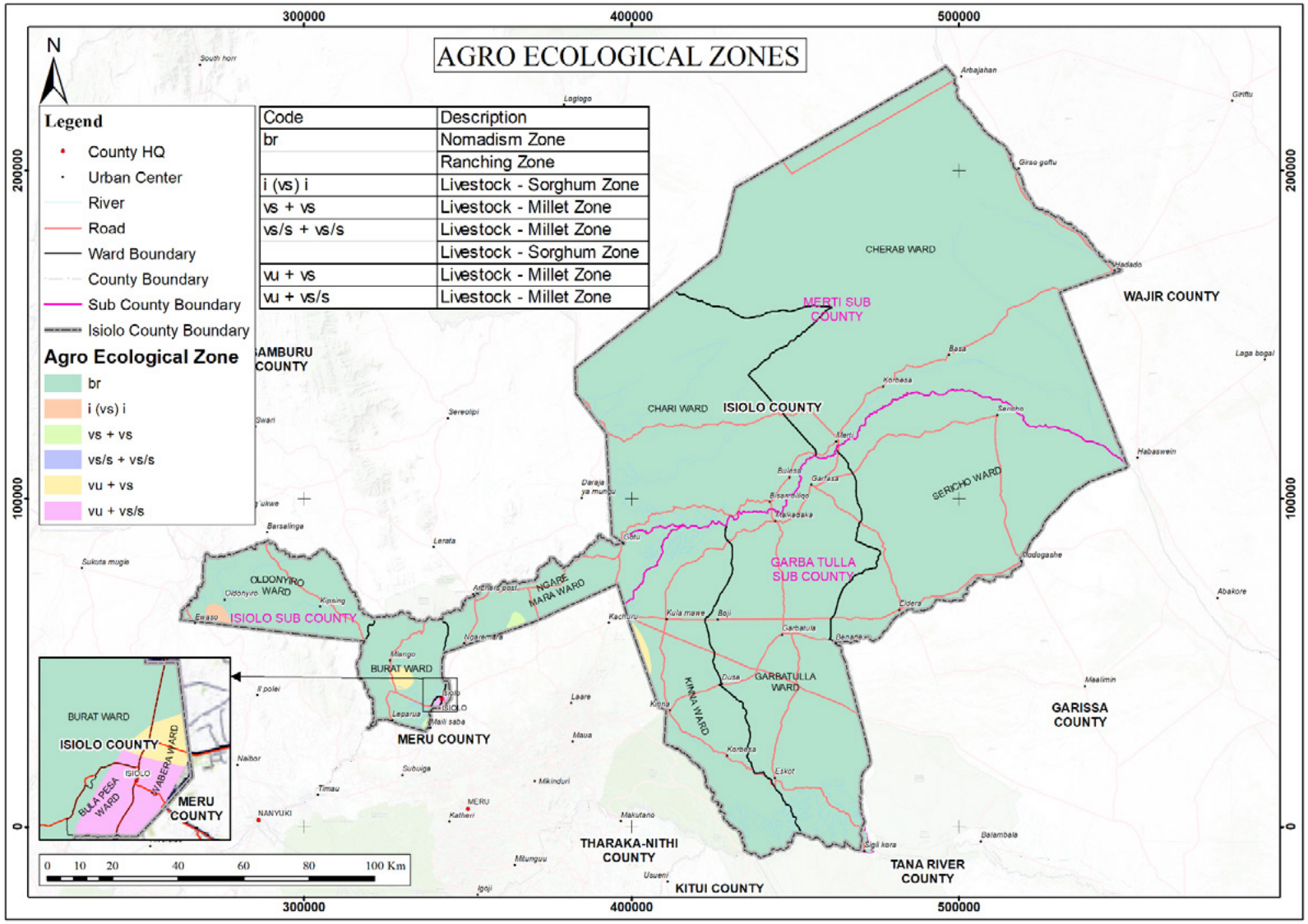
green grams, onions, tomatoes, mango, and pawpaw. These locations support both staple food crops and high-value horticultural/fruit production through practices like soil fertility management, shade netting for vegetables, timely planting after early land preparation, and integrated water conservation techniques.

In the arid zones (covering Oldonyiro, Ngaremara, northern parts of Burat, northern parts of Kinna, and Garbatulla wards), crop production is more restricted and mainly focuses on hardy staples such as maize, beans, cowpeas, and green grams. Best practices here emphasize strong moisture conservation methods (tied ridges, zai pits, or basins), intercropping with nitrogen-fixing legumes, cover cropping, and strategic small-scale irrigation or water harvesting to sustain crops during extended dry spells.

The severe arid zones (covering Chari, Cherab, and northern parts of Oldonyiro wards) experience very low rainfall and high temperatures that generally do not favour reliable rain-fed crop production. In these areas, any limited cropping attempts depend heavily on supplementary irrigation along seasonal water points, combined with highly drought-tolerant species and intensive water-saving techniques. Most of this land remains better suited to livestock grazing than to crop farming.

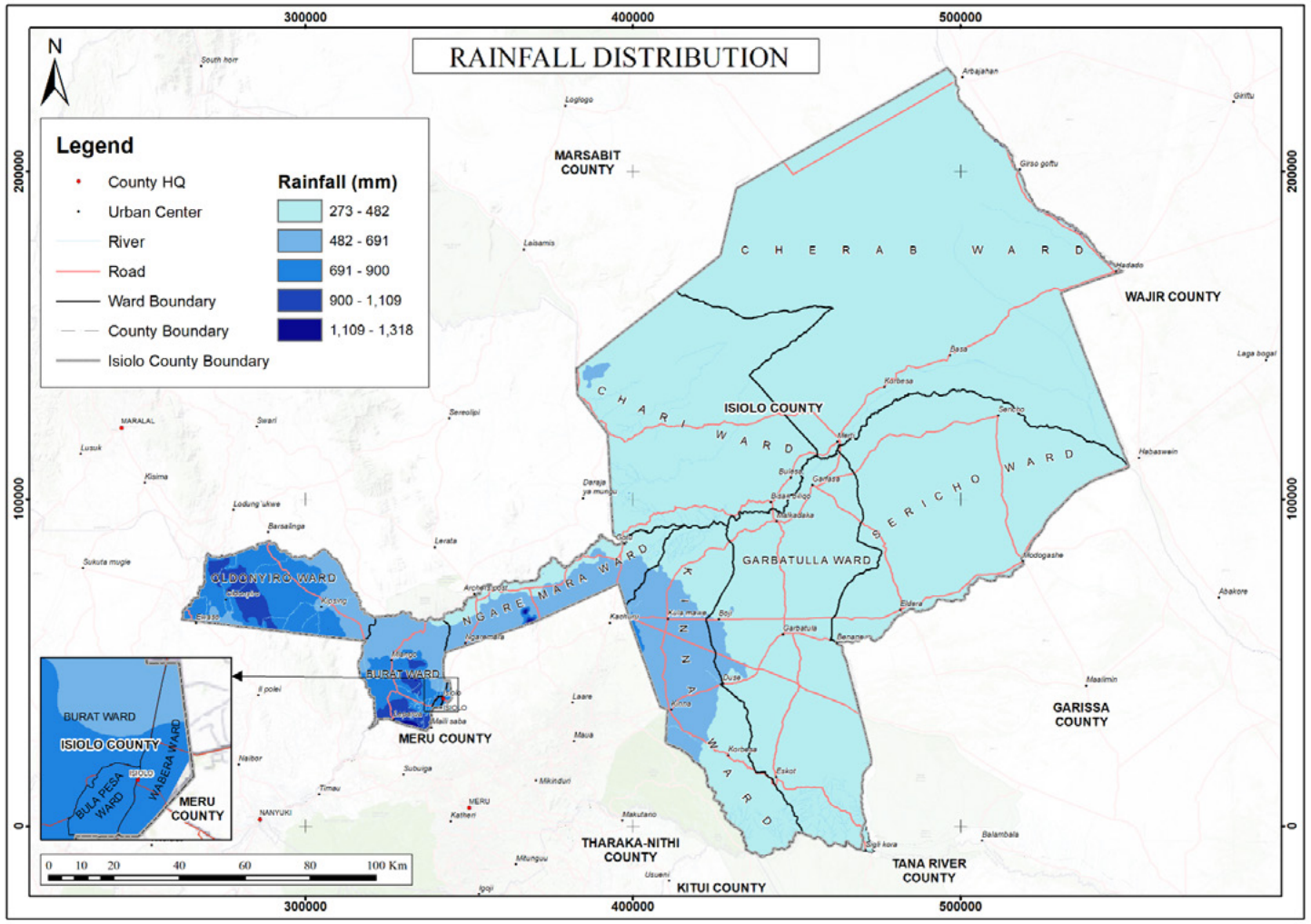
Overall, successful crop production in Isiolo County relies on climate-smart agriculture approaches — including drought-resistant varieties, efficient water and soil management, and adaptive practices — to build resilience, diversify household income, improve food security, and complement the dominant livestock sector that remains the leading economic activity in the county.

Map 11-9: Agroecological Zones



Source: Author, 2024

Map 11-10: Rainfall Distribution



Source: Author

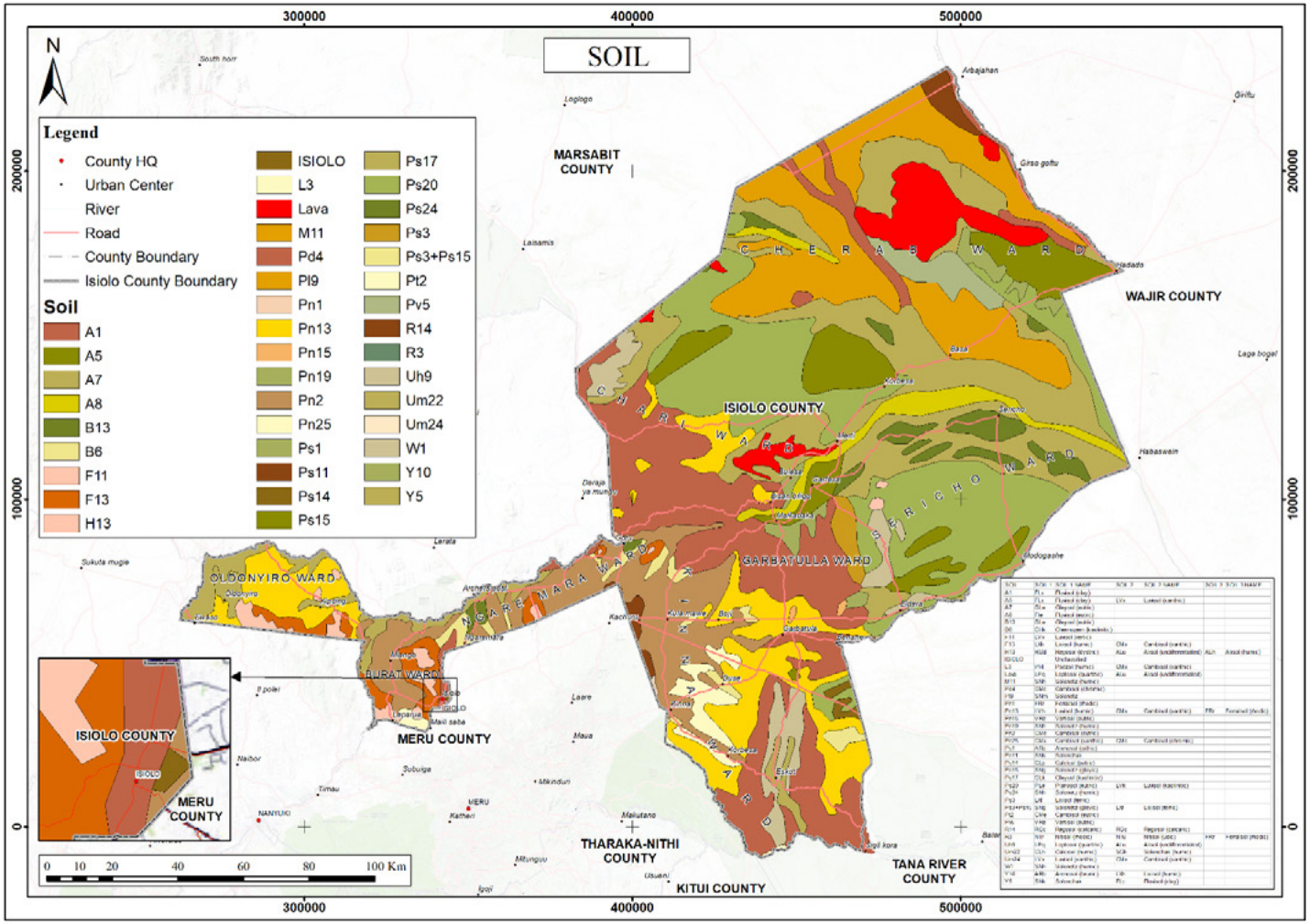
11.5.2 Rainfall Distribution

The county experiences a hot and dry climate for most months of the year, with an average of 98 days of rain, with two rainy seasons. The short rain season occurs between October and December, peaking in November, while the long rain season occurs between March and May, peaking in April. The annual rainfall in the county ranges between 400-650 mm. The map shows the rainfall distribution in the County.

11.5.3 Soils

Below is a map of the distribution of soils around the county:

Map 11-11: Soils Distribution



Source: Author

KEY - Map 11-11

CLASS	AGRICULTURAL USE	COMMON AREAS IN ISIOLO
A-1 to A-3	Poor to moderate (need irrigation, low fertility)	Ewaso Nyiro belt, dry riverbeds
A-4 to A-6	Moderate to good for crops (esp. with water)	Semi-arid fringes (Burat, Kinna)
A-7	Poor for both (swelling, cracking soils)	Black cotton soils in Garbatulla
A-8	Generally unsuitable unless drained	Rare (wetland pockets)

11.5.4 Size of land under crop production

Farming is mostly small-scale production, where farmers farm an average of 1 acre per household. There is yet no plantation farming in the county. These farms are located within irrigation schemes, they have an average size of 1acre, while the average size of the irrigation schemes is about 70 to 250 acres found in Kinna, Garbatulla, Ngaremara and Burat. These schemes include Rapsu, Guba Dida, Darajani, and Kinna irrigation schemes, among several others that are yet to be gazetted. The total acreage under food crops is 1,806 ha (CIDP 2023-2027).

11.5.5 Prioritized Value Chains

Crop production in Isiolo is secondary to the dominant **livestock sector**, but it is growing through **agropastoralism** and small-scale irrigation. The county prioritizes **drought-tolerant**, **early-maturing, and market-oriented crops** that fit the local agro-ecological zones and complement livestock activities (e.g., using crop residues as fodder).

The main **prioritized value chains** for crops include:

1. **Pulses/Legumes** (Highest priority for resilience and soil health)
    - **Green grams** (especially improved variety K26) — Hardy, high market demand, good prices, performs well in arid zones.
    - **Beans** (including black beans/Dolichos/lablab) — Nitrogen-fixing, improves soil fertility when intercropped with maize, high nutritional and market value, drought-tolerant varieties promoted.
    - **Cowpeas** — Reliable in low-rainfall areas, dual purpose (grain + fodder).

2. **Cereals/Staples**
    - **Maize** — Main food crop for household consumption and some surplus sales; promoted with drought-tolerant varieties and intercropping.
    - **Sorghum** — More resilient than maize in drier areas.
3. **Horticulture** (High-value for income generation)
    - **Onions and Tomatoes** — Key irrigated crops with strong local and regional market demand; focus on reducing post-harvest losses.
    - **Kales** and **Traditional vegetables** (African leafy vegetables) — Grown in kitchen gardens or small plots; nutritious, quick-growing, and suitable even with limited water.
4. Fruits (Emerging for diversification)
    - **Mango**, **Pawpaw**, and limited citrus/avocado/guava — Grown mainly in semi-arid zones with better water access; potential for value addition and income.

These priorities align with Isiolo's earlier sectoral plans and recent climate-vulnerability assessments for the LISTEN counties (Laikipia, Isiolo, Samburu), where green grams, black beans (Dolichos), kales, and traditional vegetables stand out as top climate-smart choices for Isiolo.

Why These Value Chains Are Prioritized

- **Climate resilience:** Drought-tolerant and early-maturing varieties reduce risk in semi-arid (Wabera, Bulla Pesa, southern Burat & Kinna), arid (Oldonyiro, Ngaremara, northern Burat/Kinna/Garbatulla), and severe arid zones (Chari, Cherab, northern Oldonyiro).
- **Market potential:** High local/regional demand (especially for green grams, onions, tomatoes, and vegetables) and better prices than bulky staples.
- **Food & nutrition security:** Pulses and vegetables improve household diets and complement livestock-based livelihoods.
- **Soil & system integration:** Legumes fix nitrogen and provide fodder, supporting

integrated crop-livestock farming.

- **Income diversification:** Horticulture and fruits offer quicker cash returns compared to livestock alone.

Supporting Best Practices (Linked to Value Chains)

Farmers are encouraged to use **climate-smart agriculture techniques** such as:

- Drought-resistant seeds and certified inputs
- Rainwater harvesting, zai pits, tied ridges, and small-scale irrigation (furrow/drip)
- Intercropping (e.g., maize with beans/cowpeas)
- Conservation agriculture and mulching
- Shade nets and kitchen gardening for vegetables
- Post-harvest handling to reduce losses (especially for onions, tomatoes, and fruits)

FOOD SECURITY IN ISIOLO COUNTY

Food security in Isiolo County, Kenya, remains a persistent challenge shaped by its arid and semi-arid (ASAL) environment. The county lies in northern Kenya's rangelands, where pastoralism and agro-pastoralism dominate livelihoods for the majority of the population (around 80% rely directly or indirectly on livestock).

As of the Short Rains Assessment (SRA) for October-November-December (OND) 2025, Isiolo County is classified in **Crisis (IPC Phase 3)** food insecurity, with a deteriorating trend heading into the March-April-May 2026 long rains season.

Key indicators include:

- Poor performance of the 2025 short rains (below normal, with uneven spatial and temporal distribution) led to near-total crop failure in rainfed systems, reduced livestock productivity, and low milk availability.

- Global Acute Malnutrition (GAM) rose to 17.4% in January 2026 (from 13.7% in 2024), with the proportion of children at risk (MUAC <135mm) increasing to 10.5%.
- Household food consumption: Overall acceptable for many, but 4.3% had poor consumption and 38.4% borderline; 76% of households used stressed coping strategies (up from 71%).
- The pastoral livelihood zone is hardest hit due to crop failure, declining milk production (1–2 liters per household vs. normal 2–3), high food prices, and limited market access.

In response, the national government has distributed emergency relief food (rice and beans) to over 140,000 residents (about 35,000 households) amid drought and insecurity. Livestock offtake programs and hay distribution are also underway to support pastoralists.

Key Drivers of Food Insecurity

Several interconnected factors undermine food availability, access, utilization, and stability in Isiolo:

1. **Climate Variability and Drought** — Recurrent droughts (exacerbated by climate change), erratic rainfall, high temperatures, and land degradation affect 65% of Africa's land, including Isiolo's rangelands. The 2020–2023 drought killed millions of livestock nationwide, with lasting impacts. Poor OND 2025 rains caused minimal pasture rejuvenation and water shortages, with forage expected to last only 1–2 months (vs. normal 3–4).
2. **Livestock-Dependent Economy** — Pastoralism provides milk, meat, and income, but herd sizes remain low post-droughts. Influxes of livestock from neighboring counties (Garissa, Wajir, Marsabit, Samburu) increase pressure on resources, spread diseases, and heighten competition.
3. **Resource-Based Conflicts and Insecurity** — Conflicts over grazing and water (including with wildlife) restrict access to pastures. Hotspot areas limit movement, while banditry and theft reduce assets. Human-wildlife conflict adds to livestock losses.

4. **Crop Production Challenges** — Rain-fed agriculture (maize, beans, green grams) suffers from low yields; acreage and output were well below long-term averages in 2025. Pests/diseases (e.g., fall armyworm) and limited irrigation compound issues. Agro-pastoral zones fare slightly better but still face exhaustion of household stocks within a month.
5. **Economic and Market Factors** — High food commodity prices, low household stocks, and reliance on markets increase vulnerability. Poverty affects a large share of the population, limiting purchasing power.
6. **Nutrition and Health Linkages** — Reduced consumption of milk, pulses, and vegetables drives malnutrition, especially among children under five and lactating mothers. Poor sanitation and disease burden worsen outcomes.

Other factors include invasive species (e.g., Prosopis juliflora/mathenge) that degrade rangelands and limit forage access.

Efforts Toward Resilience

Isiolo is gradually shifting from heavy reliance on emergency aid toward sustainable solutions:

- **Climate-smart agriculture** — Initiatives by NGOs like Action Against Hunger train women's groups (e.g., Habsa Women's Group) in drought-resistant farming, irrigation, and crop diversification (tomatoes, etc.). This improves dietary diversity and reduces malnutrition while empowering women economically.
- **Land restoration** — Community efforts with WFP and partners combat erosion, restore degraded land for grazing/crops, and build resilience. Programs promote fodder production, hay conservation, and rangeland management.
- **Livestock support** — Disease surveillance, vaccination, restocking (camels/goats), and value chains (e.g., camel milk, poultry). Anticipatory actions by FAO and others provide feed and protect herds before crises worsen.

- **Policy and Institutional Frameworks** — The County Integrated Development Plan (CIDP) 2023–2027 prioritizes agriculture, livestock, water harvesting, and mechanization. The Isiolo Information Platform for Food Security and Nutrition (IIPFN, established 2023) provides data dashboards and repositories for better decision-making. Partnerships with NDMA, national government, and donors (EU, USAID, etc.) support assessments and interventions like the Hunger Safety Net Programme.
- **Diversification** — Some communities explore fishing, youth in agriculture, and market linkages. Peace meetings address resource conflicts.

Food security in Isiolo is expected to remain stressed or worsen in the short term (into mid-2026) without adequate rains or scaled interventions, with households increasingly market-dependent and using coping strategies. Longer-term, building resilience through sustainable rangeland management, expanded irrigation, climate adaptation, conflict resolution, and diversified livelihoods is essential.

Key priorities include:

- Strengthening early warning and anticipatory actions.
- Investing in water infrastructure (boreholes, pans) and fodder reserves.
- Supporting smallholder farming and livestock value addition.
- Enhancing nutrition-sensitive programs targeting children and mothers.
- Promoting community-led restoration and inclusive governance of resources.

Isiolo exemplifies the broader challenges facing Kenya's ASAL regions, where climate pressures test traditional pastoral systems. With coordinated efforts from county/national governments, NGOs, and communities, there is potential for greater stability—shifting from crisis response to proactive food system transformation. Ongoing monitoring via platforms like NDMA and IIPFN will be critical.

Production of Crops

MAIN CROPS GROWN

Crop production focuses on staples and horticultural crops adapted to semi-arid conditions:

- **Staple cereals and pulses (rainfed or limited irrigation):** Maize, beans, green grams (mung beans), cowpeas, sorghum. These dominate rainfed systems but suffer frequent failures.
- **Horticultural crops (often irrigated):** Tomatoes, onions, kales (sukuma wiki), spinach, and other vegetables. These provide quicker returns, dietary diversity, and income, especially for women and youth groups.
- **Others**: Small areas of cassava, sweet potatoes, mango, pawpaw, bananas, and emerging drought-tolerant varieties.

Women farmers often lead in vegetable production, while men may focus more on staples or livestock integration. Youth are increasingly involved in commercial horticulture.

Production Systems

- **Rainfed production:** Limited to areas with better soil moisture retention (e.g., black cotton soils in parts of Bulla Pesa and Wabera). Acreage and output are highly variable and generally low. In the 2025 short rains (OND), performance was poor:
  - Maize: 127 ha planted (vs. LTA 237 ha), production 167 bags of 90 kg (vs. LTA 1,300 bags) — an 87% drop.
  - Beans: 142 ha (vs. LTA 195 ha), 274 bags (vs. LTA 833) — 67% decline.
  - Green grams: 37 ha (vs. LTA 59 ha), 92 bags (vs. LTA 380) — 76% decline.

Crops often failed at tasselling or flowering stages due to delayed onset, early cessation, and insufficient rains. Some wards (e.g., Oldonyiro) saw near-total failure except for NGO demonstration plots.

- **Irrigated production:** More reliable and expanding, supported by boreholes, shallow wells, rivers, canals, and solar-powered systems. Key schemes include those in Kinna (e.g., Gubadida), Merti, Burat, Ngaremara, and along Ewaso Nyiro (Rapsu, Malka Daka, Kakili, etc.).

In OND 2025, irrigated areas for onions and tomatoes increased slightly above LTA (+35%), while maize and kales declined due to seed shortages and preparation costs. Over 300 farmers now cultivate more than 500 acres with solar irrigation, certified seeds, and training, producing year-round vegetables like sukuma wiki, spinach, maize, bananas, and pawpaw.

Historical baseline (around 2012–2013): About 1,497 ha under crops, with plans to expand to 3,000 ha via irrigation rehabilitation. Recent county efforts target further growth through mechanization, inputs, and new infrastructure.

11.5.6 Storage

Main storage facilities maize cribs and stores. Isiolo County also has 2 NCPB storage facilities, which are located in Wabera ward. Each of the two silos have the capacity to hold 50,000 bags of 90kgs, which brings the total capacity to 9 million kilograms.

11.5.7 Markets

Isiolo County has one fresh produce market called Westgate Market and another at Baraza Park. These two are located in Wabera and Bulla Pesa wards. The markets coverage map has been featured under livestock markets. However, a crops market is required and needed at Rapsu due to the levelof agricultural production in Kinna Ward.

11.5.8 Cooperatives

There are a few active registered cooperatives in the county.

SOCIETY NAME	CS/NO.	YR REG.	ACTIVITY	STATUS	GENDER		WARD, SUB-COUNTY
					M	F	
Isiolo Smallholders F.C	15092	2013	F (Farms Produce, Tomatoes and Onions)	Active	60	41	Burat
Mutunyi Hort.	14540	2012	F (Horticulture)	Dormant			
Isiolo Tumesabir F.C.S	16373	2014	F (Farm Produce Tomatoes And Onions)	Active		74	Bulapesa
Gambela Tawakal Farmers Marketing Co-Operataive Society Ltd	17453	2014	F (Farm Produce Tomatoes and Onions and Vegetables)	Active	135	168	Wabera
Nasole Sacco	23451	2018	SACCO (Farming Tomatoes, Onions and Vegetables and Campsite)	Active	50	Nil	Kinna
Burat Ekeunos F.C.S	23792	2019	Marketing (Farming Tomatoes, Onions, Cereals, Horticulture and Milk Production	Active		-	Burat
Chafa Gafarsa F.C.S	24382	2019	Farm Produce	Active		-	Garbatulla
Chalchali F.C.S	24687	2019	Farm Produce	Active		-	Wabera
Monaballo Sacco	25222	2020	SACCO (Farm Produce)	Active		-	Kinna
Bihobu Marketing		2023	Marketing	Progress			Kinna
Kinnoye Sky		2023	Marketing (Farm Produce)	Active			Kinna
Wasole Fish		2023	Marketing	Active			Cherab
Insene Livestock Farmers		2023	Marketing	Active			Chari
Moliti Farmers Co-Operative	30068	2023	Marketing	Active			Garbatulla

(Source: County Trade and Economics office)

11.5.9 Key challenges to Crop Production

Crop production faces structural and climate-related constraints:

1. **Climate variability and drought** — Erratic rains, high temperatures, and prolonged dry spells cause crop failure, especially in rainfed systems. The poor OND 2025 season exacerbated this, leading to exhausted household stocks within a month and higher market dependence.
2. **Water scarcity and infrastructure gaps** — Limited reliable water sources; many schemes depend on seasonal rivers or pans that dry up. Invasive species like Prosopis juliflora (mathenge) degrade land and compete for water.
3. **Low productivity and inputs** — Small farm sizes (often 0.3–0.8 acres per household for vegetables), high costs of certified seeds/fertilizers, pests (e.g., fall armyworm on maize, aphids, thrips, Tuta absoluta on tomatoes), and limited mechanization/ extension services.
4. **Land and resource conflicts** — Competition with pastoralism for land/water, human-wildlife conflict, and insecurity restrict access. Over 80% of land remains communal/ grazing-focused.
5. **Market and economic barriers** — Poor market linkages, post-harvest losses, and low value addition. High food prices during shortages strain agro-pastoral households.

Efforts by the county to curb the above challenges

The CGI is promoting conservation agriculture by training farmers on crop rotation and the use of organic manure to restore soil nutrients, expanding irrigated farmland, capacity building of farmers through training. In addition, it also plans on increasing farmers' access to extension services and increasing water harvesting capacity by excavating water pans to support irrigation farming (Isiolo County CIDP, 2023-2027).

Area Under Irrigation

IRRIGATION SCHEMES

Other projects have failed and new ones have been proposed, which have potential for good production; they include;

1. There are two proposed irrigation schemes near the two proposed dams (Isiolo Dam and Qubi Qalo Dam). The National Irrigation Authority is currently doing feasibility studies

PROPOSED MEDIUM-SIZED IRRIGATION SCHEMES (SOME COULD BE OPERATIONAL)

(Kilimani -planning for about 250 acres, Guba Didda scheme in Kinna, Rapsu in Kinna, Malkadaka in Garbatulla, and Bullesa Kayo for about 250 acres)

PROPOSED SMALL IRRIGATION SCHEMES

(Sukuma Irrigation Scheme in Ngaremara, Elsa scheme in Burat, Leparua scheme in Burat, and Parkuruk scheme in Oldonyiro)

FODDER FARMING

Fodder farming can be a game-changing venture for the county since most residents of Isiolo County are pastoralists. There have been pilot projects in Kinna and Garbatulla by Climate Smart Agriculture NGO, where fodder was grown (Crops production office, Isiolo).

FLOOD PRONE AREAS

The map below shows flood prone areas which are along the river banks where most irrigation farms are located, due to proximity to the water source. Flood-Prone Areas in Isiolo County: Disaster Context and Impacts on Crop Farming

Isiolo County's arid and semi-arid landscape makes it highly vulnerable to **flooding** during intense rainfall events, such as the 2023 El Niño rains. Although the county is predominantly

drought-prone, the Ewaso Nyiro River and its tributaries create flash floods, river overflows, erosion, waterlogging, and submersion in low-lying riverine zones, floodplains, and irrigation schemes. These events destroy crops, wash away inputs/equipment, damage irrigation infrastructure (pipes, pumps, dams, fences), and erode soil fertility — severely disrupting the limited crop production that supports agro-pastoral livelihoods, dietary diversity, and income (especially for women and youth groups).

