



MAKUENI COUNTY FOREST AND LANDSCAPE RESTORATION IMPLEMENTATION PLAN (FOLAREP) 2023-2030



Theme

To restore 100,000 hectares of degraded landscapes in Makueni County through integrated forest and landscape restoration approaches for improved ecological functionality and social economic benefits by 2030



TABLE OF CONTENTS

TABLE OF CONTENTS	ii
LIST OF TABLES	v
LIST OF FIGURES	v
ACRONYMS	vii
FOREWORD	xi
PREFACE	xii
ACKNOWLEDGEMENTS	xiii
DEFINITION OF TERMS	xv
EXECUTIVE SUMMARY	xvii
CHAPTER 1: INTRODUCTION	1
1.1 Justification and rationale for Makueni County FOLAREP	2
1.2 The FOLAREP formulation process	2
1.3 Title and Duration of the Plan	3
1.4 Amendment/Revision of the Plan	3
CHAPTER 2: SITUATIONAL ANALYSIS	4
2.1 Enabling Legal frameworks policies and strategic underpinnings for FLR Implementation	4
2.2 Priority landscapes in Makueni	10
2.2.1 Forest lands	10
2.2.2 Agricultural landscapes	11
2.2.3 Rangelands	15
2.2.4 Wetlands and riparian areas and watersheds	15
2.2.5 Other landscapes (urban, infrastructure, settlement areas)	18

2.2.6 Summary of the landscapes	19
2.3 Historical analysis of land cover changes/Level of degradation in Makueni County	20
2.3.1 FLR Hotspots in the County	22
2.4 Forest and Landscape Restoration opportunities in Makueni County	1
2.5 On-going FLR initiatives in Makueni	2
2.5.1 Environment Directorate Forest and landscape restoration initiatives	2
2.5.2 FLR Activities by Department of Agriculture	4
2.5.3 KEFRI FLR Activities	6
2.6 Economics of Upscaling FLR	6
2.7 Barriers to Forest and Landscape Restoration	7
2.8 PESTLEG AND SWOT Analysis for FLR	9
2.9 Risk Analysis	16
2.10 Stakeholder Analysis	17
CHAPTER 3: GOAL, OBJECTIVES, PROPOSED STRATEGIC RESTORATION INTERVENTIONS AND ACTIONS	20
3.1 Goal	20
3.2 Overall Objective	20
3.3 Specific Objectives, Intervention and Actions	20
3.4 Implementation of the proposed restoration interventions	26
CHAPTER 4: COORDINATION AND INSTITUTIONAL FRAMEWORK	27
4.1 Introduction	27
4.2 Institutional arrangement for Makueni FOLAREP Implementation	27
4.3 Composition and Roles of the various FLR Coordination committees	28
4.3.1 County FLR Advisory/ Steering Committee	28

4.3.2 County Environment Committees	28
4.3.3 County FLR Technical Committee	28
4.3.4 Sub Committee on Natural Resources (FLR)	29
4.3.5 The County FLR Secretariat	29
4.3.6 Sub County FLR Steering Group	30
4.3.7 Ward FLR Planning and Coordination Committee	30
CHAPTER 5: RESOURCE MOBILIZATION	32
5.1 Introduction	32
5.2 Budget and financing mechanisms for FLR	32
5.3 Status of Makueni FLR financing	33
CHAPTER 6. MONITORING, EVALUATION AND REPORTING FRAMEWORK	34
6.1 FOLAREP Monitoring and Evaluation Plan – Outcome Indicators	35
6.2 Implementation Matrix	38
REFERENCES	76
ANNEXES	78

LIST OF TABLES

Table 1: National laws and policies	4
Table 2: Multilateral Environmental Agreements	9
Table 3: County laws and policies	9
Table 4: KFS Gazetted forests.....	10
Table 5: Makueni County Gazetted Forests CFAs.....	10
Table 6: Makueni County Forests	11
Table 7: Agroecological zones and their description	14
Table 8: Wetlands in Makueni County.....	15
Table 9: FLR hotspots in Makeni County	1
Table 10: Forests and Landscape Restoration Barriers	7
Table 11: PESTLEG AND SWOT analysis.....	9
Table 12: Risk Analysis	16
Table 13: Makueni County FLR Stakeholders.....	17
Table 14: Specific Objectives, Interventions and Actions	20
Table 15: Financial resources required for Makueni FOLAREP	32
Table 16: Makueni County Monitoring and Evaluation Plan	35
Table 17: Makueni County Implementation Matrix.....	38

LIST OF FIGURES

Figure 1: Makueni County Map	1
Figure 2: Agroecological Zones	13
Figure 3: Main watersheds in Makueni County	18

Figure 4: Makueni Landscapes..... 19

Figure 5: Land Cover Maps (2002,2013,2022) 20

Figure 6: Land Cover Change Infograph 21

Figure 7: Makueni County Population Projections Trend..... 21

Figure 8: Restoration options for Makueni based on the seven designated national restoration options 1

Figure 9: Forests and Landscape Restoration options Infograph 2

Figure 10: County Coordination and Institutional Framework for Implementation of FOLAREP 27

ACRONYMS

AWF	AFRICAN WILDLIFE FOUNDATION
AWP&B	Annual Work Plan and Budget
ADS-E	Anglican Development Services-Eastern.
CBO	Community Based Organization
CC	County Commissioner
CCAPS	County Climate Action Plans
CEAP	County Environment Action Plan CEC County Environment Committee
CECM	County Environment Committee Member CFAs Community Forest Associations
CI	Conservation International
CIDPS	County Integrated Development Plans
CIFOR	Center for International Forestry Research
COG	Council of Governors
CRSR	Country Restoration Status Report
EMCA	Environmental Management and Coordination Act
DAIF&CD	Department of Agriculture Irrigation Livestock Fisheries & Crop Development
DOECC	Department of Environment and Climate Change
FAO	Food and Agriculture Organization of the United Nations FLLoCA Financing Locally Led Climate Action
FFS	Farmer Field Schools
FLR	Forest and Landscape Restoration
FOLAREP	Forest and landscape Restoration Action Plan
GESI	Gender equity and social inclusion
GHGS	Greenhouse Gases

ICRAF	The World Agroforestry Centre
IUCN	International Union for Conservation of Nature
KALRO	Kenya Agricultural and Livestock Research Organization
KEFRI	Kenya Forestry Research Institute
KFS	Kenya Forest Service
KMD	Kenya Meteorological Department
KENHA	Kenya National Highways Authority
KERRA	Kenya Rural Roads Authority
KRCS	Kenya Red Cross Society
KSHS	Kenya Shillings
KWS	Kenya Wildlife Service
KWTA	Kenya Water Towers Agency
LUKENYA	Lukenya University
MBOCOFOA	Mbooni Community Forest Associations
MDAS	Ministries, Departments and Agencies
MEAS	Multilateral Environmental Agreements
MENR	Ministry of Environment and Natural Resources
MERL	Monitoring, Evaluation, Reporting and Learning
MOECCF	Ministry of Environment, Climate Change and Forestry
NDMA	National Drought Management Authority
NEMA	National Environment Management Authority
NGOS	Non-Governmental Organizations
NGAO	National Government Administration Officers
NRM	Natural Resource Management
NRT	Northern Rangelands Trust
NSA	Non-State Actors

NTFPS	Non-Timber Forest products
PBOS	Public Benefit Organizations
PES	Payment for Ecosystem Services
PESTLEG	Political, Economic, Social, Technological, Legal, Environment and Governance
PFMPS	Participatory Forests Management Plans
REDD+	Reduction of Emissions through Deforestation and Degradation
ROAM	Restoration Opportunities Assessment Methodology
SDGS	Sustainable Development Goals
SDL	State Department of Livestock
SEKU	South Eastern Kenya University
SLM	Sustainable Land Management
SOER	State of Environment Report
SWOT	Strengths Weaknesses Opportunities and Threats
TARDA	Tana and Athi Rivers Development Authority
TIPS	Transition Implementation Plan
TOT	Training of Trainers
TWENDE	Towards Ending Drought Emergencies
TWG	Technical Working Group
UK-PACT	United Kingdom-Partnering for Accelerated Climate Transitions
UNCBD	United Nation Convention on Biological Diversity
UNCCD	United Nations Convention to Combat Desertification.
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UN-HABITAT	United Nations Human Settlements Programme

UNSPF	United Nations Strategic Plan for Forests
USAID	United States Agency for International Development
WRA	Water Resources Authority
WRI	World Resources Institute
WWF	World Wide Fund for Nature

MAKUENI COUNTY FOLAREP- DRAFT

FOREWORD

Ecosystem degradation results in accelerated soil erosion, biodiversity loss, and reduced water flow, among other manifestations. Ultimately, degraded ecosystems have reduced the capacity of the land to provide goods and services supporting the national and local economies.

One commitment I made in my campaign manifesto and which has extensively been entrenched in the County Integrated Development Plan (CIDP) is on Environmental conservation and sustainability. This can better be implemented through restoration owing to extensive degradation of the environment currently witnessed across the entire County.

In the spirit of restoration, the County Executive will remain committed to walking the talk in policy development and resource allocated.

Mutula Kilonzo Junior, CBS

Governor

Makueni County.

PREFACE

Forest and Landscape Restoration Implementation Plan (FOLAREP)- 2023-2030 is a five-year cross-sectoral and multi-stakeholder coordination framework to accelerate actions to restore deforested and degraded landscapes. The plan seeks to enhance resilient socio-economic development, improve ecological functioning and contribute to achieving national and international aspirations and obligations, respectively.

Restoration is of high priority to the National and County Governments, as outlined in various national policies, legislation, and strategies. They include Vision 2030, Forest Conservation and Management Act (2016), Climate Change Act (2016), National and Climate Change Action Plan (2018-2022), Updated Nationally Determined Contributions (2020) and several County Commitments and policies.

Implementing FOLAREP will contribute to achieving 30% national tree cover by 2050, **up** from the current 12.38%. Further, it will contribute to the fulfillment of international obligations, including the Convention on Biological Diversity (CBD), the United Nations Framework Convention for Climate Change (UNFCCC), the United Nations Forum on Forests (UNFF), the Bonn Challenge, and the African Forest Landscape Restoration Initiative (AFRI100). It will also be a critical instrument in supporting the aspirations of the UN Decade for Ecosystem restoration, 2021-2030.

The Department of Lands, Urban Planning and Development, Environment and Climate Change will set up the requisite County structures to address the gaps in Forest and Landscape Restoration (FLR), FLR legislation, regulation, research, incentives, and capacity building as stipulated in this plan. The plan will ensure the sustainable restoration of targeted landscapes for improved ecological functionality and livelihoods in the County. The FOLAREP 2023-2027 has outlined the resources required and provided sustainable financing approaches. This plan has also incorporated a robust monitoring and evaluation framework to promote an effective, efficient and inclusive FLR programme in the County.

Therefore, I invite all stakeholders, including development partners, the private sector, civil society organizations, faith-based organizations, and local communities, to collaborate with the County Government to support the implementation of this plan.

Dr. Sonnia Nzilani Musyoka

County Executive Committee Member,

Lands, Urban Planning & Development, Environment and Climate Change

ACKNOWLEDGEMENTS

Several policies, plans, strategies, and programmes to mitigate the pressures on our ecosystems exist Nationally and at the County level but have not yielded maximum outputs due to many factors including poor coordination of actors and resource issues. Several partners have been supporting or carrying out restoration activities in different parts of the County.

Makueni County established a technical working group (TWG) in October, 2023 to develop the County Forest and Landscape Restoration Implementation Plan (FOLAREP) - 2023-2030. Drawing from their own experiences and referring to the national and international best practices, the TWG developed this plan to help accelerate and catalyze ecosystem restoration in the County in a harmonized and integrated manner.

The draft FOLAREP was subjected to public consultations involving critical stakeholders before being validated through the County Environment Committee (CEC) platform. The Department of Environment, Natural resources and Climate Change shall spearhead the implementation of the County FOLAREP to address drivers of the ecosystem and landscape degradation and restore degraded forests, rangelands, wetlands, and agricultural landscapes in a harmonized approach.

Forest and Landscape Restoration Implementation Plan (FOLAREP) - 2023-2030 has been formulated through a multi-stakeholder consultation process engaging experts from national institutions, County Government, and non-state actors. This plan has also integrated relevant restoration objectives from International, National and County policies and plans including the Makueni County Integrated Development Plan (CDIP 2023-2027).

Sincere appreciation to the County Executive Committee Member, Lands, Urban Planning & Development, Environment and Climate Change, Dr. Sonnia N. Musyoka, the Chief Officer Environment, Natural Resources, Mining and Climate Change, Mr. Japheth Kiminza for their immense support and policy guidance throughout the development of this implementation plan.

We recognize and appreciate the numerous support provided by the Governor in consultation with our development Partners.

The development of this plan was supported by the Global Environment Facility (GEF), The United Nations Food and Agriculture Organization (FAO)-Kenya, led by Meshack Muga; Country Project Coordinator and co-financed by the United Kingdom- Partnering for Accelerated Climate Transitions (UK-PACT), The Center for International Forestry Research (CIFOR) - The World Agroforestry Centre (ICRAF) led by Robin Chacha and Christine Magaju, Africa Wildlife Fund (WWF), to whom we are very grateful.

To the Forest and Landscape Restoration Technical Working Group members with the leadership of the Department of Environment, Natural Resources and Climate Change,

Director Kenya Forestry Research Institute Dr. Michael Mairura, County Director Environment (NEMA) Mr. Oloo Vincent Ochieng', County warden Kenya Wildlife Service (KWS) Mr. Gabriel Kiio, Manager Water Resources Authority (WRA) Mr. Ahmed A. Mbarak, Acting Ecosystem Conservator Kenya Forest Service, Makueni Ms Irene Kiprono, Senior Scientist Kenya Agricultural Research Organization KARLO, Mr. Bosco Kidake, Chairman Mbooni Community Forest Association, Mr. John Kioko Mutua, you have delivered a wonderful plan for the County, and I thank you.

To the TWG Secretariat to which I led, Research Scientist, Kenya Forestry Research Institute, Ms. Rufo Gano Jillo, Forester and Climate Change Expert, Directorate of Environment and Natural Resources, Mr. Christopher N. Mutunga, Environment Officer and GIS Expert County Directorate of Environment, Natural Resources, Mr. Joshua K. Mutua, Economist Directorate of County Planning and Budgeting Mr. Richard Mwendwa, Assistant Director Agriculture County Department of Agriculture, Irrigation, Livestock, Fisheries and Cooperative Development Mr. Samuel M. Mburu and DRR Resilience and Capacity Building Technical Assistant National Drought Management Authority, Makueni Ms. Faith M. Kiio. Your efforts will forever live as the Plan will give life to County forests and landscapes.

Lastly, the contribution of the local community and individuals who participated in the process by providing information, their insights and review in developing this plan is highly appreciated.

Japheth M. Kiminza

Chief Officer

Environment, Natural Resources, Mining and Climate Change

DEFINITION OF TERMS

Adaptive capacity: The ability of systems to adjust to potential damage, to take advantage of opportunities, or to respond to consequences.

Afforestation: Planting of new forests on lands that historically have not contained forests.

Carbon sequestration: The uptake of carbon containing substances, in particular carbon dioxide (CO₂), in terrestrial or marine reservoirs.

Climate change adaptation: A human intervention to reduce the sources or enhance the sinks of greenhouse gasses (GHGs).

Climate change: A long-term change in the average weather patterns that have come to define Earth's local, regional and global climates.

Deforestation: Conversion of forest to non-forest use.

Degraded landscapes: Are ecosystems that have lost their natural functions, biodiversity, and services due to human or natural disturbances.

Disaster: Severe alterations in the normal functioning of a community or a society due to hazardous physical events.

Drought: A period of abnormally dry weather long enough to cause a serious hydrological imbalance.

Ecosystem services: Ecological processes or functions having monetary or non-monetary value to individuals or society at large.

Forest and Landscape Restoration: An active long-term process to regain ecological integrity and enhance human wellbeing across deforested, degraded forests and landscapes

Forest: Land spanning more than 0.5 hectares with trees of at least 2 metres and a minimum canopy cover of 15%, and include natural and planted plantation forests on state, community and private land.

Forest Cover: Refers to a land area of more than 0.5ha with a canopy cover of at least 15%, a minimum tree height of 2 meters which is not primarily under agricultural or other specific non-forest land use.

Rangelands: Vast undisturbed natural resources and landscapes in the form of grasslands, bushland, woodlands, wetlands and deserts.

Restoration: Any intentional activity that initiates or accelerates the recovery of an ecosystem from a degraded state.

Reforestation: The natural or intentional restocking of existing forests and woodlands (forestation) that have been depleted, usually through deforestation but also after clearcutting.

Tree Cover: Area covered by tree patches of less than 0.5 hectares outside recorded forest areas

Watershed: An area of high ground which divides two or more river systems, so that all streams on one side flow into one river and those on the other side flow into a different river

Wetland: A distinct ecosystem that is flooded or saturated by water, either permanently (for years or decades) or seasonally (for weeks or months)

MAKUENI COUNTY FOLAREP- DRAFT

EXECUTIVE SUMMARY

Makueni County Forests and Landscape Restoration Implementation Plan envisions restoration of 100,000 hectares of degraded forests and landscapes. The plan aims to address the following challenges; deforestation and habitat loss, soil degradation, Climate Change, biodiversity decline and economic and social challenges due to degraded natural resources.

The goal for the Makueni FOLAREP is to accelerate County actions towards restoring the national target of 5.1 million hectares of deforested and degraded landscapes by 2030 and contribute to the achievement of County, national aspirations and international obligations. The overall objective for the plan is to restore 100,000 hectares of degraded landscapes in Makueni County through integrated forest and landscape restoration approaches for improved ecological functionality and social economic benefits by 2030.

The plan has five specific objectives;

1. To develop and strengthen policies, regulatory frameworks and institutional coordination for enhanced FLR implementation.
2. To restore 100,000 ha of degraded forests and landscapes by 2030 for improved biodiversity and climate change impacts reversal.
3. To mobilize resources locally, nationally and internationally from public and private partnerships for FLR implementation.
4. To promote inclusive nature-based value chains and adoption of alternative sources of livelihoods for improved wellbeing of communities.
5. To enhance adoption of FLR monitoring, evaluation, research & learning (MERL), knowledge management and information sharing.

The Makueni County Forests and Landscape Restoration Implementation Plan was developed through a participatory, comprehensive and collaborative process, involving key stakeholders, experts, and community representatives. The process began with the nomination of the Technical Working Group (TWG) who were involved in development of the plan. Subsequently, a series of meetings with the County Environment Committee (CEC), consultations, workshops, and public engagement initiatives were conducted to gather input and insights from various stakeholders, ensuring that the plan was inclusive and representative of the community's needs and aspirations. This iterative approach led to the formulation of a strategic and actionable plan that outlines specific restoration goals, priorities, and strategies for the sustainable management of forests and landscapes in Makueni County.

The implementation of the Makueni FOLAREP will leverage existing County structures such as; the County Forest and Landscape Restoration (FLR) Advisory/Steering Committee, co-chaired by the Governor and County Commissioner. The FLR advisory committee will oversee policy direction and resource mobilization for FLR activities, engaging various government departments and implementing partners; the County Environment Committee (CEC), led by the CECM for

Environment, will focus on coordinating and advising the Governor on FLR and resource mobilization at the county level; the County FLR Technical Committee, composed of multiple organizations and experts, will provide technical support and recommendations for FLR implementation, work plans, and budgets; the Sub Committee on Natural Resources shall handle specific FLR activities within the CEC; the County FLR Secretariat shall support the CEC by coordinating FLR activities, communication, knowledge management, and resource mobilization; the Sub County FLR Steering Group (also referred to as Sub County Steering Group under NDMA) shall ensure FLR coordination across multiple wards within the County; while the Ward FLR Planning and Coordination Committee at the community level shall coordinate, mobilize, educate, and monitor FLR activities, engaging a diverse set of community representatives. Together, these committees will work in tandem to facilitate and oversee the successful implementation of FLR initiatives in Makueni County.

Resource mobilization through public and private sector partnerships, international organizations, and grants is essential to realize the ambitious goal of this restoration plan. Collaboration with government agencies, NGOs, and local stakeholders is also central to the plan's success.

CHAPTER 1: INTRODUCTION

Makueni County is one of the 47 counties in Kenya and it is situated in the South Eastern part of the Country. It borders Machakos County to the North, Kitui County to the East, Kajiado County to the West and Taita Taveta County to the South (Figure 1). The County is located between Latitudes $1^{\circ} 31' 42.3912''$ and $2^{\circ} 59' 47.1552''$ South and Longitudes $37^{\circ} 8' 34.1844''$ and $38^{\circ} 31' 4.4616''$ East. It covers an area of $8,176.7 \text{ KM}^2$. The County has a population of 987,653 and is predominantly inhabited by the Akamba community who form approximately 97% of the total number of the inhabitants.

