KENYA UKPACT

Laikipia County Environment Action Plan (CEAP) 2025-2029

Abridged Version

CIFOR

World Agroforestry

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Contents

Foreword

I am honored to present our County Environment Action Plan (CEAP) 2025-2029, a comprehensive framework designed to guide our collective efforts in environmental conservation and sustainable development. The County Governments are mandated under EMCA 1999 (Revised 2015) to prepare CEAP after every five years. This plan is aligned to the Environmental Management and Coordination Act, (EMCA) 1999 (Revised 2015) relevant National, County, Regional and Global frameworks.

Laikipia County is endowed with diverse ecosystems, from expansive rangelands to rich wildlife habitats, which not only define our unique identity but also support livelihoods. However, these invaluable resources face challenges such as climate change, deforestation, land degradation and pollution. Recognizing these threats, we have developed this action plan to address environmental concerns proactively and strategically.

This plan reflects our commitment to safeguarding the natural resources that are the backbone of our community's well-being and economic prosperity. This document also provides a working document that will guide the planning, implementation and monitoring of all matters relating to environment for the County Environment Committee that I gazetted on October 2024 and the numerous organizations, private sector and communities in Laikipia County.

Our approach emphasizes strong and sustainable partnerships, acknowledging that collaborative efforts are essential for effective environmental management. By working together with conservancies, community groups such as WRUAs, CFAs, national government and all other stakeholders, through this CEAP, the County aims to promote sustainable environmental practices, conservation education and responsible land-use practices so as to attain our vision of ***"A healthy, resilient and sustainably managed environment that supports biodiversity, enhances livelihoods, and drives economic prosperity in Laikipia County"***.

I extend my gratitude to all partners, stakeholders, and community members who have contributed to the development of this plan. I appreciate World Agroforestry-ICRAF for the technical and financial support provided to Laikipia County with funding from Foreign, Commonwealth & Development Office (FCDO), in the development of this document including strengthening of the County Environment Committee and other environmental conservation initiatives such as the establishment of the Rural Resource Center.

Together, let us commit to the stewardship of our environment, ensuring that future generations inherit a Laikipia that thrives in harmony with nature.

H.E. Joshua Irungu EGH
Governor, Laikipia County

Preface

The County Environment Action Plan (CEAP) for Laikipia is a critical blueprint that defines our collective commitment to environmental sustainability, resilience, and the well-being of our communities. As we navigate the challenges posed by climate change, biodiversity loss, land degradation, pollution and unsustainable resource use, this plan serves as a guiding framework for coordinated action among government agencies, private sector stakeholders, civil society organizations, and local communities.

Laikipia County is endowed with a rich natural heritage, comprising diverse ecosystems that support wildlife, agriculture, and livelihoods. However, these resources are under increasing pressure due to unsustainable land-use practices, deforestation, water scarcity, and the impacts of a changing climate. To safeguard these natural assets and ensure a sustainable future, this CEAP identifies strategic interventions that promote conservation, climate-smart agriculture, reforestation, sustainable water management, environmental hazards, and green economy opportunities, environmental governance, education and sensitization.

The development of this plan is anchored on participato ry approaches, incorporating insights from communities, NGOs, technical experts, private sector, and policymakers. It aligns with frameworks such as the Environmental Management and Coordination Act, (EMCA) 1999 (Revised 2015), Kenya's Vision 2030, the County aNational Climate Change Action Plans. Through this integrated approach, we reaffirm our resolve to build a resilient and prosperous Laikipia that balances economic growth with environmental stewardship.

I extend my deepest gratitude to ICRAF for their technical and financial support under the "Promoting nature-based solutions for land restoration while strengthening national monitoring in Kenya" project funded by FCDO under the UK Partnering for Accelerated Climate Transitions (UK PACT) programme. We are particularly grateful to Prof. Catherine Muthuri the Country Director for Kenya and regional convenor for East Africa at CIFOR-ICRAF and also the project lead for her technical expertise and commitment throughout this process.

I most sincerely appreciate the County Environment Committee who were also part of the technical committee that developed the raw draft before it underwent improvements from other stakeholders. The critical input by both the Executive and the County Assembly members of the County Government of Laikipia provided during the sensitization workshop helped enhance the quality of this plan, of which we are very grateful. I appreciate H.E. Hon Joshua Irungu EGH, for his tremendous support including financial support throughout this journey. I commend the County Executive Committee under the chairmanship of H.E. the governor for approving this plan.

Furthermore, I commend the dedication and commitment of all stakeholders—including the National and County Government, NEMA, the County Environment Committee, local and international NGOs, Wyss Academy for Nature, WRUAs, CFAs, conservancies, and communities—for their invaluable role in developing, reviewing, and validating this document.

Together, we have created a plan that will drive meaningful environmental action in Laikipia County. I urge all stakeholders to embrace this plan and actively participate in its implementation for the benefit of the present and future generations.

Leah Njeri
County Environment Committee & CECM for Water Environment Natural Resources & Climate Change

Acknowledgement

The process of preparing this County Environment Action Plan (CEAP) 2025-2029 benefited immensely from the support and guidance of the County Government of Laikipia, Department of Water, Environment, Tourism, Natural Resources and Climate Change whose County Executive Committee Member (CECM) chairs the County Environment Committee. In addition, the process gained immensely from the input by the officers from the different departments of the County and National Government who formed the Technical working group. The officers gathered data on practical experience in their various fields and expertise. The officers also gave both technical and hands-on support throughout the preparation process. The National environment Management Authority (NEMA) provided both advisory and policy direction to the process. The County Director, NEMA and the staff provided valuable technical inputs and hosted the secretariat for the process.

In particular, I commend World Agroforestry (ICRAF) for technical and financial assistance in the preparation of the CEAP. This plan has been developed through a consultative, participatory and cost-effective manner using the the CEAP guide-lines developed by NEMA. I wish to laud the leadership demonstrated by the Hon Leah Njeri, the County Environment Committee Chair, who is also the CECM in charge of Environment in Laikipia Couny in the development and appointment of technical team for drafting the CEAP. The County Department of Environment, NEMA department of Planning and Research in conjunction with ICRAF developed the initial CEAP roadmap. The Secretariat at the County level was instrumental in training the technical sub-committee of the County Environment Committee.

I deeply appreciate the members of the technical team, ICRAF and the County Environment Committee for their dedication throughout the process, hence enriching the report and making it relevant to the county's development agenda. Lastly, I acknowledge the inputs from the communities captured through the public participation in all sub-counties and from all stakeholders during stake-holders' validation workshop. all all the persons who contributed directly or indirectly to the preparation of this CEAP. I also appreciate Wyss Academy for Nature for funding the participation of additional participants in one workshop and their active participation in the planning and development process.

We expect the CEAP to contribute to the county's environmental management and guide appropriately the processes of environmental planning. I urge the policy makers, all institutions, experts, stakeholders and local communities to make good use of this invaluable document.

Sarah W. Waruo
County Director-NEMA

Overview

In Laikipia County, natural resources and the environment play a crucial role in supporting livelihoods. They provide the foundation for key economic sectors including agriculture, livestock, fisheries, tourism, and forestry. Majority of communities rely directly on land, water, forests, and other natural resources for sustenance, particularly through small-scale farming and pastoralism. The health of the environment is therefore directly linked to the well-being and economic stability of Laikipia County Communities.