The 2023 El Niño Flood Damage Assessment (Department of Agriculture – Crops) documented extensive losses across these areas, with a county-wide crop damage estimate of **KSh 78,939,585.60** (plus separate irrigation/water infrastructure costs). Flooding affected both rainfed fields and irrigated schemes, leading to 50–100% crop destruction in many sites, complete nursery losses, and rotting at harvest stages. This exacerbated food insecurity by wiping out household stocks and forcing reliance on markets/aid.

MAPPED FLOOD-PRONE AREAS

The flood-prone areas, listed in the El Nino Flood Damage Assessment Report of 2023 by the CGI, are concentrated in **riverine and low-lying zones** along the Ewaso Nyiro River basin (and tributaries) in central/southern Isiolo County. These span Merti, Garbatulla, and parts of Isiolo sub-counties. The river meanders through the county, turning lowlands and irrigation schemes into high-risk zones during heavy rains.

Here is a ward-by-ward mapping (grouped as per the document, with geographic notes):

WARD/SUB-COUNTY AREA	FLOOD-PRONE LOCATIONS	KEY GEOGRAPHIC FEATURES & RISK
Chari Ward (Merti Sub-County)	Biliqo area, Chucha farm (Yussuf Dika), Bulesa Kayo Irrigation Scheme, Dima Ado	Riverine lowlands near Ewaso Nyiro; irrigation schemes and group farms highly exposed to submersion/erosion.

WARD/SUB-COUNTY AREA	FLOOD-PRONE LOCATIONS	KEY GEOGRAPHIC FEATURES & RISK
Cherab Ward (Merti Sub-County)	Marta Alba area (Iqra SHG), Manyatta Father area (Merti Vegetable Growers, Merti Youth farm), Goth Rupa Area (Rupa farmers, Waldagena W/Group, Burqa Farm)	Floodplains and river-adjacent farms; manyatta (homestead) areas and shade-net farms vulnerable to waterlogging.
Garbatulla Ward (Garbatulla Sub-County)	Garbatulla town, Malkadaka, Gafarsa, Muchuro, Kombola	Urban/peri-urban lowlands and schemes (e.g., Malkadaka Water & Irrigation); town areas prone to flash flooding.
Sericho Ward	Mogore, Eresaboru, Badan, Gubatu, Kone	Low-lying plains with 23+ acres destroyed; river overflow zones.
Kinna Ward	Rapsu Irrigation Scheme, Guba Dida Irrigation Scheme, Kinna Irrigation Scheme, Darajani Irrigation Scheme	Major irrigated riverine schemes (26–56 acres each affected); heavily engineered areas along Ewaso Nyiro.
Wabera Ward (Isiolo Sub-County)	Mwangaza, Kiwanjani, Gambela	Urban-adjacent lowlands (16.5 acres destroyed).
Ngaremara Ward	Atir, Kiwanja (Kiwaja), Sukuma, Chumvi, Gambela	Floodplains and Sukuma Irrigation (erosion/ fence damage).
Bulla Pesa Ward	Mabatini, Gachewa, Kambi ya juu (Kambi juu)	Lowland areas (80 acres affected to varying levels).
Burat Ward	Elsa, Kakili, Shambani, Leparua, Kambi Sheikh (K/Sheikh), Nabenyo, Arimet	Extensive riverine belt (378+ acres); largest single-ward impact on onions/tomatoes.
Oldonyiro Ward	Kawalash, Lenguruma	Northern lowlands and demo farms (59 acres flooded/erosion).

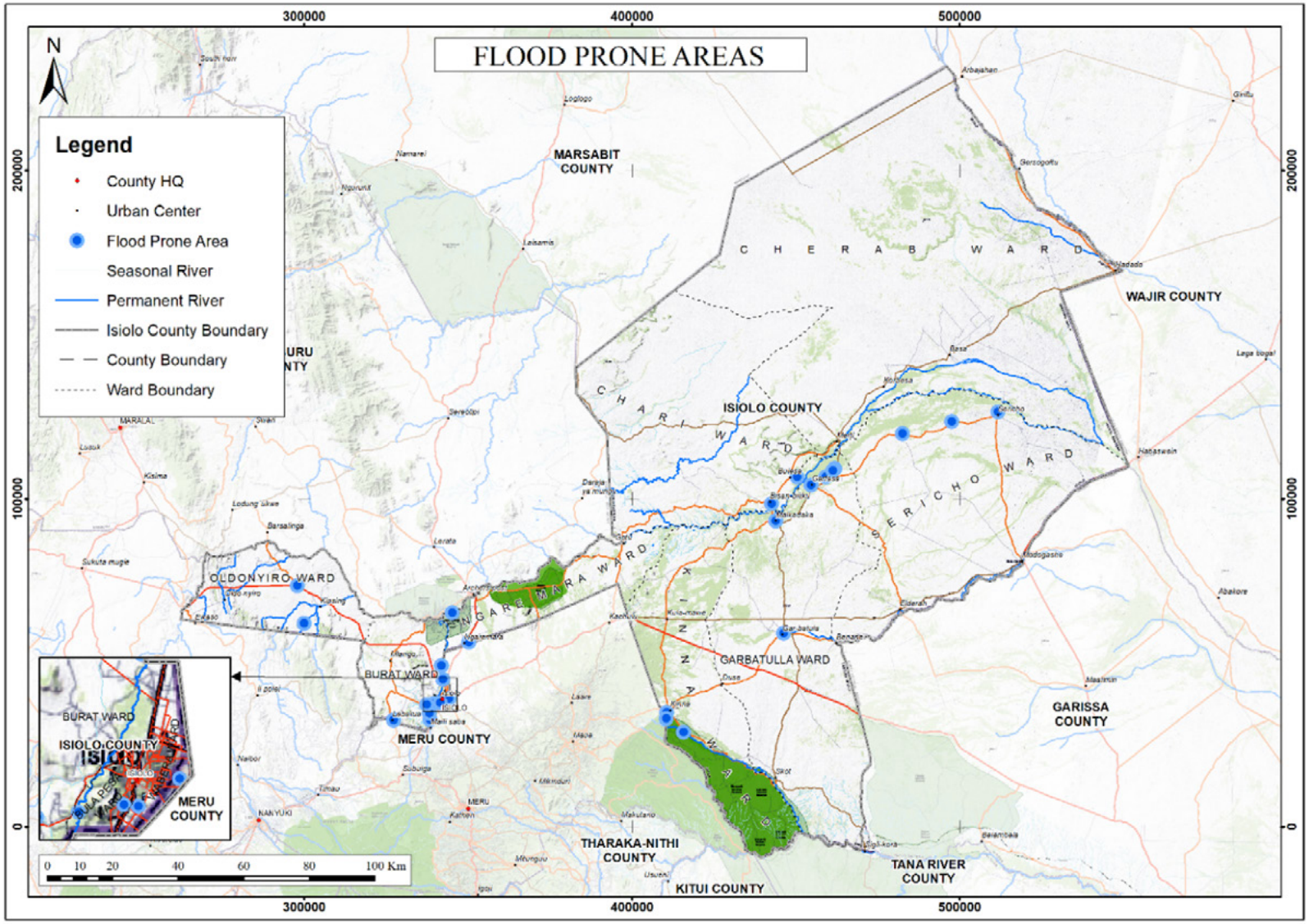
These sites cluster in the Ewaso Nyiro corridor (flowing north-east through Merti/Garbatulla/ Kinna toward Lorian Swamp). Irrigation schemes (Rapsu, Guba Dida, Kinna, Darajani, Bulesa Kayo, Sukuma) are especially at risk due to proximity to the river, while group farms (women/ youth SHGs) in Manyatta, Goth Rupa, and Chari are in floodplains. Non-riverine areas are safer but still face flash floods from seasonal streams.

Disaster Overview: Flood Impacts on Crop Farming (2023 El Niño)

The assessment focused on crop/equipment destruction in these exact areas, with the following key highlights:

- **Severe Irrigation Scheme Losses (Kinna Ward):** Rapsu (26.75 acres: 100% maize submersion, cotton lint damage); Guba Dida (40 acres: 50% maize/beans, high kales/ tomatoes loss); Kinna (56 acres: 70% onions/tomatoes); Darajani (25 acres: 90% maize waterlogging). Total sub-totals exceeded KSh 8M in Kinna schemes alone — massive for a county where crops are secondary to livestock.
- **Group Farms & Riverine Zones (Chari & Cherab Wards):** Bulesa Kayo (50% destruction across maize/beans/cowpeas/green grams); Merti Holy Quran Centre (8 acres tomatoes 60% loss, kales/spinach 80%); Goth Rupa/Burqa (total erosion/submersion of kales, onions, tomatoes). Manyatta Father and Merti Youth farms saw pawpaw/kales/spinach total destruction.
- **Widespread Partial-to-Total Losses:** 50–100% destruction common (e.g., green grams/cowpeas in Biliqo, Marta Alba; onions in Burat — 109.5 acres). Nursery losses (kales, onions, tomatoes) were complete in several sites. Equipment (PVC pipes, genset pumps, jembes, fences) was carried away, adding to costs.
- **Broader Effects:** Soil erosion/nutrient leaching (requiring top-dressing/manure); post-flood pests (e.g., Tuta absoluta in tomatoes); waterlogging causing rotting (onions at harvest).

Map 11-12: Flood Prone Areas



Source: Author, 2024

Agriculture extension services

There are about 50 registered Technical Extension Officers of different fields, within the County. There are about 12,000 registered farmers in the county. The UN recommendation for the ratio of technical extension officers to farmers is generally 1:400 to 1:500. Farmer support entails various activities and interventions that give farmers incentive to continue production. These include training of farmers, market-linkage, subsidies on inputs, extension services and provision of storage facilities.

VALUE ADDITION

Value addition activities include aggregation, cleaning, sorting, processing and packaging the farm products.

OPPORTUNITIES AVAILABLE IN THE COUNTY

The county has opportunities for crop production as reported by the key informants and crop farmers. These include:

1. Isiolo International Airport
2. High donor investment interest
3. The LAPSSET project
4. River Ewaso Ngiro crossing major parts of the county
5. Abundant land whose potential is not fully harnessed
6. BETA by the Government: (Irrigation infrastructure, Drought Resistant- crops, Agroforestry and Feedlots, Subsidies and Finance, and Digital Agriculture)

CHAPTER 12

Governance

12.1 OVERVIEW

This chapter discusses the levels of governance in Isiolo County. Governance promotes transparency, accountability, stakeholder participation, and coordinated decision-making to ensure sustainable and equitable development. Effective governance is essential for implementing the County Spatial Plan, managing resources, addressing development challenges, and achieving the county's long-term development goals.

12.1.1 The National Context of Territorial and Development Governance in Isiolo

Like the rest of Kenya, territorial and development governance in Isiolo County is governed by the dictates of the Kenya Constitution 2010, pieces of the national legislation that have been analyzed under the legal context of this document and other local pieces of legislation that give effect to the national ones.

National-level institutions that include those created by the national government and other organizations that operate at the national level. These include the offices of the County Commissioner (including sub-county commissioners and the chiefs). This office coordinates security and oversees development at the county on behalf of the national government. Together with this office are institutions that oversee national government functions that are not devolved. Among these are the National Land Commission, which manages public land, the

National Land Survey, which is responsible for land surveys on land outside the urban centres, and the Kenya National Highways Authority, which is responsible for the development and maintenance of the national highways. Other national-level institutions include the Kenya Rural Roads Authority and the Kenya Urban Roads Authority. These latter two however, seem to have responsibilities that overlap those of the county government as outlined in Schedule 4 of the Kenya Constitution 2010.

Regional level institutions and other semi-autonomous national government agencies that cut across different counties, e.g. Ewaso Ng'iro North Development Authority, and the LAPSSET Corridor Development Authority among others.

12.1.2 The County Context of Territorial and Development Governance in Isiolo

In line with the provisions of the Kenya Constitution 2010, the County Government of Isiolo has the responsibility to ensure that development is coordinated within its area of jurisdiction. This mandate is drawn from the devolved governance system that is outlined in Chapter 11 of the Kenya Constitution 2010. The County Government Act gives effect to the provisions of this chapter and provide for county governments' powers, functions and responsibilities to deliver services and for connected purposes. Section 5 of the County Government Act provides that county governments shall be responsible for the following:

i. County legislation in accordance with Article 185 of the Constitution;

ii. Exercising executive functions in accordance with Article 183 of the Constitution;

iii. Functions provided for in Article 186 and assigned in the Fourth Schedule of the Constitution;

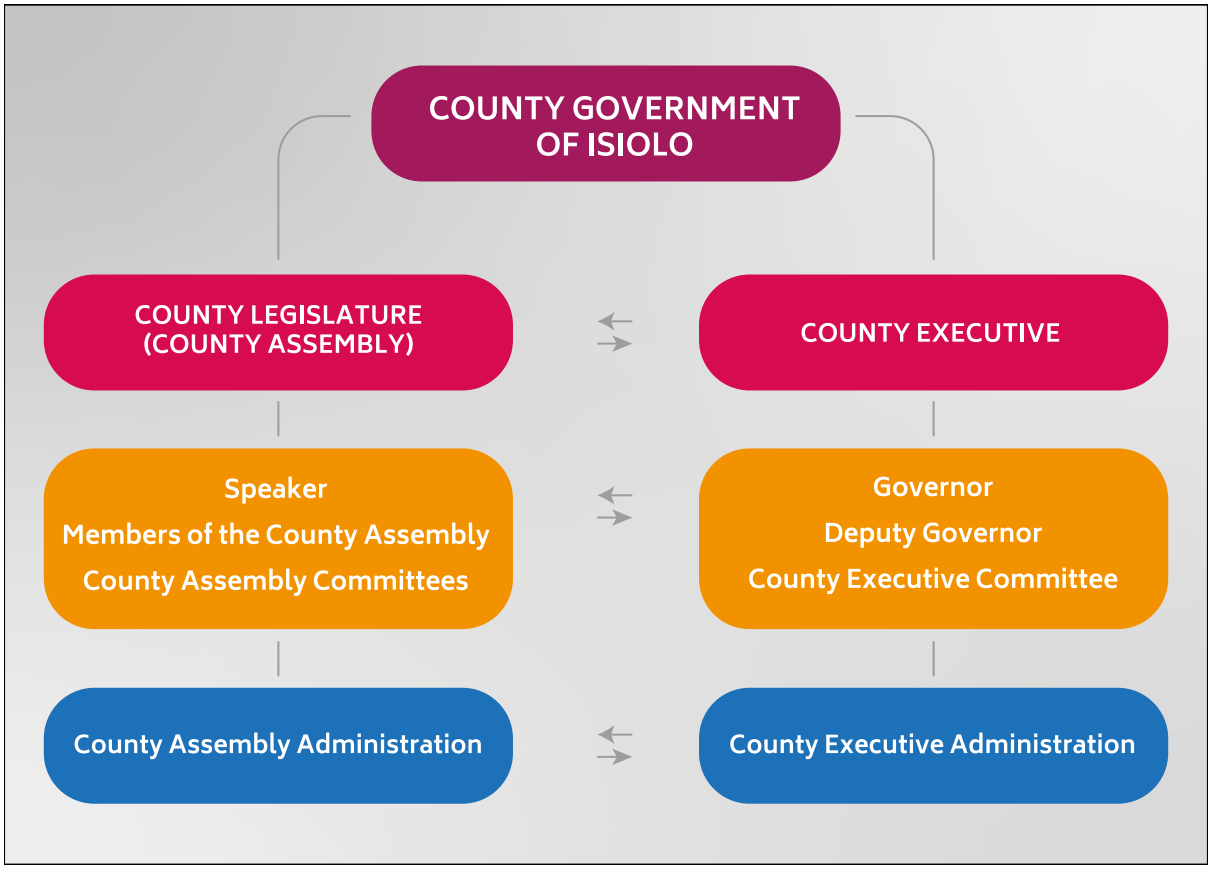
iv. Any other function that may be transferred to county governments from the national government under Article 187 of the Constitution;

v. Any functions agreed upon with other county governments under Article 189(2) of the Constitution; and

vi. Establishment and staffing of its public service as contemplated under Article 235 of the Constitution.

The leadership of the County Government of Isiolo comprises the executive and legislative arm that together enable it to execute the above responsibilities. The executive arm is led by the Governor, who oversees county administration and service delivery. The County Assembly on the other hand is responsible for enacting county laws, approving budgets and policies, and providing oversight over the executive. It comprises elected representatives from various wards within the county. The assembly operates through committee system to enhance scrutiny of legislative proposals, budget oversight, and general administration.

Figure 12-1: Structure of the County Government of Isiolo



Source: Author, 2025

Administratively, the county is divided into Isiolo North and Isiolo South Constituencies, three sub-counties (Isiolo and Merti in Isiolo North Constituency, and Garba Tulla in Isiolo South Constituency), and 10 administrative wards.

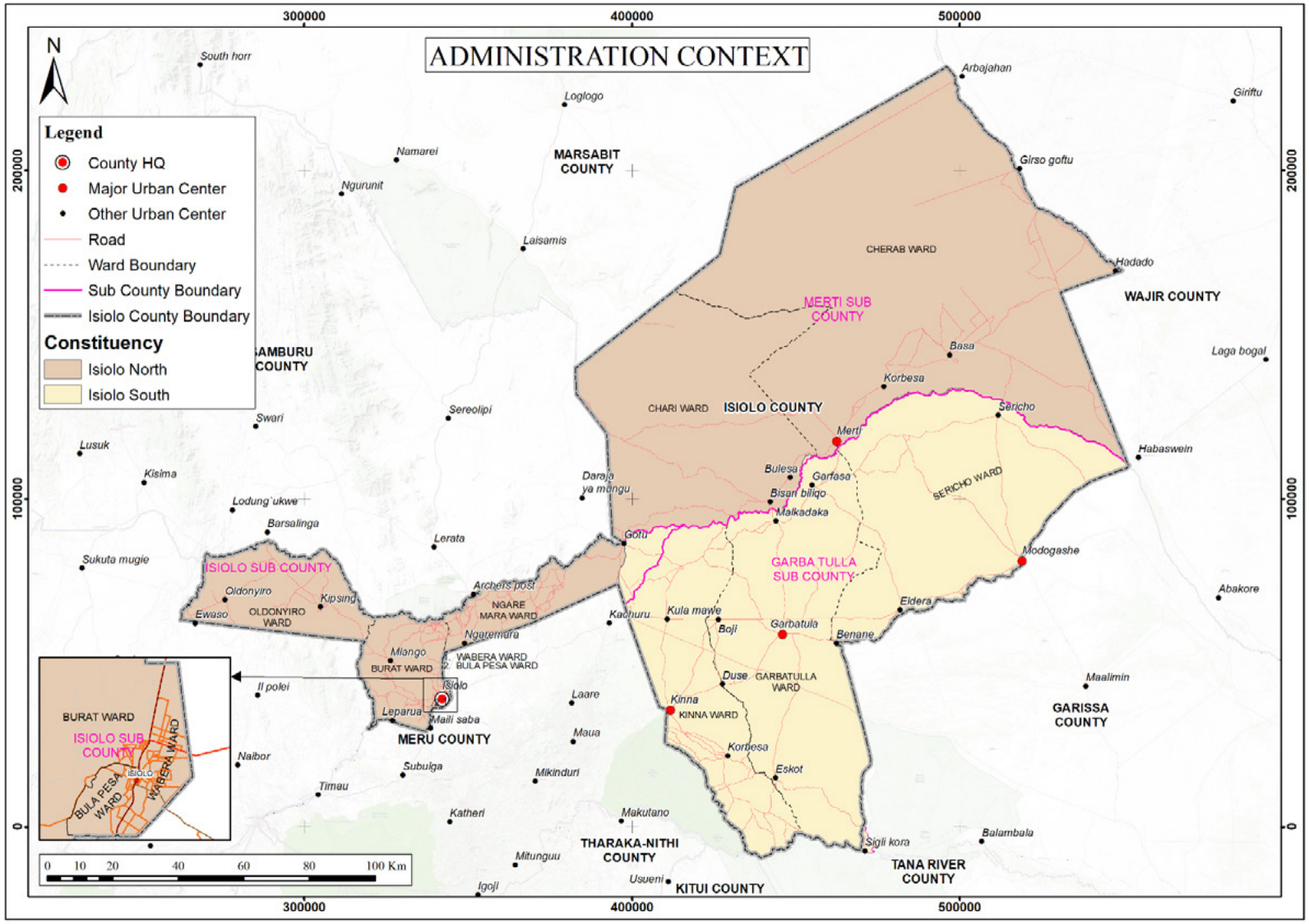
Table 12-1: Political Administrative Units in Isiolo County

CONSTITUENCY	SUB-COUNTY	WARD
Isiolo North	Isiolo	Wabera
		Bulla Pesa
		Burat
		Ngaremara
		Oldonyiro
	Merti	Chari
		Cherab
Isiolo South	Garba Tulla	Kinna
		Garba Tulla
		Sericho

Source: Author, 2025

Map 12-1 gives the spatial distribution of these political administrative units across the county.

Map 12-1: Political Administrative Units of Isiolo County



Source: Author, 2025

Public participation is a cornerstone of Isiolo's governance framework. The County Assembly has established a committee on Ethics, Justice, and Legal Affairs to facilitate public engagement and ensure transparency in legislative processes. This committee is mandated to handle matters related to constitutional affairs, law administration, elections, integrity, anti-corruption, and human rights.

The Urban Areas and Cities Act of 2011 further accords the county government the mandate to delegate its powers to institutions that it creates for purposes of managing its urban areas. Section 9 of this Act provides that the county governor may, on the resolution of the county assembly, confer the status of a municipality on a town that meets the stipulated criteria, by grant of a charter in the prescribed form. The governor may further confer town status on an area that meets the prescribed criteria under the Act. Cities and municipalities are to be managed by boards while towns and markets are to be managed by committees.

The boards have a chair, who is elected from among the membership and a city or municipal manager. The boards have the policy formulation role while the manager is responsible for implementing the decisions and functions of the boards and overseeing the management of the cities or municipalities. The towns are to be administered by a town administrator. The Act also creates a citizens' fora, which affords the citizens of an urban entity the latitude of participating in the decisions and affairs of the urban entity. Isiolo county currently has only one municipality – Isiolo Municipality.

12.1.3 Relationship Between the County Government of Isiolo and The National Government

Territorial and development governance in Isiolo County, just like any other part of Kenya are concurrently overseen by both national government institutions and those of the county government. The national government institutions include the county commissioner, the sub-county commissioners, and the chiefs. These offices ensure that the services of the national government are offered at the county. At the same time, there is the office of the county senator,

the county woman representative and the members of parliament who represent constituencies in the county in parliament. These institutions provide the link between the county and the national government through their delegated representation of the citizens of the county to parliament. On the other hand, the county government also has the offices of the sub-county administrators, ward administrators and village administrators who have the responsibility to ensure that county services reach their respective administrative units.

The general relationship between all the county governments and the national government is provided for under Article 6 (2) of the Kenya Constitution 2010. This article provides that the governments at the national and county levels shall be distinct yet inter-dependent and that they shall conduct their mutual relations based on consultation and cooperation. The implication is that county governments are not independent but rather only semi-autonomous governments that constitute an integral part of a unitary state that Kenya remains. The county governments therefore only exercise delegated sovereign power for purposes of governance.

It remains the responsibility of the national government to ensure that its services are available reasonably in all parts of Kenya. This means that the national government must step in to ensure that concerns of national interest, such as national security, protection of rights and freedoms of Kenyan citizens, and preservation of culture among other concerns are taken care of within the areas of jurisdiction of county governments.

Again, it remains the constitutional responsibility of Parliament to enact laws that assist and strengthen county governments to discharge of their roles that are outlined in the Constitution. Section 5 (1) of the County Government Act recognises this responsibility that Parliament has and provides that a county government shall be responsible for any function assigned to it under the Constitution or by an Act of Parliament. The governance structure created by this legislative arrangement emphasises the importance of seamless operations of the national and county governments. For purposes of development governance, all state organs that have a presence must therefore not undermine the operations of county governments but should rather be

guided by the Constitution and the structures that it creates in carrying out their functions and responsibilities.

Making all the above to work seamlessly requires budgetary support. It is the responsibility of the national government to collect taxes and share these with the county governments to enable them to execute their responsibilities. The process of sharing revenue raised by the national government between the national and county governments, and among the county governments, is guided by the Constitution and the Public Finance Management Act. The largest source of revenue to the counties is the equitable share. There are also other revenues including the equalisation funds, and a number of bursaries that are administered by the Members of Parliament, the Woman Representative, and the ward representatives.

12.1.4 The local Context of Territorial and Development Governance in Isiolo

The Kenya Constitution 2010 underscores the importance of public participation as both a constitutional principle and a national value. It creates a legal room for citizens and their political representatives to take part in decision-making in matters public policy concerns. Among these concerns are county planning; management, protection and conservation of the environment; governance of urban areas and cities; legislative and other business of the assembly and its committees; budgeting and accountability.

Further, the County Government of Isiolo has also enacted its own Isiolo County Civic Education and Public Participation Act of 2015. This Act provides for the establishment of legal framework, modalities and platforms for facilitating civic education and public participation in county governance, policy processes and service delivery and for connected purposes and incidental thereto. It commits the County Government of Isiolo to developing a system of governance that encourages civic education and participation by citizens in its affairs. To this end, the County Government of Isiolo seeks to:

a. Create appropriate conditions for civic education and participation in-
    - The formulation and implementation of laws, policies and regulations;
    - The preparation, implementation and review of the integrated development plan;
    - The establishment, implementation and review of its performance management system;
    - The monitoring and review of its performance, including the outcomes and impact of its performance;
    - The preparation of its budget; and
    - Making of strategic decisions relating to delivery of service.

b. Contribute to building the capacity of-
    - The citizens to enable them participate in the affairs of the county; and
    - Sub-county administrators, ward administrators and village administrators, Department of Civic Education and Public Participation and Office of the County Assembly Clerk to foster civic education and community participation.

c. Apply its resources and allocate funds annually as may be appropriate for the implementation of paragraphs (a) and (b).

Residents of Isiolo County are organised through several local institutions to take part in various citizen participation platforms created through the above efforts. These structures include local Community-Based Organisations, Faith Based Organisations, and neighbourhood associations.

Lastly, there are also numerous clan structures that have existed over the years in Isiolo county. These structures are useful in solving different development challenges and conflicts at the very local levels.

12.1.5 Emerging Issues, Challenges and Opportunities

Many governance challenges hinder the ability of the county to hinder its full potentials. These challenges will need to be addressed by this current plan.

i. Weak alignment of the operations of the national government institutions based at the county with the county government. For instance, while the KWS has designated wildlife migratory corridors, sometime these are the very areas that urbanisation and farming is permitted. There is hence a need to strengthen seamless working between the national and county government;

ii. Overlaps in responsibilities to oversee development between national and county government institutions – e.g. between KURA and the county government;

iii. Exclusion of communities that live in the far-flung parts of the county. There is hence a need to reach out to the very marginalised communities in these far-flung parts with a view to ensuring that services and infrastructure is made accessible to them;

iv. Counties that have prepared their CPLUDPs face a general challenge that planning is seen to be an end in itself rather than a means to an end. As such, there is a disconnect between planning and implementation of the proposals contained in the plans. Isiolo county must avoid taking this route if the current effort is to bear tangible development impacts on the county. There is hence a need to create a framework for ensuring that proposals contained in a CPLUDP are implemented by the line ministries and departments;

v. Being a service rather than a producer of tangible products, spatial planning has remained in the periphery when it comes to budget allocation to facilitate it. This, in spite of the fact that a good plan would ensure efficient utilisation of the meagre resources. Isiolo county is not an exemption in this regard. There is hence a need to strengthen the support for budgeting for the preparation of various form of spatial plans that are outlined in law;

vi. A need to improve on the transparency of the operations and activities of all the organisations that have a presence in the county;

vii. Cases of organisations operating without due legal registration have been recorded in Isiolo county. Such operations have the potential to compromise security and other concerns that are of national interests. There is hence a need to ensure that all organisations that have a presence in the county are legally registered and that they engage in legal activities;

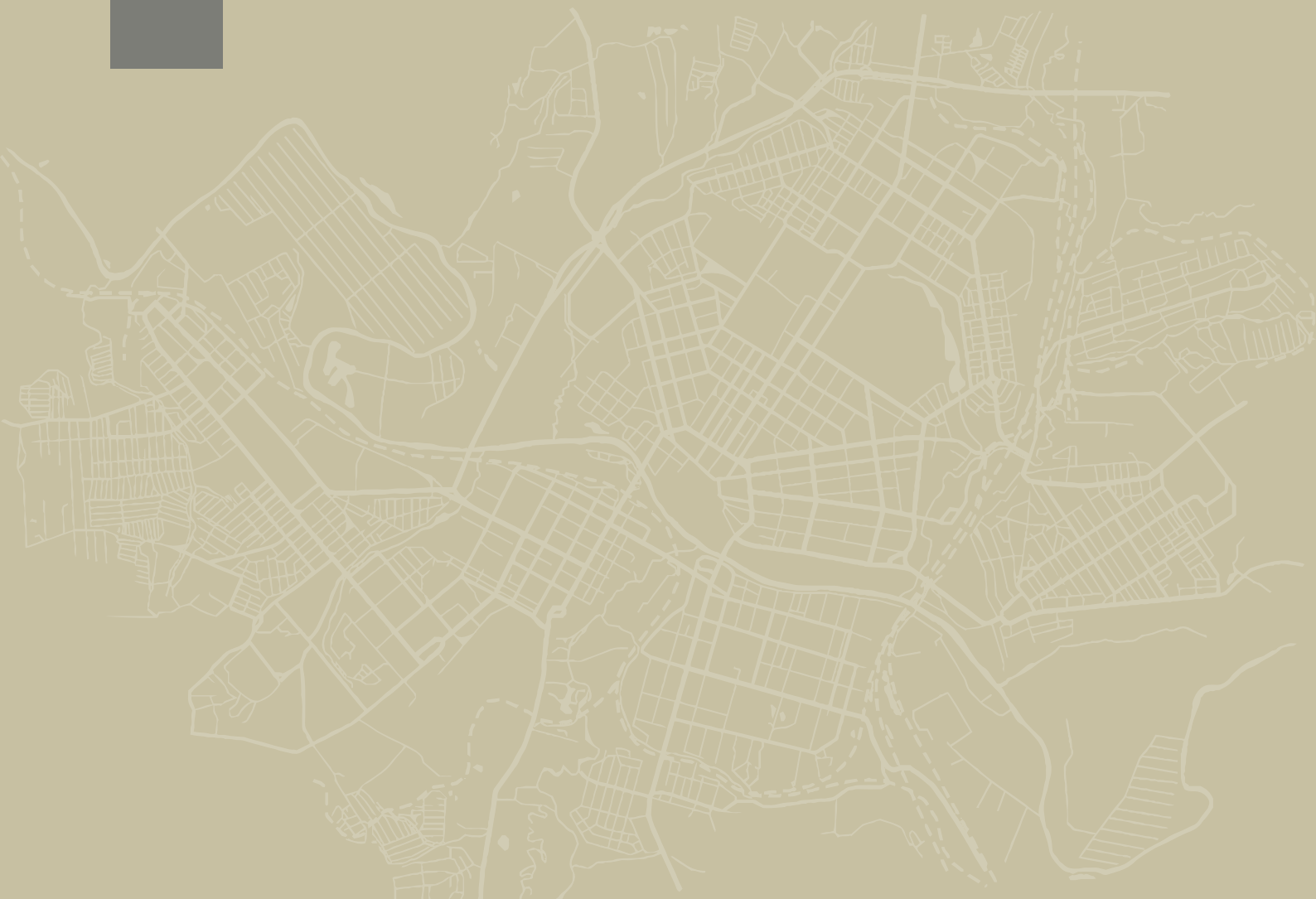
viii. A need to ensure continuous public engagement especially on the sensitive matters of unregistered community land;

ix. A need to ensure that private organisations do not run functions that compete state functions and which might compromise the security of the county;

x. Delayed allocation of revenues from the national government to the county, which has the potential to hinder service delivery at the county level;

xi. Too many disjointed funds that are administered as bursaries by the area Members of Parliament, the Woman Representative, and the County Assembly representatives. These funds need to be consolidated into one kitty that can generate greater impacts.

xii. Land governance and administration remain analog and inefficient, partly due to weak adoption of the GIS technology;



Part Three

PLAN PROPOSALS

CHAPTER 13

Scenario Building

13.1 OVERVIEW

The chapter discusses the various development models considered in the development of the Spatial Plan. The models considered in this section are: Nil Intervention, Livestock Production Model, Agro tourism and Agro-Pastoralism, Tourism and Urbanization.