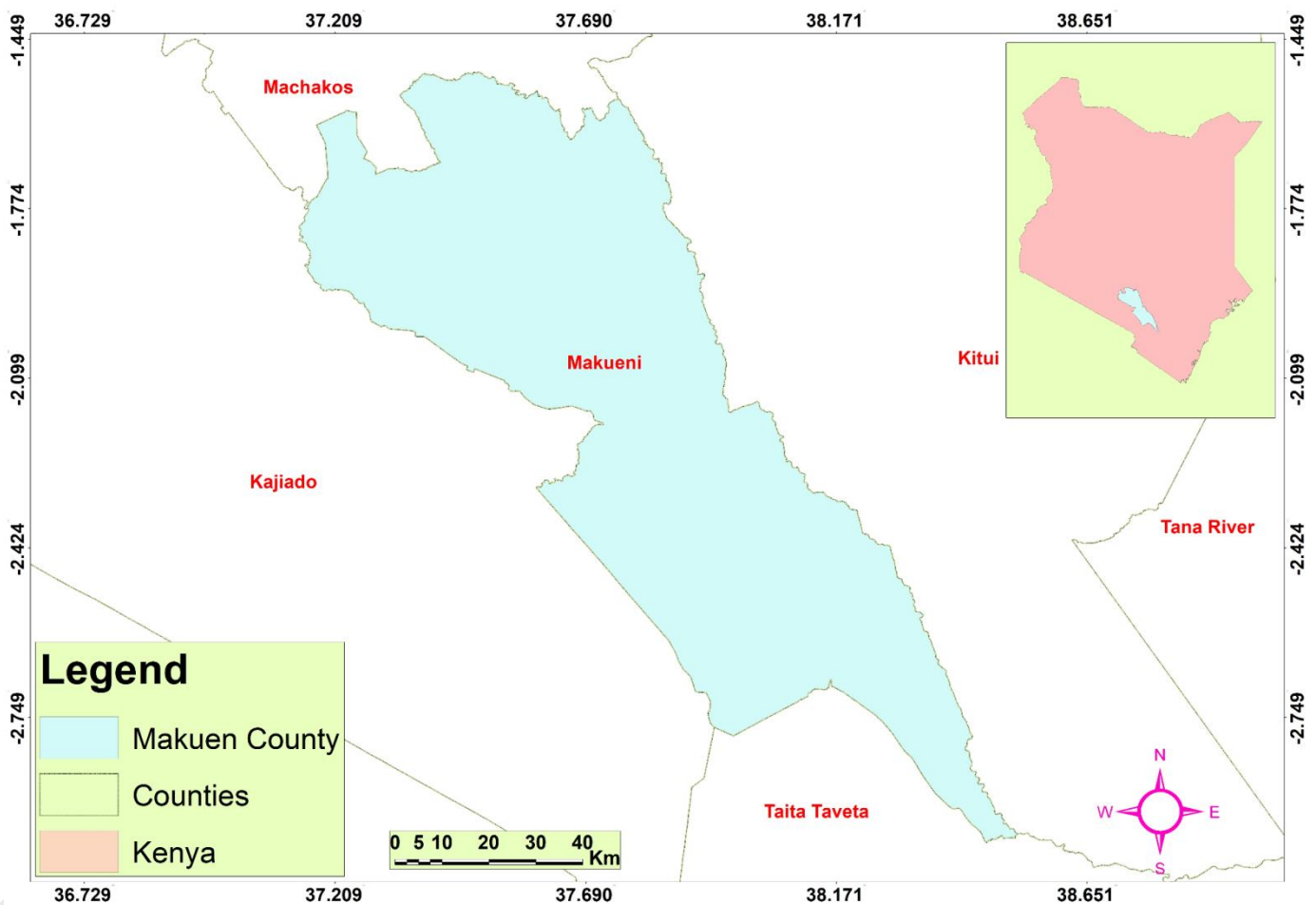


Figure 1: Makueni County Map

Source: Makueni County Spatial Plan

The County falls under the Arid and Semi-arid lands (ASAL) of Kenya, with relatively low rainfall and prolonged dry periods hence a water scarce County. Majority of the population depend on subsistence agriculture that mostly depend on rains as the main economic activity and natural

resources to meet their daily livelihoods, this has led to competition in resource use mainly land and water thus exacerbating degradation. Most farming practices are unsustainable and inappropriate coupled with other anthropogenic activities carried out in the settlement areas that significantly contribute to soil erosion and reduction of water quantity and quality. In addition, soil erosion has led to deterioration of soil fertility consequently leading to low production per unit area.

Degradation of forests and other landscapes (farmland, riparian and rangeland etc.) in Makueni is primarily linked to high population pressure as the majority of the poor significantly depend on natural resources to make ends meet. With a population density of 120 persons per KM² and annual growth rate of 5.1% and poverty rate of 34.8%, a significant part of the pressure is placed on land and water resources. Illegal and unsustainable logging for charcoal production, woodfuel and timber has contributed largely to loss of forest ecosystem goods and services.

Holistic landscape restoration approaches that balance both socio-economic, environmental goals and diverse needs of various sectors and players are needed.

The concept of forest and landscape restoration (FLR) is an integrated approach that may provide nature-based solutions aimed at improving the biodiversity, ecosystem services, productivity and well-being of communities.

There have been restoration efforts being undertaken in the County by different actors that have not borne desired results because of the silo approach. FOLAREP for Makueni County will also provide an opportunity for an amalgamated implementation of interventions identified in this plan to collectively address those challenges.

1.1 Justification and rationale for Makueni County FOLAREP

Forests and landscapes in Makueni are under immense pressure both from natural and anthropogenic factors resulting in slightly more than 13% of the total county area being degraded. Kenya committed herself to the Bonn Challenge and AFR100 in 2016 to restore 5.1 million hectares of deforested and degraded lands in order to address the associated challenges identified in the Country. Whereas, the National FOLAREP 2022-2027 targets to restore 2.55 million hectares of degraded forests and landscape. Therefore, it is necessary to cascade the National FOLAREP to Makueni County to guide the implementation towards restoring ecological functionality of forests and landscapes so as to achieve local, national and international restoration targets. This plan is in line with the County Integrated Development Plan (CIDP III) and the Makueni Vision 2025 targets on restoration and environmental conservation.

1.2 The FOLAREP formulation process

This plan was developed in line with the National FOLAREP (2023-2027) that included nomination of the County Secretariat and Technical Working Group (TWG) constituted by the County Environment Committee from different County and National Government agencies in October 2023.

The draft produced by the TWG was subjected to the following process;

- i. Technical review
- ii. CEC sensitization
- iii. Stakeholder engagement
 - a. Cabinet sensitization
 - b. Assembly Environment Committee engagement
 - c. Public participation/Sensitization
- iv. Stakeholder validation and adoption
- v. Presentation to Cabinet
- vi. Forwarding to Assembly
- vii. Governors assenting
- viii. Makueni FOLAREP launch

1.3 Title and Duration of the Plan

The title of the plan is Makueni County Forests and Landscape Restoration Implementation Plan (FOLAREP), 2023-2030. This is a seven-year plan; which will contribute to the restoration of degraded forests and landscapes.

1.4 Amendment/Revision of the Plan

A midterm review for the plan is recommended to measure the progress and impacts for possible review. It is envisaged that the review may take place three years after commencement of the implementation process. The amendment process will be guided/advised by future policy demands and new commitments on the subject matter by either the County Government or National Government or both.

CHAPTER 2: SITUATIONAL ANALYSIS

2.1 Enabling Legal frameworks policies and strategic underpinnings for FLR Implementation

Table 1: National laws and policies

National Laws and policies	National Laws and policies details
The Constitution of Kenya, 2010	Promote Sustainable utilization of natural resources and the need to maintain a national tree cover of 10%
Forest Conservation and Management Act (FCMA), 2016	Provides for management and conservation of forests and associated resources.
Water Act, 2016	Provide for the regulation and management of water supply and water catchments.
The Environment Management and Coordination Act, 1999 (Amended in 2015)	Provides for conservation of forests and natural resources, including conservation easements, restoration orders, and environmental impact assessment.
Irrigation Act, 2019	Provide advisory and guidelines on irrigated landscapes
Climate Change Act, 2016	Guiding Kenya's climate change response through mainstreaming climate change into sector functions
Land Act, 2012, 2016	Provides for management of land and land-based resources, and for connected purpose
Physical and Land-use Planning Act, 2019	Provides for the planning, use, regulation and development of land
Wildlife (Conservation and Management) Act, 2013	Provides for conservation and management of wildlife protected areas.
Community Land Act	To provide for the recognition, protection and registration of community land rights
provide for management and administration of community land	
Provide for the role of county governments in relation to unregistered community land	

National Laws and policies	National Laws and policies details
Forest (Participation in Sustainable Forest Management) Rules, 2009	Rules provide for sustainable forest harvest and community management of forest resources and provide with respect to granting of a permit and licenses
Forest (charcoal) Rules, 2009	Regulate charcoal production and transportation
Forest Harvesting Rules,2009	Provide rules for the commercial harvesting of timber in state forests, provisional forests, registered private forests, and local authority forests
Agriculture (Farm Forestry) Rules,2009	Provides for sustainable land management practices and agroforestry
The Energy Act, 2019	Provides for development and use of renewable energy technologies, including biomass
County Government Act, 2012	Provides for implementation of national policies on forest management and conservation
Agriculture Policy Draft 2019	sustainable use of natural resources, particularly land and water, which are expected to boost agricultural production and productivity establishment of farm forestry where every person who owns or occupies agricultural land shall establish and maintain a minimum of 10% of the land under farm forestry
Kenya Agricultural and Livestock Research Act No. 17 of 2013	promotes soil and water conservation and prevents the destruction of vegetation
Public-Private Partnerships (PPP) Act, 2013	Provides for regulatory framework for public private partnerships
The Timber Act, Cap. 386,1972	Provides for the more effective control of the sale and export of timber
Mining Act, 2015	Provide for regulations on mining and any dealings in minerals and reclamation of degraded land
Intergovernmental Relations (Amendment) Act	framework for consultation and cooperation between the national and county government

National Laws and policies	National Laws and policies details
Climate Change fund regulations, 2020	Public fund designed to finance local adaptation and managed at the discretion of the county government
National Environmental Policy	Provide for conservation and management of environment and natural resources
National Land Policy	Provide for rights of communities to access resources upon which they depend
National Land Use Policy	Provide legal, administrative, institutional and technological framework for optimal utilization and productivity of land related resources in a sustainable and desirable manner at national, county and community levels
National Land Reclamation Policy 2013	Provide for the protection, management and restoration of marginal and degraded lands
National Climate Change Framework Policy	committed towards ensuring and strengthening the adaptation of our natural ecosystems and human communities to climate change
National Wildlife Conservation and Management Policy	Provides for sustainable management of Kenya's wildlife resources
National Energy Policy	Provides for efficient and green energy sources
National Food and Nutrition Security Policy	Promoting sustainable food production systems with particular attention to increasing soil fertility, agro-biodiversity, organic methods and proper range and livestock management practices, support sustainable irrigation and water management systems.
National Policy on Gender and Development	achieve gender equality and women's empowerment in national development so as to enhance participation of women and men, boys and girls, vulnerable and marginalized groups for the attainment of sustainable development
Bamboo National Policy, 2019	Increasing area grown with bamboo enabling commercialization and value-addition.

National Laws and policies	National Laws and policies details
Vision 2030	Provides for social and economic transformation by 2030
The FLR Implementation Action Plan 2022-2026 (FOLAREP)	Provides for rehabilitation of 2.55 million ha
National Climate Change Action Plan	Sets out the path towards low carbon climate resilient development in a manner that prioritizes adaptation
National REDD+ Strategy	Identified the key drivers of deforestation and forest degradation
Kenya Strategic Investment Framework for Sustainable Land Management	Promotes appropriate management practices, enables land users to maximize the economic and social benefits from the land while maintaining or enhancing the ecological support functions of the land resources
Drought and risk management policy	Provides for coordination and management of drought and related emergencies
National Land Reclamation Policy 2013	Provide for the protection, management and restoration of marginal and degraded lands
National Climate Change Framework Policy	committed towards ensuring and strengthening the adaptation of our natural ecosystems and human communities to climate change
National Wildlife Conservation and Management Policy	Provides for sustainable management of Kenya's wildlife resources
National Energy Policy	Provides for efficient and green energy sources
National Food and Nutrition Security Policy	Promoting sustainable food production systems with particular attention to increasing soil fertility, agro-biodiversity, organic methods and proper range and livestock management practices, support sustainable irrigation and water management systems.
National Policy on Gender and Development	Achieve gender equality and women's empowerment in national development so as to enhance participation of women and men, boys and

National Laws and policies	National Laws and policies details
	girls, vulnerable and marginalized groups for the attainment of sustainable development
Bamboo National Policy, 2019	Increasing area grown with bamboo enabling commercialization and value-addition.
Vision 2030	Provides for social and economic transformation by 2030
The FLR Implementation Action Plan 2022-2026 (FOLAREP)	Provides for rehabilitation of 2.55 million ha
National Climate Change Action Plan	Sets out the path towards low carbon climate resilient development in a manner that prioritizes adaptation

Table 2: Multilateral Environmental Agreements

Multilateral Environmental Agreements (MEAs)	Multilateral Environmental Agreements (MEAs) Details
Paris Agreement, 2015	Sets out a global framework to avoid dangerous climate change by limiting global warming to well below 2°C and pursuing efforts to limit it to 1.5°C
Sustainable Development Goals (SDG)	Provides for targets to end poverty and inequality, protect the planet, and ensure that all people enjoy health, justice and prosperity. It is critical that no one is left behind.
The African Forest Landscape Restoration Initiative (AFRI 100)	Is a country effort to restore 100 million hectares in Africa as part of the Bonn challenge.
Africa Agenda 2063 under the African Union	This an Africa's development blueprint to achieve inclusive and sustainable socio-economic development over a 50-year period
United Nations Framework on Climate Change (UNFCCC)	Aims to stabilize greenhouse gas concentrations in the atmosphere at a level that will prevent dangerous human interference with the climate system
United Nations Conventions to Combat Desertification	Provides for actions to manage land degradation and drought promptly and effectively.

Table 3: County laws and policies

County Laws, Policies and Plans	County Laws, Policies and Plans
Makueni Vision 2025	Provides for actions to address socio-economic development challenges
Makueni County Spatial Plan 2019-2029	Provides framework for spatial development
Makueni County Environment Action Plan 2018-2022	Gives framework on Environmental Management and Conservation within the County
Makueni Water Policy, 2020	Proposes a framework for an integrated approach to planning, sustainable development & management of water resources, and progressive realization of the human right to water, sanitation and environment
Makueni County integrated Development Plan, CIDP III	A five year plan to facilitate development and environmental management
Makueni Environment and Climate Change Policy, 2020	Aims to provide a holistic framework to guide the coordination and management of climate change
Makueni County Water Act	Provides for establishment of structures to enhance water development and management
Makueni County Sand Conservation and Utilization Act 2015	Provides for conservation and utilization of sand resources
Makueni County Climate Change Act, 2022	Provides for structure to mainstream climate change and enhance community resilience to climate shocks
Makueni County Climate Change Action Plan 2023-2027	Provides framework for enhancing climate resilience
The Makueni County Agriculture and Livestock Policy, 2020	Provides for integrating Agroforestry in all Agroecological zones to enhance productivity

2.2 Priority landscapes in Makueni

2.2.1 Forest lands

The gazetted forests account for 150.2 km² while non gazetted (County) forests account for 177.88 km². There are 6 Community Forest Associations (CFAs) (Table).

Table 4: KFS Gazetted forests

Source: Kenya Forests Service, Makueni County

Table 5: Makueni County Gazetted Forests CFAs

Source: Kenya Forests Service, Makueni County

Forest Name	Forest	Block		Size (ha)	Status
Mbooni	Mbooni Forest		11	615.10	Well conserved
Makuli	Kibwezi Forest		1	3845.20	Partly degraded
Nthangu	Kilungu Forest	Kilungu Block		2701.90	Partly degraded
Mbooni	Kilungu Forest	Kenze Block		1992.70	Partly degraded
Kibwezi				5849.6	Well conserved
Nzaui	Makuli Forest	Nzaui Block			
Total				15,004.5	
Makuli	Makuli Forest	Makuli Block			

Table 6: Makueni County Forests

2.2.2 Agricultural landscapes

The county has a total of 5,042.7 Km² and 1,762.71 km² arable and non-arable land, which accounts for 74% and 21.9% of the total County surface, respectively. Most of the arable land or 6% (480.9 Km²) is used for crop cultivation purposes, down from 9% in 2000.

The County has potential in horticulture and dairy farming especially the hilly parts of Kilungu and Mbooni. The lowlands, including Kathonzweni, Mbooni East, Nzaui and Makueni are used for livestock rearing, cotton and fruit production.

The County has three major livelihood zones (LZ) namely: marginal mixed farming livelihood zone occupied by 40 percent of the total county population while mixed farming-coffee, dairy and irrigation and mixed farming - food crops, cotton, and livestock are each occupied by 30 percent of the total county population. The main industrial crops grown are cotton, coffee and sisal while the

S/NO.	Forest name	Division/Ward	Area (ha)	Status
1.	Kiou, Ndulume, Kenze	Kasikeu	188	Partly degraded
2.	Yekanga	Mavindini	100	Partly degraded
3.	Mavindini	Mavindini	100	Partly degraded
4.	Mutungu Hill	Kilungu	8	Partly degraded
5.	Mbui Nzau, Kai A+B, Kalema	Nguumo, Kikumbulyu South	16,800	Degraded
6.	Kalumbi and Mwambwani Hills	Mbitini	109	Partly degraded
7.	Kitundu A+B, Kyangoma, Nduuni, Salamala, Mukatini	Mbooni	47	Partly degraded
8.	Kathekani, Ititi, Kalimakoi, Muliluni	Mtito Andei	125	Partly degraded
9.	Ithumba	Nguu	5	Partly degraded
10.	Nzaini Nursery	Tulimani	2	
11.	Nzueni, Muvau, Unoa	Wote	304	Partly degraded
Total			17,788	

main cereal food crops grown are maize, sorghum and millets. The main pulses grown are green grams, cowpeas, pigeon peas, Dolichos lablab and beans. The root crops are sweet potatoes, cassava and arrowroot. Horticulture is a major enterprise in the region producing vegetables and fruits for both the local and the export market. The key vegetables grown are kales, capsicum, baby corn, cabbages, tomato, and Asian vegetables while the main fruit crops are citrus, mango, pawpaw, avocado, banana and watermelon. (Jaetzold and Schmidt 1982/83)

Agriculture contributes 78% of the total household income in Makueni County and is the driver of the County's economy. Additionally, the sector contributes 53.2 % of the total Gross County

Product (GCP). However, the sector contribution towards the National gross value added is 1.68%. (KNBS Gross County Product Report 2019).

Agriculture sector suffers from adverse effects of climate change, forest degradation, deforestation, desertification, unpredictable weather conditions such as drought due to climate change, pollution, soil erosion, human-wildlife conflict and salinity. This underscores the importance of establishing agro-ecological zones and land use zones to curb the adverse effects of climate change.

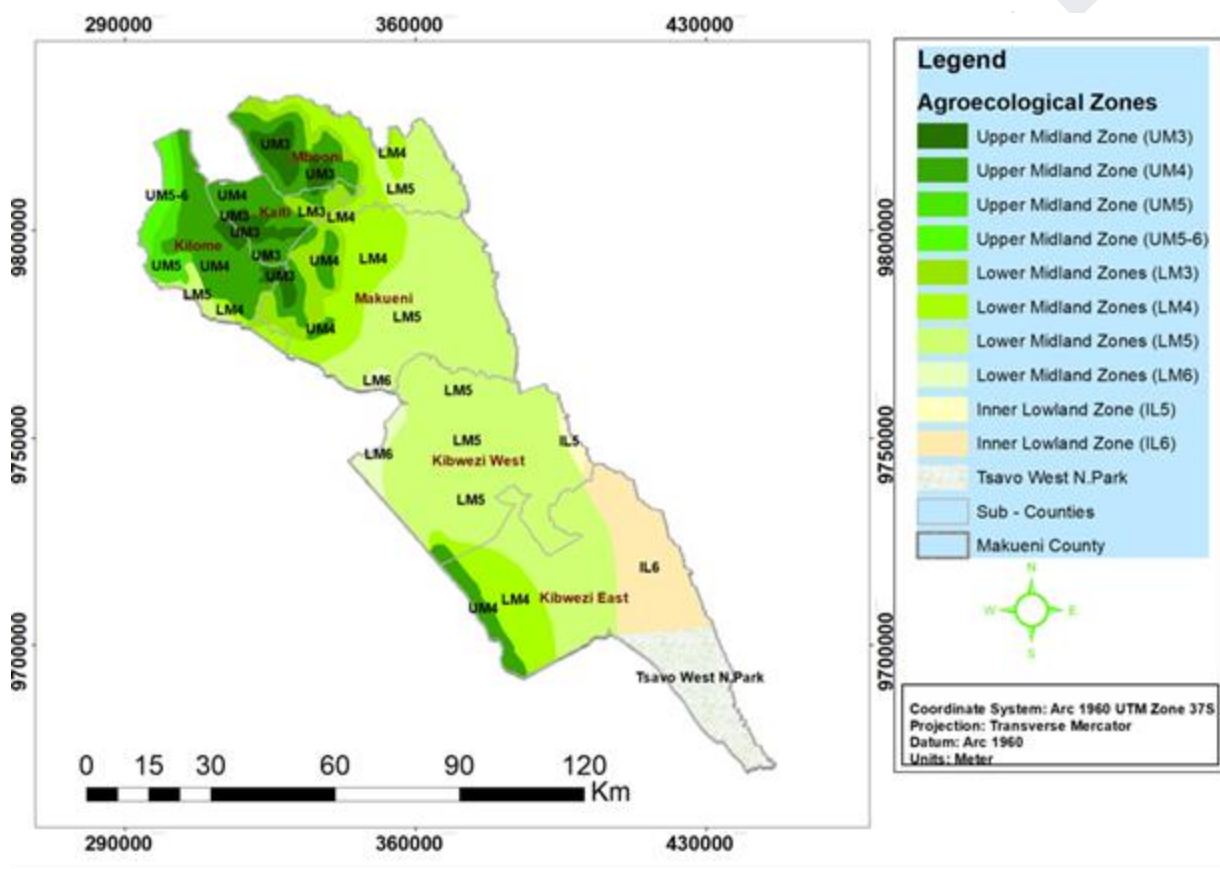


Figure 2: Agroecological Zones

Source: Farm management hand book

Table 7: Agroecological zones and their description

Zones	Area in Km2	Areas	Description
Inner Lowland Zones	670		
IL5	39	Parts of Kibwezi East/Kibwezi West	Inner Lowland Livestock-Millet Zone
IL6	631	Parts of Kibwezi East/Kibwezi West	Inner Lowland Ranching Zone
Lower Midland Zones	5352	Parts of Kibwezi East/Kibwezi West/Makueni	
LM3	389	Parts of Kibwezi East/Kibwezi West/Makueni	Cotton Zone
LM4	1094	Parts of Kibwezi East/Kibwezi West/Makueni	Marginal Cotton Zone
LM5	3757	Parts of Kibwezi East/Kibwezi West/Makueni/Kilome	Livestock - Millet Zone
LM6	112	Parts of Kibwezi East/Kibwezi West/Makueni/Kilome	Midland Ranching Zone
Upper Midland Zones	1691		
UM3	311	Parts of Kilungu Upper Makueni and Mbooni west/Kilome.	Marginal Coffee Zone, Avocado, Macadamia
UM4	1150	Some parts of Kibwezi, Kilungu, Upper Makueni, Mbooni west & East/Kibwezi East (Kyulu)	Maize - Sunflower Zone-Cotton
UM5	138	Some parts of Kilome	Livestock - Sorghum Zone. Cotton
UM5-6	93	Some parts of Kilome	Livestock/Sorghum-Upper Midland Ranching Zone

Source; Makueni County Statistical Abstract 2022

2.2.3 Rangelands

In 2016, bushland accounted for 48% (3893 Km²) of the total land cover, up from 27% in 2000. Within the same period, grasslands accounted for 5% (393.4 Km²) of land cover in Makueni, down from 7% in 2000. The major livestock species kept in the County are cattle, sheep and goats. (Makueni County Spatial Plan 2019-2029). Livestock sales account for between 37-87% of household incomes in the rangeland parts of the county. Cattle rearing in the County faces serious food shortages in the dry season as pasture gets depleted in the lower parts of Kibwezi West (Kathekani), Makindu (Nguumo), Makueni (Kitise) and Kaiti (Kee).

