



COUNTY GOVERNMENT OF LAIKIPIA

LOCAL PHYSICAL AND LAND USE DEVELOPMENT PLAN FOR KOIJA COMMUNITY LAND (2026 - 2036)



LAIKIPIA
CONSERVANCIES
ASSOCIATION

WYSS
ACADEMY
FOR
NATURE



CERTIFICATION & APPROVAL

I certify that this Plan has been prepared and published as per the requirements of the Physical and Land Use Planning Act, No. 13 of 2019 and County Government Act, 2012 Amended 2020, and other Planning Standards and Guidelines.

PREPARED BY:

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APPROVED BY:

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County Assembly of Laikipia

DEPARTMENTAL REFERENCE No.....

APPROVED DEVELOPMENT PLAN No.....



FOREWORD



Koiya Community Land is a cornerstone of Laikipia County's identity and future. It is a land of vast rangelands, rich natural resources, deep cultural heritage, and, most importantly, a resilient and determined people. These strengths define who we are as a County. Yet, we must also confront the realities before us; land degradation, water scarcity, human–wildlife conflict, and inadequate infrastructure and social services continue to limit the full potential of this great community.

As your County Government, we have made a deliberate and firm commitment to change this trajectory. We cannot afford to leave development to chance. We must plan, we must act, and we must secure the future of our people. It is in this spirit that we present the Koiya Community Land Use Plan a transformative framework that will guide how this land is used, managed, and protected for generations to come.

This Plan has been developed in line with the Physical and Land Use Planning Act No. 13 of 2019 and the Community Land Act (2016), reflects our broader vision of a prosperous, inclusive, and sustainable Laikipia. It is not just a technical document; it is a social contract between the Government and the people of Koiya. It speaks to our commitment to secure community land rights, restore and protect our natural resources, and create opportunities that improve livelihoods and dignity.

I am particularly proud that this Plan has been shaped by the voices of the people. Through an inclusive and participatory process bringing together community members, leaders, technical experts, and partners we have ensured that this Plan reflects the true aspirations and priorities of Koiya. From community mobilization and field assessments to GIS mapping and socio-economic profiling, every step has been guided by the principle that development must be people-driven.

I wish to commend the County Planning Team, led by Plan. Michael Mudeny, for their dedication, professionalism, and technical leadership in coordinating the preparation of this Plan. I also extend my sincere appreciation to the Laikipia Conservancies Association (LCA) and the Wyss Academy for Nature for their invaluable financial support and partnership in making this important initiative possible. Special recognition goes to the Ministry of Lands and



Physical Planning, through the State Department for Physical Planning, for providing the technical guidance and support that helped ensure the Plan's quality and alignment with the relevant planning standards. These partnerships demonstrate the importance of collaboration between County Government, national institutions, development partners, and communities in advancing sustainable land management.

This Plan boldly addresses the pressing challenges we face, including overgrazing, land degradation, invasive species, limited access to water, gaps in health and education services, infrastructure deficits, and human–wildlife conflict. More importantly, it provides practical and forward-looking solutions that will restore our ecosystems, strengthen community governance, unlock economic potential, and improve service delivery.

The implementation of this Plan marks a new chapter for Koija. It is a call to action for all of us. As a County Government, we will provide leadership, mobilize resources, and ensure that the commitments made here are translated into tangible results on the ground. But Government alone cannot do it. Success will require partnership, unity of purpose, and shared responsibility.

I therefore call upon the people of Koija, our development partners, the private sector, and all stakeholders to join us in this journey. Let us work together to build a future where our land is productive, our environment is protected, our communities are empowered, and our children inherit a better Laikipia.

Together, we will make Koija a model of sustainable community land management not only in Laikipia, but across the nation.

Signature.....

**H.E. JOSHUA WAKAHORA IRUNGU, EGH
GOVERNOR
COUNTY GOVERNMENT OF LAIKIPIA.**



PREFACE



The preparation of the Koija Community Land Local Physical and Land Use Development Plan (2026–2036) marks a significant milestone in addressing the complex and interrelated development challenges facing the Koija community. This Plan is the product of a rigorous, inclusive, and consultative process that brought together community members, local leadership, technical experts, and representatives from various government institutions. Through this engagement, the voices, aspirations, and priorities of the Koija people have been deliberately integrated into the planning framework, making this document not merely a technical report, but a shared vision for a resilient, equitable, and sustainable future.

While the Plan provides clear land use zoning and spatial organization, it goes further to establish a comprehensive framework for coordinated development. It prioritizes the provision of critical infrastructure, the protection and sustainable management of natural resources, improved access to essential services, and the strengthening of socio-economic livelihoods. Importantly, the proposals contained herein are responsive to Koija's unique pastoral heritage, ecological conditions, and evolving socio-economic dynamics.

As the County Executive Committee Member responsible for Lands, Housing and Urban Development, I recognize the commitment and collaboration that have made this Plan possible. I commend the County Planning Team for its technical coordination. I also acknowledge the Laikipia Conservancies Association (LCA) and the Wyss Academy for Nature for their financial support, and the Ministry of Lands and Physical Planning, through the State Department for Physical Planning, for its invaluable technical guidance. Their contributions have been instrumental in advancing this important community development initiative. Further, I reaffirm the County Government of Laikipia's commitment to the effective implementation of this Plan. We will continue to provide policy direction, institutional support, and coordination mechanisms necessary to translate these proposals into tangible outcomes on the ground.

I call upon all stakeholders including the Koija community, relevant government agencies, development partners, and the private sector to actively participate in and support the implementation of this Plan. Through sustained collaboration and shared responsibility, we can realize a future where Koija Community Land is sustainably managed, economically vibrant, and socially inclusive, for the benefit of present and future generations.

Signature.....

EKWAM NABOS

County Executive Committee Member

Infrastructure, Land & Physical Planning, Housing, Energy and Urban Development

COUNTY GOVERNMENT OF LAIKIPIA



ACKNOWLEDGEMENT

The preparation of the Koija Community Land Local Physical and Land Use Development Plan (2026–2036) is a significant step towards securing community land rights, strengthening governance, and promoting sustainable development in accordance with the Community Land Act (2016). The Plan provides a framework for coordinated land use, environmental conservation, improved livelihoods, and the protection of Koija’s natural and cultural heritage.

The process has been guided by the Department of Lands, Housing, Energy and Urban Development, working closely with the community, the Laikipia Conservancies Association (LCA), and other stakeholders. I acknowledge the County Planning Team, led by Plan. Michael Mudeny, for its technical expertise and coordination; LCA and the Wyss Academy for Nature for their financial support; and the Ministry of Lands and Physical Planning, through the State Department for Physical Planning, for its technical guidance. Their contributions have been vital in advancing this participatory planning initiative.

The Plan integrates community aspirations, local knowledge, and technical assessments to address land use conflicts, resource management, infrastructure needs, and ecological sustainability. Its successful implementation will require continued collaboration among the County Government, national government agencies, development partners, and the Koija community.

The County Government of Laikipia commits to championing the implementation of this Plan through coordinated departmental action, integration of its proposals into County development plans and budgets, resource mobilization, and effective monitoring of agreed interventions. We will strengthen collaboration with national government agencies, development partners, and the Koija community to translate the Plan’s priorities into measurable improvements in land governance, infrastructure, livelihoods, and environmental conservation. We recognize that the Plan’s success depends not only on its adoption but also on sustained investment, accountability, and collective responsibility.

This initiative provides an opportunity to demonstrate how participatory planning and responsible resource management can strengthen pastoral livelihoods, protect the environment, and promote inclusive development. It is our collective responsibility to ensure that Koija Community Land remains a valuable resource for present and future generations.

Signature.....

JOHN MWANGI GICHUKI

Chief Officer, Land & Physical Planning, Housing, Energy and Urban Development.

COUNTY GOVERNMENT OF LAIKIPIA



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TABLE OF CONTENTS

FOREWORD	iii
PREFACE	v
ACKNOWLEDGEMENT	vi
TABLE OF CONTENTS	viii
LIST OF MAPS	xiii
LIST OF FIGURES	xiv
LIST OF PLATES	xiv
LIST OF TABLES	xv
CHAPTER ONE: INTRODUCTION	1
1.1. Background.....	1
1.2. Justification of the Plan.....	3
1.3. Purpose of the Plan	4
1.4. Planning Context.....	4
1.4.1. Scope of Work	5
1.4.2. Location Context.....	5
1.5. History of Koiya Community Land	10
1.5.1. Pre-Colonial & Colonial Eras: Displacement and Group Ranches	10
1.5.2. Conservation Partnerships in the 2000s	10
1.5.3. The 2010 Constitution & Community Land Act Transition	10
1.6. Vision.....	11
1.7. Objective of the Plan.....	11
1.7.1. Overall Objective	11
1.7.2. Specific Objectives	11
1.8. Guiding Principles	12
1.8.1. Sustainable Land Use.....	12
1.8.2. Community Participation and Ownership.....	12
1.8.3. Environmental Sustainability	13
1.8.4. Climate Resilience	13
1.8.5. Use Of Space in a Way That Is Efficient and Compatible.....	13
1.8.6. Equity and Inclusivity	13
1.8.7. Accessibility and Connectivity	13
1.8.8. Safeguarding Community Living.	13
1.8.9. Wildlife Conservation	13
1.8.10. Integrated Development.....	14
1.8.11. Evidence-Based Planning	14



1.8.12. Conformance to Planning and Environmental Law	14
1.9. Approach and Methodology	14
1.9.1. Stakeholder and Community Engagement.....	14
1.9.2. Data Collection and Situational Analysis	15
1.9.3. GIS and Spatial Analysis	15
1.9.4. Land Suitability and Opportunity Analysis	16
1.10. Planning Issues and Priorities	16
1.10.1. Identification of Planning Issues and Priorities	16
1.10.2. The preparation of Spatial Development Proposals.....	16
1.10.3. Quality Assurance Plan.....	16
1.10.3. Validation and Approval.....	17
1.10.3. Monitoring and Review	17
1.11. Methodology.....	17
1.11.1. Overview	17
1.11.2. Purpose of Planning	18
1.11.3. Pre-planning.....	18
1.11.4. Preparation of the Base map	18
1.12. Primary data collection	21
1.12.3. Review of Existing Documents and Policy Frameworks	21
1.12.4. Overall Approach.....	22
1.13. Base map Updating and Data Analysis.....	22
1.13.1. Statistical Data Analysis Procedures and Tools.....	22
1.14. Public Participation.....	24
1.14.1. 1st Stakeholders Engagement	24
1.14.2. 2nd Stakeholders Engagement	28
CHAPTER TWO: LEGAL AND POLICY FRAMEWORK	30
2.1. Policy Frameworks	30
2.1.1. Kenya Vision 2030	30
2.1.2. Kenya National Spatial Plan, 2015	31
2.1.3. National Land Use Policy (Session Paper No 1 of 2017).....	32
2.1.4. Laikipia County Spatial Plan 2023-2033.....	32
2.2. Legal Framework.....	33
2.2.1. The Constitution of Kenya, 2010.....	33
2.2.2. The Physical and Land Use Planning Act, No. 13 of 2019	34
2.2.3. Community Land Act, 2016	34



2.2.4. County Government Act, 2012	35
2.2.5. National Land Commission Act, 2012.....	36
2.2.6. Environmental Management and Coordination Act (EMCA), 1999 (Revised)....	36
2.2.7. Forest Conservation and Management Act, 2016.....	36
2.2.8. Wildlife Conservation and Management Act, 2013	37
2.2.9. Climate Change Act, 2016	37
2.2.10. Land Act, 2012.....	37
2.2.11. Agriculture, Food and Fisheries Authority Act, 2013	38
2.2.12. Water Act, 2016	38
2.2.13. Urban Areas and Cities Act, 2011 (Revised 2019).....	38
2.2.14. Mining Act, 2016	38
2.2.15. Disaster Risk Management Principles	39
CHAPTER THREE: SITUATION ANALYSIS	40
3.0. Overview.....	40
3.1. Physiographic Dynamics	40
3.1.1. Hill shade Analysis	40
3.1.2. Relief/Aspect Analysis.....	40
3.1.3. Elevation Analysis	40
3.1.4. Climatic Conditions	45
3.1.5. Land Surface Temperature.....	49
3.1.6. Soil and Lithology.....	51
3.1.7. Land Tenure Distribution and Availability	54
3.1.8. Land Cover Change Analysis	59
3.1.9. Introduction to Agro-Ecological Zones	63
3.2. Site Analysis	68
3.2.1. Housing typology	68
3.3. Physical Infrastructure	70
3.3.1. Roads Network.....	70
3.3.2. Energy Sources	72
3.4. Demography Overview	74
3.4.1. Population Projections (10-Year)	75
3.4.2. Ten-Year Growth Projection.....	75
3.4.3. Population Growth and Land-Use Implications	77
3.5. Social Infrastructure.....	79
3.5.1. Solid and Liquid Waste management	79



3.5.2. Human Waste Management	80
3.5.3. Water Resources	81
3.6. Public Facilities.....	88
3.6.1. Health Facilities	88
3.7. Education Facilities.....	92
3.7.1. Emerging Issues and Planning Implications	97
3.8. Community Facilities.....	97
3.8.1. Emerging Issues and Planning Implications	99
3.8.2. Religious Institutions	100
3.8.3. Recreational Facilities.....	100
3.9. Economic Activities.....	102
3.9.1. Livestock.....	102
3.9.2. Casual Work.....	109
3.9.3. Eco-Tourism	110
3.10. Conservation Practices.....	114
3.10.1. Loss of Vegetation Cover	115
3.10.2. Invasion of Opuntia Species	116
3.10.3. Environmental Significance.....	117
3.11. Human Wildlife Conflict	118
3.11.1. Planning Implications	123
3.12. Visioning and SWOT Analysis.....	123
3.12.1. Approach and Methodology	124
3.12.2. Visioning.....	124
3.12.3. Overall, Vision Statement for Koiya Community Land	125
3.12.4. SWOT Analysis	125
CHAPTER FOUR: PLANNING PROPOSALS GUIDELINES AND STANDARDS	135
4.0. Overview.....	135
4.1. Proposed Human Settlement Strategy	135
4.1.1 Residential Areas and Settlement Consolidation	136
4.1.2 Educational Facilities.....	137
4.1.3 Commercial Activities and Public Facilities.....	137
4.1.4 Recreational and Community Facilities.....	138
4.1.5 Transportation and Accessibility	138
4.1.6 KETRACO Wayleave and Development Control	138
4.1.7 Green Bonds and Conservation Financing	139



4.1.8 Carbon Credits and Nature-Based Livelihoods	139
4.1.9 Integration of Settlement, Livestock, and Wildlife Strategies	140
4.1.10 Proposed Development Priorities	141
4.2 Proposed Livestock Development Strategy	144
4.2.1 Sustainable Rangeland Management and Forage Security	144
4.2.2 Livestock Productivity, Animal Health and Value Addition	145
4.2.3 Climate Resilience and Livelihood Diversification	146
4.2.4 Water Infrastructure, Governance and Human–Wildlife Conflict Management..	146
4.2.5 Green Bonds and Carbon Credits for Sustainable Livestock Development	147
4.2.6 Governance, Institutional Coordination and Community Participation.....	148
4.2.7 Integration with County and National Development Frameworks	148
4.2.8 Implementation Priorities for 2026–2036	149
4.3. Proposed Human–Wildlife Conflict Management Strategy	152
4.3.1. Existing Water Points	152
4.3.2. Proposed Dams and Strategic Water Provision	152
4.3.3. Protection of Wildlife Corridors and Conservation Areas.....	153
4.3.4. Solar-Powered Electric Fencing	153
4.3.5. Livestock Management and Rotational Grazing.....	154
4.3.6. Existing Security and Emergency Response Facilities	154
4.3.7. Proposed Southern Security and Wildlife Response Unit	155
4.3.8. Carbon Credits and Nature-Based Climate Financing.....	155
4.3.9. Green Bonds and Sustainable Conservation Financing	156
4.3.10. Community Participation, Governance, and Monitoring.....	157
4.3.11. Strategic Alignment and Implementation Partnerships	158
4.4: Proposed Land Use, General and Specific Standards and Guidelines.....	162
CHAPTER FIVE: IMPLEMENTATION FRAMEWORK.....	169
CHAPTER FIVE: MONITORING AND EVALUATION	175
5.1. Monitoring and Evaluation Framework.....	175
5.1.1. M&E Implementation Notes	182



LIST OF MAPS

Map 1: Location of Koija in National Context	6
Map 2: Location of Koija Community Land in County Context.....	7
Map 3 Koija Community Land in context of neighboring conservancies	8
Map 4 Koija Community Land as seen from an aerial context	9
Map 5: Koija Community Land Basemap	20
Map 6: Hillshade Analysis.....	42
Map 7: Elevation Map	42
Map 8: Relief Map	44
Map 9: Rainfall Distribution Map.....	48
Map 10: Koija Land Surface Temperature Variation	50
Map 11: Soil Map	52
Map 12: Lithology Map	53
Map 13: Land Tenure Distribution Map	56
Map 14: Land Availability Map	57
Map 15: Koija Land Cover Change 2014-2026.....	62
Map 16: Agro Ecological Map	67
Map 17: Road Network Map	71
Map 18: Water Accessibility Map	87
Map 19: Location of Ewaso Dispensary in Relation to Settlement	90
Map 20: Accessibility Index of Ewaso Dispensary	91
Map 21: Educational Facilities Accessibility Index	95
Map 22: Educational Institutions Distribution.....	96
Map 23: Koija Economic Activity Distribution.....	112
Map 24: Human Wildlife Conflict Hotspots.....	120
Map 25: Proposed Human Settlement Strategy	143



Map 26: Livestock Development Strategy	151
Map 27: Habitat Conservation and Human – Wildlife Co-existence Strategy	160
Map 28: Proposed Local Physical and Land Use Development (Zoning Plan) for Koija Community Land	161

LIST OF FIGURES

Figure 1 Long’oswani Hand Pump	85
Figure 3 Koija Dam on site	85
Figure 4 Water storage tanks on site	85
Figure 5 Ewaso River on site	85
Figure 5: Ewaso Primary School	93
Figure 6: Kipaika ECDE	93
Figure 7: Other ECDEs Within the Community Land.....	94
Figure 8: St Ann Nosirai Comprehensive School.....	94
Figure 9: Consequent Reaction to Drought	104

LIST OF PLATES

Plate 1: Community Members Engagement During the Inception Phase.....	25
Plate 2: Technical Expertise Engagement Meeting	26
Plate 3: Community Engagement Meeting	28
Plate 4 SWOT Analysis Meeting at Chui Mama Cultural Manyatta.....	29
Plate 5: Housing Typology on Site	69
Plate 6 Population and Land-Use Implications.....	77
Plate 7: Pit Latrine on Site	80
Plate 8: Ewaso Dispensary on Site.....	88
Plate 9 Chui Mama Center	98
Plate 10 Nosirai Self Help Group Initiatives	99



Plate 11: Religious Facilities	100
Plate 12 Recreational Facilities For the Community	101
Plate 13 Goats on site.....	105
Plate 14: Camels on the Community Land	107
Plate 15: A Chicken Pen	108
Plate 16: Bee Hives.....	109
Plate 17: Koiya Star Bed.....	110
Plate 18: Gullies on Site.....	116
Plate 19: Invasive Species and Control.....	117

LIST OF TABLES

Table 1: Population Size and Composition.....	74
Table 2: Population Growth Projection	76
Table 3: Koiya Water Resources	83
Table 4: Environmental Practices by the Community	114



CHAPTER ONE: INTRODUCTION

1.1. Background

Koiya Community Land is predominantly pastoral and semi-arid community landscape whose spatial evolution is very much tied to the pastoral production, natural resource availability, wildlife conservation, settlement pattern and access to social and economic infrastructure. Livestock is an important part of the community's livelihood and a significant proportion of households' livelihoods rely on goats and sheep. This dependency renders the community very dependent on pasture, water, rangeland resources, and the active livestock markets. Meanwhile, the community is facing more of the challenges that come with population growth, shifting population patterns, climate variability, environmental degradation, infrastructure, land and natural resource competition.

The existing settlement structure is characterized by dispersed homesteads, temporary and semi-permanent structures, and a concentration of more permanent residential and commercial developments around Ewaso Centre. As the key economic and service Centre of the community, Ewaso Centre will provide a significant mode of commercial, social service, transport and potential urban development. The road system also impacts settlement patterns and access to markets, health facilities, education, and other critical services. Access is however limited by the all-weather road connectivity and poor supporting infrastructure, especially during adverse weather conditions.

Natural resource base also is under growing stress in the community. Land cover analysis shows the variations in vegetation conditions through time, which include an increase in unhealthy vegetation and bare land. The long-term effects of drought, grazing, climate variability, and invasive species have been linked to these changes. These environmental challenges will compromise the productivity of rangelands and thus the livelihoods of livestock production systems. There are also several practices the community is already implementing to help preserve the land such as erosion control, planting trees, reseeding grasses and rotational grazing, and they have a good base from which additional coordination of land management activities can be established.

The landscape is also one of interaction between humans and their settlements and wildlife, in which Koiya exists. In some instances, wildlife corridors, wildlife access routes to water, grazing areas, and settlement areas coincide, leading to potential for conflict with humans and stress to ecological systems. A spatial framework is therefore required in the plan to ensure a



viable and sustainable life for the communities whilst minimizing conflicts, protecting the environmentally sensitive areas and ensuring that movement routes for wildlife are maintained.

The purpose of preparing the Local Physical and Land Use Development Plan is therefore to offer a coordinated spatial plan to direct the present and future development. The plan will incorporate settlement development, infrastructure provision, livestock production, conservation, environmental management, economic activities and community facilities within a framework of space agreed among partners. It will also serve as a foundation for managing land use and development and for coordinating investments, while allowing development to meet the needs, aspirations and environmental challenges of the Koiya community.

The community of Koiya has a number of complex spatial, socioeconomic, environmental and infrastructure issues that need to be addressed by coordinated intervention in the planning process. The pastoral economy is very resource-intensive, especially with regard to pasture and water. Rangeland resource base is under increasing stress due to intensifying grazing pressure, extended drought, degradation of the resource, invasive species and climate variability. Lack of vegetation cover decreases the carrying capacity of a grazed area and may result in a degradation cycle that sees livestock become more concentrated where there is still vegetation, causing more damage to those areas.

Settlement development is also fragmented with limited planning of supporting infrastructure and services in some places. Although Ewaso is now a major economic centre, the area around Ewaso is still mostly sparsely populated with little development. The current road network is important for connectivity but may need upgrade to ensure that all roads can be used in both wet and dry conditions. Poor road connectivity, facilities may limit access to markets, education, health services and other facilities, especially in inclement weather.

Inadequate planning and management of land uses also pose issues for the community. If no spatial planning is in place, future settlement growth, infrastructure, commerce, grazing and conservation and other land uses can develop in ways that lead to conflicts or to a degradation of the long-term productivity of community lands. Specific threats are settlement encroaching on environmentally sensitive areas and wildlife corridors, land use that is not compatible with the landscape, limited supply of public facilities, and inefficient distribution of land use for future development. Environmental degradation is another major challenge for planning. The vegetation condition has changed, bare land is increasing, soil erosion is occurring and invasive plants like *Opuntia* are affecting the ecological functioning and productive potential of the



landscape. While households are taking steps to conserve, interventions are largely at the household level and need to be better coordinated across space.

A comprehensive Local Physical and Land Use Development Plan is therefore required that is able to coordinate land uses, infrastructure, environmental conservation, settlement development, economic activities and community services. Without such an integrated spatial framework, sustainable development can be affected, land-use conflicts can grow, and the community will have less capacity to effectively address climate and socioeconomic change.

1.2. Justification of the Plan

The justification for the Koiya Local Physical and Land Use Development Plan is the need to create an integrated, legally recognized spatial framework to guide sustainable development and management of community land. There is a finite amount of land, and competing uses for settlements, livestock production, conservation, infrastructure, economic activity and social services necessitate a deliberate spatial coordination.

A key opportunity presented by the plan is to shift from primarily reactive responses to land and environmental issues to proactive and coordinated planning. This is especially important in light of signs of degradation of vegetation, the growing pressure on rangelands, drought susceptibility, and human-wildlife interactions. Spatial planning can help to define settlement areas, grazing areas, conservation areas, infrastructure areas, economic development and other land-use areas and minimize incompatible uses.

The plan is also important to assist in the development of Ewaso Centre as the main economic and service center with well planned growth. Commercial activities, public facilities, roads, sanitation and waste management, housing and other infrastructures can be prevented from encroaching on land and the land can be used optimally with proper planning. Another reason for the plan is the desire to enhance infrastructure and access. Old roads are significant for the access of residents to markets and social services, and some need upgrading to all-weather roads and enhanced drainage. A spatial framework would help to prioritize and align infrastructure investments with existing and proposed settlement areas.

The plan will also enhance environmental conservation by delineating and safeguarding environmentally sensitive areas, such as wetlands, river systems, wildlife corridors, woodland areas, degraded landscapes and more. There is a legal and policy structure in place for protecting the environment, community land management, coordinated infrastructure development and control of land development.



The planning process affords the greatest opportunity for the community to say what they want the future of their land to look like. Participatory planning provides a way to integrate local knowledge, community priorities, livelihoods systems, cultural factors and development aspirations into the final spatial proposals. This enhances the ownership of the plan and the chances of plan implementation.

1.3. Purpose of the Plan

The Koija Local Physical and Land Use Development Plan aims to offer a detailed spatial plan to support sustainable, coordinated and equitable management and development of Koija Community Land for the plan period. In particular, the plan aims to;

- Ensure the development of settlements and economic centers are orderly and sustainable.
- Provide an appropriate spatial structure for Ewaso Centre and other emerging activity areas.
- Guide the allocation and compatibility of different land uses.
- Organize the provision and upgrade of social, economic, physical and transport infrastructure.
- Conserve and manage rangelands, water, wildlife corridors, woodlands and wetlands and other environmentally sensitive areas in a sustainable manner.
- Enhance pastoral livelihoods' resilience through better grazing, livestock, water and resource management.
- Detect the places where environmental restoration and conservation actions are needed.
- Develop a plan on how to deal with human-wildlife interactions and minimize land-use conflicts.
- Direct future public and private investment in a clearly defined spatial development priority. Outline guidelines to control land subdivision, construction, provision of infrastructure and incompatible uses.
- Increase community involvement and control in land use and development planning.
- The objectives are in line with the functions of a Local Physical and Land Use Development Plan in the planning context in Kenya, which encompasses zoning, coordination of infrastructure, controlling land development, coordinating sectoral agencies and providing guidelines for development.

1.4. Planning Context

Koija Community Land is located in Laikipia County within Laikipia North Sub-County and falls administratively under Mukogodo West Ward. The community land covers an area of



approximately 7,554.0 hectares, functions primarily for communal pastoral grazing, conservation, and tourism, and comprises five villages Mutaro, Nosirai, Koija, Munishoi and Rongai. It serves 1,130 registered members as at the 2023 community register.

1.4.1. Scope of Work

The scope of the planning area covers the entire spatial extent of the delineated Koija Community Land, encompassing an approximate total planning area of 7,554 hectares. This core area serves as the primary zone of preference for community-led resource management, rotational grazing, infrastructure placement, and conservation zoning over the next 10-year planning horizon. The surrounding functional hinterland—extending across the broader Naibunga Community Conservancy network and bordering units such as Ilmotiok and Tiemamut—represents the outer spatial sphere that absorbs seasonal livestock movements, regional wildlife corridor dynamics, and shared hydrological impacts along the Ewaso Ng'iro River basin.

1.4.2. Location Context

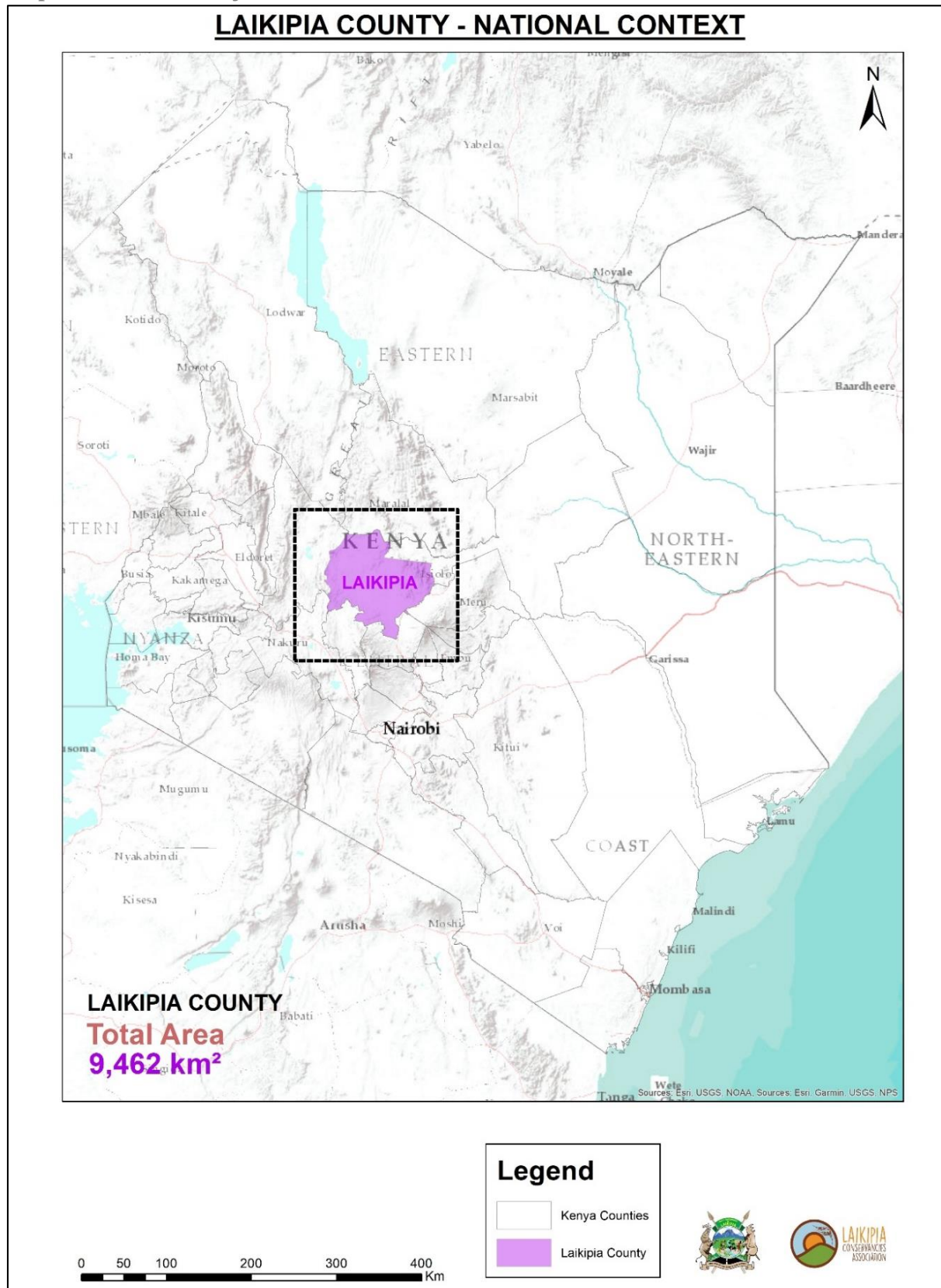
Koija community land is located within Laikipia county. The County lies along the Equator and is bounded to the east by the lower slopes of Mt. Kenya; to the south-west by the Aberdare's Ranges; and to west by the Rift Valley escarpment. Laikipia County borders Samburu County to the north, Isiolo County to the Northeast, Meru County to the southeast, Nyeri County to the south, Nyandarua County and Nakuru County to the south west and Baringo County to the West. It lies between longitudes 36° 00' and 37° 45' east and between latitude 00° 30' South and 1° 00' north.

Koija community land lies along the northern and eastern borders of the county, situated within Mukogodo West Ward, Laikipia North Sub-County, bordering by Oldonyiro to the North, to the East by Tiemamut, to the South by Ilmotiok, and to the West by Segera Ward and Sosian Ward. It covers an area of approximately 75.54 km² (7,554 hectares), bounded geographically between 0° 29' 30" N to 0° 34' 10" N Latitude, 36° 51' 25" E to 36° 58' 00" E Longitude.

The area is accessible via regional unpaved access corridors and feeder tracks connecting through Laikipia North. Geographically, the terrain transitions from riverine floodplains along its northern boundary—defined by the Ewaso Ng'iro River basin—to broken escarpments and fragile slope formations, serving as a vital bridge for both pastoral grazing routes and wildlife migration.



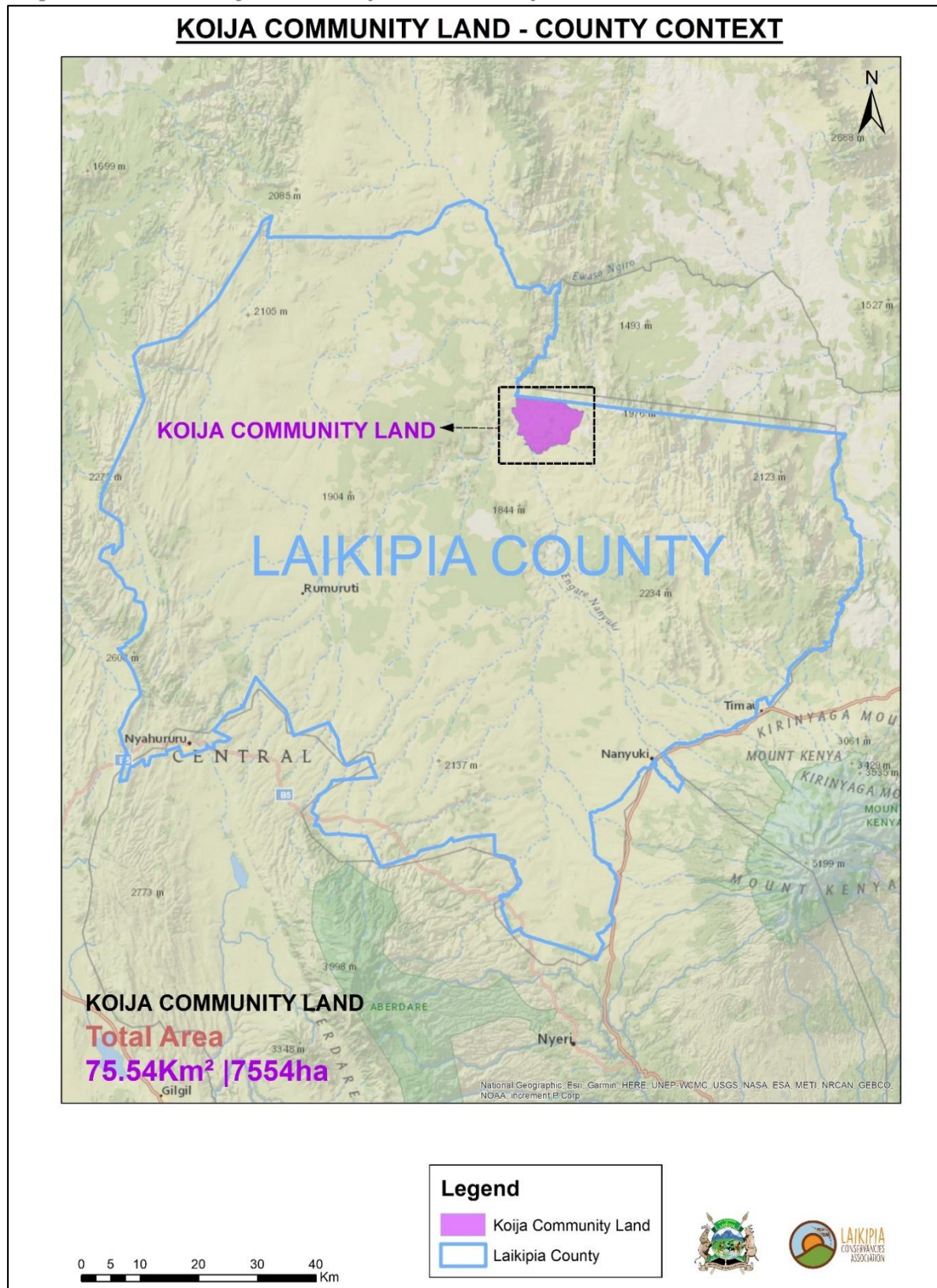
Map 1: Location of Koija in National Context



Source: Compiled from Survey of Kenya Data, 2026



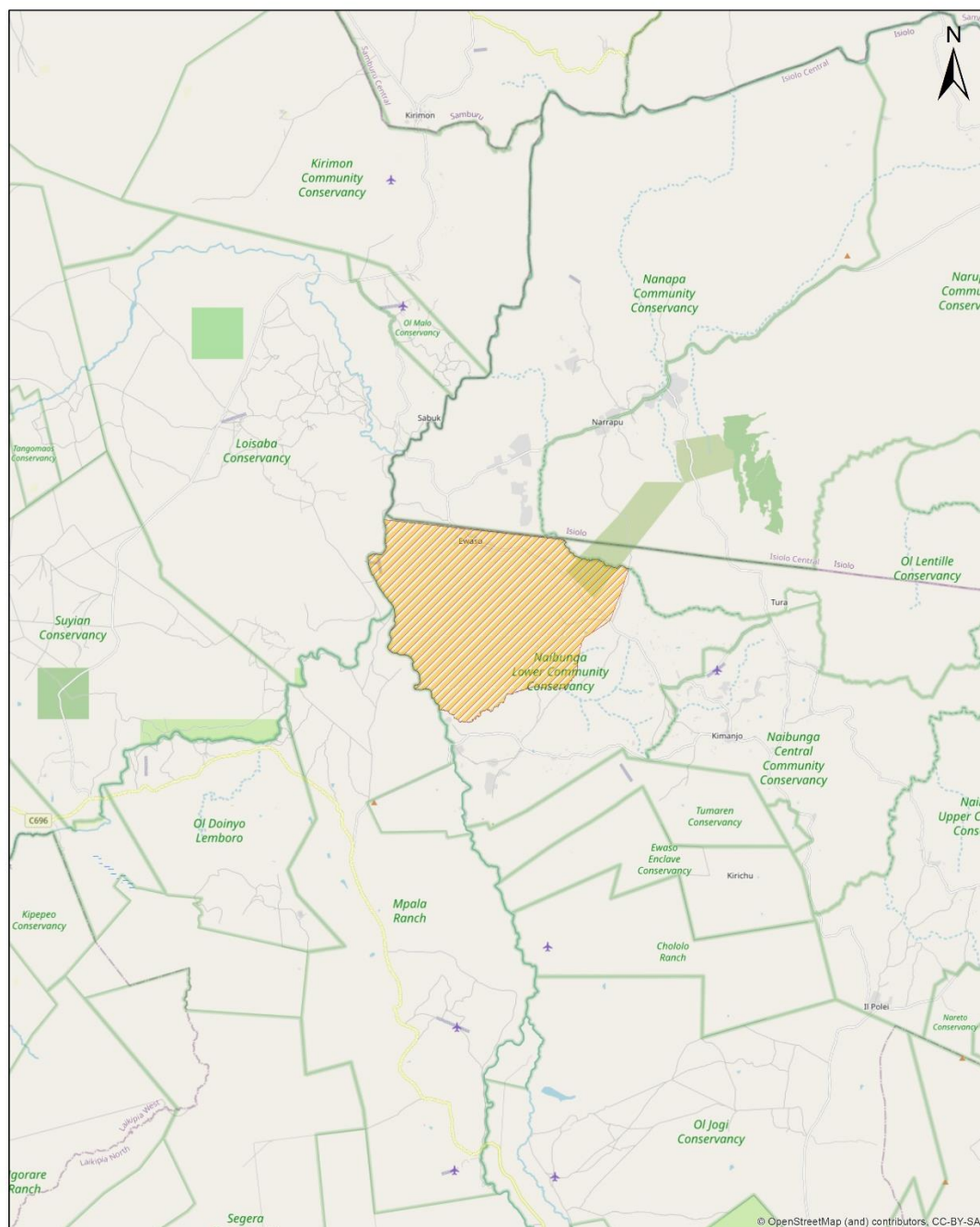
Map 2: Location of Koija Community Land in County Context



Source: Compiled from Survey of Kenya, 2026



KOIJIA COMMUNITY LAND



Legend

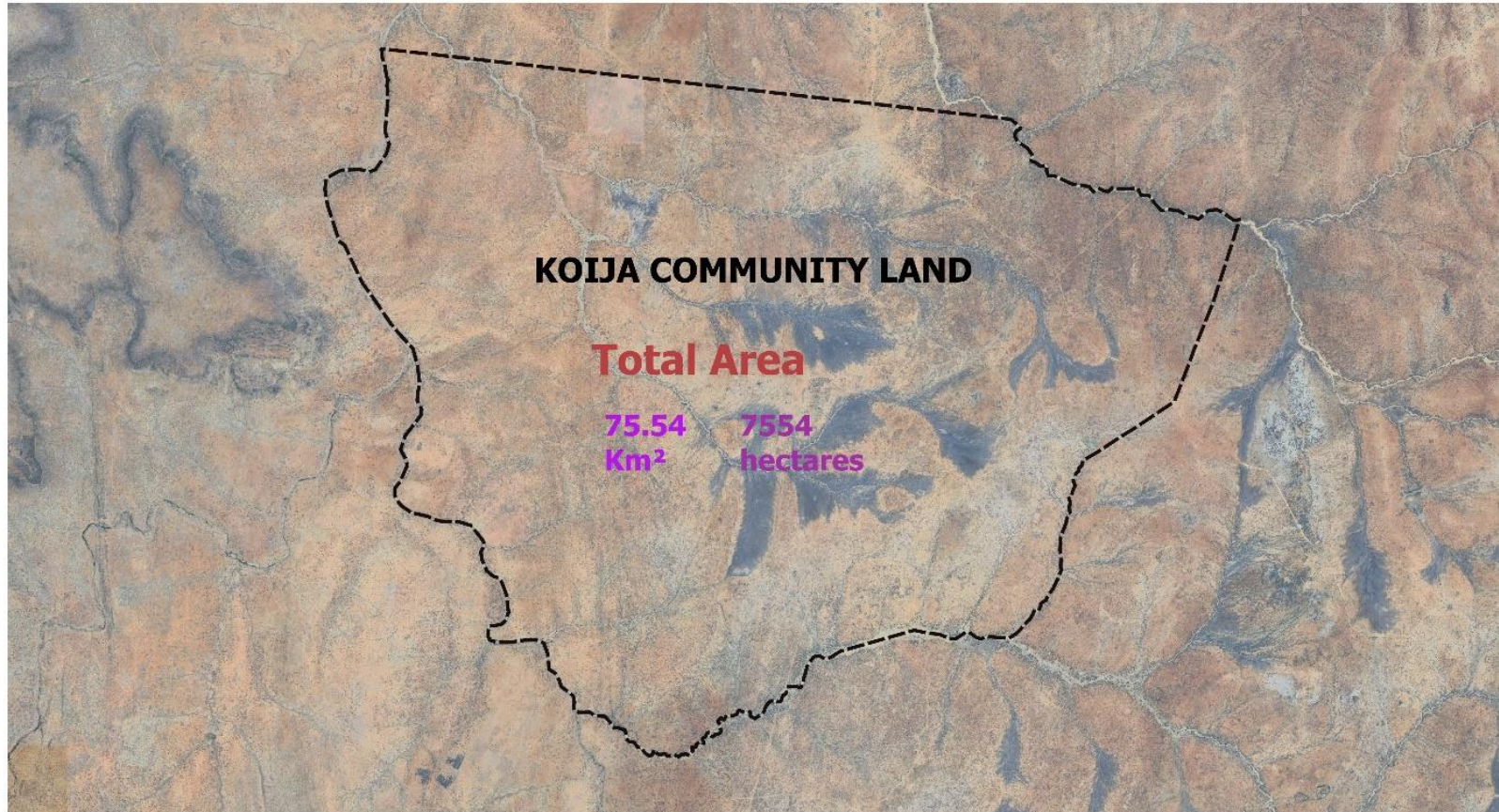
 Koiya Community Land



Map 3 Koiya Community Land in context of neighboring conservancies



KOIJA COMMUNITY LAND AREA EXTENT



Legend
□ KOIJA COMMUNITY LAND BORDER

1:50,000

0 2.5 5 km



Map 4 Koija Community Land as seen from an aerial context



1.5. History of Koija Community Land

1.5.1. Pre-Colonial & Colonial Eras: Displacement and Group Ranches

Koija has historically been inhabited predominantly by pastoralist communities mainly of Laikipiak and Yiaku-Maasai lineages who utilized the Ewaso Ng'iro River basin for seasonal livestock grazing and watering.

Anglo-Maasai Treaties forced indigenous pastoralists into designated reserves, converting surrounding fertile plateaus into private white settler ranches.

During the post-colonial land registration push of the 1970s, the land was formally registered under the Land (Group Representatives) Act (Cap 287) as Koija Group Ranch to secure collective land tenure for local pastoralist families.

1.5.2. Conservation Partnerships in the 2000s

Due to increased population pressures, human-wildlife conflict, severe cyclical droughts, and rangeland degradation over the subsequent decades, the community was prompted to seek collaborative landscape-level management solutions.