13.2 DEVELOPMENT SCENARIOS

13.2.1 Nil intervention Scenario

The Nil Development Scenario will entail allowing the current development trends to continue without planning interventions. This scenario will be characterized by the following:

Environment and Natural Resources

i. Water points (boreholes, pans, rivers) continue to be used without new investments or rehabilitation, leading to overuse and degradation.

ii. Pasture degradation intensifies due to unregulated grazing and climate variability, increasing conflict over resources.

iii. Wildlife corridors and biodiversity areas are fragmented as land conversion continues opportunistically.

Land Use and Human Settlements

i. Grazing areas will remain unplanned and unmanaged, with seasonal migration patterns continuing based on traditional routes and resource availability.

ii. Emergence of unplanned settlements without coordinated infrastructure provision.

iii. Encroachment into rangelands by unplanned human settlements and private ranches.

Physical and Social Infrastructure

i. Road networks will remain limited, mostly seasonal and in poor condition, affecting market access.

ii. Basic services such as schools, health facilities, and veterinary services, markets will remain unevenly distributed.

iii. Min investment in telecommunications and renewable energy in remote grazing areas.

Socio-Economic Impacts

i. Communities remain heavily reliant on livestock, with little diversification into alternative livelihoods.

ii. High vulnerability to droughts, floods, and other climate shocks persists.

iii. Migration to urban centers increases due to limited opportunities in rural areas.

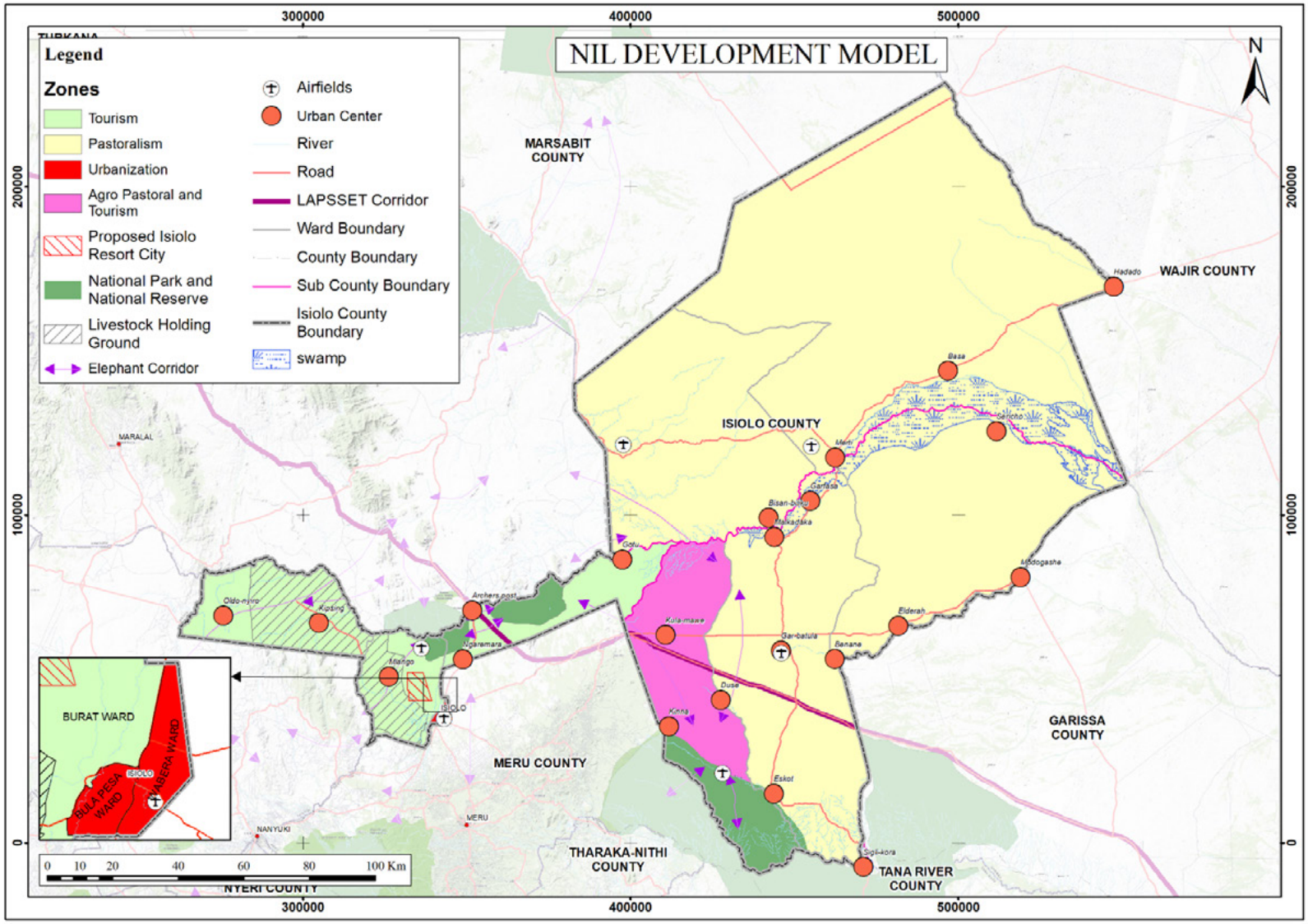
Governance

i. Land tenure issues will remain unresolved, leading to persistent resource-based conflicts between clans, pastoralists, and farmers.

ii. Weak enforcement of environmental and land management laws leading to continued degradation.

The Nil Intervention Scenario will thus maintain the status quo, allowing pastoral systems to adapt on their own to climatic, demographic, and economic pressures. Without coordinated actions, the scenario risks environmental decline, intensified resource conflicts, and deterioration in livelihoods.

Map 13-1: Nil Intervention Scenario



Source: Author, 2025

13.2.2 Livestock Production Development Scenario

This scenario focuses on strengthening traditional pastoralism and livestock production as the primary economic driver, supported by modern infrastructure, improved market access, and sustainable rangeland management. It envisions a future where livestock productivity is increased, value chains are strengthened, and pastoral communities are more resilient to climate variability. Livestock production would be the dominant land use in all wards except in Wabera and Bula Pesa wards. Livestock production would have the aspect of commercialization (marketing). Enhanced livestock production will have the following components.

i. Production Areas

ii. Holding Areas

iii. Feeding Lots

iv. Market Areas

v. Value Addition Areas

Table 13-1: Pastoralism/Livestock Production Development Scenario

S.N	WARD	PRODUCTION AREAS	HOLDING AREAS	FEEDING LOTS	MARKET AREAS	VALUE ADDITION AREAS
1	Oldonyiro	✓	✓	✓	✓	✓
2	Burat	✓	✓	✓	✓	✓
3	Bula Pesa	✓	x	x	✓	✓
4	Wabera	✓	x	x	✓	✓
5	Ngare Mara	✓	x	✓	✓	✓
6	Chari	✓	✓	✓	✓	✓
7	Cherab	✓	✓	✓	✓	✓
8	Sericho	✓	✓	✓	✓	✓
9	Garbatulla	✓	✓	✓	✓	✓
10	Kinna	✓	✓	✓	✓	✓

Source: Author, 2025

Environement and Natural Resources

i. Implementation of rotational grazing systems to prevent overgrazing and promote pasture regeneration.

ii. Construction and rehabilitation of water points and storage facilities to support dry-season grazing.

iii. Restoration of degraded rangelands through reseeding, soil conservation, and controlled access.

Land Use and Human Settlements

i. Protection and formal designation of rangelands as key economic zones.

ii. Establishment of livestock corridors to secure grazing routes and water access.

iii. Planned development of service centers in livestock production areas to provide veterinary, market, and logistical services.

Physical and Social Infrastructure

i. Development of modern livestock markets, feedlots, and abattoirs to improve product quality and marketability.

ii. Expansion of veterinary services, including mobile units for remote pastoral areas.

iii. Improvement of roads linking grazing areas to markets and processing facilities.

Socio-Economic Impacts

i. Increased household income from higher livestock productivity and better market prices.

ii. Strengthening of pastoral livelihoods while maintaining cultural traditions.

iii. Employment creation in value-added processing, transport, and marketing.

Governance

i. Formation of community grazing committees to manage grazing lands, markets, and services collectively.

ii. Partnerships with the private sector for investment in processing plants and cold chains.

iii. Policy frameworks to secure pastoral land tenure and protect mobility rights.

13.2.3 Agro Tourism Development Scenario

Agro tourism development scenario, combines livestock production, limited crop farming, and tourism development in a spatially integrated manner. The scenario seeks to diversify livelihoods, promote sustainable land use, and stimulate economic growth through planned interventions that balance livestock production, crop farming and tourism interests. The development scenario will entail various aspects as discussed below:

Environment and Natural Resources

i. Protection of rangelands and wildlife habitats to maintain both grazing and tourism value.

ii. Development of community-managed conservancies that integrate livestock grazing with wildlife viewing experiences.

iii. Investment in sustainable water harvesting systems serving both communities and tourism facilities.

Land Use and Human Settlements

i. Designated multi-use zones where pastoralism, agro-based activities, and eco-tourism coexist under clear spatial planning to prevent conflict.

ii. Establishment of tourism clusters near cultural heritage sites, wildlife corridors, and scenic landscapes.

iii. Controlled expansion of rural settlements, service towns and trading centers with infrastructure designed to support tourism, such as lodges, markets, and craft centers.

Physical and Social Infrastructure

i. Improved all-weather road access to key pastoral landscapes, parks, conservancies, and crop production farms.

ii. Expansion of renewable energy and clean water infrastructure to support lodges, camps, and farm stays.

iii. Strengthening of veterinary services and agricultural extension to boost production quality for both domestic consumption and visitor markets.

Socio-Economic Impacts

i. Diversification of household incomes through tourism employment, sale of handicrafts, and hosting of cultural events.

ii. Increased market opportunities for livestock and agricultural produce through tourist consumption.

iii. Skills development in hospitality, guiding, marketing, and farm-based tourism management.

Governance

i. Formation of community–private sector partnerships to run tourism facilities and marketing campaigns.

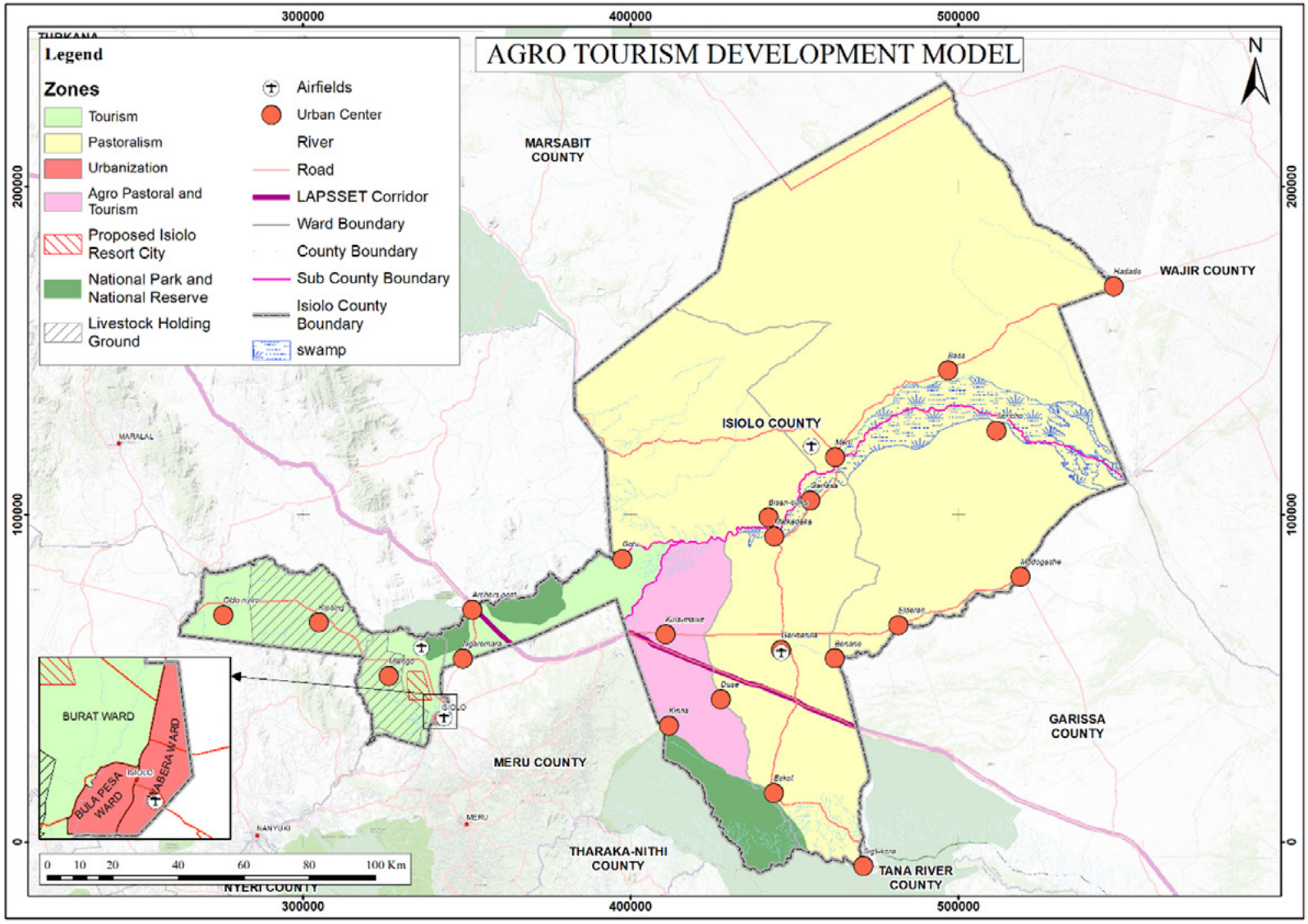
ii. Strengthening of land tenure security to encourage investment in tourism and agro-enterprises.

iii. Partnerships with local tour guides and interest groups to market the tourist destinations.

iv. Parternship with Kenya Tourist Board and Tourism Fund to enhance the tourism sector.

The development scenario leverages traditional livelihoods while introducing tourism as a complementary economic driver. Through spatial planning, it ensures that grazing lands, farmland, and tourism sites are managed in harmony, generating income, preserving cultural heritage, and protecting the natural environment.

Map 13-2: Agro Tourism Development Scenario



Source: Author, 2025

13.3 PREFERRED SCENARIO (AGRO-PASTORALISM, TOURISM AND URBANIZATION)

This scenario envisions a balanced and diversified development pathway that builds on the strengths of pastoralism and agro-pastoralism, harnesses the potential of tourism, and strategically guides urban growth. It aims to create a sustainable, resilient economy while protecting cultural heritage, enhancing service provision, and ensuring environmental stewardship.

Environment and Natural Resources

i. Sustainable rangeland management plans integrating livestock production, eco-tourism, and wildlife conservation.

ii. Watershed and catchment protection measures to ensure water availability for people, livestock, crops, and tourism facilities.

iii. Climate-smart farming techniques to improve productivity while minimizing environmental impact.

Land Use and Human Settlement

i. Clear zoning frameworks to allocate space for rangelands, agricultural areas, tourism sites, and human settlements.

ii. Planned growth of service towns and urban centers to act as market hubs, administrative nodes, and tourism gateways.

iii. Promotion of agriculture to support food security for expanding towns.

Physical and Social Infrastructure

i. All-weather road networks linking rural areas, tourism sites, and urban centers.

ii. Expansion of renewable energy, digital connectivity, and water supply systems to support both rural and urban growth.

iii. Modern livestock markets, agro-processing facilities, and tourism amenities strategically located for maximum accessibility.

Socio-Economic Impacts

i. Diversified household incomes from livestock production, farming, tourism enterprises, and urban-based employment.

ii. Expanded opportunities for youth and women in hospitality, crafts, retail, and agribusiness.

iii. Strengthened local markets through urban demand for rural produce and tourism-related goods.

Governance

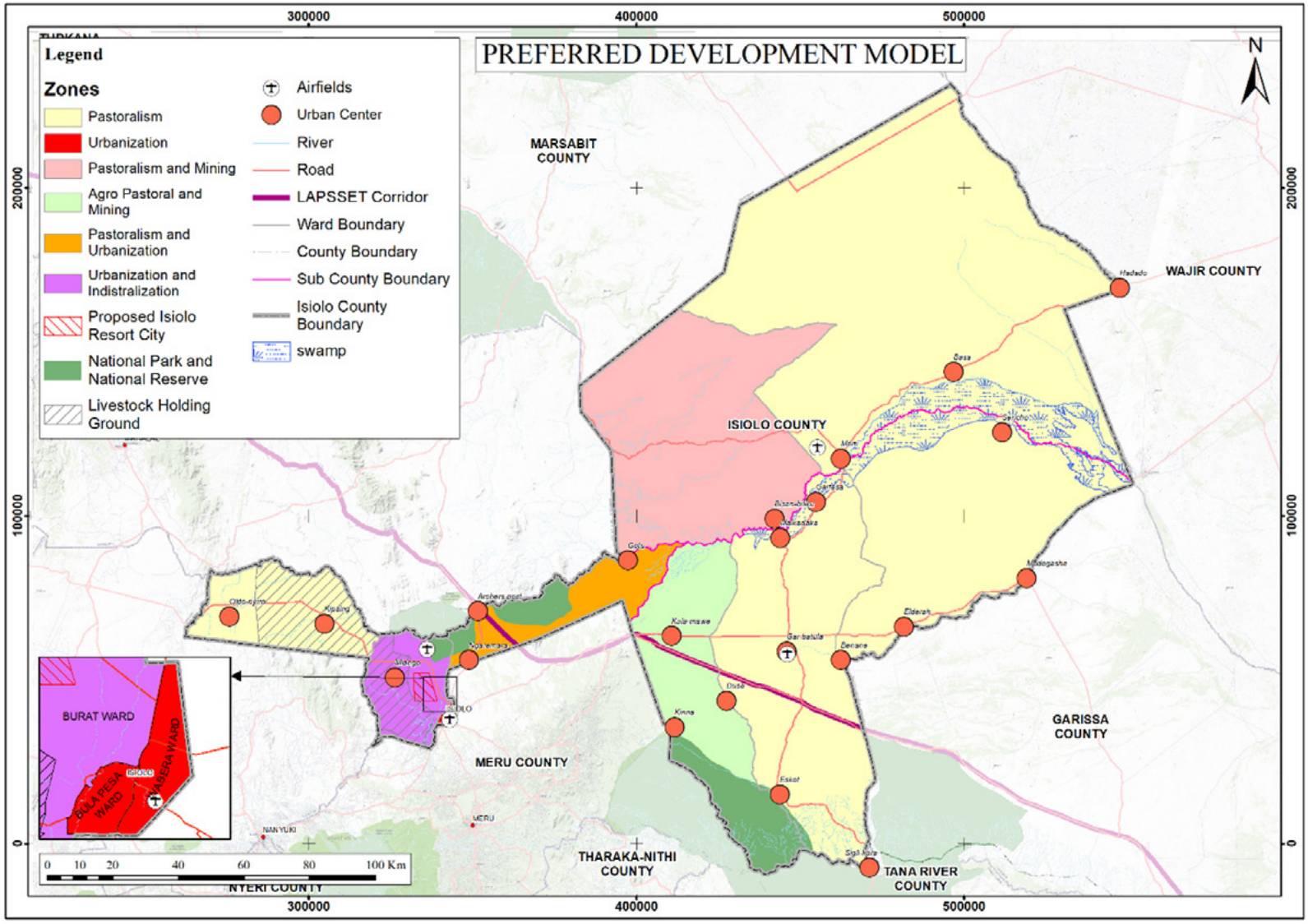
i. County-level integrated development frameworks that coordinate pastoral, agricultural, tourism, and urban planning.

ii. Public–private partnerships for infrastructure, tourism investments, and agro-processing ventures.

iii. Inclusive governance structures ensuring equitable benefit sharing between rural and urban stakeholders.

The Preferred Scenario blends the resilience of pastoralism, the productivity of agriculture, the attractiveness of tourism, and the growth potential of well-planned human settlements. This integrated approach positions the region as a competitive, sustainable economy supported by livestock production, tourism and hospitality, and trade and commerce while preserving its ecological integrity and cultural identity.

Map 13-3: Preferred Development Scenario (Agro-Pastoralism, Tourism and Urbanization)



Source: Author, 2025

13.4 EVALUATION OF DEVELOPMENT SCENARIOS

The evaluation is based on a weighted scoring method against selected criteria that reflect economic, social, environmental, and governance considerations. The evaluation has the following attributes:

i. Economic viability – potential to generate income, jobs, and investment.

ii. Social impact – effect on livelihoods, equity, inclusion, and cultural heritage.

iii. Environmental sustainability – impact on rangelands, water, biodiversity, and climate resilience.

iv. Infrastructure feasibility – ability to provide necessary roads, energy, water, and services.

v. Governance capacity – ease of implementation given institutional and policy frameworks.

vi. Resilience – ability to adapt to shocks such as droughts, floods, and market volatility.

Table 13-2: Scenario Evaluation Matrix

CRITERIA	WEIGHT	NIL INTERVENTION	AGRO TOURISM	LIVESTOCK DEVELOPMENT	PREFERRED SCENARIO
Economic viability	0.25	2	4	4	5
Social impact	0.2	2	4	4	5
Environmental sustainability	0.2	1	4	4	5
Infrastructure feasibility	0.15	1	3	3	4
Governance capacity	0.1	2	3	4	4
Resilience	0.1	2	4	4	5
Score = Σ(Weight*Criteria)		**1.65**	**3.75**	**3.85**	**4.75**

*The criteria was based on county shared vision, the total weight is 1 and the maximum score is 5.

Source: Author, 2025

The evaluation indicates that the Preferred Scenario scores highest overall, reflecting a strong balance across economic, social, environmental, and governance dimensions. Agro/Pastoralism Tourism Development and Livestock Development also perform well, while the Nil Intervention scenario ranks lowest due to limited economic growth potential, weaker social benefits, and higher environmental risks.

Based on the weighted evaluation, the Preferred Scenario (Agro/Pastoralism, Tourism, and Urbanization) is recommended as the most viable development pathway. It provides the greatest potential for sustainable economic growth, social inclusion, and environmental stewardship, supported by feasible infrastructure and strong governance frameworks. This scenario has been adopted to prepare the County Structure Plan.

CHAPTER 14

Development Strategies

14.1 OVERVIEW

The section addresses the various strategies proposed to enhance the development of various sectors within the County.

14.2 PHYSICAL AND NATURAL ENVIRONMENT CONSERVATION STRATEGIES

1. **Establishment of Environmental Protection Zones**
    - Delineate and gazette critical ecosystems such as riparian zones, wetlands (e.g. Lorian Swamp), forests, and wildlife corridors.
    - Integrate environmental sensitivity mapping into county spatial and sectoral plans.
    - Promote sustainable harvesting techniques through community training.
    - Support papyrus-based cottage industries through cooperatives, equipment, and access to markets.
    - Integrate papyrus conservation into wetland protection plans (e.g., Lorian Swamp and Ewaso Ng'iro floodplains).
    - Encourage value addition through design, branding, and eco-tourism-linked sales.

2. **Community-Led Rangeland Rehabilitation Programs**
    - Launch large-scale reseeding and soil erosion control projects in degraded grazing areas.
    - Train and support community grazing committees to manage pasture access and rotation.
3. **Water Resource Development and Conservation**
    - Construct water harvesting and storage infrastructure such as sand dams, shallow wells, and rock catchments.
    - Protect and restore upstream catchments and recharge zones to improve flow into seasonal rivers and wetlands.
4. **Sustainable Forestry and Agroforestry Initiatives**
    - Promote the planting of indigenous and drought-resistant tree species for woodlots and windbreaks.
    - Establish community nurseries and incentivize agroforestry through extension services.
    - The establishment of a community forest in Garbatulla Ward to support beekeeping and promote environmental conservation.
    - Development of guidelines and regulations to manage community forests effectively.
    - Posting of a forest officer to oversee and enforce the forestry regulations.
5. **Waste Management Infrastructure**
    - Develop designated solid waste collection and disposal sites in major towns (Isiolo, Garbatulla, Merti) and additional waste collection points in Burat ward.
    - Establishment and expansion of sewerage management systems in the urban areas such as Isiolo town, Bula Pesa, Kinna, Burat Wards etc.
    - Promote recycling and composting initiatives at community and institutional levels.

6. **Expansion and Strengthening of Conservancies**
    - Support the formalization and capacity-building of existing and emerging community conservancies.
    - Promote eco-tourism facilities that are environmentally sensitive and benefit local communities.
7. **Environmental Monitoring and Data Systems**
    - Establish a County Environmental Information System (CEIS) to monitor land degradation, biodiversity, water quality, and climate indicators.
    - Partner with academic and research institutions for environmental data collection and analysis.
8. **Climate Change Adaptation Projects**
    - Implement local adaptation projects such as drought-tolerant crops, pasture banks, and water-efficient technologies.
    - Integrate climate risk assessments into all development planning and infrastructure projects.
9. **Strengthening Environmental Governance**
    - Build capacity for County Environmental Committees and NEMA officers to enforce regulations and lead awareness campaigns.
    - Support the development of county-specific environmental policies and bylaws.
10. **Education and Awareness Campaigns**
    - Conduct community outreach and school programs on environmental conservation, natural resource management, and climate resilience.

14.3 RANGELANDS MANAGEMENT STRATEGIES

Range management strategies focus on the sustainable use and conservation of rangelands, which are ecosystems dominated by grasses, forbs, and shrubs. Effective strategies involve balancing livestock grazing with the health of the land, ensuring long-term productivity and ecological integrity.

Table 14-1: Rangeland Management Strategies

VISION STATEMENT A well-managed rangeland for enhanced and sustained supply of forage for domesticated animals and wildlife					
PLANNING ISSUE	**LOCATION**	**PROPOSED STRATEGIC INTERVENTIONS**	**SPECIFIC ACTIVITIES**	**ACTORS**	**TIME FRAME**
Soil erosion	All Wards	Rangeland management practices	· Soil and water conservation measures · Construction of gabions in areas prone to erosion · Maintaining vegetative cover · Preventing the cutting of trees and shrubs	· County government · ENNDA · Partners	Continous
Overstocking	All Wards	Carrying capacity to be maintained at One (1No.) Tropical Livestock Unit per Ha (1TLU/Ha)	· Rangeland management extension services · Livestock extension services · Assist livestock keepers to sell livestock especially before onset of dry spell	· County government – Livestock Department · Partners	Continuous
Invasive plant species (**Prosopis juliflora, Acacia reficiens, Ipomoea spp, Cactus opuntia**)	All Wards	Control of invasive species in the affected areas	· Application of mechanical, biological and chemical methods to control invasive species · Prescribed burning	· National government. County government, partners such as KEFRI, Universities, ENNDA	Continous
Prolonged dry spells	Entire county	Early warning systems			Continous

VISION STATEMENT A well-managed rangeland for enhanced and sustained supply of forage for domesticated animals and wildlife					
PLANNING ISSUE	**LOCATION**	**PROPOSED STRATEGIC INTERVENTIONS**	**SPECIFIC ACTIVITIES**	**ACTORS**	**TIME FRAME**
Fire outbreaks	· Sericho Ward, Garbattula Ward · Chari Ward · Cherab Ward · Odlonyiro Ward	Prevent fire outbreaks	· Utilize all opportunities possible (Public gatherings, Barazas · Church services, funerals, radio, social media etc) to educate local community about fire prevention. · Construction of fire breaks in grazing areas	· County Government · Local Community	
Rapid loss of vegetative cover	All Wards	Halt and reverse loss of vegetative cover	· Re-seeding · Promotion of assisted natural regeneration in areas experiencing degradation · Controlling clearing of trees and shrubs	· County Government · Local Community leadership	Continous

14.4 PHYSICAL INFRASTRUCTURE IMPROVEMENT STRATEGIES

The strategies address physical infrastructure development across transport, water, sanitation and waste management, energy, and Information Communication and Technology sectors.