The basis for preparing an Environmental Action Plan is drawn from Agenda 21 of the Earth Summit, the Kenya Constitution 2010, Environmental Management and Coordination Act, EMCA 1999 (Revised 2015) as well as other Global, Regional, National, and County development planning frameworks including; Sustainable Development Goals 2030; Africa Agenda 2063; Kenya's Vision 2030; Medium Term Plans and Bottom Ups Economic Agenda; and the County Integrated Development Plans (CIDPs).

The Kenya Constitution 2010 devolved all planning activities to the County government with environmental planning being a devolved function. The Constitution has similarly elevated the right to a clean and healthy environment to a human right. Environmental Action Planning provides the readiness for the Government to fulfill this mandate.

As part of the County Environment Planning, EMCA 1999, (Revised 2015), provides that every County Environment Committee shall in every five years prepare a County Environment Action Plan in respect of the county for consideration and adoption by the County Assembly and for further incorporation into the National Environment Action Plan.

The core purpose of Laikipia County Environment Action Plan (CEAP 2025-2029) is to provide a working document that will guide the planning, implementation and monitoring of all matters relating to environmental management for the entire County. The plan contains information on the status of the environment in the county, identifies the environmental challenges facing the environment, and proposes interventions to resolve those challenges.

The CEAP captures the detailed profile of environmental concerns in various sectors of development in Laikipia County. The plan also identifies and incorporate relevant laws and policies necessary to facilitate the implementation process. The CEAP is designed to run for the period 2025-2029.

This summary for policymaker's report presents a snapshot of the County environment and natural resources status, their challenges and proposed management analyzed from the CEAP 2025-2029. The report presents two, distinctive and connected parts.

CEC Members

Profile

This section presents the Purpose, Scope, Vision and Mission of the Laikipia County Environment Action Plan (2025-2029).

Purpose

The core purpose of Laikipia County Environment Action Plan (CEAP) 2025-2029 is to provide a working document that will guide the planning, implementation and monitoring of all matters relating to environmental management for the entire County. The plan contains information on the status of the environment, identifies the environmental challenges and their interventions and the cross- cutting issues which include Coordination, Capacity building, Partnerships, Education and awareness creation.

Scope

The CEAP captures the detailed profile of environmental concerns in various sectors of development in Laikipia County as in the CEAP preparation guidelines. The plan also identify and incorporate relevant laws and policies necessary to facilitate the implementation process. The action plan for Laikipia CEAP is expected to run for the period 2025- 2029.

Vision

A healthy, resilient and sustainably managed environment that supports biodiversity, enhances livelihoods, and drives economic prosperity in Laikipia County.

Mission

To enhance environmental stewardship through innovative policies, capacity building, and collaborative partnerships that protect ecosystems, mitigate climate change, and promote green economic growth.

Theme

Our environment our collective responsibility for a sustainable future.

Sector issues

This section outlines strategies for the sound governance of the environment and natural resources to promote sustainable development, organized by sector, including People, Environment and Development, Land Use and Soils, Climate Change and Variability, Aquatic Ecosystems, Terrestrial Ecosystems, Energy and Mining, Health, Sanitation and Waste, Environmental Hazards and Disasters, and Environmental Governance. Identified cross-cutting issues include Coordination, Capacity Building, Partnerships, Education and Awareness Creation, and Community Involvement.

This section evaluates key challenges and gaps in achieving sustainable environmental and natural resource management, as advocated in Vision 2030, the African Union (AU) Agenda 2063, the Sustainable Development Goals, and other national, regional, and international frameworks. The section details actionable strategies, the main and supporting actors responsible for implementation, and proposed interventions.

Additionally, it includes a resource mobilization strategy and an Investment Framework, identifying funding sources such as National and County Governments, corporate partnerships, community contributions, and international development agencies. By aligning environmental challenges with donor interests, it ensures effective funding and long-term sustainability. Finally, it highlights the personnel, expertise, and resources required to implement CEAP initiatives efficiently.

PEOPLE, ENVIRONMENT, AND DEVELOPMENT

Laikipia County has a total population of 518,560 persons comprising of 259,440 males, 259,102 females and 18 intersex. This population was projected to be 561,223 persons in 2023 and is expected to rise to 583,033 and 605,600 in 2025 and 2027 respectively. **The impacts of "people, environment, and development" are interconnected, where human activities like agriculture and sand harvesting can significantly affect the environment, which in turn impacts the well-being and quality of life of people,** often leading to issues like:

- land degradation
- mushrooming of informal settlements
- encroachment into forests, wetlands and riparian areas
- change of land use, floods due to poor drainage systems
- increased waste generation due to increased population
- inadequate knowledge about environmental conservation and protection
- air and water pollution
- rural and urban areas fires
- inequality and exclusion.

MAIN CHALLENGES

- **Environmental changes and degradation** have far-reaching consequences on gender, youth, and people with disabilities (PWDs).
- **Climate change leads to food insecurity, health crises, and economic instability,** which disproportionately affect vulnerable populations.
- **Women and youth,** especially in rural areas, experience job losses due to declining agricultural productivity, while PWDs face increased isolation and health risks due to inadequate infrastructure and emergency response systems.

Sustainable development aims to balance economic progress with environmental protection and social equity.

Proposed Interventions

Promote community engagement & behavioral change through public awareness campaigns on environmental conservation and protection, proper waste disposal and benefits of recycling, provide incentive programs to encourage sorting and recycling and support informal waste workers by integrating waste pickers into the formal system and providing legal recognition, training, and better working conditions and small loans. The public awareness shall use the 7 R's namely Refuse, Reduce, Reuse, Re-purpose (or Up-cycle), Recycle, Recover and Rethink framework.

Harness indigenous technical knowledge (ITK) on environmental conservation.

Develop and implement/ enforce relevant policies and legislations on environmental conservation and solid waste management.

In partnership with Water Resource Users Association (WRUAs), Community Forests Association (CFAs), local and international NGOs, private sector such as banks & SACCOs, learning and research institutions, conservancies, Community Based Organizations (CBOs), national and County Governments enhance environmental conservation and restoration measures for degraded landscapes.

Implementation of urban planning and county spatial plan.

Provision of **low cost/ social houses**.

Promote circular economy & waste valorization e.g. organic waste composting for agriculture and biogas production.

Increase funding for solid waste management in municipality & towns budget through the exchequer, Green Bonds & Climate Financing.

Establish a **County Solid Waste and Conservation Enterprise Fund** and in partnership with financial institution, support waste recycling and conservation startups and cooperatives with loans and grants.

Invest in infrastructure and technology by improving collection and transportation; upgrade disposal sites from transitioning from open dumpsites to engineered landfills and promote material recovery facilities (MRFs).

Develop and implement gender-sensitive, youth and children inclusive, disability-friendly approaches in environmental policies, programs and adaptive technologies for women, youth and

PWDs to participate in and benefit from sustainable practices, including urban farming, waste management, and advocacy for accessible green spaces.

Strengthen disaster preparedness and early warning systems and response.

Ensure that projects' Environmental and Social Impact Assessment (ESIA) is completed and approved by NEMA.