In 2002, in partnership with the neighboring private Loisaba Conservancy, Koija Group Ranch entered a joint eco-tourism venture. This led to the creation of the Koija Star beds Lodge, built on Koija land along the Ewaso Ng'iro River.

Revenues from the Star beds were directly funneled into community development funds, financing local schools, health clinics, and education bursaries. This established a template for joint-venture conservation ranches in northern Kenya.

In 2004, Koija joined eight neighboring group ranches including Munishoi, Ilpolei, Tiemamut, Ilmotiok, Kijabe, Musul, Nkiloriti and Morupusi to establish the Naibunga Community Conservancy, with a mission to harmonize wildlife conservation, rangeland restoration, and sustainable community livelihoods.

1.5.3. The 2010 Constitution & Community Land Act Transition

In 2016, the Community Land Act was passed and the Koija community land in Laikipia North Sub-County transitioned from a group ranch into a registered 7,554-acre community land parcel holding an official title deed.



Under this modern framework, the registered Community Land Management Committee (CLMC) oversees structured spatial zoning—balancing settlement nodes, educational and public utility facilities, rotational grazing blocks, and protected riparian buffers.

1.6. Vision

A resilient, well-planned and economically vibrant Koiya Community Land where sustainable pastoral livelihoods, thriving settlements, infrastructure development, environmental conservation and wildlife coexistence are harmoniously integrated for the benefit of present and future generations.

1.7. Objective of the Plan

1.7.1. Overall Objective

To create an integrated and participatory spatial plan for sustainable land use management and coordinated physical development and to enhance livelihoods, infrastructure, environmental resilience and wellbeing in Koiya Community Land.

1.7.1.1. Main Objectives

- Regulate use of land and ensure development activities conform to the Laikipia County Spatial Plan guidelines.
- Guide and coordinate development of infrastructure and provision of housing and public facilities.
- Guide development in an integrated and coordinated manner to promote sustainable urban development.
- Provide a basis for tenure regularization in the targeted market centres.
- Provide a framework for coordinating various sectoral agencies and interests.

1.7.2. Specific Objectives

- To encourage settlement development to be orderly based on appropriate spatial allocation, zoning, development control and provision of supporting infrastructure.
- To support the development of Ewaso Centre as the main economic and service center through guiding its commercial, residential, institutional, transport and public service development.
- To identify and develop the priority areas for upgrading infrastructure such as roads, drainage, pedestrian/road connectivity, water supply, energy, communication and other infrastructure.



- To encourage sustainable management of rangelands by identifying areas for grazing on a spatial basis, by implementing controlled grazing and rotational grazing, by rehabilitating degraded pastures and by ensuring access for livestock to water.
- To conserve and rehabilitate environmentally important sites, such as wetlands, watercourses, woodlands, corridors for wildlife, degraded rangelands and other ecological resources.
- Enhance climate resilience capacities by incorporating drought preparedness, environmental restoration, sustainable use of resources and climate-smart land-use planning in development proposals.
- To minimize land-use conflicts and human-wildlife conflict by demarcating settlement, livestock, conservation and wildlife movement areas and implementing suitable spatial management solutions.
- To encourage livelihood diversification and local economic development via reasonable use of the land for markets, tourism, small businesses, value addition and other income generation activities.
- To enhance the provision of social facilities by determining suitable areas and land needs for community facilities such as health, education, recreation, administration, sanitation and others.
- To improve participatory governance by engaging in community knowledge, priorities and aspirations in spatial planning, implementation, monitoring and review.

1.8. Guiding Principles

The following principles are to be used for the preparation and implementation of Koiya Local Physical and Land Use Development Plan:

1.8.1. Sustainable Land Use

Land shall be used and planned to ensure that both future and current communities can meet their needs. The ecological capacity and long-term productivity of the land shall be taken into consideration in the development proposals.

1.8.2. Community Participation and Ownership

The community has been a key player in the planning and implementation process. Spatial proposals shall be based on local knowledge, community priorities, livelihood practices and development aspiration. Participatory planning is critical for a community land as it fosters ownership and enhances implementation.



1.8.3. Environmental Sustainability

Appropriate use of land shall consider environmental conservation. The water resources, wetlands, woodlands, wildlife habitat, wildlife corridors, and degraded areas shall be identified, protected, restored, and managed appropriately.

1.8.4. Climate Resilience

The plan will take into consideration the vulnerability of the pastoral economy of Koija to drought and climatic variability. All land-use proposals will therefore support resilient livelihoods, sustainable grazing systems, water security, rangeland restoration, and climate responsive infrastructure.

1.8.5. Use Of Space in a Way That Is Efficient and Compatible

Land shall be allocated based on its suitability, capacity, access and strategic importance. Competing uses of land shall be segregated or accommodated on a compatible basis; compatible uses of land shall be integrated.

1.8.6. Equity and Inclusivity

Planning fosters equitable distribution of land, infrastructure, services, economic opportunity and community facilities. The needs of women, youth, persons with disabilities, vulnerable households and others shall be taken into consideration.

1.8.7. Accessibility and Connectivity

Development should facilitate effective movement of people, animals, products and services. Settlements will be linked to markets, health facilities, education facilities, economic centers and other critical facilities.

1.8.8. Safeguarding Community Living.

Livestock will be an integral part of the local economy and spatial planning shall preserve sufficient grazing land, animal trafficking routes, water sources and other resources that are required for pastoral production. The existing evidence indicates high reliance on livestock and thus the importance of increasing pastoral resilience and promoting livelihood diversification.

1.8.9. Wildlife Conservation

The plan will be based on the principle that wildlife conservation is an important land use but that community livelihood and human safety are paramount. Areas for wildlife corridors and dispersal shall be recognized and preserved from unacceptable development.



1.8.10. Integrated Development

Physical development shall not be assessed by itself. Spatial planning of settlement, infrastructure, environment, livelihoods, economic development, social services and governance shall be integrated.

1.8.11. Evidence-Based Planning

All planning decisions were based on field surveys, community consultations, spatial analysis, GIS, remote sensing, demographic information, infrastructure assessment, environmental analysis and other reliable evidence. Future planning decisions shall be supported by periodic monitoring, through the use of GIS and remote sensing.

1.8.12. Conformance to Planning and Environmental Law

All development proposals and interventions shall be implemented within the guidelines of the Constitution of Kenya, the Physical and Land Use Planning Act, the County Governments Act, Environmental Legislation, Wildlife Legislation and other relevant national and county policies and regulations. Local physical and land use planning is guided by the main statutory requirements of the Physical and Land Use Planning Act, 2019.

1.9. Approach and Methodology

In the preparation of the Koija Local Physical and Land Use Development Plan, integration, participatory, evidence-based, spatial and multi-sectoral planning approach was adopted. The methodology acknowledges that land-use planning is a process that considers the interplay between the physical environment, settlement systems, infrastructure, livelihoods, socioeconomic conditions, ecological resources and community aspirations.

1.9.1. Stakeholder and Community Engagement

Participatory method used for all planning. Consultation, meetings, interviews, focus group discussions, workshops and validation forums involved community members, community institutions, county departments, national government agencies, development partners, local leaders, private-sector actors and other relevant stakeholders.

The goal of participation should be to learn about the needs, challenges, priorities, potential, conflicts and concerns the community faces, the gaps in infrastructure, and what the community wants. The way will also make sure that planned action is socially acceptable and implementable in the locality.



1.9.2. Data Collection and Situational Analysis

Both primary and secondary data were used. Field observations, household surveys, key informant interviews, community consultation, GPS surveys, infrastructure assessments, and photographic documentation will be used to obtain primary data. Secondary data should comprise existing plans, administrative data, census data, environmental data, infrastructure data, satellite imagery, maps and other policy and legal documents.

The situational analysis will look at;

1.9.2.1. Population and Demographic Features.

- Existing settlement patterns.
- Land ownership and land-use.
- Housing & building conditions.
- Road and transport facilities.
- water and sanitation.
- Energy and communication facilities.

1.9.2.2. Social Facilities;

- Economic activities and livelihoods.
- Livestock production and grazing systems.

1.9.2.3. The Environment, Resources and Constraints.

- Wildlife habitats and corridors.
- Global climate change.
- Climate-related risks.
- Existing and emerging development centers.
- Community development priorities.

1.9.3. GIS and Spatial Analysis

Geographic Information Systems (GIS) should serve as a fundamental tool for spatial data management, analysis, mapping and decision making. Current and new spatial data published was added to a common geospatial database.

GIS analysis was used to determine settlement patterns, roads and road accessibility, environmental constraints, land-cover changes, wildlife corridors, areas for grazing, water resources, infrastructure gaps, development opportunities and areas for conservation and restoration.



Remote sensing and land-cover analysis shall also be used to assist monitoring of vegetation conditions and environmental change. Especially given that the current analysis suggests there are likely to be large changes in vegetation condition from 2014 to 2026.

1.9.4. Land Suitability and Opportunity Analysis

The suitability of land was analyzed to decide suitable locations for various land uses and development functions. Geophysical features like topography, soils, drainage, water resources, land cover existing at the time of the study, accessibility, environmental sensitivity, and settlement patterns shall be considered.

The analysis will be used to identify appropriate expansion of settlement, economic activities, public facilities, infrastructure, grazing, conservation, tourism and other strategic use of the area.

1.10. Planning Issues and Priorities

1.10.1. Identification of Planning Issues and Priorities

The information resulting from the fieldwork, spatial analysis, stakeholder consultation and secondary information compiled to help in the identification of the main planning issues and opportunities. These will encompass infrastructural shortcomings, settlement issues, environmental problems, vulnerability to livelihood activities, land use disputes, access to services, economic opportunities and protection needs.

Then the issues will be ranked based on their severity, geographical range, community significance, environmental impacts, tractability, and potential for long term development.

1.10.2. The preparation of Spatial Development Proposals.

Alternative scenarios of spatial development shall be developed and analyzed based on the situational analysis and identified priorities. The desired scenario shall be the basis for the proposed land use structure.

The settlement hierarchy, zoning, infrastructure networks and networks for economic activity, public facilities, grazing and conservation areas, environmental protection zones, wildlife corridors and transport networks shall be included in the settlement proposals, as shall be areas for future development.

1.10.3. Quality Assurance Plan

The plan shall provide guidelines for future physical development including construction, land subdivision, change of user, infrastructure development, settlement expansion and other



development activities. The guidelines should encourage compatible land uses, protection of the environment, provision of adequate infrastructure and orderly development.

An implementation framework shall define priority projects, responsible institutions, indicative timelines, resource needs and possible sources of financing. This will allow the plan to be a spatial document as well as a practical development management document.

1.10.3. Validation and Approval

Proposals shall be drafted and presented to stakeholders and community for validation. Input received from the validation should be used in the final plan, as appropriate. The statutory approval process will then proceed as per the Physical and Land Use Planning Act and other relevant legislation. The Act requires that local physical and land use development plans be notified to the public, be inspected, submitted for comments and objections, and be approved.

1.10.3. Monitoring and Review

Monitoring implementation of the plan shall be conducted through agreed indicators of land use change, infrastructure provision, environmental condition, settlement growth, economic development and community services. GIS and remote sensing can be used periodically to monitor land-cover and development changes and provide evidence for future planning decisions.

The plan shall be updated on a regular basis to ensure that it is responsive to changes in population, climate, economic, infrastructure, environmental and community needs.

1.11. Methodology

1.11.1. Overview

The preparation of the Koija Local Physical and Land Use Development Plan involved a structured approach to data collection, analysis, and stakeholder engagement to ensure informed and sustainable decision-making. The process began with community meetings to brief the community on the purpose of planning so that they could articulate the needs and priorities of their community. The process was followed by data collection, which includes field surveys, GIS mapping, remote sensing, and stakeholder consultations. The data was then analyzed using statistical and spatial tools to identify trends, opportunities and challenges. Community engagement and participation were integrated throughout the process. Finally, findings are then compiled into a comprehensive land use plan with strict adherence to legal frameworks and sustainable development principles.



1.11.2. Purpose of Planning

Effective planning is vital for managing land use, guiding development, and ensuring sustainable growth especially for critical areas like Koiya. It prevents unregulated expansion, promotes efficient infrastructure, and fosters economic opportunities while safeguarding the environment. Good planning guarantees access to essential services such as roads, water, and public spaces while addressing social equity and community needs. It also ensures compliance with legal frameworks, minimizes land disputes, and strengthens climate resilience.

1.11.3. Pre-planning

A desk review was carried out prior to and during the reconnaissance survey of Koiya Community Land to gather and analyze existing information relevant to the study area. This involved reviewing available maps, reports, satellite imagery, and previous studies to understand the physical features, land-use patterns, and resource distribution within the area. The information obtained helped guide fieldwork planning, identify key areas of interest, and support the validation of field data. It also provided a baseline for comparison with current observations, improving the accuracy and completeness of the final results.

1.11.4. Preparation of the Base map

A reconnaissance survey was conducted within Koiya Community Land using the UTM Geo Map to identify, locate, and map both natural and man-made resources. The survey aimed to obtain a general understanding of the area's physical features, land use, and resource distribution before undertaking detailed field mapping and assessment. The exercise involved traversing the community land and documenting key natural resources such as rivers, seasonal laggas, sand-harvesting sites, grazing areas, wildlife corridors, viewpoints, and water resources, as well as man-made resources including roads, schools, health facilities, boreholes, dams, water pans, churches, cultural manyattas, and settlement areas. All this is then spatially analyzed for the formulation of a base map



WYSS
ACADEMY
FOR NATURE







1.12. Primary data collection

These are the primary data collection methods

1.12.1. Field Surveys and On-Site;

Assessments Physical surveys are carried out to evaluate the land, record existing conditions, and collect spatial data on:

- **Current Land Use;** Identifying residential areas, educational facilities, public utilities, conservation zones, commercial spaces, and community amenities.
- **Topography and Natural Features;** Mapping rivers, caves, hills, forests, and other physical features.
- **Infrastructure and Services;** Assessing the availability of roads, electricity, water supply, and social amenities.

1.12.2. Remote Sensing and GIS

Modern geospatial tools are applied to capture and analyze land-related information through:

Satellite Imagery; Offering high-resolution views of land cover and settlement patterns.

GIS (Geographic Information Systems) Analysis; Mapping and examining spatial relationships, zoning, extents, and development trends.

1.12.3. Questionnaire Surveys

Structured and semi-structured questionnaires are distributed to households, businesses, and institutions to gather first-hand insights on:

- Landownership and preferred land use
- Socio-economic conditions and livelihood activities
- Housing requirements and infrastructure needs
- Perceptions of environmental sustainability and land management

1.12.3. Review of Existing Documents and Policy Frameworks

A review of relevant legal, policy, historical, and planning documents will provide the necessary background for the preparation of the plan and ensure compliance with applicable laws and regulations. This will include:

- **Land Ownership and Tenure Records** – Reviewing available title deeds, land registry information, ownership records, and customary land tenure arrangements.



- **National and County Planning Policies** – Assessing relevant national and county policies, legislation, plans, and development frameworks to ensure that the community land use plan is properly aligned with existing planning requirements.
- **Previous Land Use Plans and Development Reports** – Examining previous planning initiatives, development reports, and related studies to identify achievements, challenges, and lessons that can inform the current planning process.

1.12.4. Overall Approach

The preparation of the Koiya Community Land Use Plan will integrate spatial analysis, stakeholder and community engagement, policy and document review, and environmental assessment. Combining these approaches will provide a comprehensive understanding of the community land, while ensuring that the planning process is participatory, evidence-based, and responsive to local conditions. The resulting land use plan will therefore seek to address the needs and aspirations of the community while promoting sustainable and well-coordinated development.

1.13. Base map Updating and Data Analysis

1.13.1. Statistical Data Analysis Procedures and Tools

The analysis of data collected during the preparation of the Koiya Community Land Use Plan will involve the application of systematic statistical and spatial analysis methods to ensure that the information generated is accurate, reliable, and useful for decision-making. The analysis will cover both qualitative and quantitative data and will provide insights into existing land use patterns, socio-economic conditions, environmental characteristics, and development trends.

1.13.1.1. Statistical Data Analysis Procedures

1. Data Cleaning and Validation

- Prior to analysis, the collected data will be reviewed, cleaned, and validated to ensure completeness, accuracy, consistency, and reliability. The process will involve:
- Identifying and correcting errors, including duplicate, incomplete, or missing data.
- Standardizing data formats, units of measurement, Projections, and classifications to ensure consistency across datasets.
- Identifying and addressing outliers or unusual observations that may affect the accuracy of the analysis.
- Cross-checking information from different sources to verify its reliability and consistency.



2. Spatial Data Analysis

Considering the geographic nature of community land use planning, spatial analysis will be undertaken to identify patterns, relationships, trends, and areas of concern within Koiya Community Land. Key techniques will include:

- **Geostatistical Analysis** – Examining spatial relationships and variations between land use, environmental conditions, population distribution, and other relevant factors.
- **Hotspot Analysis** – Identifying areas with concentrations of development activities, environmental risks, infrastructure demand, or other significant spatial patterns.
- **Spatial Overlay Analysis** – Integrating different spatial datasets to identify suitable areas for various land uses and development activities.

1.13.1.2. Statistical Data Analysis Tools

a. Microsoft Excel and Google Sheets

Microsoft Excel and Google Sheets will be used for basic data management and statistical analysis. Their applications will include:

- Cleaning, organizing, and tabulating collected data.
- Generating descriptive statistics such as frequencies, percentages, averages, and totals.
- Producing charts, graphs, and pivoting tables for data visualization.
- Conducting basic correlation and regression analysis where applicable.

b. GIS Software (ArcGIS and QGIS)

ArcGIS and QGIS will be used for spatial data processing, analysis, visualization, and map production. These platforms will support:

- Spatial analysis and mapping of land use and socio-economic characteristics.
- Integration of statistical information with geographic datasets.
- Land use and land cover classification.
- Spatial suitability analysis for proposed development activities.
- Remote sensing analysis and interpretation.
- Assessment of environmental conditions and potential development impacts.

c. Data Visualization Techniques

Data visualization will be used to present the results of the analysis in a clear and easily interpretable manner. The following techniques will be applied:



- **Bar and Pie Charts** – To illustrate the distribution and proportions of different land use categories, socio-economic characteristics, and other variables.
- **Histograms** – To examine the distribution of demographic, infrastructure, and other quantitative variables.
- **Maps and Heat Maps** – To illustrate spatial patterns, concentrations, development intensity, environmental risks, and other geographic characteristics.
- **Thematic Maps** – To communicate spatial variations in land use, natural resources, infrastructure, population, and other planning variables.

Conclusion

The integration of statistical analysis, spatial analysis, GIS, and data visualization techniques will provide a comprehensive, evidence-based approach to the planning of Koija Community Land. These methods will facilitate the identification of existing land use patterns, socio-economic conditions, environmental characteristics, and emerging development trends. The resulting analysis will provide a reliable basis for identifying development opportunities and constraints and for guiding informed, sustainable, and community-responsive land use planning decisions.

1.14. Public Participation

1.14.1. 1st Stakeholders Engagement

1.14.1.1. Free Prior Informed Consent (FPIC Program)

A community land Baraza was held on 9th June 2026 at Koija Community Land, attended by the community assembly, elders, the area chief and assistant chief, the CLMCs, county staff, NLC representatives, the area MCA, LCA representatives, and neighboring community representatives from Tiemamut and Loisaba.

Key outputs of this stage included:

- Identification of planning issues and an inventory of existing resources within the community land.
- Preliminary vision and objectives for the plan.
- Consensus building and broad community support for the process.
- Appointment of five community volunteers to accompany the planning team in resource mapping.

NO	VOLUNTEER	VILLAGE
1.	Lenakordo Naiputari	Nosirai
2.	Kumbau Lodonkare	Koiya
3.	Leseti	Ilmunishoi
4.	Lenanguis Manyas	Mutaro
5.	Susan Parsulan	Nosirai

The community chairman emphasized that the land-use exercise is community-driven, with LCA providing funding support and government officials providing technical expertise. The area MCA highlighted the critical importance of transparency in allocating land for public purposes.

Plate 1: Community Members Engagement During the Inception Phase



1.14.1.2. Expertise Inception Engagement Meeting

The inception meeting was held at Jaqanaz Hotel, Nanyuki–Narumoru area, and brought together key government institutions, technical experts, development partners, private-sector representatives, community stakeholders, and other relevant actors involved in the preparation of the Local Physical and Land Use Development Plan (LPLUDP).

The meeting provided an opportunity to introduce the planning process, establish a common understanding of the objectives and scope of the plan, and bring together institutions and stakeholders whose mandates, interests, resources, and technical expertise are relevant to physical and land-use planning. It also provided a platform for stakeholder engagement,



coordination, identification of key planning issues, and clarification of the respective roles and responsibilities of participating institutions.

The broad representation at the meeting underscored the **multi-sectoral and participatory nature of the planning process**. The participation of national and county government institutions, local leadership, communities, private-sector actors, environmental agencies, infrastructure providers, and development partners is expected to strengthen coordination and ensure that the plan reflects the diverse development needs, opportunities, environmental considerations, and land-use interests of the planning area. The meeting further established a basis for continued consultation and collaboration throughout the preparation, validation, approval, and implementation stages of the Local Physical and Land Use Development Plan.

Plate 2: Technical Expertise Engagement Meeting





1.14.1.4. Community Inception Meetings

The first community participation meeting was held at Koiya Star bed as a flagship meeting to officially kick-start the preparation process for the Local Physical and Land Use Development Plan for Koiya.

The meeting brought together members of the local community and neighboring stakeholders to create awareness and build a common understanding of the planning process.

During the meeting, community members were sensitized on the importance of land-use planning, the purpose and objectives of the proposed plan, and the expected benefits to the Koiya community. Residents were also briefed on the overall planning process, including the various stages of plan preparation and the importance of their active participation in shaping the future development and land-use structure of the area.

The community participation schedule was presented and explained to the residents, outlining the opportunities and stages at which they would be engaged throughout the planning process. Emphasis was placed on ensuring that local knowledge, community priorities, concerns, and aspirations are adequately incorporated into the plan.

To ensure broad and inclusive participation, three community participation meetings were held during this phase. The meetings provided an opportunity to engage the wider Koiya community as well as neighbouring stakeholders, thereby ensuring that the planning process captured diverse perspectives and strengthened community ownership of the proposed land-use plan.



Plate 3: Community Engagement Meeting



1.14.2. 2nd Stakeholders Engagement

The Koiya Community Assembly meeting happened on the 18th of August 2026. This meeting brought together community leaders, CLMC members, community representatives, government officers, and other stakeholders to review the progress of the Community Land Use Plan. The meeting focused on reviewing the basemap, conducting SWOT analysis, undertaking visioning, and identifying community priorities and proposals. The community confirmed that the basemap accurately represented the key features and resources within Koiya Community Land.



Through SWOT analysis and visioning exercises, the community identified existing strengths, challenges, opportunities, and potential threats affecting the management and development of their land. Key proposals included updating the community land register, relocating the police post to its designated area, developing a community hall and assistant chief's office, marking elephant corridors, addressing human-wildlife conflict through fencing and provision of elephant watering points, and holding a special meeting to determine procedures for allocating land to schools, churches, and other community projects.

Overall, the meeting provided an important platform for community participation and validation of the planning process. The views and proposals raised will help guide the preparation of a realistic, inclusive, and sustainable Community Land Use Plan for Koija Community Land.

Plate 4 SWOT Analysis Meeting at Chui Mama Cultural Manyatta





CHAPTER TWO: LEGAL AND POLICY FRAMEWORK

2.1. Policy Frameworks

2.1.1. Kenya Vision 2030

Kenya Vision 2030 is the national long-term development blueprint that seeks to transform Kenya into a newly industrializing, middle-income country providing a high quality of life to all its citizens by the year 2030. One of its key pillars -the Environment and Natural Resource Management sector-emphasizes the achievement of a clean, secure, and sustainable environment as a foundation for sustained socio-economic development.

The Vision recognizes that sustainable land management is central to national development, and it strongly underscores the need for integrated land use planning, conservation of natural resources, and protection of environmentally sensitive ecosystems. This includes safeguarding water catchments, rangelands, forests, wetlands, and wildlife habitats, all of which are critical to ecological balance and livelihoods. Within the context of community land, Vision 2030 promotes responsible stewardship of land resources, ensuring that current utilization does not compromise the ability of future generations to meet their needs. It therefore aligns strongly with participatory and locally anchored planning approaches that promote equitable access, sustainable use, and long-term productivity of land.

For Koiya Community Land, these principles are particularly relevant given its location within the Laikipia rangeland ecosystem, where competing land uses—pastoralism, wildlife conservation, and emerging settlement pressures—are increasingly converging. Rising population demands and livestock intensification have, in many cases, led to localized pressure on grazing areas, expansion into fragile ecological zones, and increased interaction with wildlife habitats and corridors, resulting in human–wildlife conflict and ecosystem fragmentation.

In this regard, Vision 2030 provides a strong policy foundation for the Koiya Local Physical and Land Use Development Plan. The Plan operationalizes Vision 2030 objectives by promoting structured and sustainable land use management, including the protection of ecological sensitive areas, maintenance of wildlife movement corridors, and rational organization of settlement and grazing zones.

The Koiya planning process contributes directly to the realization of Vision 2030 by ensuring that land use decisions are environmentally sustainable, socially inclusive, and economically



viable, while reinforcing long-term ecological integrity within the broader Laikipia rangeland system.

2.1.2. Kenya National Spatial Plan, 2015

The Kenya National Spatial Plan (2015–2045) provides a strong strategic framework for guiding land use planning in Koija Community Land, particularly given its location within the wider Laikipia rangeland ecosystem. The Plan recognizes rangelands as ecologically fragile but economically significant landscapes that require carefully balanced land use systems integrating pastoralism, wildlife conservation, and human settlement development.

Koija falls within this broader semi-arid rangeland system, where land use is characterized by seasonal grazing, livestock mobility, and the presence of adjacent wildlife conservation areas and ecological corridors. In line with the NSP, this landscape requires planning approaches that avoid fragmentation of grazing routes, maintain ecosystem connectivity, and ensure that land subdivision or settlement expansion does not undermine the carrying capacity of the rangeland. The NSP emphasizes zoning-based and ecologically responsive planning, which is directly applicable to Koija. This supports the preparation of a Community Land Use Plan that clearly delineates appropriate zones for grazing, settlement clusters, conservation areas, and community infrastructure, based on land capability and environmental sensitivity. Such an approach ensures that development is guided by spatial logic rather than ad hoc land conversion, thereby reducing land use conflicts and environmental degradation.

In addition, the NSP promotes the protection of pastoral mobility systems, which are central to Koija's livelihood structure. Seasonal livestock movement remains a key adaptation strategy in arid and semi-arid lands, and therefore the protection of dry-season grazing reserves and movement corridors is critical for sustaining community resilience. The Koija plan aligns with this principle by supporting controlled and negotiated land use arrangements that safeguard mobility while enabling planned settlement development.

Furthermore, the NSP underscores the importance of harmonizing human activities with environmental conservation objectives. For Koija, this is particularly relevant given its proximity to conservation landscapes and wildlife dispersal areas within Laikipia. The Koija Community Land Use Plan therefore contributes to national spatial objectives by promoting coexistence between livestock production systems, wildlife conservation, and emerging settlement nodes.



Ultimately, the Koija planning process operationalizes the NSP at the community level by translating national spatial principles into locally appropriate land use structures. This ensures that Koija's development trajectory is environmentally sustainable, economically viable, and spatially organized within the broader Laikipia rangeland ecosystem.

2.1.3. National Land Use Policy (Session Paper No 1 of 2017)

The National Land Use Policy establishes Kenya's long-term framework for the sustainable management and utilization of land and its associated resources. It responds to emerging challenges arising from competing land demands by recognizing land as a finite resource whose use must be carefully planned, regulated, and optimized to support national development objectives. The Policy further acknowledges that human activities are the primary drivers of land use change and therefore require coordinated management to ensure sustainability.

The Policy provides a comprehensive framework that addresses key aspects of land use governance, including:

- Management and resolution of land use conflicts arising from competing interests
- Promotion of integrated land use planning as a tool for sustainable development
- Classification and organization of land use categories to guide orderly development
- Preparation, review, and implementation of a National Spatial Plan, and its integration with county and local level plans
- Promotion of participatory land use planning processes involving all stakeholders, alongside enforcement of approved plans
- Strengthening environmental conservation and sustainable management of natural resources through planning controls

The Policy provides a structured foundation for harmonized spatial planning across all levels of government, ensuring that land use decisions are sustainable, coordinated, and responsive to environmental, social, and economic priorities.

2.1.4. Laikipia County Spatial Plan 2023-2033

The Laikipia County Spatial Plan (2023–2033) provides a strategic spatial framework that promotes balanced coexistence between human settlements, livestock production systems, and wildlife conservation landscapes within the County. The Plan emphasizes guiding population growth and development in a manner that avoids encroachment into environmentally sensitive



areas, wildlife habitats, and established migratory corridors, while at the same time supporting sustainable livelihood systems for local communities.

In particular, the CSP advocates for integrated and environmentally sensitive land use planning, which seeks to minimize habitat fragmentation, reduce human–wildlife conflict, and ensure the protection of critical ecological zones, including conservancies, rangelands, and key biodiversity areas. It further promotes harmonized development that allows communities to benefit from the surrounding natural resource base without compromising ecosystem integrity.

Within this policy framework, the preparation of the Koija Community Land Use Plan is well aligned and strategically anchored. The plan adopts a holistic spatial planning approach that balances settlement needs, livestock mobility patterns, and wildlife conservation objectives. This ensures that land use decisions in Koija are guided by the principles of sustainability, spatial efficiency, and coexistence, as envisaged in the County Spatial Plan, thereby promoting long-term ecological integrity alongside socio-economic development.

2.2. Legal Framework

2.2.1. The Constitution of Kenya, 2010

The Constitution of Kenya, 2010 provides the supreme legal foundation for land governance, spatial planning, environmental management, and community participation in development processes. It establishes land as a national resource that must be managed in a manner that is equitable, efficient, productive, and sustainable. Article 66 grants the State authority to regulate land use in the public interest, including planning, zoning, and environmental protection. This provision is the primary constitutional anchor for the Koija Local Physical and Land Use Development Plan, which seeks to organize land use through a structured zoning framework that balances conservation, livestock production, and settlement needs.

Article 61–64 provides the classification of land into public, private, and community land, with Article 63 specifically recognizing community land as a distinct tenure category that includes grazing areas, forests, ancestral lands, and culturally significant landscapes. This is directly applicable to Koija, where land is predominantly under community tenure and where customary grazing systems remain central to livelihoods. Article 42 and 70 guarantee the right to a clean and healthy environment and impose obligations on the State to protect ecological systems, thereby mandating the identification and zoning of fragile ecosystems, riparian reserves, and wildlife corridors within the planning area.



Article 174 establishes principles of devolution that emphasize local participation, equitable development, and community empowerment. This provides the legal basis for participatory zoning in Koiya, ensuring that land use decisions reflect community priorities while maintaining ecological and economic sustainability.

2.2.2. The Physical and Land Use Planning Act, No. 13 of 2019

The Physical and Land Use Planning Act (PLUPA) is the principal statute governing spatial planning and development control in Kenya. It provides a comprehensive legal framework for the preparation, approval, implementation, and enforcement of physical and land use development plans. The Act operationalizes constitutional principles by translating them into enforceable planning instruments.

Section 45 mandates County Governments to prepare Local Physical and Land Use Development Plans for all planning areas. This provision directly establishes the legal authority for the Koiya zoning plan. The Act further requires that such plans be prepared in a manner that ensures rational land use allocation, environmental sustainability, and coordination of development activities across sectors.

Section 46 expands the purpose of local plans to include zoning, regulation of land use, infrastructure coordination, and provision of a framework for development control. In Koiya, this translates into the establishment of clearly defined spatial zones including settlement nodes, grazing reserves, conservation areas, ecological buffers, and community infrastructure corridors, all based on land capability and carrying capacity considerations.

Section 47 empowers County Executive Committee Members responsible for planning to initiate planning processes, ensuring institutional accountability. Sections 48–51 establish mandatory procedures for plan content, public participation, gazettment, objections handling, approval, and revision. These provisions ensure that the Koiya plan is not only technically sound but also legally enforceable and publicly legitimized.

Importantly, PLUPA introduces a strict development control regime requiring all land use activities to conform to approved plans. This gives legal force to zoning regulations, ensuring that unauthorized developments or incompatible land uses within Koiya can be controlled and managed through enforcement mechanisms.

2.2.3. Community Land Act, 2016

The Community Land Act, 2016 operationalizes Article 63 of the Constitution by providing a detailed legal framework for recognition, registration, governance, and management of



community land. It is highly central to Koiya, where land is collectively owned and managed under customary systems.

The Act provides that community land shall be held in trust for the community and managed in a manner that ensures sustainable use, equitable access, and protection of communal resources. It explicitly recognizes grazing areas, cultural sites, forests, and water resources as integral components of community land that must be safeguarded through structured management systems.

The Act further provides for the development of community land use plans as instruments for guiding land allocation, regulating land use change, and preventing fragmentation of communal land. This is particularly important in Koiya, where increasing pressure from settlement expansion and livestock intensification risks destabilizing traditional pastoral systems.

In practical terms, the Act provides the legal foundation for zoning in Koiya by enabling the formal designation of grazing zones, seasonal mobility corridors, conservation areas, settlement clusters, and community infrastructure sites. It also strengthens community governance structures, ensuring that land use decisions are made collectively and transparently, thereby reducing conflicts and enhancing tenure security.

2.2.4. County Government Act, 2012

The County Government Act establishes the institutional and operational framework for county-level governance, planning, and service delivery. It emphasizes integrated development planning, coordination between national and county governments, and efficient management of spatial and natural resources.

The Act requires counties to prepare long-term spatial plans supported by GIS-based systems, which form the basis for all lower-level planning instruments. It further mandates alignment between county spatial plans, integrated development plans, and sectoral strategies.

In Koiya, this Act ensures that the Local Physical and Land Use Development Plan is fully aligned with the Laikipia County Spatial Plan and the County Integrated Development Plan. It provides the institutional mechanism through which zoning decisions are integrated into broader county investment priorities, infrastructure development programs, and service delivery frameworks.



2.2.5. National Land Commission Act, 2012

The National Land Commission Act establishes the mandate of the Commission in overseeing land administration, management, and planning across Kenya. It ensures compliance with constitutional principles of land governance, including equity, sustainability, and efficiency.

The Commission plays a key role in monitoring land use planning processes, resolving land-related disputes, and ensuring proper coordination between national and county governments. In the Koija planning process, the NLC provides oversight in ensuring that zoning proposals align with national land policy, tenure security frameworks, and sustainable land management principles.

The Act also strengthens institutional coordination across the land sector, ensuring that planning, surveying, registration, and adjudication processes are harmonized and support implementation of community land use plans.

2.2.6. Environmental Management and Coordination Act (EMCA), 1999 (Revised)

EMCA establishes the legal and institutional framework for environmental governance in Kenya. It provides for the protection, conservation, and sustainable management of environmental resources, including land, water, biodiversity, and ecosystems.

The Act requires Environmental Impact Assessment (EIA) for developments that may significantly affect the environment, thereby ensuring that land use changes are evaluated for sustainability. It also regulates activities affecting wetlands, riverbanks, forests, and fragile ecosystems.

In Koija, EMCA is central to zoning decisions as it informs the identification and protection of environmentally sensitive areas such as riparian corridors, seasonal wetlands, degraded rangelands, and biodiversity hotspots. It provides the legal basis for establishing conservation zones and environmental buffers within the land use plan, ensuring ecological integrity within the rangeland system.

2.2.7. Forest Conservation and Management Act, 2016

The Forest Conservation and Management Act provides for the sustainable management, conservation, and development of forest resources in Kenya. It recognizes forests as critical ecological infrastructure that supports water regulation, biodiversity conservation, and climate stability.



The Act empowers both national and county governments, as well as communities, to participate in forest management. In Koiya, this is particularly relevant for protecting community woodlands, riparian vegetation, and dryland forest patches that support livestock, wildlife, and ecological resilience.

The Act directly informs zoning decisions by supporting the designation of conservation zones and protecting vegetation cover essential for rangeland sustainability.

2.2.8. Wildlife Conservation and Management Act, 2013

The Wildlife Conservation and Management Act recognizes wildlife as a legitimate land use and establishes mechanisms for the protection of habitats, dispersal areas, and migratory corridors. It extends wildlife conservation beyond protected areas into community and private lands.

In Koiya, the Act is highly significant due to the coexistence of pastoral systems and wildlife movement within the broader Laikipia ecosystem. It provides the legal basis for identifying and protecting wildlife corridors, minimizing human–wildlife conflict, and integrating conservation objectives into land use planning.

The Act supports spatial zoning that ensures compatibility between settlement expansion, grazing systems, and wildlife conservation, thereby promoting coexistence and ecosystem connectivity.

2.2.9. Climate Change Act, 2016

The Climate Change Act provides the legal framework for integrating climate change adaptation and mitigation into national and county development planning. It requires all sectors to mainstream climate resilience into policies, plans, and programs.

In Koiya, the Act informs zoning decisions that enhance resilience to drought, resource scarcity, and climate variability. It supports the protection of dry-season grazing reserves, water points, and ecological buffers, while promoting adaptive land use systems that enhance livelihood resilience in a semi-arid environment.

2.2.10. Land Act, 2012

The Land Act provides the framework for administration and management of public, private, and community land in Kenya. It regulates land tenure systems, land allocation, leasing, and sustainable land management practices.



In Koiya, the Act ensures that land use decisions are legally enforceable and consistent with national land administration systems. It provides the basis for regulating land transactions, preventing illegal subdivision, and ensuring that land allocation aligns with approved zoning plans. It also strengthens tenure security, which is critical for long-term investment and sustainable land management.

2.2.11. Agriculture, Food and Fisheries Authority Act, 2013

This Act regulates agricultural production systems and supports sustainable food security and livestock production. In rangeland systems such as Koiya, it provides the legal basis for improving pastoral productivity, supporting livestock mobility, and promoting sustainable grazing management.

It informs zoning decisions that protect grazing lands, prevent overstocking, and enhance rangeland productivity through planned land use systems.

2.2.12. Water Act, 2016

The Water Act provides for the regulation, management, and conservation of water resources in Kenya. It establishes water resource protection areas, catchment management structures, and riparian protection zones.

In Koiya, the Act is critical for protecting seasonal rivers, water pans, and groundwater recharge zones. It informs the establishment of riparian buffers and water protection zones within the zoning framework, ensuring sustainable water access for livestock, wildlife, and human use.

2.2.13. Urban Areas and Cities Act, 2011 (Revised 2019)

The Urban Areas and Cities Act provides the legal framework for classification, governance, and planning of urban areas. Although Koiya is predominantly rural, the Act is relevant for emerging trading centres and settlement nodes. It ensures that such nodes are planned in a structured manner, with adequate infrastructure, service provision, and spatial organization to prevent unplanned growth.

2.2.14. Mining Act, 2016

The Mining Act regulates exploration and exploitation of mineral resources in Kenya. It ensures that mining activities are conducted in compliance with environmental, social, and land use planning requirements.



In Koiya, the Act is relevant where extractive activities may occur, requiring zoning controls to ensure compatibility with settlement, grazing, and conservation areas, while preventing environmental degradation.

2.2.15. Disaster Risk Management Principles

Although Kenya does not have a single consolidated Disaster Risk Management Act, disaster risk reduction is embedded across sectoral legislation and national policy frameworks. These principles are relevant to Koiya due to exposure to drought, resource-based conflicts, and climate variability.

The planning framework incorporates disaster risk considerations through zoning strategies that enhance resilience, protect vulnerable areas, and reduce exposure to environmental and livelihood risks.



CHAPTER THREE: SITUATION ANALYSIS

3.0. Overview

The chapter comprises a situational analysis from field data collection, community engagement, and stakeholder concerns in Koija Community Land. The chapter entails population and demographic characteristics, site analysis, physical and social infrastructure, and existing environmental issues and conservation practices. The analysis provides a grounded understanding of the current context, which is essential for identifying planning priorities and guiding sustainable land use interventions.

3.1. Physiographic Dynamics

3.1.1. Hill shade Analysis

The Koija Community Land hill shade map provides a three-dimensional representation of the terrain by simulating the effect of sunlight and shadows across the landscape. The dark and light areas indicate variations in terrain orientation and steepness, with strongly contrasting areas generally representing more rugged or steep terrain. The map shows that Koija has a varied and relatively rugged terrain, with numerous ridges, valleys and undulating surfaces distributed across the community land.

3.1.2. Relief/Aspect Analysis

The Koija Community Land relief map illustrates the direction in which different parts of the terrain slope, expressed through aspect classes such as north, northeast, east, southeast, south, southwest, west and northwest. The map indicates that the landscape has diverse slope orientations, rather than one dominant direction of slope. This variation influences solar exposure, moisture retention, vegetation conditions and the suitability of different areas for settlement and agricultural activities.

3.1.3. Elevation Analysis

The Koija Community Land elevation map shows the variation in altitude across the community land, ranging from approximately 1,547 m to 1,751 m above sea level, giving an overall elevation difference of about 204 m. The western and southwestern portions generally exhibit relatively higher elevations, while lower elevations are more evident towards the eastern and northeastern sections. These elevation differences contribute to variations in drainage, temperature, vegetation, soil conditions and the general character of the landscape.

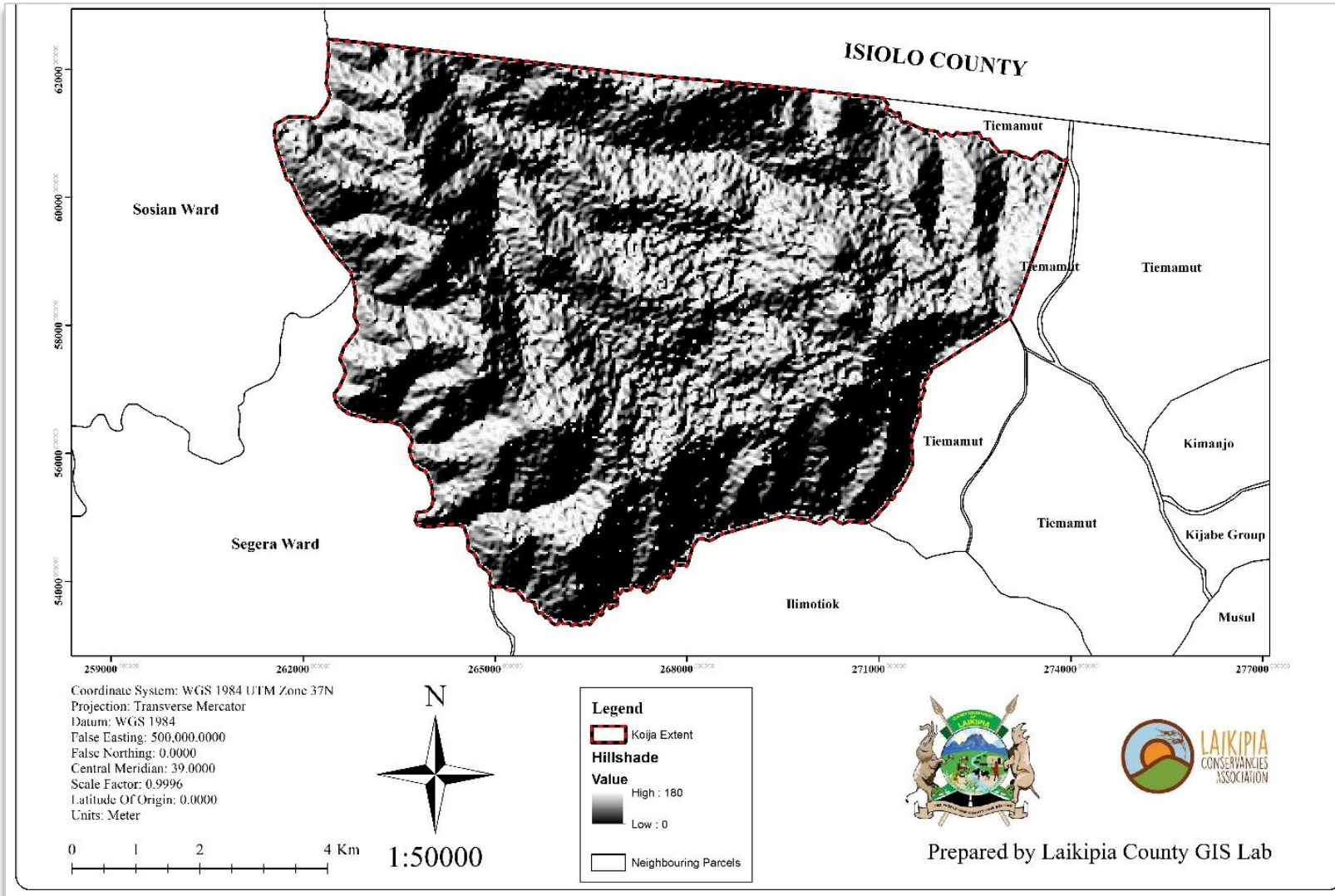


Emerging Issues and Planning Implications

- **High Soil Erosion Risk;** High areas as shown below on the maps experience soil erosion either by soil and /or water. Such areas with no vegetation suffer the most.
- **Guide settlement location:** Direct new settlements and urban expansion towards relatively gentle and stable terrain, while limiting development on steep and rugged areas.
- **Control soil erosion:** Steep slopes identified from the hill shade and relief maps should be managed through erosion-control measures such as terracing, contour farming and vegetation restoration.
- **Infrastructure planning:** Roads, water pipelines and other infrastructure should follow suitable terrain to reduce construction costs, excessive gradients and maintenance requirements.
- **Drainage management:** Elevation differences should be considered when planning drainage systems, since runoff will generally move from higher to lower areas.
- **Environmental conservation:** Rugged terrain, steep slopes and areas vulnerable to erosion should be identified for conservation and controlled development.
- **Water resource management:** Low-lying areas and natural drainage pathways should be protected from inappropriate development to maintain natural water movement and reduce flood risks.
- **Development cost reduction:** Concentrating development in areas with favorable terrain can reduce the costs associated with earthworks, road construction, drainage and other infrastructure.
- **Disaster-risk reduction:** Areas with steep slopes and complex terrain should be assessed for erosion, slope instability and other terrain-related hazards before development is permitted.

