



MAKUENI COUNTY ENVIRONMENT ACTION PLAN 2025-2029

Abridged Version















Contents

Contents.....	ii
Foreword.....	iii
Preface	1
Acknowledgement.....	2
Overview.....	3

PART ONE

Profile	5
Action Plan (2025-2029)	5

PART TWO

Sector Issues	6
 POPULATION, ENVIRONMENT AND DEVELOPMENT.....	6
 LAND USE & SOILS	8
 CLIMATE CHANGE AND VARIABILITY	9
 AQUATIC ECOSYSTEMS.	10
 TERRESTRIAL ECOSYSTEMS	11
 AGRICULTURE, LIVESTOCK, AND FISHERIES	14
 ENERGY & MINING.....	15
 HEALTH, SANITATION AND WASTE.....	16
 ENVIRONMENTAL HAZARDS AND DISASTERS.....	18
 ENVIRONMENTAL EDUCATION, AWARENESS AND COMMUNICATION	20
 ENVIRONMENTAL GOVERNANCE	21
 BUDGET AND FINANCE OF THE COUNTY ENVIRONMENTAL ACTION PLAN.....	22
Budget for the different Thematic Areas	23
Stakeholders for implementation of CEAP	24

Foreword

Makueni County is endowed with natural resources that support social and economic development as well as ecosystem goods and services. The 2021 Poverty Report indicates that Makueni County has an overall poverty headcount rate of 44.7%, which is higher than the national average of 39.8%. The County contributes about 2.3% to Kenya's total poverty of the population, placing it among counties with a moderate poverty burden. Similarly, the County's tree and forest cover is at 12.47 % and 5.38%, respectively. The County has vast water resources and rivers that support crops, fruits, and livestock production. The scenic landscapes, ranges, and geographic locations support tourism and have high untapped potential. However, the County is faced with a number of environmental challenges that include climate change shocks, poor land use and planning, environmental degradation, poor sanitation, low uptake of technology, encroachment, forest and wildfires, increased pollution, human-wildlife conflicts, and invasive and alien species.

To address these challenges, the Government of Makueni County (GMC) is mainstreaming and integrating environmental issues in planning, budgeting, and development processes. The County has put in place and is in the process of enacting several other policies, namely, the Environment Bill, Makueni County Sustainable Forest Bill, and Solid Waste Management Bill, among other instruments-laws, plans, and regulations. These instruments include the County Integrated Development Plan (CIDP) 2023-2027, Makueni County Climate Change Action Plan 2023-2027, Makueni County Sand and Utilization Act, and County Climate Change Act 2021.

The Makueni County Environment Action Plan, 2025-2029, provides an analysis of environmental parameters in various sectors, taking cognizance of where the County is and where it ought to be in achieving environmental sustainability. To tackle the environmental challenges, the County is considering and requires collaborations between public, private, State, and Non-State actors, as well as citizenry involvement.

Synergies and public participation between all stakeholders will ensure that the vision of the CEAP is actualized in a sustainable manner. This CEAP will also inform programs and engagement at the County level, regionally under the South Eastern Kenya Economic Block (SEKEB), and further at the Council of Governors (CoG) through the relevant sectoral committees.

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 Makueni County with funding from the Foreign, Commonwealth & Development Office (FCDO) in the development of this document, including strengthening of the County Environment Committee and other environmental conservation initiatives. My appreciation goes to the National Drought Management Authority (NDMA) for facilitating the sensitization of the County Assembly, the County Executive Committee, and members of the Technical Working Group, who input comments provided during these forums.

I call upon all the stakeholders to ensure that we leave an indelible mark as we strive to reverse the adverse effects witnessed on our environment due to over-exploitation and neglect. Our livelihoods depend on the environment, and my administration will do its best to rehabilitate and restore degraded areas and comply with set standards for growth and development.



H.E Mutula Kilonzo Jr. CBS
Governor, Makueni County

Preface

Makueni County's livelihoods are closely linked to access to natural resources. As our population increases and environmental quality continues to decline, there is an increased risk of social and economic destabilization, which will have significant impacts on overall environmental quality. Rural people are among the most vulnerable and insecure in terms of poverty, health, food security, economic losses, and conflicts resulting from competitive access to natural resources, among others.

The economy of Makueni and the livelihoods of her people largely depend on the utilization of her rich natural resource base. This resource base is increasingly under pressure from human activities, resulting in environmental degradation and depletion. The challenge, therefore, is to ensure the sustainable use of our natural capital by striking a balance between its utilization and conservation.

Agenda 21 of the Rio Summit in 1992 formed the basis for the Global Environmental Action Plan (GEAP). Kenya institutionalized this environmental planning in Articles 42, 69, and 70 of the Constitution of Kenya 2010. The Environment Management Coordination Act (EMCA No.8 of 1999), revised in 2015, provides for the integration of environmental considerations in national policies, plans, projects, and programs and the formulation of County Environment Action Plans (CEAPs) every five years and a State of Environment (SoE) Report every two years.