Strengthen legal and policy frameworks for environmental management.

Develop and/review **climate change adaptation & resilience policies**.

Promote climate financing mechanisms to support green projects.

Develop disaster risk reduction strategies to address floods, droughts, and deforestation.

Engage private sector players in conservation efforts (e.g., carbon credits, reforestation).

Encourage green investments in renewable energy, eco-tourism, and circular economy initiatives.

Support research on ecosystem restoration and biodiversity conservation.

Strengthening Research & Data-Driven Decision-Making.

Promote integration of evidence and data-driven environmental conservation solutions, decisions and policy advocacy and development including capacity building of actors. Wyss Academy can lead in this. This shall inform the application of CEAP on the ground.

LAND USE AND SOILS

Land and soil are vital natural resources that support agriculture, housing, infrastructure, and biodiversity. The quality and management of land and soils determine the sustainability of ecosystems and economic activities. Effective land and soil management practices are essential for mitigating environmental challenges such as erosion, deforestation, and desertification.

The main soil types in the County are loam, sand and clay. Black cotton soils are spread in most parts of the plateau, with dark-brown to red friable soils and rocky soils spread especially on the hills. The kind of parent rock and the terrain under which they are formed mainly determine the distribution of soils in the County. Time and biological activities have also contributed to soil formation, although to a lesser degree.

Table 1: *Land Tenure in Laikipia County*

Land Tenure	Area (km2)	%
Community Land	712.68	7.35
Forest Reserves	719.86	7.43
Government Land	830.98	8.57
Privately Owned Ranches	3,940.71	40.65
Privately Owned Smallholder Farms	3,379.91	34.86
Swamp	33.37	0.34
Urban	77.28	0.80
Total	**9,462.2**	**100**

Source: Laikipia County Spatial Plan (2023-2033)

Table 2: Agro -Ecological Zones in Laikipia County

Laikipia County Spatial Plan (2023-2033) in Laikipia			
Upper Highland Sub-Humid (UH 2-3) in Igwamiti and Githiga wards with well drained and fertile with plenty of humus and rainfall over 1000mm/year; This is suitable for dairy, crop and fish farming.	**Low Highlands (LH 1-5)** in areas such as Ngobit, Umande, Nanyuki, Thingithu, Igwamiti, Marmanet, Githiga where Soils are moderately well drained with less humus and rainfall ranging from 700-1000mm/year and is erratic but it is suitable for dairy, crop and fish farming.	**Upper Midlands (UM5 - UM6)** with poorly drained soils, and rainfall from 500-700mm/year in parts of Segera, Nanyuki, Tigithi, Rumuruti, Salama, Mukogodo East. The area is suitable for beef rearing and crops such as sorghum, hay and millet.	**Lower Midlands (LM3 - LM5)** has shallow and less fertile soils and high evaporation. These are parts of Mukogodo East and West, Segera, Sosian wards suitable for ranching, beef and sisal farming.

Land size

The average farm size for smallholder farmers in Laikipia County is 2 acres and 20 acres for large-scale holders. The group ranching communities hold an average of 10,000 acres, each with an average land holding of 23 acres (approximately 10.06 Ha) per household. Additionally, about 48 privately owned ranches cover more than 2000 acres of land each (approximately 809 Ha). Cumulatively, the private ranched hold over 50% (40446.9 Ha) of the counties land mass where they rear beef cattle and conserve wildlife. According to government records, more than half of small holder farmers in Laikipia County have title deeds.

MAIN CHALLENGES

Laikipia County, located in Kenya's Rift Valley region, is characterized by diverse landscapes, including grasslands, forests, and arid and semi-arid lands (ASALs). However, the county is experiencing significant land and soil degradation due to several factors:

- **Rangeland degradation** resulting in loss of vegetation cover, soil compaction in areas like Laikipia North and parts of Laikipia East, and reduced soil fertility.
- **Soil erosion** due to the hilly terrain and deforestation, especially in areas like Nyahururu. Gullies and siltation are common, impacting water sources and farmlands.
- The combination of **climate change, poor land management, and unsustainable agricultural** practices is accelerating desertification and invasive plant species in parts of Laikipia, reducing land productivity.
- **Unsustainable farming practices**, including monocropping, excessive use of agrochemicals, and lack of soil conservation measures, have led to decline in crop yields.
- **Increased encroachment into wetlands and riparian zones** in areas such as Manguo Wetland, has resulted in reduced water retention capacity and biodiversity loss.

Proposed Interventions

Promote sustainable rangeland management through rotational grazing and establish pasture regeneration programs to reduce overgrazing; Encourage fodder production initiatives on degraded lands to restore soil fertility and provide alternative feed for livestock and establish community-led rangeland rehabilitation projects using reseeding and soil stabilization techniques etc.

Promote adoption of agroecological and soil conservation practices such as conservation agriculture, including minimum tillage, crop rotation, and agroforestry; Encourage the use of organic manure, composting, and biofertilizers to restore soil fertility and Implement terracing and contour farming in hilly areas to control soil erosion; Promote growing, protection and conservation of indigenous vegetation.

Promote reforestation and riparian restoration through launching of large-scale afforestation and reforestation programs using indigenous tree species; Protect and restore riparian zones by planting vegetation buffers along rivers and wetlands and Develop community tree nurseries to provide seedlings for degraded areas.

Undertake integrated water and soil management by constructing water harvesting structures such as sand dams, water pans, and terraces to enhance water retention and reduce erosion; Promote sustainable irrigation techniques such as drip irrigation to minimize water wastage.

Promote climate smart farming by crop diversification indigenous and climate-resilient varieties.

Enhance land-use planning and policy enforcement by Strengthening land tenure systems to support sustainable land use and conservation efforts; Enforce policies against deforestation, wetland encroachment, and illegal land conversion and Develop community land-use plans that integrate pastoralism, agriculture, and conservation; Develop and implement a county policy on minimum acreage for agriculture; Implement County Rangeland Management Policy and develop rangeland management Act, Domesticate and implement the climate change (Carbon market) regulations 2024, implement FOLAREP.

Create awareness and capacity building by Training farmers and pastoralists on sustainable land management and climate-smart agriculture; Support community-led

conservation initiatives and establish local conservation committees and Promote the use of indigenous knowledge in land restoration efforts; Create awareness on Carbon credit.

Control of invasive species by Implementing biological and mechanical control measures for invasive species such as Opuntia and Prosopis juliflora; Encourage the use of invasive plants for alternative economic uses, such as fodder and biofuel production.

Support research on economic benefit of *Opuntia stricta* and other invasive species.

CLIMATE CHANGE AND VARIABILITY

- Laikipia's natural resources, including forests, wetlands, wildlife, and arable land, and rangelands are highly vulnerable to climate variability and change. Increasing temperatures, erratic rainfall patterns, prolonged droughts, and extreme weather events have significantly affected these resources. Droughts have led to water scarcity, reducing agricultural productivity and increasing competition for limited water sources among communities, and wildlife. Forest and rangelands degradation and invasive plant species have intensified due to shifting climatic conditions and human pressures. Wildlife populations face habitat loss and water shortages, exacerbating human-wildlife conflicts. These changes not only threaten biodiversity but also undermine food security, economic stability, and social cohesion.