2.2.4 Wetlands and riparian areas and watersheds

There is no lake in Makueni County although marshlands account for 0.01% (5.7 Km²) of the total county surface area, down from 1.1 in 2000. Athi River is the main seasonal river traversing the County. However, there are significant wetlands in the County as per the table below.

Table 8: Wetlands in Makueni County

S/No	Name	Locality	Area	Type of Vegetation	Use of the wetland	Ownership status	Threats	Remarks
1	Mtito andei	Mtito	820.5 ha	indigenous trees water lily	Irrigation Livestock	Community	Not fenced Encroachment	Demarcation needed
2	Simba	Masimba		indigenous trees water Lily	Irrigation Livestock	Community	Not fenced Encroachment	Demarcation needed
3	Makindu	Makindu	980 ha	indigenous trees water Lily	Irrigation Livestock	Community	Not fenced Encroachment	Demarcation needed
4	Kibwezi Springs	Kibwezi		Indigenous trees	Now restricted	Community	Partly fenced	Need to extend the fence to Kitui bridge near Kibwezi town
5	Mutala			Grass	School use part as	School	Not fenced, encroached	Demarcation needed

S/No	Name	Locality	Area	Type of Vegetation	Use of the wetland	Ownership status	Threats	Remarks
					ply grounds			
6	Kikoo	Kibwezi	18 ha	Water Lilly	Restricted	Community	None	Demarcation need Gazettement
7	Kivale			Swampy Indigenous trees	Not used	Community		Demarcation need Gazettement
8	Ndungutuni			Pond Indicator trees	Irrigation Livestock	Public	Not fenced	Demarcation need Gazettement
9	Kyaumbwa			Earth dam Grass	Irrigation Livestock	Community	Not fenced	Demarcation need Gazettement
10	Isyukoni			Water Lilly Natural vegetation cover	Irrigation Livestock	Community	Not fenced	Demarcation need Gazettement
11	Wetaa	Mbooni		Water Lilly	Arrow roots planted near the water point Domestic	Public	Encroachment Catchment degraded	Demarcation Gazettement
12	Wathi	Kikima		Nappier grass	Domestic Water use	Community	Not fenced	Demarcation Gazettement
13	Kilui	Kibwezi		Indigenous trees Water Lilly	Livestock Irrigation	Community	Not fenced Encroachment	Demarcation Gazettement

S/No	Name	Locality	Area	Type of Vegetation	Use of the wetland	Ownership status	Threats	Remarks
14	Kiboko	Kiboko		Indigenous trees Water Lilly	Livestock Irrigation	Public	Partly fenced Encroachment	Demarcation Gazettement
15	Mbui Nzau	Makindu		Natural vegetation	Livestock	Community	Encroachment Not fenced	Demarcation Gazettement
16	Ndituni	Tawa				Community		Demarcation Gazettement
17	Umani	Kibwezi				KFS protected area	Not fenced	Demarcation Gazettement
18	Kiangini	Makindu		Natural vegetation	Livestock	Community	Encroachment	Demarcation Gazettement
19	Kyuu	Mbooni		Water lily	Irrigation	Community	Not fenced	Demarcation Gazettement
20	Kwa Musyesya	Mbooni		Water Lilly	Livestock Irrigation	Public	Fencing not done	Demarcation Gazettement
21	Muoni	Kathiani		Water Lilly Grass	Farmin g	Public	Not fenced Encroachment	Demarcation Gazettement
22	Mulima	Mbooni		Water Lily Natural vegetation	Farmin g	Community	Not fenced Encroachment	Demarcation Gazettement

Source: WRA Lower Athi Subcatchment

The County has 6 main watersheds; Thwake, Kikuu, Makindu/Kiboko/Muooni, Kibwezi, Thange, Kambu and Mtito Andei that feed into River Athi.

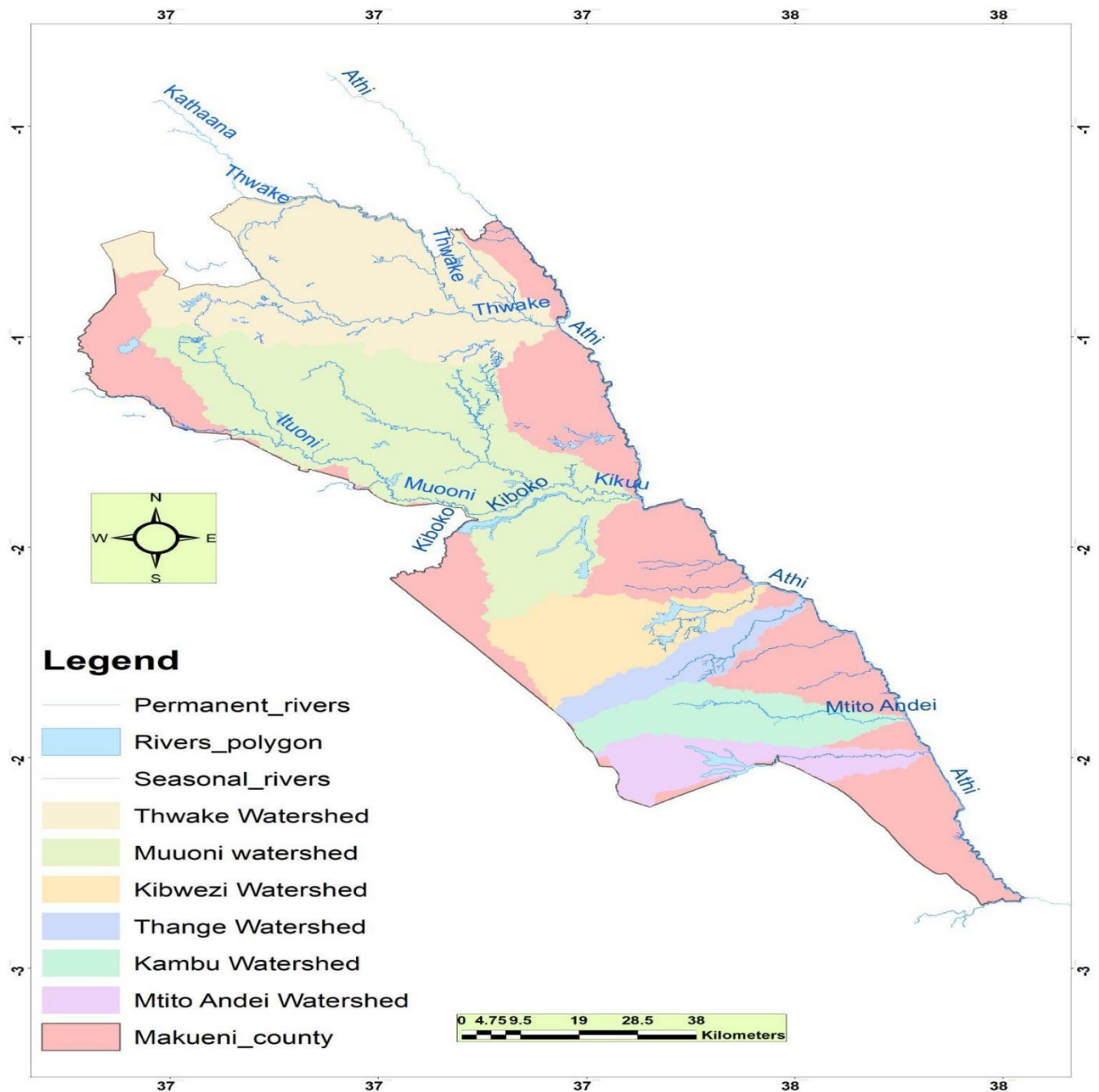


Figure 3: Main watersheds in Makueni County

Source: Makueni County Spatial Plan and Digital Elevation Model from Earth Explorer

2.2.5 Other landscapes (urban, infrastructure, settlement areas)

Built-up areas and artisanal mining sites account for 8% (644.5 km²) of the total county area, representing a 6% increase between 2000 and 2016. Denuded land is approximately 16 % (1247.1

km2) of the total land surface in Makueni and is of very marginal nature (Makueni County Spatial Plan 2019-2029).

2.2.6 Summary of the landscapes

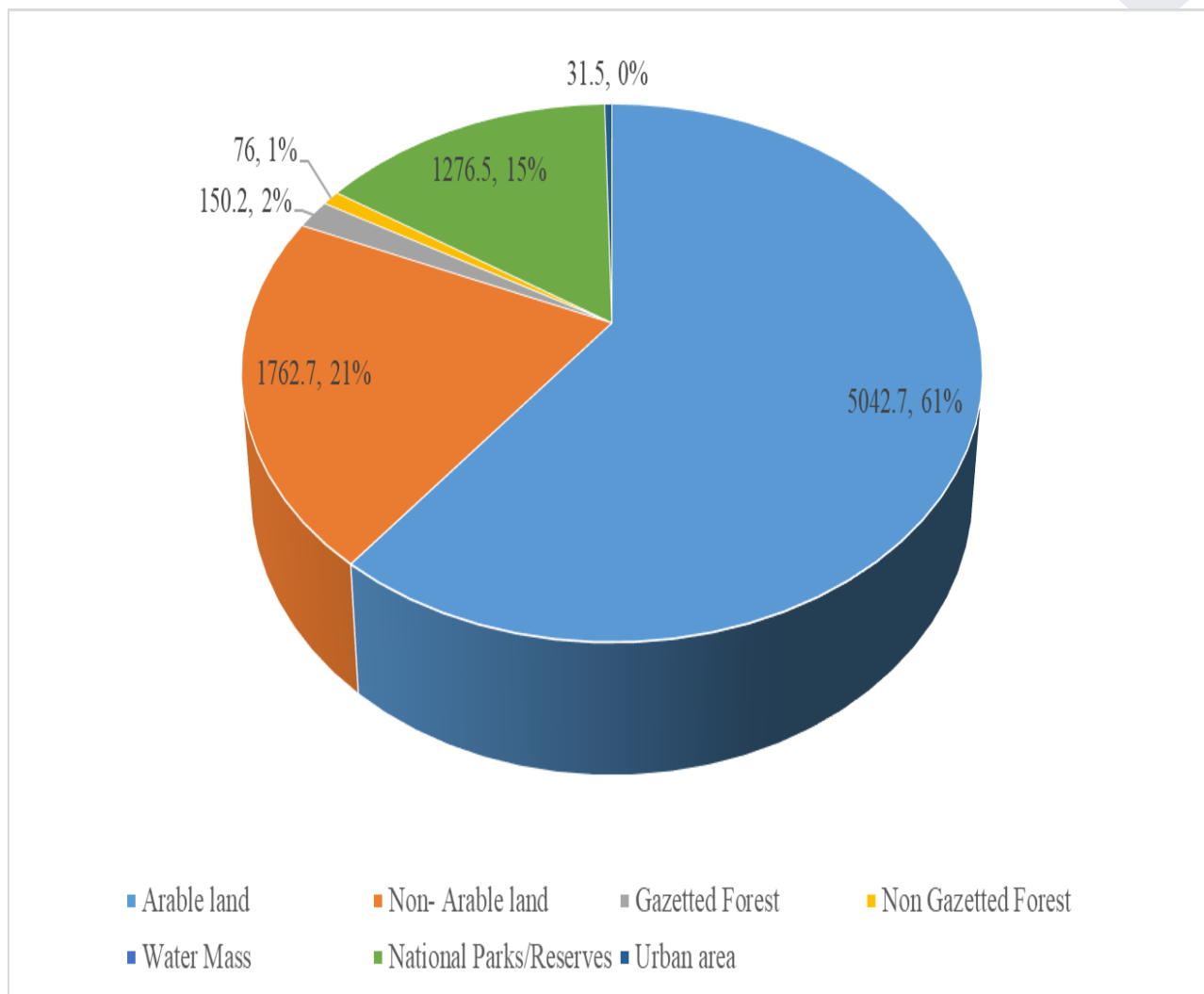


Figure 4: Makueni Landscapes

Source: Makueni County Statistical Abstract 2022

2.3 Historical analysis of land cover changes/Level of degradation in Makueni County

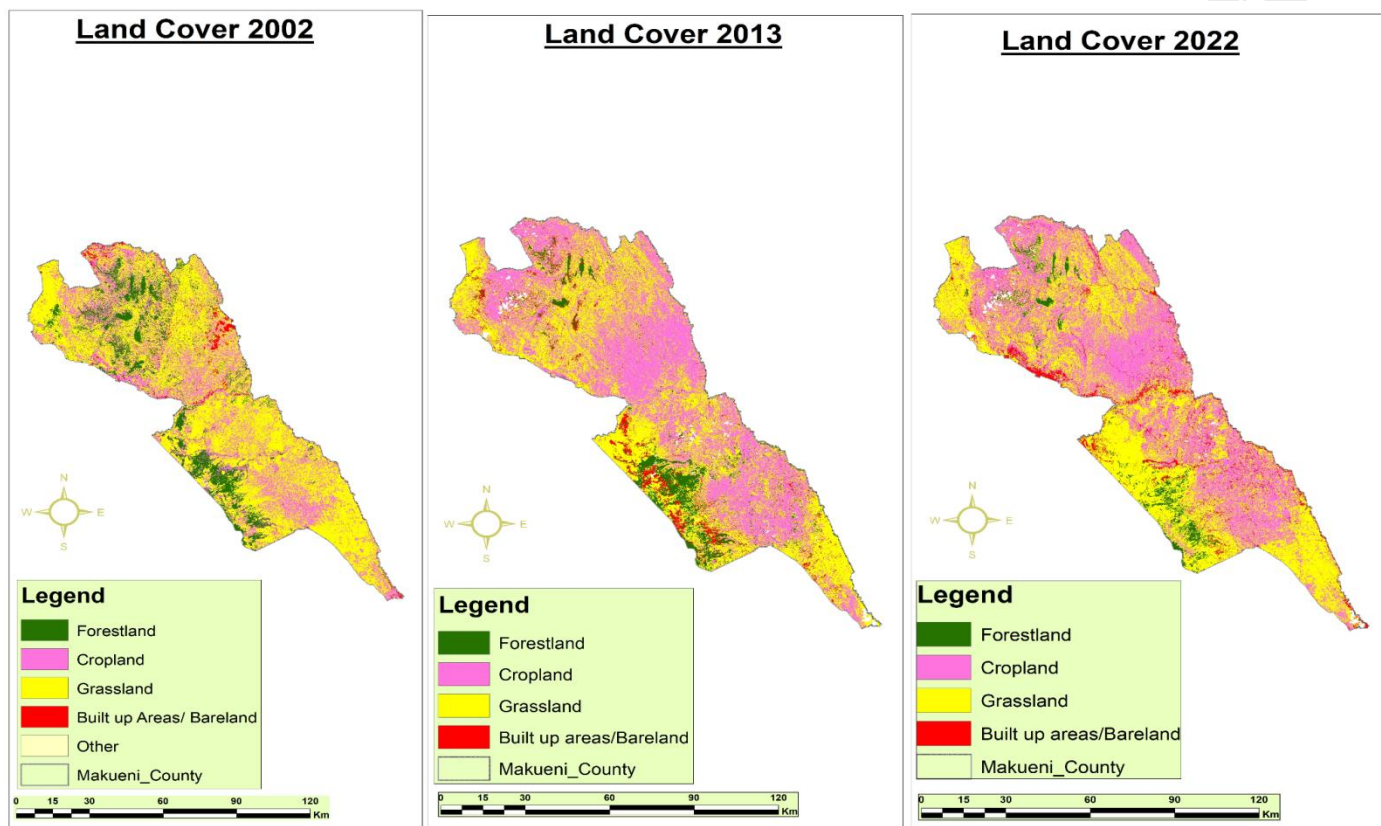


Figure 5: Land Cover Maps (2002,2013,2022)

Source: SEPAL (System for earth observation, data access, processing, analysis for land monitoring)

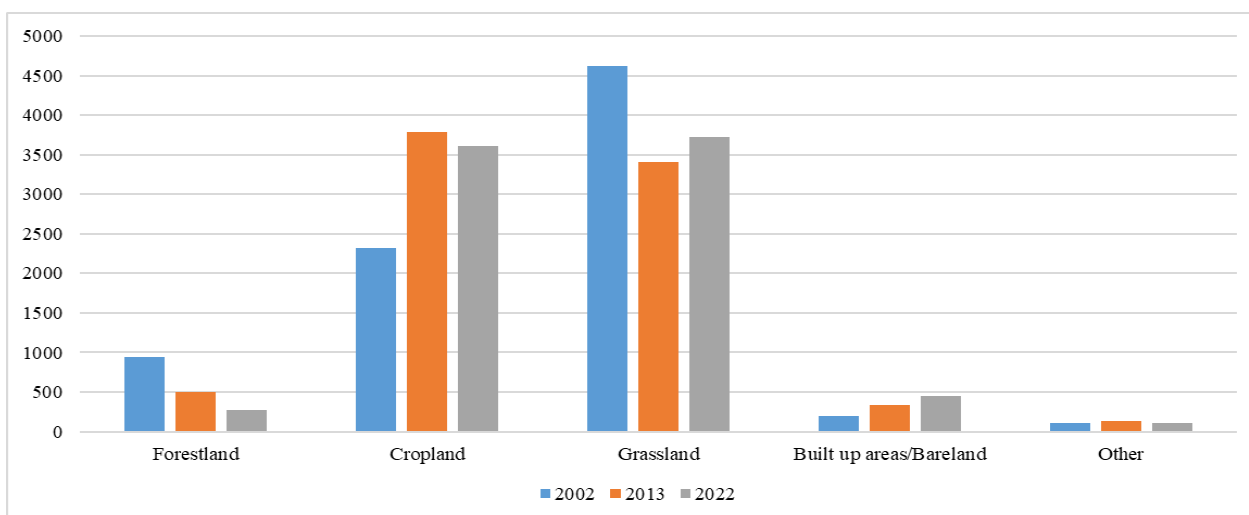


Figure 6: Land Cover Change Infograph

Source: SEPAL (System for earth observation, data access, processing, analysis for land monitoring)

The analysis revealed that forestland has been diminishing and built up areas/bareland have been increasing.

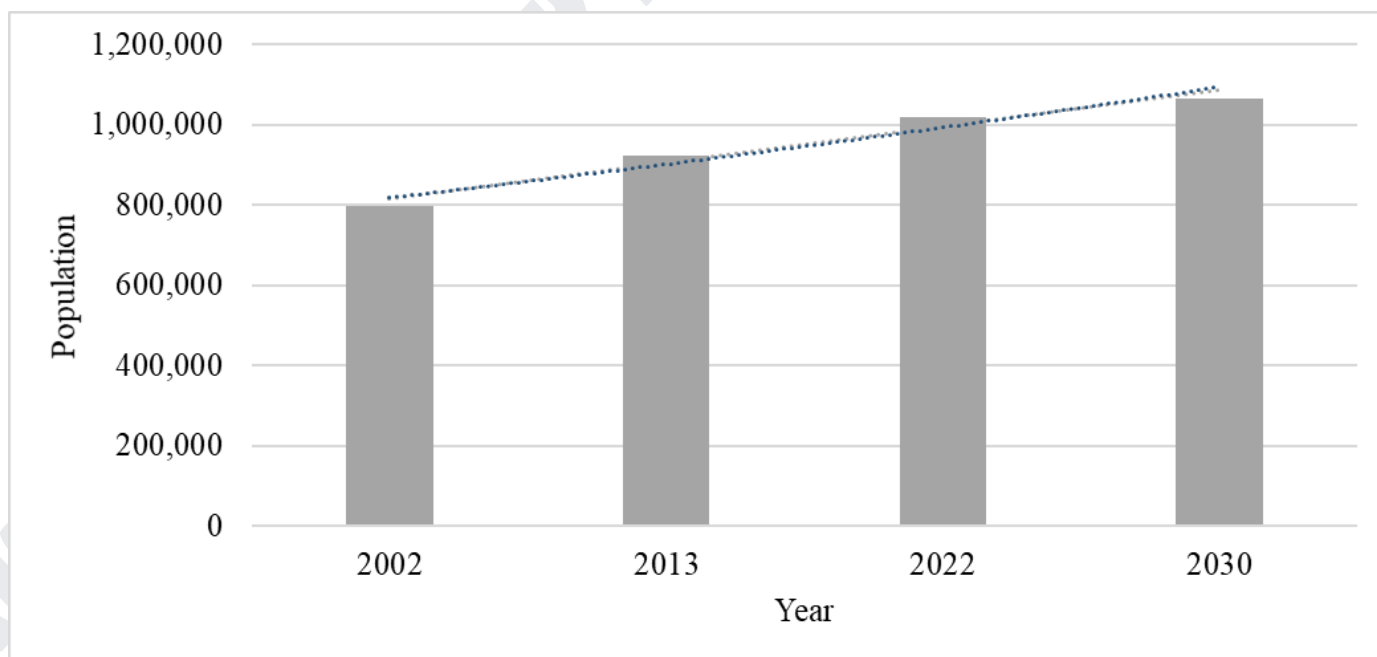


Figure 7: Makueni County Population Projections Trend

The figure above shows an increasing trend in population which has an impact on natural resources. The plan should put into consideration the expected population increase and put strategies for sustainable utilization of the forests and landscapes.