Section 29 of EMCA 1999 (Revised 2015) requires a County Governor to appoint and gazette a County Environment Committee (CEC). One of the mandates of the CEC is to develop a CEAP within the first year of enactment of the Act. Members of the technical committee of the CEC were drawn from various Ministries, Departments, and Agencies (MDAs). The Makueni County Environment Action Plan 2025-2029 was developed and presented to various stakeholders for input, enhancement, validation, approval, and ownership. These stakeholders, among others, are the full CEC, Ward Climate Change Planning Committees (WCCPCs), and other key stakeholders in the County. The CEAP was also presented to the County Executive Committee and the County Assembly Committee on Environment and Climate Change for interrogation and approval.

The Makueni CEAP provides a means of reporting on environmental issues and progress toward attaining sustainable development in the County. It has been prepared in fulfillment of Section 40(1) of the Environmental Management and Coordination Act EMCA 1999 (Revised 2015). The Makueni County Environment Action Plan will inform the National Environment Action Plan by capturing the vision of the County to assist in attaining the national Bottom-Up Economic Transformation Agenda (BETA). The CEAP will enhance the mainstreaming and integration of environmental issues into the County policies, plans, projects, and programs. In this regard, I appreciate 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) Program.

I appreciate H.E Mutula Kilonzo Jr., CBS, for his tremendous support, including financial support throughout this journey. We further appreciate the role played by Prof. Catherine Muthuri, the Country Director for Kenya and Regional Convener for East Africa at CIFOR-ICRAF, and the Project Lead for her technical guidance and commitment throughout the CEAP development process. We are also grateful to the National Drought Management Authority (NDMA) facilitation for County Assembly Sensitization, County Executive Committee Sensitization, and Technical Working Group members inputting comments provided during these sensitizations.

I call upon all stakeholders and MDAs in the County to align themselves with this plan and incorporate environmental issues into their planning and budgets to enhance performance and compliance.



Japheth Mang'oka

County Executive Committee Member, Lands, Urban Planning & Development, Environment and Climate Change

Acknowledgement

The Makueni CEAP development took a consultative and participatory approach. I highly acknowledge H.E Mutula Kilonzo Jr., EBS, the Governor of Makueni County, for his blessings, goodwill, and support in the preparation and approval of the CEAP 2025-2029. I am also grateful to Mr. Japheth Musyoka Mang'oka, the County Executive Committee Member (CECM) in charge of Lands, Urban Planning & Development, Environment and Climate Change (LUPDECC), who is also the Chairperson of the County Environment Committee for continued support and motivation in the preparation of this document. Further I would want to commend his leadership in the development and appointment of the technical team for CEAP drafting. I appreciate the Makueni County Environment Committee, whose strategic guidance made the development of this Action Plan possible.

I wish to laud the World Agroforestry (ICRAF) for technical and financial assistance through the support of UKPACT in the preparation of the CEAP, from drafting, sensitization (county environment committee, county executive, and county assembly), public participation, stakeholder validations, and finalization stages. The National Drought Management Authority (NDMA) is appreciated for facilitating County Assembly Sensitization, County Executive Committee sensitization and members of the Technical Working Group inputting comments provided during these sensitizations.

The County Directorate of Environment and Members of the Technical Working Group that coordinated the successful completion of this Action Plan are sincerely appreciated. Special thanks go to the National Environment Management Authority (NEMA) for continuously guiding the document through the process, technical inputting, and quality assurance.

I would also like to extend my appreciation to the Makueni County Assembly and the National and County administration, who were instrumental in mobilizing communities during the engagement process. Contributions from County technical staff, the National Government, civil society, academia, and the private sector also played a key role in the development of this Action plan. I acknowledge efforts by community members who spared time to actively participate in the profiling and prioritizing of Environmental issues in their respective Wards.

Finally, I wish to thank the editorial team, who put in a lot of man-hours to make this CEAP presentable. May we all join hands and stay committed to implementing the Makueni County Environment Action Plan 2025-2029.



Oloo Vincent Ochieng'
Secretary; Makueni County Environment Committee

Overview

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

The basis for preparing an Environmental Action Plan is drawn from Agenda 21 of the Earth Summit, the Kenya Constitution 2010, the 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 Plan, the Bottom Up Economic Agenda and the County Integrated Development Plans (CIDPs).

The Kenya Constitution 2010 devolved all planning activities /functions to the County, including environmental planning. 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. The Environmental Management and Coordination Act, 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 (NEAP).

The core purpose of the Makueni 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. This abridged version report of the Makueni County Environment Action Plan presents a snapshot of the County environment and natural resources status, their challenges, and proposed interventions analyzed from the CEAP 2025-2029. The report presents two distinctive and connected parts.