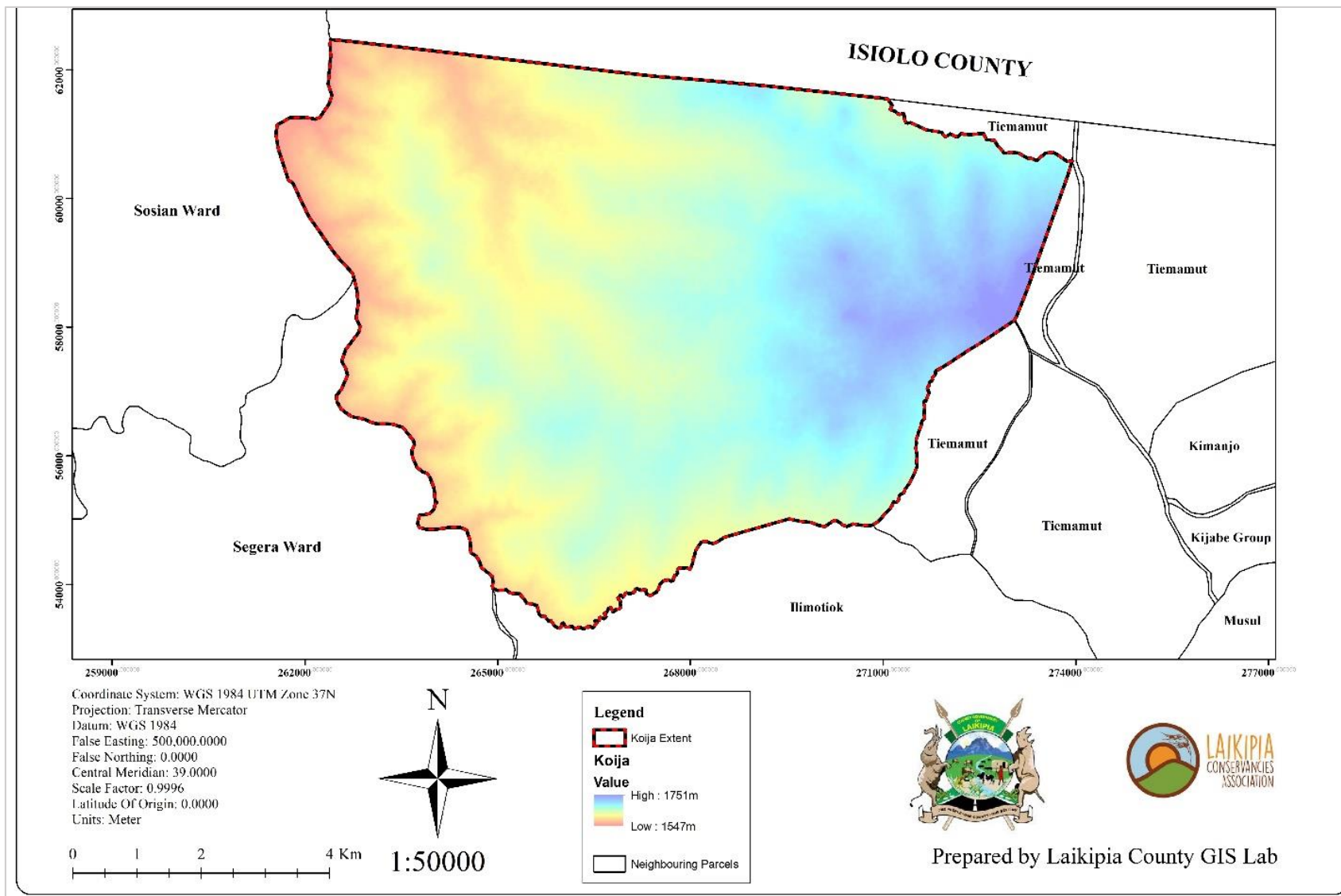


Map 6: Hillshade Analysis



Source: Laikipia County GIS Lab, 2026

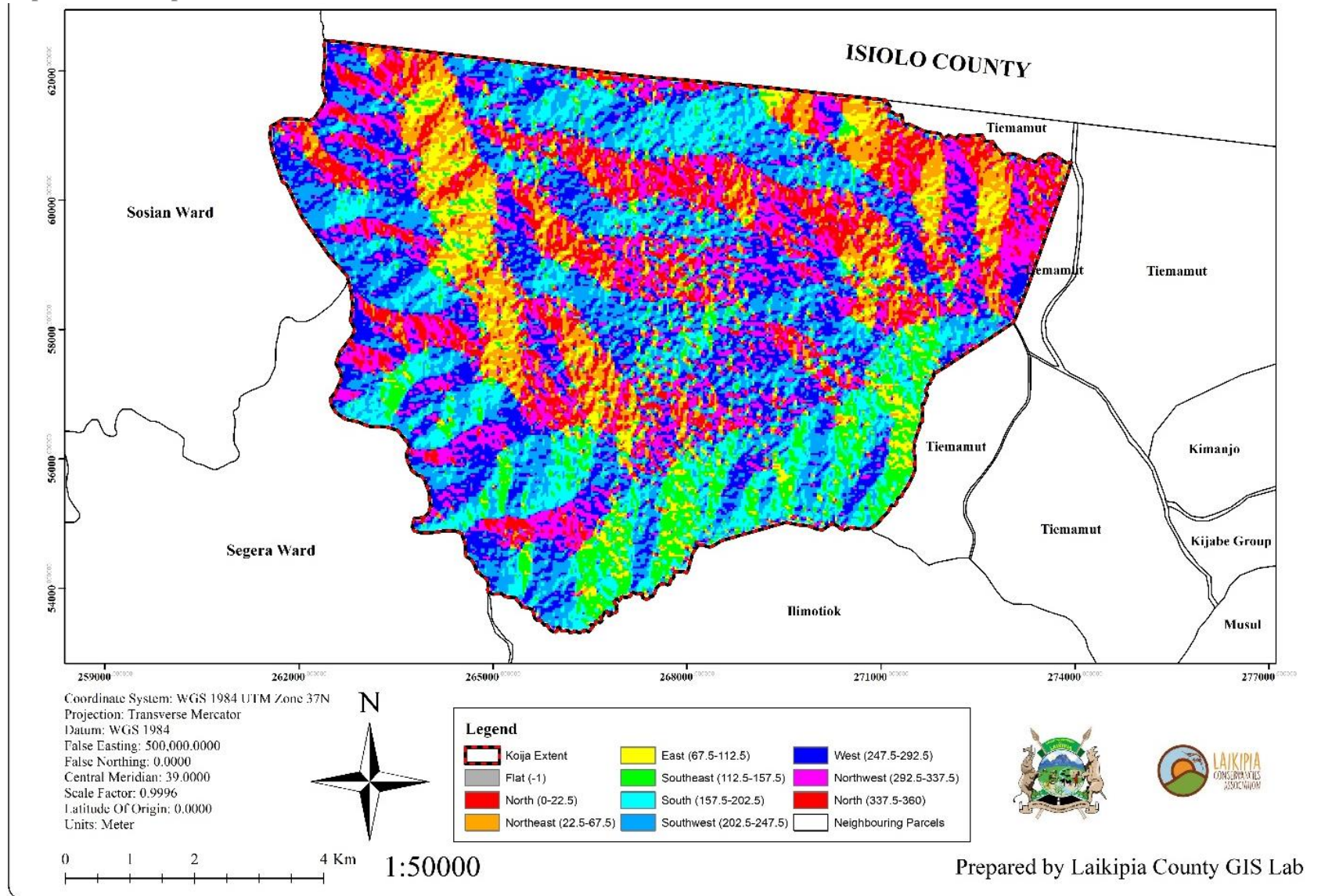
Map 7: Elevation Map



Source: Laikipia County GIS Lab, 2026



Map 8: Relief Map





3.1.4. Climatic Conditions

Koiya Community Land is predominantly semi-arid, characterized by relatively low and spatially variable rainfall, which influences vegetation distribution, pasture availability, water resources, livestock mobility and land-use patterns. As illustrated in Map 9: Rainfall Distribution Map, rainfall varies across the community land, with the western section receiving an estimated annual average of approximately 740 mm, compared to approximately 636 mm in the eastern section. This represents a rainfall difference of about 104 mm annually, indicating relatively more favorable moisture conditions in the western part of the community land.

The spatial variation in rainfall has important implications for rangeland management, livestock production, settlement patterns and the allocation of land for different uses. The relatively wetter western section, particularly areas towards the Ewaso Ng'iro River, may support comparatively better vegetation growth and pasture availability during favorable seasons. Conversely, the relatively drier eastern section is likely to experience greater moisture stress, reduced pasture regeneration and increased vulnerability to soil erosion and land degradation, particularly where vegetation cover is disturbed or grazing pressure exceeds the carrying capacity of the land.

From a planning perspective, these climatic differences provide a useful basis for guiding the management of grazing areas, settlements and other land uses. The western section may be prioritized for managed grazing and rangeland conservation, subject to ecological sensitivity, wildlife movement corridors, water availability and seasonal grazing requirements. The eastern section requires particular attention to soil and water conservation, controlled development and the protection of vegetation cover. However, the allocation of residential and other development areas should not be based on rainfall distribution alone; it should also consider existing settlement patterns, land capability, access to infrastructure and services, environmental constraints, community preferences and the protection of wildlife habitats and corridors.

The rainfall distribution pattern underscores the need for a climate-responsive and ecologically sensitive land-use planning approach for Koiya Community Land. The plan should integrate rainfall patterns with grazing capacity, seasonal livestock mobility, water-resource availability, land degradation risks and wildlife conservation priorities to promote sustainable livelihoods and long-term resilience to drought and climate variability.



Emerging Issues and Planning Implications

The observed variation in rainfall across Koija Community Land presents the following emerging issues and planning implications:

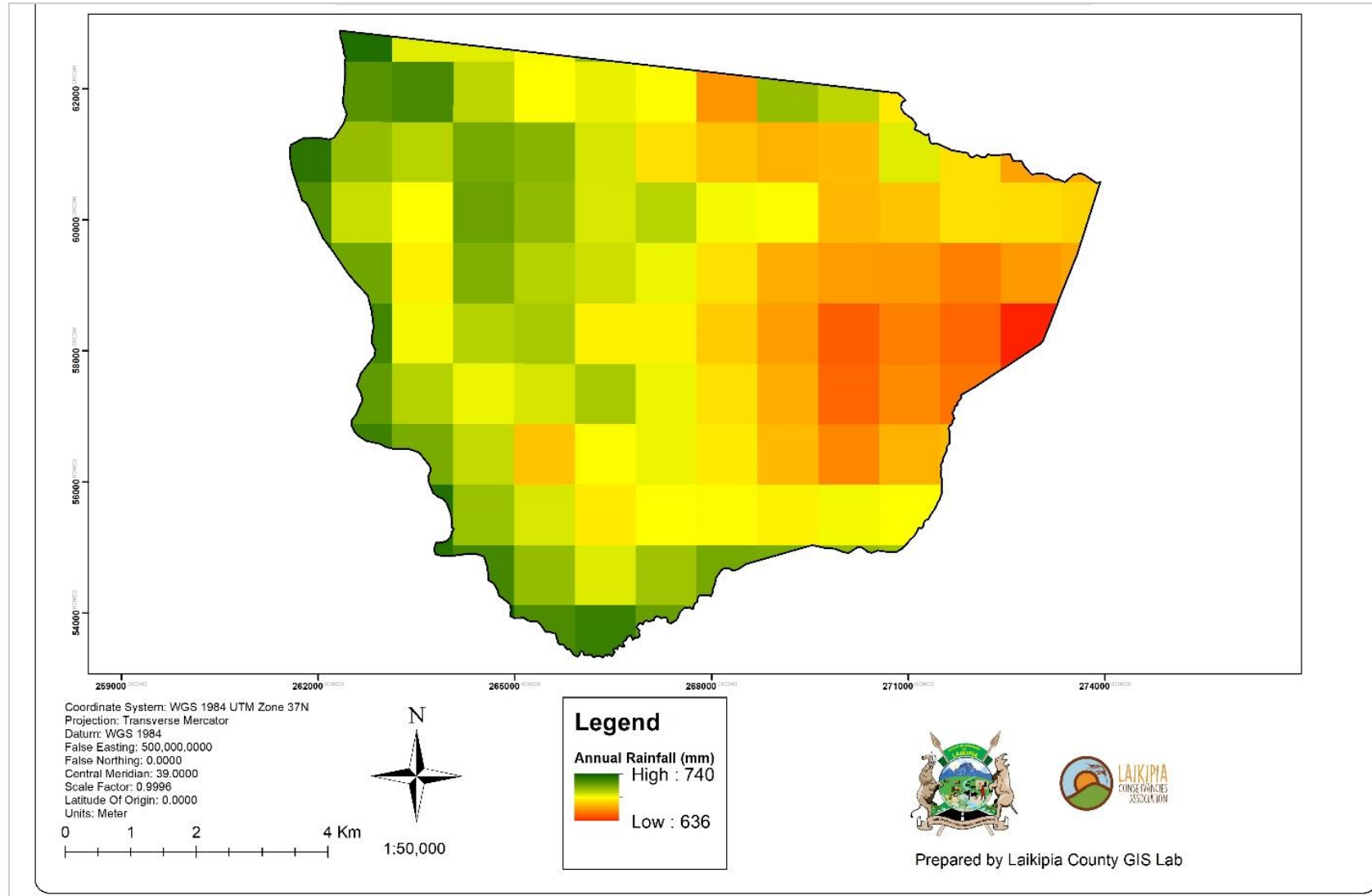
- **Uneven distribution of water and pasture resources:** The relatively higher rainfall in the western section may result in more favorable pasture conditions than in the eastern section during certain seasons. This may influence livestock movement and increase the importance of coordinated, seasonal grazing management across the community land.
- **Vulnerability to land degradation:** The relatively lower rainfall in the eastern section may limit vegetation regeneration and increase susceptibility to soil erosion, particularly where grazing pressure, vegetation removal and inappropriate land-use practices exceed the ecological capacity of the land.
- **Risk of localized overgrazing:** Concentration of livestock around reliable water sources, settlements and accessible grazing areas may lead to localized overgrazing and vegetation depletion. Grazing pressure should therefore be managed across both the wetter and drier sections rather than assuming that the eastern section alone is vulnerable to degradation.
- **Need for climate-responsive land-use zoning:** The Community Land LP&LUDP should incorporate rainfall variability and land capability into the delineation of grazing zones, settlement areas, conservation areas and other development zones. Zoning should maintain ecological connectivity and avoid encroachment into wildlife habitats, dispersal areas and movement corridors.
- **Soil and water conservation:** Appropriate interventions in vulnerable areas should include controlled grazing, reseedling of degraded rangelands with suitable indigenous grasses, assisted natural regeneration, strategic tree planting using locally appropriate species, and the construction of gabions or other erosion-control structures where technically suitable.
- **Protection of strategic grazing reserves:** The plan should identify and protect designated grazing reserves to support livestock during prolonged dry periods and droughts. These reserves should be managed through agreed community rules governing access, stocking levels and seasonal use.



- **Sustainable settlement and infrastructure development:** Settlement expansion and infrastructure provision should be directed towards environmentally suitable locations, taking into account land stability, drainage, water availability, service accessibility and the need to minimize fragmentation of rangelands and wildlife corridors.
- **Integrated rangeland and water-resource management:** Planning interventions should promote equitable access to water and grazing resources while safeguarding the ecological integrity of the Ewaso Ng'iro River and associated riparian areas.



Map 9: Rainfall Distribution Map



Source: Laikipia County GIS Lab, 2026



3.1.5. Land Surface Temperature

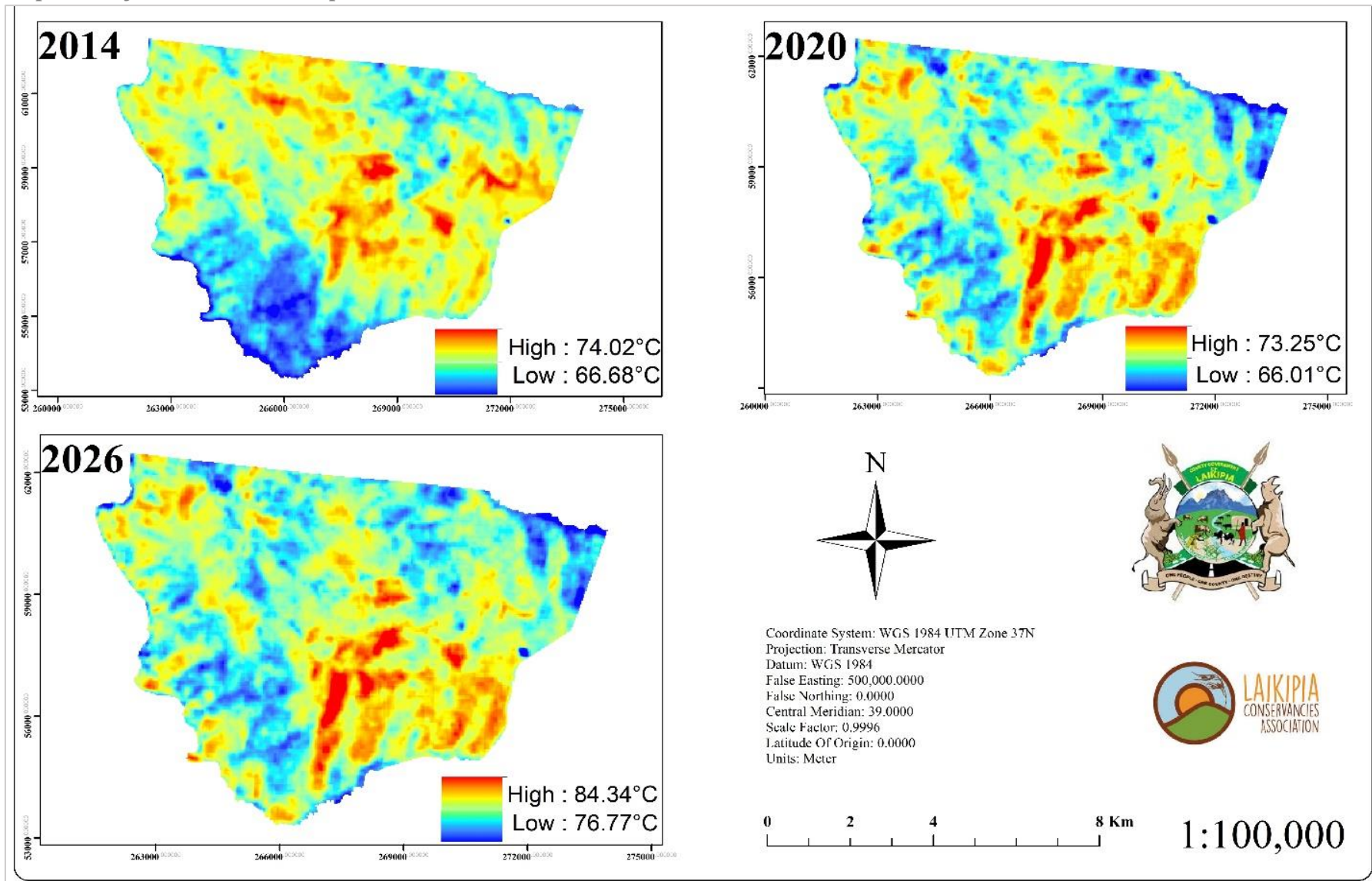
The Land Surface Temperature (LST) maps show the spatial distribution of surface temperature in Koija Community Land between 2014 and 2026. The results indicate a clear increase in the recorded temperature range over the indicated period. The average LST in 2014 lies between 66.68°C and 74.02°C compared to 2020 which was between 66.01°C and 73.25°C. However, there was significant increase by 2026 which ranges from 76.77°C–84.34°C. Higher temperatures are particularly concentrated in the central and south-eastern portions of the community land, while relatively lower temperatures occur mainly toward the western and north-western areas.

Emerging Issues and Planning Implications

- Areas experiencing persistently higher surface temperatures should be incorporated into climate-risk planning and prioritized for interventions that reduce heat exposure.
- Maintaining woodland and healthy vegetation can help moderate surface temperatures. Degraded areas should therefore be targeted for vegetation restoration and afforestation.
- Future settlement and infrastructure development should consider areas with high thermal conditions.
- Areas experiencing high temperatures may face greater evaporative demand. Planning should therefore promote water harvesting, efficient water use and protection of existing water resources.
- Increasing surface temperatures may affect pasture availability and livestock livability. Therefore, land-use planning should incorporate drought- and heat-tolerant practices.
- The persistent high-temperature zones in the central and south-eastern areas can be designated as priority areas for climate adaptation and environmental conservation interventions.



Map 10: Koija Land Surface Temperature Variation



Source: Laikipia County GIS Lab, 2026



3.1.6. Soil and Lithology

3.1.6.1. Texture

Koiya Community landscape is covered in Luvisol soils of particularly clayey texture. Zone E has an exception from the rest of the landscape. It has a deposition from the adjacent Ewaso Ngiro River which contributes to the sandy soil texture as depicted in the map below. Luvisol, characterized by alluvium or colluvium deposits, are common in relatively flat terrains which are prone to extensive flooding hence they have relatively low nutrient content and poor water retention.

3.1.6.2. Mineral Composition/Clay Description

Zones C & E are Luvisol containing high amounts of montmorillonite clay minerals belonging to the smectite group which are famous for expanding when wet and shrinking when dry. These areas are generally poorly drained and tend to experience weak leaching of nutrients.

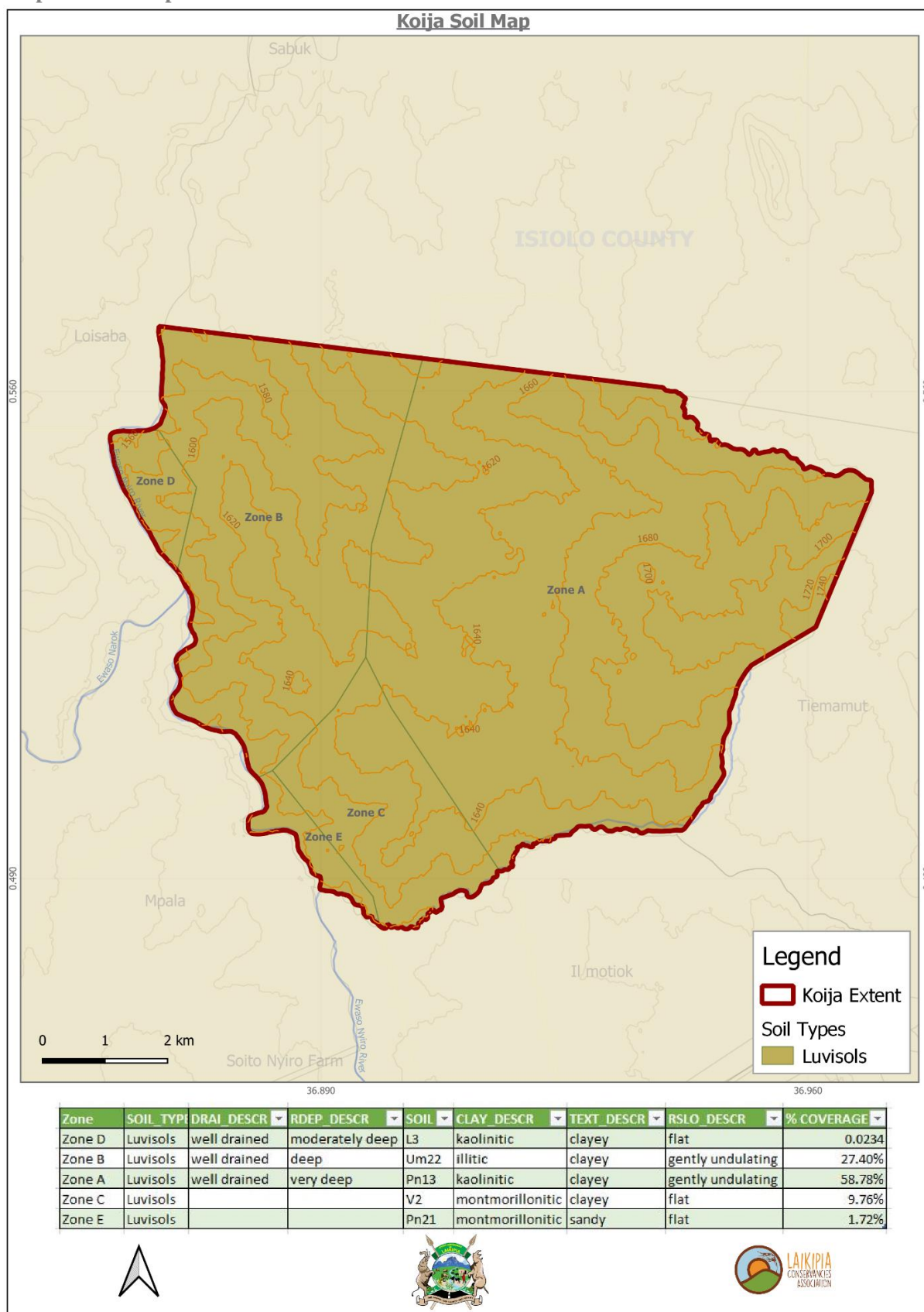
Zones A & D are kaolinite rich zones which form through chemical weathering of granite rocks in hot and humid climates. Unlike montmorillonite soils, they are well drained hence do not swell when wet or shrink in drought and tend to experience higher leaching of nutrients as compared to the aforementioned zones. Kaolinite clay types are known for their light gray color and stability against erosion. This type of soil is stable and predictable in all weather conditions hence good for agricultural management and construction.

Zone B possesses Illitic clay mineral soils belonging to the mica group and serves as a reservoir for plant nutrients, most dominantly Potassium. The spaces between layers hold potassium ions tightly which stops clay from swelling much when wet.

Lithological analysis reveals extensive coverage by Middle Quaternary surficial deposit rocks. Q2 units represent colluvial, alluvial gravels, old river terraces or wind-blown loess deposits originating from the middle Pleistocene stage. They are common in gently slopy to relatively flat areas. A small western portion of the land is dominantly Palladium rich rocks in close proximity to the active riverine habitat or riverbed.



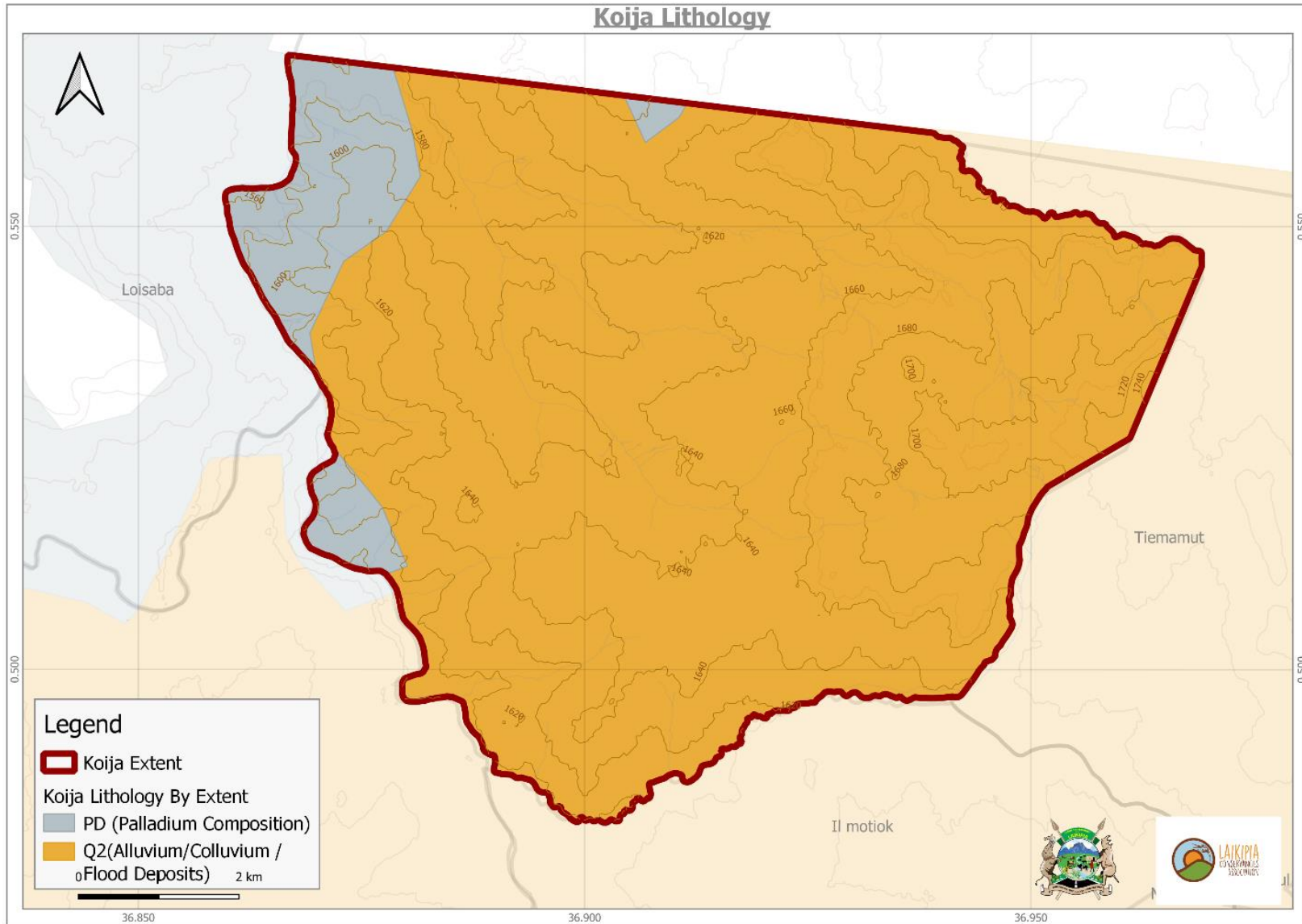
Map 11: Soil Map



Source: Laikipia County GIS Lab, 2026



Map 12: Lithology Map



Source: Laikipia County GIS Lab, 2026



3.1.7. Land Tenure Distribution and Availability

Koiya Community Land is one of the 13 community lands in Laikipia County that transitioned from the former group ranch tenure system to community land tenure. The community land is situated within a wider landscape characterized by a combination of community-owned rangelands, privately owned ranches and wildlife conservation areas. It is surrounded by private ranches, including Mpala and Loisaba, and neighbouring community lands, including Ilmotiok and Tiemamut. This spatial context makes the management of land tenure, grazing resources, wildlife movement corridors and shared natural resources particularly important.

As illustrated in Map 13, the community land contains areas associated with homesteads, private parcels, roads, the Ewaso Centre, an animal corridor and the Kenya Electricity Transmission Company (KETRACO) powerline. These features represent existing land uses, infrastructure and spatial constraints that must be considered when preparing the Community Land Local Physical and Land Use Development Plan (LP&LUDP) for 2026–2036.

The tenure structure has direct implications for land administration and development control. While community land provides a collective resource base for pastoral livelihoods and conservation, the presence of established homesteads, infrastructure and other spatial commitments requires careful coordination to avoid incompatible land uses, encroachment and fragmentation of rangelands. The plan should therefore establish a clear spatial framework for accommodating settlement, livestock production, conservation, infrastructure and socio-economic activities while safeguarding community land rights and ecological connectivity.

3.1.7.1. Land Availability

The land availability analysis, presented in Map 14: Land Availability Map, identifies the total extent of Koiya Community Land as approximately 7,266.682 hectares. Of this area, approximately 732.499 hectares are occupied by or associated with mapped features and existing spatial commitments, leaving a residual (unoccupied) area of approximately 6,534.183 hectares for further land-use assessment.

FEATURE	FEATURE	AREA (HA)	AREA (HA)
Koiya Extent	Ewaso Centre	20.126	7266.682
	Animal Corridor	457.905	
	Roads	155.612	
	Private Parcels	6.448	



FEATURE	FEATURE	AREA (HA)	AREA (HA)
	KETRACO Powerline	51.776	
	Homesteads	40.632	
	Total	732.499	
	Available Land	6534.183	

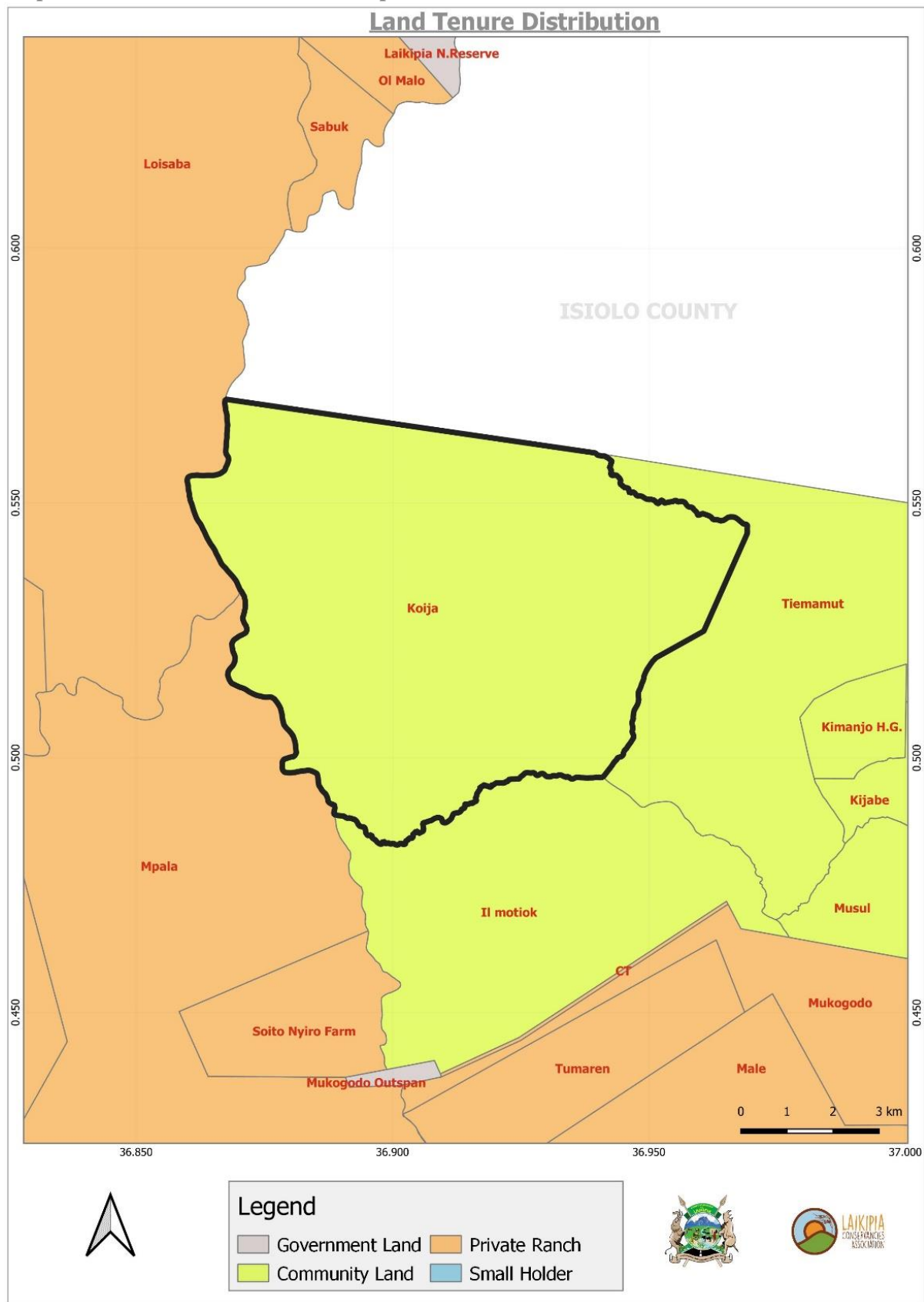
The mapped features account for approximately 10.08% of the total community land, while the residual area represents approximately 89.92%. The animal corridor accounts for the largest share of the mapped features, covering approximately 457.905 hectares. This highlights the importance of maintaining wildlife connectivity as a central consideration in future land-use decisions.

The residual area of 6,534.183 hectares should, however, be interpreted as a preliminary spatial estimate rather than land that is automatically available for allocation or development. Its suitability for particular uses will depend on verification of existing customary and occupation rights, seasonal grazing requirements, wildlife habitats and corridors, water resources, soil and terrain conditions, infrastructure easements and other environmental constraints. In particular, the animal corridor should be treated as a conservation and connectivity priority rather than as uncommitted land available for conversion to settlement or other incompatible uses.

The land availability analysis therefore provides a baseline for determining the location and extent of land suitable for different planning purposes. It should be complemented by community consultations, ground-truthing, cadastral and tenure verification, and environmental assessment before specific land allocations or zoning decisions are made.



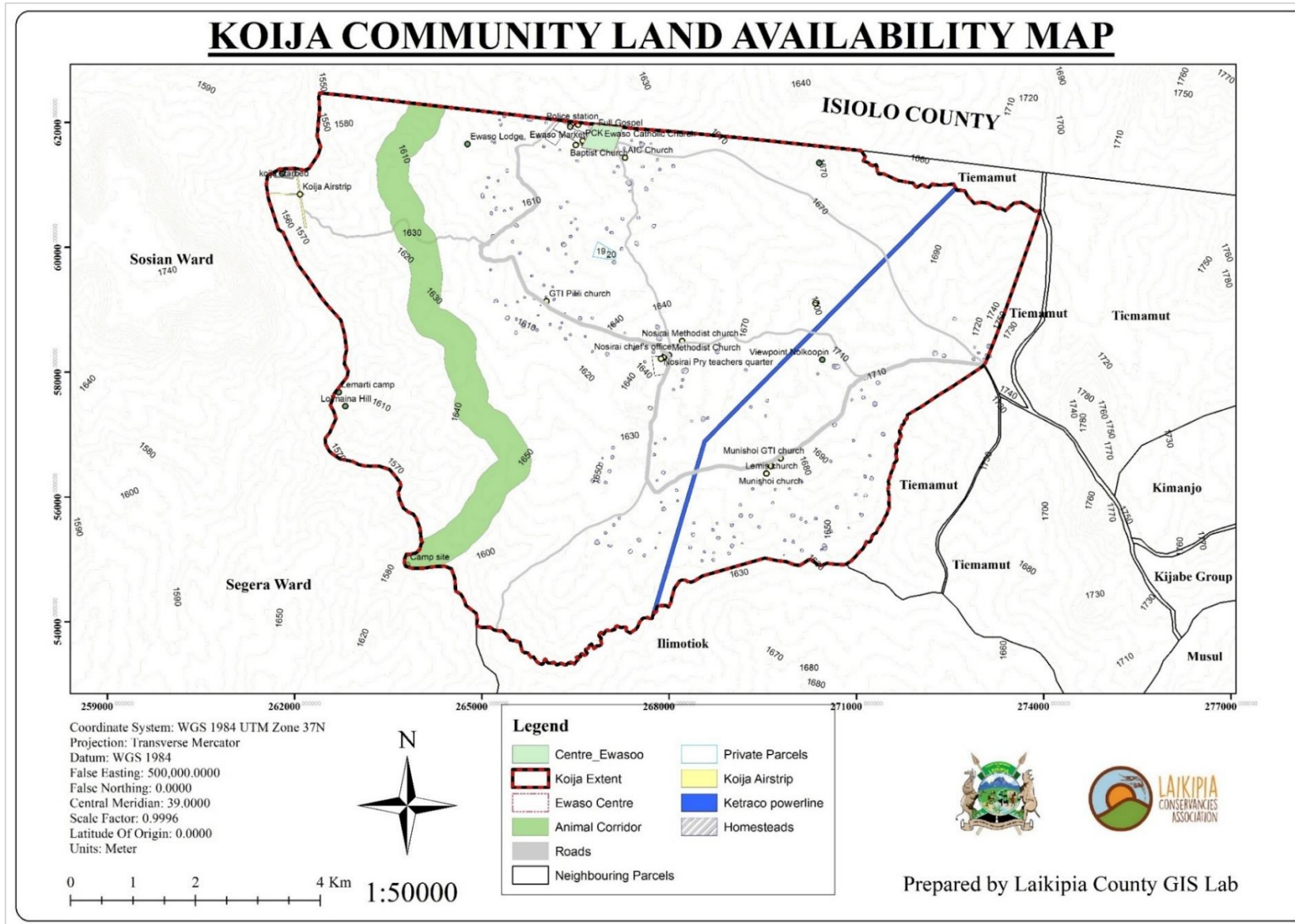
Map 13: Land Tenure Distribution Map



Source: Laikipia County GIS Lab, 2026



Map 14: Land Availability Map



Source: Laikipia County GIS Lab, 2026



Emerging Issues and Planning Implications

The land tenure and availability assessment identified the following emerging issues and planning implications:

- **Protection of community land rights:** The LP&LUDP should recognize and protect the community's land rights and existing lawful interests while establishing transparent procedures for land-use decisions, allocation and development approval in accordance with applicable legislation.
- **Management of existing land-use commitments:** Homesteads, roads, private parcels, the Ewaso Centre and KETRACO infrastructure should be accurately mapped and considered when preparing the proposed land-use zoning framework.
- **Protection of wildlife corridors:** The mapped animal corridor should be safeguarded against settlement encroachment, subdivision and incompatible development. Its management should maintain connectivity between wildlife habitats and neighboring conservation landscapes.
- **Verification of land availability:** The residual area should be subjected to field verification and participatory mapping to establish existing land rights, customary uses, grazing areas, conservation priorities and other restrictions before any land-use changes are proposed.
- **Prevention of rangeland fragmentation:** Settlement expansion, infrastructure development and other land-use changes should be directed towards appropriate locations to minimize fragmentation of communal grazing areas and disruption of livestock and wildlife movement.
- **Coordination with neighboring landholders:** Engagement with neighboring community lands, private ranches, conservancies and relevant infrastructure agencies should be promoted to support coordinated management of shared ecological systems and cross-boundary wildlife movement.
- **Establishment of a GIS-based land inventory:** A spatial database should be maintained to document land tenure, existing developments, infrastructure, conservation areas, grazing reserves and proposed land uses. This will support monitoring, development control and informed community decision-making.



The land tenure and availability analysis provides an important foundation for preparing a spatially explicit and legally compliant land-use framework. The LP&LUDP should prioritize the protection of community land rights, sustainable use of communal resources, ecological connectivity and the orderly location of settlement and development activities.

3.1.8. Land Cover Change Analysis

Land cover change analysis provides an important basis for assessing the environmental condition of Koiya Community Land and understanding the implications of land-use practices and climatic variability for pastoral livelihoods and biodiversity conservation. Map 15 presents the spatial distribution of six mapped land-cover classes: healthy vegetation, unhealthy vegetation, woodland, bare land, water and black cotton soil.

A visual comparison of the 2014, 2020 and 2026 maps suggests spatial and temporal variation in vegetation conditions across the community land. The 2014 map shows extensive areas classified as healthy vegetation, while the 2020 map displays a more pronounced mixture of healthy and unhealthy vegetation. The 2026 map indicates areas of vegetation stress and persistence of exposed or sparsely vegetated surfaces in parts of the landscape.

These patterns may reflect the combined influence of rainfall variability, prolonged dry periods, grazing pressure, vegetation recovery, soil characteristics and other land-management practices. In a semi-arid pastoral landscape such as Koiya, vegetation conditions can fluctuate considerably between seasons and years in response to rainfall and livestock movement. Consequently, the mapped changes should be interpreted as indicators of potential environmental stress rather than definitive evidence that land degradation has increased uniformly across the entire community land.

The distribution of bare land and black cotton soil also has implications for land management. Areas with exposed soil may be susceptible to erosion and reduced vegetation regeneration, depending on slope, soil structure, surface runoff and grazing intensity. Black cotton soil areas require particular attention because their physical properties can influence drainage, seasonal accessibility, soil stability and the suitability of sites for settlement and infrastructure development.

Woodland areas are important for biodiversity, habitat provision, soil protection and the ecological functioning of the wider rangeland. Similarly, mapped water bodies and drainage features are essential for livestock, wildlife and community livelihoods and should be



considered in the delineation of conservation areas and the management of riparian environments.