14.4.1 Transport

The strategies address physical infrastructure development across transport, water, sanitation and waste management, energy, and Information Communication and Technology sectors.

Table 14-2: Transport Improvement Strategies

CHALLENGE	LOCATION	STRATEGY	PROJECTS	ACTORS	TIMELINES
Poor state of urban and rural access roads	Countywide	Improve road conditions to improve connectivity	Maintain and resurface sections of the Isiolo- Moyale road that are in poor condition	· CGI · KeNHA · KeRRA · KURA · NGOs · Private partners	2026/27
			Upgrade the Eskot-Garbatulla road, Kinna-Kulamawe road, Merti-Archer's Post Road, Bisan Biliqo-Merti road and Gotu-Merti road to bitumen standards		
Poor connectivity between urban centres	Countywide	Develop alternative routes to decongest major towns	Construct a bypass on the western side of Isiolo Town to improve connection between Isiolo Municipality and the rest of the urban centers	· KeNHA · KeRRA	2028/29 to 2030/31
		Improve transport connectivity to all towns in the county	Improve connectivity between the second-tier towns (sub-county headquarters), third-tier towns (ward headquarters) in the county		2027/28 to 2029/30
			Classify highways and roads in the county		2027/28

CHALLENGE	LOCATION	STRATEGY	PROJECTS	ACTORS	TIMELINES
Lack of intermodal integration	Major transport terminals	Improve intermodal integration	Acquire land near the airport for the construction of bus terminal	· KeNHA · KURA · Kenya Railways · Development partners of CGI	2027/28
			Connect Isiolo airport to the LAPSSET corridor and the railway		2028/29 to 2030/31
			Identify 2 Ha of land along the LAPSSET oil pipeline away from settled areas of Isiolo Municipality and develop a depot there.		
Narrow roads in the major urban areas causing congestion	All urban centers in the county including Isiolo Municipality	Enhance road capacity and improve connectivity	Widen major roads within Isiolo Town, Kinna, Garbatulla, Merti and other major towns	· CGI · KeNHA · KeRRA · KURA · NGOs · Private partners	2027/28 to 2028/29
			Upgrade roads with proper drainage, designated motorcycle lanes, pedestrian walkways and road mar		2027/28 to 2028/29
			Address all the above issues in the LPLUDPs for the urban centers		2026/27
Inadequate parking spaces for private vehicles in Isiolo Town and other centers	Kinna, Garbatulla, Modogashe, Merti, Oldonyiro, Ngare Mara, Sericho and Isiolo Municipality	Improve urban mobility infrastructure	Designate and construct formal parking areas	· CGI · KeNHA · KeRRA · KURA · NGOs · Private partners	2027/28 to 2028/29

CHALLENGE	LOCATION	STRATEGY	PROJECTS	ACTORS	TIMELINES
Absence of well-structured bus parks and prevalence of informal PSV operations	Kinna, Garbatulla, Modogashe, Merti, Oldonyiro, Ngare Mara, Sericho and Isiolo Municipality	Establish organized public transport infrastructure and systems	Construct designated bus parks with appropriate amenities in Isiolo Town and other major urban centers.	· CGI · KeNHA · KeRRA · KURA · NGOs · PSV operators/ matatu saccos, · Private partners	2027/28 to 2028/29
			Require all PSV operators to operate as SACCOs	· NTSA	2025/2026 to 2026/27
Lack of infrastructure for NMT (pedestrians and cyclists) in urban areas	Kinna, Garbatulla, Modogashe, Merti, Oldonyiro, Ngare Mara, Sericho and Isiolo Municipality	Prioritize safety, efficiency and environmental sustainability, by promoting the use of non-motorized transport systems	Construct pedestrian walkways and bicycle lanes, and designate pedestrian crossing areas along all the major roads	· CGI · KeNHA · KeRRA · KURA · NGOs · Private partners	2027/28 to 2028/29
			Install street lighting and signage for safety	· CGI	2028/29 to 2029/30
Lack of designated livestock routes/ wildlife corridors	Countywide	Ensure safe and efficient livestock movement	Demarcate and fence livestock routes	· CGI · Ministry of Livestock · KeNHA · KeRRA · KURA · NGOs · Private partners	2027/28

14.4.2 Water Supply

Water access remains a critical challenge in Isiolo, driven by arid conditions, limited and poorly managed boreholes, and saline water quality. These issues are likely to worsen with climate change. There is need for expanded and modernized water infrastructure, particularly in underserved areas.

Table 14-3: Water Supply Improvement Strategies

CHALLENGE	LOCATION	STRATEGY	PROJECTS	ACTORS	TIMELINES
Inadequate and unreliable water supply for domestic and livestock use	Countywide	Increase and diversify water supply sources	Drill 1No. new boreholes in strategic locations in Cherab, Chari, Sericho, Garbatulla and Ngare Mara wards respectively	· CGI, · IWASCO, · Water Resources Authority (WRA), · NGOs, · Private Partners	2027/28-2028/29
			Rehabilitate non-functional boreholes countywide		
			Construct 10 water pans to capture water in Ngaremara		
			Implementation of the proposed crocodile jaw dam in Oldonyiro		2027/2028-2028/2029
			Development and equipping irrigations schemes in Kinna and Garbatulla		2027/2028-2030/2031
			Promote rainwater harvesting into tanks at household and institutional level		Continuous up to 2035/36
High salinity and poor quality of water especially from the boreholes	Countywide	Improve water quality	Install water quality purification systems for water from the boreholes	· CGI, · IWASCO, · Ministry of Health, · Water Resources Authority (WRA), · NGOs, · Private Partners	2027/28-2028/29
			Provide climate proofing infrastructure along boreholes such as protective fencing, riparian buffers and drainage channels		
			Put in place water quality monitoring programs		

CHALLENGE	LOCATION	STRATEGY	PROJECTS	ACTORS	TIMELINES
Poor water distribution networks and low access in rural and peri-urban areas	Countywide	Improve water supply infrastructure and ensure equitable distribution	Lay new water pipelines to the underserved areas	· CGI, IWASCO, · Water Resources Authority (WRA), · NGOs, · Private Partners	2027/28-2028/29
			Construct water kiosks in high demand areas		Continuous up to 2035/36
Conflict over water resources between people and livestock	Rural areas	Promote integrated and inclusive water resource management	Demarcate livestock water points that will be separate from human water collection points	· CGI · Ministry of Livestock · Water Resources Authority (WRA)	2027/28
Flooding	· Isiolo Municipality · Along Isiolo-Moyale road · Marire River	Implement projects to manage flooding	Implement the Sustainable Drainage Systems Project	· CGI · NDMA · CG Meru · Development partners of CGI · KeNHA · NEMA · Physical and Land Use Planning Department · Water Resources Authority (WRA)	2027/28-2028/29
			Implement stormwater management designs in urban areas		2027/28-2028/29
			Collaborate with neighbouring County Government of Meru to construct check dam the rivers that flood downstream		2029/30-2031/32
			Improve drainage of the Isiolo-Moyale Road		2027/28-2028/29
			Develop bio parks in Isiolo and other towns that are prone to flooding		2027/28-2028/29
			Map out and resettle people living in flood prone areas		2026/27-2028/29

Source: Author, 2025

14.4.3 Sanitation and solid waste management

Sanitation and waste management infrastructure is underdeveloped across the county, contributing to environmental pollution, health risks, and flooding. Sustainable management of both liquid and solid waste requires urgent attention.

Table 14-4: Sanitation and Solid Waste Management Improvement Strategies

CHALLENGE	LOCATION	STRATEGY	PROJECTS	ACTORS	TIMELINES
Inadequate and unsafe wastewater management in both urban and rural areas	Countywide	Develop efficient wastewater treatment systems	Construct a centralized wastewater treatment facility at the lowest point in Isiolo Town	· Ministry responsible for Public Works, IWASCO, NEMA	2028/29-2029/30
			Set up small-scale decentralized treatment plants in the rural areas		2028/29-2029/30
Broken/missing sewer lines	Parts of Isiolo Municipality	Rehabilitate and expand the sewer infrastructure	Repair the broken sewer lines	· CGI, Water Services Regulatory Board (WASREB), IWASCO, NEMA, Private Partners	Continuous up to 2035/36
			Lay newer sewer lines in the major towns currently lacking them		2028/29-2029/30
Lack of drainage systems in urban centers leading to waterlogging	All urban centers in the county	Provide proper drainage in all the urban centers and markets	Construct storm water drainage channels in Isiolo Town and other towns such as Kinna, Merti, Garbatulla and Modogashe	· CGI, Water Services Regulatory Board (WASREB), IWASCO, NEMA, Private Partners	2028/29-2029/30
Lack of drainage systems in urban centers leading to waterlogging	All urban centers in the county	Provide proper drainage in all the urban centers and markets	Construct storm water drainage channels in Isiolo Town and other towns such as Kinna, Merti, Garbatulla and Modogashe	· CGI, Water Services Regulatory Board(WASREB), IWASCO, NEMA, Private Partners	2028/29-2029/30
Insufficient public toilet facilities	At strategic places countywide (major urban centers)	Provide dignified public sanitation facilities	Upgrade and renovate old public toilets	· CGI, Ministry of Health, Ministry of Education, NEMA, Private Partners	2028/29-2029/30
			Build new toilets in the institutions- schools, markets, bus park		2028/29-2030/31

CHALLENGE	LOCATION	STRATEGY	PROJECTS	ACTORS	TIMELINES
Poor waste collection and disposal systems across the county	Countywide (major urban centers)	Establish efficient and sustainable solid waste management systems	Acquire land in Ngare Mara for the development of municipal solid waste management facility	· CGI, KDF, Ministry of Health, NEMA, NGOs, Private Partners	2027/2028
			Develop a landfill at Ngare Mara once the land is properly documented as a solid waste handling site	· CGI, Ministry of Health, NEMA, NGOs, Private Partners	2029/2030
			Set up waste collection points in the urban centers and markets		2028/2029
Open defecation	Rural areas of the county	Work towards OD-free status	Awareness creation and sensitization	· CGI, Ministry of Health, NEMA, NGOs, Private Partners	2026/27-2027/28
			Support rural/ pastoralist communities to construct toilet facilities.		2026/27-2027/28

Source: Author, 2025

14.4.4 Energy

Energy infrastructure is concentrated in urban areas, leaving rural residents reliant on unsustainable biomass sources. There is need to promote accessible and equitable renewable energy across the county.

Table 14-5: Energy Improvement Strategies

CHALLENGE	LOCATION	STRATEGY	PROJECTS	ACTORS	TIMELINES
Over-reliance on firewood and charcoal for cooking, leading to deforestation	Rural areas of the county	Encourage the use of alternative clean energy for cooking	Install household and institutional solar panels	CGI, Ministry of Energy, KEREA, K-OSAP, Private Partners, Kenya Power	2026/27-2027/28
			Promote the use of biogas		2027/28-2028/29
			Connect rural areas to the national grid		Continuous up to 2035/36
Unequal energy access between urban and rural areas	Countywide (major urban centers)	Expand rural energy infrastructure and grid connectivity	Extend power grids to the remote areas, including all the public institutions	CGI, Ministry of Energy, KEREA, Private Partners	2027/28-2028/29
			Install new transformers and transmission lines		2027/28-2028/29
Lack of street lighting in urban and remote areas affecting security	Major urban areas in the county	Improve lighting infrastructure in towns	Install solar-powered streetlights in towns, markets and near facilities such as schools and hospital	CGI, Ministry of Energy, KEREA, Private Partners	2028/29 - 2029/30

Source: Author, 2025

14.4.5 Information, Communication and Technology

Limited digital connectivity across the county has hindered access to services, education, financial inclusion, and governance. There is need to bridge the digital divide between urban and rural areas.

Table 14-6: Information, Communication and Technology Improvement Strategies

CHALLENGE	LOCATION	STRATEGY	PROJECTS	ACTORS	TIMELINES
Low mobile network coverage	Rural parts of the county	Improve network coverage and expand telecommunication infrastructure	Facilitate partnerships with network providers to reach remote populations	CGI, CA, Ministry of ICT, Safaricom, Airtel, Telkom	2026/27-2027/28
Limited last-mile connectivity for internet and digital services	Countywide	Enhance access to broadband and digital platforms	· Establish digital centers and ICT hubs · Extend and install fiber optics and broadband infrastructure in the institutions (schools, hospitals, public offices etc.)	CGI, Ministry of ICT, NGOs, Private Partners	2026/27-2027/28
Digital skill gap among the residents	Countywide	Build local digital literacy and capacity	Integrate ICT learning in schools	CGI, Ministry of ICT, Ministry of Health, Private Partners	2026/27-2028/29

Source: Author, 2025

14.5 SOCIAL INFRASTRUCTURE IMPROVEMENT STRATEGIES

14.5.1 Educational

Access to quality education is constrained by inadequate and unevenly distributed schools, compounded by insecurity, environmental challenges, and socio-economic barriers. There is need for strategies that ensure inclusive access to education at all levels.

Table 14-7: Educational Improvement Strategies

CHALLENGE	LOCATION	STRATEGY	PROJECTS	ACTORS	TIMELINES
Inadequate and poor distribution of primary and secondary schools	Ngaremara, Burat, Bula Pesa, Kinna Cherab, Chari	Expand access to basic education in the underserved areas	Construct a new primary and a new secondary school in each of the underserved areas	CGI, Ministry of Education, CDF, NGOs, Private Partners	At least one school per FY
			Upgrade existing schools by constructing the missing classrooms and supporting facilities		2027/28-2028/29
			Convert distant day secondary schools to day cum boarding schools		2026/27-2029/30
Truancy	Countywide	Enhance school attendance	Hold at least 1No. awareness and sensitisation campaign per month in every ward	CGI, Ministry of Education, NGOs, Private Partners	Continuous up to 2035/36
			Boost school feeding programs, especially in the rural areas		Continuous up to 2035/36
			Partner with relief agencies to ensure sustainable supply		Continuous up to 2035/36
			Establish a school farm in all wards where agriculture is viable – e.g. in Kinna		Continuous up to 2035/36
Shortage of trained teachers, especially in remote areas	Countywide	Improve teacher recruitment and deployment in underserved areas	Map out and document the teacher requirement per zone	CGI, Ministry of Education, TSC, NGOs, Private Partners	2026/27
			Fill in the available vacancies through county and national mechanism		2027/28-2028/29
			Provide decent housing for teachers		2030/31-2035/36
Lack of vocational and technical training opportunities for the youth	All the urban centres in the county	Enhance the development of skills by the youth through establishment of vocational centres	Map out and document the skills gap in Isiolo	CGI, TVETA, Ministry of Education, FBOs, NGOs, Private Partners	2026/27
			Construct a new TVET institution in every ward to train on the required skills		2027/28-2035/36
			Construct an Agricultural Training Centre in Kinna		2028/29-2030/31

Source: Author, 2025

14.5.2 Health Services

The health sector faces challenges of limited access, inadequate facilities, lack of emergency response systems, and overcrowding. There is need for strategies that improve health infrastructure, reduce disease occurrence, and leverage broader infrastructural developments such as roads to enhance service delivery.

Table 14-8: Health Services Improvement Strategies

CHALLENGE	LOCATION	STRATEGY	PROJECTS	ACTORS	TIMELINES
Unequal distribution of health facilities, with rural and remote areas underserved	Rural areas of the county	Promote equitable access to healthcare services	Construct and equip a new health centre in each rural ward	CGI, Ministry of Health, NGOs, Private Partners	2027/28-2035/36
Lack of access to healthcare esp. during emergencies	Countywide (especially the rural areas)	Improve physical and emergency access to health facilities	Upgrade road infrastructure leading to health centres	CGI, Ministry of Health, KeNHA, NGOs, Private Partners	2027/28-2029/30
			Establish a sub-county hospital at every sub-county headquarters		2028/29-2035/36
			Establish emergency response units and ambulance services at every sub-county hospital		2028/29-2035/36
Overcrowding and strain on health workers and facilities in the main hospitals	Countywide	Enhance capacity of existing health facilities through resources and staffing	Expand existing hospitals	CGI, Ministry of Health, KMPDU, NGOs, Private Partners	2028/29-2035/36
			Employ more medical staff		
			Train healthcare workers on specialized and emerging health issues		
Inadequate health infrastructure including equipment, beds and ICT systems	Countywide	Upgrade and digitize healthcare facilities and systems	· Equip health facilities with enough equipment. · Introduce electronic medical records systems	CGI, Ministry of Health,Ministry of ICT, NGOs, Private Partners	2028/29-2035/36

CHALLENGE	LOCATION	STRATEGY	PROJECTS	ACTORS	TIMELINES
Poor sanitation and waste management in and around health facilities	Countywide (especially in the urban areas)	Improve waste management strategies in and around hospitals	· Construct incinerators and proper medical waste disposal units · Ensure reliable water supply in all health centers · Provide adequate sanitation facilities	CGI, Ministry of Health, NEMA, NGOs, Private Partners	2028/29-2035/36

Source: Author, 2025

14.5.3 Recreation

Recreation infrastructure is lacking in most parts of the county. Various groups of people in the community, including women, youth, children and persons with disabilities lack access to recreational facilities. There is a need for public parks, playfields and open spaces, in every urban area and in rural parts of the county.

Table 14-9: Recreation Improvement Strategies

CHALLENGE	LOCATION	STRATEGY	PROJECTS	ACTORS	TIMELINES
Limited number of recreational facilities across the county	Countywide	Provide and expand recreational infrastructure to meet the current and future demand of all irrespective of their socio-economic or physical ability statuses	Designate land for a public recreational area in Isiolo municipality and all sub-county headquarters respectively	CGI, Ministry of Sports and Culture, NGOs, Private Partners	2028/29-2035/36
			Develop community parks, playgrounds and open areas in both urban and rural areas		2028/29-2035/36
Underserved and excluded groups in the provision of recreational facilities (Youth, children, women and persons with disabilities)	Countywide	Promote inclusive access to recreational facilities	Construct recreational facilities that can be accessed by all groups in the society.	CGI, Ministry of Sports and Culture, NGOs, Private Partners	2028/29-2035/36
			Provide age-appropriate and inclusive equipment (e.g. wheelchair ramps, security features, gender-sensitive zones)		

Source: Author, 2025

14.5.4 Security and safety

Insecurity driven by inter-ethnic conflicts, resource competition, and proliferation of small arms has undermined livelihoods, investment, and development. Security infrastructure remains inadequate and unevenly distributed, necessitating improved policing coverage and integration of security considerations into spatial planning.

Table 14-10: Security and safety Improvement Strategies

CHALLENGE	LOCATION	STRATEGY	PROJECTS	ACTORS	TIMELINES
Inadequate security infrastructure	Countywide	Expand access to policing and surveillance	Map out and document all insecurity hotspots in the county	CGI, National Police Service, Ministry responsible for internal security	2026/27
			Build and equip police posts in hotspot areas and all the urban centres		2027/28-2030/31
Inter-ethnic and resource-based conflicts	Rural areas of the county	Promote peace-building and inter-community dialogue	Establish peace committees and inter-ethnic dialogue platforms in all insecurity hotspots	NCIC, Local Leaders, Religious Groups, Peace NGOs	Continuous up to 2035/36
Delayed response and poor accessibility	Countywide	Improve mobility and coordination of security units	Improve access to remote areas and establish joint security command centres in all insecurity hotspots	CGI, KeRRA, NGOs	2026/27-2027/28
Weak community involvement in safety initiatives	Countywide	Promote community-based security models	Support and empower Nyumba Kumi initiatives and other community policing units in all villages	CGI, Local Security Forums	2026/27-2027/28

Source: Author, 2025

14.5.5 Tourism development

Isiolo County holds underutilized potential in tourism and hospitality. Attractions such as wildlife conservancies, cultural heritage, natural landscapes, and emerging cultural hubs remain inaccessible due to poor infrastructure, low promotion, and insecurity. This has denied local communities

the opportunities for job creation, income generation, and cultural preservation. Improving road access to attractions, enhancing security, and strategically marketing Isiolo as a destination will attract more tourists and investors, contributing to inclusive economic development.

Table 14-11: Tourism development Improvement Strategies

CHALLENGE	LOCATION	STRATEGY	PROJECTS	ACTORS	TIMELINES
Limited tourism activity in non-park areas	Countywide	Diversify and promote tourism across the county	Develop and promote cultural, eco-, and community-based tourism in Gabratulla, Oldonyiro, and other wards with tourism potentials	CGI, KTB, Ministry responsible for Tourism	2026/27
Limited access to tourist destinations	Oldonyiro, Ngare Mara, Burat	Improve access and amenities in tourism zones	Upgrade roads, signage, and utilities around all conservancies and cultural sites	KeNHA, KURA, CGI, NGOs, Private Partners	2026/27-2027/28
Inadequate relevant tourism facilities near tourist attractions	Countywide	Provide supporting facilities for tourist activities	Construct accommodation facilities and restaurants/eateries near all the tourist destinations	CGI, Ministry responsible for Tourism, Private Partners	Continuous up to 2035/36
Security concerns reducing discouraging tourism	Countywide	Enhance security around tourist hotspots	Establish tourism police units, install surveillance systems at all tourist destinations and along the roads	CGI, KTB, National Police Service, Private Partners	2027/28-2030/31
Low local involvement in tourism value chains	Countywide	Build local capacity and participation	Train and empower at least 10 community members in guiding, hospitality, cultural entrepreneurship in each ward	NGOs, Vocational Institutes, Community-based Organizations	Continuous up to 2035/36
Poor promotion and visibility of Isiolo's tourism potential	Countywide	Improve marketing and destination branding	Improve marketing and destination branding of Isiolo County	County Tourism Office, KTB, Private Partners	Continuous up to 2035/36

Source: Author, 2025

14.5.6 Community development

Many communities in Isiolo remain underserved in basic services, civic infrastructure, and economic opportunities, with limited platforms for public participation and poor representation of marginalized groups. Strengthening community institutions and civic spaces is essential for inclusive and cohesive development.

Table 14-12: Community development Improvement Strategies

CHALLENGE	LOCATION	STRATEGY	PROJECTS	ACTORS	TIMELINES
Limited community infrastructure	Countywide	Develop inclusive community support facilities	Construct a community hall, youth centre, and women empowerment hub in each ward where none exists	CGI, CDF, NGOs, CBOs	Continuous up to 2035/36
			Rehabilitate existing community hall, youth centre, and women empowerment hub in each ward		
Marginalization of youth, women, and persons with disabilities	Countywide (especially the rural areas)	Promote inclusive participation and representation	Establish gender desks and PWD access services in every ward	CGI, FIDA, PWD Councils, Private Partners	Continuous up to 2035/36
			Support youth organizations and mentorship forums in every village		
Weak public engagement in planning and decision-making	Countywide	Strengthen participatory governance	Build capacity for citizen feedback mechanisms	CGI, Local Administration	Continuous up to 2035/36

Source: Author, 2025

14.5.7 Natural disaster preparedness and climate change resilience

Due to its location in the Arid and Semi-Arid Lands (ASAL) region, Isiolo County experiences a range of climate-related disasters. These include prolonged droughts, flash floods, human and human-wildlife conflicts, diseases affecting humans), livestock diseases, crop pests and diseases, and widespread environmental degradation. These hazards lead to significant displacement, loss of human and animal lives, destruction of shelter, and severe ecological damage. Flooding remains the most frequent and widespread hazard, affecting nearly all wards in the county. Despite the county's efforts to reduce the occurrence and effects of these disasters, there remains an urgent need for infrastructure that can help reduce risk and enhance disaster response, particularly the construction of effective storm water drainage systems, improvement of rural road networks, and strengthening of communication infrastructure.

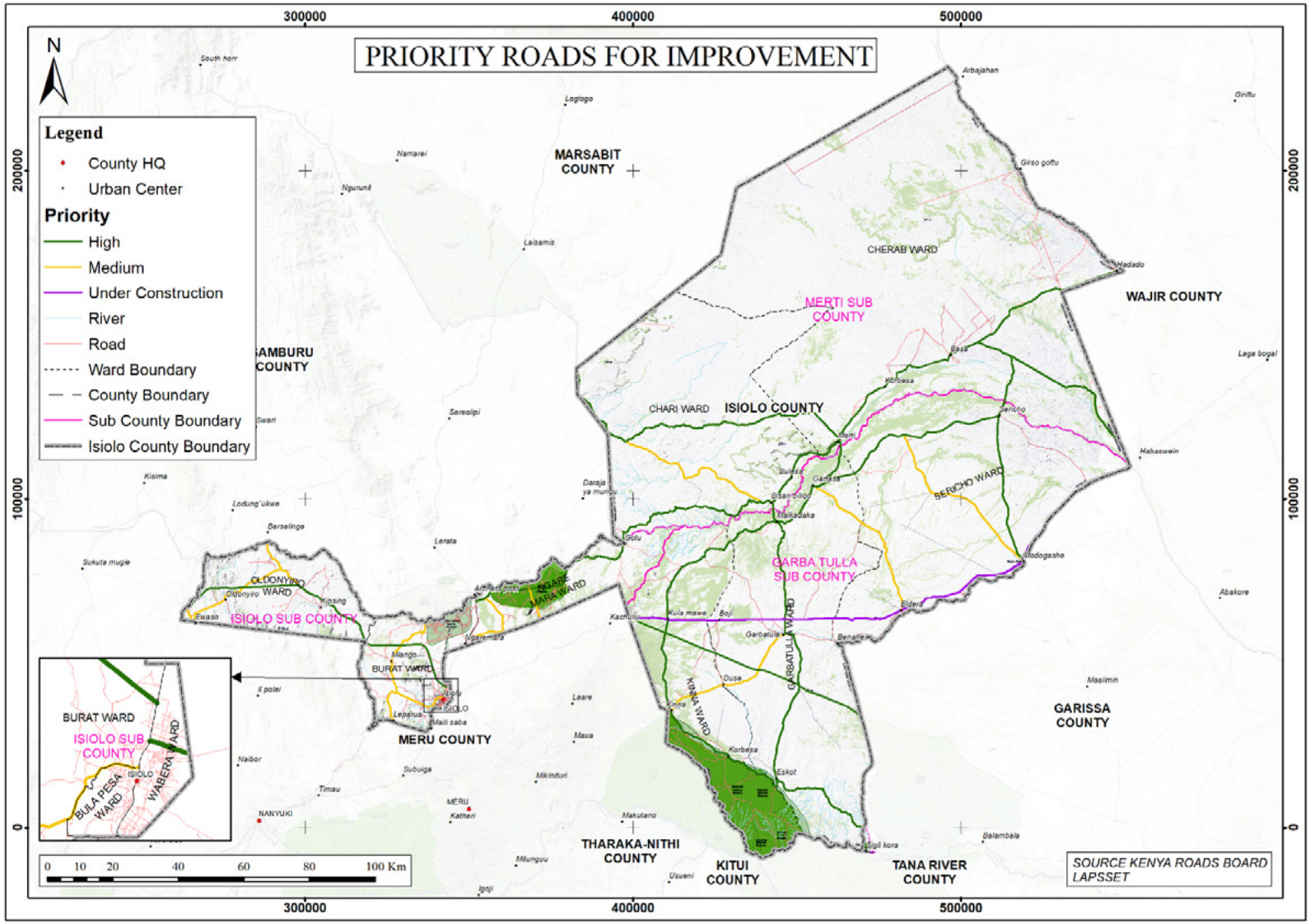
Table 14-13: Natural Disaster Preparedness and Climate Change Resilience Improvement Strategies

CHALLENGE	LOCATION	STRATEGY	PROJECTS	ACTORS	TIMELINES
Frequent droughts and floods	Countywide (especially in Chari, Ngaremara, Cherab, Oldonyiro)	Strengthen early warning and response systems	Develop community-based early warning and rapid response systems	NDMA, Meteorology Department, County Government, Red Cross	2027/28-2030/31
Poor drainage leading to urban and rural flooding	Countywide	Develop resilient drainage and flood control systems	Map out and document the critical roads that are most affected	CGI, KeRRA, KURA, Local Contractors, Private Partners	2029/30-2031/32
			Construct stormwater drains in flood-prone settlements and along critical roads		
			Construct water pans to capture and store water along the critical roads		2029/30-2031/32

CHALLENGE	LOCATION	STRATEGY	PROJECTS	ACTORS	TIMELINES
Slow disaster response in remote areas	Rural areas of the county	Improve access during emergencies	Upgrade all rural access roads to murram at minimum	CGI, Ministry responsible for Roads, Disaster Response Agencies	2026/27-2027/28
			Build emergency coordination hubs at the ward level at minimum		2028/29-2035/36
Limited community capacity in disaster response	Countywide	Promote community-based disaster risk management	Train at least 10 community disaster response personnel at the ward level	CGI, NGOs, NDMU, KRC, Private Partners	2028/29-2035/36
			Equip community disaster response personnel with tools and communication kits		
Human-wildlife and inter-community conflict	Bula Pesa, Burat, Kinna, Sericho, Wabera	Integrate resilience planning with peace building	Establish 60m buffer zones and wildlife corridors; coordinate cross-border dialogue	KWS, NCIC, Peace Committees	2027/28-2032/33

Source: Author, 2025

Map 14-1: Priority Roads for Improvement



Source: Author, 2025

14.6 ECONOMIC ACTIVITIES IMPROVEMENT STRATEGIES

14.6.1 Livestock Production Improvement Strategies

The strategies proposed are aimed at ensuring a well-coordinated livestock production subsector supported by veterinary and marketing services. This will enhance livestock production which is the main economic activity within the County.