Makueni County Environment Committee Members

Part I Presents the County profile, Vision, Mission, and Purpose of the CEAP.

Part II Outlines the challenges of the environment, natural resources, and management in various thematic chapters, as provided in the Makueni County Environment Action Plan (2025-2029). The critical thematic chapters articulated include (i) County Profile, (ii) People, Environment and Development, (iii) Land Use and Soils, (iv) Climate Change and Variability, (v) Aquatic Ecosystems, (vi) Terrestrial Ecosystems, (vii) Energy and Mining, (viii) Health, Sanitation and Waste, (ix) Environmental Hazards and Disasters and (x) Environmental Governance. The section identifies cross-cutting issues, which include coordination, capacity-building, partnerships, education and awareness-creation, and community involvement. It points out important issues and presents an evaluation of gaps in achieving sustainable environment and natural resources management and conservation as advocated in Vision 2030, African Union Agenda 2063, Sustainable Development Goals, and other national, regional, and international agendas.

The section also has a resource mobilization strategy. The overall financial requirements to implement this plan is estimated to cost the County Government and partners approximately KSHs. 11.7 billion to implement proposed interventions and approximately KSHs. 12.5 billion to implement the County Environmental Investment Plan totaling KSHs. 24.2 billion (USD 90m). These resources will be mobilized from the County government's budgetary allocations, bilateral donors, public-private partnerships, and local and international NGOs / PBOs. Other resources will be mobilized through global financing mechanisms such as GCF and GEF by the government in collaboration with other stakeholders.



Some of Makueni County Executive Committee Members.

PART ONE

Profile

This section presents the Vision, Mission, and Purpose of the Makueni County Environment.

Action Plan (2025-2029)

Makueni County is situated in the South Eastern part of Kenya, bordering Machakos County to the North, Kitui County to the East, Taita Taveta County to the South, and Kajiado County to the West, as shown in Figure 1. It lies between Latitude 1° 35' and 3° 00' South and Longitude 37°10' and 38°30' East. The County covers an area of 8,176.7 Km². The County is accessible by major road networks like Mombasa to Nairobi highway, Kibwezi to Kitui highway, and Machakos to Kitui highway. These provide opportunities for inter-county trade, agricultural activities, and rural-urban connectivity.

Vision

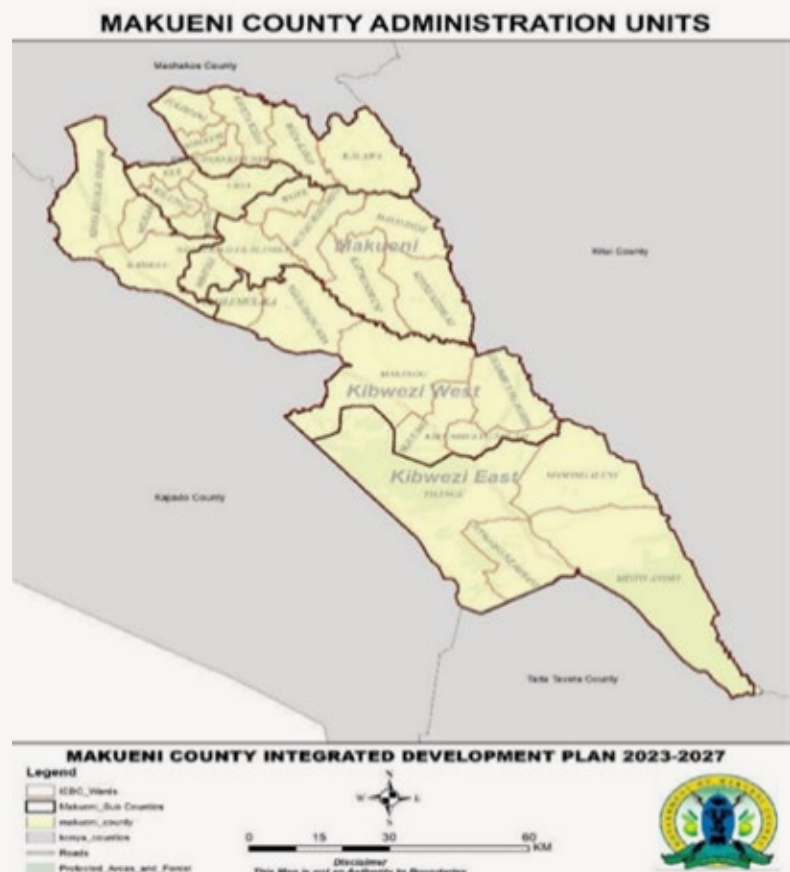
To be the strategic enabler for a transformative development agenda spurred by sustainable harnessing of the County's natural resources in a clean and healthy environment.

Mission

To sustainably integrate harnessing of the County's natural resources to spur socio-economic development and mindset change.