The land cover change assessment therefore provides a basis for identifying areas requiring further investigation, prioritizing rangeland restoration and integrating environmental management into the Koija Community Land LP&LUDP for 2026–2036. To establish the magnitude and direction of change conclusively, the mapped classes should be quantified by area and percentage for each reference year, using consistent classification criteria and comparable seasonal imagery.

Emerging Issues and Planning Implications

The land cover change analysis identifies the following emerging issues and planning implications:

- **Declining or variable vegetation condition:** Areas mapped as unhealthy vegetation should be investigated to establish whether the observed patterns are associated with drought, excessive grazing pressure, soil conditions or other causes. Where degradation is confirmed, appropriate restoration and grazing-management measures should be implemented.
- **Sustainable grazing management:** The plan should promote rotational or planned grazing, appropriate stocking levels based on seasonal forage availability, and the protection of recovering areas. Grazing arrangements should accommodate livestock mobility and maintain access to essential pasture and water resources.
- **Rehabilitation of bare and degraded land:** Priority restoration areas should be identified through field assessment. Interventions may include reseedling with suitable indigenous grasses, assisted natural regeneration, erosion control, soil stabilization and temporary grazing restrictions where necessary.
- **Protection of woodland and indigenous vegetation:** Existing woodland and areas of ecological significance should be identified for conservation and sustainable management. Uncontrolled clearing and other activities likely to compromise vegetation cover should be discouraged.
- **Conservation of water resources and drainage systems:** Water bodies, drainage channels and associated riparian areas should be protected from encroachment, pollution and destructive land uses. Appropriate buffers should be determined in



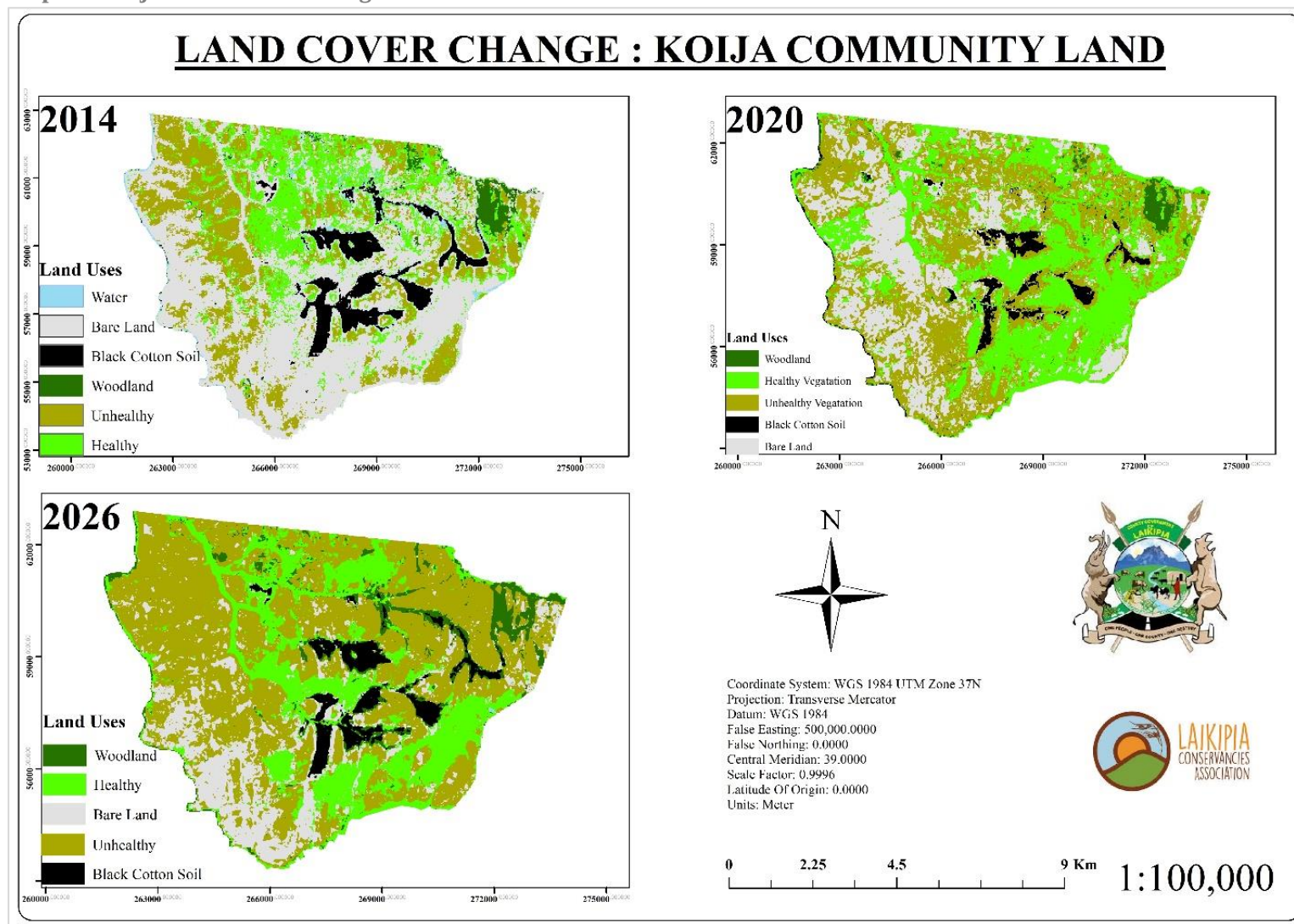
accordance with applicable legal requirements and site-specific environmental conditions.

- **Land-use suitability on black cotton soils:** Areas characterized by black cotton soils should be assessed for their suitability for settlement, roads and other infrastructure. Development proposals should consider soil shrink–swell characteristics, drainage, foundation requirements and potential maintenance costs.
- **Climate-resilient land management:** The plan should integrate drought preparedness, protection of grazing reserves, water-resource management and rangeland restoration into a coordinated climate adaptation strategy.
- **Periodic monitoring using GIS and remote sensing:** Satellite imagery and field observations should be used to monitor vegetation condition and land-cover change at regular intervals. The analysis should report the area and percentage of each mapped class for 2014, 2020 and 2026 to provide a quantitative basis for tracking environmental change.

The 2014–2026 assessment underscores the importance of moving towards proactive, evidence-based rangeland management. By integrating vegetation monitoring, sustainable grazing practices, soil and water conservation and ecological protection, the LP&LUDP can help strengthen the resilience of Koiya Community Land to drought, environmental degradation and changing land-use pressures.



Map 15: Koiya Land Cover Change 2014-2026



Source: Laikipia County GIS Lab



3.1.9. Introduction to Agro-Ecological Zones

Agro-Ecological Zones (AEZs) provide a spatial framework for understanding variations in climatic conditions, elevation, soils, vegetation and land capability that influence the suitability of land for different livelihood and production systems. In semi-arid pastoral landscapes such as Koiya Community Land, agro-ecological zonation can help guide decisions on rangeland management, livestock production, conservation, settlement planning and the suitability of limited areas for crop cultivation.

The distribution of agro-ecological zones is particularly important in Koiya because variations in rainfall, terrain, soil conditions and vegetation influence the availability of pasture and water, seasonal livestock movement and the vulnerability of different parts of the landscape to drought and land degradation. Integrating AEZ information into the LP&LUDP can therefore help align proposed land uses with the ecological capacity of the land while safeguarding wildlife habitats and supporting community livelihoods.

Map 16 identifies three mapped agro-ecological zones within Koiya Community Land: Upper Midland (Ranching Zone), Upper Midland (Livestock–Sorghum Zone) and Lower Midland (Ranching Zone). Their spatial distribution provides an initial basis for differentiating land-management priorities across the community landscape.

3.1.9.1. Spatial Distribution

1. Upper Midland (Ranching Zone)

According to Map 16, the Upper Midland (Ranching Zone) covers the largest proportion of Koiya Community Land. This zone forms the principal spatial unit for extensive livestock production and rangeland management. Its suitability for ranching and pastoral activities should be assessed in relation to forage availability, rainfall variability, soil characteristics, terrain, water access and the ecological requirements of wildlife.

The zone should be managed primarily through sustainable grazing practices that maintain vegetation cover, allow pasture regeneration and accommodate seasonal livestock mobility. The planning framework should also identify wildlife habitats, movement corridors and conservation areas within the zone to ensure that livestock production remains compatible with biodiversity conservation.



Planning implications:

- Prioritize extensive livestock production and sustainable rangeland management in areas demonstrated to be suitable for these uses.
- Establish grazing management units and seasonal grazing arrangements based on forage availability, water access and ecological conditions.
- Identify and protect grazing reserves for use during drought and other periods of pasture scarcity.
- Maintain wildlife connectivity and prevent incompatible development within designated conservation areas and movement corridors.
- Promote periodic assessment of vegetation condition and grazing capacity to guide stocking decisions and restoration interventions.

2. Upper Midland (Livestock–Sorghum Zone)

The Upper Midland (Livestock–Sorghum Zone) occurs along the northeastern boundary of the community land, as indicated in Map 16. The mapped classification suggests an agro-ecological setting in which livestock production may be integrated with the cultivation of drought-tolerant crops, such as sorghum, where local conditions permit.

However, the suitability of this zone for crop cultivation should not be inferred from its classification alone. Rainfall reliability, soil depth and fertility, slope, moisture availability, water access and the risk of competition with livestock grazing should be evaluated before crop production is promoted. Sorghum and other drought-tolerant crops may provide livelihood diversification opportunities in suitable locations, but production should remain responsive to the area's semi-arid conditions.

Planning implications:

- Identify and verify suitable sites for small-scale, climate-smart crop production without compromising essential grazing resources.
- Encourage drought-tolerant crops and soil-moisture conservation practices where supported by local agro-ecological conditions.
- Promote integrated crop–livestock systems where these are compatible with community land-use priorities.
- Establish measures to minimize soil erosion, vegetation clearance and competition between cultivated land and livestock grazing.



- Support community-based monitoring of crop performance and seasonal rainfall to guide decisions on agricultural investment.

3. Lower Midland (Ranching Zone)

The Lower Midland (Ranching Zone) is mapped within a relatively small area at the northwestern tip of Koiya Community Land. This zone represents a distinct agro-ecological unit whose land-use suitability should be assessed in relation to its elevation, local rainfall, temperature, soil characteristics, vegetation and water availability.

Where conditions are relatively warmer or drier, pasture may become depleted more rapidly during extended dry periods. Nevertheless, the actual grazing capacity and vulnerability of this zone should be established through field assessment rather than assumed from its classification alone. The zone may support livestock production where forage and water resources are sufficient, subject to appropriate grazing management and conservation safeguards.

Planning implications:

- Assess the zone's seasonal pasture availability, water resources and carrying capacity to determine appropriate grazing intensity.
- Promote flexible grazing arrangements that enable livestock movement in response to seasonal conditions.
- Prioritize soil and water conservation in locations vulnerable to erosion or reduced vegetation cover.
- Avoid excessive concentration of livestock around limited water points and other essential resources.
- Integrate the zone into community-wide drought preparedness and rangeland monitoring programmes.

3.1.9.2. Summary of Planning Implications of Agro-Ecological Zonation

The agro-ecological distribution presented in Map 16 provides an initial framework for matching land uses to ecological conditions. The following considerations should guide its application in the Koiya Community Land LP&LUDP:

- **Land-use compatibility:** Proposed land uses should be consistent with the ecological capability of each zone and should avoid activities likely to cause long-term degradation.

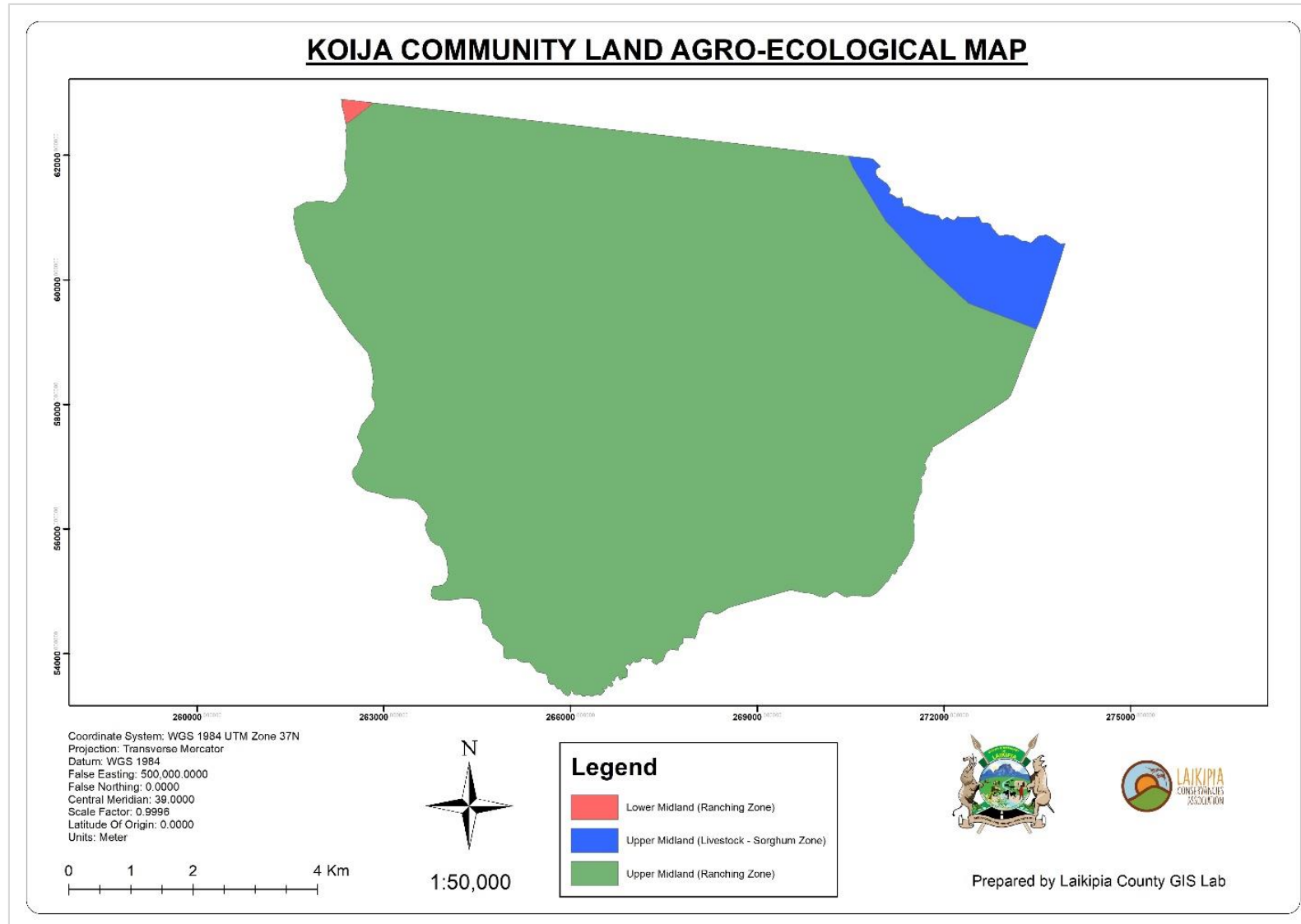


- **Rangeland sustainability:** Grazing management should be informed by seasonal forage availability, water resources and the need to maintain sufficient vegetation for livestock and wildlife.
- **Climate adaptation:** Planning should recognize the uncertainty associated with rainfall variability and drought, incorporating grazing reserves, flexible livestock mobility and water-resource protection.
- **Agricultural suitability:** Crop cultivation should be promoted only in areas demonstrated to have suitable soils, moisture conditions and other necessary production requirements.
- **Conservation and ecological connectivity:** Agro-ecological boundaries should be considered alongside wildlife habitats, riparian areas, dispersal areas and movement corridors when determining appropriate land uses.
- **Settlement and infrastructure planning:** Settlement expansion and infrastructure development should be directed towards environmentally suitable locations after considering soil conditions, drainage, water availability, accessibility and potential effects on pastoral and conservation systems.
- **Monitoring and adaptive management:** The community should periodically review land-use decisions using field assessments, vegetation monitoring, rainfall information and GIS-based analysis to respond to changing ecological conditions.

The agro-ecological zonation provides a useful starting point for differentiating land-management approaches across Koiya Community Land. Its effective application will depend on validating the mapped zones against field conditions and integrating the results with rainfall distribution, land cover, land availability, grazing requirements, water resources and wildlife conservation priorities. This integrated approach will support a land-use framework that balances pastoral livelihoods, environmental sustainability and the long-term resilience of the community landscape.



Map 16: Agro Ecological Map



Source: Laikipia County GIS Lab, 2026



3.2. Site Analysis

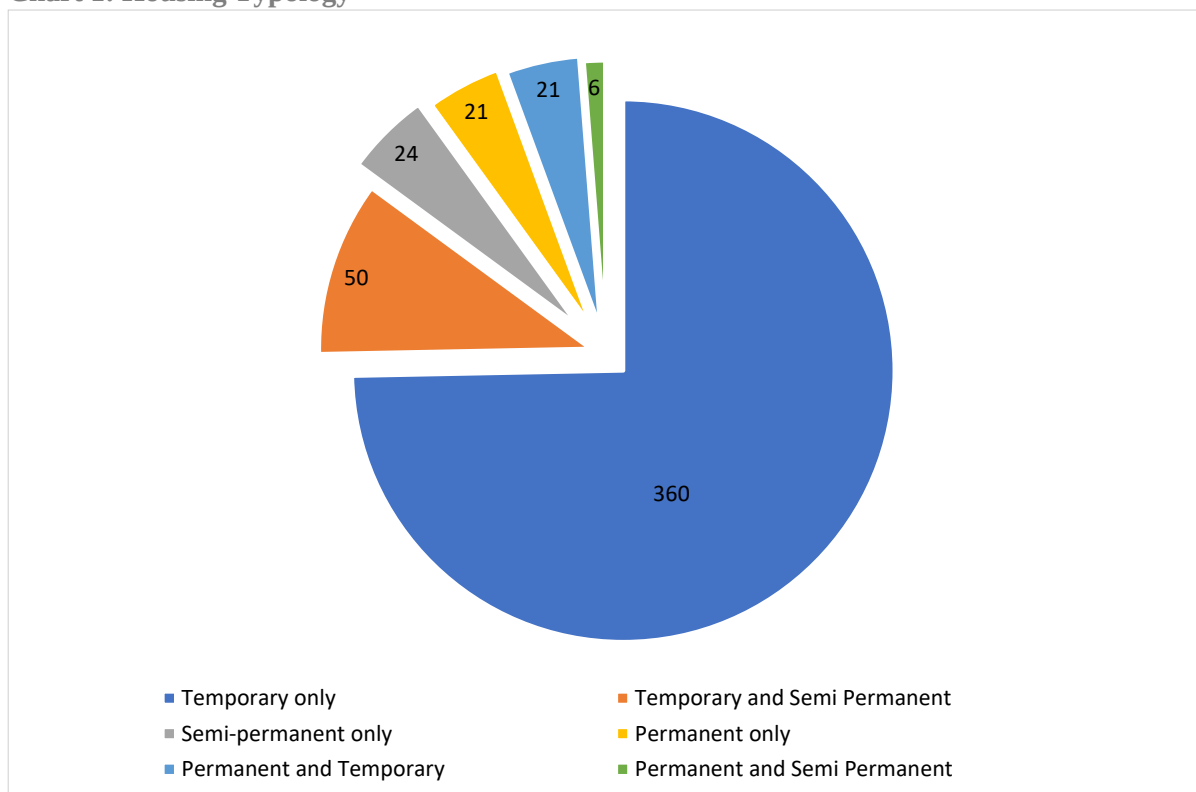
3.2.1. Housing typology

Whereas there is a mixture of housing typologies, temporary houses are the most common across the community. Considering the community mode of life is nomadism, residents are unlikely to develop permanent structures. However, there are permanent structures and commercial structures concentrated at Ewaso center since it's the main economic hub.

These are primarily rental and commercial shops. Conversely, residential houses are distributed across the land with the main construction material being mud, cow dung and grass thatched.

The chart below shows the distribution of various housing typology.

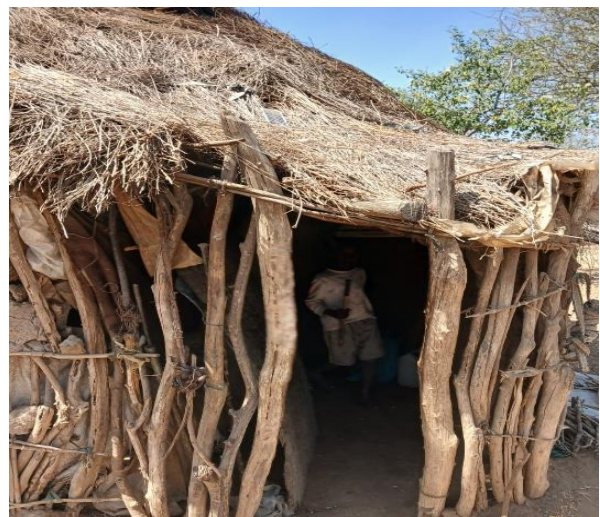
Chart 1: Housing Typology



Source: Laikipia County Government, 2026



Plate 5: Housing Typology on Site





3.3. Physical Infrastructure

3.3.1. Roads Network

Koiya community land is served by two major roads. Kimanjo -Ol-Donyiro road that runs through Ewaso Center and Mpala-Nongabolo-Nosirai-Ewaso road. There are other existing smaller roads that greatly improve the accessibility of community land. Although all these roads are generally usable, their main challenge is destruction by floods during rainy seasons which make most of the roads impassable

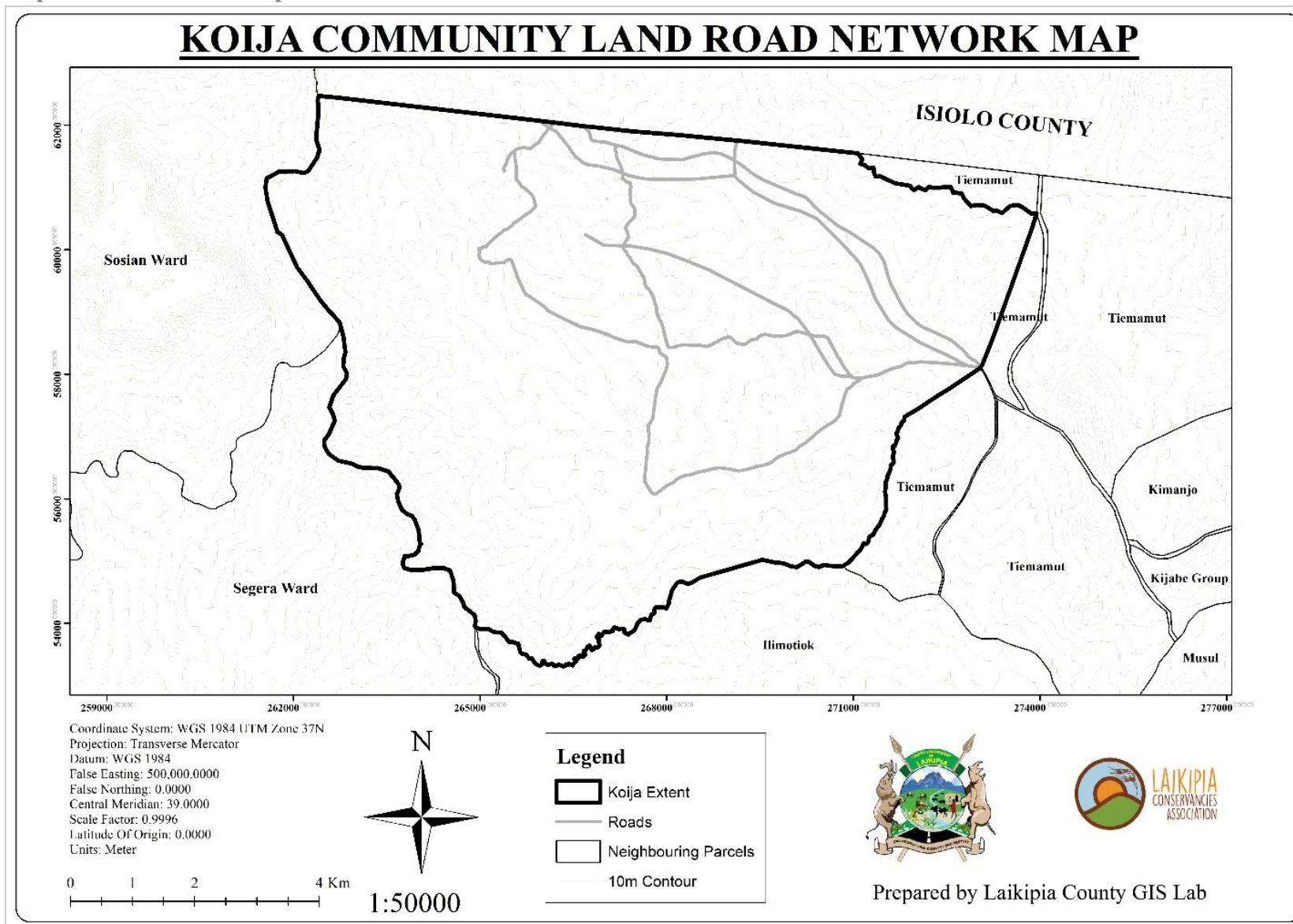
It is therefore necessary to upgrade them to all weather roads to improve community accessibility. The current road infrastructure supports essential mobility for residents, access to markets, social services, and inter-community connections.

Majority of the population's mode of transport is through walking and use of motorbikes to access essential services like health, education, and markets. Non-motorized transport is the common mode of transport whereby residents commute from one point to the next to access essential services and conduct activities of daily living. Consequently, there are a myriad of tracks traversing through the land.

Majority of the population mode of transportation rotates between motorized and non-motorized transportation. Motorized transportation is done through motorbikes and small cargo cars that are mostly used to transport goods in and out of the community land. Non-motorized transportation is practiced by virtue of walking from one place to another.



Map 17: Road Network Map



Source: Laikipia County GIS Lab, 2026



The map above shows road connectivity in the area where they are more concentrated from the western to the northern region. These are areas that have high human settlements and Ewaso center as the main economic hub within the community. The road network is also instrumental in informing human settlements where the population primarily settles where there is easier access to essential services. However, temporary foot paths act as connection to major roads for people in remote areas. Notably, there is no road connection on the western region which is uninhabited and whose terrain does not support human settlement.

3.3.1.1. Emerging Issues and Planning Implications

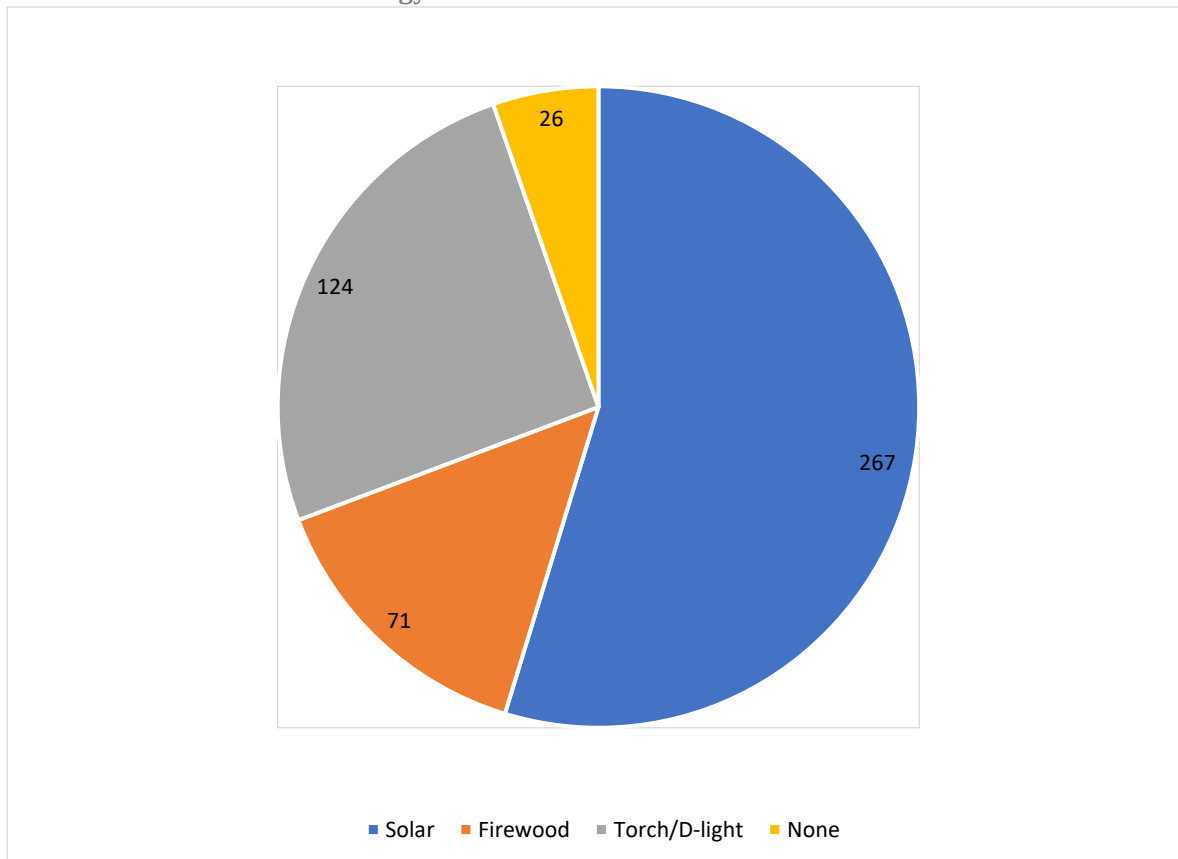
- The road network determines the ability to access essential services like market, health, and education. However, the lack of all-weather roads is likely to hinder transportation needs during adverse weather conditions. Therefore,
- It is imperative to upgrade roads to all weather and open up remote locations.
- Ensure there is proper drainage along major roads to prevent soil erosion during rainy season and ensure transportation is not hindered.
- Ensure continuous maintenance of existing transportation corridors.

3.3.2. Energy Sources

Koiya community is not connected to the national electricity grid. However, there is minimal connections at Ewaso center. Therefore, the community primarily relies on solar energy and firewood as the main sources of energy. The residents indicate that 267 rely on solar, 124 on. The 55 households that depends on firewood as their main source are merely the visible fraction of a much larger biomass dependency in reality, nearly all households, including the 231 with solar, almost certainly cook with firewood. The figure below shows distribution of energy sources in Koiya community.



Chart 2: Main Household Energy Source



Source: Laikipia County Government, 2026

3.3.2.1. Emerging Issues and Planning Implications

- Use of firewood as primary source of energy has resulted in a rise in respiratory diseases which kids are highly susceptible to.
- Use of firewood and burning of charcoal as a commercial activity has resulted in deforestation of scarce vegetation as a foreseen in the change detection maps for vegetation.
- Support alternative energy sources to reduce reliance on firewood which will consequently result in environmental conservation and reduction in vegetation degradation.
- Harnessing solar energy and distribution across the community is likely to improve the community's quality of life.
- The high installation cost of solar can be a point to lobby funds from donors and NGO's who support green and renewable energy.



3.4. Demography Overview

The surveyed community is a high-growth and predominantly youthful population. The surveyed population consists of **2,928** persons and **488** households and an approximate household size of **6.0** persons. The community is characterized by a child population (**69.4%**) and a relatively small adult workforce, indicating a rapid natural increase and a heavy burden on the productive-age cohort.

Table 1: Population Size and Composition

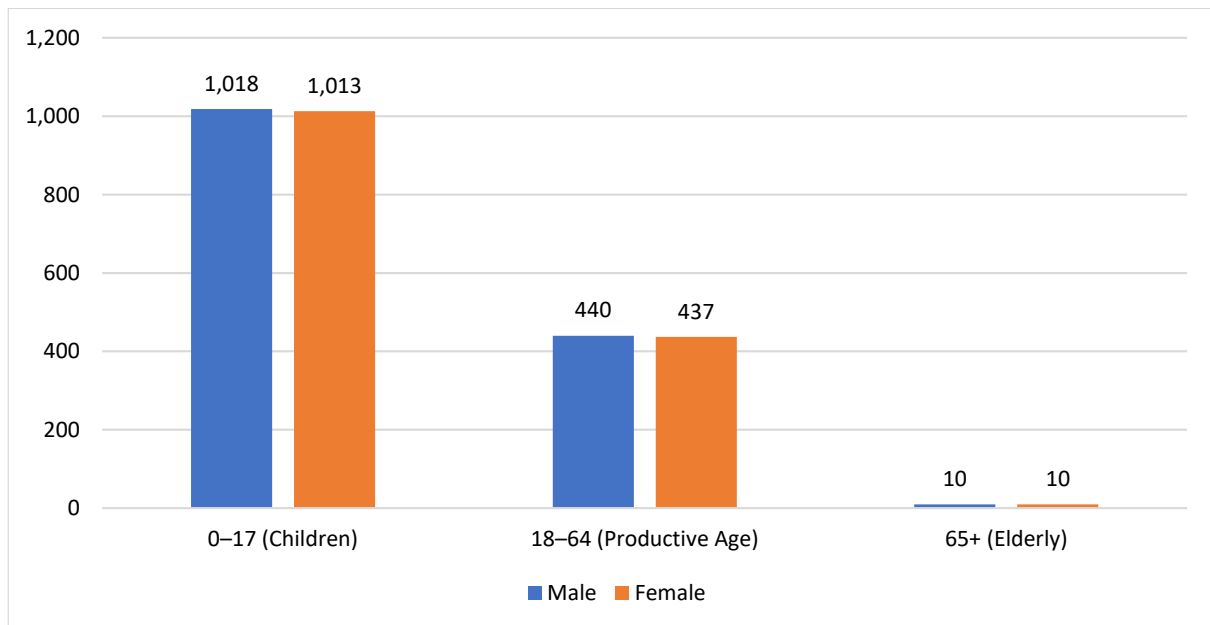
Metric	Value	Percentage
Population	2,928	100%
Households	488	-
Average Household Size	6	-
Males	1,468	50.14%
Females	1,460	49.86%
Adults (18+)	897	30.63%
Male Adults	450	50.1% of adults
Female Adults	447	49.9% of adults
Children (Under 18)	2,031	69.37%
Male Children	1,018	50.1% of children
Female Children	1,013	49.9% of children

STRUCTURAL INDICATOR	VALUE	SIGNIFICANCE
Child Dependency Ratio	226.4%	(2,031 children / 897 adults) × 100. Extremely high means every adult supports 2 children.
Old-Age Dependency Ratio	2.2%	Very low minimal elderly care burden.



Total Dependency Ratio	228.6%	Combined burden; >200% is considered
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Chart 3: Population Distribution by Age and Sex



Source: Laikipia County Government, 2026

3.4.1. Population Projections (10-Year)

The age distribution of the population in Koiya community indicates a high fertility rate considering there is an average of 4 children per women sampled from an approximately **447** adult females. Therefore, the birth rate per **1,000** women is likely to be **9** children. This is reflective of the overall fertility trend in pastoral and Agro-pastoral communities in most of the ASAL regions in Kenya where large family size is common and a practical solution to livestock labor requirements. However, it is also characterized by a lack of Family planning (FP) services and also the risk of child mortality

3.4.2. Ten-Year Growth Projection

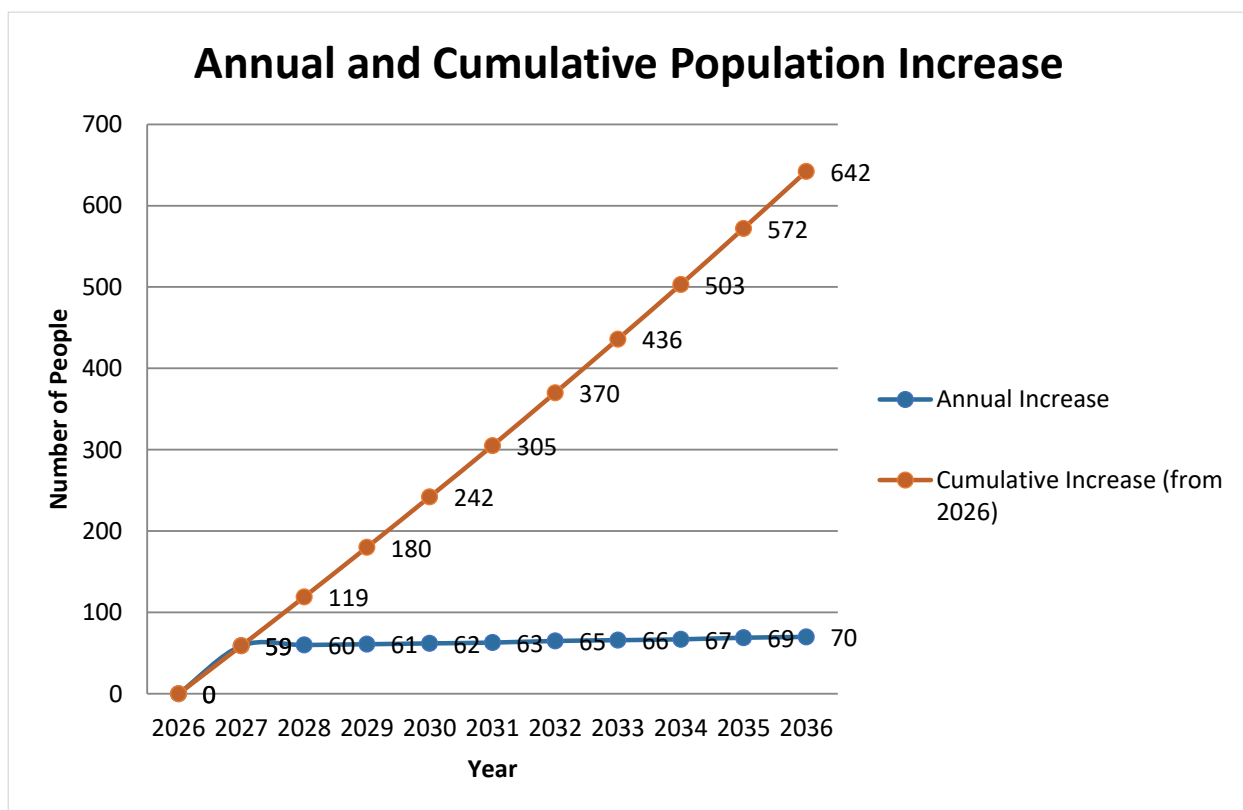
Assuming a conservative growth rate of about **2.0** per cent annually as is typical for rural and pastoral Kenyan populations, and the age distribution of the population surveyed, then the community's population will rise from **2,928** in 2026 to approximately **3,570** in 2036, an increase of **642**, or about **21.9%** over the **10-year** period.



Table 2: Population Growth Projection

Year	Annual Increase	Cumulative Increase (from 2026)	Projected Population
2026	—	—	2,928
2027	+59	+59	2,987
2028	+60	+119	3,047
2029	+61	+180	3,108
2030	+62	+242	3,170
2031	+63	+305	3,233
2032	+65	+370	3,298
2033	+66	+436	3,364
2034	+67	+503	3,431
2035	+69	+572	3,500
2036	+70	+642	3,570

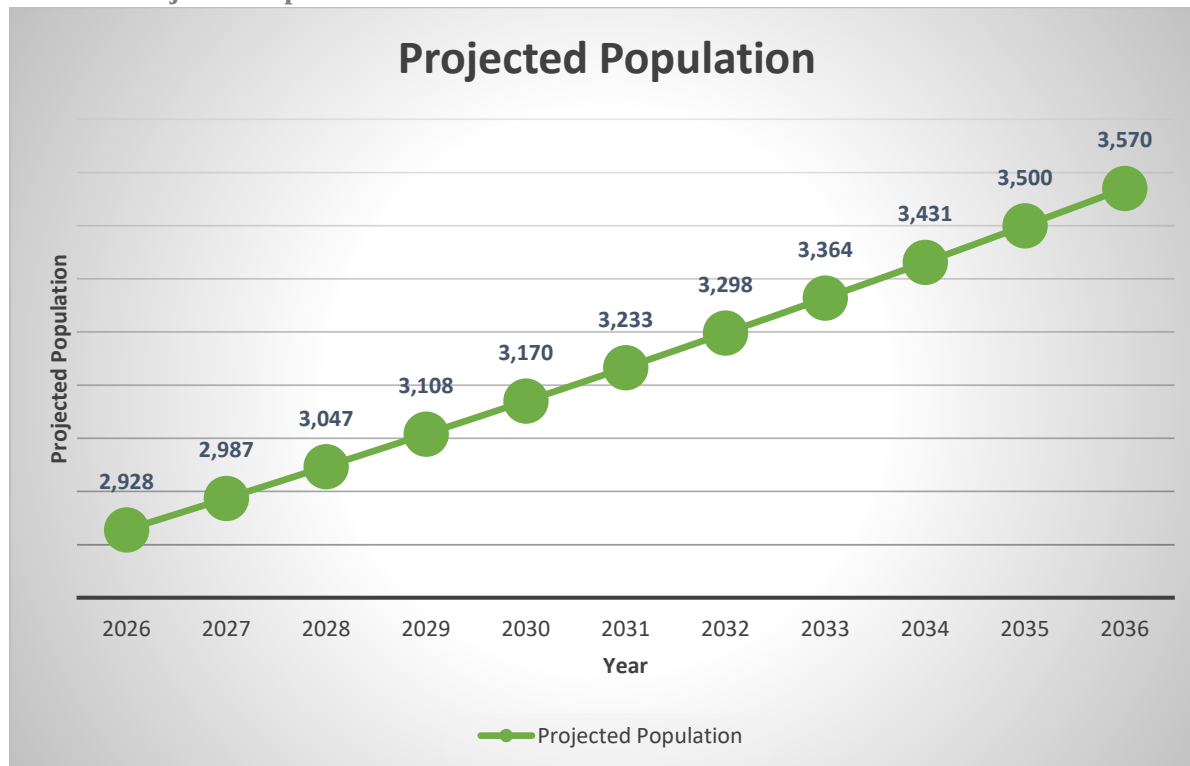
Chart 4: Projected Annual and Cumulative Population Increase



Source: Laikipia County Government, 2026



Chart 5: Projected Population Increase



Source: Laikipia County Government, 2026

3.4.3. Population Growth and Land-Use Implications

The population projections should be used as a basis for determining the future capacity of public facilities. Planning should not simply provide for the projected population but should also account for the geographical distribution of households, the pastoral lifestyle and the fact that some facilities serve populations outside Koiya Community Land.

The following planning priorities are recommended:

Plate 6 Population and Land-Use Implications

Sector	Population-related planning response
Education	Expand existing schools and reserve land for additional ECDE, primary and secondary facilities.
Health	Upgrade Ewaso Dispensary with a maternity wing and provide additional dispensaries.
Water	Increase water production, storage and distribution capacity and improve water quality.



Sector	Population-related planning response
Housing	Designate suitable settlement areas and manage settlement expansion.
Roads	Improve access roads linking villages, schools, markets, health facilities and water points.
Livestock	Protect grazing areas, livestock routes, watering points and veterinary facilities.
Conservation	Protect wildlife corridors and establish development-control measures around sensitive areas.
Commerce	Revitalize the livestock market and establish suitable commercial centers.
Energy	Expand electricity and solar-energy infrastructure to emerging settlements and public facilities.
Sanitation	Provide adequate sanitation and solid-waste management facilities alongside settlement growth.
Recreation	Reserve land for community recreation, cultural facilities, tourism and public open spaces.
Administration	Secure land tenure for existing and future public facilities.



3.4.3.1. Emerging Issues and Planning Implications

Based on the population data, the following critical emerging issues demand immediate policy attention

Educational Infrastructure

With 2,031 children, the community needs extra educational facilities. There is a need for schools' expansion to cater for the increasing children's population. Further, it is imperative to create community awareness on the need for education to increase literacy levels. The initiative will improve school enrollment and transition from primary to secondary school.

Water and Sanitation Strain.

The expected population growth will have significant strain on current water supply and sanitation infrastructure with an average household size of 6.0 persons per household. There will be an increase in demand for water resources. The risk of water borne diseases like cholera and diarrhea may be higher when water and sanitation facilities are inadequate. The plan should then focus on the installation of extra water points, better storage facilities, a more reliable water supply, water management, solid-waste management and good quality sanitation facilities.

Primary Healthcare Shift

New healthcare services will be needed to accommodate the changing population structure, as health care needs of children and adults must be provided separately. Children will also need crucial services like immunization, growth monitoring, nutrition screening and treatment of common childhood illnesses. Meanwhile, the adult population will drive up demand for maternal and reproductive health, chronic disease management, mental health services, and other primary healthcare services. Those of the 447 adult females should be given special attention, such as antenatal, postnatal and reproductive health services, and the overall capacity of the local health facility strengthened to meet the needs of the increasing population.

3.5. Social Infrastructure

3.5.1. Solid and Liquid Waste management

The community does not have specified areas for solid waste collection and disposal. Therefore, the residents rely on open fields and open pits for waste disposal. These practices create environmental hazards.



Therefore, there is a need to explore alternative waste management activities such as recycling and reuse.