2.3.1 FLR Hotspots in the County

According to the National Drought Early Warning Bulletin 2023 by NDMA, the County was on alert drought phase. 15 Wards of the 30 Wards were frequently hard hit by drought. This trend has been somehow consistent in the last three decades. the Cover Change detention maps indicates several FLR hotspots across the County that can be summarized as below

Table 9: FLR hotspots in Makeni County

SUB COUNTY	Ward	Thematic Area	Environmental Issue	Location
KAITI	KILUNGU	Forestry	<ul style="list-style-type: none"> Illegal Grazing 	<ul style="list-style-type: none"> Kilungu Forest
		Landscape	<ul style="list-style-type: none"> Gullies 	<ul style="list-style-type: none"> Nthunguni Itambani Matua Kyathani Salvation Army Kathuluni
		Wetlands/ water sector	<ul style="list-style-type: none"> Pollution Siltation 	<ul style="list-style-type: none"> Ilovoto Muthunzuuni Usi Uasa
	ILIMA	Forestry	<ul style="list-style-type: none"> Illegal Grazing 	<ul style="list-style-type: none"> Charles Mbindyo Kyambeke
		Landscape	<ul style="list-style-type: none"> Gulleys 	<ul style="list-style-type: none"> Kwa Malia Katikomu Mutomboa
		Wetlands/ water sector	<ul style="list-style-type: none"> Pollution 	<ul style="list-style-type: none"> Along Ndolo Valley Musuvi stream
	KILALA	Forestry	<ul style="list-style-type: none"> Illegal Grazing Bush Fire Outbreaks Firewood/Tree Felling 	<ul style="list-style-type: none"> Katende Mutula Forest Kilala Forest Kyai Forest Nthangu Forest
		Landscape	<ul style="list-style-type: none"> Gulleys 	<ul style="list-style-type: none"> Kaumoni Gulley
		Wetlands/ water sector	<ul style="list-style-type: none"> Pollution Siltation 	<ul style="list-style-type: none"> Ikangaani Wetland
	KEE	Forestry	<ul style="list-style-type: none"> Charcoal Burning Illegal Grazing 	<ul style="list-style-type: none"> Makongo Forest
		Landscape	<ul style="list-style-type: none"> Gullies 	<ul style="list-style-type: none"> Matangi Primary School
		Wetlands/ water sector	<ul style="list-style-type: none"> Pollution 	<ul style="list-style-type: none"> Along Kaiti River Along Waswa River

SUB COUNTY	Ward	Thematic Area	Environmental Issue	Location
KIBWEZI WEST	EMALI/ MULALA	Forestry	<ul style="list-style-type: none"> Encroachment, Illegal grazing in hills, deforestation, charcoal burning 	<ul style="list-style-type: none"> Muuni hill, Maatha hill, Tutini hill Across the ward
		Landscape	<ul style="list-style-type: none"> gulleys 	<ul style="list-style-type: none"> Mwasangombe, Iteta, Maatha, Tutini
		Wetlands/water sector	<ul style="list-style-type: none"> Water pollution from agro-chemicals Sand harvesting, riverine vegetation destruction and encroachment 	<ul style="list-style-type: none"> Along Muooni river
	NGUU/ MASUMBA	Forestry	<ul style="list-style-type: none"> Deforestation, grazing in Hills, encroachment 	<ul style="list-style-type: none"> Ithumba hill, Nguu hill
		Landscape	<ul style="list-style-type: none"> Gullies bare land 	<ul style="list-style-type: none"> Itaava- Ithumba cluster, Yikivumbu, Vololo, and Masamukye clusters Ndunguni, Katulani, Kitende and gulleys
		Wetlands/water sector	<ul style="list-style-type: none"> Encroachment and destruction of riverine vegetation 	<ul style="list-style-type: none"> Along Muuoni river and Kikuu river
	MAKINDU	Forestry	<ul style="list-style-type: none"> Deforestation and encroachment 	<ul style="list-style-type: none"> Twaandu, Mitendeu and Kaasuvi hill, Kai Hill
		Landscape	<ul style="list-style-type: none"> bare land and gullies 	<ul style="list-style-type: none"> Kyanda in Kalii, Kwa Maundu in Kalii, Kwa Manzala Ngaakaa, kalindiloni
		Wetlands/water sector	<ul style="list-style-type: none"> Encroachment Uncontrolled shallow wells, illegal grazing Deforestation/ riverine destruction Sand harvesting 	<ul style="list-style-type: none"> Kiu catchment, along Muooni river and Kiboko river Kiu catchment and Kiboko springs/river Kiboko river, Kiu catchment Kiboko river-Nthia
	NGUUMO	Forestry	<ul style="list-style-type: none"> Encroachment, deforestation and grazing in hills Charcoal burning 	<ul style="list-style-type: none"> Mbuinzau hill, Kilema hill, Tunguni, Kituvu and Makusu
			<ul style="list-style-type: none"> Grazing, illegal tree felling 	<ul style="list-style-type: none"> Kilema hill, mbuinzau hill
		Landscape	<ul style="list-style-type: none"> Gullies and bare land 	<ul style="list-style-type: none"> Makusu, Tuanga, Mukononi, Wiivia, Ivoleni villages
		Wetlands/water sector	<ul style="list-style-type: none"> Destruction of water towers 	<ul style="list-style-type: none"> Mbuinzau hill

SUB COUNTY	Ward	Thematic Area	Environmental Issue	Location
KIBWEZI EAST	KIKUMBULYU SOUTH	Forestry	<ul style="list-style-type: none"> Encroachment, deforestation and grazing in hills 	<ul style="list-style-type: none"> Mbuinzau hill
		Landscape	<ul style="list-style-type: none"> Bare land and gullies 	<ul style="list-style-type: none"> Siembeni-KwaKyai road, Masalani, Katulani – Mitundu road, Kalamba – Kawala road.
		Wetlands/water sector	<ul style="list-style-type: none"> Deforestation/illegal tree felling Riparian encroachment grazing in Wetland sand harvesting 	<ul style="list-style-type: none"> Kwakyai wetland, yuu river riparian area Kibwezi river Kibwezi/ (mwisho wa lami area) Kalamba river, Yanda Malisyo
	KIKUMBULYU NORTH	Forestry	<ul style="list-style-type: none"> Deforestation on farms and charcoal burning 	<ul style="list-style-type: none"> Across the ward
		Landscape	<ul style="list-style-type: none"> Bare land and gullies gullies 	<ul style="list-style-type: none"> Ndetani, Kisayani, Ithumula, Katilamuni, Kasekeleni, Yikivala, Nguuni, Kivati, Kinzui, Makaani, King’uutheni, Kisayani cluster, Musigini cluster, Ndetani cluster, Ithumula cluster
		Wetlands/water sector	<ul style="list-style-type: none"> Water pollution Riparian encroachment and riverine vegetation destruction 	<ul style="list-style-type: none"> Athi river, yuu river
KILOME	MUKAA	Land degradation	<ul style="list-style-type: none"> Gullies Landslides 	<ul style="list-style-type: none"> Kiongwani, Kakutha, Muvai, Itumini, Munakye, Mangani Kiongwani, Kilome
		Forests	<ul style="list-style-type: none"> Illegal logging, illegal grazing 	<ul style="list-style-type: none"> Kiongwani hill and Kenze
		Riparian zones/ wetlands	<ul style="list-style-type: none"> Encroachment, pollution from agrochemicals and farm tools. 	<ul style="list-style-type: none"> Kwa Muulu, Kwa Kasilia, Nzaini, Nganya, Kasyukoni.(wetlands) Rivers: Usi Unene, Kitonguni, Kwa Longo and Kyandue
	KIIMA KIU/ KALANZONI	Forests	<ul style="list-style-type: none"> Illegal grazing and illegal logging 	<ul style="list-style-type: none"> Mawa, Malili and Ulu Conservancy hills.
		Land degradation	<ul style="list-style-type: none"> Gullies 	<ul style="list-style-type: none"> Kwakatili, Kavuko, Marwa, Kalemwani.

SUB COUNTY	Ward	Thematic Area	Environmental Issue	Location
		Riparian Zones/ Wetlands	<ul style="list-style-type: none"> Encroachment, pollution from agrochemicals and farm tools. 	<ul style="list-style-type: none"> Ikolya river Kwakivukui, Kwa Mwanzui, Kwa mwekundu wetlands
	KASIKEU	Land degradation	<ul style="list-style-type: none"> Gullies 	<ul style="list-style-type: none"> Kayata, Kandolo, Yale, Kwale, Kwothithu, Kima, Kalimbini, Ikutani
		Riparian areas/ Wetlands	<ul style="list-style-type: none"> Pollution from agrochemicals and farm tools, encroachment 	<ul style="list-style-type: none"> Muangini, Kaluku, Kima, Kawese and Enguli rivers Enguli wetland
		Forests	<ul style="list-style-type: none"> Deforestation and illegal grazing 	<ul style="list-style-type: none"> Kilia and Kiou hills.
MBOONI	TULIMANI	Forestry	<ul style="list-style-type: none"> Forest degradation Forest degradation 	<ul style="list-style-type: none"> Tulimani forest Kithoo forest
		Landscape	<ul style="list-style-type: none"> Gulley 	<ul style="list-style-type: none"> Nthangathini 2 in Number Muthwani 2 in number Kwa mutaki earth dam Kinyuani
		Wetlands/water sector	<ul style="list-style-type: none"> Riparian degradation 	<ul style="list-style-type: none"> Ngunduni springs Nzoweni Mukilo weir Kithimani weir
	KAKO/ WAIA	Forestry	<ul style="list-style-type: none"> Forest degradation 	<ul style="list-style-type: none"> Nthangu, Katende, Waia and Kithendu hill
		Landscape	<ul style="list-style-type: none"> Gullies, barelands 	<ul style="list-style-type: none"> Nzuu nthei, Kwa Mutonga, Kithendu, King'eleti, Katitika, Kavingiliti and Ngilani (Kyaluma)
		Wetlands/water sector	<ul style="list-style-type: none"> Encroachment and pollution 	<ul style="list-style-type: none"> Nthangu, Nthaatwa, Muiu, Mituvu and Sakai
	KISAU/ KITETA	Forestry	<ul style="list-style-type: none"> Encroachment 	<ul style="list-style-type: none"> Utuneni, Kwakatunga, Kalimani
		Landscape	<ul style="list-style-type: none"> Gullies 	<ul style="list-style-type: none"> Kalimani, Kyome gullies, Kwa Katunga, Tawa river, AIC Kiambwa
		Wetlands/water sector	<ul style="list-style-type: none"> Pollution, encroachment 	<ul style="list-style-type: none"> Mukundi, Ndituni, Maia, Mwivithwa
	MBOONI	Forestry	<ul style="list-style-type: none"> Forest degradation 	<ul style="list-style-type: none"> Mukaatini, Nduni, Mbooni boys
		Landscape	<ul style="list-style-type: none"> Gullies 	<ul style="list-style-type: none"> Matondoni primary, kwa Musyimi along ndueni Uvaa Road, Kwa Mbisu, Kiinyuni

SUB COUNTY	Ward	Thematic Area	Environmental Issue	Location
				ABC, Ndolo, Kiimani in Kikiini, Mbuveni ECDE, Syiluni, Kyamunya, Kwa Kiilu along Kikima Kyuu Road, Kangethukani Mutulu Road, Muthei AIC.
		Wetlands/water sector	<ul style="list-style-type: none"> Encroachment of wetlands, pollution 	<ul style="list-style-type: none"> Kwa Kithue, Wathi River, Kyambui, Kiliku, Kituluni, Nduni /Mukasi, Yoani, Wetaa, Mangolo river, Isyukoni, Uvi, Makuu, Kalamani to Nzaini, Kyanthundi, Ikaangani, Yambae, Kwa Mwau,
	KITHUNGO/ KITUNDU	Forestry	<ul style="list-style-type: none"> Encroachment 	<ul style="list-style-type: none"> Kitundu Forest
		Landscape	<ul style="list-style-type: none"> Gullies 	<ul style="list-style-type: none"> Kinyeke along Mwenyeani –Utangwa road; along Kwa Mutula – Woyani road; Kwa Pascal along Kilala – kavutini road; Along Kyanzuki-Utangwa road; KwaMuasa – Uma village; Kwa Ndisya – Woyani village; Kwa Mutisya Kasuni – Kithoni village Muvaa, Ngai, Kangaleni (Kwa Kioko Ndeto, Kwa Musinda and Kwa Musyoki), Mutooni
		Wetlands/water sector	<ul style="list-style-type: none"> Encroachment of riparian areas 	<ul style="list-style-type: none"> Kiuuma, Kwa Kyenze and Kwa Kavete,
	KALAWA	Forestry	<ul style="list-style-type: none"> No forests 	<ul style="list-style-type: none"> N/A
		Landscape	<ul style="list-style-type: none"> Gullies and barelands 	<ul style="list-style-type: none"> Kasooni gulleys and Bareland, Ngomeni Village - Gulleys and Denuded land, Kyeni and Kathiani village- Gulleys, Mililuni village gulleys, Kalima Village gulleys, Mutomo/Mbusyani Village gulleys, Syotuvali Sub location along Athi River has gulleys, Athi Location, along Athi River. Mutanda. Kavumbu, Kwa malenge, Along Thwake River, Mweleli Sub Location Maluini, Malunda, Ngangani villages, Mbukoni Sub Loc- Ngangani, Ngamione, Kaseve, Thwake Sb

SUB COUNTY	Ward	Thematic Area	Environmental Issue	Location
				location- Katulya, Kinyau, thwake areas, Mwaniambo, Ititu sub location.
		Wetlands/water sector	No wetlands	N/A
MAKUENI	KITISE/ KITHUKI	Landscape/Land degradation	<ul style="list-style-type: none"> Gullies 	Miambani village, waimu village, kimundi village, Nthiiiani village, kalelo villageb , kasoka village, yi nganga village
			<ul style="list-style-type: none"> Charcoal Burning 	At own farm
		Riparian zones /Wetlands/ water sector	<ul style="list-style-type: none"> Illegal sand harvesting 	Kimundi earth dam, kimundi river (Nthiiiani point and kalelo point) Ksoka River in matheani village
			<ul style="list-style-type: none"> Riparian encroachment and riverine vegetation destruction 	Kimundi earth dam
			<ul style="list-style-type: none"> Destruction/encroachment of water towers 	
			<ul style="list-style-type: none"> Siltation 	Kimundi earthdam
			<ul style="list-style-type: none"> flooding 	
		Pollution	<ul style="list-style-type: none"> Water pollution from agro-chemicals 	Kw mbila earth dam and along River Athi
			<ul style="list-style-type: none"> Air pollution 	
			<ul style="list-style-type: none"> Noise pollution 	
	NZAU/KILILI/ KALAMBA	Landscape/Land degradation	<ul style="list-style-type: none"> Gullies 	Mavyaume, maatha village, mung'etheele village and kwa munyali
		Forestry	<ul style="list-style-type: none"> Forests/Bush Fires 	Nzau hiil, Makuli
			<ul style="list-style-type: none"> Illegal Grazing Deforestation /Illegal logging/Tree Felling Forests encroachment 	Nzau hiil, Makuli hill, kalumbi and matha hill
			<ul style="list-style-type: none"> Charcoal Burning 	Nzau hiil, Makuli hill, kalumbi, matha hill and own farm
		Riparian zones /Wetlands/ water sector	<ul style="list-style-type: none"> Illegal sand harvesting 	Mwilu river, kikui river, manyenyoni river and Kyamela river
			<ul style="list-style-type: none"> Destruction/encroachment of water towers 	Nzau and Makuli hill

SUB COUNTY	Ward	Thematic Area	Environmental Issue	Location
		Pollution	<ul style="list-style-type: none"> Siltation 	Kwa klanyonga, njau earthdam, kisowe, uvileni, malungu, kanzili, kalima, katumati and yiangini
			<ul style="list-style-type: none"> Water pollution from agro-chemicals 	Kikuu river
			<ul style="list-style-type: none"> Soil and water pollution 	Matiliku market – open deification.
			<ul style="list-style-type: none"> Noise pollution 	Matiliku – bars and live bands, kalamba market, katulye and makutano market - bars.
	KATHONZWENI	Landscape/Land degradation	<ul style="list-style-type: none"> Gullies 	Thavu, kwa kavisi, maluvyu, kwa kato, kwa kalani, kwa kivondo, kwa David syolinda, kwa syeni, kwa mutual mwalili and Kwa Tumba
			<ul style="list-style-type: none"> Illegal Grazing 	Syethe Mbula hill
			<ul style="list-style-type: none"> Deforestation /Illegal logging/Tree Felling 	
			<ul style="list-style-type: none"> Forests encroachment 	
			<ul style="list-style-type: none"> Charcoal Burning 	Own farm and Syethe Mbula hill
			<ul style="list-style-type: none"> Riparian encroachment and riverine vegetation destruction 	
			<ul style="list-style-type: none"> Destruction/encroachment of water towers Siltation 	Londokwe earth dam, matinga I, matinga II(Kasambani), Kwa luma, kwa mbila earth dam, kiteei earth dam, kwa katiku, kwa kilunnga
			<ul style="list-style-type: none"> flooding 	Kthonzweni polytechnic/ wetland
		Pollution	<ul style="list-style-type: none"> Water pollution from agro-chemicals 	Kikuu river, Londokwe earth dam, matinga I, matinga II(Kasambani), Kwa luma, kwa mbila earth dam, kiteei earth dam, kwa katiku, kwa kilunnga
			<ul style="list-style-type: none"> Noise pollution 	Kathonzweni market – bars and marketing during market day, Mbuvo market - bars
	MAVINDINI	Landscape/Land degradation	<ul style="list-style-type: none"> Gullies 	The entire Katithi location, Kamuithi, kitumbai, syelia, thwake village, nguumo village. Ngosini, Yekanga, Nzeveni, Kanthuni,

SUB COUNTY	Ward	Thematic Area	Environmental Issue	Location
				Iiani, Kakusywi, methovini and ivinga nzia villages.
		Forestry	• Forests/Bush Fires	
			• Illegal Grazing • Forests encroachment • Deforestation /Illegal logging	Yekanga hill, Kanthuni hill,Katumbua hill,
			• Charcoal Burning	Yekanga hill, Kanthuni hill,Katumbua hill, own farm,
		Riparian zones /Wetlands/ water sector	• Illegal sand harvesting • Riparian encroachment and riverine vegetation destruction • Siltation	Kanyonga, kalinzi, kisanyanoi, ngosini river, Athi river and Thwake river, Kya ngwasi river, syongo itomaa,
		Pollution	• Water pollution from agro-chemicals	Athi river
			• Noise pollution	Bars
	MUVAU KIKUMINI	Landscape/Land degradation	• Gullies	Silanga, kivani, nguni
			• Landslides	
		Forestry	• Forests/Bush Fires	
			• Illegal Grazing	Nzueni hill
			• Deforestation /Illegal logging/Tree Felling	
			• Forests encroachment	
			• Charcoal Burning	Nzueni hill and Own farm
		Riparian zones /Wetlands/ water sector	• Illegal sand harvesting	Thwake river,
			• Riparian encroachment and riverine vegetation destruction • Water pollution from agro-chemicals	Ngosini river, kwa kathoka earth dam, kambi mawe earth dam
			• Destruction/encroachment of water towers	

SUB COUNTY	Ward	Thematic Area	Environmental Issue	Location
	MBITINI WARD.	Landscape/Land degradation	• Siltation	Kwa kathoka and kambi mawe earth dams
			• Gullies	Mutiswa, Mutyambua and Masue hill zones and slopes (Mutyambua sub ward).
			• Landslides	Mungyani- and Muambwani hills (Kyemundu sub ward)
		Forestry	• Forests/Bush Fires	Muambwani,Kalumbi,Kyemundu and Masue forests.
			• Illegal Grazing	Masue and Muambwani forests.
			• Deforestation /Illegal logging/Tree Felling	Muambwani,Kalumbi,Kyemundu and Masue forests.
			• Forests encroachment	Muambwani forest.
			• Charcoal Burning	Muambwani,Kalumbi,Kyemundu, Masue forests and own farm.
		Riparian zones /Wetlands/ water sector	• Illegal sand harvesting	Suspected illegal sand smuggling by local dealers along Muooni river at Kavuthu drift site, Kwa Makove entry site, Ndituni river in Mutyambua location and from Mbulutini to Mbuthani along Muooni river.
			• Riparian encroachment and riverine vegetation destruction	Along Muooni river
			• Destruction/encroachment of water towers	Kyemundu sub ward different points; Muambwani hill, Kakutha area, Mutiswa Kanyoonyoo spring area in Katani cluster), Kwa Nzasi spring point in Kyumbuni cluster, Mangyaka spring area point in Mutyambua cluster.
			• Siltation	Kwanzou E. Dam,Mutyambua E.Dam which was desilted halfway and kwa Ngwili E.Dam all in Mutyambua sub ward.
			• Flooding	Lower zones of Mutiswa location; (Mutiswa and Katani clusters) and Mutyambua location; (Mutyambua & Kyumbuni clusters).
		Pollution	• Water pollution from agro-chemicals	Muuoni and Ndituni rivers

SUB COUNTY	Ward	Thematic Area	Environmental Issue	Location
	WOTE/NZIU	Landscape/Land degradation	<ul style="list-style-type: none"> Gullies 	Kitheini Nganza
		Forestry	<ul style="list-style-type: none"> Forests/Bush Fires 	Makuli forest
			<ul style="list-style-type: none"> Illegal Grazing 	Makuli forest
			<ul style="list-style-type: none"> Deforestation /Illegal logging/Tree Felling 	Makuli forest
			<ul style="list-style-type: none"> Forests encroachment 	Makuli forest
			<ul style="list-style-type: none"> Charcoal Burning 	Makuli forest (Kitheini cluster)
		Riparian zones /Wetlands/ water sector	Illegal sand harvesting	Kilumwa, Wakyoo, Kanzoka, Kyambui and Mikwani streams
			<ul style="list-style-type: none"> Riparian encroachment and riverine vegetation destruction 	Kilumwa, Wakyoo, Kanzoka, Kyambui and Mikwani streams
			<ul style="list-style-type: none"> Destruction/encroachment of water towers 	Kwa kimani
			<ul style="list-style-type: none"> Siltation 	Yamuthinzi dam
			<ul style="list-style-type: none"> Flooding 	N/A
		Pollution	<ul style="list-style-type: none"> Water pollution from agro-chemicals 	N/A
			<ul style="list-style-type: none"> Air pollution 	N/A
			<ul style="list-style-type: none"> Noise pollution 	N/A

2.4 Forest and Landscape Restoration opportunities in Makueni County

Based on the Makueni County ROAM, 2018 data, the largest opportunity for landscape restoration in the County lies in Agroforestry (44%), Silvo-pastoral and Rangeland rehabilitation (32%) and Plantation forests (19%), collectively this accounts for 95% of the restoration options in the County. Although all the Sub-counties have opportunities in Agroforestry, those in the lower zones (Kibwezi East and West) have greater opportunities for Rangeland restoration compared to the ones in the middle and upper zones, the latter which have more opportunities for plantation forests.