Purpose

The Makueni CEAP aims to provide a framework for coordinating environmental activities by all stakeholders, including the private sector and government, to guide the course of development activities. It provides strategies for conserving, protecting, using, and managing natural resources and the environment in general. The document further prioritizes the environmental issues in the County and is geared towards the provision of sustainable solutions. This will enable the County to integrate and mainstream environmental matters in developmental and sectoral plans of Makueni County so as to achieve sustainable socio-economic development, alleviate poverty, and change the infeasible mindsets on natural resource use in a clean and healthy environment as provided for by the Constitution of Kenya 2010.



PART TWO

Sector Issues

This section outlines the strategies that will enable sound governance of the environment and natural resources to promote sustainable development. It clearly outlines key activities within the CEAP thematic areas/chapters. It further details environmental challenges and proposed interventions. The section also outlines a resource mobilization framework with strategies and methods to acquire the necessary funding, personnel, expertise, and other resources needed to effectively implement the CEAP initiatives, ensuring the plan's sustainability and impact by identifying potential funding sources, building partnerships, and optimizing the use of existing resources.

POPULATION, ENVIRONMENT, AND DEVELOPMENT



According to the KNBS report 2019, the County population is 987,653, consisting of 489,691 males, 497,942 females, and 20 inter-sex. Most of the population in Makueni are young people aged 0-14 years (34.9%) and 15-24 years (20.5%). The population growth rate is 1.1%, with a population projection of 1,065,482 and 1,087,776 by the end of 2025 and 2027, respectively.

The combined impacts of population growth, environmental conditions, and development patterns significantly affect natural resources and the environment, leading to issues like resource depletion, pollution, habitat loss, and climate change, primarily due to increased demand for resources as populations grow and economies develop, often with unsustainable practices.

MAIN ENVIRONMENTAL CHALLENGES

- Inadequate development and implementation of gender-sensitive, youth and children, disability-friendly approaches in environmental conservation.
- Inadequate community engagement & behavioral change on environmental conservation and protection.
- Waste disposal.
- Inadequate indigenous technical knowledge (ITK) on environmental conservation.
- Inadequate partnership with Lead Agencies, the private sector, learning institutions, and other organizations for environmental conservation.
- Inadequate implementation of urban planning and County spatial plans.

PROPOSED INTERVENTIONS



Provide alternative sources of livelihood



Mainstreaming gender, youth, children, and people with special needs in environmental conservation initiatives.



Promote community engagement & behavioral change through public awareness campaigns on environmental conservation and protection,



Develop proper waste management mechanisms, including incentives for recycling.



Harness indigenous technical knowledge (ITK) on environmental conservation.



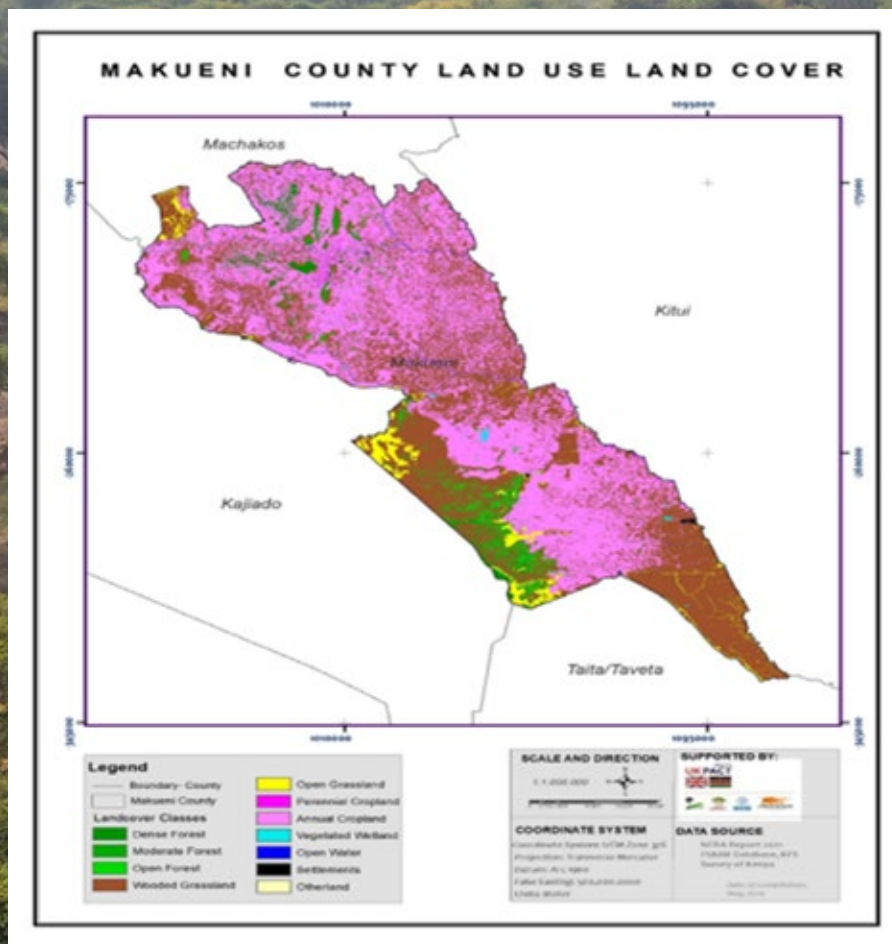
Promote partnerships with Lead Agencies, Private sectors, Learning institutions, and other organizations for environmental conservation.