MAIN CHALLENGES

Despite efforts to combat climate change, Laikipia faces several challenges in adaptation and mitigation, including:

- **Limited financial resources** to invest in adaptation and mitigation due to competing development priorities
- **Weak institutional capacity** and coordination among county and national governments, stakeholders such as WRUAs, CFAs, NGOs, conservancies, development partners and private sector, thereby hindering effective implementation of climate interventions and policies.
- **Limited public awareness and community involvement** as communities lack awareness of climate risks and adaptation strategies, slowing grassroots-level action.
- **Slow pace of adoption of climate smart practices and technologies** for instance in the agriculture and livestock and water and sanitation sector.
- **Human-wildlife conflicts** due to climate-induced habitat changes that force wildlife into human settlements, increasing conflicts and biodiversity loss.

- **Encroachment and destruction of ecosystems** such as the wetlands (Marura, Ewaso Narok and Silale Swamps and riparian is such as in Nanyuki and Likii rivers as well as forests (Rumuruti Forest).
- **Over abstraction of water** for irrigation
- No budgetary resources set aside for the **climate information services (CIS).**
- **Inadequate packaging and dissemination of the Early Warning Systems (EWS).**
- **Weak integration of traditional and local knowledge systems** with modern methods of addressing climate change.
- **Women, youth, and persons with disabilities (PWDs) often face barriers** such as limited access to financing, exclusion from decision-making processes, and inadequate capacity-building opportunities, hindering their full participation in climate change adaptation and mitigation efforts.

Proposed Mitigation

- **Policy and legislation frameworks** such as Laikipia County Climate Change Policy, Laikipia County Climate Change Act (2021), Climate Change Fund Regulation (2023), Laikipia County Rangelands Management Policy (2022), Draft Laikipia Water Master Plan, Laikipia County Invasive Species Eradication Plan, Laikipia County Integrated Development Plan (CIDP) 2022-2027, The Laikipia County Wetland Management Plan (2021-2024), Laikipia County Participatory Climate Risk Assessment (PCRA), Laikipia County Climate Change Action Plan (2023-2027), Laikipia County Forest and Land Rehabilitation Plan.
- **Afforestation and reforestation programs** guided by the National 15 Billion Tree Campaign, that aim to enhance forest cover and carbon sequestration.
- Participation and implementation of the **Financing Locally Led Climate Action (FLLoCA)** program co-funded by World Bank and County Governments.
- Allocation of at least **3% of the county development budget** to climate change
- **Investment** in water harvesting, solarization of boreholes, conservation.
- Promoting of **water efficient irrigation systems** to improve communities' resilience against droughts.
- Promotion of **climate-smart agriculture, drought-resistant crops, and agroforestry** to enhance food security.
- **Empowering local communities** through capacity-building, eco-friendly enterprises, and nature-based solutions to enhance resilience.
- Strengthening early warning systems, drought response mechanisms, and climate information services to **reduce climate-related vulnerabilities through the meteorological department**.
- **Carbon credit trading** by NRT.

Proposed Interventions

Strengthening the existing **multi stakeholders' forum** on Climate Change.

Increase and ring fence CGL budgetary allocation for climate change from the current 3% to 4%.

Allocate resources, technical expertise, for lessons and opportunities to **upscale proven solutions**.

Promote children involvement in climate action.

Strengthen legal and governance frameworks.

Prioritize protection and restoration of the natural ecosystems e.g. Rumuruti Forest, Manguo, Ewaso Narok wetlands and the rangelands

Raising public awareness and education to enhance climate literacy, empower youth and children in climate action (innovation and green entrepreneurship).

Train communities on **disaster risk preparedness and reduction**.

Mobilize resources for climate information services (CIS) -(increase meteorological observation network)

Strengthen dissemination and effectiveness of EWS by use appropriate media (local FM stations, community Barazas print in local languages, social media, bulk SMS.

Integrate EWS with the Indigenous traditional knowledge (ITK).

Enhance environment/natural resources protection and restoration programs.

Develop and/ or enforce relevant policies and legislations e.g. EMCA, 1999 and the 2015 amendment; Water Act 2002, County Climate Change Act 2021 and other relevant legislations.

Map and reclaim the wildlife corridors, dispersal areas and establishing wildlife protected areas.

AQUATIC ECOSYSTEMS

Laikipia County is a lowland with numerous volcanic ridges and characterized by rivers & streams and Wetlands or swamps aquatic ecosystems. The County has five main aquifers; the Aberdares, Mt. Kenya, Lake Olobolosat, Timau & basement. The Ground water potential in Laikipia County varies from one sub catchment area to another. Lake Olobolosat, Timau and Aberdares aquifers have the highest yields and the basement as the lowest yields.

The main River in Laikipia County is Ewaso Ng'iro from Mt.Kenya. Other Rivers that flow through the County are Ewaso Narok, Mutara, Pesi, Melwa, Upper Ewaso Ngiro, Ngushishi, Nanyuki, Likii, Naromoru, Rongai, Sirmon, Timau, Teleswani, Moyok, Burguret, Suguroi, and the seasonal streams Aiyam & Muhotetu Rivers. Other surface water sources in Laikipia are the Ewaso Narok (Marura), Manguo, Lamuria & Marura-Rongai wetlands.

Water quality

The quality of groundwater in Laikipia County varies from one aquifer to another. The upper zone aquifers (Mt.Kenya ,Abeadares & Timau) of the county has high yield and freshwater with minimal mineral contents, while the Basement aquifer on the lower zone have salty water due to high contents of minerals.

Over time, the county has witnessed progressive deterioration of water quality. Seepage of chemicals and fertilizers into surface and subsurface waters has not only rendered them unfit for human consumption but also disrupted aquatic ecosystems.

ENVIRONMENTAL SIGNIFICANT AREAS AND CURRENT STATUS

Ewaso Narok (Marura) 2,400 HA Swamp that is currently encroached for farming, grazing of livestock.

- **Gazetted 2023. Integrated Management Plan developed 2023-2033**
- **WRUAs formed**

Manguo swamp 30KM is currently encroached for farming. Pollution by sewer and solid waste.

- **Management of the Swamp is incorporated in**
- **The IMP for Lake Olobolosat**

Marura -Rongai river, the land was sub divided to individuals.

- **No remedial measures that have been put in place.**

Lake Olobolosat has been encroached for farming and settlement. Human wildlife conflict is common. Deforestation of the lake Riparian.

- **Gazetted in 2022/2023**
- **Has IMP 2023-2033**

MAIN CHALLENGES

- **Water scarcity and over-abstraction** due to increased demand for water from agriculture, livestock, and domestic and Unregulated borehole drilling and irrigation schemes are depleting groundwater levels.
- **Pollution and water contamination caused** by agricultural chemicals and fertilizers, urban wastewater and raw sewer, plastic and solid waste dumping in water bodies contributes.
- **Degradation of riparian zones and wetlands** caused by encroachment into wetlands and riverbanks for agriculture, settlements, and infrastructure depleting aquatic biodiversity and deforestation along riparian zones increases soil erosion, leading to siltation of rivers and wetlands.
- **Climate change impacts** as a result of irregular rainfall patterns and prolonged droughts reducing river flows and groundwater recharge and rising temperatures that increases evaporation rates.
- **Human-wildlife conflicts**.
- **Unregulated sand harvesting and mining** from riverbeds leading to erosion & lowering water levels.
- **Weak governance and policy enforcement** due to inadequate enforcement of water resource management policies, pollution, and encroachment on wetlands and lack of integrated watershed management plans results in uncoordinated and unsustainable use of water resources.
- **Inadequate knowledge in integrated water resource management (IWRM) by communities**, and pollution caused by solid and liquid waste (oil spillage from garages, car wash, plastics, raw sewer etc).