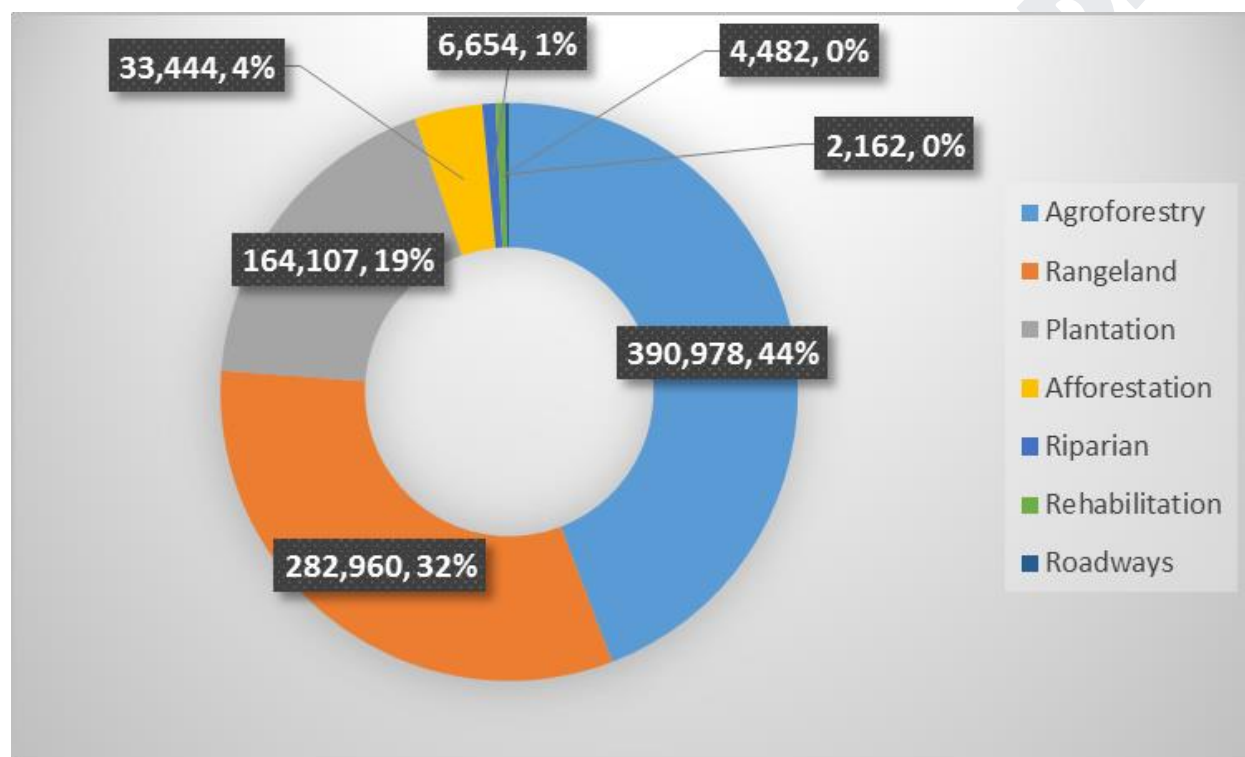


Figure 8: Restoration options for Makueni based on the seven designated national restoration options

Source: Makueni ROAM, 2018

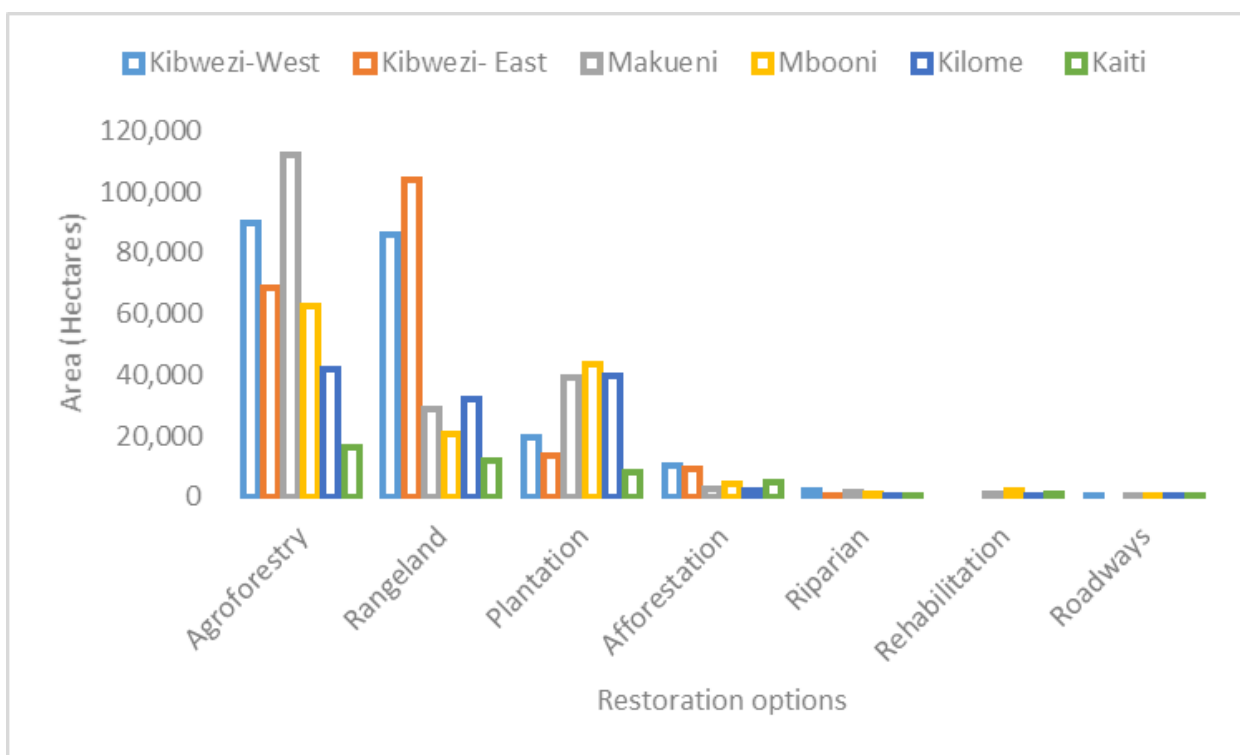


Figure 9: Forests and Landscape Restoration options Infograph

Source: Makueni ROAM, 2018

2.5 On-going FLR initiatives in Makueni

The County Government of Makueni in partnership with various stakeholders has and is implementing various Forest and Landscape initiatives in various areas that include:

2.5.1 Environment Directorate Forest and landscape restoration initiatives

The Government in 2018 partnered with World Resources Institute (WRI) to conduct a Restoration Opportunities Assessment Methodology study (ROAM) in 2018. The Assessment was aimed at identifying the land use challenges and opportunities for restoration in the county. This report formed the basis for forest and landscape restoration in the county. Seven restoration options were identified, afforestation and reforestation of natural forests; agroforestry; riparian land restoration; road buffer zone restoration; rangeland rehabilitation; plantation forests and rehabilitation of natural forests. The Government has implemented the ROAM report through the following:

- i. **Makuli- Nzau Landscape restoration:** In collaboration with WRI a Restoration Action Plan 2021-2026 was prepared. WRI through the Mastercard Foundation is financing the planting

and growing of 1,200,000 seedlings in five (5) years. So far more than 200,000 seedlings have been planted in both forestland and farmland.

- ii. **Afforestation:** The government in partnership with Kenya Forest Service (KFS) rehabilitated degraded natural forest through, enrichment planting of 100 ha in Makuli, Nthangu, Mbooni and Kilungu Forests; production of four million seedlings in KFS tree nurseries in Makuli, Kibwezi, Mbooni, Kilungu, Nthangu, and Makueni central nursery; establishment of 100 ha woodlots on farms; restocking of 50 ha of industrial forest plantations; rehabilitation of 10 ha in riverine areas and establishment of 10 Km firebreaks. 130,800 seedlings were also planted in institutions, market areas, water projects sites and established additional 58 tree nurseries.
- iii. **Devolution forest:** This was established at Kwa Kathoka ATC during the 7th and final devolution conference from 23 - 26 November, 2021 where 1,000 indigenous tree species were planted in collaboration with the Council of Governors.
- iv. **Degraded Land rehabilitation:** The government rehabilitated Matwikani watershed by planting 3,000 tree seedlings, 200 stalks of Napier grass, 400 giant bamboo seedlings and 100 stalks of live materials (Sisal). Nine farm ponds were excavated, one water pan desilted, 59 household farms provided with 1Kg. of grass for grass reseeding and they were also trained on water harvesting technologies. Additionally, 9 gully sites were rehabilitated across the county.
- v. **Water catchment protection:** 17 km of terraces were excavated as soil-water conservation structures in Muuni-Maatha hill, Mbui Nzau hills and Yekanga forest to enhance the hydro-ecological function of county forests.
- vi. **Riparian land Restoration:** The government Rehabilitated Kiboko and Kiu in Kibwezi west, Mangelete, Kwa Mukonza, and Umani in Kibwezi east, and Kinyongo wetlands in Mbooni sub-county by planting seedlings in 40 hectares of land, constructing and rehabilitating weirs, sand dams, and grass reseeding. 1,500 tree seedlings were also planted along the river banks of Kanyonga and Kambu rivers.

- vii. **Protection of gazetted forests:** Kenya Forest Service (KFS) protected and conserved a total of 15,004.5 Ha of gazetted forest against all forms of threats and degradation activities on forest conservation.
- viii. **TWENDE Project:** The County in collaboration with NDMA, ADSE, IUCN, CI and SDL are implementing an Ecosystem Based Adaptation (EBA) initiative. Towards Ending Drought Emergencies Project (TWENDE) aims at reducing the cost of climate change induced drought on the national economy by increasing resilience of the livestock and other land use sectors in restored and effectively governed rangeland ecosystems. The project wards in Makueni are: Nguumo, Makindu, Thange, Ivingoni/Nzambani, Nguu/Masumba.

2.5.2 FLR Activities by Department of Agriculture

National Agricultural Value Chain Development Project (NAVCDP) aims at supporting small scale farmers who will be transitioning or have potential to transition from subsistence farmers to commercial farmers, restoration of landscapes for enhancing the climate resilience.

Kenya Cereal Enhancement Programme Climate Resilient Agricultural Livelihoods (KCEP-CRAL) in collaboration with NDMA has excavated two water pans; Mitundu (contracted cost Ksh. 4,220,100 with a capacity of 8,260 cubic meters, benefiting 773 HH in Kikumbulyu south ward) and; Kataa (contracted cost Ksh. 4,637,950 with a capacity of 8,103 cubic meters, benefiting 406 HH) in Masongaleni ward. In Kathonzweni ward, KCEP-CRAL and NDMA implemented Kwa Kilui Earth dam with a capacity of 40,000 M3 and benefitting 7,500 households and over 3,000 Livestock (Cattle, Goats/ Sheep & Donkeys). Distance for accessing Water has been reduced from 10 - 8 Km to 4 Km thus saving time for searching for water from 5 hours to 1 hour. Livestock are now watered daily contrary to previously after 2 - 3 days. This has resulted in reduced conflicts over water. In addition, three sand dams were constructed in Kikumbulyu North.

Under the Smallholder Irrigation and Value Addition Project (SIVAP) several activities have been carried out. They have been geared towards;

- 1) Preventing and mitigating land degradation and restoration of degraded lands

- 2) Control of soil erosion
- 3) Improvement of soil water storage
- 4) Management of soil organic matter for soil carbon sequestration
- 5) Management and enhancement of soil fertility

The specific activities include;

Excavation of land management practices including; Fanya Juu – 29,655m, Cut off drains – 12,452m, Grass strips 5,870m, Pasture establishment – 5Ha and Agro forestry -6,500 fruit trees

Under National Agricultural and Rural Inclusive Growth Project (NARIGP), over 700 groups were funded and put 6,827Ha under sustainable land management practices which included conservation agriculture, manuring, and water harvesting: Producer organizations were funded and ripped over 3,190 acres of land under promotion of conservation agriculture. NARIGP also carried out capacity needs assessment on Sustainable Land Management practices and acquired equipment such as Handheld GPS devices, Mobile mappers, clinometers, Geodetic RTK and Soil testing equipment for use in the SLM practices. Additionally, seven Multi-community investments (MCIs) have been implemented. These are Rehabilitation of Kilombo Earth Dam and Kilombo SLM/ Catchment protection, Kwa Nguni, Ngosini, Muangini, Muuni, Kyakivandi and Mukuyuni. 40 farm ponds were excavated and lined.

Immediate outcomes include;

- 301,250m³ of water harvested in Kilombo Earth dam and 7 Sand dams
- Soil water conservation- 35,522m terraces excavated
- Tree seedlings planted – 17,353
- 440 farmers have received soil testing services and 1,421 terrace leveling services.

In addition, The County in collaboration with ICRAF and FAO is delivering on nature based solution outcomes. The project aimed at Capacity strengthening and scaling gender-responsive, context-appropriate water management options, tree growing and sustainable wood-fuel systems in Makueni; Co-development, implementation, and capacity building on NbS and FLR monitoring

and reporting frameworks; Strengthening coordination of community forest associations (CFAs) and their contribution to county forest conservation and management policies; Gender, Equity and Social Inclusion (GESI): Building institutional capacity for equitable and inclusive FLR.

2.5.3 KEFRI FLR Activities

KEFRI Kibwezi-Sub-Regional Research Centre in Makueni and supports the County in its service provision FLR through:

- Production high quality germplasm for increased farm productivity and expansion of forestry programmes;
- Diversification of trees and bamboo for soil erosion control and increased crop production;
- High quality forest products for construction, furniture, bio chemicals, medicinal and herbal products and biomass energy;
- Innovative digital products such as JAZA MITI to track progress of ten percent (30%) tree cover by 2032;
- Conduct research in forestry and allied natural resources;
- Disseminate research findings to stakeholders;
- Build capacity of stakeholders;
- JICA/KEFRI Project on Development of Drought Tolerant tree species;
- Rehabilitation of degraded forests with bamboo and other spp;
- Demonstrations of various indigenous tree species.

2.6 Economics of Upscaling FLR

The upscaling will involve the decentralization of forests and landscape restoration (FLR) activities to community level. At this level, direct impact will be felt. This translates into enormous social, economic and environmental benefits. The economics of upscaling restoration therefore will be achieved by restoring 100,000 ha of Forest and Landscape. Restoration of the 100,000 ha will be two fold;

- 1) Costing initiatives that fix carbon as biomass (in tree or wood state). These are by tree and grass planting
- 2) Fixing carbon soil through soil fertility management, basically the Sustainable Land Management (SLM) practices.

The first initiative which in the case of Makueni will take the bulky share of the target area (to consume three quarters of the area) will cover 75,000 ha. This area will be planted with tree based components. This translates to 50M tree species being planted and grown to a tune of Ksh 25 B where the cost of planting and growing a single seedling to mature tree is estimated to cost Kshs. 500. Grass reseeding will cover 25,000 ha. The approximate cost of reseeding one Ha of land including the costs of land preparation, acquisition of grass seeds and crop management is Ksh. 35,000 and will accumulate total to Ksh. 875 M.

The second initiatives of fixing carbon in the soil that include SLM activities will cover 25,000 ha. The approaches will include; One, the mechanical and biological interventions (gabion boxes, scour check, check walls, sanddam). Secondly, the Agronomic interventions (terracing, zai pits, trapezoidal bands, retention ditches), and lastly, natural regeneration and Farmer Managed Natural Regeneration (FMNR). Mechanical interventions will cover 10,000 ha at a total cost of 500m while Agronomic interventions will cover 10,000 ha at a total cost of Ksh. 1.5 B. The last approach of FMNR will cover 5,000 ha at a total cost of Ksh. 56 M.

In summary, upscaling FLR activities will cost the government and partners approximately Ksh. 30 billion. This is against the National budget of Ksh. 1.9 trillion as per the FOLAREP 2023 - 2030.

2.7 Barriers to Forest and Landscape Restoration

There are several barriers to the implementation and upscaling of FLR in Makueni as detailed in table below;

Table 10: Forests and Landscape Restoration Barriers

Key area	Barriers
Policy Related Issues	<ul style="list-style-type: none"> ● Conflicting government policies, laws and related strategies and initiatives ● Slow uptake of devolved functions

	<ul style="list-style-type: none"> ● Absence of County level legal frameworks ● Weak structures to implement and enforce relevant policies, laws and regulations ● Inadequate personnel to implement relevant policies, laws and regulations
Information Barriers	<ul style="list-style-type: none"> ● Inadequate information on FLR technologies ● Ineffective knowledge management systems and information sharing mechanism on FLR associated benefits ● Limited access to data ● Inadequate information on site species matching
Land Tenure Issues	<ul style="list-style-type: none"> ● Encroachment into public land ● Expensive and tedious succession process. ● Ineffective land use planning. ● Land fragmentation ● Competing land uses
Social Barriers	<ul style="list-style-type: none"> ● Demographic pressures on land. ● Resource use conflicts among families and communities. ● Negative cultural norms and practices (malpractice) on succession and tree growing. ● Gender inequalities and norms. ● Negative political interest ● Poverty
Economic Barriers	<ul style="list-style-type: none"> ● Inadequate financing. ● Expensive FLR technologies ● Inadequate benefit sharing mechanisms. ● Inflexible programming for public and donor funded projects. ● Inadequate prioritization and allocations of FLR budgets
Biophysical barriers	<ul style="list-style-type: none"> ● Frequent and prolonged droughts ● Water scarcity ● Water salinity ● Invasive and parasitic species explosion ● Extreme land degradation ● Infertile soils ● Wildfires

2.8 PESTLEG AND SWOT Analysis for FLR

Table 11: PESTLEG AND SWOT analysis

	Strengths	Weaknesses	Opportunities	Threats
Political	<ul style="list-style-type: none"> • Structural and institutional frameworks in place to support forest and landscape restoration initiatives; • Clearly outlined planning documents mainstreaming FLR initiatives (CIDP, ADP, ROAM, Spatial Plan and Governor's manifesto); • Transition Implementation Plans (TIPS) approved by the executive; • Enabling policy and legislative instruments (Makueni Environment Policy/ Bill, 2023 and Tree Planting and growing bill, 2023); • Strong linkages and synergies from development partners at Sub-National, National and International Platforms supporting forest and landscape restoration; 	<ul style="list-style-type: none"> • Low prioritization and inadequate budget allocation for FLR; • Limited awareness on FLR and its benefits that can influence accurate decision making • Political inclination of most leaders towards prioritization of FLR projects in hotspots 	<ul style="list-style-type: none"> • Funding for GoK, private sector and development partners; • Favorable national, regional global political agenda on FLR; • Political good will e.g. President directive on 15 B trees drive 	<ul style="list-style-type: none"> • Bureaucracy in governance • Slowed project implementation during political transition; • Negative political incitement towards conservation initiatives.

	Strengths	Weaknesses	Opportunities	Threats
Economic	<ul style="list-style-type: none"> • Elaborate restoration financing opportunities at national, regional and international level for FLR (climate, agriculture, environment, water sectors). • Expanding nature-based enterprises • Increased awareness of ecosystem benefit sharing models • Resource mobilization by local communities geared towards FLR 	<ul style="list-style-type: none"> • Unstable Global and local economic performance cycles; • Inadequate financial resources for restoration of degraded lands; • Competition for forest and land resources for development; • Weak linkages of forest and land-based products to markets and Industries to spur development in sustainably managed environment; • High cost of FLR activities implementation; 	<ul style="list-style-type: none"> • Increasing global demand of forest products from sustainably managed landscapes; • Existence of employment opportunities in nature-based enterprises; • Opportunities of green, blue and circular economies to incentivize stakeholders on environmental activities; • Opportunities in carbon offsetting programs e.g. REDD+ program 	<ul style="list-style-type: none"> • Unpredictable exchange rates; • Inflation; • Uncertain monetary and scale policies (i.e. Reduction of budget allocations to restoration programs) • Corruption; • High demand for forest goods and services; • Global recession; • Market fluctuation and failure – unclear valuation for ecosystem services and nature-based products • Poorly developed value addition chains of NTFPS; • Lack of clear structures in benefit sharing

	Strengths	Weaknesses	Opportunities	Threats
				thus hindering investment in FLR.
Social	<ul style="list-style-type: none"> • Availability of youthful population to undertake FLR; • Indigenous knowledge in conservation and management of natural resources; • Community engagement in participatory forest management; • Willingness of stakeholders to participate in Forest and land restoration programmes and projects; • Positive cultural norms that support conservation (shrines) 	<ul style="list-style-type: none"> • High poverty levels leading to high dependency on the land-based sector; • Insufficient information on degradation status and value of forest resources to support proper planning; • High rates of unemployment; • Minimal inclusivity in FLR approach which limiting ownership of the process at the community level; • Inadequate knowledge on the importance and impacts of FLR among the communities; • Rigidity to new information and up to date technologies; 	<ul style="list-style-type: none"> • Presence of many stakeholders participating in FLR; • Improved uptake of nature based interventions; • Availability of land for FLR amongst community members especially on the lower zones of the County; • Change of attitudes towards FLR. 	<ul style="list-style-type: none"> • Population growth/pressure; • High poverty levels; • Competing land use practices; • Inequalities in benefit sharing from proceeds of FLR; • Negative cultural norms, beliefs and practices. • Gender inequalities and lack of inclusivity in decision making. • Lack of land succession hindering investment in FLR

	Strengths	Weaknesses	Opportunities	Threats
Technological	<ul style="list-style-type: none"> • Availability of science, technology and indigenous (ITK) technologies for FLR; • Existence of research and higher learning institutions; • Availability of trained workforce in the market for FOLAREP; • Existence of restoration related infrastructure for mapping, monitoring, reporting forecasting etc.(Jaza miti app, regreening africa) • availability of useful open source information (Media) 	<ul style="list-style-type: none"> • Inadequate information dissemination on best practices for FLR; • Limited access to technology and data in marketing of forest and other land-based products; • Limited access to information, technology and connectivity • Limited profiling of empirical evidence and most recent information to influence policy on landscape restoration; • Lack of ICT equipment and tools for FLR. • Expensive monitoring tools 	<ul style="list-style-type: none"> • Existence of an Executive Order that promotes automation of government services for improved efficiency and effectiveness; • Availability of open source FLR tools for research, planning, implementation and monitoring; • Expanded use of smartphones may be used to improve monitoring FLR. 	<ul style="list-style-type: none"> • Lack of agreed FLR common monitoring tools/platforms at National level to guide the County FLR; • Low uptake on ICT technologies; • Cybercrime and data insecurity (fraud, hacking misuse and abuse of data)
Legislative	<ul style="list-style-type: none"> • Existence of some supportive policy and legislative instruments; • Availability of gazetted forests and protected areas 	<ul style="list-style-type: none"> • Conflicting policies and laws both at county, national and sectoral levels; 	<ul style="list-style-type: none"> • Existence of government blue prints such as Vision 2030, 	<ul style="list-style-type: none"> • Lengthy process on formulation and legislation of laws and policies governing the

	Strengths	Weaknesses	Opportunities	Threats
		<ul style="list-style-type: none"> ● Weak policy formulation and implementation framework; ● Inadequate policies and legal frameworks. ● Weak linkages between science and policy development on natural resources management; ● Low understanding of legislative frameworks and their interpretation; ● Unpackaged devolved functions. 	<ul style="list-style-type: none"> ● 15 billion trees planting campaigns. ● Favorable constitutional dispensation; ● Effective County Assembly; 	<p>sustainable use of forest resources and other land-based sector goods and services;</p> <ul style="list-style-type: none"> ● Undefined roles and duplication of roles
Environment	<ul style="list-style-type: none"> ● Availability of diverse landscapes that requires restoration; ● Availability different players supporting FLR ● Availability of inputs for restoration (diverse tree species, technologies, skills and knowledge); ● Existing information and baseline data for FLR 	<ul style="list-style-type: none"> ● Weaknesses in implementation of environmental Laws and policies ● Low level of awareness on carbon credit; ● Limited/low uptake of information on FLR; ● Low implementation rates of existing plans 	<ul style="list-style-type: none"> ● Potential for commercialization of native tree species value chains; ● Advancing development of payment for ecosystem services (PES) 	<ul style="list-style-type: none"> ● Prolonged droughts; ● Uncontrolled land-use changes and settlement on sloppy areas disturbing the soil structure (Infrastructure that interfere with the hydrology);

	Strengths	Weaknesses	Opportunities	Threats
		and recommendations on restoration	<ul style="list-style-type: none"> • Availability of funding opportunities and enabling environment; • Kenyan commitment to The UN Decade of Ecosystem Restoration; <ul style="list-style-type: none"> ○ 	<ul style="list-style-type: none"> • Pollution; • Inadequate disaster recovery plans and conflict resolution mechanisms on environmental issues; • Extremely denuded landscapes; • Emergence of alien invasive and parasitic species; • Encroachment
Governance	<ul style="list-style-type: none"> • Two-tier level of governance at national and county for coordination and strengthening implementation of FOLAREP; • Existence of national Institutions responsible for forest management, conservation and research; • Existence of Acts and regulations that guides participation of community in restoration activities; 	<ul style="list-style-type: none"> • Lengthy bureaucratic layering of governance • Low capacities of the county governments to implement devolved forestry and agriculture functions • Inadequate enforcement and compelling laws to support FLR. 	<ul style="list-style-type: none"> • Restructuring/changes in land governance/Government reforms; • Increased funding from Government and development partners; • Existence of County multi-stakeholder platforms for 	<ul style="list-style-type: none"> • Uncontrolled use of forest products by user groups; • Limited access for funding FLR activities for government agencies; • Lack of frameworks for M&E for FLR;

	Strengths	Weaknesses	Opportunities	Threats
	<ul style="list-style-type: none"> • Availability of community-based structures to support FLR (CFA, WRUAs, CBOs, Self-help groups); 	<ul style="list-style-type: none"> • Conflicting and overlapping Institutional mandates; • Uncoordinated efforts towards FLR; • Limited capacity to strengthen enforcement of County and community managed protected areas • Lack of public private partnership framework on FLR; • Unrealistic restoration targets; • Conflicting directives and executive orders e.g. charcoal ban, logging ban; • Unscientifically supported activism by civil society. • Ignorance by user groups. 	<ul style="list-style-type: none"> • coordination (CEC, CCFB) • Existence of a national and County FLR framework. <ul style="list-style-type: none"> ○ 	

2.9 Risk Analysis

The following are risks associated with the implementation of the Makueni County Forest and Landscape Restoration action plan.