3.5.2. Human Waste Management

Majority of the population within the community do not have sanitation facilities in their homesteads for liquid waste disposal and use open fields. This situation indicates a sanitation gap requiring proactive intervention to reduce disease spread and improve community health

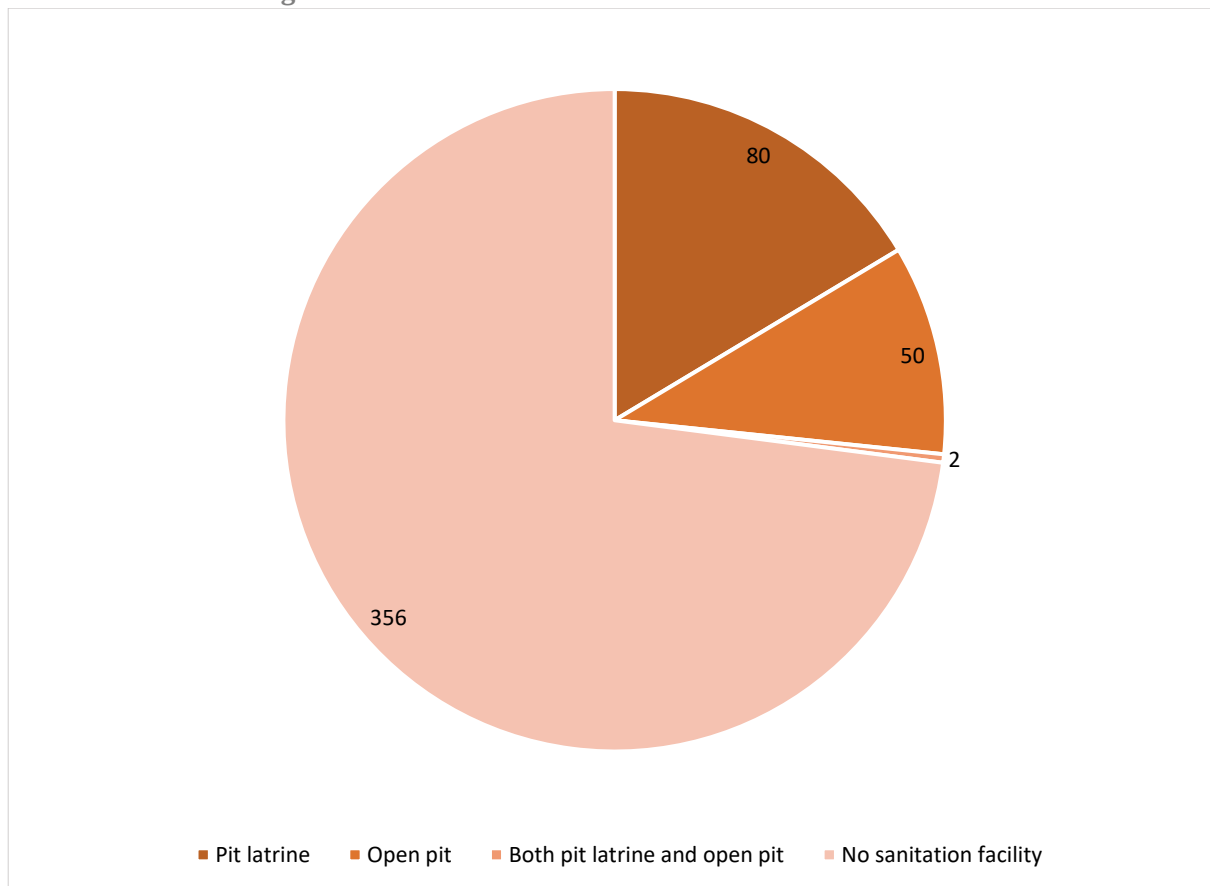
Plate 7: Pit Latrine on Site



Source: Field Survey, 2026



Chart 6: Waste Management Practices



Source: Laikipia County Government, 2026

3.5.2.1. Emerging Issues and Planning Implications

- With the majority of the population not having waste disposal and sanitation facilities, there are high risks of outbreaks of both human and livestock diseases. Therefore, there is a need to create awareness on proper waste management and disposal activities.
- Proper waste management will significantly reduce risk of pollution and contamination of rainwater during rainy seasons. This water ends up seeping in riverbeds and is dug out during dry seasons as sand dams.
- There is a need to place emphasis on Ewaso center that has high waste production and allocate waste disposal site during land use planning.

3.5.3. Water Resources

3.5.3.1. Human Consumption

Koiya Dam, Sand dams and boreholes are the main sources of water for human consumption. Boreholes are evenly distributed across the land providing a source of potable water. However,

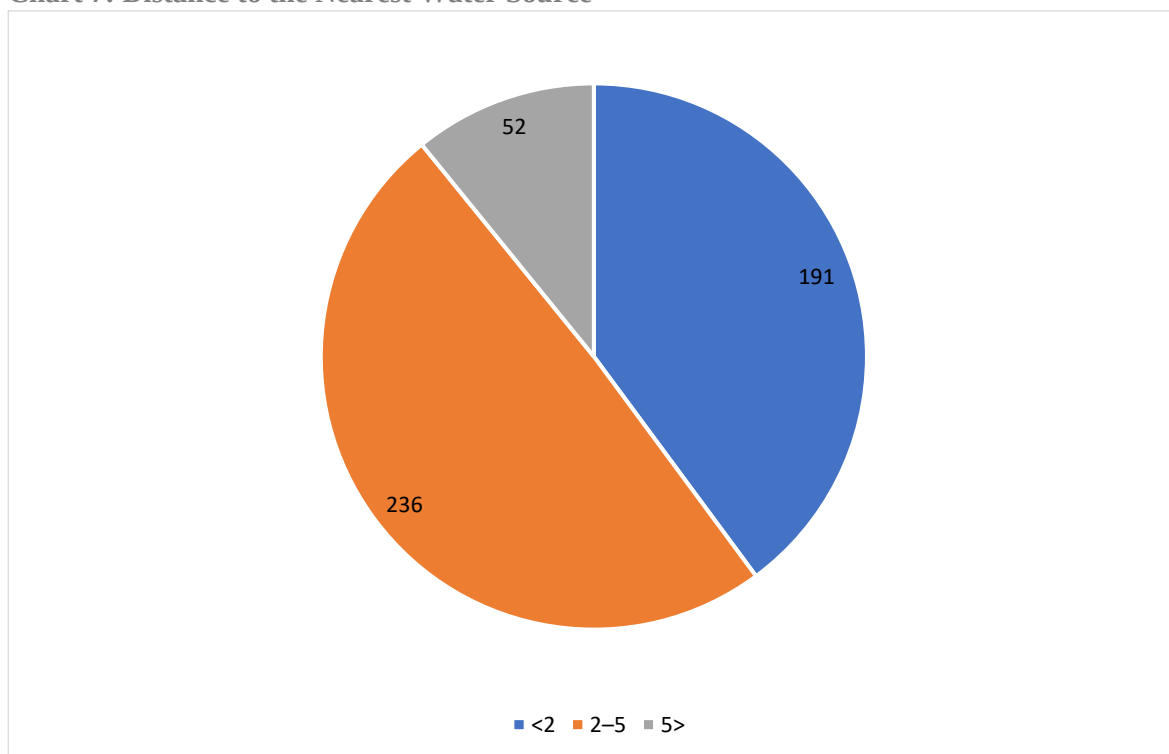


not all are functional. Other sources of water are shallow wells, Rock catchment, and Ewaso river. Majority of the population are within 2 kilometers to the nearest water source.

3.5.3.2. Animal Consumption

Domestic and wild animals' survival is highly dependent on water availability. There is an even distribution of water points. The water points are mainly located along the wildlife corridors or largely influence wildlife movement. For instance, Koiya dam attracts wildlife movement along the Southeast part of the land. Similarly, there is a wildlife bathing pond on the western part along a wildlife corridor. The map below shows water distribution for animal consumption

Chart 7: Distance to the Nearest Water Source



Source: Laikipia County Government, 2026



The table below shows the main water infrastructure within Koija Community land and their operational status.

Table 3: Koija Water Resources

SOURCE	UTILITY	STATUS
Groundwater Source	Koija Borehole (Main)	Solar powered; fully functional; largest borehole in Koija; supplies all schools, Ewaso Dispensary and Ewaso Centre
	Ewaso Borehole	Functional; solar powered; supplies schools and community water points
	Community Water Points (Ewaso)	Functional; open 06:00–18:00; fee Ksh 100/month; managed by water committee; salty in some sources
	Nosirai Borehole	Functional; solar powered; animal and human consumption; salty water
	Nosirai Water Storage Tank	Operational (CGL – Water & Environment); salty water
	Munishoi Borehole	Functional; solar powered
	Pilili Borehole 1	Solar powered; not functional at time of survey; two storage tanks on site
	Pilili Borehole 2	Solar powered; functional; sufficient water
Surface Water Sources	Loosupukei Wells	Functional
	Rhino Self-Help Group Sand Dam	Existing
	Munishoi Water Pan	Functional
	Loonkujij Water Pan	Has water; can sustain supply for an extended period



SOURCE	UTILITY	STATUS
	Lngoswani Dam	No water; requires rehabilitation
	Koiya Dam	It is a crucial water source especially during dry seasons
	Olchurai Dam	Dry; not lined; lining and rehabilitation required
	Lentir Dam	Almost dried up; desilting and rehabilitation required
	Rock Catchment Area	Existing; utilized for rainwater harvesting



Figure 1 Long'oswani Hand Pump



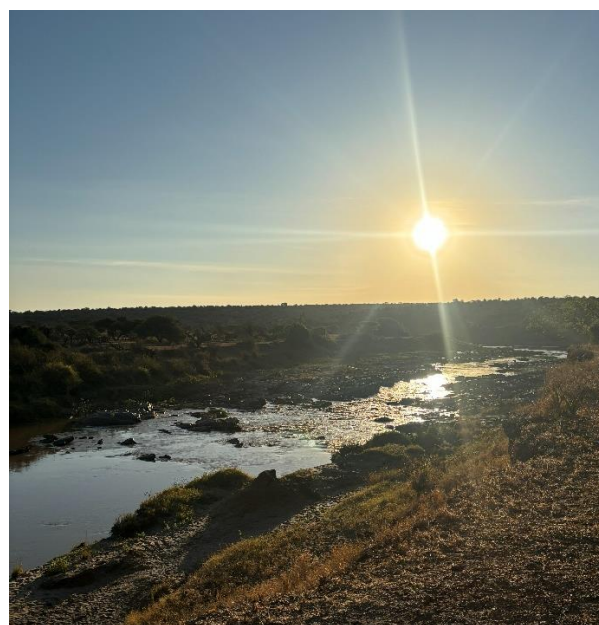
Figure 2 Koiya Dam on site



Figure 3 Water storage tanks on site



Figure 4 Ewaso River on site



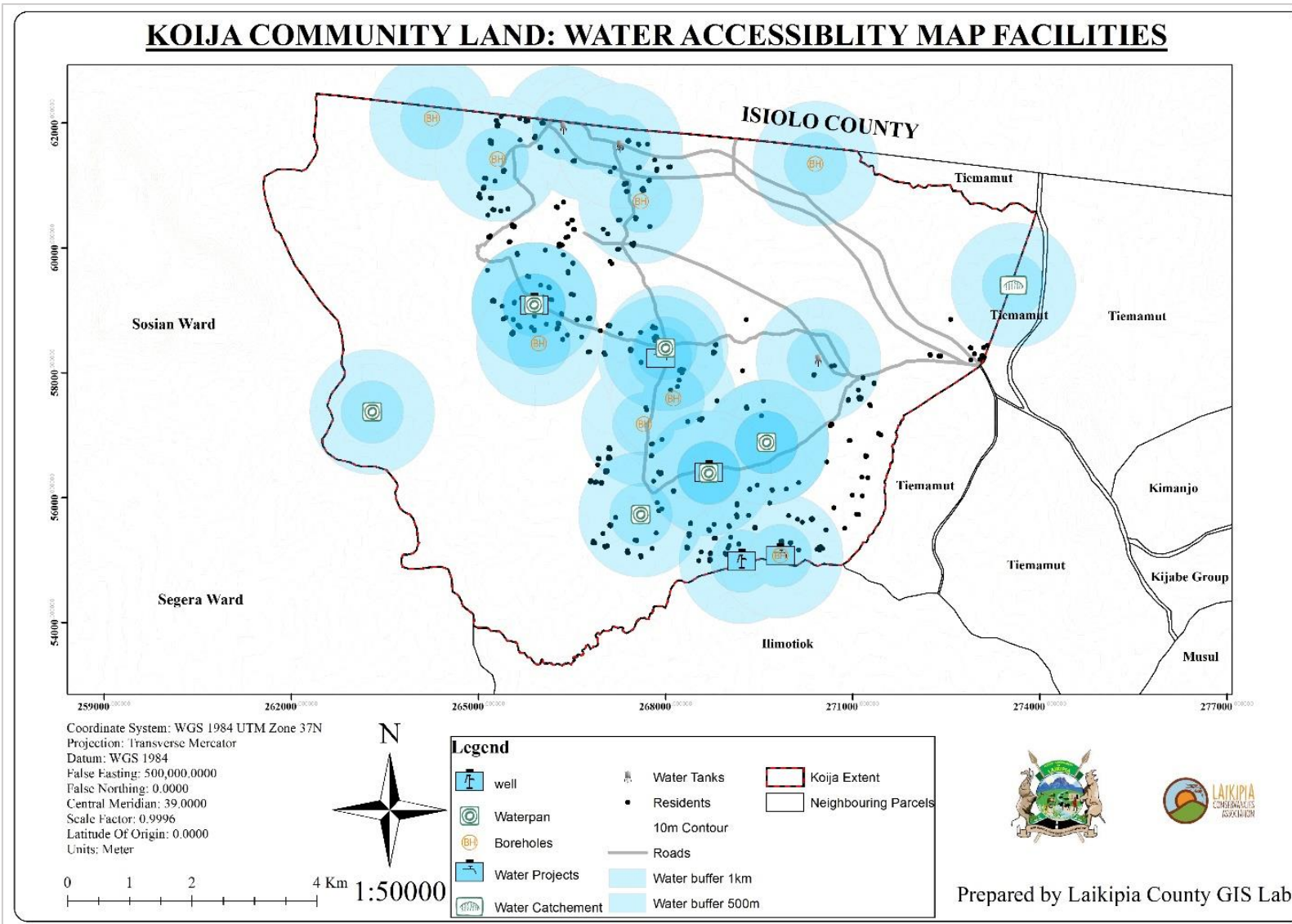


3.5.3.3. Emerging Issues and Planning Implications

- Boreholes are the primary source of potable water for the community and most of them are solar-powered. These water sources are resilient and are unlikely to dry during dry seasons. Therefore, they are a safe source for human consumption all year round.
- Rock catchment like the Nenkimanjoi catchment consisting of a large rock acting as a means to harness rainwater and directing it to a storage tank. The resource acts as a relief for the community by availing clean water for domestic and livestock use.
- Sand dams are built across riverbeds. They fill up with sand which holds water for an extended period even after the river dries up. Consequently, residents dig up shallow wells from the sand dam to access water. They act as an essential source of water during dry season, and the sand protects water from evaporation.
- Although water is accessible throughout the landscape, clean water for human consumption is still scarce with most sources of water being salty water and the rest contaminated by both livestock and wildlife
- There should be designated spots for both human and animal water extraction so as to avoid water contamination.
- Major water sources such as Koija Dam should have purification systems so as to increase the quantity and quality of water for human consumption.



Map 18: Water Accessibility Map



Source: Laikipia County GIS Lab, 2026



3.6. Public Facilities

3.6.1. Health Facilities

Koiya community is served by one major health facility; Ewaso Dispensary. It is a level 2 facility by there is a proposal to have it upgraded to level 3. The dispensary has a catchment patient population of 1,200 per month, serving the local community and neighboring population from other counties. The facility is currently understaffed and cannot effectively address the community's needs. However, there is periodic support from Loisaba Community Trust. The main health issues encountered in the facility are respiratory tract infections, Tuberculosis, water-borne diseases, and malnutrition. It also offers maternity, prenatal, and postnatal services. The major issues encountered in the facility are inadequate water supply and malnutrition linked to cultural food practices. Whereas the facility is already fenced, the administration is unaware of its full extent and do not have ownership documents.

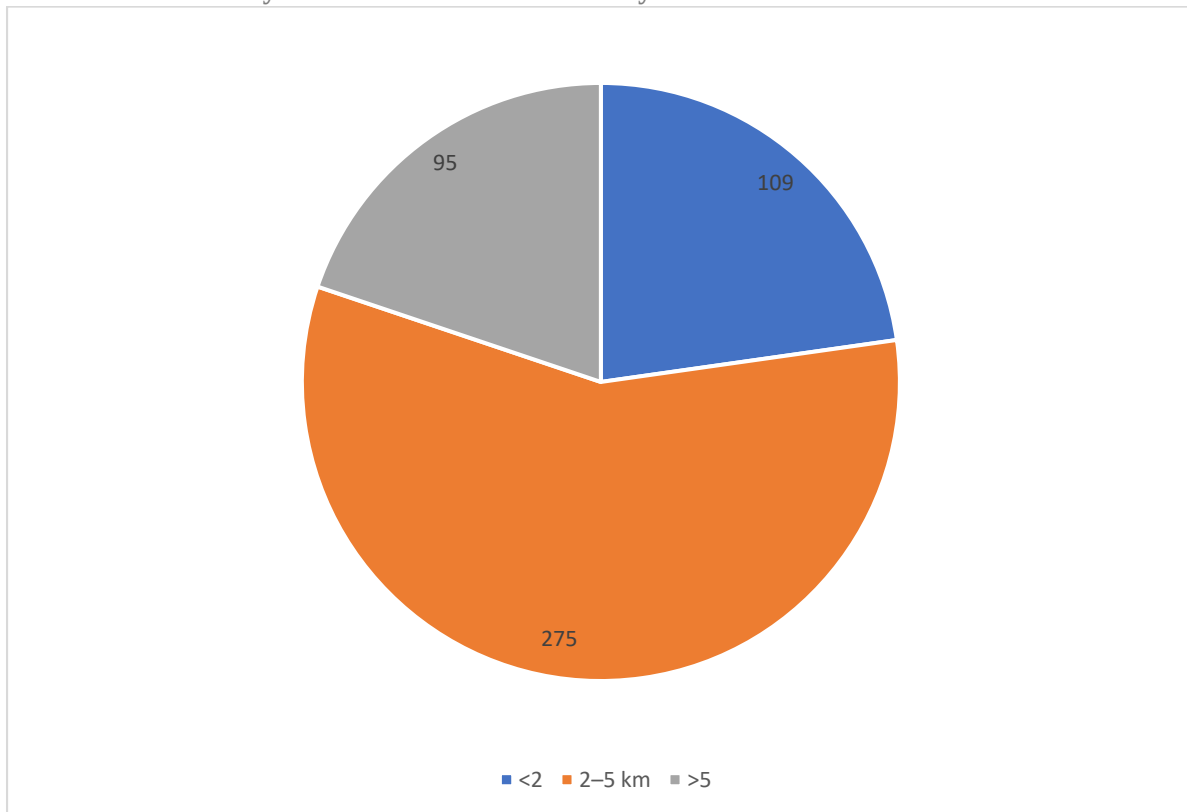
Plate 8: Ewaso Dispensary on Site



Source: Site Visit, 2026



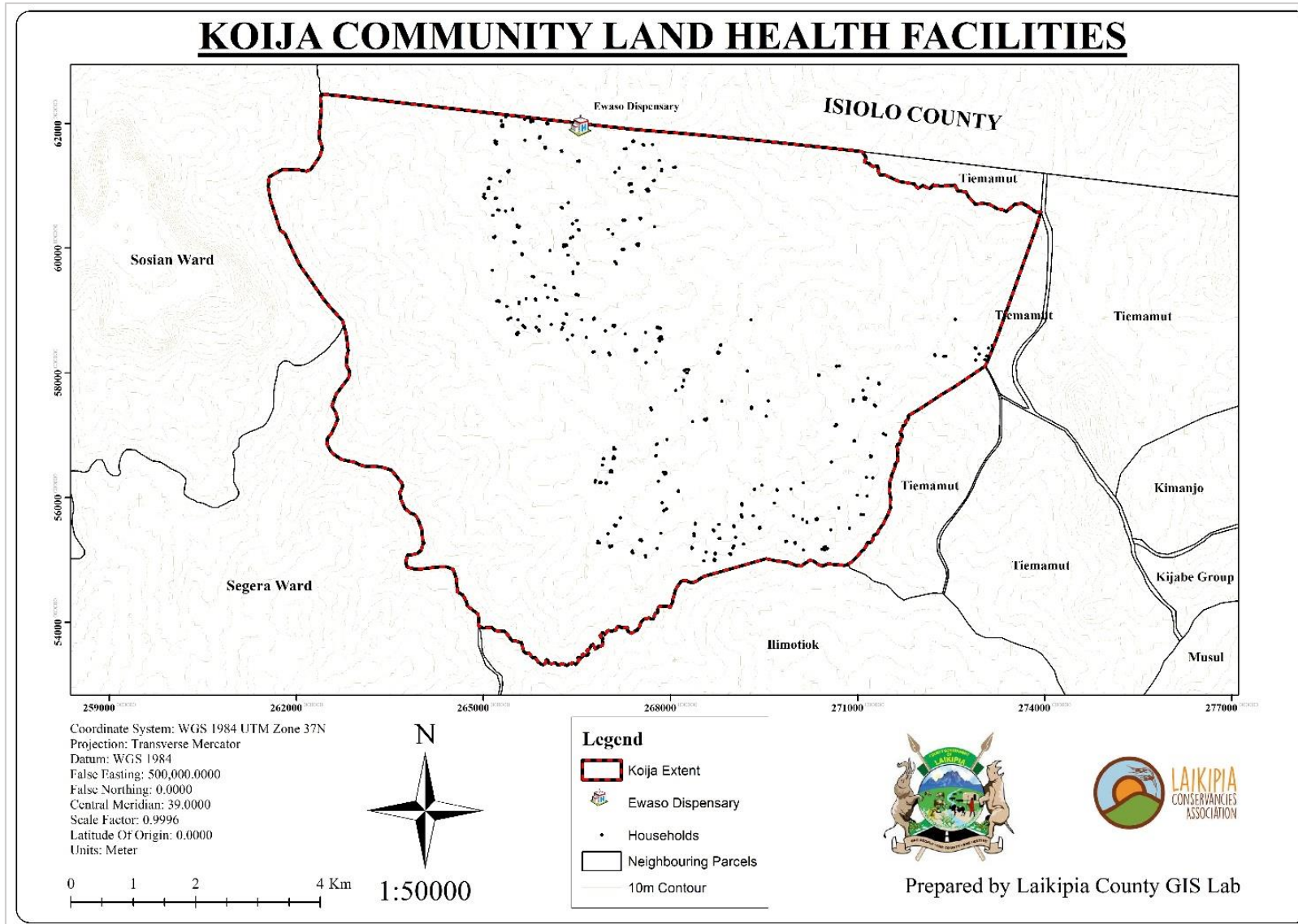
Chart 8: Accessibility to the Nearest Health Facility



Source: Laikipia County Government, 2026



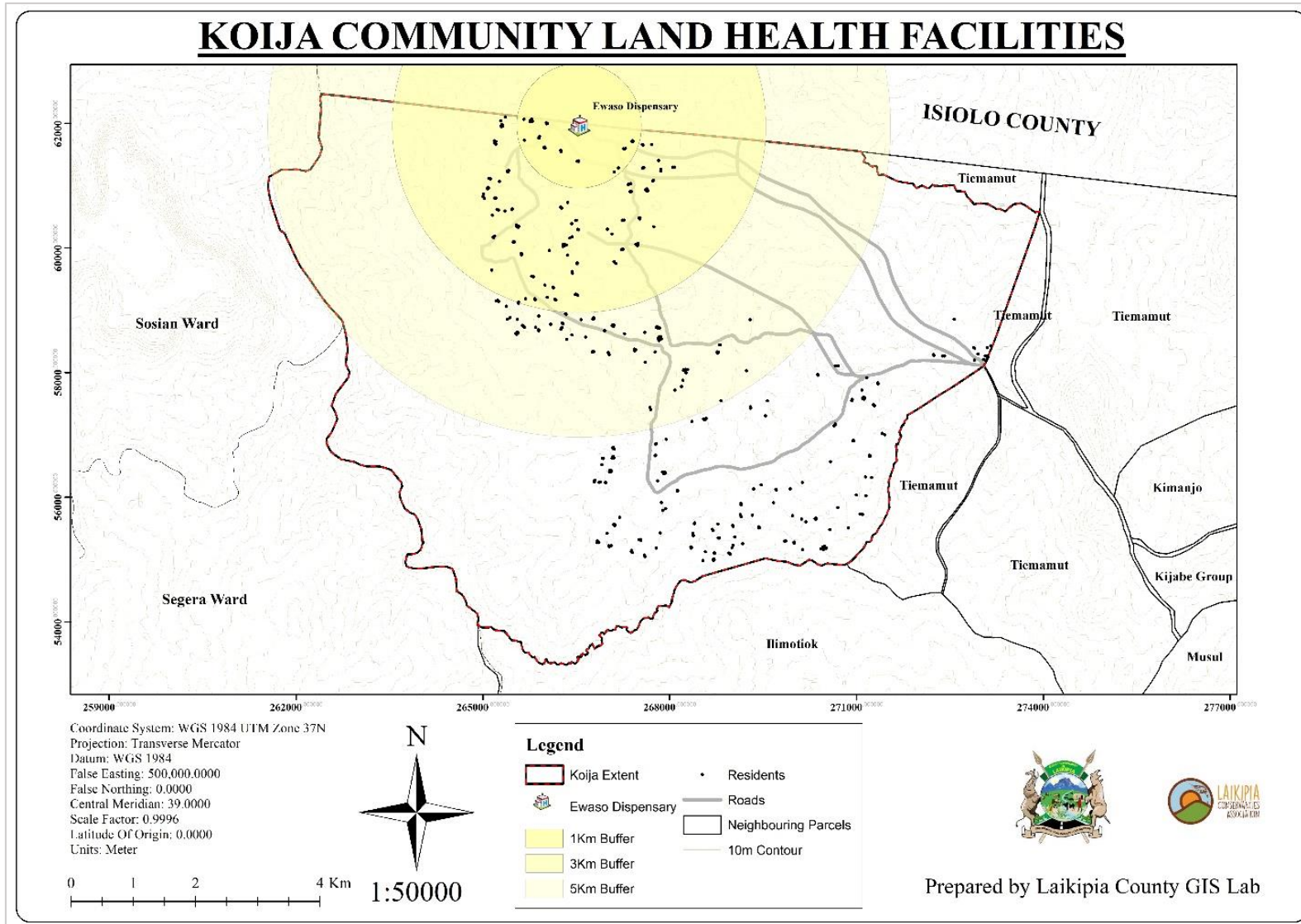
Map 19: Location of Ewaso Dispensary in Relation to Settlement



Source: Laikipia County GIS Lab, 2026



Map 20: Accessibility Index of Ewaso Dispensary



Source: Laikipia County GIS Lab, 2026



The map above shows there is a considerable population with limited access to the nearest health facility, especially those located in the southern end of the community, and considering there is only one health facility in the area at Ewaso Center.

3.6.1.1. Emerging Issues and Planning Implications

There is only one health facility in Koija community which serves the local population and neighboring communities. The situation results in a strain on the facility considering it is understaffed and cannot comprehensively address all community health needs. Therefore;

- In the short term, it will be imperative to improve staffing levels and have satellite clinics to address urgent health needs.
- There is a need to construct additional health facilities, especially on the southern end of the community where locals travel more than five kilometers to access healthcare.

3.7. Education Facilities

Koija community has two major educational institutions; Ewaso Comprehensive school and Ewaso Mixed Day and Boarding School. Ewaso Comprehensive School has a student population of 683. The student composition is 345 boys and 338 girls. In addition, there is an ECDE center within the school compound with 84 boys and 65 girls totaling 149 pupils. Whereas the school is operation, it is understaffed to cater to all pupils' needs.

The key outstanding issue is that the school's administration are uncertain of the schools' compound extent and do not have any ownership documents. According to questionnaire interviews conducted, management contacted by the planning team indicated that they would desire to have at least 12 acres of land to facilitate sufficient area for administration block expansion, enough classrooms, and playground. The school is not connected to national power grid and relies on solar power. Other challenges include water unavailability and nomadism which affects pupil attendance.

Ewaso Secondary School has a student population of 120 students. The school experiences low student intake implying there is low transition from primary to secondary school. This can be primarily related to early marriages and nomadism which, unfortunately, is the community's way of life that places little emphasis on children education. The school does not have ownership documents, but the administration proposes a 20-acre land allocation to cater for all student needs. Other educational institutions are St. Annes Nosirai Comprehensive School, ECDE centers within substantial number of students and within 2km of accessibility. Boreholes



are the main source of water for educational institutions, which is not enough to sustain the facility

Figure 5: Ewaso Primary School



Source: Site Visit, 2026

Figure 6: Kipaika ECDE



Source: Field Survey, 2026



Figure 7: Other ECDEs Within the Community Land

a) Munishoi ECDE



b) Pilili ECDE



Source: Field Survey, 2026

Figure 8: St Ann Nosirai Comprehensive School

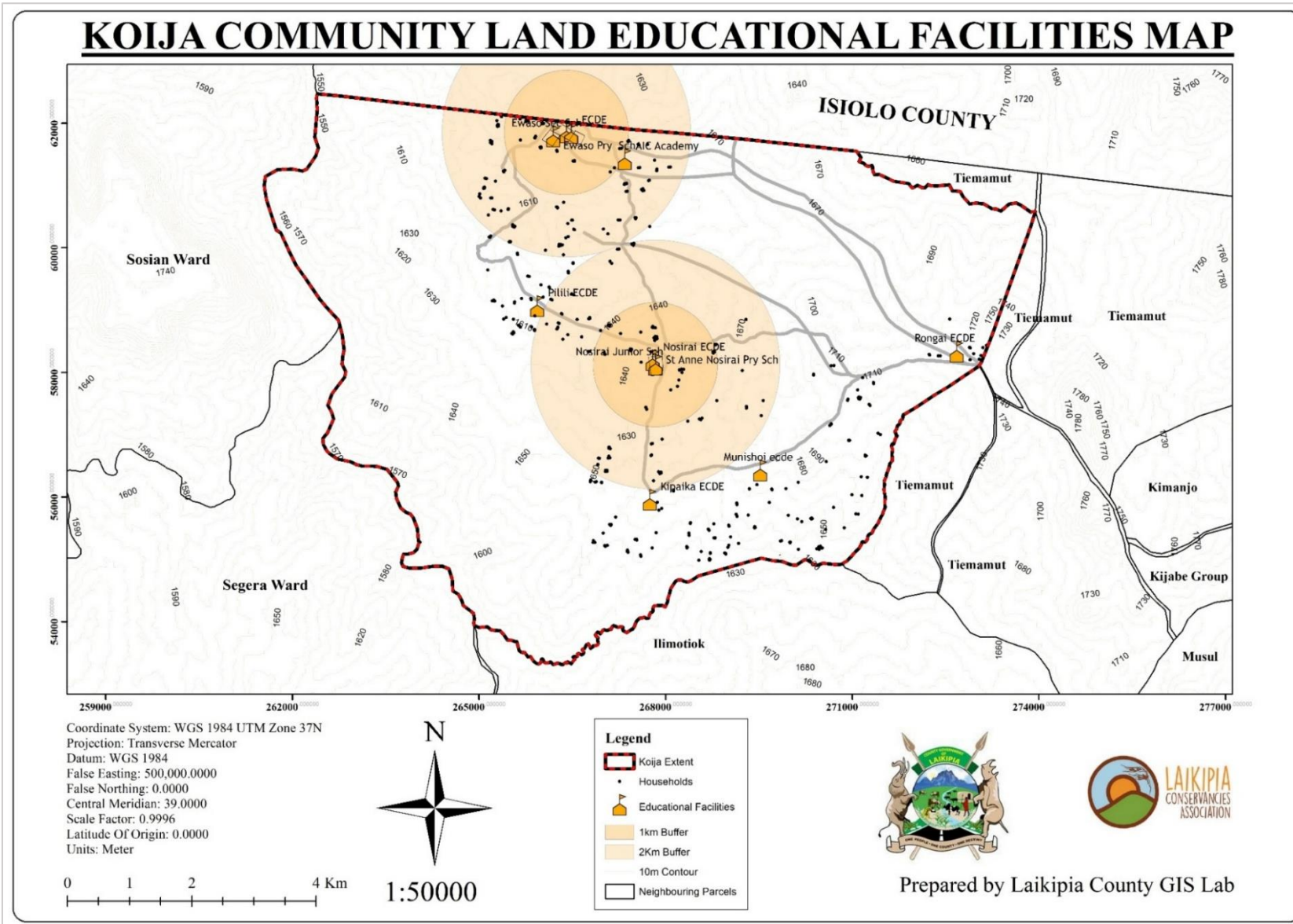


Source: Field Survey, 2026

The map below shows accessibility distance to Ewaso Primary and Secondary School, Nosirai ECDE, and St. Anne Nosirai Primary School. The map shows that majority of the population are within 2 kilometers of access to the nearest education facility. However, there is a significant population on the southern end that are beyond 2 kilometers of access



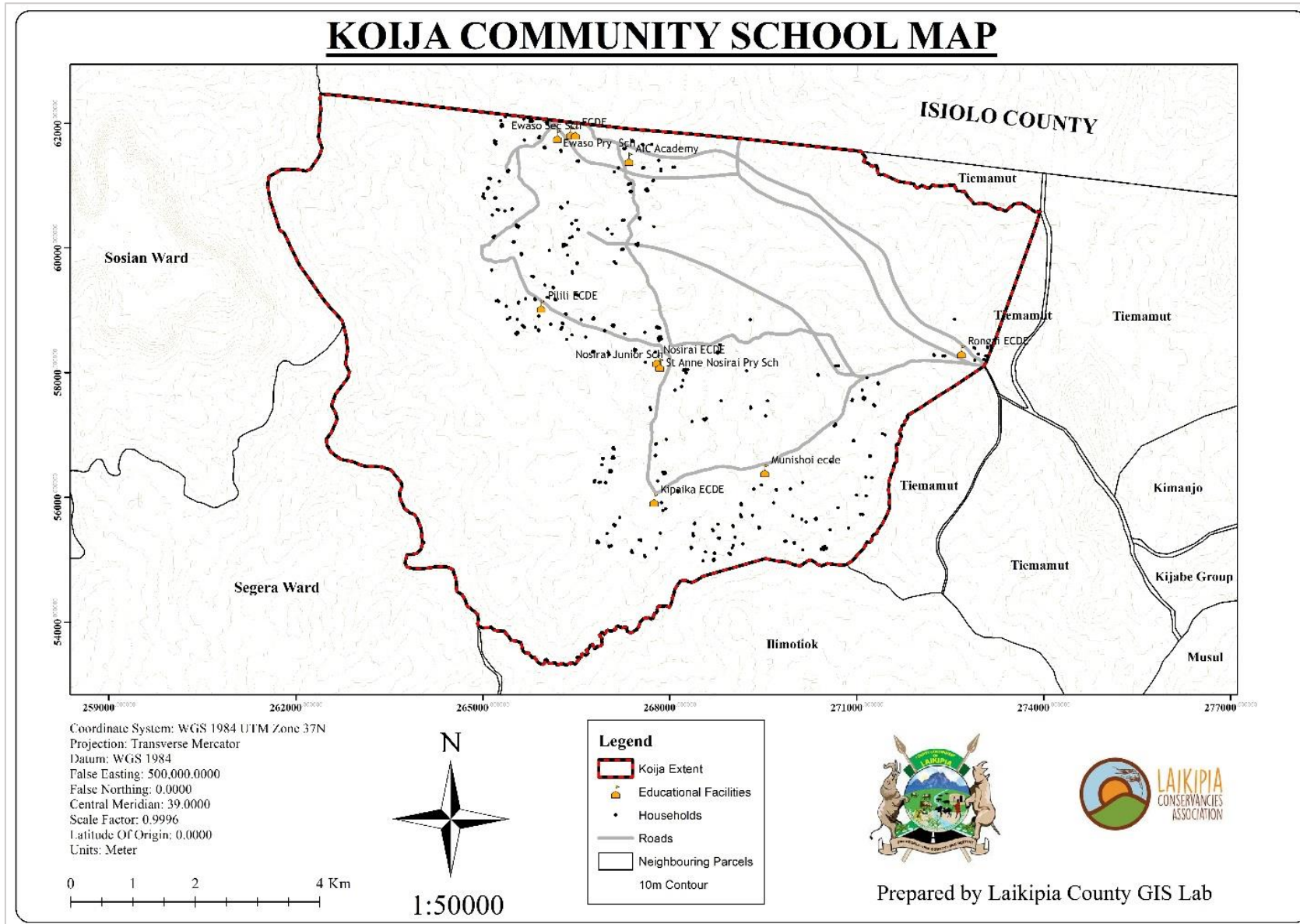
Map 21: Educational Facilities Accessibility Index



Source: Laikipia County GIS Lab, 2026



Map 22: Educational Institutions Distribution



Source: Laikipia County GIS Lab



3.7.1. Emerging Issues and Planning Implications

Koiya community has limited learning institutions being Ewaso Comprehensive and Secondary schools and St. Anne's Nosirai Comprehensive school. In addition, these institutions have low student enrollment and transition from primary to secondary. Therefore, to improve access to quality education;

- It is imperative to add education facilities in the southern parts of the community to cater for the needs of the population who travel more than 5 kilometers to the nearest primary school.
- It is necessary to provide support infrastructure including sufficient and potable water, electricity, and improve staffing levels.
- Allocate sufficient land for school expansion and construction of enough classes, playground, and administration block.
- Elevate existing Monishoi ECDE to a primary and secondary school.

3.8. Community Facilities

Koiya has two community centers; Chui Mamas Center and Nosirai Rhino Women Manyatta. Chui Mamas Center is located at Ewaso on 10 acres of land that is fenced off and has a membership of approximately 1,000 members. The project receives support from Mazingira, Loisaba Conservancy and San Diego Zoo Wildlife Alliance Kenya. The project focuses on women empowerment through various activities like soap making, beekeeping, permaculture, agriculture, tailoring, and beadwork.

The center has employees who have undergone specialized training who act as tutors to training local women to learn special skills and use them for self-development. Further, honey refining, soap sales, and clothing sales from the tailoring department are a source of revenue for the center

The project receives additional revenue by renting out the boardroom for conferences and rooms for short-term stays. Similarly, the Nosirai Women Manyatta focuses on women in Koiya community and empowers them through chicken farming and beekeeping. It has five houses to conduct their activities and is fully funded by Nosirai Rhino Women Group. These empowerment activities are instrumental in supplementing and improving household incomes.



Plate 9 Chui Mama Center

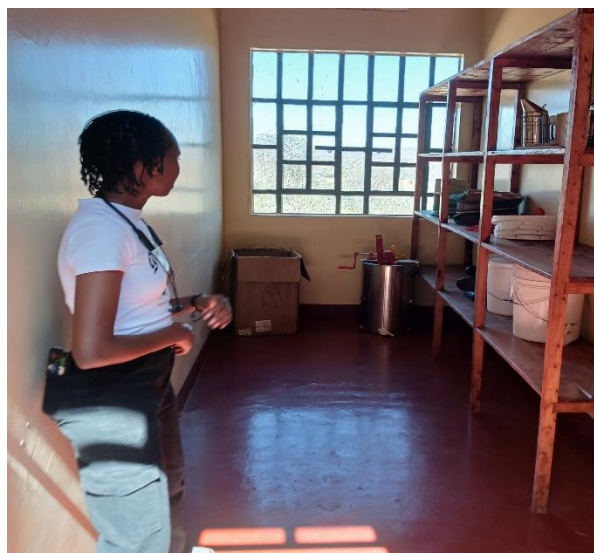
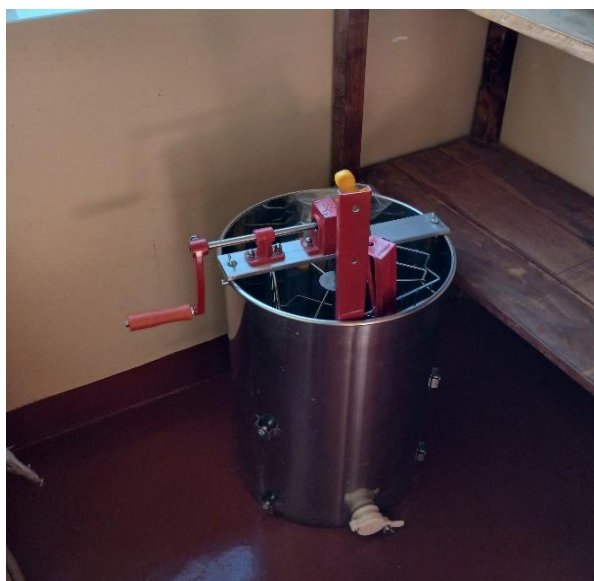




Plate 10 Nosirai Self Help Group Initiatives



3.8.1. Emerging Issues and Planning Implications

- The projects focus on women empowerment to improve income levels, self-reliance and community quality of life.
- There is a need to improve supporting infrastructure, including access roads, water supply, sanitation facilities, renewable energy systems, and digital connectivity.
- Community facilities increase community resilience and revenues during adverse climatic conditions.
- The community need to strike a balance of empowerment so as to include the male gender especially the youth.



3.8.2. Religious Institutions

Koiya is a predominantly Christian community with a variety of churches. However, most of the churches are temporary structures without ownership documentation and on un-surveyed land. They also lack basic infrastructure like sanitation, electricity, and water.

AIC Ewaso church is well established and has additional facilities including education facility attending to the needs of PP1 and PP2 pupils. Considering the increasing youthful population, the church will ease the burden of education needs in the community.

DENOMINATION	STATUS / NOTES
Baptist Church	Temporary structure
Full Gospel Church	Temporary structure
Catholic Church	Under construction; permanent
AIC Ewaso	Established; AIC Academy PP1 and PP2 on site
Nosirai Methodist Church	In use
Lemis Church (Munishoi)	Functional; not fenced; no latrine
GTI Church (Munishoi)	Functional; not fenced
GTI Church (Pilili)	Existing

Plate 11: Religious Facilities

a) GTII church Pilili



b) GTI Church Munishoi



3.8.3. Recreational Facilities

There is a functional Multi-Purpose Stadium that is inclusive and integrates the recreational needs of the Ewaso comprehensive and secondary school with the community. There is also a



children's playground located in AIC church Ewaso that is dedicated to children and provides a safe and fun environment. The space is not fully developed with adequate facilities and lacks some basic amenities such as electric supply and adequate water supplies.

Plate 12 Recreational Facilities For the Community



3.8.3.1. Emerging Issues and Planning Implications

- The stadium has no developments hence its not serving the community at its full potential and capacity.
- The facilities need proper development in terms of infrastructure and amenities so as to serve the community optimally.
- The stadium, if developed properly, can serve various purposes such as holding community meetings and hosting various sport activities.
- There is need to connect the facility to water, electricity and a waste management facility.



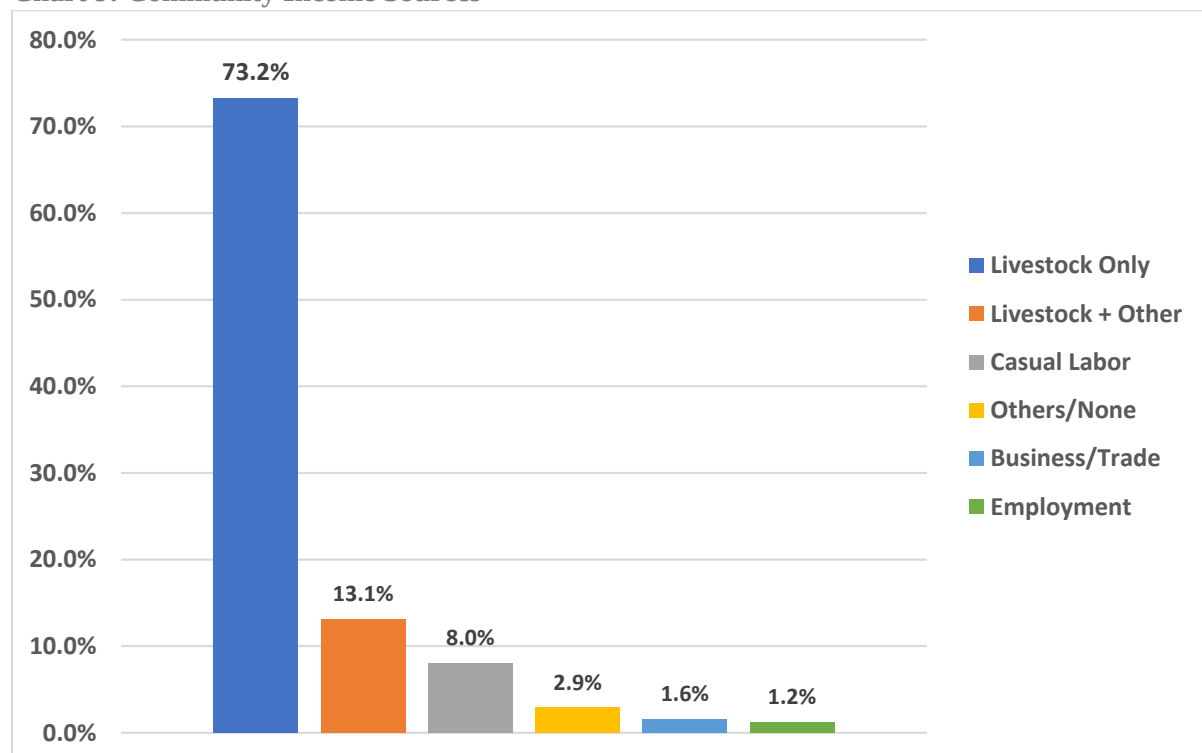
3.9. Economic Activities

The analysis of household income sources indicates that livelihoods in Koija are predominantly livestock-based, with 421 out of 488 households (86%) identifying livestock as their main or joint source of income, reflecting a pastoral economy.