Proposed Interventions

Promote sustainable water resource management by regulating water abstraction, enforcing water-use permits and quotas; promoting water harvesting by encouraging construction of water pans, sand dams, and rainwater harvesting systems at household and institutions farms to reduce reliance on river water; and promote adoption of efficient irrigation methods such as climate-smart irrigation techniques (e.g. drip irrigation); promote construction of common water intakes for easy of regulation and management; treatment of waste water for irrigation.

Promote pollution control and water quality management by promoting agroecological farming practices, such as organic farming and buffer zones along riverbanks, to reduce chemical pollution; Establish proper sewage treatment systems and enforce regulations against dumping waste into water bodies; and organize regular community led cleanup initiatives for rivers, wetlands, and lakes to remove plastic and solid waste Designate the garages away from the river riparian areas.

Enhance protection and restoration of riparian zones and wetlands by undertaking reforestation of riparian areas by planting indigenous trees and grasses along riverbanks to prevent soil erosion and enhance water retention; Implement strict land-use zoning and enforce laws against settlement and farming in riparian zones; and develop Wetland Restoration Projects to restore degraded Manguo and Ewaso Narok Wetland by rehabilitating native vegetation and regulating human activities and eradicate trees that use excessive water; survey and demarcate riparian zones.

Undertake climate change adaptation and mitigation interventions through watershed conservation where catchment area protection programs are implemented to improve water recharge and reduce runoff; and promote drought resilience strategies by planting water-efficient crops, alternative livelihoods, and community-led conservation initiatives to reduce the impact of prolonged dry spells.

Promote biodiversity conservation and habitat protection by creating designated wildlife water access points to reduce human-wildlife conflicts over freshwater resources.

Enhance regulation of sand harvesting and mining by promoting sustainable sand harvesting practices; Implement guidelines for controlled sand harvesting to prevent excessive extraction and riverbed degradation and rehabilitation of mined areas to restore quarry sites through tree planting and soil stabilization.

Strengthening governance and policy implementation by strengthening the capacity of WRUAs to oversee local water management and conservation efforts; Enforce environmental laws such as EMCA, WRUAs and SCMP and other water conservation policies and Conduct public awareness and capacity building on sustainable water use, pollution prevention, and ecosystem restoration through training and outreach programs; Finalize the Laikipia Water Bill, Develop the County Water Policy, County Water Harvesting, and finalize the County Water Master Plan, develop SCMP, and Establish and strengthen the multi stakeholder water sector forum in the county.

Others include

- Development of comprehensive hydrological survey map.
- Identify and map existing underground water recharge sites and conserve them.
- Strengthen surveillance and inspections for compliance and enforcement.
- Develop IMP & gazette for implementation Marura-Rongai & Laimuria Swamps.

TERRESTRIAL ECOSYSTEMS

Grasslands, Woodlands and Montane Forests

Laikipia County is home to a diverse and ecologically rich terrestrial ecosystem. The region is characterized by a combination of grasslands, woodlands and montane forests, which support a wide variety of plant and animal species. The main environmental challenges grasslands, woodlands and montane forests include Forest encroachment, Illegal exploitation of forest products, Overstocking, Forest rangeland fires, Riparian degradation, Pests and diseases outbreak and decreasing tree cover.

Wildlife and Tourism

Laikipia County, encompassing over 9,500 square kilometers and uniquely located in the expansive semi-arid and highland ecosystems, provides habitat to half of Kenya's black rhinos which are categorized as critically endangered by IUCN, the country's second largest population of the endangered elephants, Kenya's third largest and only stable population of lions, the world's sixth largest population of the endangered African wild dogs, a large proportion of the world's remaining endangered Grevy zebras, two thirds of the world's remaining Reticulated giraffe, a globally significant population of cheetah, Kenya's largest population of Patas monkeys and a unique race of hartebeest. Besides hosting the highest populations of large mammals outside of the Maasai Mara National Reserve, the species diversity includes over ninety-five species of mammals, 540 species of birds, notable bird species include the Jackson's widowbird, the Abyssinian ground hornbill, and various raptors. Over 700 species of plants and almost 1000 species of invertebrates, more than 70,000 large herbivores, of which nearly half are Burchell's zebras – a subspecies of plain zebras. Other ungulate wildlife species include Jackson's hartebeest, reticulated giraffe, buffalo, and various antelopes – impala, kudu, oryx, eland, kongoni, Duiker, Grant's and Thompson's gazelles. Carnivores include lions, leopards, striped hyenas and wild dogs. Additionally, more than 87 species of amphibians and reptiles have been recorded in Laikipia.

The County is one of the country's most exhilarating wildlife-based safari tourism destinations owing to its rich biodiversity that comprises a combination of diverse wildlife, wilderness experience, scenic landscapes, unique Maasai culture, ecological conservation areas and cultural sites.

MAIN CHALLENGES

- **Loss and degradation** of habitats and wildlife dispersal areas and corridors.
- **Climate change, human wildlife conflict, invasive species.**
- **Declining wildlife populations,** limited community engagement and under exploited wildlife resource.

Proposed Interventions

- Enhancement of **Law enforcement**.
- **Forest land boundary demarcation and protection**.
- **Develop participatory forest management plans (PFMP)** for all forests.
- **Promote optimal carrying capacity**.
- Promote **regenerative rangeland management practices**.
- **Create public awareness** and sensitization including the school children.
- Support and promote **nature based ecosystem services**.
- **Adopt technology** such as use of drones in restoration of landscape and monitoring.
- Promote **early warning, preparedness** and response to **fire**.
- Promote **conservation and restoration** of forest landscape.
- Strengthen enforcement of **forest conservation laws**.
- Develop **integrated land-use plans** that balance conservation, agriculture, and settlement.
- **Establish wildlife corridors and buffer zones** to reduce habitat fragmentation.
- Use **community-based conservation approaches** to ensure local benefits from wildlife such as carbon trading.
- **Develop dams** in the wildlife core conserved areas to minimze human-wildlife conflict.
- Promote **commercial tree planting and agroforestry**.
- Promote **Afforestation and or Reforestation** as well as urban forestry.
- Reclaim wildlife dispersal and **movement corridors**.
- Implement the county **spatial plan**.
- Control invasive **plant species**.
- Strengthening **governance** structures.
- Establish **Kirimon Game Reserve** and its management plan.

AGRICULTURE, LIVESTOCK, AND FISHERIES

Laikipia County has a diverse agricultural sector that plays a crucial role in food security, livelihoods, and economic development. The county's agricultural production systems are crop cultivation (by both small holder farmers and large-scale commercial farmers) and livestock rearing for dairy and meat and pastoralism. Fisheries is undertaken to some extent especially in areas close to urban areas.