Table 12: Risk Analysis

Risk	Level	Mitigation	Actors
Drought	High	<ul style="list-style-type: none"> • Species site matching, early planting/preparedness and underground water provision to supplement • Research on drought resistant species • Deployment of innovative technologies to address erratic weather patterns • Early warning systems 	NDMA, KMD, KEFRI, KFS, County Governments,
Wild/forest fires	Low	<ul style="list-style-type: none"> • Establishment and maintenance of firebreaks and fire lines for forest protection • Awareness creation on fire management and control 	NGAOs, KFS, County Governments, Communities, KWS, NDMA
Insecurity	Mode rate	<ul style="list-style-type: none"> • Security enhanced by already established organs 	NGAOs, KFS, KWS
Pest and diseases	Low	<ul style="list-style-type: none"> • Pest and disease control measures • Capacity building on pest and diseases tolerant species • Promotion of biological control of pests • Supporting research and dissemination of pest and diseases tolerant species 	KEFRI, KEPHIS, MOA, KALRO, KFS, KWS, County governments, NDMA

2.10 Stakeholder Analysis

Table 13: Makueni County FLR Stakeholders

S/NO	Stakeholder	Relevant FLR Mandate/Activities
1.	Action Aid	Community capacity building on Agroforestry Restoration of degraded lands and management
2.	Anglican Development Services-Eastern (ADS-E)	Makueni Agro-forestry Carbon Project (MACP) Building resilience through Agro-forestry in Makueni County.
3.	African Wildlife Foundation (AWF)	Sensitizing and strengthening CFAs
4.	African Sand Dam Foundation (ASDF)	Addressing access to water in the ASAL regions (support construction of sand dams)
5.	Bilal Muslim Mission Kenya	Provision of water structures, education support/sponsor , provision of food aid to the community
6.	CARITAS	Training on Environmental conservation Climate Smart Agriculture Promotion of apiculture, poultry
7.	Cereal Growers Association (CGA)	Capacity building on Climate Smart Agriculture
8.	Community Forest Associations (CFA)	Advocacy for forest conservation and protection, support for nature based enterprises and co-management of forests
9.	Compassionate Aid (Faith based)	Capacity building to trainers Education support
10.	David Sheldrick	Environmental conservation Human-Wildlife conflict Management – fencing of the park
11.	Desert Oasis Residents Empowerment Programme (DOREP)	Training on table banking and training on smart farming
12.	FAO/ MasterCard Foundation	Pasture establishment (SFERA Emergency project)
13.	Financial Services Association (FSA)	Training and advocacy for financing services
14.	Government of Kenya	Formulation of FLR legal frameworks and other relevant policies, their implementation and enforcement
15.	Government of Makueni County	Domestication of FLR legal frameworks Implementation of devolved functions Building synergies with partners on FLR
16.	Government of Makueni County; KCEP- CRAL	Training on CA and Smart Agriculture, Provision of farming inputs to farmers
17.	Government of Makueni County; NARIGP	Training farmer groups on value chain approach for priority value chains and funding them on value chain addition
18.	Government of Makueni County; Agriculture department	promotion of Agro-forestry Pasture production Soil and water conservation

S/NO	Stakeholder	Relevant FLR Mandate/Activities
		Improved breeds for goats, tractors and certified seeds
19.	ICRAF	Advocacy and training on smart agriculture Promotion of Gender Environment and Social Inclusion in FLR Support in FLR legal framework domestication
20.	ICRISAT	Research on crops
21.	KALRO	Research on crops, Livestock genetic resources and bio-technology Disseminate research findings to stakeholders
22.	KEFRI	Research on forestry and allied Natural resources Disseminate research findings to stakeholders Capacity building of stakeholders Partnering with different institutions and stakeholders
23.	Kenya Forest Service (KFS)	Production of high quality forestry seedlings Environmental conservation (Agroforestry) Provision of casual employment to community
24.	KFS REDD+ project	Sustainable management of forest and the conservation and enhancement of forest carbon stock Advocating and training on environment conservation of Chyulu ecosystem
25.	KENHA, KERRA, County department in charge of Roads	Road construction and maintenance
27.	Kenya Water Towers Agency (KWTa)	Protection, rehabilitation, conservation and sustainable management of water towers
28.	Kibwezi Well-Wishers / Kibwezi Center for Sustainability (KWW/KCS)	Sensitization on environmental conservation
29.	Kenya Wildlife Service (KWS)	To sustainably manage Kenya's wildlife and its habitats for the benefit of nature and humanity. Education support (sponsorship); corporate social responsibility
30.	NEMA	Supervising and coordinating all matters relating to the environment. The main national body in the implementation of Government policies relating to the environment.

S/NO	Stakeholder	Relevant FLR Mandate/Activities
31.	National Drought Management Authority (NDMA)	Disseminate drought information Drought preparedness, management and coordination through the CSG Ending Drought Emergencies (water projects; rehabilitation & construction e.g earth dams and boreholes) Capacity building and sensitization Chyulu Landscape Restoration (TWENDE) in 5 Wards
32.	One Acre Fund	Capacity building on smart agriculture and market linkage to farmers' produce
33.	Rea Vipingo Sisal Plantation (DWA)	Training on sisal growing and market linkage to farmers
34.	RECONCILE	Training on Environmental conservation Climate Smart Agriculture Promotion of apiculture, poultry
35.	Redcross	Agriculture support, Health sensitization and risk response and Education support
36.	State Department of Livestock (SDL)	Rangeland development
37.	Water mission	Building safe water, sanitation and hygiene solutions in developing countries.
38.	Water Regulatory Authority (WRA)	Responsible for the governance on the use and management of water resources
39.	Water Service Providers (WSP)	Water provision (distribution and management of water infrastructure)
40.	WRUA	Training on water resources management and protection , Tree planting, Awareness creating, water allocation
41.	Welthungerhilfe (WHH)/ GAA	Water Sanitation and Hygiene (WASH) interventions. Integrated Food Security interventions (Smart Agriculture) Infrastructure Development Support in Public Primary Schools Climate Change mitigation and adaptation (Borehole/ River Catchment conservation, Soil and water conservation and Environmental conservation through Tree planting drives)
42.	World Vision	Supporting vulnerable groups; cash transfers

CHAPTER 3: GOAL, OBJECTIVES, PROPOSED STRATEGIC RESTORATION INTERVENTIONS AND ACTIONS

3.1 Goal

Accelerate County actions towards contributing to restoring the national target of 5.1 million hectares of deforested and degraded landscapes by 2030 and contribute to the achievement of County, national aspirations and international obligations.

3.2 Overall Objective

To restore 100,000 hectares of degraded landscapes in Makueni County through integrated forest and landscape restoration approaches for improved ecological functionality and social economic benefits by 2030.

Specific Objectives

1. To develop and strengthen policies, regulatory frameworks and institutional coordination for enhanced FLR implementation.
2. To restore 100,000 ha of degraded forests and landscapes by 2030 for improved biodiversity and climate change impacts reversal.
3. To mobilize resources locally, nationally and internationally from public and private partnerships for FLR implementation.
4. To promote inclusive nature-based value chains and adoption of alternative sources of livelihoods for improved wellbeing of communities.
5. To enhance adoption of FLR monitoring, evaluation, research & learning (MERL), knowledge management and information sharing.

3.3 Specific Objectives, Intervention and Actions

Table 14: Specific Objectives, Interventions and Actions

Key Interventions Area	Actions
Objective 1: To develop and strengthen policies, regulatory frameworks and institutional coordination for enhanced FLR implementation	
1.1 Review existing policy and regulatory frameworks.	<p>1.1.1 Review and identify the gaps in the existing FLR related policies and regulations in view of global, regional, national initiatives, treaties, conventions, protocols and agreements</p> <p>1.1.2 Harmonize the gaps in existing FLR related policies and regulations frameworks and Validate the reviewed policies with stakeholders</p> <p>1.1.3 Prepare a cabinet memo outlining key recommendations on policy review and harmonization by County Executive and if need be</p>

Key Interventions Area	Actions
	<p>forward to County Assembly for approval.</p> <p>1.1.4 Recommend development of new policies and/or regulations as advised by legal review outcome.</p>
1.2 Support implementation and development of FLR-related policy and regulatory frameworks	<p>1.2.1 Create awareness on FLR-related policies and regulations at the County and Ward levels.</p> <p>1.2.2 Support development of recommended policies in activity</p> <p>1.2.3 Develop County FLR related policies and legislations, framework.</p> <p>1.2.4 Integrate FLR policies and strategies in County Integrated Development Plans (CIDPs).</p>
1.3 Support institutional coordination to enhance implementation of FLR	<p>1.3.1 Strengthen existing FLR related coordination units at County level, Sub County and at Ward level.</p> <p>1.3.2 Establish technical secretariat for coordination of FLR efforts at County level</p> <p>1.3.3 Establish and strengthen County Multi-stakeholder engagement platform at County.</p> <p>1.3.4 Develop and strengthen forums for stakeholders' engagement in FLR implementation and monitoring</p> <p>1.3.5 Develop and strengthen trans-ward and inter-county frameworks for FLR implementation.</p> <p>1.3.6 Strengthen cross-sectoral and interdepartmental efforts on FLR related activities</p> <p>1.3.7 Create and strengthen linkages and synergies with existing FLR related programmes</p>
Objective 2. To restore 100,000 ha of degraded forests and landscapes by 2030 for improved biodiversity and climate change impacts reversal.	
2.1 Update and scale down the County level forest landscape restoration assessment to the Landscape and Ward level.	<p>2.1.1. Access and review the Technical Report on the National Assessment of FLR Opportunities in Kenya (MENR, 2016) and the Makueni ROAM Report, 2018.</p> <p>2.1.2. Strengthen capacity of stakeholders to implement recommendations of County Forest Landscape Restoration Plan (FOLAREP)</p>

Key Interventions Area	Actions
	2.1.3. Develop and implement specific Landscapes and Ward level Forest and Landscape Restoration (FLR) Plans.
2.2 Restore and protect 19,000 ha of degraded forest land/plantations	<p>2.2.1 Surveying, mapping, beaconing and gazettement of gazetted and non gazetted forests</p> <p>2.2.2 Identification and preparation of sites for plantations establishment.</p> <p>2.2.3 Strengthen capacity of stakeholders to produce 19 million seedlings of preferred plantation species.</p> <p>2.2.4 Establishment of 19,000 hectares of plantations and carry out necessary silvi-cultural practices.</p> <p>2.2.5 Develop and review Forest Management Plans- FMPs</p>
2.3 Restore 4,000 ha of degraded natural forests	<p>2.3.1 Undertake enrichment planting, silvi-cultural practices in 4,000 hectares of natural forests by planting 4 million of assorted indigenous tree seedlings</p> <p>2.3.2 Promote and enhance natural regeneration in specific identified natural forests</p> <p>2.3.3 Identify and manage invasive species in plantations and natural forests</p> <p>2.3.4 Identify and promote conservation and protection of endemic and endangered species</p> <p>2.3.5 Develop and review Participatory Forest Management Plans- PFMPs in collaboration with CFAs to support result-based financing for the PFMPs</p> <p>2.3.6 Create awareness and sensitization to government agencies, non-state actors, private entities and Community Forest Associations on FLR actions.</p> <p>2.3.7 Promote innovative community-based and cost-efficient approaches for protection of restored and/ or areas under restoration (such as use of surveillance technologies, adopt a forest, social fencing, solar fencing among others).</p> <p>2.3.8 Promote and incentivize restoration approaches by private entities</p>

Key Interventions Area	Actions
2.4 Restore 43,300 ha of degraded cropland/Agroforestry in the County	<p>2.4.1 Map and promote protection of ecologically sensitive niches within croplands from degradation</p> <p>2.4.2 Identify and promote the adoption of agroforestry best practices (setting up demo sites, FFS).</p> <p>2.4.3 Promote soil and water conservation measures in degraded croplands.</p> <p>2.4.4 Support mass production and access to 23.3 million quality fruit trees (Avocado, macadamia, mangoes, citrus etc) and 20 million high value tree seedlings (<i>Grevillea</i>, <i>Tamarindus</i>, <i>Moringa</i>, <i>Sclerocarya birrea</i> (amarula), <i>Terminallia Brownii</i>, <i>Sesbania</i>, <i>Melia</i> etc) totalling to 43.3 million tree seedlings</p> <p>2.4.5 Promote Sustainable Land Management Practices (SLM) such as conservation agriculture, Climate Smart Agriculture, farmer managed natural regeneration etc.)</p>
2.5 Restore 32,000 ha of degraded rangelands and woodlands	<p>2.5.1 Promote pasture seed production, range reseeding and natural regeneration initiatives through community involvement</p> <p>2.5.2 Improve access to 8 million drought-tolerant seedlings (250 seedlings per hectare)</p> <p>2.5.3 Sensitization of communities on best practices on rangeland management</p> <p>2.5.4 Promote soil and water conservation technologies and water harvesting measures in rangelands</p> <p>2.5.5 Identify, map and manage key invasive species within Makueni County</p> <p>2.5.6 Promote livelihood diversification programmes and green IGAs (Income Generating Activities - Commercial pasture development, feed lotting, hay).</p> <p>2.5.7 Promote sustainable utilization and value addition wood and Non-Timber Forest Products (NTFPs)</p>
2.6 Restore 1,000 ha of degraded buffer zones along water bodies	2.6.1. Map, survey, pegging, gazette and secure water bodies, wetlands and riparian buffer zones

Key Interventions Area	Actions
and wetlands	<p>2.6.2. Strengthen the capacity of local communities and affiliated user groups through capacity building on best technologies to undertake restoration and management of water bodies, wetlands and riparian zones</p> <p>2.6.3. Promote, incentivize and upscale best water harvesting, soil conservation, riverine restoration and adoption of indigenous knowledge approaches along rivers, wetlands and water bodies</p> <p>2.6.4 Support development and implementation of specific water catchment management plans</p> <p>2.6.5 Enhance enforcement of existing laws and regulations on riparian conservation to safeguard the gains made on restoration</p>
2.7 Restore 500 ha of degraded land/bare land/urban areas and 200 ha of roadways in the County	<p>2.7.1 Map and promote protection of degraded and bare land</p> <p>2.7.2 Identify and promote the adoption of best restoration practices for degraded, denuded and bare land (Trapezoidal and half-moons bands etc)</p> <p>2.7.3 Support mass production of planting live materials/germplasms (sisal, euphorbia, grass, bamboo, aloe etc) to restore 500 ha of degraded land</p> <p>2.7.4 Identify and promote adoption of mechanical and biological interventions (Gabion boxes, check walls, score checks etc) to restore denuded land affected by soil erosion</p> <p>2.7.5 Identify and promote roads for water technologies (farm ponds, mitred drains, road beautification program etc) to restore 200 ha of roadways surface run off</p> <p>2.7.6 Identify and promote adoption of natural regeneration and farmer managed restoration technologies in restoration of denuded and barelands</p>
Objective 3: To mobilize resources locally, nationally and internationally from public and private partnerships for FLR implementation	
3.1 Support financial resource mobilization initiatives for FLR implementation.	<p>3.1.1 Conduct the County capacity needs assessment on resource mobilization.</p> <p>3.1.2 Enhance the County capacity on resource mobilization and proposal development by training stakeholders and actors to implement FLR.</p>

Key Interventions Area	Actions
	<p>3.1.3 Support stakeholders to develop a bankable FLR investment projects and business plans.</p> <p>3.1.4 Promote community-based innovative financing mechanisms to support restoration.</p> <p>3.1.5 develop County public-private partnership (PPP) framework or platform to finance FLR.</p> <p>3.1.6 Advocate for additional FLR budgetary allocations by the County Executive and Assembly</p> <p>3.1.7 Develop a strategy for enhancing access to financial resources for FLR from private sector and other stakeholders</p> <p>3.1.8 Promote linkages to optimize bilateral and multilateral funding opportunities for restoration</p>
3.2 Strengthening restoration fund schemes (County climate change fund, Reclamation fund etc)	<p>3.2.1 Strengthen existing governance structures for FLR resources mobilization and disbursement.</p> <p>3.2.2 Advocate and champion the use of existing funding scheme</p> <p>3.2.3 Develop and strengthen fund structure and governance procedures.</p>
Objective 4: To promote inclusive nature-based value chains and adoption of alternative sources of livelihoods for improved wellbeing of communities	
4.1 Promote and develop gender inclusive green value chains.	<p>4.1.1 Map out existing green value chains and technologies in the County for improved livelihoods.</p> <p>4.1.2 Identify structural barriers to equitable access to restoration benefits (gender, youth and vulnerable groups).</p> <p>4.1.3. Develop measures that enhance equitable access and sharing of the FLR benefits.</p> <p>4.1.4. Develop appropriate value chain for the identified products</p> <p>4.1.5 Disseminate and upscale green value products</p>
Objective 6: To enhance adoption of FLR monitoring, evaluation, research & learning (MERL), knowledge management and information sharing	

Key Interventions Area	Actions
5.1 To enhance adoption of FLR monitoring, evaluation, research & learning (MERL).	<p>5.1.1 Enhance adoption and customisation of the nationally harmonized FLR monitoring, evaluation, research & learning (MERL) methodology/tool.</p> <p>5.1.2 Sensitize participating stakeholders on the harmonized M&E framework for common reporting and learning.</p>

3.4 Implementation of the proposed restoration interventions

The County Government will liaise with the national government and other stakeholders to facilitate FLR action planning and implementation. The County has already prepared a ROAM and preparation of this plan will help in guiding restoration activities.

The FLR activities are integrated and mainstreamed into the county planning processes, including the County Integrated Development Plans (CIDPs), County Environment Action Plans, Spatial plans, Wetland Management Plans, Catchment Management Plans and Annual Developments Plans and Budgets.

The County Government will collaborate with National Government Ministries, Departments and Agencies with mandates on forests and landscape restoration, as well as non- state actors implementing FLR actions. Further, the County Government will formulate, enact and implement requisite legislations and policies to create a conducive environment for FLR interventions.

The County Environment Committee (CEC) was gazetted and is already in place. The CEC will take the lead in managing environmental issues in the County. The County Government will prioritize budgetary allocation to the environment sector to support the operations of the Committee. Under the CEC, there is the Secretariat which is the technical arm of the committee. The Secretariat supports the Sub Committee on Natural Resources as well as the Technical Planning Committee. Implementation at the grassroots level is spearheaded by the Ward Planning Committee.

CHAPTER 4: COORDINATION AND INSTITUTIONAL FRAMEWORK

4.1 Introduction

FOLAREP will leverage on the existing structures and institutional frameworks both at the local, county and national levels. The County department responsible for Environment Climate Change and Forestry will be the focal point of FOLAREP. The successful implementation of this plan will require commitment and interaction of top management at County levels, technical experts and all stakeholders. The County will consolidate FLR interventions and link up with the National FLR interventions geared towards achievement of the national target. The figure below provides a clear link and feedback mechanism within the county in the planning, resource allocation, implementation, monitoring, evaluation and reporting of FLR activities. Membership of the various committees will be informed by the mandates of various MDAs, and key stakeholders involved in FLR activities in Makueni County.