Consequently, dependence on livestock in a semi-arid region is susceptible to adverse climatic conditions making it challenging for the residents to be resilient during prolonged drought periods. Further, fluctuating market prices for the livestock is equally a downside for residents having an over-reliance on livestock for economic gain.

Casual work, reported by 39 households (8%), is the other notable source of income. This indicates that a small proportion of households' supplement livestock-based livelihoods through temporary and often irregular wage opportunities. Small businesses and formal or semi-formal employment also contribute to household incomes, although their contribution is considerably lower than that of livestock. Overall, the income structure suggests limited livelihood diversification, with most households relying heavily on livestock.

Chart 9: Community Income Sources



Source: Laikipia County Government, 2026

3.9.1. Livestock

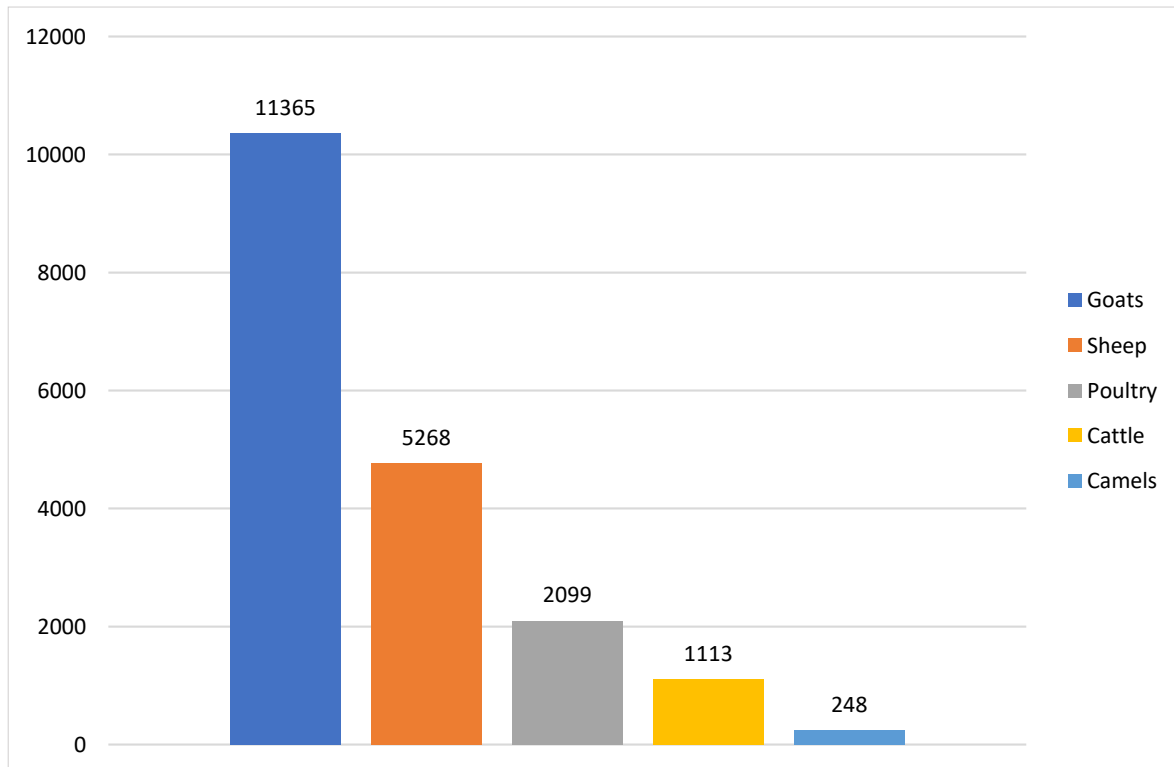
Livestock is the dominant source of income for households in Koija approximately **86%**



This indicates:

- Strong dependence on pastoral livelihoods
- High reliance on rangeland, pasture, and water resources
- Exposure to drought and other climate-related shocks
- Vulnerability to livestock disease and market fluctuations

Chart 10: Livestock Ownership in Koija



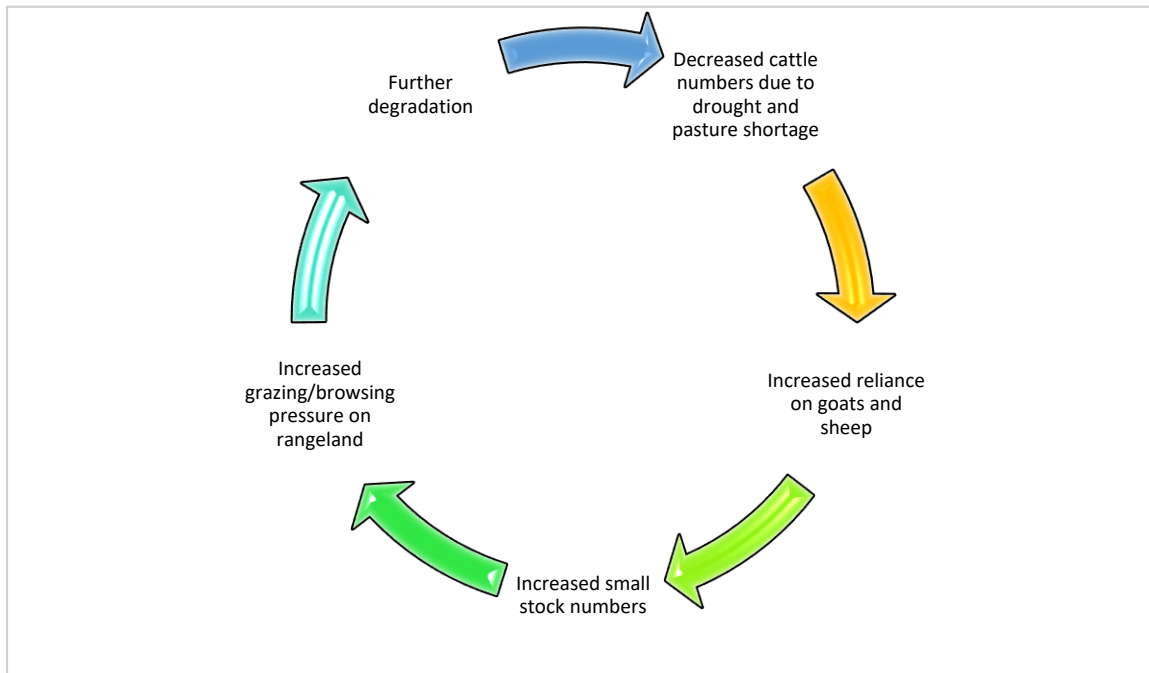
Source: Laikipia County Government, 2026

Ownership of livestock is highly dependent on the availability of grasslands, where the community reduces livestock herds during drought seasons since small stock are more adaptable to prevailing climatic conditions. In addition, goats and sheep are more adaptable to drought, reduced pasture, and overgrazing explaining why the community has more goats and sheep as compared to cattle. Small stock requires less resources than cattle and can utilize vegetation, so that cattle are not able to utilize efficiently.

The figure below shows the consequent reactions to drought and probable overgrazing.



Figure 9: Consequent Reaction to Drought



Source: Laikipia County Government, 2026

Goats and sheep have enabled families to have an economic reliance on them even in the face of poor environmental conditions. However, as they become more dominant, they must be matched not only by better use of the grazing land, but also by better planning of water resources.

3.9.1.1. Goat ownership

The goats are the predominant livestock in the community consisting of **11,365** goat heads that account for about **64%** of the total livestock. The highest reported holding is **200** goats, indicating a highly specialized or relatively affluent households of goat herders. Goats' dominance is tightly related to environmental conditions faced by households. Goats are better suited to dry areas than cattle as they can browse shrubs, bushes, leaves and other vegetation that may be available when grass is not. They are also a major source of livelihood and food security during adverse climatic conditions.

But owning a goat should not be taken as an indicator of wealth. The clustering of goats in a few households indicates uneven livestock wealth distribution. Families with big goat herds have much greater livestock asset base hence have more resilient to emergencies and other emerging issues that require funds.

The high goat population also is an environmental issue. Goats are less sensitive to drought than cattle, however, they can survive by browsing, which can put significant pressure on



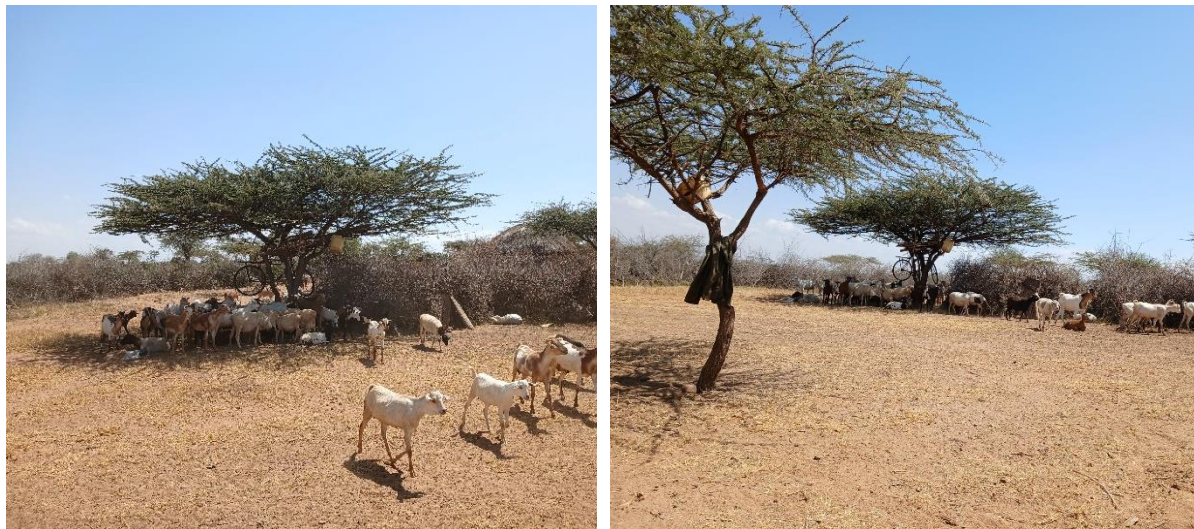
shrubs, young trees and other woody vegetation if their numbers are increased. Goat ownership, therefore, is a coping strategy to rangeland degradation, and a possible factor of additional degradation if goats' numbers are in excess of the capacity of grazing and browsing resources.

3.9.1.2. Sheep Ownership

The sheep population is **5,268**, making them the second most important livestock species. These differences show again a high degree of inequality of ownership. The minimum holding per household is **10** sheep while the maximum holding of **250** sheep which is particularly striking. It clearly shows that sheep are not evenly distributed among households, with a few households having very large flocks.

A small group of sheep can be used as a useful financial asset in normal households just like goats. Households can sell their sheep to fund their food, school, medical, ceremonies or other urgent needs. Sheep are also more competitive with cattle for the limited natural grassland and are predominantly grazers. A more economic justification for sheep ownership may exist at the individual household level, even as it may be collectively contributing to the pressure on rangeland.

Plate 13 Goats on site





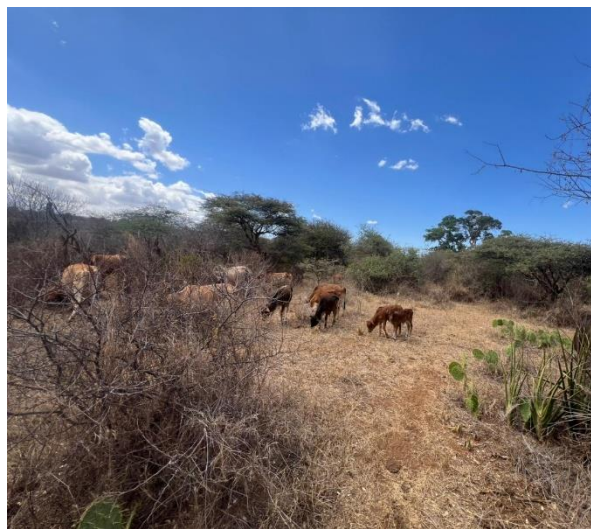
Source: Field Survey, 2026

3.9.1.3. Cattle ownership

There are only **1,113** cattle recorded, accounting for less than **7%** of the total livestock population recorded. The cattle ownership is relatively small with about **5** out of **10** households keeping cattle accounting for at least **50%** of the population not having any cattle. This is in contrast to the relatively high number of goats and sheep and emphasizes the decreasing value and access to cattle as a household livestock asset. The **50** maximum of cattle per household from range indicated that although half the population do not keep cattle, some household hold a significant number of cattle.

This implies that the livelihoods of families cannot be viewed as being dependent on cattle as an asset at household level. Rather, a minority of people are cattle owners. This can lead to variations in households' resilience to drought and other economic impacts. Households without cattle need to rely more on goats, sheep, poultry, wage earning, or other livelihood activities.

This reduction in the relative importance of cattle also provides an example of how environmental stress can alter livestock systems. Households will seek to lower the number of cattle and invest in livestock that can also use a wider range of plants. This low stocking rate of cattle can therefore be seen as an obvious result of adaptation to environmental constraints.



Source: Field Survey, 2026

3.9.1.4. Camel ownership

There are **248** recorded camels and were the least abundant out of the major livestock species. The ownership of camels is relatively low, about **2** of **10** households own a camel. This means that camel ownership is limited to some households with those households rearing a significant number of camels. This specialization could stem from differences in wealth, pastoral specialization, historical build-up of livestock, access to grazing land, or ability of households to manage bigger stock.

Camels are well adapted to arid environments and drought. They are able to withstand drought-like conditions by utilizing available vegetation and sources of water available, making them an important strategic asset in areas where drought is a recurring event. Therefore, the small number of camels should not be considered as a measure of their economic importance.

Plate 14: Camels on the Community Land





3.9.1.5. Poultry ownership

Poultry keeping is practiced by approximately **4** out of every **10** households, indicating that poultry ownership is relatively common within the community, although generally maintained in small numbers.

In the case of poorer households, poultry could be specifically significant as initial investment in poultry is generally less than that in cattle, camels, or large flocks of goats and sheep. Poultry is thus a potential enterprise for the small livestock farmers to include in their livelihoods. At the same time, poultry numbers remain relatively small compared with small ruminants since the pastoral nature of the community makes it hard for poultry rearing. This indicates that the community's livestock economy remains fundamentally oriented toward pastoral or agropastoral species rather than household-level poultry production.

Plate 15: A Chicken Pen



Source: Field Survey, 2026

3.9.1.6. Beekeeping (Apiculture)

The community has embraced beekeeping as an alternative livelihood activity to supplement household incomes. The beehives shown are strategically located within the natural bushland, where abundant flowering vegetation provides a suitable environment for honey production.



Beekeeping offers a sustainable source of income through the sale of honey and other bee products while requiring minimal land and water resources. In addition to generating income, the activity promotes environmental conservation by encouraging the protection of natural vegetation and enhancing pollination of plants within the ecosystem.

Plate 16: Bee Hives



3.9.2. Casual Work

Casual labor is the second most reported source of income at approximately 8%. It provides supplementary income for some households but is generally temporary and less predictable than livestock-based income.

Small businesses and employment provide additional income opportunities but account for a relatively small proportion of household livelihoods. Their limited contribution points to restricted access to formal employment, capital, markets, and business opportunities.

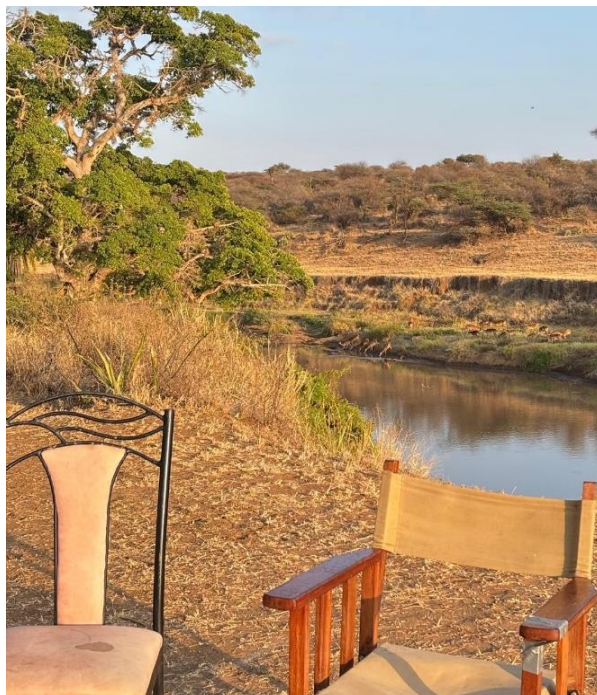


3.9.3. Eco-Tourism

Koiya Star bed is an eco-tourism site overlooking the Ewaso River in an area with various wildlife sightings. The lodge directly benefits the community through employment and financing conservation. In addition, it is used by the local community for social and economic empowerment activities such as meetings and conferences.

The facility is well located near Ewaso river, a permanent river that supports life through watering wildlife animals

Plate 17: Koiya Star Bed



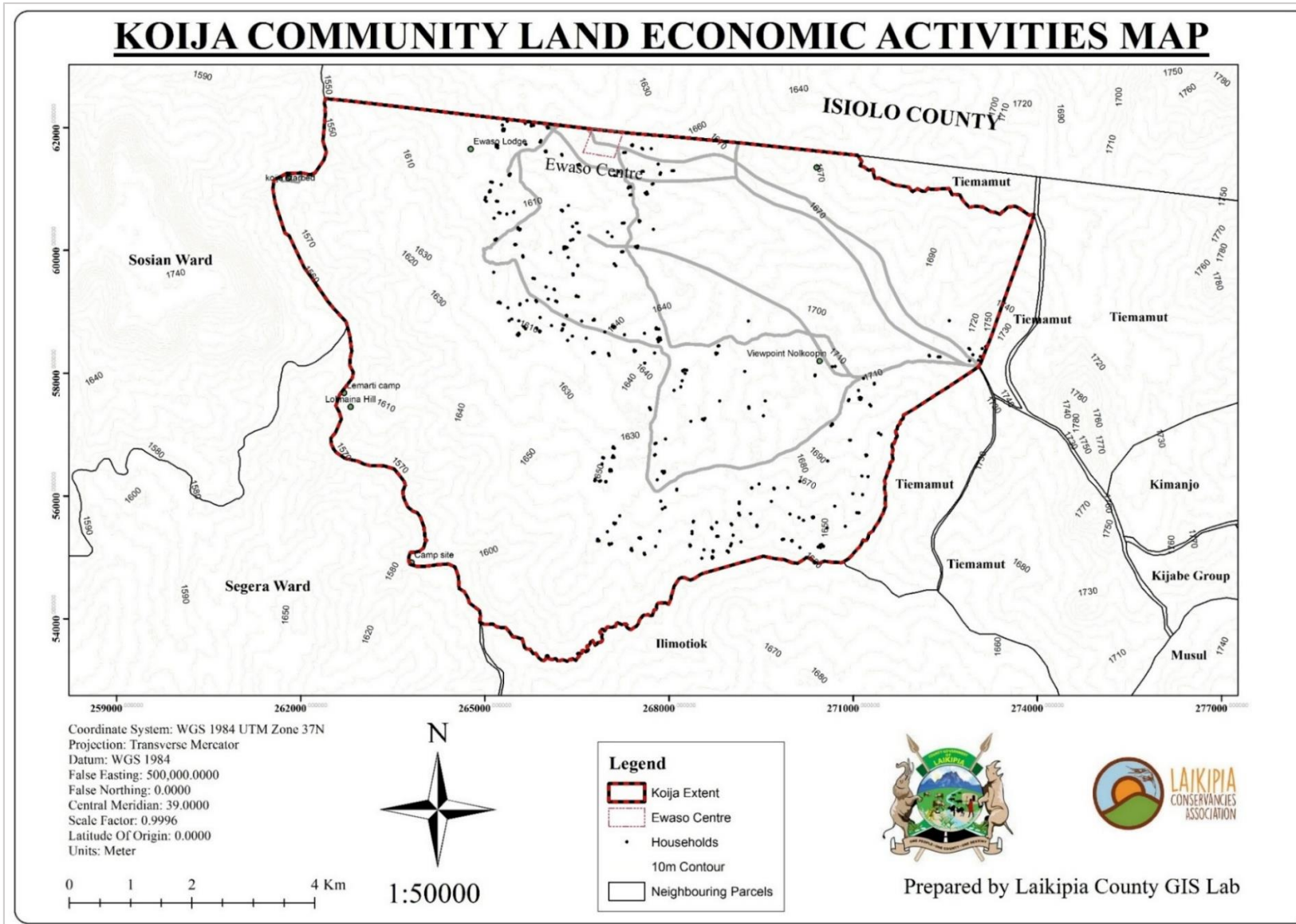


3.9.3.1. Emerging Issues and Planning Implications

- The community is heavily reliant on livestock for economic gains making them easily vulnerable to climatic change induced calamities such as drought and famine.
- The community does not control herds hence the land suffers from overgrazing while animals die during drought seasons.
- There are other sources of income that if invested with can reduce the reliance on livestock by a big margin. These activities are Bee keeping, Poultry and casual jobs in value addition infrastructure of products.
- Koja star bed should be marketed to increase the influx of tourists in the area which would directly influence all other economic activities on site.
- Due to climate change and adverse weather conditions, the community should look for newer breeds of livestock that are more resilient to drought and famine.
- Starting capital required to own camels is high hence fewer households are able to afford them despite them being more resilient to adverse weather conditions.
- Programs should differentiate support for small, medium, and large livestock-owning households rather than relying on community averages.
 - ✓ Support smallholders: Prioritize animal health, water access, herd survival, and rebuilding of productive livestock assets.
 - ✓ Strengthen medium-scale producers: Improve access to livestock markets, veterinary services, breeding programs, and pasture-management practices.
 - ✓ Engage large herd owners: Involve them strongly in grazing management, controlled stocking, and rangeland conservation.
- Promote sustainable livestock systems: Encourage livestock diversification while maintaining appropriate stocking rates.
- Improve rangeland management: Invest in pasture restoration, grazing controls, and sustainable management of natural resources.
- Strengthen water management: Improve reliable access to water while managing its use to reduce pressure on grazing areas.
- Develop livestock markets: Better markets can improve household incomes and reduce the need to maintain unsustainably large herds.
- Overall planning priority: Balance the drought resilience and livelihood benefits of small livestock with the long-term ecological sustainability of the rangeland.



Map 23: Koija Economic Activity Distribution



Source: Laikipia County GIS Lab, 2026





3.10. Conservation Practices

Koiya community is already practicing some form of environmental control measures ranging, semi-circular bunds, gully filling and creation of storm water drains during grading of roads. Household survey data show that residents are already engaged in a range of soil, water, and vegetation management interventions, with uptake intensity varying considerably by practice type.

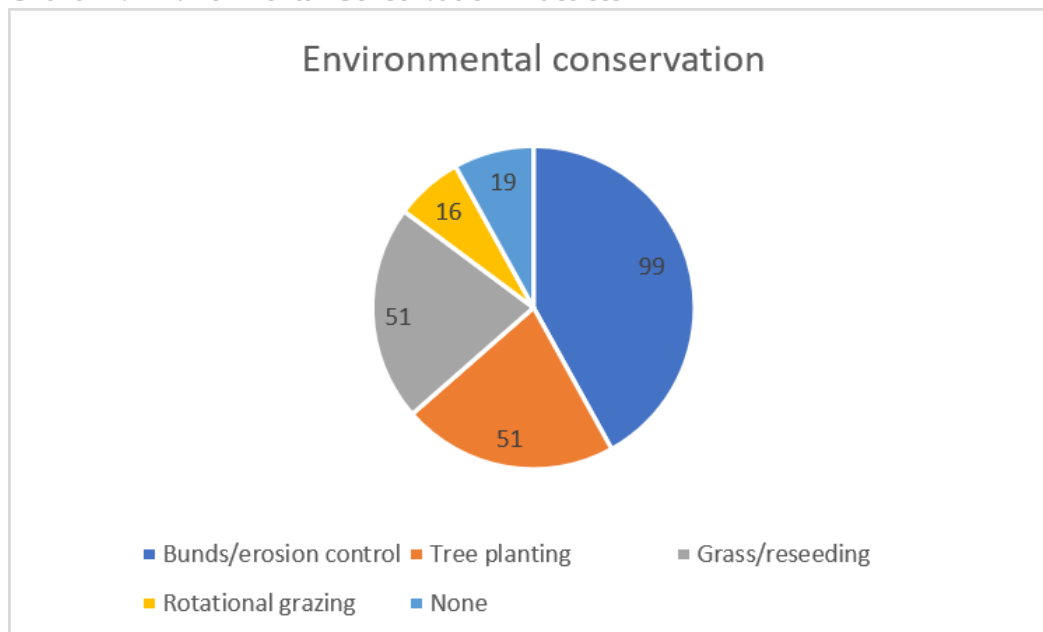
The most widely reported measure is erosion control through gully filling construction, followed by tree planting and grass reseeding. Only a minority of surveyed households report undertaking no conservation activity at all, indicating that conservation awareness is already broadly embedded in household land management behaviors.

Table 4: Environmental Practices by the Community

Conservation practice	Households reporting
Bunds/erosion control	99
Tree planting	51
Grass/reseeding	51
Rotational grazing	16
None	19



Chart 11: Environmental Conservation Practices



Source: Laikipia County Government, 2026

3.10.1. Loss of Vegetation Cover

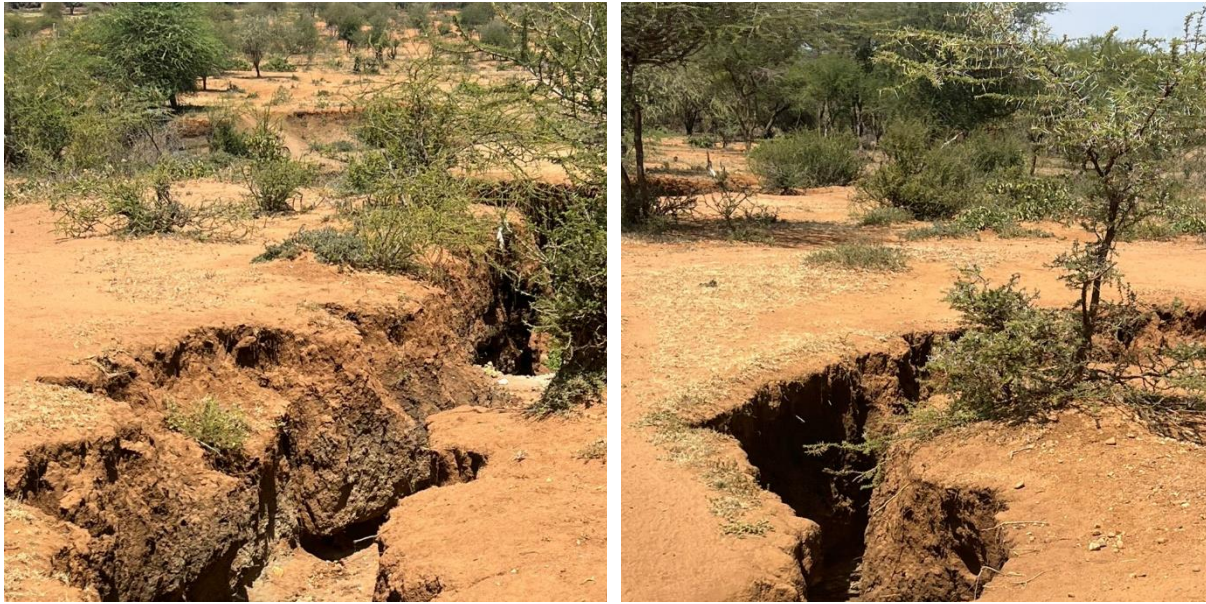
There has been significant reduction of vegetation cover in Koiya community land as reported in at least the past 5 years. Prolonged drought and overgrazing have been the most report reason for vegetation cover, resulting in a decline in grazing land.

Declining grass and shrub cover strips away the rangeland's basic productive capacity and reduces the vegetation available to both livestock and wildlife. It also exposes soil to wind and rain erosion, lowers rainwater infiltration, and accelerates the cycle of degradation. Reduced grazing capacity in one area pushes livestock pressure onto the areas that remain vegetated, compounding the loss.

However, the community practices construction of semi-circular bunds to trap runoff rainwater and improve grass growth for livestock consumption as reported by **99** households coupled with tree-planting and reseeding efforts (**51** households each) can be read directly as a household-level response to this same problem- an attempt to rebuild vegetative cover and stabilize soil using the tools most readily available at the homestead level.



Plate 18: Gullies on Site



Source: Field Survey, 2026

3.10.2. Invasion of *Opuntia* Species

Another compounding threat to vegetation cover in Koija is the spread of invasive *Opuntia* species which erodes away valuable grazing land, outcompeting and displacing the indigenous grasses and shrubs. Its dense, spiny growth restricts livestock movement, reduces the effective area of productive pasture, and poses a direct risk of injury to both livestock and wildlife.

Degraded, sparsely vegetated ground is more vulnerable to *Opuntia* colonization, and once established, *Opuntia* further suppresses the recovery of native vegetation cover. However, the community has some form of *Opuntia* control by continuously extracting it to control spread. There is also a center at Chui Mama that focuses on rearing of *Opuntia* eating bacteria.



Plate 19: Invasive Species and Control



a) Opuntia Species



b) Biolab

3.10.3. Environmental Significance

Taken together, these findings show a community already responding to a real and identifiable problem- the loss of vegetation cover, compounded by Opuntia invasion using the household-level tools most readily available earthworks, tree planting, and reseeding.

What remains underdeveloped is the collectively coordinated intervention, rotational grazing and beneficial ways to reduce livestock to the carrying capacity on the land. This would relieve the underlying grazing pressure driving vegetation loss in the first place, and a structured response to the Opuntia threat specifically.

3.10.3.1. Emerging Issues and Planning implications

- Prioritize interventions that directly restore vegetation cover, as this is the community's most significant environmental challenge: expand support for tree-planting and reseedling programs by ensuring reliable access to seed and seedlings.
- The existing biological control approach which introduces natural enemies of Opuntia, such as specific insect species that feed on the cactus is an efficient way to respond to the invasion. However, the introduction of biological agents requires careful evaluation to avoid unintended ecological consequences, including risks to non-target plants or disruption of local species.
- Scale up semicircular bund construction and erosion-control structures in the highest-degradation zones identified through spatial analysis.
- Have a maximum ceiling on the number of livestock a household should hold mixed with grazing schedules to avoid overgrazing.



- Targeted outreach to households currently undertaking no conservation activity, to identify and address the specific barriers preventing their participation.
- Integrate vegetation restoration, Opuntia control, and grazing management into the Community Land Use Plan as coordinated, mapped interventions rather than isolated household choices.

3.11. Human Wildlife Conflict

Human-wildlife conflict is among the most frequently cited threats. Data collected reports that lions are the most common predators named by **354** households, hyenas **328**, and elephants **151**. Leopards and jackals add further predation pressure on small stock. People have also been killed by elephants in recent encounters.

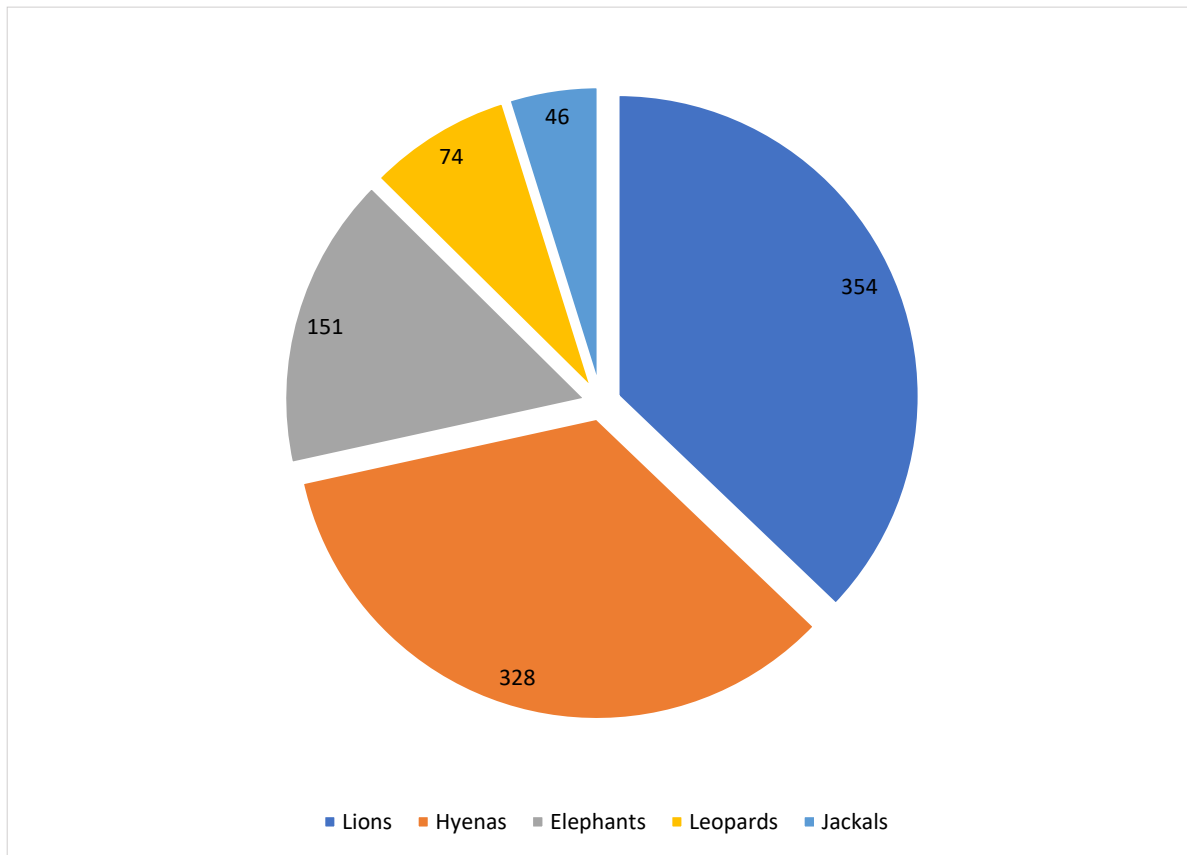
In addition, there is a need to address threats to human safety and damage property. Similarly, human-wildlife conflict is related by human settlements along wildlife corridors disrupting animal movement from one location to another or access to water.

It is however imperative to have a distinction between perceived and real conflict. Lions are perceived as the greatest threat because of their impact on high-value animals such as cattle and camels, while a separate, real driver of conflict is elephants and extensive human settlement on wildlife corridors, disrupting migratory routes and access to water.

The chart below shows the number of wildlife interactions as reported by the community with lions being the most common predator.



Chart 12 Wildlife Interaction Chart



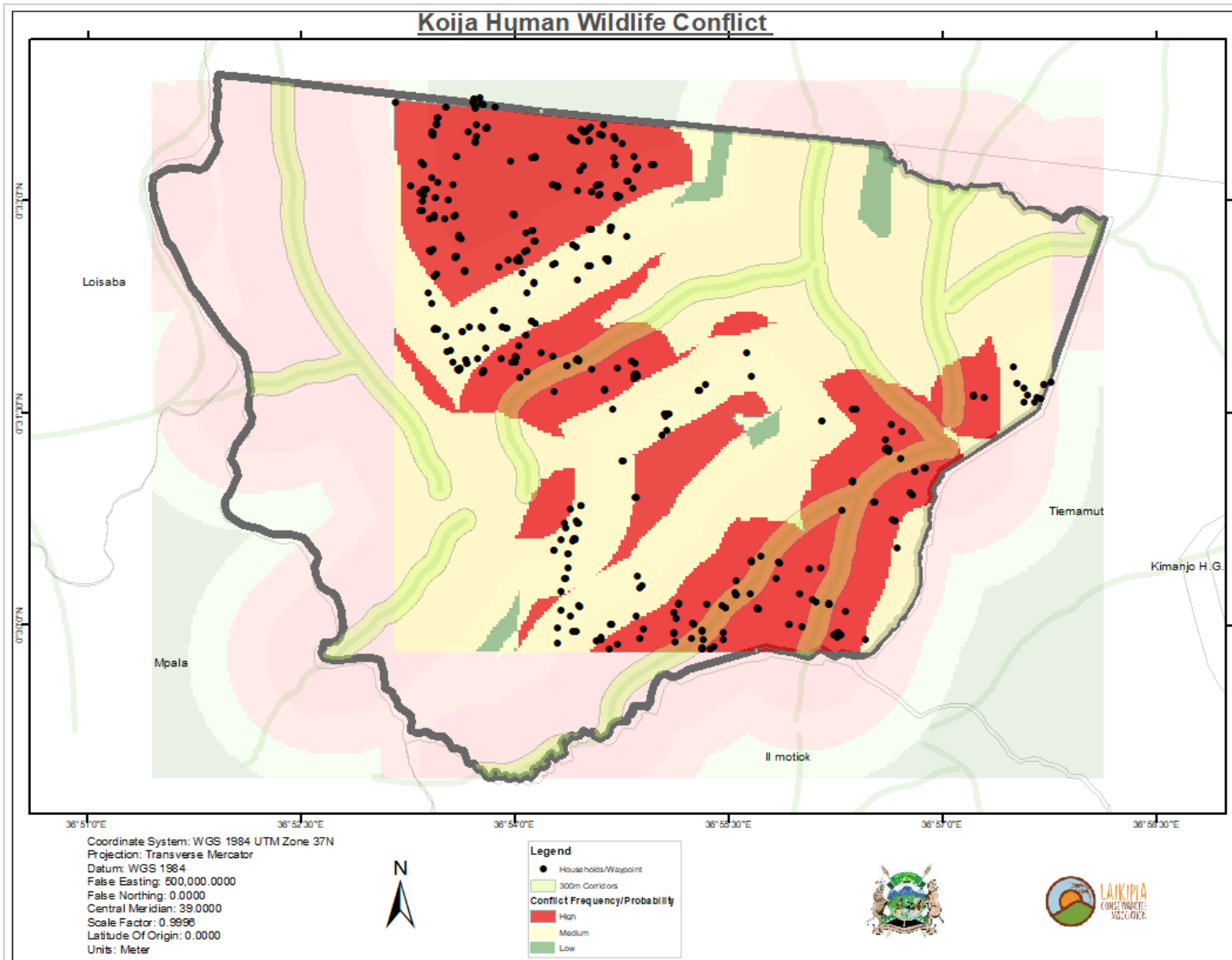
Source: Laikipia County Government, 2026

The map below shows wildlife corridors and the level of human interaction to human and livestock safety. The map shows wildlife corridors on the west side near Koija Star bed experience no conflict since the area is inhabited. Corridors crossing residential areas create the most conflicts hence there is need to leave reserves to allow for safe co-existence between wildlife and human population.

Analyzing the information in relation to human settlement shows high risk hot spots highlighted in red. The map shows there is extensive human settlement along wildlife corridors increasing the risk of human and livestock safety, especially from elephants. On the other hand, in the northern areas, the conflict arises through negative interaction with other animals like lions attacking high value animals,



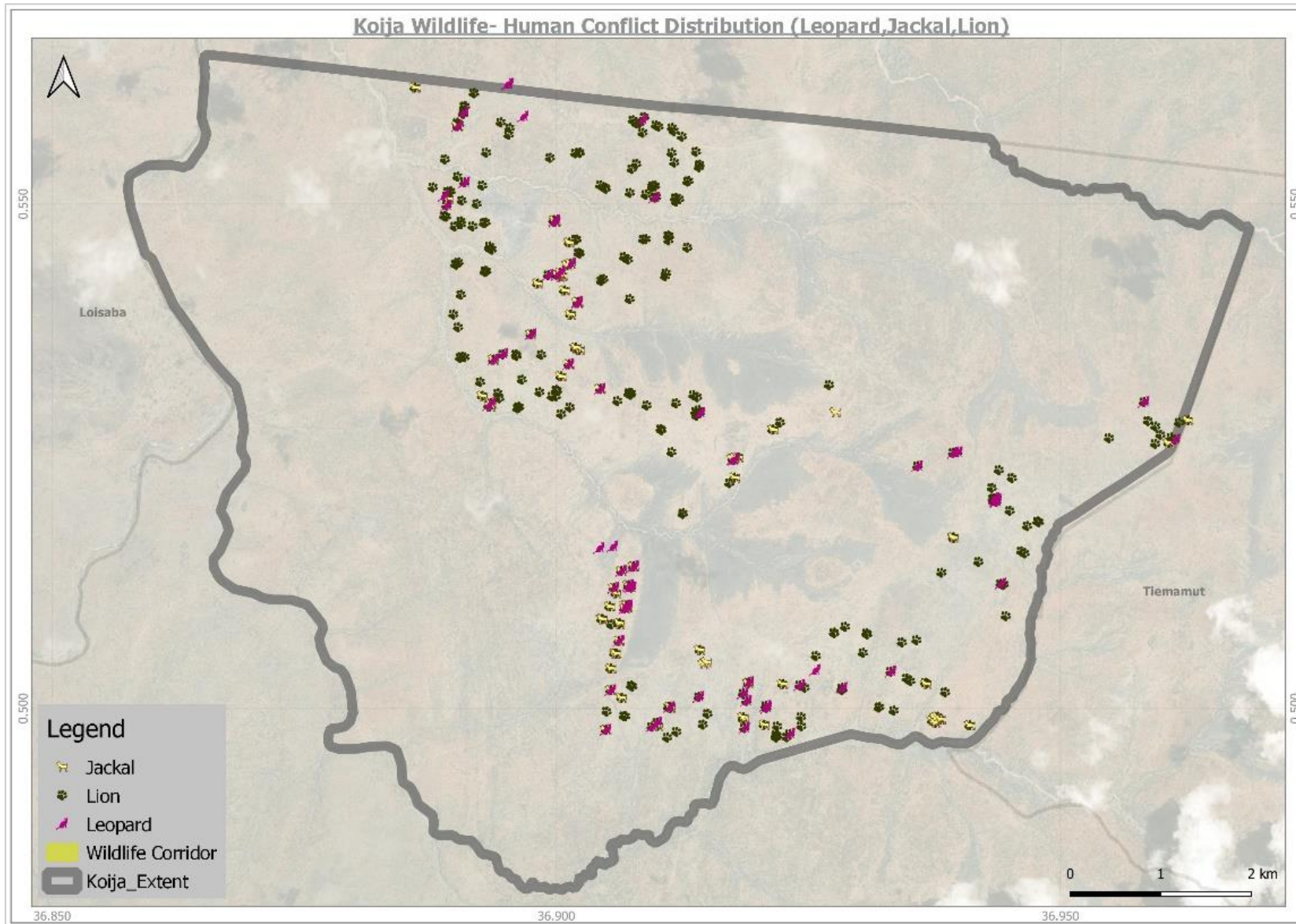
Map 24: Human Wildlife Conflict Hotspots



Source: Laikipia County GIS Lab, 2026



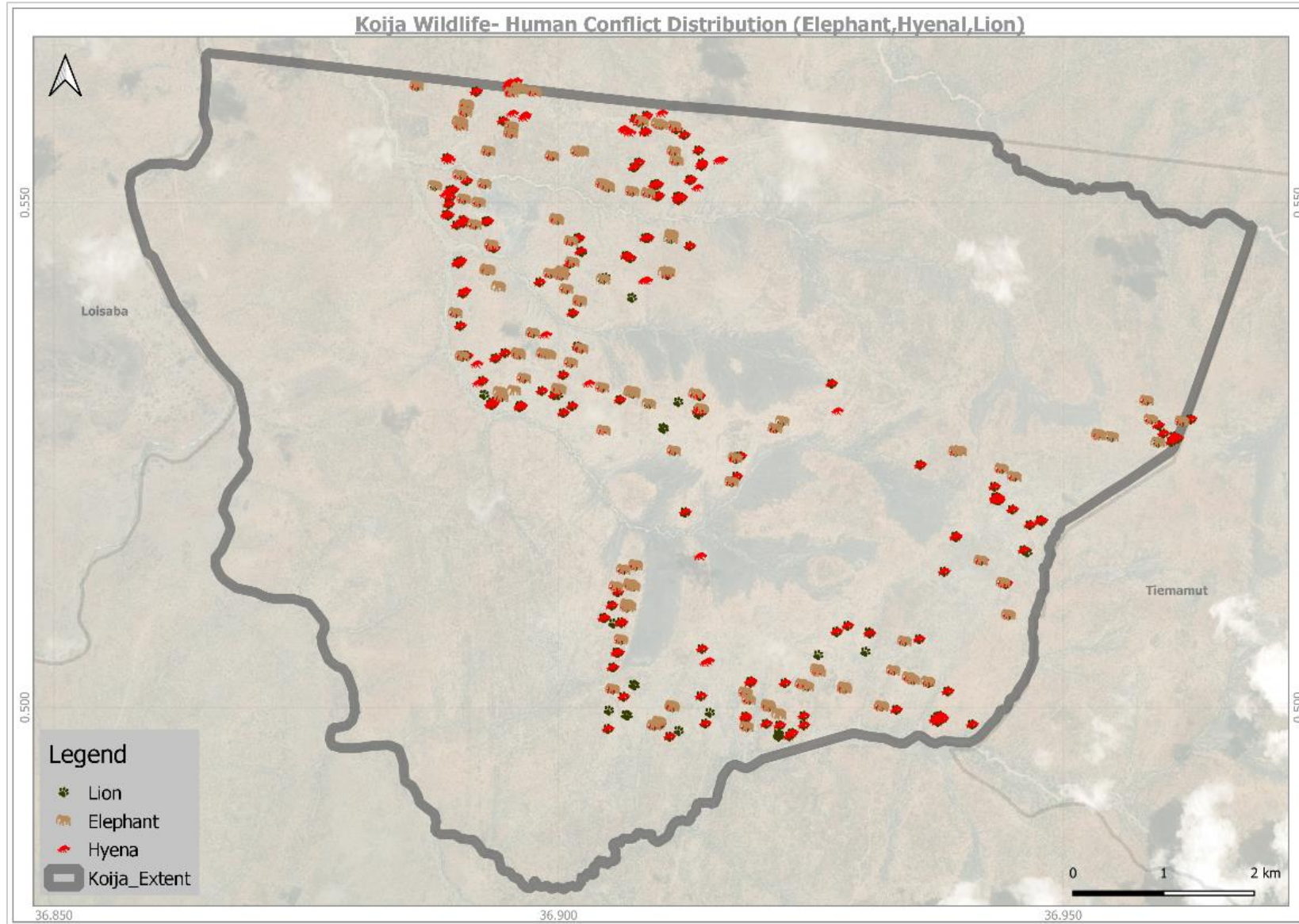
Map : Koiya Wildlife Sitings – Elephant, Hyenas



Source: Laikipia County GIS Lab, 2026



Map : Koiya Wildlife Sitings – Elephant, Hyena, Lion



Source: Laikipia County GIS Lab, 2026



The maps above indicate the level of reported wildlife sightings reported by community members. Notably, reported conflicts tend to align with human settlements some of which are along wildlife-corridors. In addition, predators are more likely to invade settlements attacking livestock. Further, there is a higher number of reported lions indicating a higher perceived threat attacking high-value animals.