Promote implementation of urban planning and County spatial plans.



Promote circular economy, including organic waste composting for agriculture and biogas production.



LAND USE & SOILS



Land use in Makueni County has undergone significant changes due to farming expansion and urbanization. Forests and rangelands, such as the Nguu Ranch, have been converted into arable land, with farming becoming the dominant activity. Urbanization in towns like Wote, Emali, and Kibwezi has further driven land conversion, increasing land value as agricultural land is repurposed for commercial and residential use. In areas such as Wote and Makindu, the rate of agricultural land conversion is reported at 2-3% annually, fueled by urbanization, population growth, and rising land prices. This aligns with broader trends observed in Kenya's rapidly urbanizing counties. Previous

excisions of gazetted land for settlements, such as the Ngai Ndethya settlement scheme carved out from Ngai-Ndethya Game Reserve, have exacerbated land conflicts.

The County features a variety of soil types, including sandy, clay, and loamy soils, with most areas dominated by sandy and loamy textures. These soils are generally low in fertility and prone to erosion, making them less ideal for intensive agriculture without proper management. However, they are suitable for drought-resistant crops like sorghum, millet, green grams, and pigeon peas, which are staples in the region.

MAIN ENVIRONMENTAL CHALLENGES

- Land Degradation.
- Soil Erosion.
- Overgrazing.
- Deforestation.
- Water Scarcity.
- Land fragmentation.
- Encroachment of Ecologically Sensitive Lands.



PROPOSED INTERVENTIONS



Promote terracing, agroforestry, and reforestation



Use gabions and grass strips for erosion control.



Develop rotational grazing and fodder production



Community-driven afforestation and forest protection programs



Promote the development of water pans and rainwater harvesting

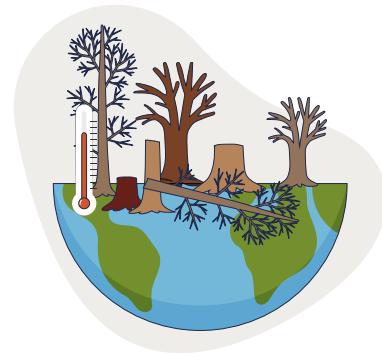


Develop and enforce land subdivision policy



Undertake Education, awareness, Protection, and Gazetting of Environmentally Significant Areas.

CLIMATE CHANGE AND VARIABILITY



Climate change and variability significantly impact the environment, natural resources, and livelihoods by causing disruptions in weather patterns. This leads to extreme events like droughts, floods, heat waves, and altered precipitation, which in turn affect agricultural yields, water availability, ecosystems, and, ultimately, the socio-economic well-being of communities.

The most affected are those heavily reliant on natural resources for their sustenance. Makueni County, like other parts of the country, has experienced an increase in extreme weather events over time. Depressed rainfall and, in other cases, highly enhanced rainfall causing flash floods are common phenomena.

MAIN ENVIRONMENTAL CHALLENGES

- Inadequate Climate Information Services.
- Inadequate Early Warning Systems.
- Inadequate finance for Climate Change mitigation and adaptation.
- Inadequate research on the impacts of climate change on environmental, social, and economic sectors.

PROPOSED INTERVENTIONS



Strengthening the existing multi-stakeholder forum on Climate Change.



Increase and ring-fence County Government budgetary allocation for climate change mitigation and adaptations



Capacity building on early warning systems



Research the impacts of climate change on environmental, social, and economic sectors.





AQUATIC ECOSYSTEMS

The Aquatic ecosystems in Makueni County consist of rivers, wetlands, seasonal streams, swamps, and man-made water storage systems. Aquatic ecosystems are a cornerstone of rural communities' environmental health, cultures, livelihoods, and economies. However, environmental degradation poses threats to these vital resources. Effective conservation and management of the aquatic ecosystems are key to the long-term resilience of Makueni County's environment and economy.