4.2 Institutional arrangement for Makueni FOLAREP Implementation

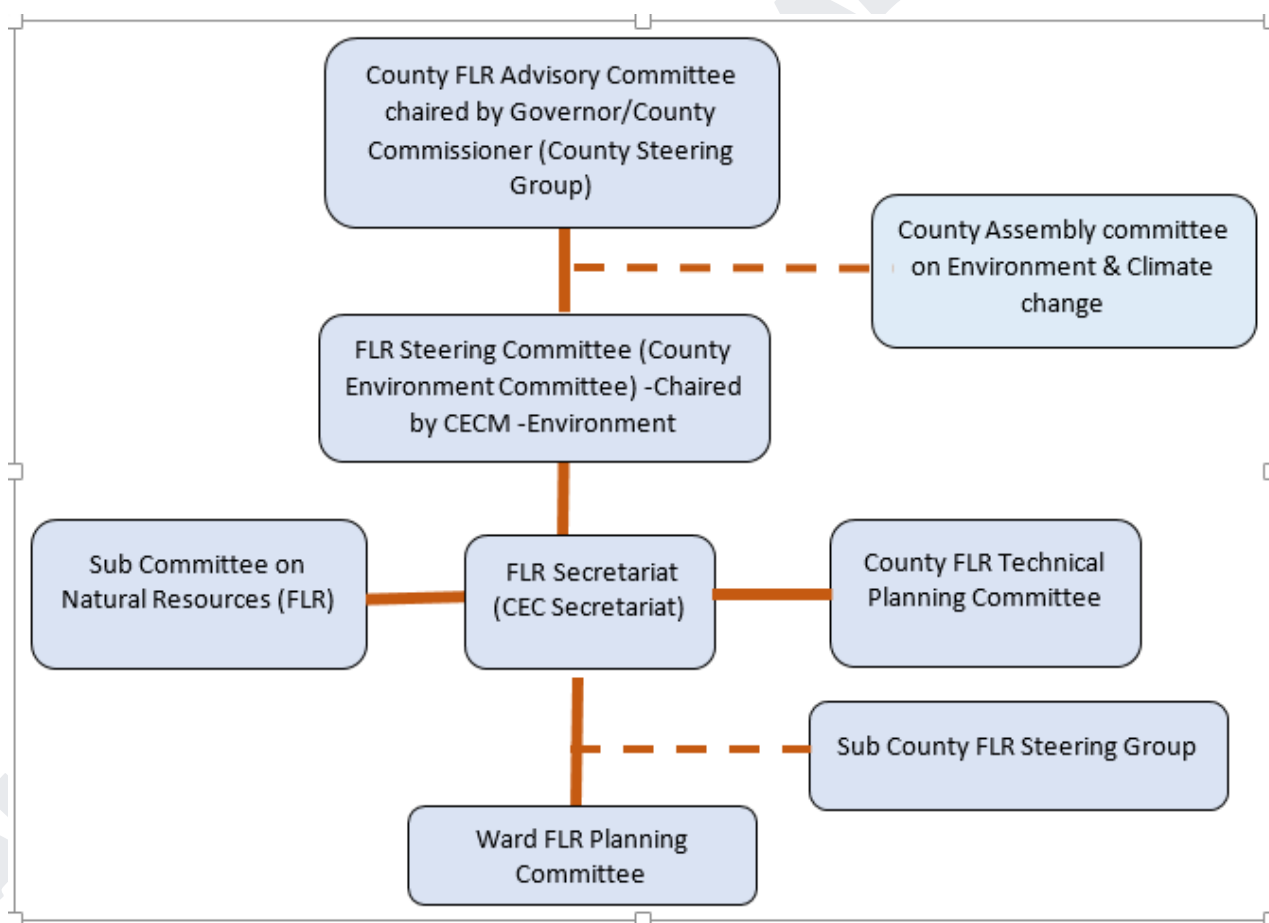


Figure 10: County Coordination and Institutional Framework for Implementation of FOLAREP

4.3 Composition and Roles of the various FLR Coordination committees

4.3.1 County FLR Advisory/ Steering Committee

This Committee is anchored under the Disaster Risk Management (DRM) Policy domiciled in National Drought Management Authority (NDMA). The Committee shall be co-chaired by H.E the Governor and the County Commissioner, and shall draw members from County Departments, National Government ministries and agencies together with representation from Implementing Partners relevant to FLR activities. This Committee will provide overall oversight and policy direction, set the agenda and top priorities for FOLAREP, and promote financial and technical resource mobilization for the governance and implementation of FOLAREP. It will work along with Sector working groups.

County Advisory/ Steering group shall be the County FLR steering Committee discharging such duties of resource mobilization for implementation of FOLAREP and it shall draw membership of NEMA, KEFRI, WRA, KMD, Agriculture, Economic Planning and Development, Education (National Government), Energy, Finance, Fisheries, Public Health, Industry, Law or law enforcement and Kenya Water Towers Agency. The Committee shall also ensure incorporation and implementation of recommendations from the National FLR Advisory Committee; implement recommendations from the National FLR Advisory Committee; monitor and evaluate FOLAREP's implementation, carry out resource mobilization and address any associated risks. The committee will also ensure that FLR activities are entrenched and budgeted for in their institutional programs and initiatives.

4.3.2 County Environment Committees

This is the Committee bestowed with general Coordination of FLR activities in the County. It is chaired by CECM responsible for Environment and Climate Change and the secretary is the County Director of Environment (NEMA). The County Environment Committee's composition is provided for in EMCA Cap 387 of the Laws of Kenya. Its membership includes six representatives from Private Sector, Development Partners and PBOs and representatives from County Departments and Lead Government agencies.

The main mandate of the CEC is to provide oversight, coordination and implementation of environmental conservation initiatives and to advise the Governor over the subject matter. The same will apply also when discharging the FOLAREP and resource mobilization at the County level

4.3.3 County FLR Technical Committee

This Committee is domiciled under Makueni County Climate Change Act, 2022. It has a maximum of 31 members nominated by the Accounting Officers of the following organizations : The National Treasury and Planning, The Ministry of Environment and Forestry, CoG, KFS, NEMA, NETFUND, KEFRI, Kenya Marine and Fisheries Research Institute, KALRO, KWS, NMK, WRA, KWTA, Departments of Crop production, Departments of Livestock production, Water Department Lands and Physical Planning, Department of Finance and Social Economic Planning, Department of

Agriculture and Livestock, NDMA, NACOPA, and representatives from PBOs, Kenya Private Sector Association (KEPSA).

The committee shall provide technical support to the Steering Committee on the implementation of FOLAREP; promote synergies and complementarities on FLR amongst key actors. It shall also review and recommend the annual FLR Work Plans and Budgets for approval by the steering committee; prepare progress, quarterly and annual reports. It shall further ensure that recommendations from the steering are implemented and constitute sub-committees to provide technical support in the various thematic areas of FOLAREP including capacity building of Ward and Sub County Structures together with other stakeholders.

Specific Duties of the County Technical FLR Committee will be technical guidance on;

- i. Implementation of specific national government policies on natural resources and environmental conservation
- ii. Manage all forests on public land vested and held in trust by County Governments;
- iii. Prepare annual reports on County forest activities of the County government, for approval by the County Assembly;
- iv. Promote afforestation and reforestation activities in the County;
- v. Promote value addition and commercialization of forest products (wood and Non-Timber Forest Products (NTFPs);
- vi. Establish and maintain green zones in markets, urban areas, housing estates and any other areas within the County;
- vii. Develop a sustainable charcoal value chain for County forests and private forests;
- viii. Enforce forest National and County legislation within the County forests and private farms; Establish and manage farm forest extension services;
- ix. Soil and Water Conservation;
- x. Climate change adaptation and mitigation.

4.3.4 Sub Committee on Natural Resources (FLR)

This is a sector working committee of the CEC on FLR activities. it includes membership from; County Directorate of Environment - Chairman, KFS - Secretary, NEMA, KWS, NDMA, KMD, County Directorate of Agriculture, TARDA, County commissioner and two representatives of Public Benefits Organization. The role of the committee is to advise CEC on matters within their jurisdiction.

4.3.5 The County FLR Secretariat

The County Directorate Environment shall host the FLR Secretariat and shall incorporate other stakeholders on a need-by-need basis. The secretary to the committee shall be KFS - Ecosystem conservator. The general functions of the FLR Secretariat shall be to give technical support to the County Environment Committee. To deliver these, the Secretariat will work jointly and alongside the CEC Sub-Committee on Natural Resources and The County Technical Committee to

consolidate their support to the CEC. Specifically, the FLR Secretariat will do the following; prepare Annual Work Plans and Budgets (AWP&B) for FLR activities; coordinate implementation of FLR activities at County levels; ensure effective communication, knowledge management and learning on FLR; organize quarterly fora on information sharing on challenges, milestones for implementation FLR activities; act as the central repository for FLR data, reports and information on FLR projects; compile Country Restoration Status Report (CRSR) for consideration and adoption by the technical and other Coordination committees; prepare terms of reference for consultancies for consideration by the technical committee; consolidate information on available resources and their utilization on FLR activities; prepare draft concept notes for engaging with potential development partners for funding of FLR activities for consideration by the technical committee; identify and provide stakeholders with available funding opportunities; documentation of restoration initiatives and support resource mobilization.

4.3.6 Sub County FLR Steering Group

This is a replica committee of County Advisory and Steering Group whose mandate is to coordinate FLR across several Wards at the Sub County level. Their main duty shall be to ensure budgeting and mainstreaming of Cross-Ward FLR activities. The Committee is established by the Disaster and Risk Management Policy domiciled under NDMA.

4.3.7 Ward FLR Planning and Coordination Committee

This committee is adopted from the Ward Climate Change Planning committee which consists of 9 members representing diverse interests in the community namely; one person from each gender representing elders; youths; persons living with disability, a representative of relevant sectors relevant to FLR; one person representing Community Based Organizations in the Ward; and Ward Administrator who is the Secretary.

The roles of this committee include:

- (a) to coordinate and mobilize communities and other stakeholders in the Ward to design and implement FLR activities;
- (b) to facilitate research and knowledge management at the Ward level on FLR, its impacts and strategies for implementation of restoration activities;
- (c) to facilitate public education, awareness creation and capacity building at the ward level on FLR, its impacts and strategies for restoration;
- (d) to coordinate, facilitate and manage community consultations on priority FLR activities;
- (e) participate in county planning and budgeting process with a view of ensuring mainstreaming FLR and prioritization of restoration in county development plans;
- (f) facilitate public participation in FLR governance, implementation of agreed restoration response activities and monitoring;

- (g) coordinate and facilitate provision of technical support to communities in the ward in developing proposals on FLR response projects for funding;
- (h) oversee implementation of FLR projects and report progress to the sub-county FLR steering group.

CHAPTER 5: RESOURCE MOBILIZATION

5.1 Introduction

Forest and Landscape Restoration Implementation Plan (FOLAREP) - 2023-2030 is a cross-sectoral and multi-stakeholder coordination framework to accelerate actions to restore deforested and degraded landscapes. The plan seeks to enhance resilient socio-economic development, improve ecological functioning and contribute to achieving County, National and International aspirations and obligations respectively.

Implementing FOLAREP will contribute to achieving 30% National tree cover by 2050, up from the current 12.38%. Further, it will contribute to the fulfillment of International obligations, including the Convention on Biological Diversity (CBD), the United Nations Framework Convention for Climate Change (UNFCCC), the United Nations Forum on Forests (UNFF), the Bonn Challenge, and the African Forest Landscape Restoration Initiative (AFR100). It will also be a critical instrument in supporting the aspirations of the UN Decade for Ecosystem restoration, 2021-2030.

5.2 Budget and financing mechanisms for FLR

The overall financial requirements to implement this plan is estimated to cost the County government and partners approximately Ksh. 30 Billion. This is against the National budget of Ksh. 1.9 trillion as per the FOLAREP 2023 - 2027.

Table 15: Financial resources required for Makueni FOLAREP

Objective	Amount (Kshs)	Amount (USD)
1.1 Review existing policy and regulatory frameworks.	600,000	4,000
1.2 Support implementation and development of FLR- related policy and regulatory frameworks	1,350,000	9,000
1.3 Support FLR institutional coordination to enhance implementation	1,500,000	10,000
2.1 Update and scale down the County level forest landscape restoration assessment to the Ward level.	9,000,000	60,000
2.2 Restore and protect 19,000 ha of degraded forest land/plantations	9,500,000,000	63,333,333
2.3 Restore 4,000 ha of degraded natural forests	500,000,000	3,333,333
2.4 Restore 43,300 ha of degraded cropland/Agroforestry in the		56,083,333

Objective	Amount (Kshs)	Amount (USD)
County	8,412,500,000	
2.5 Restore 32,000 ha of degraded rangelands and woodlands	9,920,000,000	66,133,333
2.6 Restore 1,000 ha of degraded buffer zones along water bodies and wetlands	500,000,000	3,333,333
2.7 Restore 500 ha of degraded land/bare land and 200 ha of roadways in the County	164,500,000	1,096,667
3.1 Support financial resource mobilization initiatives for FLR implementation.	1,000,000	6,667
3.2 Strengthening restoration fund schemes (County climate change fund, Reclamation fund etc)	10,000,000	66,667
4.1 Promote and develop gender inclusive green value chains	2,000,000	13,333
5.1 To enhance adoption of FLR monitoring, evaluation, research & learning (MERL)	1,000,000	6,667
	29,023,450,000	193,489,667

Notes:

1. The exchange rate used was 1 USD=KES 150.

These resources will be mobilized from the County government's budgetary allocations, bilateral donors, public private partnership, local and international NGOs. An opportunity for prioritization of FOLAREP funding from key global financing mechanisms such as GCF and GEF should be pursued by the government in collaboration with other stakeholders.

5.3 Status of Makueni FLR financing

Currently, most of the funds for restoration are project based and sourced through different avenues.

Key financial sources available for FLR 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.
- Public Private Partnership (PPP).

CHAPTER 6. MONITORING, EVALUATION AND REPORTING FRAMEWORK

The purpose of the monitoring and evaluation framework will be to provide information and key milestones progress, challenges and lessons learnt in the process of implementing FOLAREP programmes and projects in Makueni County towards landscapes restoration and provision of future restoration programmes. The M&E framework will be essential in identification of implementation gaps and provide information on programmes and projects to key stakeholders as well as assess achievements of the set restoration targets in the plan and the impact of restoration impacts.

6.1 FOLAREP Monitoring and Evaluation Plan – Outcome Indicators

Table 16: Makueni County Monitoring and Evaluation Plan

Result Area	Indicator	Metrics	Source of Data	Frequency	Responsibility
County Legal, Regulatory and Coordination Framework	No of legal frameworks and policies related to FLR reviewed, gaps identified and validated with stakeholders	Numbers and Types and description	Cabinet Memos Policy briefs CA/CE websites	Quarterly & Annually	CECM environment and climate change County ECMs' Cabinet County Assembly County FLR secretariat
	No of FLR policies developed and adopted by cabinet and approved County Assembly	Numbers and Types and description	Cabinet Memos Policy briefs CA/CE websites	Quarterly & Annually	CECM environment and climate change County ECMs' Cabinet County Assembly
	No of institutional coordination framework developed and strengthened in the County in relation to FLR	Numbers and Types and description	Cabinet Memos Policy briefs CA/CE websites	Quarterly & Annually	CECM environment and climate change County ECMs' Cabinet County Assembly
County Area under Forest landscape restoration	No of FLR assessments updated and scaled down to sub county and ward levels	Numbers and Types and description	Cabinet Memos Policy briefs County FLR assessment reports FLR M&E reports	Quarterly & Annually	CECM environment and climate change County FLR secretariat NEMA, KFS

Result Area	Indicator	Metrics	Source of Data	Frequency	Responsibility
	Hectares of degraded land restored and protected	Hectares of degraded land, natural forests, cropland, agroforestry, rangelands, woodlands, buffer zones along water bodies and wetlands and bare lands restored and protected	Cabinet Memos Policy briefs County FLR assessment reports FLR M&E reports County Statistical Abstracts Ward Profiles	Progress, quarterly and Annually	CECM environment and climate change KWS, KFS County Forest Unit Ministry of lands/ survey County Survey Division
County Resource Mobilization	Amount of financial resources mobilized toward FLR	KSHs, USD, Stakeholders' inventory (grants and donors)	County Annual Budgets County Fiscal Strategy Papers County Investment Profiles County Stakeholders'/ Liaison reports	Quarterly	CECM environment and climate change County Treasury
	No of FLR fund schemes strengthened	FLR fund schemes (CCCF and Restoration fund)	County Annual Budgets County Fiscal Strategy Papers County Investment Profiles	Quarterly	CECM environment and climate change County Treasury
Nature-based value chains and adoption of alternative sources of livelihoods for improved	No of gender inclusive green value chains promoted and developed	Numbers of gender groups	FLR secretariat reports CSA Gender assessment and mapping reports	Biennial & Annually	CECM environment and climate change and gender
	No of bankable projects on nature based value chains invested with restoration benefits	Investment amount	County Investment Profiles County Annual Budgets	Annually	CECM environment and climate change County Treasury County Forest Unit

Result Area	Indicator	Metrics	Source of Data	Frequency	Responsibility
wellbeing of communities					KFS
	Percentage change in community livelihoods/income levels	Income levels, jobs created	KNBS CSA/ Ward Profiles Kenya Household Survey	Annually	CECM environment and climate change County Treasury
Research, Innovation and Knowledge management	Baseline survey & Evaluation	Current FLR practices	Ward Profiles Kenya Household Survey	Thrice in the project period (At the start, midway & end)	CECM environment and climate change County Treasury
	Percentage adoption of FLR best practices	Percentage, Number and description	County FLR secretariat reports Policy briefs	Annually	CECM environment and climate change KWS, KFS County Forest Unit
	No of knowledge management products produced on FLR	Number and description	County FLR secretariat Reports Policy briefs	Annually	CECM environment and climate change County Treasury
	No of technologies on FLR researched, innovated and promoted in the county	Number and description	County FLR secretariat Reports Policy briefs	Annually & Biennial	CECM environment and climate change KWS, KFS County Forest Unit

Result Area	Indicator	Metrics	Source of Data	Frequency	Responsibility
	No of integrated M&E management system developed and adapted in the county	Number and description	County FLR secretariat Reports Policy briefs	Annually	CECM environment and climate change KWS, KFS County Forest Unit

6.2 Implementation Matrix

Table 17: Makueni County Implementation Matrix

Activity	Output	MoV	Responsible Institution	Time frame							
				2023	2024	2025	2026	2027	2028	2029	2030
Objective 1: To develop and strengthen policies, regulatory frameworks and institutional coordination for enhanced FLR implementation											
Strategic Intervention Area 1; Review existing policy and regulatory frameworks											

Activity	Output	MoV	Responsible Institution	Time frame							
				2023	2024	2025	2026	2027	2028	2029	2030
Identify and review the gaps in the existing FLR related policies and regulations in view of global, regional, national initiatives, treaties, conventions, protocols and agreements	Existing FLR policies reviewed and gaps identified	Invitation letters, no. of meetings conducted and minutes; Policies reviewed	NEMA, KFS, DoECC, DAILF&CD, NDMA, KWS, KALRO, WRA, KEFRI, Non State Actors (NSA)	X	X						
Harmonize the gaps in existing FLR related policies and regulations frameworks and Validate the reviewed policies with stakeholders	Policy gaps harmonized in relation to FLR and validated by stakeholders	Reports and gaps identified and harmonized;	NEMA, KFS, DoECC, DAILF&CD, NDMA, KWS, KALRO, WRA, KEFRI, Non State Actors (NSA)	X	X						

Activity	Output	MoV	Responsible Institution	Time frame							
				2023	2024	2025	2026	2027	2028	2029	2030
Prepare a cabinet memo outlining key recommendations on policy review and harmonization by County Executive and if need be forward to County Assembly for approval.	Cabinet Memo with recommendations on policy review and harmonization requirements	Cabinet memo	DoECC	X	X						
Recommend development of new policies and/or regulations as advised by legal review outcome.	Developed policies and legal frameworks on FLR	Reports, Policies recommended Policies developed	CEC	X	X						
Strategic Intervention Area 2; Support implementation and development of FLR- related policy and regulatory frameworks											

Activity	Output	MoV	Responsible Institution	Time frame							
				2023	2024	2025	2026	2027	2028	2029	2030
Create awareness on FLR-related policies and regulations at the County and Ward levels	Awareness created on FLR related policies and regulations	Awareness report, Training materials developed	NEMA, KFS, DoECC, DAILF&CD, NDMA, KWS, KALRO, WRA, KEFRI, Non State Actors (NSA) NGAO.		X	X	X	X	X	X	X
Support development of recommended policies in activity / Strengthening the existing laws and policies	Finalized FLR Policies	Reports, Developed policies, Laws reviewed	CIFOR- ICRAF, FAO, UNDP, WRI, AWF, UNEP, UN Habitat, USAID,		X	X	X	X	X	X	X

Activity	Output	MoV	Responsible Institution	Time frame							
				2023	2024	2025	2026	2027	2028	2029	2030
Develop County FLR related policies and legislations, framework	Finalized FLR Policies	Reports, Developed policies, Laws reviewed	DoECC, NEMA, CEC	X	X	X	X	X	X	X	X
Integrate FLR policies and strategies in County Integrated Development Plans (CIDPs).	Linked FLR policies with county plans	Reports, CIDP with FLR activities	CEC, NEMA, DoECC	X	X	X	X	X	X	X	X
Strategic Intervention Area 3; Support institutional coordination to enhance implementation of FLR											
Strengthen existing FLR related coordination units at County level, Sub County and at Ward level	Strengthened FLR related coordination units/structures	Trainings and progress reports,	NGAO, CEC, NEMA, DoECC, NDMA	X	X	X	X	X	X	X	X

Activity	Output	MoV	Responsible Institution	Time frame							
				2023	2024	2025	2026	2027	2028	2029	2030
Establish technical secretariat for coordination of FLR efforts at County level	Established technical secretariat for FLR Coordination level	Appointment letters, Progress reports	CEC, NEMA, DoECC, NDMA	X	X	X	X	X	X	X	X
Establish and strengthen County Multi-stakeholder engagement platform	Established and strengthened County multi-stakeholder engagement platform	Appointment letters, Progress reports	CEC, NEMA, DoECC	X	X	X	X	X	X	X	X
Develop and strengthen forums for stakeholders' engagement in FLR implementation and monitoring	Developed and strengthened FLR implementation and monitoring forum	Progress reports	CEC, NEMA, DoECC		X	X	X	X	X	X	X

Activity	Output	MoV	Responsible Institution	Time frame							
				2023	2024	2025	2026	2027	2028	2029	2030
Develop and strengthen trans-ward and inter-county frameworks for FLR implementation.	Developed and strengthened trans-ward and inter-county frameworks	Frameworks developed, Reports	CEC, NEMA, DoECC		X	X	X	X	X	X	X
Strengthen cross-sectoral and interdepartmental efforts on FLR related activities	FLR cross-sectoral linkages established	Cross-sectoral reports	CEC, NEMA, DoECC		X	X	X	X	X	X	X
Create and strengthen linkages and synergies with existing FLR related programmes	Linkages and synergies created and strengthened on related programmes	MOUs, MOAs and partnership reports	CEC, NEMA, DoECC		X	X	X	X	X	X	X