3.11.1. Planning Implications

- Identifying existing wildlife corridors will help in identifying appropriate areas for human settlements and reduce wildlife route disruptions and improve human and livestock safety.
- Identifying the corridors will help in factoring positive wildlife interactions such as eco-tourism into land use planning.
- It is imperative to factor community awareness into planning to enable them to know about positive human wildlife interaction and co-exist productively.
- The use of artificial intelligence and machine learning to track and predict wildlife conflict is an opportunity for future development areas.
- Fencing delineated wildlife corridors to avoid stray wildlife that could cause conflict.

3.12. Visioning and SWOT Analysis

This process was done as part of public participation aimed at identification and development of a set of vision statements that best articulate and represent the desires and perspective of the residents of Koija Community Land and a bottom-up approach analysis that best describes the site.

The engagement of the community in the planning process has been envisioned firmly in the Constitution of Kenya (2010) and other legal frameworks such as The Physical and Land Use Planning Act No 13 of 2019, The Community Land Act of 2016 and The County Government Act of 2012.

The objectives of this process are similar to those of public participation. They are as follows;

1. **Provides a clear direction for development:** The vision statement captures the community's shared aspirations and desired future, guiding the preparation of the local physical and land use development plan.
2. **Promotes community ownership and participation:** Developing the vision and conducting the SWOT analysis through stakeholder engagement ensures that local people actively contribute to decisions affecting their land and development.



3. **Identifies strengths, weaknesses, opportunities and threats:** SWOT analysis helps the community understand existing conditions, available resources, development challenges and potential opportunities that should inform planning decisions.
4. **Helps set realistic priorities and strategies:** The findings enable planners and the community to identify priority development needs, allocate land appropriately and develop practical strategies that respond to local circumstances.
5. **Build consensus and supports sustainable development:** Stakeholder discussions create a common understanding among community members and other stakeholders, reducing conflicts and ensuring that the plan reflects local needs while promoting sustainable and balanced land use.
6. **Help to develop a more effective and implementable LPLUDP:** Stakeholder driven statements and proposals represent realistic issues and implementable proposals and projects.

3.12.1. Approach and Methodology

The visioning and SWOT Analysis exercise was conducted through meetings with the community and CLMCs at Chui Mama Cultural Center Meeting Hall. The exercise was done in one meeting starting with Visioning the SWOT Analysis. *(See attached Photos and attendance Lists).*

3.12.2. Visioning

The visioning exercise was a public participation technique used to support stakeholders in establishing a shared vision for the future development of Koija Community Land. The Visioning process involved asking the group of stakeholders to appraise:

1. What is our past?

Few members. The community has grown to understand and respect conservation as a land use.

There was plenty of fodder and few livestock, hence there was little confrontation water points and during feeding with wild animals. There was less land degradation

2. Where are we?

Due to increased human population in recent years, livestock has risen and land size has not changed pushing pressure and stress on available resources to satisfy the needs of the present population.



There have been more efforts on conservation but little to respect on land conditions. A lot of uncontrolled grazing and development has happened which has resulted to the deterioration of land conditions.

3. Where do we want to go?

Through the local physical and land use development plan, there is a chance to rectify and rehabilitate the land while also satisfying the needs of today's population as well as the future population. There will be additional population and flocks of livestock hence there is need to plan the use of land so as to have a better planned Koiya.

3.12.3. Overall, Vision Statement for Koiya Community Land

"A prosperous, resilient and united Koiya community where land and natural resources are secure, biodiversity and cultural heritage thrive, livelihoods flourish, development is inclusive and sustainable, and every generation has an equal opportunity to live with dignity, security and hope."

3.12.4. SWOT Analysis

STRENGTHS	
Livestock	<ul style="list-style-type: none"> • Strong pastoral livestock base supporting household livelihoods and food security. • Established traditional knowledge in livestock keeping and management. • Availability of communal grazing areas within the community land. • Livestock provides income, food, savings and social value to households.
Bee keeping	<ul style="list-style-type: none"> • Existing traditional knowledge and experience in beekeeping • Provides an important source of supplementary household income and nutritional value. • Honey production is compatible with conservation and sustainable land use.
Conservation	<ul style="list-style-type: none"> • Strong community involvement and interest in conservation of wildlife.



	<ul style="list-style-type: none"> • Extensive community land provides opportunities for conservation and ecosystem management. • Supports biodiversity, wildlife habitats and healthy rangelands. • Conservation creates opportunities for tourism and other nature-based enterprises. • Provides a foundation for sustainable land management and restoration initiatives.
Women groups	<ul style="list-style-type: none"> • Existing women's groups provide a strong platform for collective action. • Strengthen women's participation in community development activities. • Can facilitate access to development programmes, finance and markets.
Eco Lodges	<ul style="list-style-type: none"> • Presence of eco-lodges provides an established foundation for tourism development. • Creates employment and income-generating opportunities for local community members. • Provides markets for locally produced goods and services. • Promotes conservation through nature-based tourism. • Creates opportunities for stronger community participation in tourism enterprises.
Tradition, Culture and people	<ul style="list-style-type: none"> • Rich cultural heritage and local traditions foster strong community identity. • Welcoming, friendly and resilient people with strong social cohesion. • Strong community participation and willingness to engage in development initiatives such as Land use Planning process. • Indigenous knowledge and traditional practices have been supporting local development and conservation. • Strong cultural identity has been providing opportunities for cultural tourism and heritage promotion.



Cultural Manyattas	<ul style="list-style-type: none"> • Cultural manyattas provide an authentic representation of local traditions and lifestyles. • Preserve traditional knowledge, practices, and cultural heritage. • Provide opportunities for cultural tourism and community-based enterprises acting as a contact point for economic activities of the community. • Create platforms for showcasing local crafts, food, music and traditional practices. • Strengthen intergenerational transmission of cultural knowledge and identity.
Good partnerships	<ul style="list-style-type: none"> • Existing partnerships provide access to technical expertise and development support such Partnerships with LCA and other partners have led to the development of a land use plan which has in turn led to strengthening conservation, tourism and livelihood-development initiatives. • Loisaba Conservancy helped coming up of Chui Mama Cultural Center
Carbon Credits	<ul style="list-style-type: none"> • They are a major foundation upon which community conservation activities are based such as restoration activities. • It creates an alternative source of income
Good Connectivity	<ul style="list-style-type: none"> • Connectivity supports access to markets, services and surrounding settlements • Facilitates movement of people, livestock, goods and tourism • Supports communication and engagement with partners and service providers
WEAKNESS	
Poor road conditions	<ul style="list-style-type: none"> • Poor road conditions have affected movement within and around the community land. • Difficult access during rainy seasons limits transportation and service delivery. • Increases the cost of transporting livestock and goods to markets.



	<ul style="list-style-type: none"> • Limits access to health, education and other essential services. • Constrain tourism development and access to eco-lodges and cultural sites.
Invasive species	<ul style="list-style-type: none"> • Spread of invasive species has reduced the availability and quality of grazing resources. • Invasive plants compete with indigenous vegetation and desirable pasture species. • Invasive species if not managed well can contribute to degradation of rangelands and loss of biodiversity increasing pressure on already limited grazing areas. • There is limited resources and capacity for systematic invasive-species control.
Human wildlife conflict	<ul style="list-style-type: none"> • Predation of livestock by Leopards, hyenas and other wildlife causes household losses. • Competition between livestock and wildlife for grazing and water increases conflict. • Conflict may affect community attitudes towards wildlife and conservation.
Water Scarcity & Poor water quality	<ul style="list-style-type: none"> • There is limited availability of reliable water sources, particularly during dry periods. • Long distances to water points increase the burden on households and livestock keepers. • Poor water quality may expose people and livestock to water-related diseases. • Existing water sources face increased pressure during droughts. • Limited water infrastructure constrains livestock, household and economic activities
Drought and food insecurity	<ul style="list-style-type: none"> • Recurrent droughts reduce pasture and water availability for livestock which leads to livestock body condition and productivity decline during prolonged dry periods.



	<ul style="list-style-type: none"> • Drought increases livestock mortality and household vulnerability. • Food insecurity can increase during prolonged periods of low rainfall. • Heavy dependence on pastoralism increases exposure to climate-related shocks.
Land degradation and Soil erosion	<ul style="list-style-type: none"> • Overuse of grazing areas contributes to degradation of rangelands; loss of vegetation cover which increases vulnerability to soil erosion. • Soil degradation reduces pasture productivity and land carrying capacity. • Concentration of livestock around water points can accelerate land degradation. • Limited restoration measures may reduce the long-term productivity of community land
Inadequate health facilities	<ul style="list-style-type: none"> • Limited health infrastructure restricts access to timely medical services. • Long distances to adequately equipped health facilities increase vulnerability. • Treatable diseases can contribute to high morbidity and mortality. • Limited emergency services affect responses to injuries and other urgent cases. • Snake-bite cases are difficult to manage where appropriate antivenom is unavailable. • The availability of just one health facility in the whole community land possesses a great risk to the population.
Lack of a proper land use plan	<ul style="list-style-type: none"> • Absence of a clear land-use plan can result in competing land uses. • There has been allocation of land by community leaders without proper guidelines. This has resulted in shrinking of land hence conflicting with other land uses that require humongous land sizes



	<ul style="list-style-type: none"> Unplanned developments have also resulted in pressure on communal resources
Banditry and cattle rustling	<ul style="list-style-type: none"> Cattle rustling has claimed life and valuable property i.e. Livestock from the community. Intruders have been grazing on conserved areas resulting in additional conflict with the community.
Overgrazing	<ul style="list-style-type: none"> High livestock numbers have placed pressure on available grazing resources contributing to land degradation and soil erosion. Competition between wildlife and large livestock herds has intensified grazing pressure.
Overreliance on one economic activity	<ul style="list-style-type: none"> Most community households have relied heavily on livestock and livestock related products for income This overdependence on pastoralism has greatly increased the vulnerability of community to climate and animal diseases
Inadequate facilities in school	<ul style="list-style-type: none"> Inadequate school infrastructure has affected the quality of education, limiting learning and constraining student performance Poor education outcomes have resulted to increased illiteracy levels and reduced education by the community Long distances to school have limited school attendance and retention.
Inadequate facilities in school	<ul style="list-style-type: none"> High mortality rates attributed by treatable diseases Sizable incidences of snake bites with no antivenom in the only dispensary
Early marriages	<ul style="list-style-type: none"> It has been a major contributor to girls dropping out to school with very low education attainment. Early marriages have reduced opportunities for girls and young women who no longer chase their dreams
OPPORTUNITIES	
Availability of investors	<ul style="list-style-type: none"> Opportunity for potential eco-lodges.



	<ul style="list-style-type: none"> • Opportunity to attract investors interested in sustainable tourism, conservation, hospitality and community-based development. • Potential access to investment can support infrastructure improvement, expansion and income-generating activities.
Chui Mama Cultural Center	<ul style="list-style-type: none"> • Potential for marketing and branding of community products and initiatives. • Potential production and commercialization of products such as soaps, honey, fabrics and other handicrafts. • Opportunity for value addition and improved packaging of local products. • Potential to serve as an advertising platform and center for showcasing community land goods, culture and tourism activities.
Presence of schools	<ul style="list-style-type: none"> • Opportunity to address nutrition challenges and improve health among school children through school feeding programmes, kitchen gardens and nutrition education. • Increased school attendance can contribute to improved literacy and educational outcomes. • Schools can also provide platforms for environmental and community awareness programmes.
Presence of health facilities	<ul style="list-style-type: none"> • Opportunity to improve and strengthen healthcare services within the community through attracting additional healthcare funding and resources.
Good partnerships with NGOs	<ul style="list-style-type: none"> • Opportunity to secure CSR sponsorships and NGO support for education, health, livelihoods and environmental programmes. • Partnerships can facilitate funding, technical expertise, capacity building and implementation of community development projects such as the ongoing local physical and land use development plan.
Land Use Planning	<ul style="list-style-type: none"> • Potential to improve utilization and management of land and its resources. Proper land-use planning can reduce land-use conflicts, support sustainable development, protect environmentally



	sensitive areas such as animal corridors and promote more productive use of available land.
Carbon Markets & Rangeland Credits	<ul style="list-style-type: none"> Potential to attract climate-finance investors while promoting conservation, improved grazing practices, soil restoration and sustainable livelihoods for the community.
THREATS	
Insecurity	<ul style="list-style-type: none"> Banditry and cattle rustling undermine livestock production, community safety and economic development by causing loss of livestock, property and human lives. Insecurity also discourages investment, restricts movement and limits access to markets and essential services
Diseases	<ul style="list-style-type: none"> Human, livestock and wildlife diseases reduce the community's ability to maintain a healthy and productive population and livestock base. Frequent illnesses such as respiratory diseases increases household expenses, reduce productivity and income generation.
Drought and famine	<ul style="list-style-type: none"> Recurring drought and famine undermine food security, livestock production and household incomes by causing water shortages and livestock losses. This increases poverty and weakens the community's ability to build resilient livelihoods.
Land degradation	<ul style="list-style-type: none"> Land degradation reduces the productive capacity of grazing, limiting the community's ability to sustain livestock production, food security and livelihoods. It also increases pressure on remaining natural resources.
Human wildlife conflict	<ul style="list-style-type: none"> Through loss of life, livestock and destruction of property, the community ability to sustainably benefit from the land is affected. Such conflict can undermine conservation and tourism opportunities



Drug abuse	<ul style="list-style-type: none"> • Drug and substance abuse undermines the ability of young people and the wider community to contribute productively to development. • It can increase school dropouts, unemployment, crime, poor health and social instability.
Outdated Community Register	<ul style="list-style-type: none"> • An outdated community register limits effective planning, targeting and delivery of development interventions by providing inaccurate information on households, population and community needs. • This can result in some vulnerable groups being excluded from programmes and resources
Land use conflict	<ul style="list-style-type: none"> • Land-use conflicts limit the community's ability to achieve sustainable land management and peaceful development by creating disputes among different land users. • Conflicts can discourage investment, disrupt livelihoods and contribute to insecurity.
Inadequate water supply	<ul style="list-style-type: none"> • Inadequate water supply limits the community's ability to sustain proper hygiene in households, improve livestock keeping, education and healthcare. Water shortages reduce the effective operation of schools, dispensaries and other public facilities.
Lack of good animal breeds	<ul style="list-style-type: none"> • Limited access to improved livestock breeds reduces productivity and profitability, limiting the community's ability to increase household incomes and develop a commercially viable livestock sector
Inadequate veterinary services & extension officers	<ul style="list-style-type: none"> • Limited veterinary and extension services constrain the community's ability to improve livestock productivity, control diseases and adopt modern and climate-resilient production practices. • This contributes to preventable livestock losses and low productivity



Unemployment	<ul style="list-style-type: none">• High unemployment limits household incomes and the community's ability to improve living standards and reduce poverty. It also increases dependency among households and may contribute to social problems, particularly among young people.
Lack of abattoirs & Value addition facility	<ul style="list-style-type: none">• Inadequate slaughter and value-addition infrastructure limit the community's ability to maximize returns from livestock production.• Producers are often forced to sell livestock at lower prices, reducing income, employment opportunities and local economic growth



CHAPTER FOUR: PLANNING PROPOSALS GUIDELINES AND STANDARDS

4.0. Overview

The proposed plan focuses on three interconnected pillars: Human, Livestock, and Wildlife. These pillars are closely linked, and the success of one contributes to the well-being and sustainability of the others.

- **Human**
- **Livestock**
- **Wildlife**

The proposals under this plan are therefore designed to address these three pillars in an integrated manner. Improving human livelihoods, strengthening livestock management, and conserving wildlife and their habitats are mutually reinforcing objectives. For example, improved livelihood opportunities can reduce dependence on natural resources and increase community support for conservation, while better livestock management can reduce pressure on grazing areas, water resources, and wildlife habitats.

Careful management of land and its resources is essential for achieving these outcomes. Sustainable activities and new income-generating opportunities can improve livelihoods, reduce poverty, and strengthen communities' capacity to participate in conservation. At the same time, improved livestock management can reduce competition for grazing and water and help minimize Human-Wildlife Conflict.

As communities experience improved livelihoods and greater benefits from conservation, awareness, participation, and tolerance toward wildlife are likely to increase. This can support the protection of wildlife corridors, grazing areas, and water points, creating a more balanced relationship between people, livestock, and wildlife.

Ultimately, the proposals are interconnected: they aim to improve human well-being, support sustainable livestock production, and conserve wildlife and natural resources as parts of one integrated landscape system.

4.1. Proposed Human Settlement Strategy

The proposed Human Settlement Strategy for Koiya Community Land seeks to promote orderly, accessible, and climate-resilient settlement development while safeguarding communal land rights, pastoral livelihoods, wildlife habitats, and the natural resources that sustain the community. The strategy is informed by the Laikipia County Spatial Plan (2023–2033), which recognizes that dispersed settlements in Laikipia North, including community lands such as Koiya, present challenges in the provision of essential services while also



providing opportunities for extensive community land management and conservancy-based development.

The County Spatial Plan prioritizes the preparation of Local Physical and Land Use Development Plans (LP&LUDPs) for urban centres, market centres, and community lands to support sustainable land management. In Koija, the strategy should therefore adopt an integrated spatial planning approach that accommodates human settlement, livestock production, wildlife conservation, and tourism without undermining the communal land system.

Residential development is mainly concentrated in the central and northern parts of Koija, where homesteads are distributed around established settlement areas and access roads. The proposed strategy seeks to consolidate these settlement patterns, improve access to essential services, and guide future development away from sensitive ecological areas, key grazing lands, and wildlife movement corridors.

4.1.1 Residential Areas and Settlement Consolidation

Residential development should be directed towards designated settlement zones, with future expansion guided by the community's agreed land-use framework. The strategy should reaffirm a three-zone land-use model that distinguishes between settlement areas, livestock production and grazing areas, and wildlife conservation areas, while recognizing that some compatible uses may occur across zone boundaries subject to agreed management rules.

Settlement planning should promote low-density development that reflects Koija's pastoral way of life, household needs, and customary land-use practices. The designated settlement areas should be supported by access roads, reliable water supplies, sanitation, energy, and other essential services. Consolidating development around existing settlement areas will help reduce infrastructure costs, limit scattered homesteads, and minimize encroachment into grazing areas and wildlife habitats.

All settlement proposals should be developed through meaningful community participation and implemented in a manner that safeguards communal land rights, cultural heritage, and equitable access to land and resources.



4.1.2 Educational Facilities

Educational facilities are concentrated around established settlement areas and include Ewaso Primary School, Ewaso Secondary School, Koija Nursery School, and proposed educational sites. The strategy seeks to improve access to education by strengthening existing facilities and locating future educational infrastructure within accessible settlement zones.

Planning for educational facilities should consider the distribution of households, the needs of children from pastoral families, road access, water availability, sanitation, and safe learning environments. Where feasible, schools and community learning facilities can also promote environmental awareness, sustainable grazing practices, water conservation, climate adaptation, and coexistence between people, livestock, and wildlife.

4.1.3 Commercial Activities and Public Facilities

Commercial activities should be concentrated around established centres and transportation routes to improve accessibility, support local trade, and create livelihood opportunities for the community. Compatible small-scale enterprises may include shops, livestock-related services, local produce markets, craft enterprises, and tourism-related businesses, subject to the approved land-use plan and applicable development controls.

Public-purpose and utility facilities should be strategically located within designated settlement areas to improve access to essential services and strengthen local administration. The location of these facilities should consider the needs of residents in central and more remote parts of Koija, as well as the availability of water, access roads, energy, and other supporting infrastructure.

The strategy should also encourage livelihood diversification that complements pastoralism and conservation. Tourism and other community-based enterprises may provide additional income, but their development should be guided by carrying capacity, environmental safeguards, community priorities, and the need to retain adequate land for grazing and wildlife conservation.



4.1.4 Recreational and Community Facilities

The existing playground at Ewaso Centre, adjacent to Ewaso Primary and Secondary Schools, serves students and the wider community. The facility should be retained, protected, and improved to support recreation, sports, community gatherings, and social interaction.

Future improvements may include appropriate sports facilities, sanitation, water access, landscaping, and shade trees using suitable indigenous species. The playground should remain accessible to the community and be managed in a manner that complements nearby educational facilities and other public uses.

4.1.5 Transportation and Accessibility

The existing road network connects the main settlement areas with neighboring communities and provides the primary framework for movement and future development. The strategy proposes maintaining and upgrading priority access roads to improve connectivity between residential areas, schools, commercial centres, livestock grazing areas, water points, and tourism facilities.

Road improvements should prioritize all-weather accessibility, adequate drainage, and measures to control soil erosion. Road alignments should also be assessed to avoid unnecessary fragmentation of wildlife habitats, disruption of livestock routes, and encroachment into sensitive ecological areas. Transport planning should therefore support community mobility and service delivery while maintaining the connectivity required for pastoralism and wildlife conservation.

4.1.6 KETRACO Wayleave and Development Control

The high-voltage electricity transmission line traversing the eastern and southeastern parts of Koija requires protection of its designated wayleave. Permanent structures, incompatible land uses, and high-growing trees should be restricted within the corridor in accordance with the applicable safety requirements and directions of the Kenya Electricity Transmission Company Limited (KETRACO).

The wayleave should be clearly reflected in the spatial plan and development control framework. Proposed developments within or adjoining the corridor should be subjected to the necessary technical clearances to protect public safety, facilitate maintenance, and prevent



incompatible land uses. Where appropriate, compatible uses of the corridor may be permitted subject to KETRACO's requirements and applicable regulations.

4.1.7 Green Bonds and Conservation Financing

The strategy proposes exploring green bonds and other appropriate green-financing mechanisms to mobilize resources for eligible conservation, environmental restoration, and climate-resilient infrastructure projects in Koija. Potential investments could include sustainable water infrastructure, solar-powered facilities, restoration of degraded rangelands, protection of wildlife corridors, and improvement of community facilities that deliver measurable environmental benefits.

The Community Land Management Committee, working with the County Government, conservancy partners, development agencies, and suitable financial institutions, may identify priority projects and assess their financing requirements. Potential projects should be supported by clear implementation plans, cost estimates, environmental safeguards, and transparent financial management arrangements.

Green bonds could be explored where projects are sufficiently large, financially viable, and capable of meeting applicable investor and regulatory requirements. Alternatively, Koija could participate in wider county, conservancy, or landscape-level financing initiatives rather than independently issuing a bond.

Any financing arrangement should protect communal land rights and ensure that community priorities remain central to investment decisions. Green bonds should be treated as a potential financing option, not as guaranteed revenue, and should complement rather than replace public funding, development partner support, and other appropriate sources of finance.

4.1.8 Carbon Credits and Nature-Based Livelihoods

Koija's pastoral landscape and conservation initiatives provide an opportunity to assess the feasibility of community-based carbon credit projects that support sustainable land management and climate resilience. Potential interventions may include rangeland restoration, improved grazing management, rehabilitation of degraded areas, and protection or restoration of suitable carbon-rich ecosystems.



Before pursuing a carbon project, the community should undertake a feasibility assessment to establish the area's carbon sequestration potential, identify eligible activities, determine project costs, and assess the potential market and long-term revenue. Projects should demonstrate measurable emission reductions or carbon removals, supported by credible monitoring, reporting, and verification arrangements.

The community should also assess how carbon projects would interact with existing pastoral practices, seasonal grazing arrangements, wildlife conservation, and customary resource use. Carbon-related activities must not impose inappropriate restrictions on community access to land or undermine livestock-based livelihoods.

Any project must comply with applicable Kenyan carbon-market laws and regulations, including relevant requirements for community participation, consent, benefit sharing, and community development agreements. The community should receive clear information on project obligations, costs, risks, expected benefits, and the duration of any commitments before deciding whether to participate.

Where viable, carbon revenues could contribute to rangeland rehabilitation, water infrastructure maintenance, drought preparedness, community facilities, livelihood diversification, and human–wildlife conflict mitigation. Benefit-sharing arrangements should be transparent, equitable, and agreed upon by the community.

4.1.9 Integration of Settlement, Livestock, and Wildlife Strategies

Human settlement planning in Koija must be closely integrated with the Livestock Development and Wildlife Conservation Strategies. Residential areas and public facilities should be concentrated in appropriate locations while maintaining adequate land for grazing, livestock movement, water access, and wildlife corridors.

Water infrastructure should be planned jointly to consider domestic needs, livestock watering, and wildlife hydration. Proposed dams and other water facilities should be sited following appropriate technical and environmental assessments to avoid creating new conflict hotspots around homesteads or disrupting important wildlife movement routes.

Where electric fencing or other wildlife-management infrastructure is proposed, its location should be coordinated with settlement patterns and livestock routes to minimize disruption to



pastoral mobility and ecological connectivity. Security and wildlife response facilities should similarly support community safety, livestock protection, and timely management of wildlife incidents.

The strategy should also explore how conservation financing, including feasible green-financing and carbon-credit initiatives, can complement these integrated land-management interventions. Such financing should be directed towards clearly identified priorities, with measurable outcomes and community oversight.

4.1.10 Proposed Development Priorities

With Koija's community land status formally recognized, the Community Land Management Committee has an important role in facilitating community-led decisions on land management and development, subject to the Community Land Act and other applicable laws. The following interventions are proposed:

- i. Refine and reaffirm the three-zone model to guide settlement development, livestock production, and wildlife conservation while protecting communal land rights and compatible traditional land uses.
- ii. Promote orderly, low-density settlement development around existing settlement areas, with appropriate development controls to minimize scattered homesteads and protect sensitive ecosystems.
- iii. Improve access to essential services by strengthening educational facilities, public-purpose sites, water infrastructure, sanitation, energy, and priority access roads within designated settlement areas.
- iv. Protect pastoral livelihoods and livestock mobility by safeguarding grazing areas, seasonal livestock routes, and access to shared water resources, while coordinating these provisions with wildlife conservation measures.
- v. Support climate-resilient livelihoods and responsible tourism through community enterprises and livelihood diversification that complement pastoralism and conservation without converting excessive areas of grazing land or wildlife habitat.
- vi. Explore green bonds and other green-financing opportunities for eligible environmental and climate-resilient infrastructure projects, subject to financial feasibility, applicable requirements, and transparent governance.



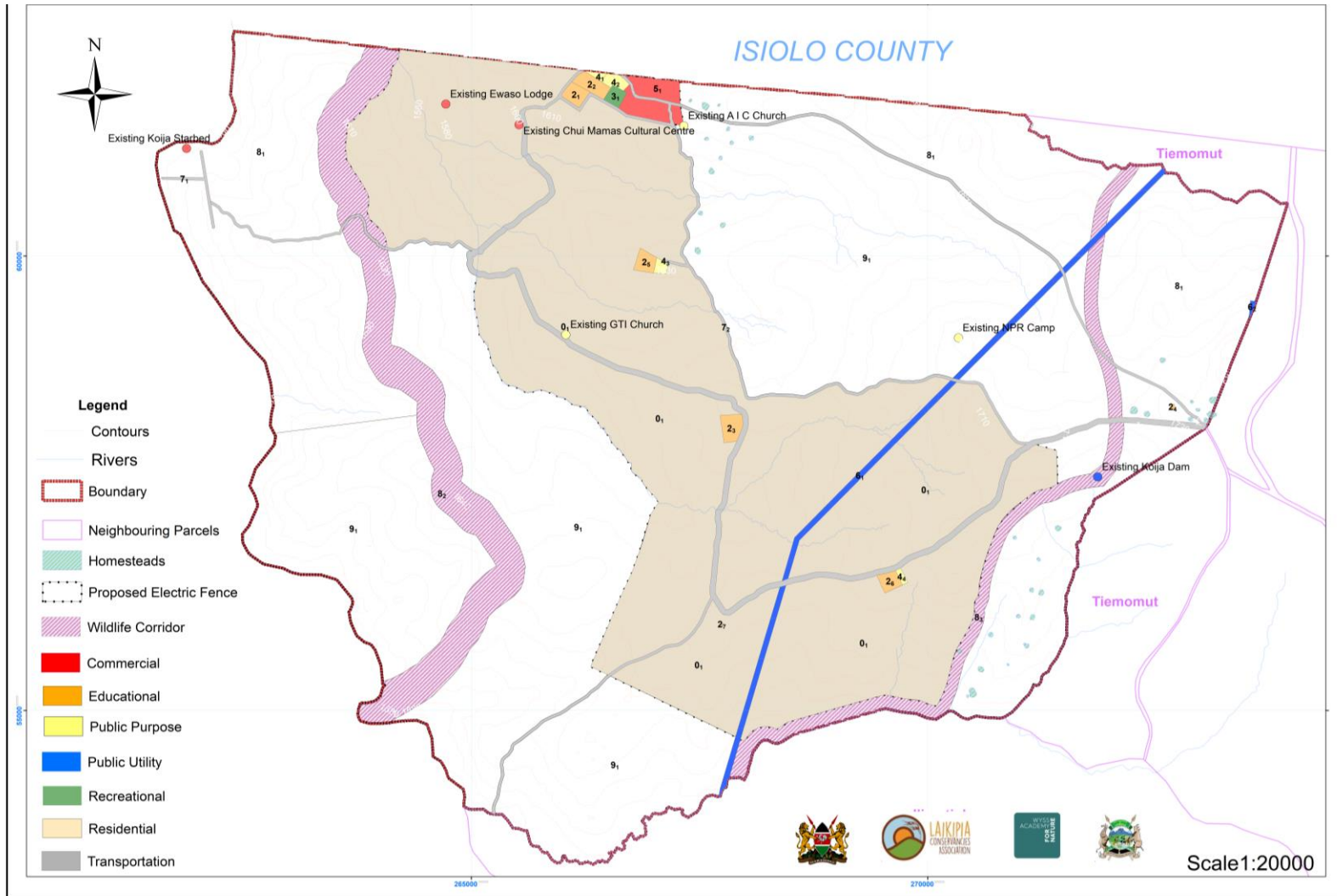
- vii. Assess carbon-credit opportunities for eligible rangeland restoration, improved grazing management, and other suitable nature-based interventions, ensuring informed community participation and equitable benefit sharing.
- viii. Strengthen community governance and monitoring through the Community Land Management Committee, regular stakeholder engagement, transparent resource allocation, and monitoring of settlement growth, land-use changes, and conservation outcomes.

The proposed Human Settlement Strategy provides a framework for orderly settlement development in Koija while safeguarding pastoral livelihoods, communal land rights, and the ecological systems that sustain wildlife and the local economy. By coordinating residential development, essential services, transport infrastructure, livestock management, and conservation measures, the Plan seeks to improve community well-being without compromising the long-term sustainability of the landscape.

The exploration of green bonds and carbon credits may provide additional opportunities to finance conservation and climate-resilient development, but their success will depend on technical and financial feasibility, compliance with applicable requirements, credible environmental outcomes, and meaningful community participation. Ultimately, the strategy seeks to ensure that settlement development, pastoral production, and wildlife conservation reinforce one another, with the community retaining a central role in determining Koija's land-use priorities and sharing the benefits of sustainable development.



Map 25: Proposed Human Settlement Strategy



Source: Laikipia County GIS Lab



4.2 Proposed Livestock Development Strategy

The Proposed Livestock Development Strategy for Koiya Community Land seeks to strengthen pastoral livelihoods, improve livestock productivity, restore rangeland health, and enhance resilience to drought and climate variability over the 2026–2036 planning period. The strategy recognizes livestock production as a key pillar of the community's economy, food security, cultural identity, and land-use system. It therefore promotes sustainable pastoralism while maintaining the ecological balance necessary for wildlife conservation and the long-term sustainability of communal land resources.

The strategy is closely linked to the Human Settlement and Wildlife Conservation Strategies. It seeks to ensure that residential development does not unnecessarily encroach on grazing areas, that water infrastructure serves community and livestock needs while considering wildlife requirements, and that conservation interventions do not unnecessarily restrict livestock movement or access to pasture. The Community Land Management Committee (CLMC), in collaboration with relevant County Government departments, conservancy partners, livestock producers, and development partners, will have an important role in coordinating and monitoring implementation.

4.2.1 Sustainable Rangeland Management and Forage Security

The Plan proposes sustainable management of Koiya's communal grazing areas through planned and rotational grazing, rangeland restoration, and improved forage availability. Grazing areas should be managed according to seasonal pasture conditions, livestock numbers, carrying capacity, and the ecological sensitivity of different parts of the landscape.

Rotational and seasonal grazing should be implemented through agreed grazing schedules and designated grazing zones that allow vegetation to recover, reduce overgrazing, and maintain adequate forage throughout the year. Degraded areas should be rehabilitated through appropriate indigenous grass reseedling, erosion control, soil and water conservation, and temporary resting of heavily grazed sections. Community fodder banks, hay production, and strategic feed reserves should be encouraged to reduce livestock losses during prolonged dry periods. Traditional livestock movement routes, watering points, and access to seasonal grazing areas should also be identified and protected to maintain pastoral mobility. Stocking decisions should reflect available pasture and water resources, particularly during droughts.



These interventions should be coordinated with wildlife conservation measures to maintain habitat connectivity and reduce competition for forage and water. Where carbon-credit opportunities are considered, eligible rangeland restoration and improved grazing practices may be assessed for their potential to improve soil carbon storage and support climate resilience, subject to technical feasibility and applicable carbon-market requirements.

4.2.2 Livestock Productivity, Animal Health and Value Addition

The strategy seeks to improve livestock productivity and household incomes through better animal health, appropriate breed improvement, reliable water access, and stronger market linkages. Interventions should be adapted to Koiya's pastoral production system and the need to maintain livestock breeds and practices suited to local environmental conditions.

Access to veterinary services should be strengthened through vaccination, disease surveillance, livestock treatment, and collaboration with County Government veterinary officers and relevant partners. Appropriate breed improvement should prioritize locally suitable breeds and breeding practices that enhance resilience, productivity, and adaptation to drought and limited forage availability. Existing livestock watering facilities should be maintained, and additional infrastructure assessed where necessary to reduce excessive livestock travel distances and pressure on existing water sources.

Livestock marketing should be improved through better access to markets, market information, aggregation facilities, and organized marketing arrangements that strengthen pastoralists' bargaining power. Suitable value-addition opportunities, including milk handling, meat marketing, hides and skins, and other livestock products, may be explored where market demand, infrastructure, and environmental conditions permit. Limited feedlots or other intensive production systems may be considered where economically viable, provided they have reliable feed and water supplies and do not undermine communal grazing systems or create additional environmental pressures.

These measures should be linked to the Human Settlement Strategy by improving access to markets, veterinary services, and compatible commercial facilities. They should also support the Wildlife Conservation Strategy by reducing avoidable pressure on sensitive habitats and encouraging responsible management of shared water and grazing resources.



4.2.3 Climate Resilience and Livelihood Diversification

Koiya's livestock production system is vulnerable to recurrent drought, variable rainfall, pasture shortages, and competition for water. The strategy therefore seeks to strengthen the resilience of pastoral households while maintaining livestock mobility as an important adaptation mechanism.

Community drought-response plans should be developed to monitor pasture and water availability and guide timely interventions during periods of resource scarcity. Strategic fodder reserves should be established through the production, storage, and management of livestock feed for use during droughts. Awareness and uptake of suitable livestock insurance products, including index-based livestock insurance where available and appropriate, should also be promoted to help households manage drought-related losses.

Livelihood diversification should complement rather than replace pastoralism. Opportunities may include community-based tourism, crafts, small enterprises, and other suitable ventures that reduce excessive dependence on livestock without undermining pastoral traditions. The community should also explore conservation-linked livelihood opportunities and benefit-sharing arrangements that recognize its role in maintaining wildlife habitats and ecological connectivity.

4.2.4 Water Infrastructure, Governance and Human–Wildlife Conflict Management

Reliable access to water is fundamental to livestock production, domestic needs, and wildlife conservation. The strategy proposes coordinated management of existing and proposed water infrastructure to improve availability while minimizing competition among people, livestock, and wildlife.

Existing dams, sand dams, shallow wells, springs, and boreholes should be maintained and rehabilitated where necessary, with clear responsibilities for operation and maintenance. Proposed dams and other water developments should be assessed in relation to grazing patterns, settlement areas, wildlife corridors, hydrological conditions, and seasonal water demand. Transparent community water-management arrangements should guide access, maintenance contributions, and equitable use during drought periods.



Recurring human–wildlife conflict hotspots around water points, grazing areas, and settlements should be identified and addressed through site-specific interventions. Coordination among the CLMC, pastoralists, conservancy rangers, security agencies, and wildlife authorities should be strengthened to address livestock theft, wildlife incidents, and resource-related disputes. Roads, fences, and other infrastructure should be designed to avoid unnecessarily obstructing livestock routes or disrupting critical wildlife movement corridors.

The strategy should be implemented alongside the Wildlife Conservation Strategy to ensure that interventions such as dams and electric fencing are appropriately located and designed. Wildlife fencing should not unnecessarily block livestock movement or restrict access to essential grazing resources.

4.2.5 Green Bonds and Carbon Credits for Sustainable Livestock Development

The Plan proposes exploring green financing, including green bonds and carbon credits, as potential mechanisms for supporting sustainable pastoralism, rangeland restoration, and climate resilience in Koija. These mechanisms could complement County Government resources, development partner support, and other appropriate funding sources.

Green bonds may be explored to mobilize investment for eligible environmental and climate-resilient projects, including rangeland rehabilitation, sustainable water infrastructure, solar-powered water systems, and other projects with measurable environmental benefits. The CLMC, County Government, conservancy partners, and relevant financial institutions could work together to identify priority investments and assess whether these projects could form part of a wider county, conservancy, or landscape-level green-financing programme. Any proposal would require a sound financial structure, appropriate safeguards, transparent reporting, and compliance with applicable requirements.

Carbon credits may provide another potential source of conservation financing where activities can demonstrate measurable greenhouse gas emission reductions or increased carbon sequestration. Potential interventions for assessment include restoration of degraded rangelands and suitable indigenous vegetation, improved grazing management and sustainable rangeland stewardship, soil and ecosystem restoration measures with demonstrable carbon benefits, and protection or restoration of suitable carbon-rich ecosystems where compatible with existing community land uses.



Before pursuing carbon credits, Koiya should undertake a feasibility assessment to establish baseline conditions, potential carbon benefits, project costs, monitoring requirements, market viability, and implications for pastoral livelihoods. Any project must comply with applicable Kenyan carbon-market requirements and safeguard communal land rights, community participation, and equitable benefit sharing.

Revenue, if generated, could support rangeland restoration, water infrastructure maintenance, drought preparedness, livestock-related livelihood initiatives, and community conservation activities. However, green bonds and carbon credits should be treated as potential financing options rather than guaranteed revenue. Projects should proceed only where their financial and environmental viability is established and where community members understand and agree to the proposed arrangements.

4.2.6 Governance, Institutional Coordination and Community Participation

Effective implementation will require strong community governance and coordination between the CLMC, County Government departments responsible for livestock, agriculture, water, environment, and physical planning, as well as conservancy management and relevant development partners.

The CLMC should facilitate participatory development and implementation of community grazing rules, water-use arrangements, and livestock movement protocols. Community-based mechanisms should be established to monitor pasture conditions, water availability, livestock health, and drought risks. Women, youth, livestock keepers, and other community groups should be actively involved in planning and decision-making.

Coordination between livestock development, settlement planning, tourism, and wildlife conservation should be strengthened to minimize conflicting land uses and maximize shared benefits. Any conservation financing or carbon-credit initiative should operate under transparent governance and accountability arrangements, with clearly defined community participation and benefit-sharing mechanisms.

4.2.7 Integration with County and National Development Frameworks

The strategy should be implemented in alignment with relevant county and national development priorities. The Laikipia County Spatial Plan (2023–2033) provides a framework



for sustainable land management and recognizes the importance of pastoralism and community land systems in Laikipia North. The Plan should therefore support the spatial protection of communal grazing areas, livestock routes, watering points, and appropriate livestock markets and value-chain facilities.

The strategy may also explore relevant livestock-sector initiatives, including County Livestock Investment Companies where applicable, strategic fodder reserves, veterinary service programmes, livestock marketing support, and index-based insurance. The relevance, availability, and implementation arrangements for each initiative should be confirmed with the responsible agencies.

Coordination with county and national programmes will help mobilize technical support, strengthen market access, improve drought preparedness, and avoid duplication of investments. It will also create opportunities to link livestock development with conservation finance and climate-resilience initiatives where these are suitable for Koija.

4.2.8 Implementation Priorities for 2026–2036

Implementation should focus on securing and sustainably managing grazing areas through rotational grazing, seasonal grazing plans, rangeland restoration, and protection of livestock routes. Livestock productivity and market access should be improved through animal health services, appropriate breed improvement, better marketing arrangements, and feasible value-addition initiatives. Water and drought resilience should be strengthened by maintaining existing water points, assessing proposed dams, establishing fodder reserves, and improving drought preparedness.

Human–livestock–wildlife conflicts should be reduced through coordinated water planning, protection of livestock mobility, appropriate fencing, and stronger incident-response arrangements. Livelihood diversification should be supported through suitable community enterprises, tourism, and conservation-related opportunities that complement pastoralism. The community should explore green bonds and carbon credits for eligible rangeland restoration, sustainable water infrastructure, and other viable conservation and climate-resilience projects, subject to feasibility and community safeguards.