Agriculture

The productivity of land in Laikipia depends on factors such as soil type, rainfall, farming methods, and climate change. The county's agricultural zones include:

- High-potential areas (Nyahururu, Marmanet, and parts of Laikipia East. These supports maize, potatoes, wheat, beans and vegetables due to relatively higher rainfall and fertile soils.
- Semi-arid and arid areas (Rumuruti, Doldol, and parts of Laikipia North) – Support drought-tolerant crops such as millet, sorghum, and legumes.
- Irrigated farming zones (along major rivers) grow high-value crops such as horticultural crops, tomatoes, onions, vegetables and fruits.
- Recently, the communities have started growing high value fruit trees as macademia, coffee and avocado.

MAIN CHALLENGES

Agricultural practices in Laikipia vary depending on land ownership, available resources, and climatic conditions. Some of the most common practices and environmental impact arising from this is as follows.

- Small-holder farmers reliance on rainfall to cultivate crops such as maize, and beans. However, **unreliable rainfall patterns** often lead to poor yields and food insecurity. This increases vulnerability to drought and crop failure. Large-scale farms and some smallholder farmers use river water, water pans and dams and boreholes for irrigation, especially along the Ewaso Ng'iro, Ewaso Narok and Ngare Ndare rivers.
- **Over-abstraction of river water** leads to river depletion, groundwater exhaustion, and ecosystem disruption and conflict among the crop and livestock farmers as well as human wildlife conflict.
- **Monocropping** is common especially for maize thereby reducing soil fertility and increases pest and disease prevalence.
- Due to **depletion of soil nutrients**, farmers increase their reliance on chemical fertilizers and pesticides to boost crop productivity, resulting in soil degradation, water pollution, and loss of beneficial soil microorganisms.

- **Low agricultural productivity** exerts pressure on land and natural resources, prompting cropland expansion and ecosystem degradation, leading to increased emissions from deforestation.
- **Burning vegetation** to clear land in preparation for planting season, destroys the soil structure, releasing carbon emissions, and contributing to desertification. Despite these challenges, the sector remains vital for local food production, employment, and agro-processing industries.

Proposed Interventions

Promotion of **drought-resistant crops** such as millet, sorghum, and pigeon peas.

Adoption of **climate-smart agriculture practices** like conservation tillage and agroforestry.

Diversify into **high value fruit trees** such as avocado, macademia, coffee which do well in parts of Laikipia West and East.

Efficient water management techniques, including rainwater harvesting and drip irrigation.

Adopt and implement appropriate **farm management systems**.

Control pollution from use agricultural inputs (pesticides and fertilizers).

Training farmers on climate resilience strategies to enhance food security.

Promote and incentivize farmers to use **organic fertilizer**.

Reduce post-harvest losses.

Introduce **crop rotation, cover crops, organic fertilizers, terracing and contour farming, mulching and, agroforestry, conservation tillage**.

Adopt and implement integrated **pest and disease management practices**.

Develop and implement agricultural **solid waste management strategies**.

Develop and **enforce legislations governing subdivision of agricultural land**.

Promote **climate-resilient, low-carbon, environmentally sustainable, and financially viable agricultura**l value chains and expedite transfer of technology, knowledge, assets, and services.

Livestock

Livestock production is a major economic activity in Laikipia County, providing livelihoods for pastoralists, agro-pastoralists, and commercial ranchers. The county's rangelands support cattle, sheep, goats, camels, rabbits, apiculture, donkeys, and poultry farming. However, the sector faces environmental and climate-related challenges that affect its sustainability.

Livestock Keeping Practices and Environmental Impacts

Laikipia County livestock production systems, include **pastoralism** practiced by communities in Laikipia North and parts of Laikipia West and involves mobility as a strategy for accessing pasture and water. This results in soil degradation, and deforestation as a result of not optimizing grazing land. Conflicts often arise over scarce pasture and water resources during dry seasons. **Agro-Pastoralism** where farmers combine livestock keeping with crop farming to diversify income in Nyahururu, Igwamiti, Marmanet, Laikipia East and Rumuruti. Land clearing for fodder cultivation affects biodiversity, and manure mismanagement can lead to water pollution.

Commercial ranching and conservancies where large-scale ranches in Laikipia host cattle, sheep, goats, and game farming. Some conservancies integrate wildlife conservation with livestock production (e.g. Ol Pejeta and Borana, conservancies). Well-managed ranches promote sustainable grazing, but poorly managed commercial farms can lead to overgrazing, land degradation and water depletion. **Dairy farming** is prominent in wetter highland areas such as Nyahururu and Marmanet, while **Poultry keeping** is growing as an alternative income source and hence more farmers are commercializing poultry in Laikipia West and East. Waste from dairy and poultry farms can pollute water sources if not properly managed. Piggery is also emerging as a livestock mainly in Laikipia West.

MAIN CHALLENGES

- **GHG emissions, pests and diseases, biodiversity loss, inadequate capacity of climate resilience initiatives**,
- **Climate change** affects livestock production in multiple ways as drought reduces pasture and water availability, leading to livestock deaths and food insecurity.
- **Flooding** affects grazing lands, increases disease outbreaks, and disrupts livestock markets.
- **Heat stress** due to high temperatures and therefore reduction of milk and meat production.
- The spread of **vector-borne diseases** like Rift Valley Fever, Foot and Mouth Disease, and East Coast Fever increase.
- **Slaughterhouses and abattoirs** generate waste, which if not managed properly, contaminates water sources.
- **Milk processing plants** use large amounts of water and produce waste that can pollute the environment.
- The **hides and skins processing (tanneries)** produce toxic chemicals that, if not treated, pollute water bodies.

Proposed Interventions

Adoption of **eco-friendly waste management systems**.

Sustainable grazing practices such as rotational grazing and reseeding of degraded pasturelands in the rangelands, establish grazing reserves.

Manure management by using biogas digesters to convert waste into renewable energy and use biogas technology in abattoirs to reduce methane emissions.

Agroforestry integration where trees are planted alongside livestock farming to improve soil quality and reduce emissions.

Promotion of **indigenous breeds** adapted to dry conditions.

Promote adoption of water - harvesting and conservation technologies such as construction of storage facilities like water pans, improved irrigation methods for pasture, water recycling in dairy processing plants and efficient watering systems for livestock.

Establish **wildlife-livestock buffer zones**.

Promote, train and support farmers on climate smart livestock rearing such as introduction of drought-resilient livestock breeds, fodder production to reduce pressure on natural rangelands, introduce and promote adoption of methane-reducing feed additives.

Improve animal husbandry through better veterinary care and breeding programs.

Marketing Channels

Strengthen livestock cooperatives and market linkages.

Establish modern livestock markets with proper infrastructure.

Encourage contract farming between pastoralists and meat-processing companies.

Value Addition

Establish meat processing and packaging industries.

Promote dairy product processing (cheese, yogurt, powdered milk).

Invest in leather processing industries to add value to hides and skins.

Fisheries

In Laikipia county three fisheries activities are undertaken namely culture fisheries, capture fisheries and fish trade. Species of fish found in Laikipia waters include tilapia, cat/mud fish, common carps, labels, barbus, trout, eels, haplochromis, mosquito fish and ornament fishes. Fisheries is mainly farmed in ponds.