Activity	Output	MoV	Responsible Institution	Time frame							
				2023	2024	2025	2026	2027	2028	2029	2030
Objective 2. To restore 100,000 ha of degraded forests and landscapes by 2030 for improved biodiversity and climate change impacts reversal.											
Strategic Intervention Area 4; Update and scale down the County level forest landscape restoration assessment to the Landscape and Ward level.											
Access and review the Technical Report on the National Assessment of FLR Opportunities in Kenya (MENR, 2016) and the Makueni ROAM Report, 2018.	Reviewed technical reports on assessment FLR opportunities	Review reports	CEC Secretariat				X				

Activity	Output	MoV	Responsible Institution	Time frame							
				2023	2024	2025	2026	2027	2028	2029	2030
Strengthen capacity of stakeholders to implement recommendations of County Forest Landscape Restoration Plan (FOLAREP).	Capacity build stakeholders on FLR implementation	Training and progress reports	CEC, NEMA, DoECC	X	X	X	X	X	X	X	X
Develop and implement specific Landscapes and Ward level Forest and Landscape Restoration (FLR) Plans.	Developed and implemented Ward FLR Plans	Reports Ward FLR plans	NEMA, KFS, DoECC, DAILF&CD, NDMA, KWS, KALRO, WRA, KEFRI, Non State Actors (NSA)	X	X	X	X	X	X	X	X
Strategic Intervention Area 5; Restore and protect 19,000 ha of degraded forest land/plantations											

Activity	Output	MoV	Responsible Institution	Time frame							
				2023	2024	2025	2026	2027	2028	2029	2030
Mapping, surveying, beaconing and gazettement of gazetted and non gazetted forests.	Mapped, surveyed, beacons and gazetted and non gazetted county forests	Maps, Survey reports and gazetted forests	DoECC, KFS, NEMA, WRA		X	X	X				
Identification and preparation of sites for plantations establishment.	Plantation sites identified and prepared	Site reports	KFS, NEMA, DoECC	X	X	X	X	X	X	X	X
Strengthen capacity of stakeholders to produce 19 million seedlings of preferred plantation species.	19 million seedlings of preferred species produced	Stakeholder training reports, Seedling production reports	NEMA, KFS, DoECC, DAILF&CD, NDMA, KWS, KALRO, WRA, KEFRI,	X	X	X	X	X	X	X	X

Activity	Output	MoV	Responsible Institution	Time frame							
				2023	2024	2025	2026	2027	2028	2029	2030
			Non State Actors (NSA)								
Establishment of 19,000 hectares of plantations and carry out necessary silvi-cultural practices.	19,000 hectares of forests established and maintained	Progress reports	KFS, NEMA, DoECC	X	X	X	X	X	X	X	X
Develop and review Forest Management Plans- FMPs	Developed and reviewed County Forest management plan	Reports FMPs	KFS, NEMA, DoECC		X	X	X	X			
Strategic Intervention Area 6; Restore 4,000 ha of degraded natural forests											

Activity	Output	MoV	Responsible Institution	Time frame							
				2023	2024	2025	2026	2027	2028	2029	2030
Undertake enrichment planting, silvi-cultural practices in 4,000 hectares of natural forests by planting 4 million of assorted indigenous tree seedlings	4,000 ha of degraded natural forests restored	Progress reports	NEMA, KFS, DoECC, DAILF&CD, NDMA, KWS, KALRO, WRA, KEFRI, Non State Actors (NSA)	X	X	X	X	X	X	X	X
Promote and enhance natural regeneration in specific identified natural forests	Acreage of natural regeneration sites in county natural forests	Progress reports	KFS, CFAs, WRUAs, WRA, DoECC, KWS	X	X	X	X	X	X	X	X
Identify and manage invasive species in plantations and natural forests	Identified and managed invasive species	Progress reports	KFS, KEFRI, NEMA, DoECC	X	X	X	X	X	X	X	X

Activity	Output	MoV	Responsible Institution	Time frame							
				2023	2024	2025	2026	2027	2028	2029	2030
Identify and promote conservation and protection of endemic and endangered species	Identified, conserved and protected endemic and endangered species	Progress reports	KFS, KEFRI, NEMA, DoECC	X	X	X	X	X	X	X	X
Develop and review Participatory Forest Management Plans- PFMPs in collaboration with CFAs to support result-based financing for the PFMPs	Developed and reviewed Participatory Forest Management Plans	Reports, PFMPs	KFS, KEFRI, NEMA, DoECC		X	X	X				

Activity	Output	MoV	Responsible Institution	Time frame							
				2023	2024	2025	2026	2027	2028	2029	2030
Create awareness and sensitization to government agencies, non-state actors, private entities and Community Forest Associations on FLR actions.	Sensitized government agencies, non-state actors, private entities and Community Forest Associations	Training/progress reports,	NGAO, KFS, CEC, NEMA, DoECC, KEFRI		X	X	X	X	X	X	X
Promote innovative community-based and cost-efficient approaches for protection of restored and/ or areas under restoration (such as use of surveillance technologies, adopt a forest, social fencing,	Promoted innovative and cost efficient approaches for restoration	Progress reports,	NGAO,KFS, KEFRI, DoECC, WRA	X	X	X	X	X	X	X	X

Activity	Output	MoV	Responsible Institution	Time frame							
				2023	2024	2025	2026	2027	2028	2029	2030
solar fencing among others).											
Promote and incentivise restoration approaches by private entities	Incentivised restoration approaches	MOUs, Progress reports MOAs	NEMA, KFS, DoECC, DAILF&CD, NDMA, KWS, KALRO, WRA, KEFRI, Non State Actors (NSA)	X	X	X	X	X	X	X	X

Activity	Output	MoV	Responsible Institution	Time frame								
				2023	2024	2025	2026	2027	2028	2029	2030	
Strategic Intervention Area 7; Restore 43,300 ha of degraded cropland/Agroforestry in the County												
Map and promote protection of ecologically sensitive niches within croplands from degradation	Mapped and protected niches within croplands	Maps and Survey reports, Progress reports	KEFRI, DAILF&CD, DoECC, KFS, WRA, KALRO	X	X	X	X	X	X	X	X	
Identify and promote the adoption of agroforestry best practices (setting up demo sites, FFS).	Identified and promoted best practices on agroforestry	Progress reports	KEFRI, DAILF&CD, DoECC, KFS, KALRO	X	X	X	X	X	X	X	X	
Promote soil and water conservation measures in degraded croplands.	Promoted soil and water conservation measures	Progress reports	KEFRI, DAILF&CD, DoECC, KFS, KALRO, WRA	X	X	X	X	X	X	X	X	

Activity	Output	MoV	Responsible Institution	Time frame							
				2023	2024	2025	2026	2027	2028	2029	2030
Support mass production and access to 23.3 million quality fruit trees (Avocado, macadamia, mangoes, citrus etc) and 20 million high value tree seedlings (Grevillea, Tamarindus, Moringa, Sclerocarya birrea (amarula), Terminallia Brownii, Sesbania, Melia etc) totalling to 43.3 million tree seedlings	Improved high value seedlings production	Seedling production report, Progress reports	NEMA, KFS, DoECC, DAILF&CD, NDMA, KWS, KALRO, WRA, KEFRI, Non State Actors (NSA)	X	X	X	X	X	X	X	X

Activity	Output	MoV	Responsible Institution	Time frame							
				2023	2024	2025	2026	2027	2028	2029	2030
Promote Sustainable Land Management Practices (SLM) such as conservation agriculture, Climate Smart Agriculture, farmer managed natural regeneration etc.)	Promoted SLM practices Area restored using SLM	Progress reports	NEMA, KFS, DoECC, DAILF&CD, NDMA, KWS, KALRO, WRA, KEFRI, Non State Actors (NSA)	X	X	X	X	X	X	X	X
Strategic Intervention Area 8; Restore 32,000 ha of degraded rangelands and woodlands											
Promote pasture seed production, range reseeding and natural regeneration initiatives through community involvement	Promoted pasture seed production, range reseeding and natural regeneration initiatives	Seeds production report, Progress reports	NGAO, NEMA, KFS, DoECC, DAILF&CD, NDMA, KWS, KALRO, WRA, KEFRI,	X	X	X	X	X	X	X	X

Activity	Output	MoV	Responsible Institution	Time frame							
				2023	2024	2025	2026	2027	2028	2029	2030
			Non State Actors (NSA)								
Improve access to 8 million drought-tolerant seedlings (250 seedlings per hectare)	Improved access to seedlings and establishment of drought tolerant species	Seedlings production report, Progress reports, Training reports	NEMA, KFS, DoECC, DAILF&CD, NDMA, KWS, KALRO, WRA, KEFRI, Non State Actors (NSA)	X	X	X	X	X	X	X	X

Activity	Output	MoV	Responsible Institution	Time frame							
				2023	2024	2025	2026	2027	2028	2029	2030
Sensitization of communities on best practices on rangeland management	Communities sensitized on range management best practices	Training and progress reports	NGAO,NEMA, KFS, DoECC, DAILF&CD, NDMA, KWS, KALRO, WRA, KEFRI, Non State Actors (NSA)	X	X	X	X	X	X	X	X
Promote soil and water conservation technologies and water harvesting measures in rangelands	Conserved soil and water	Progress reports	NGAO,NEMA, KFS, DoECC, DAILF&CD, NDMA, KWS, KALRO, WRA, KEFRI, Non State Actors (NSA)	X	X	X	X	X	X	X	X

Activity	Output	MoV	Responsible Institution	Time frame							
				2023	2024	2025	2026	2027	2028	2029	2030
Identify, map and manage key invasive species	Identified, mapped and managed areas under invasive species	Maps, Progress reports	NEMA, KFS, DoECC, DAILF&CD, NDMA, KWS, KALRO, WRA, KEFRI, Non State Actors (NSA)	X	X	X	X	X	X	X	X
Promote livelihood diversification programmes and green IGAs (Income Generating Activities - Commercial pasture development, feed lotting, hay).	Promoted livelihood diversification programmes	Progress reports	NGAO,NEMA, KFS, DoECC, DAILF&CD, NDMA, KWS, KALRO, WRA, KEFRI, Non State Actors (NSA)	X	X	X	X	X	X	X	X

Activity	Output	MoV	Responsible Institution	Time frame							
				2023	2024	2025	2026	2027	2028	2029	2030
Promote sustainable utilization and value addition of wood and Non-Timber Forest Products (NTFPs)	Sustainable utilization and value addition of wood and non-wood products promoted	NTFPS value chains reports, Progress reports	NGAO,NEMA, KFS, DoECC, DAILF&CD, NDMA, KWS, KALRO, WRA, KEFRI, Non State Actors (NSA)		X	X	X	X	X	X	X
Strategic Intervention Area 9; Restore 1,000 ha of degraded buffer zones along water bodies and wetlands											
Map, survey, pegging, gazette and secure water bodies, wetlands and riparian buffer zones	Mapped, surveyed, pegged, gazetted and secured areas	Maps, Survey reports Gazetted water bodies, Progress reports	NEMA, KFS, DoECC, DAILF&CD, NDMA, KWS, KALRO, WRA, KEFRI, Non State Actors (NSA)		X	X	X	X	X		

Activity	Output	MoV	Responsible Institution	Time frame							
				2023	2024	2025	2026	2027	2028	2029	2030
Strengthen the capacity of local communities and affiliated user groups through capacity building on best technologies to undertake restoration and management of water bodies, wetlands and riparian zones	Capacity build stakeholders on best restoration management practices	Training reports, Progress reports	NEMA, KFS, DoECC, DAILF&CD, NDMA, KWS, KALRO, WRA, KEFRI, Non State Actors (NSA)	X	X	X	X	X	X	X	X

Activity	Output	MoV	Responsible Institution	Time frame							
				2023	2024	2025	2026	2027	2028	2029	2030
Promote, incentivise and upscale best water harvesting, soil conservation, riverine restoration and adoption of indigenous knowledge approaches along rivers, wetlands and water bodies	Promoted and incentivised best practices for restoration	Training reports, Progress reports, MoUs	CIFOR-ICRAF, FAO, UNDP, WRI, AWF, UNEP, UN Habitat, USAID, NSA, MDAs	X	X	X	X	X	X	X	X
Support development and implementation of specific water catchment management plans	Developed water catchment management plans	Water Catchment Management Plan. Progress report, MoUs	NEMA, KFS, DoECC, DAILF&CD, NDMA, KWS, KALRO, WRA, KEFRI,	X	X	X	X	X	X	X	X

Activity	Output	MoV	Responsible Institution	Time frame							
				2023	2024	2025	2026	2027	2028	2029	2030
			Non State Actors (NSA)								
Enhance enforcement of existing laws and regulations on riparian conservation to safeguard the gains made on restoration	Improved compliance to existing laws and regulations on riparian conservation	Sensitization reports, Enforcement/prosecution reports, Water abstraction and pollution survey reports	NEMA, KFS, DoECC, DAILF&CD, NDMA, KWS, KALRO, WRA, KEFRI, Non State Actors (NSA)	X	X	X	X	X	X	X	X
Strategic Intervention Area 10; Restore 500 ha of degraded land/bare land/urban areas and 200 ha of roadways in the County											

Activity	Output	MoV	Responsible Institution	Time frame							
				2023	2024	2025	2026	2027	2028	2029	2030
Map and promote protection of degraded and bare land	Mapped and protected degraded and bare land	Maps of protected sites, Progress reports, MoUs	NEMA, KFS, DoECC, DAILF&CD, NDMA, KWS, KALRO, WRA, KEFRI, Non State Actors (NSA)	X	X	X	X	X	X	X	X
Identify and promote the adoption of best restoration practices for degraded, denuded and bare land (Trapezoidal and half moons bands etc)	Identified and promoted best practices for restoration	Progress reports,	NEMA, KFS, DoECC, DAILF&CD, NDMA, KWS, KALRO, WRA, KEFRI, Non State Actors (NSA)	X	X	X	X	X	X	X	X

Activity	Output	MoV	Responsible Institution	Time frame							
				2023	2024	2025	2026	2027	2028	2029	2030
Support mass production of planting live materials/germplasms (sisal, euphorbia, grass, bamboo, aloe etc) to restore 500 ha of degraded land	Produced live planting materials, 500 ha land under restoration	Progress reports,	NEMA, KFS, DoECC, DAILF&CD, NDMA, KWS, KALRO, WRA, KEFRI, Non State Actors (NSA)	X	X	X	X	X	X	X	X
Identify and promote adoption of mechanical and biological interventions (Gabion boxes, check walls, score checks etc) to restore denuded land affected by soil erosion	Identified and adopted interventions for restoration, Increased water storage, Reduced soil erosion	Progress reports, Approved design plans, BoQs, Technical reports	NEMA, KFS, DoECC, DAILF&CD, NDMA, KWS, KALRO, WRA, KEFRI, Non State Actors (NSA)	X	X	X	X	X	X	X	X

Activity	Output	MoV	Responsible Institution	Time frame							
				2023	2024	2025	2026	2027	2028	2029	2030
Identify and promote roads for water harvesting technologies (farm ponds, mitred drains, road beautification program etc) to restore 200 ha of roadways surface run off	Identified and adopted road run off harvesting technologies	Progress reports, Approved design plans, Technical reports	NEMA, KFS, DoECC, DAILF&CD, NDMA, KWS, KALRO, WRA, KEFRI, Non State Actors (NSA)	X	X	X	X	X	X	X	X
Identify and promote adoption of natural regeneration and farmer managed restoration technologies in restoration of	Identified, promoted and adopted natural regeneration and farmer managed restoration technologies	Progress reports,	NEMA, KFS, DoECC, DAILF&CD, NDMA, KWS, KALRO, WRA, KEFRI, Non State Actors (NSA)	X	X	X	X	X	X	X	X

Activity	Output	MoV	Responsible Institution	Time frame							
				2023	2024	2025	2026	2027	2028	2029	2030
denuded and Bareland											
Objective 3: To mobilize resources locally, nationally and internationally from public and private partnerships for FLR implementation											
Strategic Intervention Area 11; Support financial resource mobilization initiatives for FLR implementation.											
Conduct the County capacity needs assessment on resource mobilization.	Capacity needs assesment done	Capacity needs assessment report, Resource mobilization reports, Focus groups management plans and reports	FAO, CIFOR-ICRAF, WRI, NEMA, DoECC, CEC		X	X	X	X	X	X	X

Activity	Output	MoV	Responsible Institution	Time frame							
				2023	2024	2025	2026	2027	2028	2029	2030
Enhance the County capacity on resource mobilization and proposal development by training stakeholders and actors to implement FLR.	Capacity on resource mobilization enhanced	Training reports, MoUs and progress reports	CEC, NSA, Development Partners		X	X	X	X	X	X	X
Support stakeholders to develop a bankable FLR investment projects and business plans.	Developed bankable FLR investment projects and business plans	Training reports, MoUs and progress reports	NSA, DAILF&CD, KFS, DoECC		X	X	X	X	X	X	X

Activity	Output	MoV	Responsible Institution	Time frame							
				2023	2024	2025	2026	2027	2028	2029	2030
Promote community-based innovative financing mechanisms to support restoration.	Promoted financing mechanisms	Proposals, Access to finances, MoUs, MoAs	NEMA, KFS, DoECC, DAILF&CD, NDMA, KWS, KALRO, WRA, KEFRI, Non State Actors (NSA)		X	X	X	X	X	X	X
Develop County public-private partnership (PPP) framework or platform to finance FLR.	Developed public-private partnership (PPP) framework or platform to finance FLR.	MoUs, MoAs, Progress reports	DoECC, NSA, KFS, NEMA		X	X	X	X	X	X	X

Activity	Output	MoV	Responsible Institution	Time frame							
				2023	2024	2025	2026	2027	2028	2029	2030
Advocate for additional FLR budgetary allocations by the County Executive and Assembly	Increased FLR budgetary allocations by the County Executive and Assembly	Budget allocation report	DoECC	X	X	X	X	X	X	X	X
Develop a strategy for enhancing access to financial resources for FLR from private sector and other stakeholders	Developed strategy for enhance access to financial resources for FLR from private sector and other stakeholders	Strategic plan, Progress report, MoUs/MoAs	DoECC, NSA, KFS, NEMA	X	X	X	X	X	X	X	X
Promote linkages to optimize bilateral and multilateral funding	Promoted linkages	Strategic plan, Progress report, MoUs/MoAs	MDAs, DoECC, NSA, KFS	X	X	X	X	X	X	X	X

Activity	Output	MoV	Responsible Institution	Time frame							
				2023	2024	2025	2026	2027	2028	2029	2030
opportunities for restoration											
Strategic Intervention Area 12; Strengthening restoration fund schemes (County climate change fund, Reclamation fund, County Water Fund etc)											
Strengthen existing governance structures for FLR resources mobilization and disbursement.	Strengthened governance structures for FLR resources mobilization and disbursement.	Progress reports	CEC, Development Partners		X	X	X	X	X	X	X
Advocate and champion the use of existing climate funding schemes e.g	Existing funding scheme in use	Carbon trading reports	NEMA, KFS, DoECC, Development Partners	X	X	X	X	X	X	X	X

Activity	Output	MoV	Responsible Institution	Time frame							
				2023	2024	2025	2026	2027	2028	2029	2030
Carbon credit trading and offsets.											
Develop and strengthen fund and structure governance procedures.	Developed and strengthened funding structure and governance procedures.	Training reports and procedures	DoECC, NEMA, KFS		X	X	X	X	X	X	X
Objective 4: To promote inclusive nature-based value chains and adoption of alternative sources of livelihoods for improved wellbeing of communities											
Strategic Intervention Area 13; Promote and develop gender inclusive green value chains											

Activity	Output	MoV	Responsible Institution	Time frame							
				2023	2024	2025	2026	2027	2028	2029	2030
Map out existing green value chains and technologies in the County for improved livelihoods.	Mapped out existing green value chains and technologies	Report	NEMA, KFS, DoECC, DAILF&CD, NDMA, KWS, KALRO, WRA, KEFRI, Non State Actors (NSA)		X	X					
Identify structural barriers to equitable access to restoration benefits (gender, youth and vulnerable groups).	Identified structural barriers to restoration	Report	NEMA, KFS, DoECC, DAILF&CD, NDMA, KWS, KALRO, WRA, KEFRI, Non State Actors (NSA)		X			X			X

Activity	Output	MoV	Responsible Institution	Time frame							
				2023	2024	2025	2026	2027	2028	2029	2030
Develop measures that enhance equitable access and sharing of the FLR benefits.	Enhanced equitable access and sharing of the FLR benefits	Inclusivity report	NEMA, KFS, DoECC, DAILF&CD, NDMA, KWS, KALRO, WRA, KEFRI, Non State Actors (NSA)		X			X			X
Develop appropriate value chain for the identified products	Developed value chain for identified products	Reports	NEMA, KFS, DoECC, DAILF&CD, NDMA, KWS, KALRO, WRA, KEFRI, Non State Actors (NSA)		X	X	X	X	X	X	X

Activity	Output	MoV	Responsible Institution	Time frame							
				2023	2024	2025	2026	2027	2028	2029	2030
Disseminate and upscale green value products	Disseminated and upscaled nature-based enterprises and products	Reports	NEMA, KFS, DoECC, DAILF&CD, NDMA, KWS, KALRO, WRA, KEFRI, Non State Actors (NSA)		X	X	X	X	X	X	X
Objective 5: To enhance adoption of FLR monitoring, evaluation, research & learning (MERL), knowledge management and information sharing											
Strategic Intervention Area 14; Enhance adoption of FLR monitoring, evaluation, research & learning (MERL)											

Activity	Output	MoV	Responsible Institution	Time frame							
				2023	2024	2025	2026	2027	2028	2029	2030
Enhance adoption and customisation of the nationally harmonized FLR monitoring, evaluation, research & learning (MERL) methodology/tool.	Enhanced adoption and customisation of FLR monitoring, evaluation, research & learning (MERL) methodology/tool.	Methodology/tool	CEC, DoECC, NEMA, Development Partners		X	X	X	X	X	X	X
Sensitize participating stakeholders on the harmonized M&E framework for common reporting and learning.	Sensitized stakeholders on the harmonized M&E framework for common reporting and learning.	MERL reports	CEC, DoECC, NEMA, Development Partners		X	X	X	X	X	X	X

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MAKUENI COUNTY FOLAREP- DRAFT

ANNEXES

8.1 List of Technical Working Group Members

8.2 List of key contributors

8.3 Consultants

8.4. TWG Biography

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