MAIN ENVIRONMENTAL CHALLENGES

- Conversions for settlements and agricultural activities.
- Over-extraction of water for irrigation.
- Unregulated sand harvesting and mining from riverbeds leading to erosion & lowering water levels.
- Inadequate enforcement of water and sand harvesting legislation.
- Pollution and water contamination caused by agricultural chemicals and fertilizers, urban wastewater and raw sewer, oil spillage from garages, car wash plastic, and solid waste dumping in water bodies.
- Aquatic alien and invasive species.
- Encroachment into environmentally significant areas.
- 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.
- Soil erosion leads to the siltation of rivers and wetlands.
- Climate change impacts are a result of irregular rainfall patterns and prolonged droughts, reducing river flows and groundwater recharge, and rising temperatures that increase evaporation rates.
- Human-wildlife conflicts.
- Inadequate integrated watershed management plans lead to uncoordinated and unsustainable use of water resources.
- Inadequate knowledge of integrated water resource management (IWRM) by communities.

PROPOSED INTERVENTIONS



Enhance Inter County border cooperation for wetlands management



Promotion of soil and water conservation initiatives



Compliance with legislation governing wetlands



Undertake research, capacity building, and monitoring of alien and invasive species



Promotion of efforts to restore riparian zones (the land adjacent to rivers and streams) through tree planting and the protection of wetlands.



Provide incentives for the conservation of water sources/ catchments



Build capacity for enforcement of water and sand harvesting legislation



Create awareness of encroachment into water sources.



Identify and Gazette Environmentally Significant Areas



Promote sustainable water resource management by regulating water abstraction, enforcing water-use permits and quotas;



Promote water harvesting by encouraging the construction of water pans, sand dams, and rainwater harvesting systems at households and institutions.



Develop initiatives for farms to reduce reliance on river water and promote the adoption of efficient irrigation methods such as climate-smart irrigation techniques (e.g., drip irrigation);



Promote the construction of common water intakes for easy regulation and management;



Promote treatment of wastewater 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.



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;



Develop Wetland Restoration initiatives to restore degraded Wetlands by rehabilitating native vegetation and regulating human activities.



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.



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.



Implement guidelines for controlled sand harvesting to prevent excessive extraction and riverbed degradation and rehabilitate 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;



TERRESTRIAL ECOSYSTEMS



Makueni County primarily features arid and semi-arid terrestrial ecosystems, which are influenced by rainfall patterns and topography. Key ecosystems include grassland savannas, dry bushlands, rocky outcrops, riverine forests, and degraded lands, which are significantly challenged by climate change and human activities like livestock grazing and agriculture.

MAIN ENVIRONMENTAL CHALLENGES

- Excision, habitat loss, and illegal logging.
- Degradation.
- Invasive species.
- Inter-County conflict.

PROPOSED INTERVENTIONS



Strengthen litigation on environmental offenses



Preserving the wildlife habitats and migratory corridors



Prevention of forest fires, Control of forest pests and diseases



Control and manage invasive species



Formation of Inter County Conflicts and resolutions committees





AGRICULTURE, LIVESTOCK, AND FISHERIES

In Makueni County, the primary environmental challenges facing agriculture, livestock, and fisheries are primarily related to severe drought conditions due to climate change. This has led to water scarcity, soil degradation, reduced crop yields, livestock losses, and limited access to water for fish farming. Other issues include erratic rainfall patterns, poor land management practices, overgrazing, and limited access to sustainable farming technologies.

MAIN ENVIRONMENTAL CHALLENGES

- Drought.
- Improper use of Synthetic fertilizers and Agrochemicals.
- Inadequate use of veterinary Services.
- Pests and diseases.
- Food contamination (Aflatoxicosis, salmonellosis, chemical residues).
- Sector Weak regulatory system.
- Poor soil fertility.
- Sand Floods.

PROPOSED INTERVENTIONS



Construction of dams and water storage facilities



Capacity development of farmers



Undertaking Animal Vaccination, Deworming, and administration of Vitamin boosters



Undertake training on pest and disease control,



Train on food safety and post-harvest Management.



Undertake sector Policy review and development.



ENERGY & MINING



Makueni County is characterized by a diverse topography that provides opportunities for unique energy and mining ventures. The County’s commitment to sustainable development and natural resource management has driven efforts to harness its energy potential and explore its mineral wealth. It holds significant potential in renewable energy, particularly solar, wind, biomass, and mining.

MAIN ENVIRONMENTAL CHALLENGES

- Low rate of electricity access, with only around 25% of households connected to the power grid.
- Under-utilized minerals.
- Disused old petroleum pipes.
- Borrow Pits Rehabilitation.
- Water and Soil pollution.



PROPOSED INTERVENTIONS



Promote reliable and affordable energy access



Mapping out the minerals inwards that are not utilized



Need for more mineral prospecting (feasibilities)



Establishment of a Mineral Value Addition Centre



Convert old petroleum pipes for water extension



Landscaping and afforestation



Adopt clean mining technologies



HEALTH, SANITATION AND WASTE

In Makueni County, Poor health, sanitation, and waste management practices impact the environment and natural resources through water contamination, air pollution, soil degradation, and disruption of ecosystems. This has led to adverse effects on human health and biodiversity due to the spread of diseases and hazardous waste exposure.