Table 14-14: Livestock Production Improvement Strategies

EMERGING ISSUE	LOCATION	PROPOSED STRATEGIC INTERVENTION MEASURES	ACTORS	TIME FRAME
Limited Commercialization of livestock production-	All the 10 wards	Establishment of feedlots cooperatives where farm animals are fattened before being disposed Some ranches may be specialized e.g dairy cows, beef cattle, camel ranches, and ranches for shoats or mixed livestock enterprises	Cooperative Societies, private investors, County Government	Short Term
Inadequate entrepreneurial skills among the livestock keepers	All Wards	Training		Continuous
Poor distribution of livestock in space due to insecurity	Chari, Cherab, Ngaremara, Oldonyiro and Sericho	Address the insecurity issue through peace talks	Multi-Agency Team, National Government, County Government, Faith-based organizations (FBOs), Local Community Leaders, Grazing Committees	Continuous
Inadequate forage/ feeds/ fodder for livestock especially during dry season	Chari, Cherab, Ngaremara, Kinna, Garbatulla, Sericho, Burat and Oldonyiro	· Initiate program for fodder production · Pasture establishment through irrigation · Diversity livestock supplements · Rangeland rehabilitation (reseeding, management of invasive species, soil and water conservation structures)	Livestock cooperatives, County Government, Partners	Medium
Water scarcity	Chari, Cherab, Ngaremara, Kinna, Garbatulla, Sericho, Burat and Oldonyiro	· Sink boreholes at strategic locations. Boreholes are closed when pastoralists move elsewhere · Develop water harvesting structures e.g water pan, sand dams · Rehabilitation of water points	WRA, Ministry of Water and Irrigation, Isiolo County Government, ENNDA	Short

EMERGING ISSUE	LOCATION	PROPOSED STRATEGIC INTERVENTION MEASURES	ACTORS	TIME FRAME
Insecurity	Chari, Cherab, Ngaremara, Kinna, Garbatulla, Sericho, Burat and Oldonyiro	· Culture change – livestock stealing as a culture should change through sensitization. · Strengthen peace building initiatives · Strengthen peace committees · Intensification of peace talks especially at border areas · Beefing up security by anti-stock theft agencies	Non-State Actors (FBOs, NGOs, Community Opinion shapers etc), National Government, County Government	Continuous
Limited livestock extension services due to inadequate personnel and lack of facilitation	Chari, Cherab, Ngaremara, Kinna, Garbatulla, Sericho, Burat and Oldonyiro	· Recruit more livestock production experts and deploy to the Wards · Intensify livestock extension services and provide logistical support- transportation, field allowances · Capacity building of lead livestock keepers/farmerswhose enterprises will service as centres to support extension services	Isiolo County Government, Partners	Short Term
Loss of grazing land due spread of invasive plant species	Chari, Cherab, Ngaremara, Kinna, Garbatulla, Sericho, Burat and Oldonyiro	Application of multi-faceted approach- mechanical, chemical and biological control, use fire	National government, county government, research institutions, universities, other partners	Short term
Limited adoption of improved livestock breeds	Chari, Cherab, Ngaremara, Kinna, Garbatulla, Sericho, Burat and Oldonyiro	Encourage livestock keepers to adopt improved livestock breeds. These can be done gradually	County Government- Department of livestock, Partners such as Mid-P and others	Medium
Low uptake of bee-keeping	Chari, Cherab, Ngaremara, Kinna, Garbatulla, Sericho, Burat and Oldonyiro	Promote commercial bee-keeping program in all Wards	County Government, Youth groups, Women groups, CBOs, Partners	Short
Poor enforcement of community grazing plans	Chari, Cherab, Ngaremara, Kinna, Garbatulla, Sericho, Burat and Oldonyiro	Enforce grazing plans as the agreed plans	Community grazing committees, National and county government	Short

EMERGING ISSUE	LOCATION	PROPOSED STRATEGIC INTERVENTION MEASURES	ACTORS	TIME FRAME
Limited uptake of livestock insurance schemes	Chari, Cherab, Ngaremara, Kinna, Garbatulla, Sericho, Burat and Oldonyiro	Encourage livestock keepers to embrace the concept of livestock insurance	National and County Government, Partners	Medium
Dysfunctional livestock holding grounds	Burat and Kinna	· Plan and acquire Title Deeds for livestock holding grounds · Improve the livestock holding grounds with the necessary infrastructure · Beef up security to ensure no vandalism of infrastructure	County government in partnership with national government and Local Community	Short
Loss of livestock due to prolonged drought	Chari, Cherab, Ngaremara, Kinna, Garbatulla, Sericho, Burat and Oldonyiro	· Rollout the livestock insurance program in all Wards · Encourage pastoralists to sell livestock during season of low fodder to avoid losses · Work of attitude change because most pastoralists are not keen to sell livestock even when they know the consequences · County and national government to maintain a fund for purchasing livestock from the pastoralists during the period of prolonged drought	County Government, National Government, Partners	Short
High incidences of livestock diseases across the county	Chari, Cherab, Ngaremara, Kinna, Garbatulla, Sericho, Burat and Oldonyiro	· Provide adequate veterinary capacity and institutional infrastructure · Recruitment of more veterinary experts · Acquire more field vehicles for every sub-county · Employ diverse methods of controlling livestock diseases · Animal hygiene and Immunization	County government Partners	Short
Limited animal health and hygiene extension services	Chari, Cherab, Ngaremara, Kinna, Garbatulla, Sericho, Burat and Oldonyiro	Provide supply and demand-driven animal health and hygiene extension services	County Government, Partners, Livestock Cooperatives Societies	Short
Inadequate trained personnel in livestock subsector	Chari, Cherab, Ngaremara, Kinna, Garbatulla, Sericho, Burat and Oldonyiro	Establish a middle-level college to train personnel to serve the county and other neighbouring counties of Samburu, Wajir, Laikipia, Meru, Marsabit	National Government, County Government	Long

EMERGING ISSUE	LOCATION	PROPOSED STRATEGIC INTERVENTION MEASURES	ACTORS	TIME FRAME
Limited livestock value chains	Chari, Cherab, Ngaremara, Kinna, Garbatulla, Sericho, Burat and Oldonyiro	· Carry out feasibility studies for various livestock value chains- e.g dairy goats, sheep for wool and mutton, poultry, rabbits and honey production · Promote camel milk production · Encourage commercial livestock production for international and local market	· County government · Cooperative societies · Private investors · Partners	Short
Drug resistance due to misuse of drugs	All wards	· Implement an elaborate programme for educating livestock keepers about the drug resistance due to misuse of drugs · Capacity building for Livestock farmers	· County Government · Local Media Houses	Continuous
Limited livestock marketing and market channels	All wards	· Livestock markets to be provided with basic infrastructure facilities- perimeter fencing, offices, water and sanitation facilities etc · Operationalization of Isiolo Export Abattoir	· County government Livestock Cooperatives · Ministry of Agriculture · Ministry of Investment Trade and Industries	Short
Lack of Community involvement in management of livestock markets	Barambate, Ngaremara, Kinna, Duse	Community representation in the Market Committees	· County government · Livestock Cooperatives	Short

Source: Author, 2025

Table 14-15: Fisheries Subsector Improvement Strategies

FISHERIES SUBSECTOR					
Vision: A thriving fisheries subsector					
EMERGING ISSUE	**LOCATION**	**PROPOSED STRATEGIC INTERVENTIONS**	**SPECIFIC ACTIVITIES**	**ACTORS**	**TIME FRAME**
Fisheries subsector at infancy stage	Ngaremara, Bullapesa, Kinna, Chari and Oldonyiro	To strengthen fish farming across the county	Sensitization of residents to embrace fishing farming and consumption	National and county governments, Local community, Development Partners	Continous
Lack of appropriate fish-handling facilities- cold storage, fish nets, etc	Ngaremara, Bullapesa, Kinna, Chari and Oldonyiro	To have appropriate fish handling facilities	· Prepare a strategic plan for fisheries subsector · Invest in modern fish-handling facilities	National and county governments, Local community	Short
Poor access to fish feeds	Ngaremara, Bullapesa, Kinna, Chari and Oldonyiro	To ensure sufficient supply of fish feeds locally	Carry out feasibility studies for manufacturing of fish feeds	· County government and national government for feasibility studies · Involvement of private investors in production of fish feeds	Continuous
Lack of appropriate transportation facilities for fish	Ngaremara, Bullapesa, Kinna, Chari and Oldonyiro	To put in place an elaborate framework for transporting fish to the market	Acquisition of refrigerated vehicles for fish handling harvested fish	County government in partnership with the private investors (private transporters)	Long term
Inadequate funding	Ngaremara, Bullapesa, Kinna, Chari and Oldonyiro	To mobilize funding for the fisheries subsector	Prepare an annual budget for funding by county government and partners	County government, National government	Continuous
Lack of local suppliers of fingerlings	Ngaremara, Bullapesa, Kinna, Chari and Oldonyiro	To establish local production of fingerlings	· Prepare an investment plan for fingerlings · Prepare a funding proposal for local production of fingerlings · Reach out to potential partners	· County and national government · Partners such as Local Universities	Short

FISHERIES SUBSECTOR					
Vision: A thriving fisheries subsector					
EMERGING ISSUE	LOCATION	PROPOSED STRATEGIC INTERVENTIONS	SPECIFIC ACTIVITIES	ACTORS	TIME FRAME
Poor fish marketing linkage	Ngaremara, Bullapesa, Kinna, Chari and Oldonyiro	Establish well-coordinated fish market linkages	Create partnerships with the ministry and non state actors	County government, Partners, Local fish farmers, ENNDA, Ministry of Agriculture and Livestock Development	Short

Source: Author, 2025

14.6.2 Crop Production Improvement Strategies

14.6.2.1 Crop Development Strategy

This strategy promotes agricultural production to ensure food and nutrition security in the productive food baskets. It also promotes livestock production for the sustenance of livelihoods in the pastoralists sub-region.

Table 14-16: Crop Production Improvement Strategies

CHALLENGES	LOCATION	STRATEGY	PROJECTS	ACTORS	TIMEFRAME
Inadequate water for irrigation	Kinna, Ngaremara, Burat, Bullapesa	Expansion and creation of more water harvesting facilities and water pans	· Drilling boreholes · Desilting water pans · Creation of earth dams	· CGI, · Ministry of Water, Sanitation and Irrigation · NGOs · Private partners	Short
			· Development and equipping irrigations schemes in Kinna and Garbatulla · Drilling water pans in flood plains along the Ewaso Ngiro river · Implementation of the proposed crocodile jaw dam in Oldonyiro · Rehabilitate boreholes infrustructure		
Crop pest and diseases infestation	Kinna, Ngaremara, Burat, Bullapesa	Enhance extension services to improve early detection and taking action in advance	· Establishing extension office stations closer to farmers in Garbatulla and Kinna, where most farming takes place · Providing pesticides and chemicals in urban centres in farming zones such as Oldonyiro, Burat, Kinna and Garbatulla	· CGI, · Ministry of Agriculture, · NGOs, · Private Partners	Short
			· Establishing cold storage facilities for perishable goods such as tomatoes and other vegetables		
High production costs	Kinna, Ngaremara, Burat, Bullapesa	Build capacity to exploit alternative sources such as Solar	· Establishing solar farms to serve off grid areas that need energy for farming to pump water from boreholes and water pans · Subsidize farm inputs	· CGI · Private Partners · Ministry of Energy · Ministry of Agriculture and Livestock Development	Medium
Inaccessible extension services	Kinna, Ngaremara, Burat, Bullapesa	Increased funding for extension workers to ensure they reach the farmers	· Creating Satellite offices in Agriculture regions to enable extension officers become accessible in sub county offices or urban centres close to markets	· CGI · NGOs · Private Partners	Continuous
			· Equipping extension officers with mobility means such as vehicles and motorcycles to enable reach into the hinterlands		

CHALLENGES	LOCATION	STRATEGY	PROJECTS	ACTORS	TIMEFRAME
Climate change, unpredictable patterns	Kinna, Ngaremara, Burat, Bullapesa	Leveraging technology to create early warning systems on climate change	· Early warning systems · Climate smart agriculture	· CGI · Ministry of Environment and Forestry · Private Partners · NGOs	Short
Social cultural aspects	Kinna, Ngaremara, Burat, Bullapesa	Sensitization on the importance of livelihood diversification	· Agriculture training centres	· CGI · Private partners · NGOs · Local leaders	Short
Small subsistence production	Kinna, Ngaremara, Burat, Bullapesa	Zoning and strict implementation of regulations on subdivision	· Zoning · Land ownership · Putting more land under irrigation · Increasing water availability · Minimum land for production should be 2.5acres in productive areas. This include Kinna, parts of Garbatulla and Burat	· CGI · Private partners · NGOs	Short
Poor market linkage	Kinna, Ngaremara, Burat, Bullapesa	Improving market conditions by encouraging many players and investors	· Encouraging investment along the value chain to improve production · Building better physical infrastructure for markets to encourage commerce in all urban centres of the wards	· CGI · NGOs · Private partners	Short
Low quantity for Agro-processing	Kinna, Ngaremara, Burat, Bullapesa	Put efforts to increase the production capacities to produce more raw materials	· Setting up of aggregation centres, and agro-processing to reduce post-harvest losses	· CGI · NGOs · Private partners	Short

Source: Author, 2025

14.6.3 Trade and Commerce Improvement Strategies

Trade and investment provide locals with employment and income-generating opportunities. Besides, they are a critical element in growing the county's local revenue base. The trade and investment strategy guiding the county for the next decade should promote and induce investment to further advance socioeconomic development and the county's prosperity.

Table 14-17: Trade and Commerce Improvement Strategies

EMERGING ISSUES	LOCATION	STRATEGY	INTERVENTIONS	ACTORS	TIMEFRAME
Inadequate markets/trading spaces	All Wards	Expand/increase the existing markets/ trading spaces	· Completion of the Isiolo Modern Market · Upgrading existing markets – Ngaremara, Modogashe, Boji, Merti, Oldonyiro, Kipsang, Bulesa, and Kinna markets · Construction of new markets in Sericho, Garbatulla, Kula Mawe and Boji. · Construction of jua-kali sheds in Isiolo Municipality	· CGI · State Department for Housing and Urban Development	Medium-term
Inadequate value addition facilities and industries	All Wards	Develop value-addition capacity	· Operationalization of the Isiolo Export Abattoir · Opening of slaughterhouses in all major market centers and upgrading existing ones (Sericho, Modogashe, Garbatulla, Boji, Kinna, Merti, Bulesa, Ngaremara, Oldonyiro, and Kipsang) · Opening milk cooling plants in major market centres (Sericho, Modogashe, Garbatulla, Kinna, Merti, Bulesa, Ngaremara, Oldonyiro, and Kipsang) · Opening leather bandas in major market centres (Sericho, Modogashe, Garbatulla, Kinna, Merti, Bulesa, Ngaremara, Oldonyiro, and Kipsang) · Construction of a hides and skins tannery and a footwear factory within the Isiolo Meat City Special Economic (Burat Ward) · Construction of a gums and resins processing factory within the Isiolo Meat City Special Economic Zone (Burat Ward) · Construction of the Isiolo County Aggregation Industrial Park (Ngaremara Ward)	· ICG · Ministry of Investments & Industry · State Department for Housing and Urban Development	Medium-term

EMERGING ISSUES	LOCATION	STRATEGY	INTERVENTIONS	ACTORS	TIMEFRAME
High cost of business and poor access to capital	All Wards		· Standardization of levies charged to traders · Provide an economic stimulus program targeting SMEs through the Biashara Fund · Promotion of business cooperatives and SACCOs to increase their access to credit facilities.	· ICG	Continuous
Lack of business training/ skills among traders	All Wards		· County partnership with Micro and Small Enterprise Authority (MSEA), Kenya National Chamber of Commerce and Industry (KNCCI), NGOs, and other development partners in training and sponsoring SMEs in the County. · Establishment of business incubation centres to promote entrepreneurial and management skills among residents	· ICG · MSEA · KNCCI · NGOs	Continuous
Low attractiveness of Isiolo as an investment destination	All Wards		· County's partnership with local banks, microfinance organisations, and NGOs to facilitate the provision of low-interest credit facilities to traditionally disfranchised businesspersons, including SMEs, farmers, women, and the youth through group lending opportunities. · Enacting the County's Trade and Market Bill to provide the legal and regulatory framework for incentivizing investors. · Marketing Isiolo County as an ideal investment destination for both locals and international players. · Organizing trade and investment conferences to bring together investors and industry players and introduce them to existing investment opportunities. · Promoting public-private partnerships (PPPs) to fast-track the sourcing of capital necessary of business and industrial development	· ICG	Continuous

Source: Author, 2025

14.6.4 Mining Improvement Strategies

Isiolo County is recognized as having significant potential for mineral deposits in the country. However, mining within Isiolo is largely at the artisanal scale, limiting the potential for revenue generation. The mining improvement strategy aims to formulate a feasible plan for mineral exploration and extraction.

Table 14-18: Mining Improvement Strategies

EMERGING ISSUES	LOCATION	STRATEGY	INTERVENTIONS	ACTORS	TIMEFRAME
Limited data about mineral potential	Countywide	Natural resource mapping and feasibility studies	· Exploration of gold deposits in Kom-Durte to determine feasibility for large-scale mining · Exploration of bauxite ore deposits in Belgesh area · Exploration of copper deposits in Merti and Chari Wards · Exploration of mica mineral deposits in Merit, Chari, and Oldonyiro · Exploration of gemstone (blue and yellow sapphires) mineral deposits along the Merti-Kinna-Garbatulla stretch	· CGI · State Department for Mining	Long-term
Unsustainable and unregulated mining and quarrying operations	Countywide	Create a policy and regulatory framework to guide mining and quarrying operations	· Regularization of gold mining in Kom-Durte area · PPPs in the extraction of mable stones in Oldonyiro · Promotion of sustainable sand extraction and quarrying: · Enact the County Mining Act and the Sand Harvesting Regulations · Construct access roads towards with high potential for quarrying and sand-harvesting – Loruko and Leparua · Address land disputes/community conflicts related to resource access	· CGI	Medium- to long-term
Inadequate support infrastructure	Countywide	Improve accessibility to and security in mineral-rich areas	· Improve and maintain access roads towards the existing quarrying and sand extraction sites in Ngaremara, Burat, and Kula Mawe · Build security installations (police posts) and deploy adequate security personnel in high conflict areas · Collaborate with community conservancies in the management of mineral resources.	· CGI · NPS	Continuous

Source: Author, 2025

14.6.5 Tourism Promotion Strategies

Tourism and conservation are among the primary land uses in Isiolo County. The sector has significant potential for improvement. The tourism promotion strategy aims to elevate the county's status to a leading tourism destination and a hotbed for investment in the hospitality sector.

Table 14-19: Tourism Promotion Strategies

EMERGING ISSUES	LOCATION	STRATEGY	INTERVENTIONS	ACTORS	TIMEFRAME
Poor tourism infrastructure development in existing national reserves	Buffalo Springs, Shaba, and Bisanandi NRs	Provision of tourism infrastructure to attract investment and tourists	· Revival of Bisanadi National Reserve – Construction of two gates to access Bisanadi NR from Kinna and Skot (Garbatulla) – Construction of access roads within the national park. – Construction of dirt roads within the national reserve to enhance safari tourism – Recruit staff and construct staff houses · Rehabilitate existing staff houses in all NRs · Automate the revenue collection system in all national reserves	· ICG · KWS	Medium Term
Limited tourism products and services	Countywide	Diversification and branding of tourism products/services	· Developing and promoting additional niche tourism products (camping grounds, picnic sites, and cultural tourism) · Developing and promoting additional niche tourism services (Filming/ documentary making, game drives and bird viewing)	· CGI · KTB · KWS	Continuous
Poor marketing of Isiolo as a tourism destinations	Countywide	Enhanced tourism promotion and marketing	· Organizing annual tourism fairs, exhibitions, and promotional events akin to the Maa Cultural Week · Publicizing all the tourist attraction sites within the county, including national reserves, community conservancies, and cultural sites on online and press media · Destination branding using the "Special Five" – Gravy zebra, reticulated giraffe, Somali Ostrich, Basal Orynx, and the Gerenuk – as branding anchors · Collaborate with the Kenya Tourism Board (Tembea Kenya and Magical Kenya) to promote tourism in Isiolo County to the international market	· CGI · KTB · KWS	Continuous

EMERGING ISSUES	LOCATION	STRATEGY	INTERVENTIONS	ACTORS	TIMEFRAME
Regulatory and administrative barriers in tourism development	Countywide	Creating an enabling environment for investors in tourism and hospitality	· Easing regulatory requirements and reducing bureaucratic hurdles for investors in the hospitality industry · Offering financial incentives to investors in the tourism industry (tax breaks, to investments in undeveloped areas with high tourism potential, such as Bisanadi National Reserve · Promoting PPPs with investors in the hospitality industry. · Enacting tourism and wildlife management laws and policies: – The Tourism Bill, – The Wildlife Management Bill – ·The Community Conservancy Bill. · Offer short courses and train staff in collaboration with the Tourism and Regulatory Authority	· CGI · KTB · KWS	Continuous

14.7 Land and Land Use Management Strategies

Land as a resource is finite in its nature. Land is one of the most important natural resources for the creation of wealth in many societies. Its ownership and control bring economic power, which in turn, is often the basis for social and political power. The use of land in urban and rural areas as well as in the land/water interface has been a major area of concern to all Kenyans.

Isiolo County is known for vast land area and low population density. This provides space for future growth, investment, and land use planning with minimal pressure on existing resources. Strategically located along the LAPSSET Corridor, Isiolo serves as a gateway to northern Kenya and a future logistics hub, enhancing its economic and spatial significance.

The county also benefits from extensive rangelands that support pastoralist livelihoods and offer potential for sustainable livestock production, eco-tourism, and conservation-based enterprises. Strong customary land governance systems among pastoralist communities provide a functional foundation for managing community land, which forms the majority of the county's land area. Additionally, the presence of unique ecological and tourism assets, including national reserves and conservancies, enhances the county's value from both a biodiversity and economic perspective. However, there are several challenges facing the land sector in the County. The following are the challenges being experienced in the sector;

a. Rapid and Unplanned Urbanization
b. Insecure Land Tenure
c. Land Use Conflicts
d. Inadequate Land Information Systems
e. Degradation of Rangelands
f. Low Public Awareness and Legal Literacy
g. Pressure from Strategic Projects and External Interests

The strategies for the land resource management are meant to ensure formulation and implementation of policies to guide efficient and sustainable use of land. The strategy proposes the measures to be adopted to ensure sustainable use of land within the county. The major proposals in this sub-sector are as below:

14.7.1 Participatory Land Use Planning

- Involve communities, especially pastoralists, in preparing land use plans at ward and sub-county levels.
- Integrate traditional knowledge systems with modern spatial planning tools.

14.7.2 Strengthening Land Tenure Security

- Promote issuance of community land titles under the Community Land Act, 2016.
- Facilitate adjudication and registration of individual and group rights, particularly in urbanizing centers.
- Protect customary rights to access grazing land, water points, and seasonal movement corridors.

14.7.3 Sustainable Rangeland Management

- Encourage rotational grazing and restoration of degraded rangelands using reseeding, controlled bush clearing, and water point zoning.
- Support establishment of rangeland user associations (RUAs) for local oversight and conflict resolution.
- Incorporate early warning systems for drought and forage availability.

14.7.4 Urban Land Governance and Planning

- Strengthen development control in Isiolo town and upcoming urban centers to prevent informal settlements and speculative land grabbing.
- Promote planned urban expansion, zoning regulations, and infrastructure provision.

14.7.5 Conflict-Sensitive Land Management

- Map and protect inter-county and intra-county conflict hotspots, including disputed grazing areas and water sources.
- Institutionalize alternative dispute resolution (ADR) and customary mechanisms for addressing land-related conflicts.
- Mainstream land conflict resolution into county peacebuilding and security frameworks.

14.7.6 Climate-Smart Land Use Practices

- Promote land use that supports climate resilience such as agro-pastoralism, dryland agroforestry, and conservation agriculture.
- Identify and protect fragile ecosystems like wetlands, riverine areas.

14.7.7 Capacity Building and Institutional Strengthening

- Build technical capacity of county land officers and local administrators in GIS, planning, dispute resolution, and land legislation.
- Digitize land records and support the establishment of a County Land Information Management System (CLIMS).
- Foster partnerships with the National Land Commission (NLC), NGOs, and research institutions.

14.7.8 Establishment of adequate LIM

This should include investment and provision of a robust system, hardware's, qualified and adequate personnel. This component shall ensure that the system is functional, up to date and effective to meet the rising demands and dynamics of land administration and use in the county.

The system also needs to be compliant of the data protection and communication laws and in line with the land laws and regulations. The processes, requirements, procedures and products of the LIM system should be legal and in line with the provisions such policies, regulations and laws.

14.7.9 Preparation of lower-level plans.

It is recommended that the county government and its development partners shall cascade the planning exercise to the local level by preparation of Local Physical and land use plans for various Towns, market centers and settlements. There is need to prepare LPUDP for areas such as Kinna, Modogashe, Merti, Isiolo Municipality, Oldonyiro, Garbatulla. Existing plans require timely updates.

14.7.10 Cascade land and land use governance structure to local levels

Land administration and land use activities/services should be should be cascaded to bring services to the sub-county level and progressively to ward level. The provisions of County Government Act, PLUPA and UACA should inform such actions.

14.7.11 Clarity on land and land use

The county should provide clear, up to date and well documented procedures, forms, structures, subject offices, statutory fees, timelines and requirements in regards to permits and any transactions over land and land use.

14.7.12 Provision of adequate budgets and deliberate investment in the land and land use sector

Land being a vital component of product require deliberate investment by the County government and its partners. The county assembly should also provide adequate budget to the department and the entire sector.

14.7.13 Densification in urban areas

To address rapid conversion of agricultural and range land into urban development, it is necessary to allow higher densities and floors in urban areas. This should however factor sensitive areas such as flight paths and security installations

14.7.14 Servicing of settlements

A deliberate effort to provide basic infrastructure and social services in settlements and potential

settlements need to be implemented. The County should partner with communication and networks provision companies to extend stable services in all corners of the county.

14.7.15 Planning of future settlements

Any conversion of land from settlement should be accompanied by a Land use plan. This shall ensure that developments don't spread haphazardly. It shall also shall ensure spaces for social facilities; recreational and strategic use are provided on the settlements.

14.7.16 Planning and registration of Community Land

Before the registration of community land, prepare comprehensive land use plans in close consultation with local communities. These plans should clearly demarcate areas for human settlement, grazing, conservation, and other land uses. By aligning registration with prior land use planning, Isiolo County can minimize land disputes, reduce human–wildlife conflict, and ensure sustainable resource allocation that supports both livelihoods and biodiversity conservation.

14.8 HUMAN SETTLEMENT DEVELOPMENT STRATEGIES

The strategies are categorised into two broad categories, Rural Settlement Development Strategies and Urban Settlement Development Strategies.

14.8.1 Rural Settlement Development Strategies

Rural settlements within the County support livestock production which is the main economic activity. The planning of rural settlements will take into consideration the grazing areas.

14.8.1.1 Agro-Pastoral Zoning

Develop a rural land use zoning framework that clearly identifies zones for settlement, livestock keeping, crop production, and communal grazing for rural land.

14.8.1.2 Incorporation of Modern Designs into Traditional Housing Designs

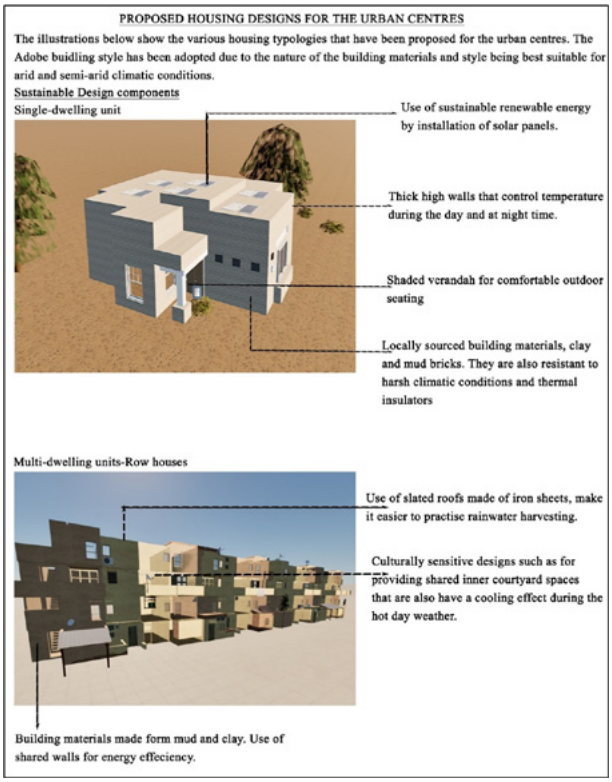
Blend modern resilience techniques with traditional housing designs such as Manyattas to preserve cultural identity within rural settlements. Isiolo County Government engage community elders and artisans in design processes to ensure acceptability and uptake.

14.8.1.3 Climate Resilience in Rural Housing Developments

Promote climate resilience for rural housing developments suitable for Arid Land with components including proper ventilation, insulation with ability to withstand heat, flooding and other local climate stressors.

Incorporate sustainable practices such as rainwater harvesting and use solar energy in rural settlements. Isiolo County Government should partner with the Ministry of Water, Sanitation and Irrigation (MWSI), Rural Electrification and Renewable Energy Corporation (REREC) and other development partners and to empower communities.

The County can conduct community training programs on improved building techniques using locally available materials and resilient construction methods.



14.8.1.4 Integration of rural housing needs in Land Use Policies.

Develop regulatory frameworks that recognize the unique socio-cultural, environmental, and economic characteristics of its rural and pastoral communities with regards to housing developments in Isiolo County. This includes identifying and designating appropriate zones for rural settlements within Land Use Plans, while promoting climate-resilient, affordable, and culturally appropriate housing typologies such as improved Manyattas. The county can also establish planning guidelines that support flexible land tenure arrangements suited to nomadic lifestyles, ensure access to basic services and infrastructure, and incorporate participatory planning approaches that engage local communities in decision-making.

14.8.2 Urban Settlements Development Strategies

14.8.2.1 Proposed reclassification of urban areas

Under Urban Areas and Cities Act, 2011, urban areas are classified into three categories and with defined population thresholds. These categories are as follows:

1. Town with a population threshold of 10,000
2. Municipality with a population threshold of at least 50,000
3. City with a population of at least 250,000

From the above population thresholds, none of the Urban areas meet the threshold to be elevated to the next level.