MAIN CHALLENGES

- **Declining fish production and productivity trends** due declining water quantities and quality, pollution in aquatic habitats, degradation of fish breeding sites, illegal fishing methods and poor methods of fish farming.
- **Fish predation** leading to loss and low fish production out puts.
- **Migratory fish predators** such as birds encourage spread of diseases and disease -causing pathogens.
- **Inadequate and poor management of fish production systems** have led to waterlogging, proliferation of mosquitoes.
- **Poor quality feeds** and poor pond fish farming management practices.
- **Use of chemicals** for fish diseases management leading to their pollution.

Proposed Interventions

Strengthen capacity of the county to take advantage of the concept of **blue economy** and design projects in order to benefit from the opportunity for project funding in the area.

Develop a county aquaculture policy, legislation, and master plan to embrace the emerging technology of in fish farming.

Strengthen fish cooperatives to aggregate produce, negotiate better prices, and access larger markets.

Utilize mobile applications and online platforms to connect directly with buyers, access market information, and reduce reliance on intermediaries.

Strengthen compliance and enforcement to address destructive fishing and fish farming methods and maintain good management practices.

Promote use of modern technologies such as aquaponics, cage culture and green house fish ponds in fish farming.

Promote home based fish feed production using cheap but quality locally acquired raw materials.

Promote aquaculture through provision of certified fish seeds, feeds, formulation.

Development and implementation of development of **aquaculture business plans**.

Public-Private Partnerships engagement for quality fish seeds and feeds.

Develop and implement programs to address degradation of habitats for fisheries.

Promote value addition and establish market linkages to ensure profitability of the fisheries sector.

Energy and Mining

Energy and mining operations impact the environment and natural resources through activities like land disturbance, water pollution, air emissions, biodiversity loss, and depletion of mineral reserves. The County has a variety of minerals which include Marble, Vermiculite, Iron, Silica Sand, Garnets, Mica, Bauxite, Granite and Bentonite. However, the county has constitutional mandate over sand harvesting and stone quarrying only.

MAIN CHALLENGES

ENERGY

- Low adoption of renewable energy.
- Overreliance on wood fuel.
- High voltage lines across wildlife corridors and birds flight paths.
- Inadequate access to the main grid.
- Lack of regulatory and policy reform for clean energy at county level.
- Air pollution.
- Low capacity and public awareness.

MINING

- Land degradation, water and air **pollution**.
- Life risks related to **artisanal mining.**
- Inadequate information on mineral quantity and location in the county.
- **Unsustainable sand harvesting** and quarrying practices.
- The disruption of ecosystems during **mining** operations leads to the destruction of habitats for plants and animals, reducing biodiversity in the area.

Proposed Mitigation

- Promote and subsidize renewable energy technologies (solar, wind, etc.).
- Facilitate licensing and approval for renewable energy projects.
- Reforestation, afforestation and agroforestry.
- Promotion of energy-saving technologies.
- Implementing bird friendly design features.
- Re-vegetation-planting native species to restore vegetation and support biodiversity.
- Involving local community in planning and decision making.
- Upgrade grid technologies to handle renewable sources.
- Deploy decentralized energy solutions (e.g., mini-grids, solar home systems) in off-grid areas.
- Develop training programs for energy sector professionals.
- Launch public awareness campaigns on energy conservation and renewable energy and provide financing and incentives for accelerated adoption.
- Develop and implement policies to support clean energy adoption.

Proposed Interventions

- **Conduct geological mapping**.
- **Enactment of the National occupation health and safety policy**.
- **Survey and assess mineral deposits**.
- **Develop benefit sharing framework**.
- **Develop and implement policy, regulation** and act on sand harvesting and quarrying including regulations on rehabilitation of quarries.
- **Implementation of Air quality regulations**.
- **Enforcement of Occupational, Health and Safety regulations.**
- **Enforcement of EMCA, 1999 and its subsidiary regulations** (EIA/EA regulations).

HEALTH SANITATION AND WASTE

Poor health, sanitation, and waste management practices impact the environment and natural resources through water contamination, air pollution, soil degradation, and disruption of ecosystems, ultimately leading to negative effects on human health and biodiversity due to the spread of diseases and hazardous exposure.

MAIN CHALLENGES

- Inadequate **water and sanitation systems**.
- Health hazard due to improper **waste disposal** and medical waste management.
- **Water** pollution and waterborne diseases.
- Air and sound pollution.
- **Limited public awareness** and environmental education.

Proposed Interventions

- **Sensitization of stakeholders** on the impact of climate change on health and sanitation.
- **Promote and strengthen the One Health Approach**.
- **Develop water and sanitation systems** in under served areas.
- Carry out **hygiene behavior change** campaigns.
- Avail more **funding to support health sanitation programs**.
- **Conduct committee hygiene education programs**.
- Develop and implement structured **urban and rural areas waste collection and disposal systems**.
- **Recycle waste- water**.
- **Designate, develop and maintain dumping sites**.
- Organize regular **community clean-up and air quality awareness events**.
- Set up designated points for **diapers and sanitary wares collections** and disposal.
- **Invest on research on waste recycling** and value addition including diapers.
- **Create awareness campaigns on water pollution**.
- **Establish structured water quality monitoring systems**.
- **Enforce regulations on disposal of waste** (electronic, medical etc waste).
- **Monitor air quality in hotspots**.
- **Support environmental education in schools**.
- **Conduct media campaigns** on environmental issues.
- Strengthen **collaborations and partnership** on environmental issues.
- Enforce **regulations on air and noise pollution**.

ENVIRONMENTAL HAZARDS AND DISASTERS

Environmental hazards and disasters have significant impact on the environment and natural resources They cause widespread destruction of ecosystems, altering landscapes, contaminating water and air, disrupting biodiversity, and impacting the availability of essential resources like food and clean water, often with long-term consequences for both human populations and natural.

MAIN CHALLENGES

- Unpredictable **weather patterns**, prolonged droughts, and floods.
- **Wildfires** common during the dry season due to climatic and vegetation factors.
- **Deforestation**, inadequate optimal grazing, and agriculture contribute to soil erosion and environmental degradation, Inadequate budgetary allocations.
- **Resource-based conflicts** linked to poor governance of natural resources.

Proposed Interventions

- **Sensitization of stakeholders** on the County Climate Change Action Plan 2023- 2027.
- Promotion of **Sustainable Agricultural Practices**.
- **Reforestation and Afforestation Programs**.
- **Partnerships** with development partners, NGOs and Private Sector.
- **Community Training and Capacity Building** on disaster risks and preparedness measures and development/ review of the ward DRR/ PCRA action plans.
- **Public Awareness Campaigns** on disaster risks and preparedness measures.
- Integration of **Disaster Education** in Schools.
- **Resource Mobilization Strategies**.
- Strengthening/Establishment of **Coordination Committees**.
- Development of **Multi-Stakeholder Action Plans**.
- **Reviewing and Updating Existing Policies**.
- **Soil Conservation and Rehabilitation Programs**.
- **Sustainable Land Management Practices**.
- **Anti-Deforestation Campaigns and Reforestation**.