MAIN ENVIRONMENTAL CHALLENGES

- A large proportion of the population lacks access to improved sanitation facilities.
- Inadequate solid waste management.
- Improper handling and management of asbestos roofing sheets.
- Existence of Open defecation areas.
- Emerging Waste types-diapers, e-waste.
- Lack of baseline survey and data for waste management.
- Lack of public sanitary facilities along transport corridors.
- Few incineration facilities collectively impact adversely the health of residents and the environment due to poor waste disposal methods.
- Limited access to clean water.



PROPOSED INTERVENTIONS



Construction of sewerage systems in major towns



Upgrading of existing hospital lagoons



Building inventory and capacity of asbestos waste handlers in the County



Construction of new and expansions of mortuary facilities



Allocation of more land for the disposal of unclaimed bodies



Designating asbestos disposal sites



Provision of incineration facilities and promote Extended Producer Responsibility(EPR) mechanism



Upscaling Community Led Total Sanitation



Undertake research on Waste Management



Construction of toilets at designated places along Mombasa Road



Construction of hospital waste incineration facilities





ENVIRONMENTAL HAZARDS AND DISASTERS

Environmental hazards and disasters significantly impact 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 nature.

MAIN ENVIRONMENTAL CHALLENGES

- Unpredictable weather patterns.
- Prolonged droughts and floods.
- Wildfires, common during the dry season.
- Inadequate Climate change shocks, systems.
- Environmental degradation.
- Oil spillages.
- Resource-based conflicts.



PROPOSED INTERVENTIONS



Strengthen Early Warning Systems



Develop participatory disaster preparedness plans



Promote sustainable food production and management systems



Develop safety nets programs (Provision of food or non-food items) to vulnerable households and institutions.)



Development/rehabilitation of climate-proofed water storage and harvesting investments



Adoption of technology-based water solutions



Strengthen community health systems



Upscale WASH and nutrition programs



Promote crop and livestock insurance



Secure and protect the water catchment areas (wetlands, riparian lands)



Exploitation of technologies for converting invasive/alien species into useful products



Creation of wildlife control barriers (Electric Fence)



Pest and disease outbreak control



Afforestation and reforestation programs



Promotion of clean, efficient, and sustainable energy



Build capacity for surveillance of the oil pipelines



Strengthen the emergency operation center



Enforcement of Polluter pays principle and compensation



Promote Bio-remediation and restoration initiatives



ENVIRONMENTAL EDUCATION, AWARENESS AND COMMUNICATION

Environmental education, awareness, and communication are all important for managing natural resources and the environment. Environmental education teaches about the natural and built environments and 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 with 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, and environmental communication can help share information, insights, and opinions on environmental issues. Environmental communication can help support policymaking and public participation, and environmental education and communication can help improve environmental management.

MAIN ENVIRONMENTAL CHALLENGES

- Lack of Environmental Institutions in the County.
- Inadequate inventions, innovations, and adoption of Environmental conservation solutions.
- Inadequate data collection and sharing mechanisms, Monitoring and Evaluation.
- Lack of Environmental Champions.

PROPOSED INTERVENTIONS



Lobby for the development of Environmental School



Promote inventions and innovations



Integration of minority communities in training and governance structures



Ensure Data Collection, analysis, and dissemination



Develop a Monitoring and Evaluation plan



Form and activate environmental clubs in all learning Institutions



H.E Governor Mutula Kilonzo Jr., visiting the Digital Library and Innovation Laboratory in South Eastern Kenya University (SEKU) Wote Campus.

ENVIRONMENTAL GOVERNANCE



Environmental governance refers to the frameworks, systems, and actions that direct the sustainable management, protection, and use of natural resources while ensuring a balance between economic development, social equity, and ecological sustainability. It involves the participation of governments, communities, private sectors, and civil society in decision-making processes that impact the environment. In the context of County governance, it is instrumental in addressing environmental challenges such as climate change, land degradation, resource depletion, and biodiversity loss.

MAIN ENVIRONMENTAL CHALLENGES

- Insufficient incentives for environmental conservation activities.
- Competing land uses.
- Weak enforcement mechanisms.
- Inadequate coordination between national, County, and cross-county and activating WRUAs.
- Limited resources and funding.
- Inadequate public awareness.



Makueni County Environment Committee (CEC)

PROPOSED INTERVENTIONS



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



Establish multi-stakeholder collaboration frameworks and forums.



Strengthen Environmental enforcement capacity through training and resource allocation.



Establish community policing



Develop and Implement community sensitization and engagement initiatives



Identify and adopt modern environmental compliance and enforcement monitoring technologies, e.g., drones.



Mobilize financial resources through partnerships and grants



Enhance data collection and analysis for decision-making.