Table 14-20: Proposed Reclassification of Urban Areas

URBAN AREA	POPULATION (2019)	2025	2030	2034	2035	PROPOSED URBAN AREA
Isiolo Town	78,650	92,823	106,567	119,013	122,346	Municipality
Garbatulla	17,443	20,586	23,634	26,395	27,134	Town
Modogashe	11,814	13,943	16,007	17,877	18,378	Town
Kinna	11,175	13,189	15,142	16,910	17,384	Town
Merti	10,990	12,970	14,891	16,630	17,096	Town
Oldonyiro (Oldonyiro, Rumate, Longopito and Tuale)	12,113	14,213	16,238	18,064	18,551	Town

Source: Author, 2025

14.8.2.2 Delineation of Urban Areas Extents

The Plan proposes the containment of urban development within designated areas. This will curb increased urban sprawl and subdivision of the rich livestock production areas. To achieve this, the existing urban areas will be delineated, incorporating areas for future expansion. Delineation is proposed for the following urban areas;

a. Isiolo Resort City
b. Isiolo Municipality
c. Garbatulla Town
d. Modogashe Town
e. Kinna Town
f. Merti Town
g. Oldonyiro Town

14.8.2.2.1 Establishment of Urban Wildlife Buffer Zones

The proposal to establish buffer zones within the designated urban areas where wildlife interacts with human populations aims to create designated transitional spaces that mitigate human-wildlife conflict and promote sustainable coexistence. Functioning as ecological barriers, the buffer zones would reduce the encroachment of urban development into sensitive habitats,

thereby preserving biodiversity within urban boundaries. In addition to serving their ecological purpose, these areas could provide recreational opportunities, contribute to climate change resilience, and offer platforms for environmental education and awareness. The integration of such buffer zones into urban settlement planning is intended to achieve a balanced approach to urban growth and natural ecosystem conservation

14.8.2.2.2 Street Naming within Isiolo Town and the urban areas

The street naming strategy within Isiolo town and urban areas seeks to systematically assign names to streets and public spaces to improve navigation, enhance service delivery, and foster a sense of identity within communities. Properly named streets facilitate efficient provision of postal, and utility services, as well as accurate property identification for planning and infrastructural development among other benefits.

Beyond its functional value, street naming can be used to preserve cultural heritage, commemorate significant individuals or events, and promote local identity. Implementing this strategy involves the development of clear guidelines, stakeholder engagement, and the integration of names into official maps and Geographic Information Systems (GIS), ensuring consistency, accessibility, and sustainability in urban management.

14.8.2.3 Preparation of Local Physical and Land Use Development Plans

The preparation of Local Physical and Land Use Plans for all urban areas within the County will ensure effective management of urban development. The Plans will also form a basis for land use planning and development control.

14.8.2.4 Urban Management and Governance

Establishment of town management committees to manage the towns in accordance with the provisions of UACA, 2011 (Amended 2022). The committees for Garbatulla, Modogashe, Kinn, Merti and Oldonyiro towns within Isiolo County shall be responsible for overseeing the efficient administration, service delivery, and infrastructure development of the respective urban areas.

These committees will operate within the legal framework set out in UACA, 2011 (Amended 2022) and shall promote participatory governance, transparency, and sustainable urban growth in alignment with county and national development priorities.

14.8.2.5 Strategic Urban Development

Population projection analysis for the planning period indicates that the existing towns and market centers are likely to maintain their current growth trajectories under the prevailing conditions. However, targeted investment in infrastructure and service provision within currently underdeveloped areas holds significant potential to catalyze development, attract investment, and drive population growth. As a strategic approach to promoting balanced and sustainable urban development, the establishment of secondary urban nodes in Merti and Garbatulla Sub-Counties will serve as a foundation for the emergence of new market centers, towns, and potentially municipalities and cities. This strategy aims to unlock the economic potential of these regions, enhance regional connectivity, and support inclusive urbanization in line with long-term spatial development goals.

14.8.2.6 Urban Infrastructure and Services Development Strategy

The strategy aims to ensure that current and upcoming urban areas have access to reliable infrastructure and services necessary for growth and development. It emphasizes sustainability, resilience, and inclusivity by aligning infrastructure investments with projected urban growth, environmental considerations, and socio-economic needs. By prioritizing under-served areas, leveraging innovative technologies, and strengthening institutional capacity, this strategy supports the creation of well-functioning, livable, and economically competitive urban centers. The following is proposed;

- Extension of elec and sewer services to towns, market centres and rural settlements
- Completion of the Isiolo Stadium
- Decentralization of services to the other Sub Counties; Garbatulla and Merti
- Equipping the existing Library in Isiolo Town with resources including learning materials

14.8.2.7 Promote sustainable human settlements

Integration of sustainable practices such as rainwater harvesting and solar heating in urban housing developments to promote environmentally responsible and resource-efficient technologies.

Adoption of guidelines on energy efficiency practices applicable for Arid and Semi-Arid Land as provided in legislation and policies including the Building Code, 2024 such as provision for natural lighting, natural cooling and natural ventilation in buildings.

CHAPTER 15

Spatial Development Framework

15.1 OVERVIEW

The chapter discusses the proposed spatial framework for Isiolo County. The chapter also discusses development guidelines and urban development designs proposed for the County.

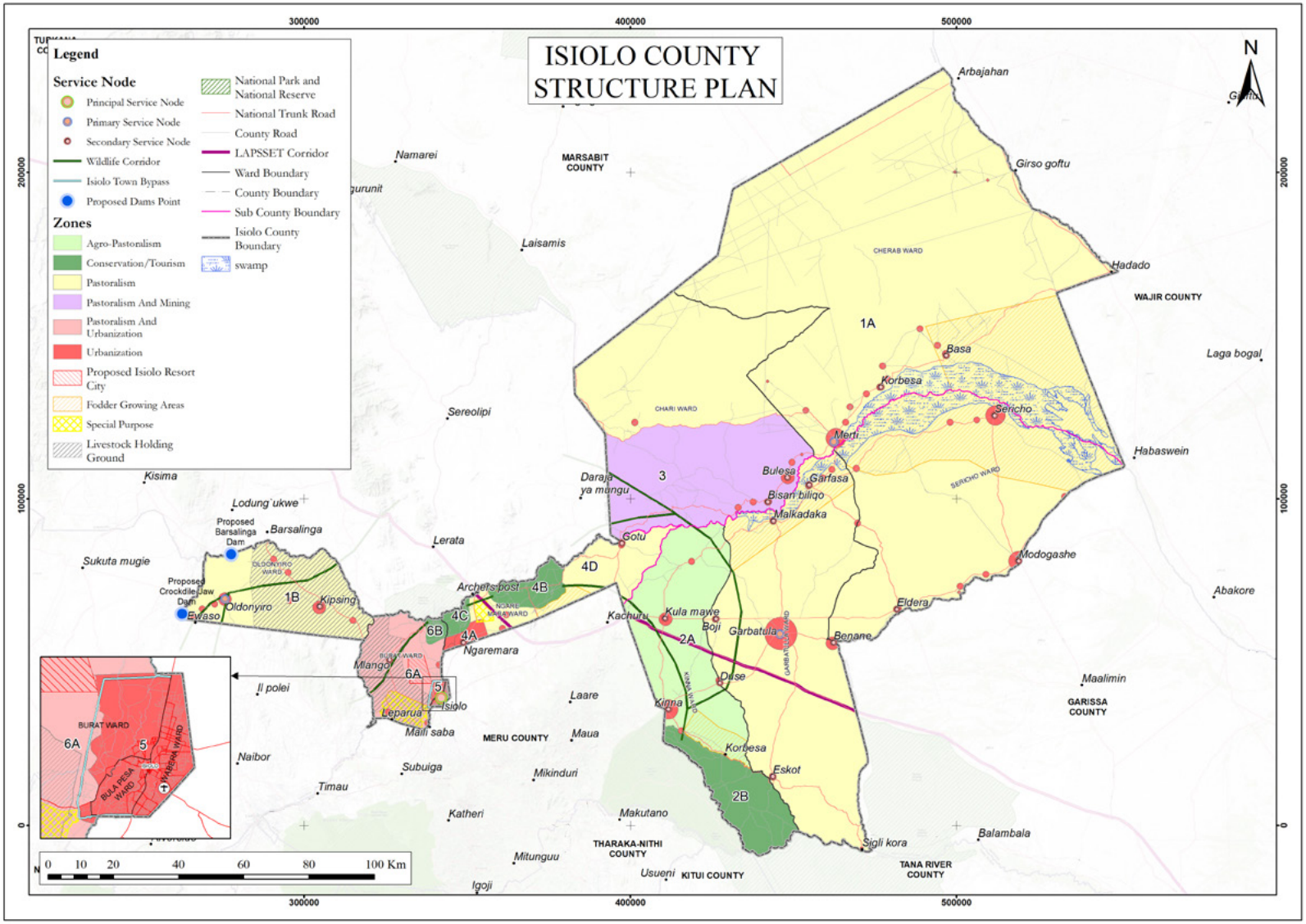
15.2 PROPOSED STRUCTURE PLAN

Isiolo County Spatial Plan proposes areas designated for various broad land uses. These are:

1. Livestock production
2. Urbanization and Industrialization
3. Tourism
4. Crop Farming
5. Conservation
6. Mining

The map below shows the proposed structure plan for Isiolo County.

Map 15-1: Isiolo County Proposed Structure Plan



Source: Author, 2025

15.3 PROPOSED LAND USE PLAN (SPATIAL PLAN)

The Proposed Plan has categorized the County into 6 zones based on the dominant land Uses.

These zones are outlined below.

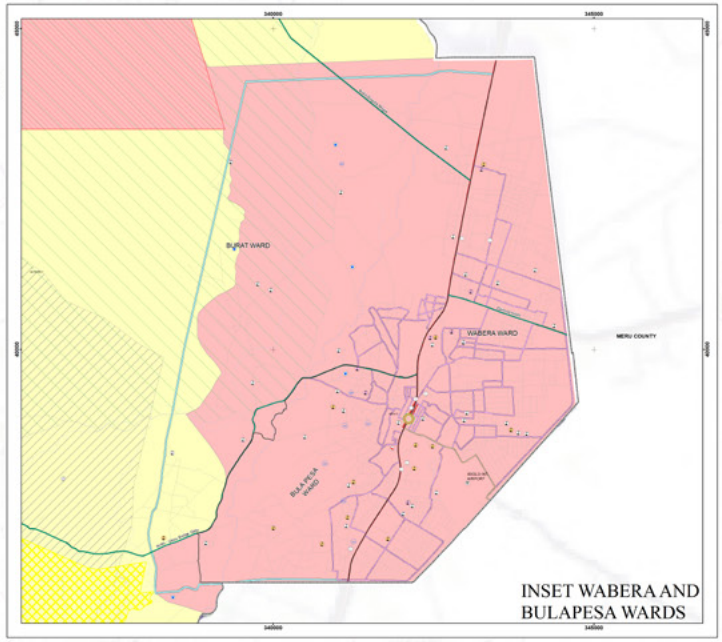
Table 15-1: Proposed Zones

ZONE	SUB ZONE	ZONE CATEGORIZATION	WARD/AREA
1	1A	Livestock Production	· Cherab · Garbatula · Sericho · Upper Part of Chari
	1B	Livestock Production	Oldonyiro
2	-	Agro-Pastoralism	Kina
3	-	Pastoralism and Mining	Chari
4	4A	Urbanization	Part of Ngaremara
	4B	Conservation/Tourism	Part of Ngaremara
	4C	Conservation/Tourism	Part of Ngaremara
	4D	Pastoralism	Part of Ngaremara
5	-	Urbanization	Bulapesa, Wabera and Part of Burat (Isiolo Municipality)
6	6A	Pastoralism and Urbanization	· Part of Burat · Livestock Holding Ground and Isiolo Resort City.
	6B	Conservation	Part of Burat

Source: Author, 2025

ISIOLO COUNTY PHYSICAL AND LAND USE PLAN

Map 15-2: Isiolo County Proposed Land Use Plan



Legend

Major Land Use
- Pastoralism
- Urbanization
- Agro-Pastoralism
- Conservation/Tourism
- Pastoralism And Mining

Tourism
- National Park/Reserve

Economy
- Proposed Crop Market
- Proposed Livestock Market
- Livestock Market
- Proposed Milk Cooling Plant
- Mineral Occurences

Agriculture
- Fodder Growing Areas
- Livestock Holding Ground
- Dry Season Grazing Area
- All Season Grazing Area
- Wet Season Grazing Area

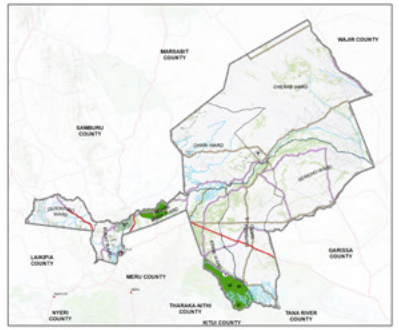
Environment
- Wildlife Corridor
- Perrenial River
- Pamarnent River
- swamp
- Riparian Reserve

Infrastructure
- Airfields
- Bore Hole
- Water Spring
- Water Point
- Proposed Water Pan
- Water Pan
- Telecomunication Mast
- Proposed Isiolo Town Bypass
- Proposed Road For Improvement
- Class A Road
- Class B Road
- Class C Road
- County Road
- LAPSSET Corridor

Social Services
- Primary School
- Secondary School
- Proposed TVET
- Tertiary Institution

Human Settlement
- Principal Service Node
- Primary Service Node
- Secondary Service Node
- Building
- Special Purpose
- Settlement Area
- Proposed Isiolo Resort City

Boundary
- Ward Boundary
- Sub County Boundary
- Isiolo County Boundary



0 5 10 20 30 40 50 Km

DESIGN WORKS Architects & Consultants
SPACE PLANNERS LTD
SUPREME PLANS CONSULTANTS LIMITED

15.4 DEVELOPMENT GUIDELINES

ZONE	SUB-ZONE	ZONE CATEGORIZATION	WARD/ AREA	PERMITTED LAND USES	DEVELOPMENT REGULATIONS	
1	1A	Livestock Production	· Cherab · Garbatula · Sericho · Upper Part of Chari	· Livestock production · Conservation · Human settlement · Markets · Light industrial	Land Use (Livestock production)	· Fodder production to be carried out limited within dry season grazing areas. · Maintain carrying capacity at 1 Tropical Livestock Unit (TLU) per Ha per year. · Communities to prepare and implement grazing plans. · Resolve resource-use conflicts · No subdivision within the community grazing areas. · Within transition areas, grazing and wildlife, be managed as multi-use areas with controlled human activities.
	1B	Livestock Production	· Oldonyiro		Conservation	· Survey, demarcation and gazettment of riparian areas. (Rivers, Gambela, Goto and Lorian Swamps, and springs) · Eradication of invasive plant species such as prosopis juliflora, ipomoea and acacia reficiens. · Limiting human settlement within the areas. · Allow development of eco-lodges subject to conditions. · Establish an umbrella association that governs eco-lodges that have members withdrawn from conservancies. · Reseeding with indigenous tree/plant species. · Survey, demarcation and gazettment of community conservancies, e.g., Cherab, Sericho and Garbatulla. · Passing of the Community Conservancy Bill that provides for conservancy management.

ZONE	SUB-ZONE	ZONE CATEGORIZATION	WARD/ AREA	PERMITTED LAND USES	DEVELOPMENT REGULATIONS	
					Human Settlement	· Limit human settlement within gazetted adjudication areas and planned community settlement schemes. · Survey and demarcation areas identified to have human settlements. · Prepare a Local Physical and Land Use Development Plan (LPLUDP) for existing centers and Human settlement areas. · Delineate and plan centers identified in adjudication areas. · Review Legal Notice 150 to accommodate other settled areas. (List of those settlements to be attached) · Industrial land use is allowed subject to ESIA. · All clustered human settlements to be provided with adequate access to health, basic education facilities and basic infrastructure.
					Wildlife Corridors	· Within transition areas, grazing and wildlife be managed as multi-use areas with controlled human activities. · Demarcate the wildlife corridors. · Limit crop production within the demarcated areas. (fodder production) · Grazing committees, KWS and County Government to collaborate in controlling grazing within the corridors. · Prohibit incompatible land uses and activities, i.e., human settlements. · The corridor to be managed as mixed-use (Pastoralism and Wildlife) areas. · Development within the designated areas should be subject to ESIA. · Allowable supportive developments, i.e., water pans. · Reseeding with appropriate indigenous tree/plant species.
					Infrastructure	· All clustered human settlements to be provided with adequate access to health, basic education facilities and basic infrastructure.

ZONE	SUB-ZONE	ZONE CATEGORIZATION	WARD/ AREA	PERMITTED LAND USES	DEVELOPMENT REGULATIONS	
2	-	Agro-Pastoralism	· Kinna	· Pastoralism · Crop production · Wildlife Corridors · Human settlement · Mining · Conservation · Transportation	Livestock production	· Fodder production to be limited within dry season grazing areas. · Grazing committees to be established in every location · Grazing Committees to prepare and implement grazing plans. · No subdivision within the community grazing areas. · Within transition areas, grazing and wildlife should be managed as multi-use areas with controlled human activities. · Feeding lots to be within the fodder production areas. · Have livestock markets located at all the urban centers.
					Crop production	**Production** · Increase acreage for crop production. · Control land fragmentation below 2.5 acres. · Bringing farm inputs closer to the farmers. · Demarcate and Buffer crop production areas. · Fodder production areas as a buffer between grazing and crop production areas. · Have markets located at all the urban centers.
						Value Addition · Agro-processing
						Marketing · Markets In All Urban Centers
						Distribution · Promoting connectivity
					Mining	· Restricting mining in environmentally sensitive areas such as riparian and wildlife corridors. · County to implement the Mining Act. · Regulating/Providing controlled access to mining sites. · Maintain a 300m buffer around mining areas.

ZONE	SUB-ZONE	ZONE CATEGORIZATION	WARD/ AREA	PERMITTED LAND USES	DEVELOPMENT REGULATIONS	
					Transportation	· Rehabilitation of roads. · Aligning proposals to those in the LAPSSET. · Restriction of land use conversion along the LAPSSET, 20m each side. · Providing spaces for underpasses and overpass at the junction of LAPSSET and other roads. · Provision of bus parks in major towns which should be addressed through LPLUDP.
3	-	Pastoralism And Mining	· Chari	· Pastoralism · Mining · Conservation · Human settlement	Pastoralism	· Fodder production to be carried out within dry season grazing areas. · Maintain carrying capacity at 1 Tropical Livestock Unit (TLU) per Ha per year. · Communities to prepare and implement grazing plans. · No subdivision within the community grazing areas. Within transition areas, grazing and wildlife shouldbe managed as multi-use areas with controlled human activities.
					Mining	· Restricting mining in environmentally sensitive areas such as riparian and wildlife corridors. · County to implement the Mining Act. · Regulating/Providing controlled access to mining sites. · Maintain a 300m buffer zone around mining areas. · Undertake ESIA.
					Human settlement	· Limit human settlement within gazetted adjudication areas and planned community settlement schemes. · Survey and demarcation areas identified to have human settlements. · Prepare a Local Physical and Land Use Development Plan (LPLUDP) for existing centers and Human settlement areas.

ZONE	SUB-ZONE	ZONE CATEGORIZATION	WARD/ AREA	PERMITTED LAND USES	DEVELOPMENT REGULATIONS	
4	4A	Urbanization	· Ngaremara	· Tourism/ Conservation · Pastoralism · Human settlement · Mining · Crop production · Wildlife Corridors · Special Planning Zone – Military School	Tourism/ Conservation	· Public-Private Partnerships with investors (hotels) to offer low incentives such as lowering fees during start-up of the business. · Marketing of Ngare mara as a destination through film and documentaries. · Promote cottage industries. · Enforce speed limits along the Isiolo - Marsabit - Moyale Road within Ngaremara Area
	4B & 4C	Conservation/Tourism		· Special Planning Zone – Military School	Wildlife Corridors	· Enforce speed limits along the Isiolo - Marsabit - Moyale Road within Ngaremara Area · Allow controlled multi-use within the corridor.
					Mining	· Adopt Sand Harvesting and Mining Act · Standardize the collection of revenue. · Restricting mining in environmentally sensitive areas such as riparian and wildlife corridors. · County to implement the Mining Act. · Regulating/Providing controlled access to mining sites. · Maintain a 300m buffer around mining areas.
					Human Settlement	· Limit human settlement within gazetted adjudication areas and planned community settlement schemes. · Survey and demarcate areas identified to have human settlements. · Prepare a Local Physical and Land Use Development Plan (LPLUDP) for Gotu, Ngaremara and other human settlement areas.

ZONE	SUB-ZONE	ZONE CATEGORIZATION	WARD/ AREA	PERMITTED LAND USES	DEVELOPMENT REGULATIONS	
					Livestock Production	· Fodder production to be carried out within dry season grazing areas. · Community grazing committees to prepare and implement grazing plans. · No subdivision within the community grazing areas. · Within transition areas, grazing and wildlife should be managed as multi-use areas with controlled human activities. · Feeding lots to be within the fodder production areas. · Have markets located at all the urban centers.
5	5	Urbanization	· Bulapesa, Wabera and Part of Burat (Isiolo municipality)	· Residential · Industrial · Educational · Recreational · Public Purpose · Commercial · Utility · Transportation · Differed/ Undeveloped · Agriculture	Residential	· Preparation of municipal LPLUDP. · Survey and issuance of ownership documents · Establishment of Land Information Systems (LIS) and Integration with other sectors · Management of stormwater. · Control Development within the Municipality
6		Pastoralism And Urbanization	· Burat	· Livestock Production · Conservation · Human settlement · Special Planning Zone - Military · Urbanization/ Tourism	Livestock Production	· Fodder production to be carried out within dry season grazing areas. · Communities to prepare and implement grazing plans. · No subdivision within the community grazing areas. · Within transition areas, grazing and wildlife should be managed as multi-use areas with controlled human activities. · Feeding lots to be within the fodder production areas. · Have markets located at all the urban centers.
					Special Planning Zone	· Preparation of LPLUDP to guide development of the area · Provide a buffer between the SPZ and the Municipality

15.5 URBAN AREAS DEVELOPMENT AND DESIGN

15.5.1 Urban Area Development

15.5.1.1 Categorization of Urban Areas based on Land Use

Table 15-3: Categorization of Urban Areas based on Land Use

URBAN AREA	RESIDENTIAL	INDUSTRIAL	AGRO PROCESSING	RESORT/ TOURISM
Isiolo Municipality	✓	✓		✓
Garbatulla	✓		✓	
Modogashe	✓		✓	
Kinna	✓		✓	✓
Merti	✓		✓	
Oldonyiro	✓		✓	

Source: Author, 2025

15.5.2 Urban Design

Urban Design entails both the built and recreational spaces. A well-designed urban area feels coherent, inviting, and functional. Poor urban design, on the other hand, can lead to traffic congestion, unsafe streets, dead public spaces, and social isolation. Form & Layout – how streets, blocks, and buildings are arranged to create walkable, human-scaled environments.

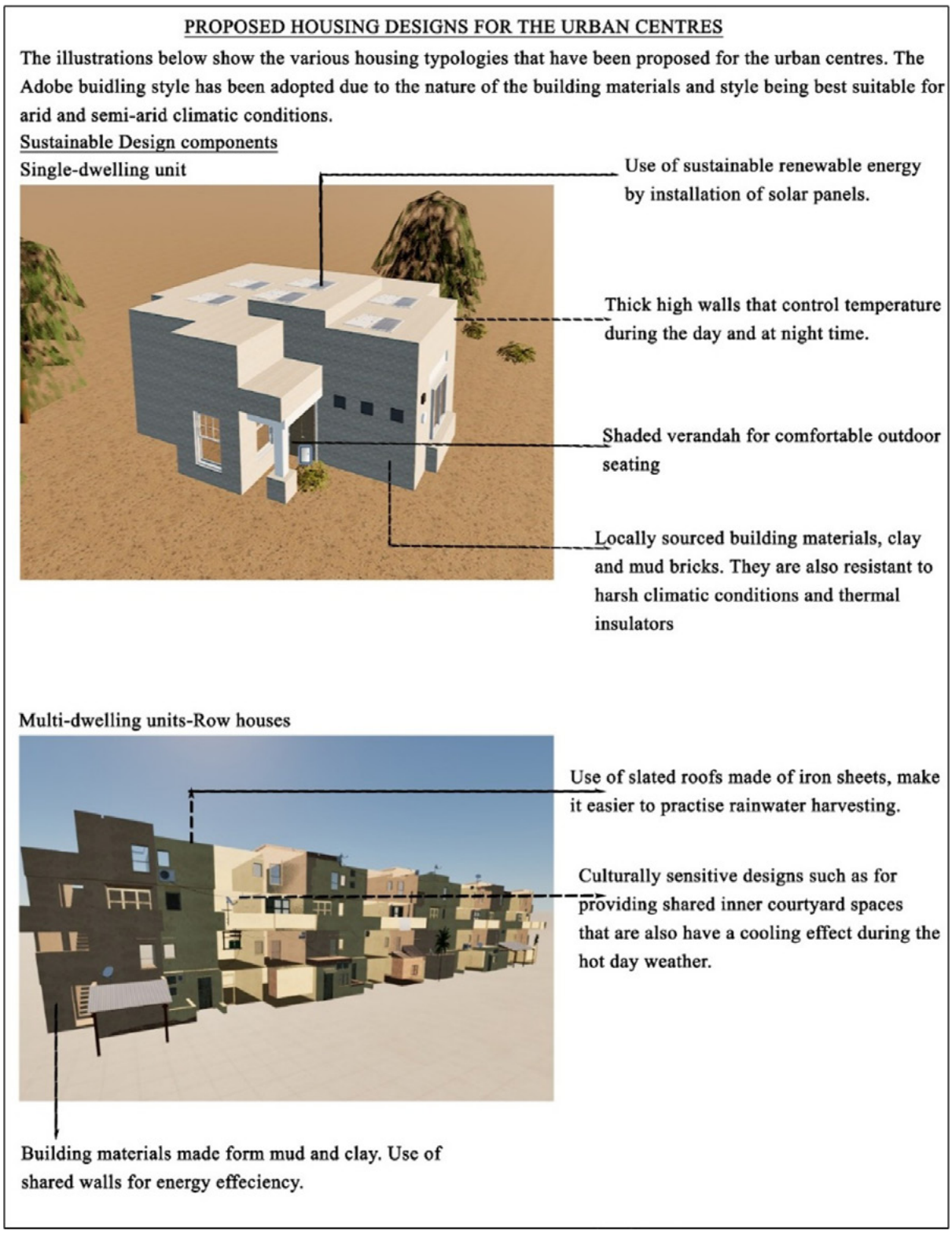
- **Public Spaces** – designing plazas, parks, and waterfronts that encourage social interaction.
- **Connectivity** – ensuring people can move easily via walking, cycling, public transport, and cars.
- **Identity & Character** – reflecting local culture, history, and climate in the built environment.
- **Sustainability** – integrating green infrastructure, energy-efficient buildings, and climate-resilient layouts.
- **Mixed-use Development** – blending housing, shops, offices, and recreation so areas are active at different times of the day.

Figure 15-1: Typical Urban Design for the Urban Areas



Source: Author 2025

Figure 15-2: Proposed Designs for Urban Housing



Source: Author 2025

Transportation Designs

Figure 15-3: Proposal for the 15m wide

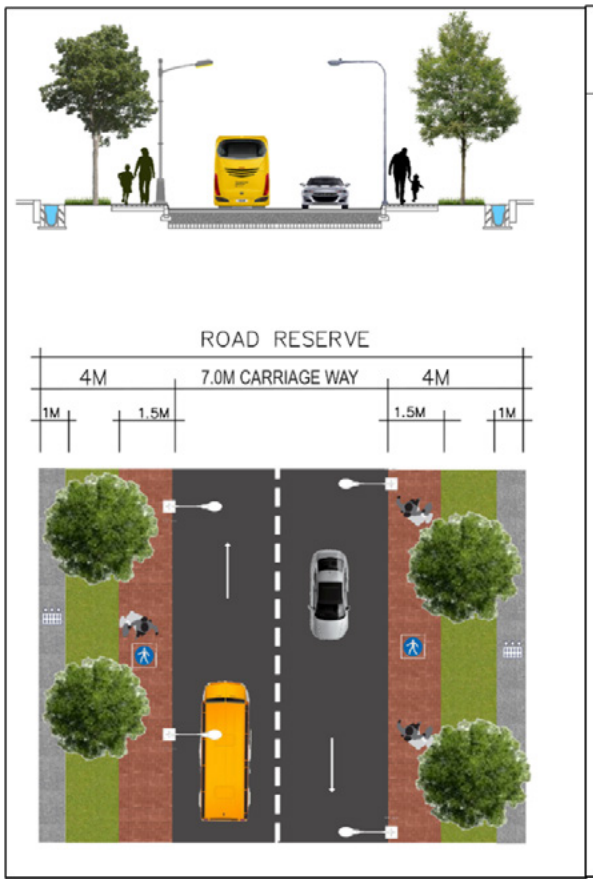
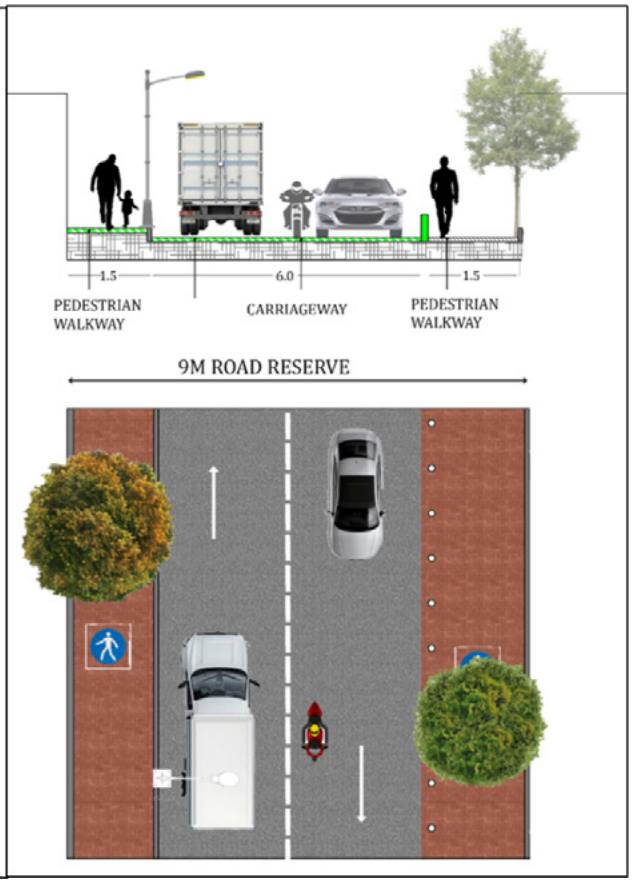


Figure 15-4: Proposal for the 9m wide



CHAPTER 16

Action Plans

16.1 OVERVIEW

This section discusses the Action Plan for the proposed development scenarios.