ENVIRONMENTAL EDUCATION, AWARENESS AND COMMUNICATION

Environmental education, awareness, and communication are important tools for environmental management and sustainability. Environmental education teaches about the natural and built environments, raises awareness of environmental issues. Environmental communication raises awareness changes behavior, influences public opinion, advocates for environmental related policies and supports effective policymaking. Environmental management improves when there is increased public awareness and involvement and improves when there are skills to respond to environmental challenges .Therefore Environmental education can help raise awareness and change behaviors, Environmental communication can help share information, insights, and opinions on environmental issues, Environmental communication can help support policymaking and public participation while Environmental education and communication can help improve environmental management.

MAIN CHALLENGES

- **Inadequate awareness** creation on environmental issues.
- **Curriculum gaps.**
- Behavioral change in **waste management,** limited support for innovations and inventions.
- Limited integration of **indigenous knowledge.**
- Limited access to **environmental data.**

Proposed Interventions

Organize and support community-driven conservation events like the Mukogodo Walk Wild Event.

Develop and implement a communication strategy for disseminating environmental information.

Commemorate international environmental days (e.g., World Environment Day, World Wetlands Day.

Promote use of ICT tools like apps (e.g., Jaza Miti App) and use of drones for interactive and real-time environmental awareness and monitoring.

- **Host community awareness forums** in schools and local community centers.
- **Partner with non-state actors** for awareness campaigns and community engagements.
- **Promote Community outreach programs** to promote waste management and recycling practices.
- **Advocate for integrating environmental studies** into primary, secondary, and tertiary curricula.
- **Establish innovation hubs** and provide grants for environmental technologies and inventions.
- **Develop centralized platforms** for environmental data storage and dissemination.
- **Document and integrate Indigenous technical knowledge (ITK)** into environmental management practices.

ENVIRONMENTAL GOVERNANCE

Environmental governance refers to the processes of decision making involved in the control and management of the environment and natural resources. It plays a critical role in the implementation of CEAP by providing a framework for decision-making, ensuring accountability, coordinating efforts across different stakeholders, allocating resources effectively, monitoring progress, and enforcing environmental regulations, ultimately leading to successful execution of environmental protection strategies.

Environmental management in Laikipia County is structured through various institutional and collaborative frameworks. These institutions include, the National Government, County Government, non-state actors, Community

structures and conservation organizations. The coordination mechanisms include, Public-participation forums, Multi-stakeholder collaborations and monitoring tools like the Jaza Miti App that enhance accountability and adaptive management.

MAIN CHALLENGES

- Insufficient **incentives for conservation activities**.
- **Bureaucratic** hurdles.
- Limited **resources and funding.**
- Weak **enforcement mechanisms.**
- Low **public awareness.**
- Poor **coordination**.
- **Competing land uses** undermine environmental governance.

Proposed Interventions

Streamline the mandates of each Ministry, Agency, and Department.

Establish **multi-stakeholder** collaboration frameworks and forum.

Strengthen Environmental enforcement capacity through training and resource allocation.

Develop and **conduct public sensitization and engagement campaigns**.

Develop and deploy **advanced monitoring technologies** e.g. use of drones.

Align county-level policies with national policies.

Mobilize financial resources through partnerships and grants.

Enhance **data collection and analysis** for decision-making.

BUDGET AND FINANCE OF CEAP

Financing of CEAP

Currently, Key financial sources available for this plan include:

- National and County government.
- Bilateral and multilateral funds such as Global Environment Facility (GEF); Green Climate Fund (GCF); World Bank.
- Local and International Non-Governmental Organizations.
- Development partners / PBOs.
- Public Private Partnership (PPP).

Stakeholders in the county

County Government of Laikipia, Government Ministries, Departments and Agencies (MDAs) such as NEMA, WRA, KFS, KWS, KEFRI, Pulic Benefit Organizations (PBOs)/ Civil Society Organizations, the Private Sector, Community Based Organizations, Faith Based Organizations, donors and other development partners.

Table 3: Budgets for the different thematic areas

		2025 – 2029	
THEMATIC AREAS	**SUB THEMATIC AREA**	**BUDGET (Ksh)**	**BUDGET (USD)**
People, Environment and Development		2,650,210,000	20,386,230.77
Land Use and Soils		350,000,000	2,692,307.69
Climate Change and Variability		550,000,000	4,230,769.23
Aquatic Ecosystems		333,250,000	2,563,461.54
Terrestrial Ecosystems, Wildlife and Forestry	**Forestry**	250,400,000	1,926,153.85
	Wildlife	4,320,137,500	33,231,826.92
Agriculture, Livestock and Fisheries	**Agriculture**	1,500,300,000	11,540,769.23
	Livestock and Fisheries	752,500,000	5,788,461.54
Energy and Mining	**Energy**	375,000,000	2,884,615.38
	Mining	250,000,000	1,923,076.92
Health, Waste and Sanitation		436,650,000	3,358,846.15
Environmental Hazards and disasters		150,800,000	1,160,000.00
Environmental Education and awareness		173,000,000	1,330,769.23
Environmental Governance		380,000,000	2,923,076.92
CEC Operational Cost for Planning & strategy • Progress and mid-term review • Annual Reports including County State of Environment Report • Monitoring and Evaluation & Accountability field visits • Resource mobilization activities • Participation in local, national and international forum/conferences & other events		50,000,000	384,615.38
		12,522,247,500	**96,324,980.77**

Stakeholders for implementation of CEAP

Departments of County Government of Laikipia, NEMA, WRA, KFS, KWS, KEFRI, Ministry of Energy, Ministry of Mining, Other National Government Ministries, Departments and Agencies (MDAs), The Local Communities, Public Benefit Organizations (PBOs), the Private Sector, Community Based Organizations, Faith Based Organizations, National Government Administration (NGAO) and Any Other Relevant Stakeholders.

Table 4: *Organizations that participated in the development of CEAP*

Ministry of Environment Climate Change and Forestry	UK-PACT	Wyss Academy for Nature
County Government of Laikipia	World Agroforestry -ICRAF	IMPACT Kenya
County Assembly of Laikipia	Northern Rangeland Trust	Laikipia Conservancies Association
National Environment Management Authority (NEMA)	Laikipia Permaculture Centre	Kenya Meteorological Department -Laikipia County
Net Fund Kenya	Community Conservancies	CETRAD
Kenya Forest Service	Laikipia Wildlife Forum	Mpala Research Center
Kenya Wildlife Service	GROOTS Kenya	Pioneer Child Development Programme
Water Resources Authority	Lions Landscape	Mount Kenya Network Forum
National Drought Management Authority (NDMA)	Pathyways Policy Institutes	Space for Giants
Members for the County Environment Committee	UN Women	Friends of Environment
Fauna and Flora International	The Nature Conservancy	Nyahururu Water and Sanitation Company
Kenya Forestry Research Institute	Communities from all the sub-counties	Kenya Red Cross Society
Kenya Defense Force	Cereal Growers Association	Water Resource Users Associations e.g. Likii, Nanyuki, Manguo, Ewaso Narok etc
Ewaso Ng'iro North Development Authority	Community Forest Associations	
	Upper Nairobi Tana Water Fund	
	Nanyuki Water and Sanitation Company	
	Northway Policy Institute	

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