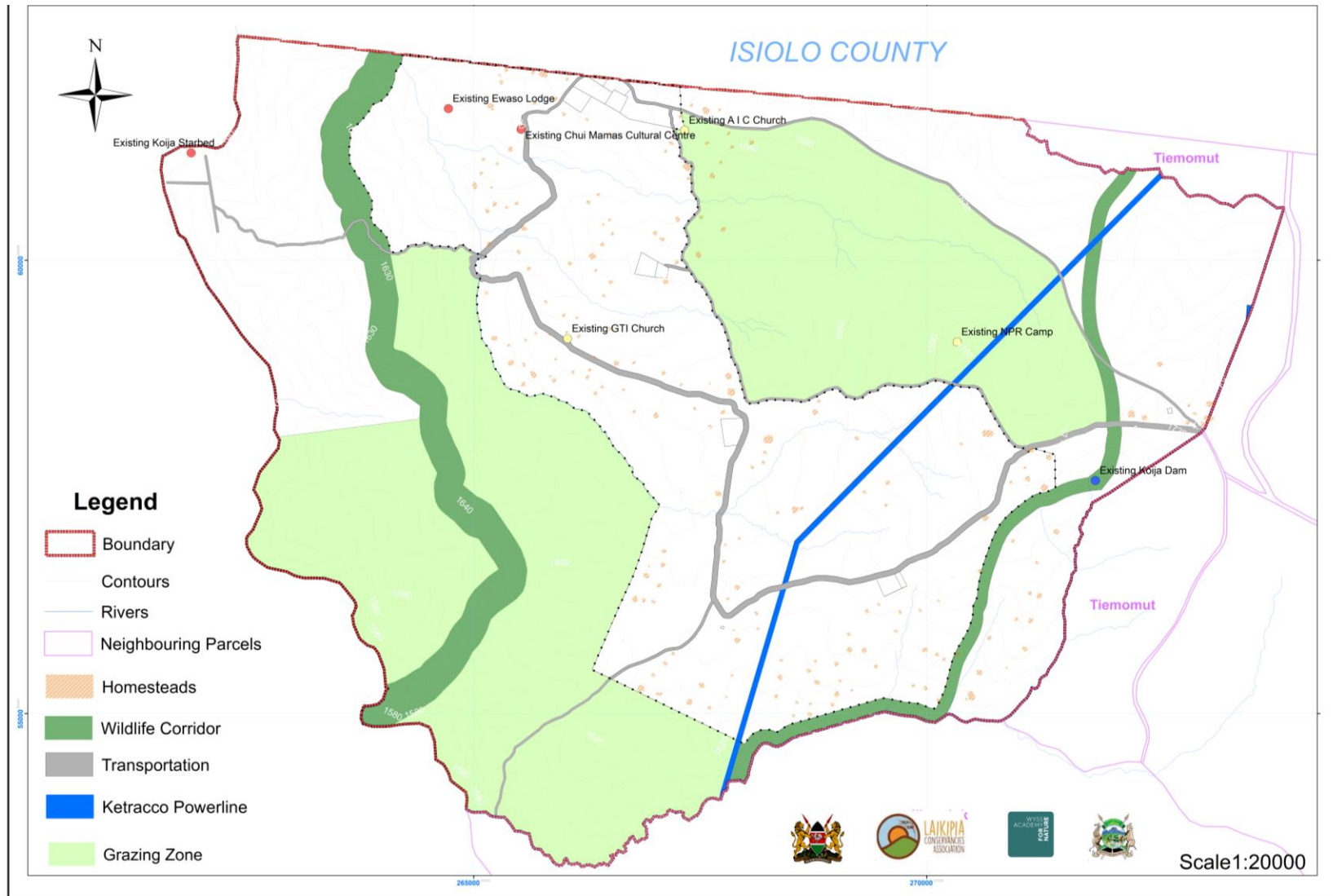
Implementation should be supported by participatory decision-making, transparent resource management, and alignment with county and national programmes. Monitoring should



consider indicators such as rangeland condition, livestock losses during drought, water-point functionality, access to veterinary services, market participation, and community benefits from conservation initiatives.



Map 26: Livestock Development Strategy



Source: Laikipia County GIS Lab



4.3. Proposed Human–Wildlife Conflict Management Strategy

The proposed Human–Wildlife Conflict Management Strategy for Koiya Community Land integrates wildlife conservation, livestock management, water provision, settlement planning, community security, and sustainable financing. The strategy builds on existing infrastructure and proposes targeted interventions, including additional dams, protection of wildlife corridors and conservation areas, solar-powered electric fencing, strengthened security and wildlife response facilities, rotational grazing, and innovative financing through carbon credits and green bonds.

The interventions seek to reduce competition for shared resources, minimize dangerous encounters between people and wildlife, protect livestock and property, strengthen drought resilience, and maintain the ecological and tourism value of the landscape. The strategy also seeks to mobilize long-term investment in conservation and community development while ensuring that the benefits of sustainable natural resource management accrue to the community.

4.3.1. Existing Water Points

Existing water points within Koiya Community Land support domestic water needs, livestock watering, and wildlife hydration. However, the limited and uneven distribution of water sources can increase competition, particularly during dry seasons when people, livestock, and wildlife converge around the same facilities.

The strategy therefore promotes improved water distribution, protection of existing water sources, and appropriate separation of water-use areas where feasible. Water infrastructure should be planned to reduce competition between users while maintaining access for pastoral households and supporting the ecological needs of wildlife.

4.3.2. Proposed Dams and Strategic Water Provision

Five additional dams are proposed across the community land, particularly within or near designated conservation areas, wildlife corridors, and established elephant movement routes. These dams will complement existing facilities, including Lngos Uani Dam in the central-western grazing zone and Koiya Dam along the south-eastern boundary.

The proposed dams are intended to improve access to water for livestock and wildlife, reduce pressure on existing water points, and provide alternative water sources during prolonged dry



periods. Their distribution should also reduce livestock travel distances and support the sustainable management of grazing areas. Site selection, design, and management should consider catchment characteristics, environmental sensitivity, water availability, and the risk of creating new human–wildlife conflict hotspots.

Where feasible, water points intended primarily for wildlife should be located at appropriate distances from homesteads, livestock holding areas, and other sensitive land uses. This approach should be complemented by protection of wildlife corridors, clear settlement boundaries, and community awareness on safe practices around wildlife. Water provision alone will not eliminate wildlife incursions; therefore, dam locations should be coordinated with wildlife movement patterns, grazing zones, and existing settlement arrangements.

4.3.3. Protection of Wildlife Corridors and Conservation Areas

The plan proposes to protect designated conservation areas and wildlife corridors to maintain habitat connectivity and allow wildlife, particularly elephants, to move between important habitats and water sources. These areas should be safeguarded from incompatible land uses, uncontrolled settlement expansion, and activities that obstruct wildlife movement.

The strategy recognizes the need to coordinate conservation measures with designated grazing areas so that livestock production and wildlife conservation can coexist. Community-agreed zoning, controlled access where necessary, restoration of degraded habitats, and regular monitoring will be important in maintaining this balance.

Protection of wildlife corridors and conservation areas will also provide a foundation for potential carbon financing initiatives, particularly where conservation and restoration activities can demonstrate measurable climate and ecosystem benefits.

4.3.4. Solar-Powered Electric Fencing

Solar-powered electric fencing is proposed around selected conservation areas and at strategic locations where wildlife movement creates risks to settlements, livestock, or tourism facilities. The proposal draws on the experience of Koija Star Beds, where fencing has contributed to safety and the protection of tourism-related activities.

Solar power is proposed to reduce reliance on conventional electricity and support long-term operational efficiency. However, fencing should be carefully designed and selectively applied



to avoid blocking established wildlife corridors or disrupting essential wildlife movement. Fence alignment should be determined through ecological assessment and community consultation, with provision for appropriate wildlife passage points where necessary.

Effective implementation will require regular inspection, maintenance, trained personnel, and a sustainable financing arrangement to cover operating costs and repairs. Potential carbon-credit revenue, green financing, and partnerships with conservation organizations may be explored to support eligible fencing and associated renewable-energy investments.

4.3.5. Livestock Management and Rotational Grazing

The strategy integrates human–wildlife conflict management with the proposed livestock development interventions. Designated grazing areas in the western and north-eastern blocks should be managed through rotational grazing to allow pasture recovery, reduce rangeland degradation, and limit the concentration of livestock around settlements and water points.

The proposed dams should be coordinated with grazing zones to improve livestock access to water and reduce unnecessary movement across wildlife-sensitive areas. Where possible, livestock watering facilities and routes should be organized to minimize overlap with critical wildlife habitats and major elephant movement routes.

Community-agreed grazing schedules, seasonal access arrangements, and water-use guidelines will be essential, particularly during drought periods when competition for resources is likely to intensify. Restoration of degraded rangelands and improved grazing management may also create opportunities for eligible carbon-credit projects, subject to technical assessments, applicable standards, and demonstrated carbon benefits.

4.3.6. Existing Security and Emergency Response Facilities

The Ndonyoruma National Police Reservist (NPR) Camp in the north-eastern sector and Ewaso Police Station in the northern section provide existing security infrastructure that can support community safety and wildlife-related incident response.

The strategy proposes strengthening these facilities through improved coordination, adequate staffing, regular patrols, and clear procedures for reporting and responding to human–wildlife conflict incidents. Collaboration among the community, National Police Reservists, Kenya



Wildlife Service, county authorities, and conservation partners will be important in ensuring timely, coordinated, and appropriate responses.

4.3.7. Proposed Southern Security and Wildlife Response Unit

An additional security and wildlife response unit is proposed in the southern section of Koiya Community Land to improve geographical coverage and reduce response times in areas located farther from existing facilities. The unit would support incident reporting, community alerts, patrol coordination, and rapid response to wildlife incursions and other security concerns.

Its establishment should be coordinated with the relevant security agencies and wildlife authorities to clarify responsibilities, staffing requirements, operational procedures, and the resources needed for effective implementation. The possibility of supporting eligible elements of the facility through conservation partnerships or climate-related financing should be explored during project preparation.

4.3.8. Carbon Credits and Nature-Based Climate Financing

Koiya Community Land has the potential to explore carbon-credit initiatives as a means of mobilizing finance for wildlife conservation, rangeland restoration, sustainable livestock management, and community resilience. Activities such as restoring degraded rangelands, improving grazing management, conserving woody vegetation, and protecting eligible ecosystems may generate measurable carbon benefits that could qualify for carbon credits under a recognized standard or programme.

The proposed rotational grazing system, protection of conservation areas and wildlife corridors, and restoration of degraded grazing zones provide a potential foundation for a community-led carbon project. However, the suitability of these activities must be established through a technical feasibility assessment, including an assessment of baseline conditions, additionally, carbon accounting, permanence, leakage risks, and the applicable verification requirements.

Development of a carbon-credit project should be based on clearly established land and carbon rights, informed community consent, transparent governance, and an equitable benefit-sharing framework. The rights and interests of pastoral households, including customary access to grazing areas, water sources, and wildlife corridors, should be safeguarded. The community



should also be provided with clear information on project obligations, potential revenues, costs, risks, and the duration of any proposed carbon agreements before committing to participation.

Revenue from the sale of verified carbon credits could support priority interventions identified in this plan, including rangeland rehabilitation, water infrastructure maintenance, wildlife habitat protection, solar-powered fencing, community-based wildlife monitoring, and livelihood diversification. A community-approved financing mechanism should determine how net proceeds are allocated between participating households, community-wide development priorities, conservation activities, and the costs of managing the carbon project.

Carbon-credit revenue should be treated as a potential supplementary source of financing rather than guaranteed income. Project development should proceed only where the technical, environmental, legal, and financial requirements are demonstrably feasible.

4.3.9. Green Bonds and Sustainable Conservation Financing

The plan proposes exploring green bonds and other climate and conservation finance instruments to mobilize resources for priority infrastructure and environmental management interventions. Green bonds are debt instruments used to raise capital for eligible environmental projects. Unlike carbon credits, which may generate income through the sale of verified carbon units, green bonds involve financing that must be repaid in accordance with the applicable terms.

Potential investments associated with Koiya Community Land include the construction and rehabilitation of dams, installation of solar-powered water systems, eligible renewable-energy infrastructure, rangeland restoration, ecosystem rehabilitation, and sustainable natural resource management. These investments could improve water security, reduce pressure on shared resources, strengthen drought preparedness, support livestock production, and contribute to wildlife conservation.

Given the financial and institutional requirements of green bonds, implementation would likely require collaboration with the County Government of Laikipia, relevant national government agencies, development finance institutions, conservation organizations, and private investors. The feasibility of a county-level, pooled, or other appropriate green financing arrangement should be assessed before selecting a specific bond structure.



Any proposed financing mechanism should clearly identify eligible projects, capital requirements, implementation responsibilities, expected environmental outcomes, repayment arrangements, and monitoring and reporting procedures. The community's participation, rights, and potential financial obligations must be clearly defined, and the financing structure should avoid placing unsustainable debt or contingent liabilities on the community.

Green bonds and other climate-finance instruments should complement public funding, development-partner support, and community contributions rather than displace essential public investment. Their use should be guided by the scale of proposed investments, financial feasibility, environmental integrity, and the capacity of the implementing institutions to manage the projects.

4.3.10. Community Participation, Governance, and Monitoring

Successful implementation will depend on strong community ownership and the active participation of local institutions in managing grazing areas, conservation zones, water infrastructure, and wildlife-related risks. Community land governance structures should support enforcement of agreed zoning principles, monitoring of wildlife movement and conflict hotspots, maintenance of fencing and water facilities, and reporting of incidents.

Where carbon credits or green financing are pursued, the community should establish transparent governance and financial management arrangements. These should provide for community participation in project selection, disclosure of financing terms, independent oversight where appropriate, transparent reporting of income and expenditure, and equitable sharing of benefits. Community members should have access to information on project performance and the use of any revenue generated.

Regular monitoring should assess changes in human–wildlife conflict incidents, livestock losses, property damage, access to water, rangeland condition, and wildlife habitat connectivity. For carbon-credit initiatives, monitoring should also address the relevant carbon and environmental indicators required by the selected standard. For green-financed investments, reporting should track project expenditure, implementation progress, environmental outcomes, and repayment obligations where applicable.

The findings should inform adjustments to infrastructure locations, grazing arrangements, response measures, and financing priorities as conditions change.



4.3.11. Strategic Alignment and Implementation Partnerships

The proposed interventions seek to balance community safety, wildlife conservation, livestock production, tourism, and settlement development. They support the broader planning objectives associated with the Laikipia Spatial Plan's pastoralist enclave concept, county priorities for rangeland management and livestock investment, and national efforts to strengthen the resilience of arid and semi-arid lands (ASALs).

Secure community land tenure provides an important foundation for coordinated planning and engagement with government agencies, conservation organizations, development partners, and potential investors. Partnerships will be essential for technical support, resource mobilization, infrastructure development, ecological monitoring, and implementation of eligible climate-finance projects.

Implementation should also be integrated with wider Naibunga landscape management initiatives to promote ecological connectivity and coordinated resource management beyond Koija's boundaries. Carbon-credit and green-financing opportunities should be assessed within this wider landscape context where appropriate, while ensuring that Koija's community rights, priorities, and benefit-sharing arrangements remain clearly defined.

The Human–Wildlife Conflict Management Strategy adopts an integrated approach in which water provision, grazing management, wildlife corridor protection, selective fencing, settlement planning, security response, and sustainable financing reinforce one another. The proposed dams will improve the distribution of water; rotational grazing will support pasture recovery; conservation areas and wildlife corridors will maintain habitat connectivity; and strengthened security and response facilities will improve community safety.

Carbon credits and green bonds offer potential complementary financing mechanisms for implementing and maintaining these interventions. Carbon credits may support eligible activities that generate verified carbon benefits, while green bonds may help finance larger environmental infrastructure investments where a credible repayment structure exists. Both mechanisms require careful feasibility assessment, transparent governance, community participation, and clear environmental and financial safeguards.

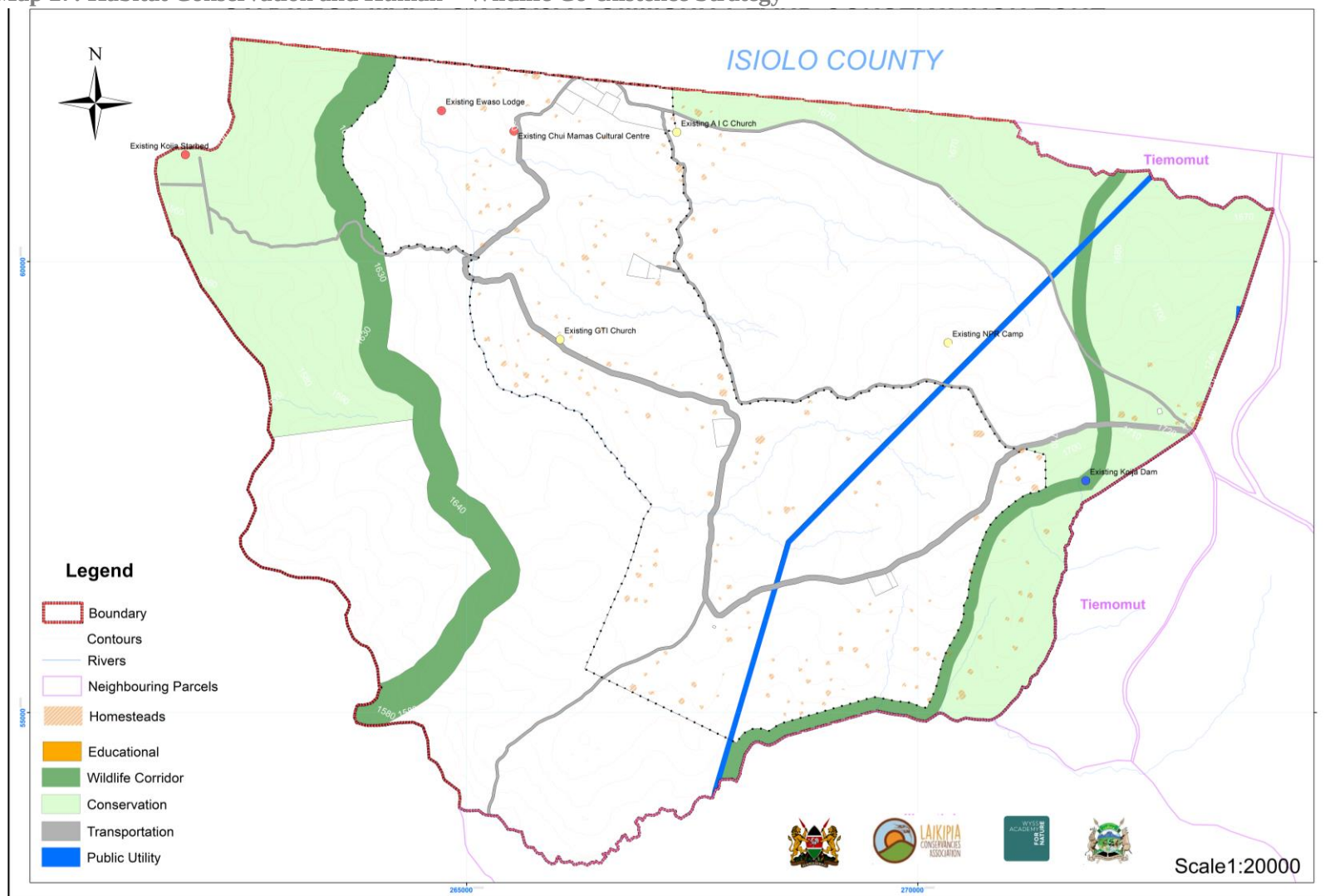
Through coordinated implementation over the 2026–2036 planning period, Koija Community Land can strengthen pastoral livelihoods and drought resilience, protect wildlife habitats,



sustain tourism opportunities, and reduce human–wildlife conflict. Long-term success will depend on community ownership, enforcement of agreed land-use principles, effective partnerships, reliable financing, and adaptive management that responds to changing environmental and livelihood conditions.



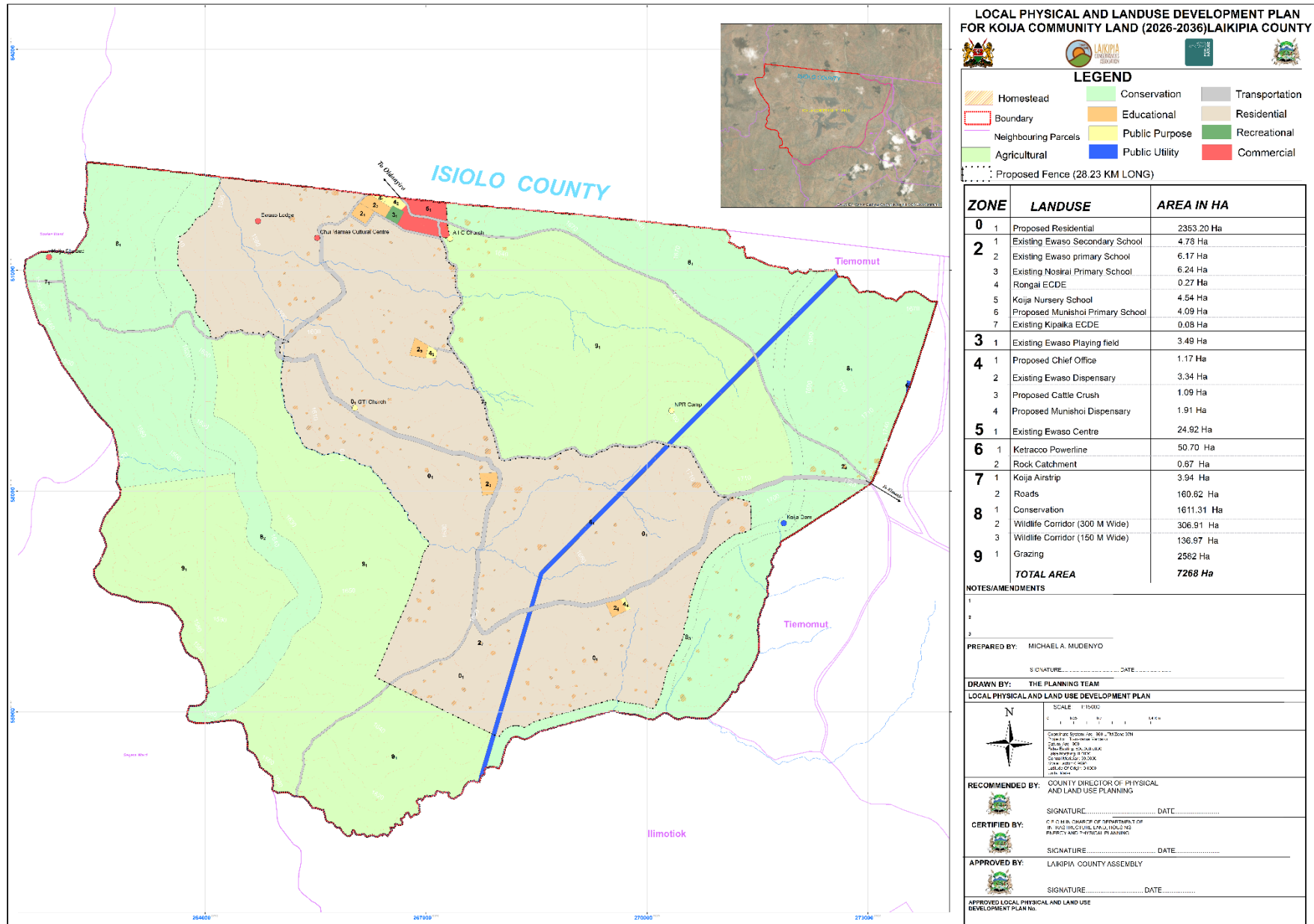
Map 27: Habitat Conservation and Human – Wildlife Co-existence Strategy



Source: Laikipia County GIS Lab, 2026



Map 28: Proposed Local Physical and Land Use Development (Zoning Plan) for Koija Community Land



Source: Laikipia County GIS Lab



4.4: Proposed Land Use, General and Specific Standards and Guidelines

LAND USE	PROPOSED MINIMUM LAND SIZES:		GENERAL GUIDELINES	SPECIFIC GUIDELINES
Residential	Low Density Residential	Minimum of 0.5 Acres Maximum depends on herd and family size	All residential areas should be well accessible and close to critical infrastructure that supports high standards of living such as; water sources, security and other social public infrastructure.	<ul style="list-style-type: none"> All residential developments in the rangelands are limited to ground plus one in height. All developments shall be self-sufficient, i.e. have their own waste management facilities on site All permanent developments shall be required to process development approvals from the County Government before construction. An authorization letter from the CLMC will be a requirement in the development application process. Permanent structures are highly encouraged to promote development in the community land. Avoid location of residential areas in flood-prone or high-slope (>12%) areas.
Educational	Existing Ewaso Secondary School	4.82 Ha	Any proposed school grounds should be located in places with least climatic hazards such as	<ul style="list-style-type: none"> All educational facilities shall be fenced off to avoid conflicting land
	Existing Ewaso Primary School	6.17 Ha		



LAND USE	PROPOSED MINIMUM LAND SIZES:		GENERAL GUIDELINES	SPECIFIC GUIDELINES
	Existing School	Nosirai 6.27 Ha	floods and away from disruptive land uses such as industrial facilities, sewage or dump sites. Grounds should be levelled for ease of use especially learners' playing fields. Educational facilities should be within 2 km walking distance of households for eased of access, especially for children going through ECDE.	uses such as wildlife and grazing activities.
	Rongai ECDE	0.26 Ha		<ul style="list-style-type: none"> Educational facilities should be left free of encroachment Educational facilities may be repurposed to other educational uses only. (No change of use to other land uses). ECDEs may be established on residential areas on need bases. A radius of 2Km. All educational facilities should have a playing ground. It shall be provided in areas with a (<2%) gradient. Ensure adequate drainage to carry surface water off the field.
	Koiya Nursery School	4.54 Ha		
	Proposed Primary and Secondary School	Munishoi --		
Recreational	Existing Playing Field	Ewaso 3.49 Ha	In accordance with the planning standards, local stadiums and playing fields should have a minimum 3 Ha with adequate access roads and should be well-served by public transport or within walking distance for local population.	<ul style="list-style-type: none"> The facility shall host its own waste management facility on site. The facility shall be fenced all round subject to survey done as per the allocated hectares. All roads accessing the facility shall be at least 15 Meter road to allow for easy access to the facility.



LAND USE	PROPOSED MINIMUM LAND SIZES:		GENERAL GUIDELINES	SPECIFIC GUIDELINES
			Further, there should be a 9 Meter road surrounding the playing field to deter encroachment.	<ul style="list-style-type: none"> The facility shall have multiple alternative road access. The facility may be repurposed to other recreational uses and other limited social uses such as community meetings.
Public Purpose	Existing Ewaso Police Station	1.11 Ha	<ul style="list-style-type: none"> The planning guidelines stipulate those administrative offices should be located near commercial centers with ease of accessibility to majority of the population. Further, there should be provision for accessibility and away from conflicting land uses like industrial sites and dumping sites. The land requirement for police station and chief's camp is dependent on the population and area served. Ensure adequate access roads for the local population to access facilities. 	<ul style="list-style-type: none"> All public facilities shall be fenced off to avoid encroachment. All health facilities proposed and existing shall be equipped with staff and medical facilities. i.e., Medicine, antivenom, medical machines. Religious institutions with substantial land sizes shall incorporate complementary public-purpose facilities such as dispensary and/or educational facilities.
	Existing Ewaso Dispensary	3.28 Ha		
	Existing AIC Church	3.12 Ha		
	Existing Ndonyoruma NPR Camp	0.70 Ha		
	Existing Munishoi GTI Church	0.35 Ha		
	Existing Lemis Church	0.25 Ha		
	Existing Cattle Dip	1.91 Ha		
	Existing Chui Mama Cultural Center	0.56 Ha		
	Proposed Munishoi Dispensary	--		



LAND USE	PROPOSED MINIMUM LAND SIZES:		GENERAL GUIDELINES	SPECIFIC GUIDELINES
Commercial	Existing Ewaso Commercial Hub	23.53 Ha	Commercial centers and facilities are located with sufficient road network to facilitate circulation and center functionality. In addition, there should be supporting infrastructure including electricity, water, and waste disposal areas. Commercial facilities must comply with zoning regulations while markets require waste collection and water points.	<ul style="list-style-type: none"> Existing road Plan for supporting infrastructure including electricity, water, and waste disposal. commercial development to comply with zoning and development control guidelines. Designated markets to have central refuse collection and water points.
	Nosirai Commercial Hub	--		
	Ewaso Eco Lodge	6.02 Ha		
	Existing Koija Star Bed	4.38 Ha		
Public Utility	Existing Koija Dam	7.04 Ha	Location of water resources considers accessibility for human and animal consumption. Ensure adequate measures to protect water resources against contamination and pollution and reduce spread of water-borne diseases. The powerline has sufficient wayleave but erection of structures along it is prohibited for safety purposes.	<ul style="list-style-type: none"> Water resources should be at least within 2km service radius for human consumption while livestock use up to 5km. Discourage direct livestock watering from the source to prevent contamination. Site latrines, cattle dips, and waste disposal points outside water sources. Fence sensitive water infrastructure where contamination risk is high.
	Existing Munishoi Water pan	4.39 Ha		
	Existing Olturoto Water pan	0.82 Ha		
	Existing Lenaikoble Water pan	0.92 Ha		
	Existing Lngos Uani Dam	4.45 Ha		
	Existing Ketraco Powerline	50.58 Ha		



LAND USE	PROPOSED MINIMUM LAND SIZES:		GENERAL GUIDELINES	SPECIFIC GUIDELINES
				<ul style="list-style-type: none"> Prohibit human settlement along powerline way leave.
Transport	Existing Roads	156.31 Ha	<p>The road reserve for the main artery should be a minimum of 30m while local distributor roads should be between 12m and 15m. There should be no encroachment on road to allow for installation of utilities like electricity lines and water reticulation. All land uses must have adequate access roads. The guidelines stipulate that conflicting land is used to ensure that airstrips are free of obstacles such as high-rise buildings. It is imperative to limit location of land uses that attract wildlife like dumping sites attracting birds and animal water points.</p>	<ul style="list-style-type: none"> Road reserve widths for the main artery to be a minimum of 30m and local access roads 12-15m. Permanent structures are not permitted on road reserve and will be used for electricity lines and water reticulation. Every land use must have adequate road access Maintain the Obstacle Limitation Surfaces around airstrips no high-rise buildings Keep dumpsites/landfills at least 13 km from the airstrip to reduce bird-strike risk. Avoid locating animal watering points similar wildlife-attracting uses near the airstrip
	Existing Koiya Airstrip	4.02 Ha		
Conservation	Conservation Area	1260 Ha	<p>Designating wildlife corridors must aim to protect human settlement and livestock from wildlife invasion. Identified wildlife corridors have a minimum buffer of 250m to allow for animal movement to</p>	<ul style="list-style-type: none"> Wildlife corridors should be routed to avoid traversing through settlement or grazing zones directly. Use appropriate fencing at corridor-settlement/livestock interfaces to reduce conflict
	Wildlife Corridor	520.3 Ha		
	Proposed wildlife fence	--		



LAND USE	PROPOSED MINIMUM LAND SIZES:		GENERAL GUIDELINES	SPECIFIC GUIDELINES
			access water and migration. It is imperative to have a wildlife fence to reduce livestock invasion. There should be limited human activities such as settlements in designated conservation area. Compatible land uses in conservation areas include eco-tourism facilities. Conservation area should include environmental regeneration activities like reforestation and reseedling.	<ul style="list-style-type: none"> Prohibit new settlement within designated conservation zones Low-footprint eco-tourism is an accepted compatible use but should operate under a community/conservancy management agreement. Environmental regeneration to include reforestation, reseedling, and erosion control as a standing requirement for conservation areas.
Agriculture	Proposed Grazing Area	2535 Ha	The guidelines indicate that there should be no erecting of structures on grazing area. There should be sufficient access to watering point and mitigate against pollution of water infrastructure like dams. Manage areas where grazing land overlap with wildlife corridors to access watering points. Cattle crush location should be near a reliable water source for the collecting yard trough. However, there should be measures to protect the water sources from	<ul style="list-style-type: none"> Prohibit erecting structure on designated grazing land. Where grazing land overlaps a corridor, manage through time-based access so livestock and wildlife aren't competing for the same watering point simultaneously. Locate cattle crush near a reliable water source while protecting it from chemical contamination. Provide proper drainage so chemical runoff cannot reach groundwater or domestic water sources.
	Proposed Cattle Crush	--		



LAND USE	PROPOSED MINIMUM LAND SIZES:		GENERAL GUIDELINES	SPECIFIC GUIDELINES
			contamination by chemical runoffs. There should be treatment mechanisms and proper drainage where chemicals cannot reach ground water for domestic consumption. It should be centrally located on grazing areas.	<ul style="list-style-type: none">Centrally located within the grazing block it serves, with vehicle access for veterinary supply and maintenance.



CHAPTER FIVE: IMPLEMENTATION FRAMEWORK

CATEGORY	PROPOSALS	RESPONSIBLE ACTORS	PRIORITY
Livestock & Economic Development	<p>Diversify livelihoods beyond livestock by expanding beekeeping, poultry keeping, casual labor, and include value-addition; introduce drought-resilient livestock breeds and differentiate support by herd size (smallholder, medium-scale, large herd owner); promote livestock markets, veterinary services and breeding programmes.</p> <p>These will reduce livestock diseases and enhance livestock-related economic activities.</p>	County Livestock Production & Veterinary Services, KALRO, Community Livestock Management Committees, Laikipia Conservancies Association, and related Non-Governmental Organizations.	Medium (medium term)
Rangeland & Grazing Management	<p>Promote controlled grazing guided by spatial degradation mapping to help environmental conservation and rangelands regeneration to ensure uninterrupted availability of grazing lands; scale up semi-circular bund construction and erosion-control structures in the highest-degradation zones. Gully filling would be essential in areas susceptible to soil erosion.</p>	County Livestock/Veterinary Dept., Community Grazing Committees, Kenya Forest Service, NGO such as LCA, Wyss Academy and other partners	High (short term)



CATEGORY	PROPOSALS	RESPONSIBLE ACTORS	PRIORITY
Vegetation Restoration & Invasive Species Control	Expand tree-planting and grass-reseeding programmes with reliable access to water, seed and seedlings; scale up biological control of invasive Opuntia alongside continued manual extraction; carry out targeted outreach to households not currently undertaking conservation activity.	Kenya Forest Service, NEMA, County Environment Department, Community Conservation Committees, NGOs	High (short term)
Land Use Planning & Wildlife Corridors	Identify and map out wildlife corridors to guide settlement locations; fence identified corridors and maintain buffer zones of at least 250m width where wildlife transverse to access water points or migrate to other locations to mitigate against crossing in residential zones; integrate corridor protection and grazing management into the Community Land Use Plan as coordinated, mapped interventions.	County Physical Planning Department, Kenya Wildlife Service (KWS), National Land Commission, Community Land Management Committee and other Non-Governmental Organizations	High (short term)
Human-Wildlife Conflict Mitigation	Build community awareness on positive human-wildlife interaction and co-existence. These will help in promoting eco-tourism. Promote wildlife tracking to determine their movement and migration routes and reduce the risk	Kenya Wildlife Service (KWS), County Government, Community Conservancy Committees	High (short term)



CATEGORY	PROPOSALS	RESPONSIBLE ACTORS	PRIORITY
	<p>of wildlife conflicts. It will also help in early response for locations susceptible to attacks on humans and domestic animals.</p> <p>Construction of electric fence around residential and commercial areas to restrict movement of stray wildlife.</p>		
Water Resources & Infrastructure	<p>Make provision for separate water points for human and animal consumption; make effective water reticulation systems from major water sources such as Koiya Dam, water pans, existing, and proposed boreholes to ensure the community have access to potable water; maintain and repair non-functional boreholes, Protect and increase the available sand dams and rock catchments to ensure water accessibility.</p>	<p>County Water Dept, Water Resources Authority (WRA), NGOs, Community Water Committees</p>	High (short term)
Solid & Liquid Waste Management	<p>Make provision for solid-waste management and disposal sites, prioritizing Ewaso as a commercial center; promote recycling and reuse as alternative waste-management activities; Facilitate community awareness on proper solid and liquid waste practices</p>	<p>County Government (Environment/Public Health Dept.), NEMA, Community Land Management Committee</p>	Medium (medium term)



CATEGORY	PROPOSALS	RESPONSIBLE ACTORS	PRIORITY
	to reduce the risk of preventable and communicable diseases.		
Primary Healthcare Capacity	Improve staffing levels at Ewaso Dispensary and establish additional health facilities on the southern part of Munishoi to ensure easier accessibility to health services; upgrade Ewaso Dispensary from Level 2 to Level 3 with essential health services; expand maternal, reproductive and child-health services, including prenatal and post-natal healthcare.	Ministry of Health, County Health Dept, Community Health Volunteers	High (short term)
Educational Infrastructure Expansion	Add education facilities in the southern parts of the Munishoi, especially ECDE centers to improve education accessibility to a maximum of 1km radius; provide potable supporting infrastructure such as water, electricity and improve staffing in schools; allocate sufficient land for school expansion, administrative offices, and playing ground; enhance community awareness on the value of education.	Ministry of Education, County Education Dept, TSC, Parents/Community, Development Partners	High (short term)



CATEGORY	PROPOSALS	RESPONSIBLE ACTORS	PRIORITY
Land Tenure & Governance	Regularize land ownership for public institutions that include Ewaso Dispensary, existing educational facilities, administrative offices, and religious institutions.	County Physical Planning Dept, National Land Commission, Community Land Management Committee	Medium (medium term)
Renewable Energy Access	Support and expand solar and other renewable energy sources to reduce firewood dependency that results in environmental degradation; lobby donor/NGO funding to offset high solar installation costs.	Rural Electrification & Renewable Energy Corporation. (REREC), County Energy Dept, Private solar providers, Development Partners/NGOs	Medium (medium term)
Community & Social Facilities	Improve supporting infrastructure (access roads, water, sanitation, renewable energy, digital connectivity) at community centers; broaden empowerment programming to include men and youth alongside women; develop the Multi-Purpose Stadium and children's playground with electricity, water and waste-management infrastructure.	County Government, Community Land Management Committee, Development Partners/NGOs	Low (long term)
Roads & Transportation Infrastructure	Upgrade the Kimanjo–Ol-Donyiro and Mpala–Nongabolo–Nosirai–Ewaso roads to all-weather standard; ensure proper drainage along major roads;	County Roads Dept., National Government, Community	High (short term)



CATEGORY	PROPOSALS	RESPONSIBLE ACTORS	PRIORITY
	maintain existing transportation corridors continuously.		
Eco-Tourism Economic Diversification	& Market Koiya Star Bed more actively to increase tourist inflows; develop value-addition infrastructure for livestock products, honey and other diversified livelihoods.	County Trade & Tourism Dept, Community Cooperatives, NGOs, Private Investors	Low (long term)



CHAPTER FIVE: MONITORING AND EVALUATION

5.1. Monitoring and Evaluation Framework

Monitoring and evaluation (M&E) of the proposed interventions for Koiya Community Land is essential to ensure effective implementation, accountability and adaptive management. Drawing on the proposals set out for Koiya spanning livestock and rangeland management, vegetation restoration, land use planning, human-wildlife conflict, water, sanitation, health, education, land tenure, energy, social infrastructure, roads and eco-tourism the following indicators, verification methods, responsible actors and monitoring frequencies are proposed to track progress in implementing this Plan.

No.	Category	Key Monitoring Indicators	Means Of Verification	Responsible Actor(S)	Frequency
1	Livestock & Economic Development	<ul style="list-style-type: none"> Number of households diversifying into beekeeping, poultry and value-addition activities Number of drought-resilient livestock breeds introduced Functionality of veterinary and breeding support services 	County Livestock Dept. records; CLMC activity reports; household surveys	County Livestock Production & Veterinary Services, KALRO, Community Livestock Management Committees, NGOs	Annually
2	Rangeland & Grazing Management	<ul style="list-style-type: none"> Area (Ha) under rotational/controlled grazing Number of semi-circular bunds and erosion-control structures constructed 	Spatial degradation mapping/GIS reports; Grazing Committee records; field inspection	County Livestock/Veterinary Dept., Community Grazing Committees, Kenya Forest Service, NGOs	Bi-annually



No.	Category	Key Monitoring Indicators	Means Of Verification	Responsible Actor(S)	Frequency
		<ul style="list-style-type: none"> Reduction in degradation levels in mapped high-risk zones 			
3	Vegetation Restoration & Invasive Species Control	<ul style="list-style-type: none"> Number of trees planted and survival rate Area (Ha) reseeded with grass Area (Ha) cleared of Opuntia through biological/manual control Number of households reached through outreach on conservation activity 	KFS/NEMA planting and clearance records; Community Conservation Committee reports	Kenya Forest Service, NEMA, County Environment Dept., Community Conservation Committees, NGOs	Annually
4	Land Use Planning & Wildlife Corridors	<ul style="list-style-type: none"> Wildlife corridors formally mapped and gazetted Length (Km) of corridor fencing completed Corridor protection integrated into the Community Land Use Plan 	County Physical Planning Dept. maps; KWS reports; approved Community Land Use Plan	County Physical Planning Dept., Kenya Wildlife Service (KWS), National Land Commission, Community Land Management Committee	Annually



No.	Category	Key Monitoring Indicators	Means Of Verification	Responsible Actor(S)	Frequency
5	Human-Wildlife Conflict Mitigation	<ul style="list-style-type: none"> Number of community awareness sessions on co-existence conducted AI/machine-learning early-warning tools piloted and operational Response time and number of predator/elephant incidents managed 	KWS incident reports; Conservancy Committee records; training attendance registers	Kenya Wildlife Service (KWS), County Government, Community Conservancy Committees	Quarterly
6	Water Resources & Infrastructure	<ul style="list-style-type: none"> Separate human and livestock water extraction points established Purification systems installed at major sources (e.g. Koija Dam) Number of non-functional boreholes, sand dams and rock catchments repaired 	Water Resources Authority (WRA) records; Community Water Committee reports; site inspection	County Water Dept., Water Resources Authority (WRA), NGOs, Community Water Committees	Bi-annually
7	Solid & Liquid Waste Management	<ul style="list-style-type: none"> Waste collection/disposal site established (Ewaso Center prioritised) Number of households practising recycling/reuse 	County Environment/Public Health Dept. records; NEMA compliance reports	County Government (Environment/Public Health Dept.), NEMA, Community Land Management Committee	Annually



No.	Category	Key Monitoring Indicators	Means Of Verification	Responsible Actor(S)	Frequency
		<ul style="list-style-type: none"> Number of household sanitation facilities constructed 			
8	Primary Healthcare Capacity	<ul style="list-style-type: none"> Staffing levels at Ewaso Dispensary against required norms Ewaso Dispensary upgraded from Level 2 to Level 3 Number of satellite clinics/additional facilities established in the southern end Uptake of maternal, reproductive and child-health services 	Ministry of Health/County Health Dept. records; facility registers	Ministry of Health, County Health Dept., Community Health Volunteers	Annually
9	Educational Infrastructure Expansion	<ul style="list-style-type: none"> Number of new education facilities established in the southern parts Schools with potable water, electricity and adequate staffing Land allocated for school expansion School enrolment trends 	Ministry of Education/County Education Dept. records; TSC staffing data; school registers	Ministry of Education, County Education Dept., TSC, Parents/Community, Development Partners	Annually



No.	Category	Key Monitoring Indicators	Means Of Verification	Responsible Actor(S)	Frequency
10	Land Tenure & Governance	<ul style="list-style-type: none"> Number of public institutions (Ewaso Dispensary, schools, churches) with formalised title 	National Land Commission records; County Physical Planning Dept. title registry	County Physical Planning Dept., National Land Commission, Community Land Management Committee	Annually
11	Renewable Energy Access	<ul style="list-style-type: none"> Number of households/institutions with solar or other renewable energy installations Level of donor/NGO funding secured to offset installation costs Reduction in firewood dependency 	Rural Electrification & Renewable Energy Corp. (REREC) records; County Energy Dept. reports; donor/NGO funding agreements	Rural Electrification & Renewable Energy Corp. (REREC), County Energy Dept., Private solar providers, Development Partners/NGOs	Annually
12	Community & Social Facilities	<ul style="list-style-type: none"> Access roads, water, sanitation, energy and digital connectivity at community centres improved Number of men and youth participating in empowerment programmes 	County Government project records; Community Land Management Committee reports	County Government, Community Land Management Committee, Development Partners/NGOs	Annually



No.	Category	Key Monitoring Indicators	Means Of Verification	Responsible Actor(S)	Frequency
		<ul style="list-style-type: none"> Multi-Purpose Stadium and children's playground developed with supporting infrastructure 			
13	Roads & Transportation Infrastructure	<ul style="list-style-type: none"> Kimango–Ol-Donyiro and Mpala–Nongabolo–Nosirai–Ewaso roads upgraded to all-weather standard Drainage works completed along major roads Frequency and quality of ongoing road maintenance 	County Roads Dept./National Government works records; site inspection	County Roads Dept., National Government, Community	Bi-annually
14	Eco-Tourism & Economic Diversification	<ul style="list-style-type: none"> Tourist inflows to Koija Star Bed Value-addition infrastructure developed for livestock products and honey Number of community cooperatives/private investors engaged 	County Trade & Tourism Dept. Records, visitor statistics	County Trade & Tourism Dept., Community Cooperatives, NGOs, Private Investors	Annually





5.1.1. M&E Implementation Notes

- The Community Land Management Committee (CLMC) should serve as the primary coordinating body for consolidating monitoring data across all categories and reporting progress to the community and partner agencies.
- High-priority, short-term interventions (rangeland management, vegetation restoration, wildlife corridors, human-wildlife conflict, water, healthcare, education and roads) should be monitored at least bi-annually to allow for timely corrective action.
- Medium- and long-term interventions (economic diversification, waste management, land tenure, renewable energy, social facilities and eco-tourism) can be monitored annually, aligned with county planning and budgeting cycles.
- Baseline data should be established for each indicator at the start of implementation to allow meaningful comparison over time.
- An annual M&E report should be compiled and shared with the community, County Government departments and development partners to inform decision-making and resource allocation for subsequent years.