16.2 LIVESTOCK SECTOR DEVELOPMENT ACTION PLAN

Livestock development is the single most important economic pillar for development of Isiolo County. However, the sector is characterized by a myriad of challenges which require urgent action. A livestock development action plan (LDAP) for Isiolo County is an evidence-based and time-bound plan for achieving desired outcomes in line with the county's vision, goals and objectives. The action plan is organized into three distinct but interrelated parts thus:

i. **Livestock production** - means the business of raising domesticated farm animals (like cattle, pigs, sheep, poultry) for products such as meat, milk, eggs, fiber (wool), and labor, involving activities like breeding, feeding, healthcare, and management, and is a core part of agriculture and food systems globally. It covers various systems, from small farms to large-scale operations, focused on providing essential commodities for human consumption and economic livelihoods

ii. **Value addition in livestock sector** - this involves transforming raw animal products (milk, meat, hides, manure) into more useful, attractive, and profitable goods like cheese, sausages, leather, or biogas, increasing their market value and shelf life beyond the original raw state, benefiting farmers through higher income and creating more jobs. It's about processing and branding raw materials to meet consumer demand for convenience, quality, and specific health benefit

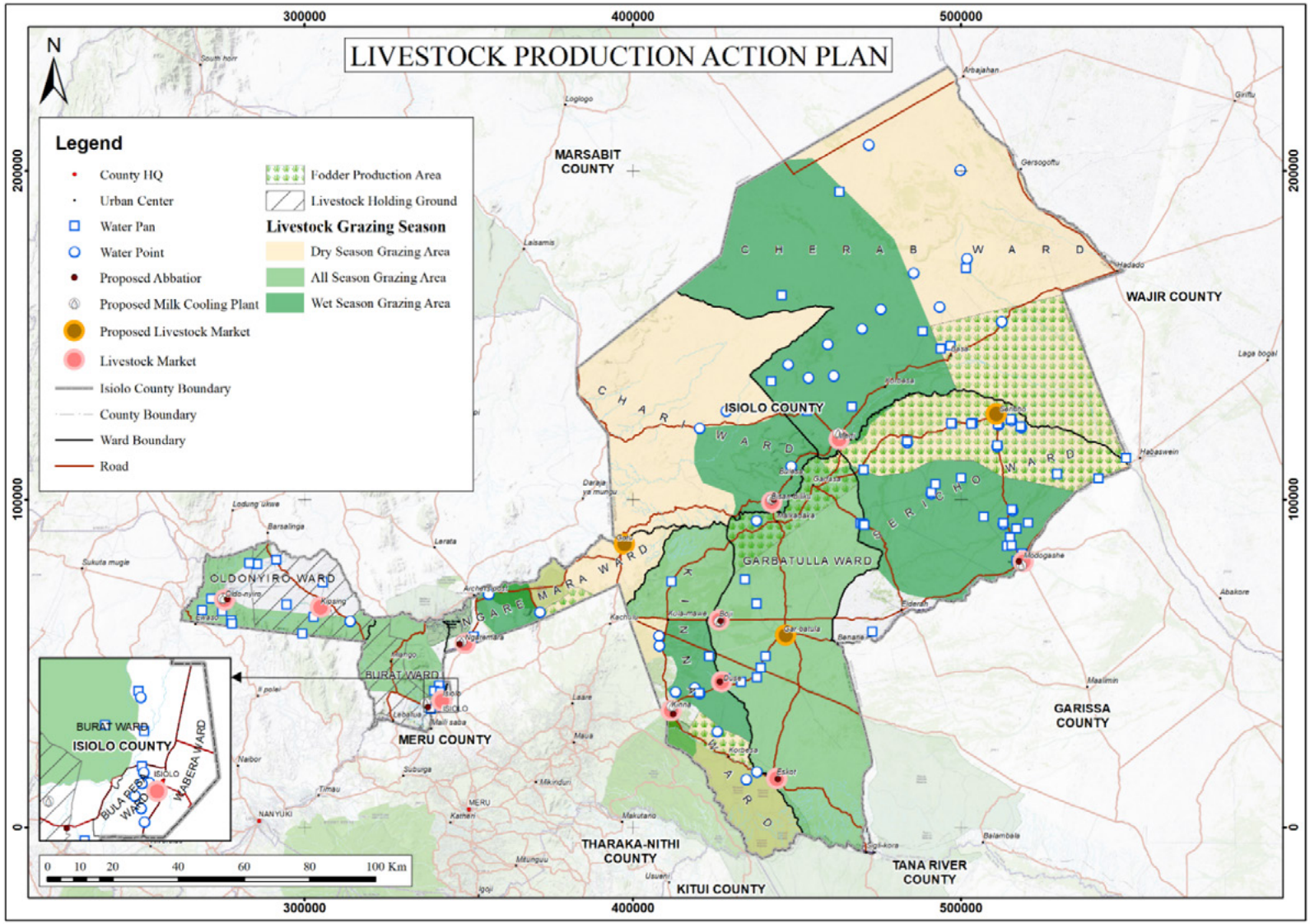
iii. **Marketing of livestock and livestock products** - this means the entire process of getting live animals (cattle, sheep, camels, poultry, etc.) and their products (milk, wool, meat, hides and skins) from producers to consumers, involving all activities like pricing, promotion, grading, transportation, storage, and sale through auctions, markets, or direct deals, all to add value and meet market needs. It's more than just selling; it's a strategic system of exchange that provides farmers cash for other goods and services, requiring understanding trends, costs, and consumer preference

Table 16-1: Livestock Development Action Plan

PLANNING ISSUE	PROPOSED INTERVENTION/ACTION	PLACE IN COUNTY (E.G WARD)
Part I: Livestock Production		
Inadequate fodder especially during dry season	· Initiate program for fodder production · Pasture establishment through irrigation · Establishing feedlots in every Ward · Diversify livestock supplements	1A and 4C
Inadequate water	· Provide adequate water through boreholes and water pans located at strategic locations in every Ward	Zone 1A, 1B , 4B, 4C and 4D
Poor implementation/ enforcement of grazing plans	· Proper implementation/enforcement of grazing plans in all Wards · Have workable monitoring indicators	Zone 1A, 1B, 4B, 4C and 4D
Inadequate livestock holding grounds	· Establish one (1No.) livestock holding ground per Ward except Bula Pesa and Wabera Ward which are close to Isiolo Town and are experiencing rapid urbanization	Zone 1A, 1B, 4B, 4C and 4D
Lack of feedlots	· Establish one (1No.) feedlot covering 1000 acres per ward and provide support infrastructure	Zone 1A, 1B, 4B, 4C and 4D
Limited diversification of livestock production	· Diversify livestock production to include cricket farming in liaison with local universities/research institutions, bee-keeping and rearing of rabbits	Zone 1A, 1B, 4B, 4C and 4D

PLANNING ISSUE	PROPOSED INTERVENTION/ACTION	PLACE IN COUNTY (E.G WARD)
Part 2: Livestock Value Addition		
Non operational abattoir for export market	· Operationalise the abattoir for export market	Burat Ward
Lack of modern slaughter slabs for local market (existing slaughter slabs old and dilapidated)	· Construct and operationalize modern slaughter slabs for local market in every Ward	All Wards
Lack of medium-size milk processing plants	· Construct one medium-size milk processing plant per Ward	All Wards
Lack of honey processing facilities	· Install honey processing facilities	Zone 1A,1B , 4B, 4C and 4D
Lack of modern tannery	· Construct modern tannery in Isiolo Town and establish collection centres for hides and skins in every Ward	All Wards
Part 3: Livestock Marketing		
Poor marketing of livestock	· Construct modern livestock market similar to the one at Oldonyiro · Improve governance of livestock markets	· Kinna · Cherab · Chari · Sericho · Garbatulla · Ngaremara

Map 16.1: Livestock Production Action Plan



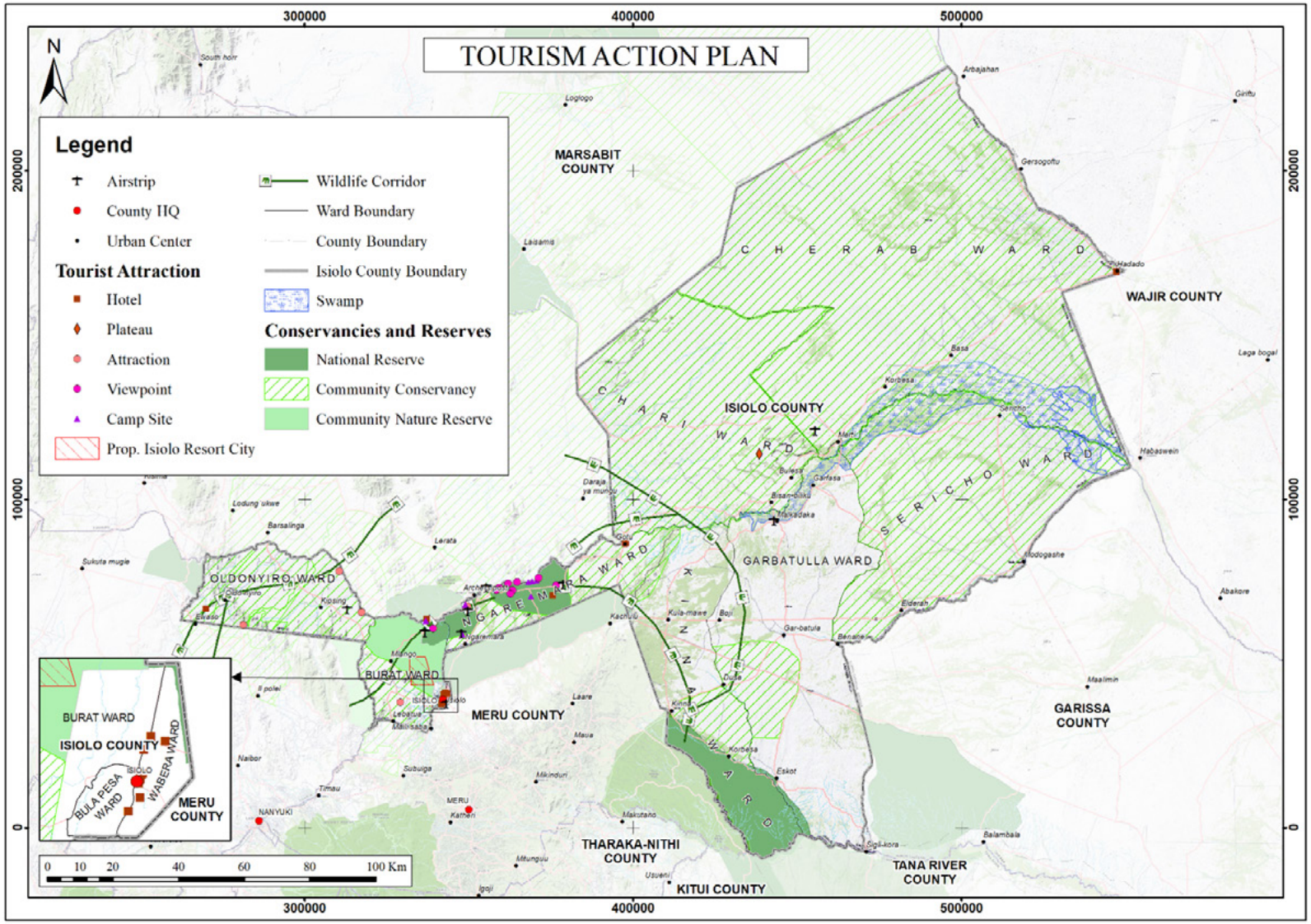
Source: Author 2025

16.3 TOURISM DEVELOPMENT ACTION PLAN

EMERGING ISSUES	STRATEGIES	PROJECTS	AREAS
Poor tourism infrastructure development in existing national reserves	Provision of tourism infrastructure to attract investment and tourists	· Revival of Bisanadi National Reserve – Construction of two gates to access Bisanadi NR from Kinna and Skot (Garbatulla) – Construction of access roads within the national park. – Construction of dirt roads within the national reserve to enhance safari tourism – Recruit staff and construct staff houses · Rehabilitate existing staff houses in all NRs · Automate the revenue collection system in all national reserves	Buffalo Springs, Shaba, and Bisanandi NRs
Limited tourism products and services	Diversification and branding of tourism products/services	· Developing and promoting additional niche tourism products (camping grounds, picnic sites, and cultural tourism) · Developing and promoting additional niche tourism services (Filming/documentary making, game drives and bird viewing)	Buffalo Springs, Shaba, and Bisanandi NRs
Poor marketing of Isiolo as a tourism destination	Enhanced tourism promotion and marketing	· Organizing annual tourism fairs, exhibitions, and promotional events akin to the Maa Cultural Week · Publicizing all the tourist attraction sites within the county, including national reserves, community conservancies, and cultural sites on online and press media · Destination branding using the "Special Five" – Gravy zebra, reticulated giraffe, Somali Ostrich, Basal Orynx, and the Gerenuk – as branding anchors · Collaborate with the Kenya Tourism Board (Tembea Kenya and Magical Kenya) to promote tourism in Isiolo County to the international market	Countywide

EMERGING ISSUES	STRATEGIES	PROJECTS	AREAS
Regulatory and administrative barriers in tourism development	Creating an enabling environment for investors in tourism and hospitality	· Easing regulatory requirements and reducing bureaucratic hurdles for investors in the hospitality industry · Offering financial incentives to investors in the tourism industry (tax breaks, to investments in undeveloped areas with high tourism potential, such as Bisanadi National Reserve · Promoting PPPs with investors in the hospitality industry. · Enacting tourism and wildlife management laws and policies: - The Tourism Bill, - The Wildlife Management Bill - The Community Conservancy Bill. · Offer short courses and train staff in collaboration with the Tourism and Regulatory Authority	Countywide

Map 16.2: Tourism Development Action Plan



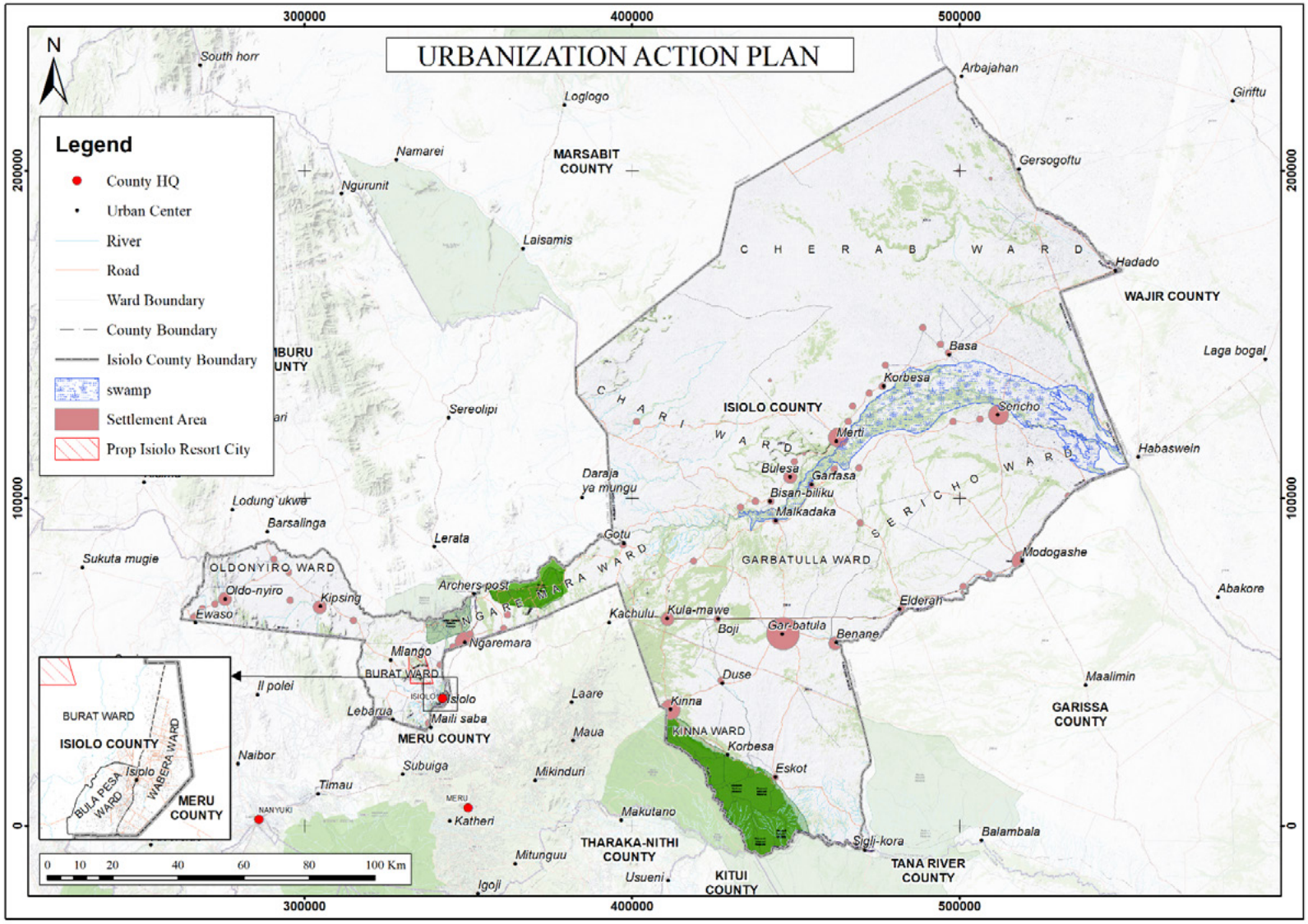
Source: Author 2025

16.4 URBAN GROWTH DEVELOPMENT ACTION PLAN

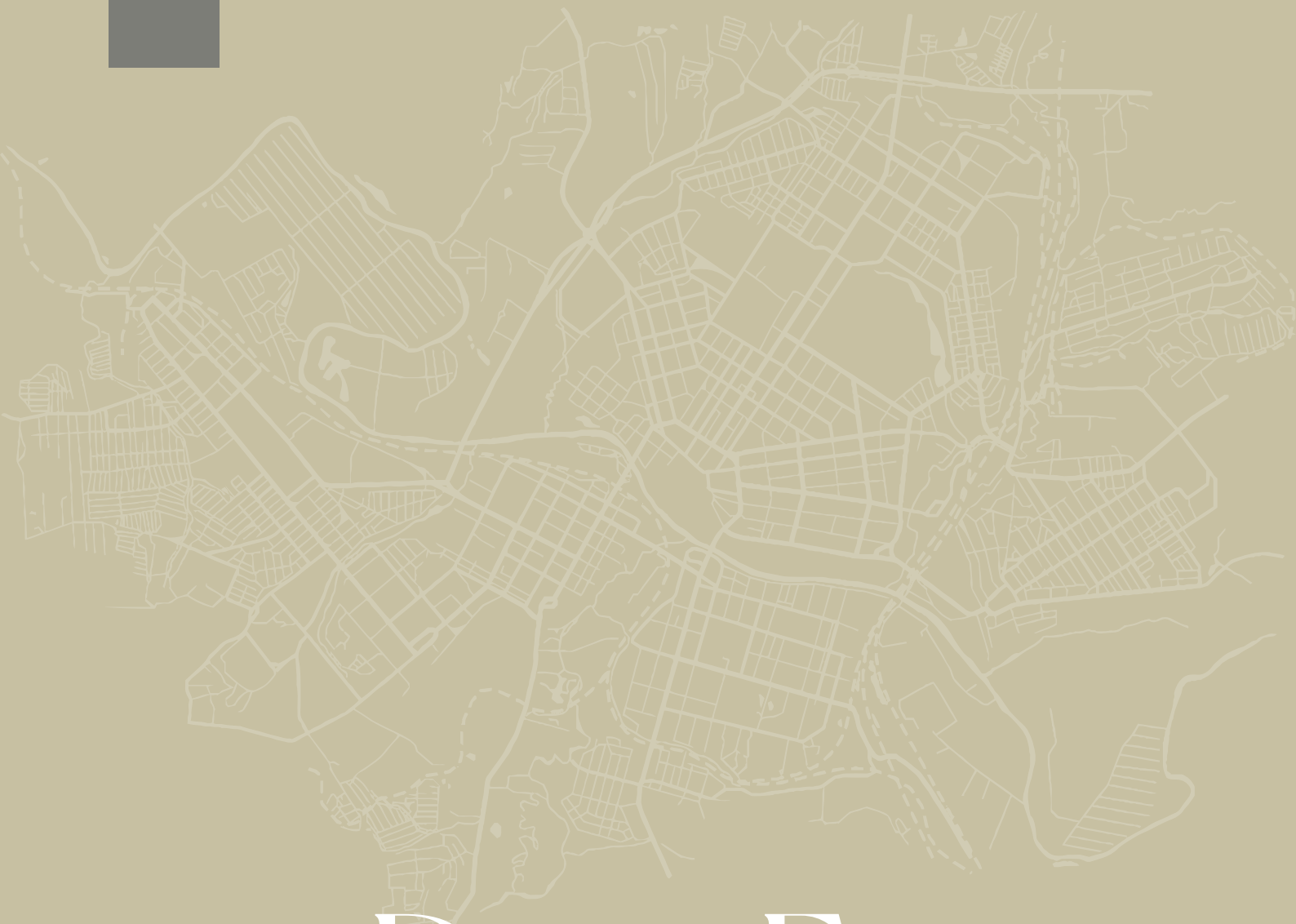
EMERGING ISSUES	STRATEGIES	PROJECTS	AREAS
Inadequate markets/trading spaces	Expand/increase the existing markets/ trading spaces	Completion of the Isiolo Modern Market	Bulapesa
		Upgrading existing livestock markets	Ngaremara, Modogashe, Boji, Merti, Oldonyiro, Kipsang, Bulesa, and Kinna markets
		Construction of 3 new livestock markets	Sericho, Garbatulla, Gotu
		Construction of jua-kali sheds in Isiolo Municipality	Isiolo Municipality
Inadequate value addition facilities and industries	Develop value-addition capacity	Operationalization of the Isiolo Export Abattoir	Isiolo Meat City Special Economic Zone (Burat)
		Opening of slaughterhouses in all major market centers and upgrading existing ones	Sericho, Modogashe, Garbatulla, Boji, Kinna, Merti, Bulesa, Ngaremara, Oldonyiro, and Kipsang
		Opening milk cooling plants in major market centres	Sericho, Modogashe, Garbatulla, Kinna, Merti, Bulesa, Ngaremara, Oldonyiro, and Kipsang
		Opening leather bandas in major market centres	Sericho, Modogashe, Garbatulla, Kinna, Merti, Bulesa, Ngaremara, Oldonyiro, and Kipsang
		Construction of a hides and skins tannery and a footwear factory	Isiolo Meat City Special Economic Zone (Burat)
		Construction of a gums and resins processing factory	Isiolo Meat City Special Economic Zone (Burat)
		Construction of the Isiolo County Aggregation Industrial Park	Ngaremara Ward
High cost of business and poor access to capital	Introduce programs to lower business costs and increase credit access	· Standardization of levies charged to traders · Provide an economic stimulus program targeting SMEs through the Biashara Fund · Promotion of business cooperatives and SACCOs to increase their access to credit facilities.	Countywide

EMERGING ISSUES	STRATEGIES	PROJECTS	AREAS
Lack of business training/ skills among traders	Partnering with organizations and state bodies involved in training	County partnership with Micro and Small Enterprise Authority (MSEA), Kenya National Chamber of Commerce and Industry (KNCCI), NGOs, and other development partners in training and sponsoring SMEs in the County.	Countywide
	Introduce training centres	Establishment of business incubation centres to promote entrepreneurial and management skills among residents	One incubation centre per ward
Low attractiveness of Isiolo as an investment destination	Partnerships to promote investment	· County's partnership with local banks, microfinance organisations, and NGOs to facilitate the provision of low-interest credit facilities to traditionally disfranchised businesspersons, including SMEs, farmers, women, and the youth through group lending opportunities. · Promoting public-private partnerships (PPPs) to fast-track the sourcing of capital necessary of business and industrial development	Countywide
	Enacting relevant laws	Enacting the County's Trade and Market Bill to provide the legal and regulatory framework for incentivizing investors.	Countywide
	Marketing	Marketing Isiolo County as an ideal investment destination for both locals and international players.	Countywide

Map 16-3: Urbanization Action Plan



Source: Author 2025



Part Four

PLAN IMPLEMENTATION, MONITORING & EVALUATION

CHAPTER 17

Implementation and Monitoring Framework

17.1 OVERVIEW

The chapter discusses the proposed action area plans, the Capital Investment Plan and the Implementation Framework.

17.2 CAPITAL INVESTMENT PLAN

Table 17-1: Capital Investment Plan

SECTOR	PROJECT	PROJECT LOCATION	QTY	UNIT (KES.MILLION)	TOTAL COST (KES.MILLION)	ACTORS
Land	Registration of Community Land	· Oldonyiro Ward · Burat Ward · Sericho Ward · Kinna Ward · Cherab Ward · Garbatulla Ward · Chari Ward · Ngaremara Ward	8 wards	40	320	· County Government of Isiolo · National Land Commission · State Department of Lands and Physical Planning · Community Conservancies
	Establishment and operationalization of the County Planning Unit	Subcounty Headquarters	4	10	40	· County Government of Isiolo · Development Partners
Livestock	Construction of Livestock Markets	Ngaremara, Sericho and Ngaremara	3	30	90	· Isiolo County Government
	Construction of a major Slaughter House in Isiolo Town catering for Burat and Bula Pesa and Wabera Wards		1	20	20	· Isiolo County Government
	Establishment of Fodder Production areas (Hay banks, watering points, Feeding grounds)	· Kinna · Sericho · Chari	300Ha	0.1	30	· Isiolo County Government and Development Partners · Livestock Cooperatives
	Construction of the Isiolo County Aggregation Industrial Park (Phase 1)	Ngaremara	1	500	500	· Ministry of Industry Trade and Industrialization · Isiolo County Government

SECTOR	PROJECT	PROJECT LOCATION	QTY	UNIT (KES.MILLION)	TOTAL COST (KES.MILLION)	ACTORS
	Construction of Isiolo Tannery and Leather Factory (Phase 1)	Burat	1	650	650	· ENNDA · Isiolo County Government and Development Partners
	Construction of Isiolo Gums and Resins Processing Factory	Burat	1	330	330	· ENNDA · Isiolo County Government and Development Partners
	Construction of Garbatula ESP Market	1	1	25	25	· Isiolo County Government
	Upgrading Kinna Market	1	1	15	15	
Tourism/ Conservation	Opening, branding and marketing of Bissanadi Game Reserve	Kinna	2	10	20	· Isiolo County Government · KWS
Human Settlements	Carry out planning and adjudication of all identified human settlements in Legal Notice 150 of 2019	Entire County			500	· Isiolo County Government
	Preparation of Local Physical and Land Use Development Plan for Isiolo Municipality	Isiolo Municipality	1	30	30	· Isiolo County Government · Development Partners
	Preparation of Local Physical and Land Use Development Plan for Urban Areas	Urban areas	6	30	180	· Isiolo County Government · Development Partners
Physical Infrastructure	To grade the Class A (Isiolo-Kipsing-Oldonyiro) Road (A10)	A10	88km	0.2	16.6	· KERRA
		Kipsing – Oldorini bridge	1	102	102	· KERRA
		Kubi Tullo (Malkadaka) bridge	1	226	226	· KERRA
	To Improve the Road to Archers post – Gotu - Biliqo - Merti (C340)	C340	150	0.2	30	· KERRA

SECTOR	PROJECT	PROJECT LOCATION	QTY	UNIT (KES.MILLION)	TOTAL COST (KES.MILLION)	ACTORS
	To Improve the Road to Merti Branching to Modogashe (C317)	C317	100	0.2	20	· KERRA
	Tarmacking Road (C347), Gotu - Atuambul	C347	22	20	440	· KERRA
	Tarmack Road B84 Kachuru-Modagashe	B84	190	20	3800	· KENHA
	Tarmack the (C341) Garfasa-Sericho-Modagashe	C341	110	20	2200	· KERRA
	Upgrade Kinna - Kulamawe – Skot Road to tarmac (C 1050)	C1050	30	20	600	· KERRA

Source: Author, 2025

17.3 IMPLEMENTATION FRAMEWORK

Table 17-2: Implementation Framework

PROGRAMMES	PROJECTS	LOCATION	ACTORS	TIMELINE
Enhancing trading activities	Construction of open-air markets	Garbatulla, KInna, Modogashe, Sericho and Merti	CGI	Medium term
	Construction of jua kali sheds	Isiolo Town, Oldonyiro, and Garbatulla	CGI	Medium term
	Establishment of business incubation centres to promote entrepreneurial and management skills among residents	Isiolo Town and the 12 community conservancies	CGI	Long term
	Facilitating market linkages for livestock produce	-	CGI	Continuous
	Provide an economic stimulus program targeting SMEs through the Biashara Fund	-	CGI	Continuous

PROGRAMMES	PROJECTS	LOCATION	ACTORS	TIMELINE
	Promotion of business cooperatives and SACCOs to increase their access to credit facilities.	-	CGI and MSEA	Continuous
	Partnerships development partners in training and sponsoring SMEs in the County.	-	CGI, MSEA, KNCCI, and NGOs	Continuous
	Standardization of levies charged to traders	-	CGI	Quick wins
Enhancing Industrial Manufacturing and Processing	Construction of the Isiolo County Aggregation Industrial Park	Isiolo Town	National Government	Medium term
	Setting up cottage industries	12 community conservancies	CGI and NRT	Medium term
	Construction of a leather tannery and footwear factory	Isiolo	CGI	Medium Term
	Construction of milk cooling facilities	Garbatulla, Oldonyiro, Sericho, Modogashe, Kinna, and Sericho	CGI	Medium to long term
	Construction of a honey processing plants	Isiolo Town, Oldonyiro, Merti and Kula Mawe	CGI	Long term
	Construction of a gums and resins processing plant (Sericho Ward) and collection centres	· Sericho Ward · All community conservancies	CGI	Long term
Attracting Investment	Partnering with local banks, microfinance organisations, and NGOs to facilitate the provision of low-interest credit facilities to traditionally disfranchised businesspersons, including SMEs, farmers, women, and the youth through group lending opportunities.	-	CGI, local banks, microfinance organisations, and NGOs	Continous
	Enacting the County's Trade and Market Bill to provide the legal and regulatory framework for incentivizing investors.	-	CGI	Quick wins
	Marketing Isiolo County as an ideal investment destination for both locals and international players.	-	CGI	Continuous
	Organizing trade and investment conferences to bring together investors and industry players and introduce them to existing investment opportunities.	-	CGI	Continuous
	Promoting public-private partnerships (PPPs) to fast-track the sourcing of capital necessary of business and industrial development	-	CGI	Continuous