Facilitate the formation, registration, and functionality of CFAs and WRUAs



BUDGET AND FINANCE OF THE COUNTY ENVIRONMENTAL ACTION PLAN

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 Makueni,
- Government Ministries, Departments and Agencies
- (MDAs) such as NEMA, WRA, KFS, KWS,
- KEFRI, Public Benefit Organizations (PBOs)
- Civil Society Organizations,
- Private Sector, Community-Based Organizations,
- Faith-Based Organizations and Other Development Partners.

The overall financial requirements to implement this plan are estimated to cost the County government and partners approximately Kshs. 11.7 Billion to implement proposed interventions and approximately Kshs.12.5 Billion to implement the County Environmental Investment Plan totaling Kshs. 24.2 Billion (USD 90,739,451) as detailed in the Makueni CEAP 2025-2029

These resources will be mobilized from the County government's budgetary allocations, bilateral donors, public-private partnerships, and local and international NGOs. Key financial sources available for this plan include:

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

Areas of investment and estimated budget

THEMATIC AREA	SUB THEMATIC AREA	BUDGET 2025-2029	
		(Kshs.)	(USD)
People, Environment and Development		1,755,000,000	13,588,850
Land Use and Soils		520,000,000	4,026,326
Climate Variability and Change		800,000,000	6,194,348
Aquatic Ecosystems		1,900,000,000	14,711,576
Terrestrial Ecosystems, Wildlife and Forestry	Wildlife	750,000,000	5,807,201
	Forestry	850,000,000	6,581,494
Agriculture, Livestock and Fisheries	Agriculture and Livestock	1,785,000,000	13,821,138
	Fisheries	200,000,000	1,548,587
Energy and Mining	Energy	750,000,000	5,807,201
	Mining	250,000,000	1,935,734
Health, Waste and Sanitation		1,524,000,000	11,800,232
Environmental Hazards and disasters		340,000,000	2,632,598
Environmental Education and Awareness		175,000,000	1,355,014
Environmental Governance	General Environmental governance support and enforcement	70,000,000	539,000
	CEC strengthening, statutory mid-term reviews and reporting, M&E, CEC capacity building, resource mobilization strategy, local, national & international upscaling activities/conferences and events	50,000,000	385,000
TOTAL		11,719,000,000	90,739,451

Stakeholders for implementation of CEAP

Departments of County Government of Makueni for Environment and all others, 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.

ORGANIZATIONS THAT PARTICIPATED IN THE DEVELOPMENT OF CEAP

State Agencies (Government)

County Government of Makueni
County Assembly of Makueni

National Government Ministries, Departments, and Agencies (MDAs):

National Environment Management Authority (NEMA)
Kenya Forestry Service (KFS)
Kenya Wildlife Service (KWS)
Kenya Forest Research Institute (KEFRI)
Ministry of Environment, Climate Change, and Forestry
National Drought Management Authority (NDMA)
Tana and Athi River Development Authority (TARDA)
Kenya Meteorological Department (KMD)
Kenya News Agency (KNA)

Public Universities :

South Eastern Kenya University (SEKU)
Lukenya University

NGOs/International Organizations:

Fadhili Trust (NGO)
RECONCILE
The Nature Conservancies
Welthungerhilfe (WHH) (NGO)
World Agroforestry (ICRAF)
UK-PACT (UK government-funded climate program, implemented by non-state partners)

Community-Based/Private Sector:

Communities from all sub-counties
Community Forest Associations
Water Resource Users Associations (WRUAs)

REVIEWERS

WORLD AGROFORESTRY (ICRAF)

Prof. Catherine Muthuri
Kenya Country Director

Denis Wakaba
Social Economist and Gender

Paul Nguru
Consultant

MAKUENI COUNTY GOVERNMENT

Dr Geoffrey Muthoka
*Chief Officer Environment,
Natural Resource, Mining &
Climate Change*

Joseph Munyao
*Deputy Director Environment &
Natural Resource.*

Katua Nzile
Director, Communications

Christopher Mutunga- Mbooni
Sub County Environment Officer

Kelvin Mutua
Environment Officer

NEMA

Dr. Diana Mobagi
*Senior Principal Environmental
Planning Officer*

Vincent Oloo
County Director Makueni

Bonface Wanga
Environment Officer

A PUBLICATION OF THE MAKUENI COUNTY GOVERNMENT

Copyright © 2025, Makueni County Government, P.O. Box xxx

First Published in 2025

ISBN:

This book may be reproduced in whole or in part for educational or non-profit purposes without copyright authorization, providing the source is cited.

Makueni County would appreciate a copy of any publication citing this study.

All correspondence should be addressed to:

The Governor
County Government of Makueni
P.O. Box 78 – 90300 Wote,
Makueni

Telephone: +254795717889/+254780717885

Email: info@makueni.go.ke