PROGRAMMES	PROJECTS	LOCATION	ACTORS	TIMELINE
Provision of tourism infrastructure	Revival of Bisanadi National Reserve - Construction of access roads to the national parks, with 3 main gates; one bordering Kitui County, one towards Kinna Ward, and the third towards Garbatulla Ward. - Construction of dirt roads within the national reserve to enhance safari tourism - Recruit staff and construct staff houses	Bisanadi National Reserve	CGI and KWS	Medium Term
	Rehabilitate existing staff houses	Shaba and Buffalo Springs	CGI and KWS	Short term
	Develop campsites within the three national reserves	Shaba, Buffalo Springs and Bisanadi	CGI and KWS	Medium Term
	Renovation of Malka Cultural Centre	Kinna	CGI	Short term
	Establishing and improving cultural centres within community conservancies	12 conservancies	CGI and NRT	Medium Term
	Automate the revenue collection system in all national reserves	-	CGI	Quick wins

ISSUES	LOCATION	OBJECTIVES	STRATEGIES/ACTION AREAS	ACTORS	PERIOD
Urban Management and Governance	Urban Areas (Isiolo Municipality, Garbatulla, Merti, Kinna and Modogashe Towns	To promote participatory governance, transparency, and sustainable urban growth	· Building Capacity in the management of urban areas · Establishment of town management committees · Strengthen Isiolo Municipality Board	· Isiolo County Government	Short Term

ISSUES	LOCATION	OBJECTIVES	STRATEGIES/ACTION AREAS	ACTORS	PERIOD
Urban Development	Urban Areas (Isiolo Municipality, Garbatulla, Merti, Kinna and Modogashe Towns	To promote Land Use Planning in Urban Areas	· Classification and demarcation of urban areas within the County · Preparation of Local Physical and Land Use Development Plans	· Isiolo County Government · Development Partners	Short Term
Inadequate Infrastructure and Services	Isiolo Municipality	To ensure current and upcoming urban areas have access to reliable infrastructure and services	· Creation of well-functioning, livable, and economically competitive urban centers. · Extension of electricity and sewer services to towns, market centres and rural settlements · Improvement of transportation network in rural areas	· Isiolo County Government · KeRRA · REREC	Short Term
Rapid & Unplanned Urbanization	· Isiolo Municipality · Kinna · Ngaremara · Merti · Garbatulla · Modogashe	Guide orderly urban growth through planned land use and development control	· Develop local physical and land use development plans · Conduct community consultations during plan preparation · Map critical land resources · Enforce zoning and building regulations · Formalize informal settlements	· Dept. of Lands & Physical Planning · NLC · Communities	Continuous
Insecure Land Tenure	Community Conservancies	Secure land rights for communities & reduce land-related conflicts	· Identify and register community land · Issue community land titles · Legal awareness campaigns	· Ministry of Lands · NLC · Communities · County Govt.	Mid–Long Term

ISSUES	LOCATION	OBJECTIVES	STRATEGIES/ACTION AREAS	ACTORS	PERIOD
Uncoordinated Strategic Regional Projects	Crocodile Jaw Dam Catchement	Coordinate strategic intercounty projects	· Preparation of intercounty physical and land use development plans	· CGI · Samburu County · Laikipia County · Ministry of Water and Irrigation · State Department of Lands and Physical Planning	Medium Term
	Isiolo Internal Airport	Coordinate strategic intercounty projects	· Preparation of intercounty physical and land use development plans	· CGI · Meru County · KAA · State Department of Lands and Physical Planning · MOTI	Medium
Climate-Smart Land Use	· Community Conservancies · Ecologically sensitive areas	Promote sustainable and climate-resilient land use practices	· Promote dryland agroforestry · Protect wetlands and riparian zones · Incorporate climate data into planning	· Dept. of Environment · Dept. of Lands & Physical Planning · FAO · Communities	Continuous
Institutional Capacity Building	County Lands and Physical Planning Department	Strengthen land administration and planning capacity	· Train county lands department officers · Operationalization of the County Planning Unit · Establish County Land Information System · Harmonize land records	· County HR · ICT · Ministry of Lands · Development Partners	Continuous
Public Awareness & Legal Literacy	County-wide	Encourage community participation in land use planning	· Run public education campaigns · Use barazas and radio to reach remote areas	· County Government · NGOs	Continuous

ISSUES	LOCATION	OBJECTIVES	STRATEGIES/ACTION AREAS	ACTORS	PERIOD
Insecure Land Tenure & Low Registration Levels	Countywide	To enhance land tenure security and reduce land disputes	· Systematic land adjudication and registration · Community land formalization · Undertake land adjudication and surveying · Issue title deeds (community & individual) · Map and protect grazing corridors and communal resources	· Isiolo County Government · State Department of Lands · National Land Commission · Survey of Kenya	Medium-Long term
Weak Land Information Systems	County HQ	To establish a modern, efficient land information system	· Development of CLIMS · Digitization of land records · Procure GIS infrastructure · Digitize land records · Develop geo-referenced database	· Isiolo County Government	Medium-Long term
Absence of Valuation Roll & Weak Revenue Systems	Municipality & Urban Centres	To enhance land-based revenue generation	· Preparation of valuation roll · Enactment of valuation law · Develop valuation roll · Establish property database · Implement land value capture mechanisms	· Isiolo County Government	Medium term
Unplanned Urban Growth & Informal Settlements	Isiolo Municipality, Kinna, Merti, Garbatulla, Modogashe & other Urban Centres	To promote planned and sustainable urban development	· Prepare and enforce zoning regulations · Approve development plans · Promote high-density development in urban cores	· Isiolo County Government	Continuous
Lack of LPLUDPs	Urban & gazetted Urban Centres	To guide structured development and investment	· Preparation of LPUDPs · Updating existing plans · Prepare LPUDPs for gazette urban areas · Review outdated plans	· Isiolo County Government · Development Partners	Continuous

ISSUES	LOCATION	OBJECTIVES	STRATEGIES/ACTION AREAS	ACTORS	PERIOD
Unregulated Land Use Change & Subdivision	Peri-urban Areas & Growth Corridors	To ensure controlled land use conversion and subdivision	· Land use regulation framework · Development control systems · Develop approval guidelines · Monitor subdivision trends · Enforce minimum plot sizes	· Isiolo County Government · State Department of Lands	Continuous
Rangeland Degradation & Invasive Species	Rangelands	To restore degraded ecosystems and improve productivity	· Rangeland restoration · Invasive species control · Reseeding programmes · Mathenge eradication · Controlled grazing systems	· Communities · Isiolo County Government · NGOs	Continuous
Weak Institutional Capacity	County Government Institutions	To strengthen land governance and service delivery	· Capacity building · Institutional strengthening · Hire and train staff (Planners, Development Control Officers, Land Economists, GIS Experts, Urban Designers) · Establish Central Planning Unit for coordination, monitoring and evaluation	· Isiolo County Government	Short–Medium Term
Inter-County Land Use Conflicts & Fragmentation	Border Areas (Isiolo, Samburu County, Laikipia County)	To harmonize land use and reduce conflicts	· Inter-county spatial planning · Regional collaboration · Develop inter-county spatial plan · Align land use policies	· Isiolo County Government · Regional Blocs	Long Term
Low Public Awareness & Transparency in Land Processes	Countywide	To improve access to land information and services	· Public awareness campaigns · Service transparency · Develop service charters · Conduct public education · Digitize services	· Isiolo County Government	Continuous

Source: Author, 2025

The projects and programmes have different time frames which are:

1. Continuous – Spanning through the 10 years
2. Quick Wins – Below 1 year
3. Short Term – 1 year – 2 years
4. Medium Term – 3 years to 5 years
5. Long Term – 5 years to 10 years

17.4 MONITORING AND EVALUATION FRAMEWORK

This plan proposes a monitoring and evaluation framework that is anchored in the existing CIMES/e-CIMES, spatial-plan implementation practice, and public-sector audit principles of economy, efficiency, effectiveness, compliance, accountability and value for money. The plan already contains action plans, a Capital Investment Plan (CIP) and an implementation framework in Chapters 16 and 17, which will form the results chain and indicator base.

The overarching objective of M&E in this case will be to track whether the spatial plan is being implemented as approved, whether projects are delivered on time and within budget, and whether they are producing intended spatial, social, economic and environmental outcomes. The logframe presented in Table 17-3 and Table 17-4 outlines the logic that must be followed to monitor and evaluate the plan and the projects contained therein.

Table 17-3: CPLUDP logframe

RESULT AREA	KEY INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS/RISKS	RESPONSIBLE INSTITUTION
Impacts Sustainable, resilient, inclusive and spatially integrated county development achieved through orderly land use, environmental conservation, economic transformation and equitable service delivery.	Reduction in poverty levels; increase in access to basic services; improved environmental quality; increased investment levels; reduced informal and unplanned settlements; enhanced climate resilience; improved livelihood security; increased county GDP contribution; reduction in land-use conflicts; improved liveability index; enhanced accessibility to infrastructure and social services.	Quality of life surveys; KNBS socio-economic surveys; Kenya Population and Housing Census reports; environmental monitoring reports; satellite imagery; GIS spatial analysis; County Statistical Abstracts; County Annual Development Reviews; public perception surveys; climate vulnerability assessments; Auditor-General reports; SDG progress reports; CIDP review reports; national economic surveys.	Continued political stability; sustained funding and fiscal discipline; effective intergovernmental coordination; security maintained across the county; climate shocks manageable; policy continuity maintained across political cycles; private-sector confidence sustained; adequate institutional capacity developed; public participation sustained; donor support maintained where applicable. Risks include droughts, insecurity, political interference, inadequate funding, rapid unplanned urbanisation, and weak enforcement of planning regulations.	County Government of Isiolo; County Executive Committee; County Assembly; National Government Ministries and Agencies; National Land Commission (NLC); National Treasury; Development Partners; Private Sector; Civil Society Organizations (CSOs); Community Institutions.
Outcomes Orderly urban and rural growth; improved access to infrastructure and services; enhanced land governance; reduced environmental degradation; improved investment climate; enhanced disaster resilience; strengthened institutional coordination	Percentage increase in planned urban growth; reduction in land disputes; increase in serviced land; percentage increase in population with access to water, sanitation, roads and ICT; reduction in disaster losses; increased zoning compliance; increase in protected environmental areas; increase in registered community land; improved infrastructure connectivity; increased investment uptake in designated growth centres.	GIS-based land-use monitoring systems; zoning compliance reports; development approval registers; environmental audit reports; infrastructure completion certificates; land registration records; water and sanitation coverage reports; service delivery reports; disaster management records; investment promotion reports; public complaints registers; e-CIMES reports; annual departmental reports; project monitoring reports.	County departments collaborate effectively; planning standards enforced consistently; adequate operational budgets available; communities support implementation; land tenure issues resolved amicably; institutional coordination mechanisms operational; technical staff retained and adequately trained; legislative and policy support maintained. Risks include weak enforcement, political interference, land conflicts, overlapping mandates, climate disasters and delayed funding disbursement.	County Physical and Land Use Planning Department; County M&E Unit; Lands Department; Urban Boards; Environment Department; Infrastructure Departments; Water Department; DRM Unit; National Agencies; NLC; NEMA; Survey Department.

RESULT AREA	KEY INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS/RISKS	RESPONSIBLE INSTITUTION
Outcomes Completed and operational projects, approved lower-level plans, serviced urban centres, improved infrastructure systems, protected ecological zones, functional governance systems, and strengthened economic nodes	Number of local physical and land use plans prepared; kilometres of roads constructed/upgraded; number of water projects completed; hectares of rehabilitated rangelands; number of urban centres reclassified and planned; number of ICT facilities developed; number of public participation forums held; number of community lands adjudicated and registered; number of markets and livestock facilities operational; number of environmental restoration projects implemented.	Approved plans and gazette notices; project completion reports; contractor certificates; GIS databases; progress reports; procurement records; environmental restoration records; infrastructure asset inventories; photographs and geo-tagged evidence; inspection reports; supervision reports; financial expenditure reports; audit reports; community feedback reports.	Timely procurement processes; availability of contractors and consultants; sufficient funding allocated and released on time; stakeholder cooperation maintained; technical approvals obtained in time; security conditions conducive for implementation; availability of land for projects. Risks include procurement delays, contractor non-performance, inflation, cost escalation, litigation and community resistance.	County Departments; Urban Boards; Implementing Agencies; National Government Agencies; Contractors and Consultants; Development Partners; Community Committees.
Land governance Secure, transparent, equitable and sustainable land administration and management system established.	Number of community lands registered; percentage of public land mapped and documented; reduction in land disputes and encroachments; number of cadastral maps digitized; percentage of development applications approved within statutory timelines; number of adjudication sections completed; proportion of developments complying with zoning regulations; number of land information management systems operationalized.	NLC records; County Land Registry; cadastral maps; GIS databases; adjudication reports; dispute resolution records; digitized land information systems; development control registers; approved development plans; enforcement notices; land transaction records; survey records; audit reports.	Political goodwill sustained; legal reforms implemented effectively; accurate cadastral and survey data available; public trust in land institutions maintained; adequate staffing and ICT systems available. Risks include historical land injustices, overlapping land claims, corruption, weak enforcement and inadequate survey coverage.	County Lands Department; National Land Commission; Ministry of Lands; Survey of Kenya; Physical and Land Use Planning Department; Community Land Management Committees.

RESULT AREA	KEY INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS/RISKS	RESPONSIBLE INSTITUTION
Spatial planning Integrated and enforceable spatial planning system operationalized across the county	Number of local physical development plans prepared and approved; percentage zoning compliance; reduction in incompatible land uses; number of planning approvals processed; proportion of developments aligned with the CPLUDP; number of GIS-based spatial databases operational; percentage of urban growth occurring within planned areas; number of development control inspections conducted annually.	Approved plans; development control registers; GIS compliance maps; planning approval records; enforcement notices; satellite imagery; urban growth analysis reports; inspection reports; zoning maps; county gazette notices; public participation records.	Political and institutional support maintained; development control adequately funded; technical planning staff retained; public awareness of planning regulations enhanced; adequate GIS infrastructure operational. Risks include uncontrolled urbanization, political interference in approvals, inadequate enforcement capacity and informal settlement expansion.	County Planning Unit; Urban Boards; Lands Department; Survey Department; County GIS Unit; County Enforcement Unit.
Infrastructure Efficient, resilient and equitable infrastructure systems developed and maintained.	Kilometres of roads upgraded; percentage road network in good condition; percentage population with access to clean water; sewer coverage levels; electricity connectivity rates; ICT coverage; number of drainage systems developed; reduction in travel time; increase in NMT infrastructure; number of public transport facilities upgraded.	Site inspection reports; contractor certificates; engineering completion reports; GIS infrastructure maps; utility provider records; budget utilization reports; asset inventories; photographs; transport surveys; water and sanitation reports; maintenance records.	Adequate infrastructure financing; stable economic environment; utility agencies cooperate effectively; land acquisition resolved in time; climate conditions manageable. Risks include cost escalation, climate damage, vandalism, inadequate maintenance budgets and delayed procurement.	Roads Department; Public Works; Water Department; Energy Agencies; ICT Department; KeNHA; KURA; KeRRA; utility providers.
Urban growth management Planned, compact, serviced and sustainable urban development achieved	Number of urban centres planned and serviced; reduction in informal settlement expansion; increase in serviced plots; urban density management indicators; percentage compliance with urban design standards; increase in green/open spaces; number of urban redevelopment projects implemented; increase in urban investment uptake.	Urban plans; development approvals; building permits; GIS urban growth maps; land-use surveys; satellite imagery; infrastructure coverage data; urban service reports; urban audits.	Effective urban governance; sufficient infrastructure investment; political support for enforcement; public compliance with regulations; economic growth sustained. Risks include speculative development, informal settlement growth, weak urban governance and population pressure.	Urban Boards; Planning Department; Housing Department; Infrastructure Departments; Environment Department.

RESULT AREA	KEY INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS/RISKS	RESPONSIBLE INSTITUTION
Environment and resilience Protected ecosystems, restored landscapes and strengthened climate resilience systems	Hectares of restored rangelands and forests; number of conservation areas protected; reduction in environmental degradation hotspots; flood-prone areas rehabilitated; number of climate adaptation projects implemented; reduction in disaster losses; increase in green cover; number of environmental compliance audits conducted.	Environmental audits; satellite imagery; GIS environmental maps; restoration reports; climate vulnerability assessments; disaster records; NEMA compliance reports; biodiversity surveys; field inspection reports.	Climate financing available; communities support conservation; environmental regulations enforced; technical expertise available. Risks include drought, invasive species, encroachment, overgrazing and climate variability.	Environment Department; DRM Unit; NEMA; Kenya Forest Service; Community Conservancies; NGOs and CBOs.
Economic development Diversified, competitive and spatially balanced county economy achieved.	Number of operational livestock markets; tourism facilities developed; industrial investments established; agricultural productivity levels; employment creation; increase in county revenue; growth in value chains; increase in tourism arrivals; number of SMEs supported; investment inflows into designated growth centres.	Revenue reports; facility records; trade licenses; employment statistics; tourism statistics; agricultural production reports; investment promotion reports; cooperative records; business registration records.	Market stability maintained; security improved; investor confidence sustained; infrastructure improved; climate conditions manageable. Risks include insecurity, drought, market fluctuations and inadequate investment incentives.	Livestock Department; Trade Department; Tourism Department; Agriculture Department; Investment Promotion Unit; Cooperatives Department.
Governance and participation Transparent, accountable, participatory and coordinated governance systems strengthened	Number of public participation forums held; percentage of grievances resolved; number of audit queries resolved; percentage compliance with planning laws; frequency of interdepartmental coordination meetings; number of annual implementation reviews conducted; citizen satisfaction levels.	Public participation reports; attendance registers; grievance logs; audit reports; meeting minutes; county assembly reports; monitoring reports; annual review reports; citizen scorecards.	Citizens remain engaged; accountability mechanisms enforced; political support maintained; institutions cooperate effectively. Risks include low public participation, corruption, weak coordination and political interference.	County M&E Unit; County Assembly; County Executive; Public Participation Office; Ethics and Governance Institutions.

RESULT AREA	KEY INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS/RISKS	RESPONSIBLE INSTITUTION
Activities: Surveys, planning, land registration, infrastructure construction, environmental restoration, capacity building, policy formulation, enforcement, stakeholder engagement, GIS mapping and monitoring activities undertaken.	Number of surveys conducted; number of stakeholder consultations held; number of projects supervised; number of enforcement actions undertaken; number of staff trained; number of GIS datasets updated; number of monitoring visits conducted.	Activity reports; training reports; field supervision reports; attendance lists; procurement records; GIS databases; inspection reports; consultant reports; meeting minutes.	Staff available and motivated; procurement systems functional; stakeholders cooperate; operational budgets available. Risks include delays in approvals, logistical constraints and staff turnover.	All Implementing Departments and Agencies.
Inputs: Financial, human, institutional, technological and material resources mobilized for implementation	Annual budget allocations; staffing levels; number of technical experts recruited; availability of GIS infrastructure; vehicles and equipment procured; amount of donor funding mobilized; number of operational offices established.	Budget reports; IFMIS records; HR records; procurement records; inventory registers; donor agreements; asset registers; financial statements.	Adequate fiscal allocation; donor support sustained; procurement systems efficient; staff recruitment timely. Risks include budget cuts, inflation, delayed disbursements and inadequate technical capacity.	County Treasury; Public Service Board; Sector Departments; Development Partners.

Table 17-4: Rangeland Management and Livestock Production Log Frame

PLANNING ISSUE	PROPOSED INTERVENTION	OBJECTIVELY VERIFIABLE PERFORMANCE INDICATORS (OVPIs)	EVIDENCE
Limited rangeland extension services	Intensification of rangeland extension services at Ward level Recruitment and deployment of rangeland extension officers	Number of rangeland extension officers recruited and deployed to Wards Field days held to train local community on rangeland management practices	Available records
Rangeland Degradation	Improvement of rangeland conditions through rehabilitation · Control of soil erosion · Soil and water conservation measures · Controlled grazing to ensure sustainable utilization of forage · Controlling stocking of livestock to ensure sustainable utilization of rangeland resources · Maintain the carrying the capacity at 1TLU/Ha to avoid overgrazing · Intensification of rangeland extension services · Control burning of charcoal with support from County Commissioner's Office	· Number of local community members trained/ educated on range management practices per Ward · Existence of active grazing committees in every location · Approved Action Plan for soil and water conservation	Available records/Site visits for verification
Proliferation of invasive species	Mapping and control of invasive species (Prosopis juliflora, Ipomoea Spp, Cactus oppuntia, etc) using a combination of methods –mechanical, chemical and biological	· An approved Plan of Action for control of invasive plant species · Onboarding of partners · Approved budget for the invasive species control · Workshops held to train/educate local community on the control of invasive plant species	· Available records · Site visits for verification

PLANNING ISSUE	PROPOSED INTERVENTION	OBJECTIVELY VERIFIABLE PERFORMANCE INDICATORS (OVPIs)	EVIDENCE
Part 1: Livestock Production			
Scarcity of fodder	Increase supply of fodder through pasture establishment (Chloris gayana etc)	Acres of land under pasture establishment using certified seeds	Available records/site visits for verification
	Establishment of irrigation schemes for pasture production	Acres of land under irrigation for pasture production (certified seeds)	Available records/site visits
	Construction of fodder aggregation centres	Number of fodder aggregation centres across the county	Available records/site visits for verification
Water Scarcity	Increase availability of water for livestock production in each Ward	Number of water supply projects commissioned per Ward (Boreholes, water pans)	Available records/site visits for verification
Limited livestock upgrading	Initiate livestock upgrading programs in each Ward through cross-breeding with high-yielding breeds (Poultry, sheep, goats, cattle, camels, pigs)	Number of livestock up-grading programs launched per Ward	Available records/site visits for verification
Limited commercialization of livestock	Intensify commercialization of livestock through training/education programs	Number of meetings held to train livestock keepers on commercialization	Records/reports
Limited livestock extension services	· Recruit and deploy livestock extension officers · Intensify livestock extension services · Facilitate the extension staff with mobility (vehicles)	· Number of livestock extension officers deployed to each Ward · Availability of vehicles for fieldwork · Record of work done per quarter	Available records/site visits
Resource use conflicts (water and pasture)	· Drastically minimize resource use conflicts through implementation of community grazing plans · Establishment of community grazing committees · Operationalization of community grazing plans · Facilitation of community grazing committees (motivation allowances)	· Existence of functional grazing committees per location · Existence of community grazing plans · Facilitation of community grazing committee members (allowances paid for motivation)	Available records/Site visits for verification
Loss of livestock due to prolonged droughts	Uptake of livestock insurance as a risk mitigation measure	Number of livestock keepers who have taken livestock insurance	Available records

PLANNING ISSUE	PROPOSED INTERVENTION	OBJECTIVELY VERIFIABLE PERFORMANCE INDICATORS (OVPIs)	EVIDENCE
Banditry	Drastically minimize banditry through beefed-up security	· Establishment of functional security posts along the areas characterized by banditry · Availability of armored vehicles and modern security equipment · Existence of modern communication facilities for coordination	Available records/site visits
Part 2: Livestock Disease Control			
Limited livestock disease surveillance	Intensify livestock disease surveillance across the county	Livestock disease surveillance initiative carried out	Available records
Limited vaccination of livestock	Intensify vaccination of livestock	Number of livestock vaccinated	Available records
Uncontrolled cross-border movement of livestock	Control cross-border movement of livestock through	Multi-agency teams deployed along porous borders to monitor livestock movement	Available records/site visits
Limited number of qualified Veterinary Officers	Recruit and deploy qualified Veterinary Officers. Priority to be given to underserved regions such as Merti, Garbatulla, etc	Number of Veterinary Officers recruited and deployed	Available records
Poor facilitation of Veterinary Officers	County government to facilitate Veterinary Officers to perform their duties – mobility, security and drugs	· Availability of vehicles for mobility of Veterinary Officers and security teams · Drugs procured and issued to the officers	Available records
Limited extension services by Veterinary Officers	Intensify livestock health and hygiene extension services	Number of field days held per location to educate livestock keepers on livestock health and hygiene, drug resistance etc	Available records

PLANNING ISSUE	PROPOSED INTERVENTION	OBJECTIVELY VERIFIABLE PERFORMANCE INDICATORS (OVPIs)	EVIDENCE
Part 3: Livestock Value Chains and Value Addition			
Limited livestock value chains (Overreliance on pastoralism)	Diversification of livestock value chains to include bee-keeping, poultry (improved kienyeji), rabbits, dairy goats, wool sheep	Type of new livestock value chains introduced per Ward	Available records/Site visits
Limited Beef value addition	· Intensify value addition in beef through establishment of modern slaughter houses across the county · Commission the export abattoir	· Number of modern slaughter houses established · Completion and commissioning of the export abattoir in Burat Ward	Available records/site visits
	Diversification of beef products from the county	Types of beef products packaged and branded from Isiolo County e.g Beacon, sausages, chuck, rib, loin, round, flank, short plate, brisket, and shank	Available records/Site visits
Limited milk value addition	Intensify milk value addition through establishment of aggregation centres, establishing milk processing plants, processing and producing of various products.	· Number of aggregation centres established across the county · Number of milk processing plants established · Types of milk-based products produced in the county e.g yogurt, butter, ghee, and flavoured milk	Available records/site visits
Limited wool value addition	Upscale wool value addition to produce higher value products	Quantity of wool processed to produce high value products such as washed fleece, spun yarn, knitted garments, or insulation	Available records/site visits for verification
Limited honey value addition	· Upscale value addition in honey for produce higher value products such as creamed honey, infused/flavored honey, chunk honey · Establish honey processing plants in every Ward with support from county government and development partners	· Number of honey processing plants established per Ward · Number of bee-keepers trained on bee-keeping and honey processing	Available records/site visits for verification
Limited hides and skins value addition	· Upscale value addition in hides and skins · Establish aggregation centres in each Ward · Develop hides and skins processing plant in Isiolo Town	· Number of aggregation centres established across the county · Existence of a functional hides and skins processing plant in Isiolo Town	Available records/Site visits for verification

PLANNING ISSUE	PROPOSED INTERVENTION	OBJECTIVELY VERIFIABLE PERFORMANCE INDICATORS (OVPIs)	EVIDENCE
Part 4: Marketing of Livestock and Livestock Products			
Dysfunctional livestock markets due to insecurity e.g Kinna, Modogashe,	Beef-up security in areas currently prone to insecurity	· Security posts established · Security committees established	Available/Site visits to verify
Vandalism of livestock market infrastructure	Maintenance of infrastructure in livestock markets	Number of livestock markets with well-maintained infrastructure	Available records/Site visits to verify
Lack of livestock markets in some regions	Open livestock markets in areas currently underserved	Number of new livestock markets opened in underserved areas	Available records/Site visits for verification
Encroachment on livestock holding grounds Grabbing livestock holding grounds	Secure land for livestock holding grounds through planning and acquisition of Title Deeds	Number of Title Deeds for livestock holding grounds issued to Department of Livestock	· Availability of Title Deeds · Approved Part Development Plans (PDPs) for Livestock holding grounds
Limited involvement of local community in management of livestock markets	Establishment of local livestock market committees	Number of livestock market committees established	Available records/Site visits for verification
Dysfunctional Livestock cooperatives	Revitalization of currently existing cooperatives		

PLANNING ISSUE	PROPOSED INTERVENTION	OBJECTIVELY VERIFIABLE PERFORMANCE INDICATORS (OVPIs)	EVIDENCE
Part 5: Fisheries			
Low uptake of fisheries value chain	Sensitization of local community to venture into fisheries	Number of sensitization workshops held per Ward Number of local people sensitized on fish farming	Available records
Inadequate water for fish farming	Increase water supply to support fish farming (Boreholes sunk)	Number of bore holes sunk per Ward	Available records
Lack of fingerings	Arrangements for supply of fingerings	Strategic suppliers of fingerings	Available records
Losses due to poor handling of fish during transportation	Reduce losses incurred during transportation- use refrigerated vehicles Provide cold storage facilities in various Wards/Locations	Number of cold storage facilities established Availability of refrigerated vehicles	Available records Site visits for verification
Inadequate number of fisheries officers	Recruit and deploy fisheries officers	Number of fisheries officers recruited and deployed	Available records

Doing the above will require setting up the institutional arrangements that are necessary to oversee the implementation, development of the indicators and progress reporting. In terms of the institutional framing, there will be a need to establish a County Spatial Plan M&E Committee that reports to the County Secretary. The County Directorate of Physical and Land-Use Planning shall form the secretariat, which shall be linked to the County M&E Unit/CIMES. Members of this committee will include the County Physical and Land Use Planning Department, Finance, Roads, Water, Agriculture and Livestock, Environment, Urban Boards, NLC, national agencies, ward representatives and development partners.

Although this plan identifies the indicator categories that should help to track the physical progress, financial absorption, spatial compliance, change in service provision/outcome, and governance/accountability, there will be a need to expand the dimensions of these categories to those that are not necessarily included in this plan but which are nonetheless useful in monitoring and evaluating the plan.

This plan proposes monthly, quarterly, biannual, and annual reporting to ensure its implementation. The monthly reporting shall focus on tracking project implementation. The quarterly reporting shall, on the other hand, focus on CIMES progress and budget review while the biannual reporting shall focus on spatial compliance and field verification. The annual reporting shall focus on the County Physical and Land Use Plan implementation report. At the same time, there shall be a mid-term review, which shall focus on reviewing the performance of the plan and an end-term review, which shall focus on evaluation of the plan and recommendation of the areas that require revision.