COUNTY GOVERNMENT OF MIGORI
Department of Environment, Natural Resources, Climate Change and Disaster Management

THE WORLD BANK

MIGORI COUNTY

CLIMATE CHANGE ACTION PLAN 2023-2027

Foreword

Globally, the consequences of global warming have rapidly necessitated local government action to mitigate and adapt to significant threats to current and future local sustainable developments. Kenya, and by extension Migori County, has witnessed increased severity, frequency and duration of climate-related disasters, with a myriad of catastrophes including intense flooding, extended droughts, water stress, food insecurity, increased incidences of human and livestock diseases, ecosystem degradation, infrastructure damages amongst other griefs. These impacts are projected to increase, necessitating bold local actions in all sectors of our economy.

Furthermore, the National Government through the Kenya Climate Change Act, 2016 and Kenya National Climate Change Action Plan 2020-2025, mandated all devolved units to mainstream climate change actions into their development plans. In response, the World Bank through the Green Climate Fund launched Financing Locally Led Climate Action Programme (FLLoCA) – the first national model developed jointly with the National Treasury to identify and invest in solutions to address climate change. The FLLoCA Program was designed to ensure that ninety percent of its funds are spent at county and community levels to ensure that climate resilience interventions reach those most at risk, including women, youth, People with Disabilities (PWDs), elderly and other traditionally vulnerable groups.

To tap into this programme and achieve a climate-resilient community, the County of Migori, over the recent years, has made efforts to enhance the delivery of locally-led climate resilience actions. Through the Climate Change Act, 2021 and Climate Change Fund Act, 2021, the County has made concrete steps towards enhancing implementation at the local level. Subsequently, the County has now developed this County Climate Change Action Plan (CCCAP), a product of a robust community-led Participatory Climate Risk and Vulnerability Assessment (PCRA) whose report had been approved by the County Executive Committee.

The participation and collaboration of hundreds of community members countywide underpins the success of this CCCAP report. It is their knowledge, enthusiasm and dedication, as well as their willingness to participate and contribute through the PCRA which has given this Action Plan its impact and policy relevance, making it simpler for the County Government to better understand, assess and take action on climate change at the local level, where the challenges of planning for climate change are particularly high. With both PCRA and CCCAP available, the County of Migori has successfully met the minimum access conditions that will unlock investment funds to support community-prioritized interventions.

My gratitude goes to the Department of Environment, Natural Resources, Climate Change and Disaster Management, led by the County Executive Committee Member, the Hon. Rahab Robi for spearheading this process to its success. Much appreciation to the Department's Management, Staff, and more specifically, the Climate Change Unit for their dedication, enthusiasm and unwavering commitment to the development of this Action Plan. Special acknowledgement also goes to our development partners – World Bank, and the FLOCCA National Programme Implementation Unit for the financial support and technical guidance throughout the process.

H.E. DR. OCHILO MBOGO AYACKO,
THE GOVERNOR - MIGORI COUNTY.

Acknowledgement

The development of this County Climate Change Action Plan (CCCAP) has been an intense, yet productive process that began with the Department bringing together tens of stakeholders to identify and find common footprints for knowledge sharing and resource mobilization towards Climate Change mitigation and adaptation. Special thanks, therefore, goes out to all the stakeholders for their exceptional expertise and untiring commitment to the development of this Action Plan.

Additional recognition goes to the stakeholders who formed part of the Technical Working Group on PCRA and CCAP, and helped guide the process to completion. Their input and feedback ultimately led to the creation of specific action targets and strategies within the Plan. They provided invaluable insights and thoughtful feedback, discussions and additional background information that beefed up community engagement proposals.

This Action Plan is an interdisciplinary product whose development brought together a number of technical experts from different Migori County Government Departments, and whose expertise ranged from agricultural systems, nutrition, water, clean energy, fisheries and blue economy, infrastructure as well as forestry and land systems. Seven County Government Departments were represented in the TWG. We would like to express our gratitude to all them for their technical input and guidance and immeasurable commitment to the development of this Action Plan.

This Plan would not have been possible without the amazingly incredible dedication of the Department's Staff and CCU led by the Chief Officer, Mr. Charles Chacha for working off hours, burning midnight oil and offering to be engaged on weekends to ensure timely completion of this process. The Chief Officer was very instrumental in offering leadership, guidance and facilitating the numerous field works and meetings. The Department's team, led by FLOCCA Focal Person, Mercy Achapa were not only instrumental, but professional in their work.

Finally, much appreciation goes to our Development Partner – World Bank, which through the National Treasury, for the generous financial assistance received to support the County carry out its Climate Risk and Vulnerability Assessment and develop its Climate Action Plan. We are most grateful.

Hon. Rahab Robi
County Executive Committee Member – Department of Environment, Natural Resources, Climate Change and Disaster Management

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ABBREVIATIONS

ADP	-	Annual Development Plan
AYFS	-	Adolescents and Youth Friendly Services
BMU	-	Beach Management Units
CA	-	Conservation Agriculture
CBK	-	Central Bank of Kenya
CBO	-	Community Based Organization
CCCAP	-	County Climate Change Action Plan
CCCF	-	County Climate Change Fund
CDM	-	Clean Development Mechanism
CEC	-	County Executive Committee
CFA	-	Community Forest Association
CFA	-	Community Forest Association
CGM	-	County Government of Migori
CIDP	-	County Integrated Development Plan
CIS	-	Climate Information Services
CISP	-	Climate Information Services Plan
CSA	-	Climate Smart Agriculture
DPs	-	Development Partners
EWS	-	Early Warning Services
FGD	-	Focused Group Discussion
FMCF	-	Forest Management and Conservation Fund
GDP	-	Gross Domestic Products
GHG	-	Greenhouse Gases
KEFRI	-	Kenya Forestry Research Institute
KFS	-	Kenya Forest Service
KWS	-	Kenya Wildlife Services
MDA	-	Ministries, Departments and Agencies
NCCAP	-	National Climate Change Action Plan
NCCC	-	National Climate Change Council
NCCF	-	National Climate Change Fund
NDC	-	Nationally Determined Contribution
NEMA	-	National Environment Management Authority
NGO	-	Non-Governmental Organization
PCRA	-	Participatory Climate Risk Assessment
PWD	-	People with Disability
REDD+	-	Reducing Emissions from Deforestation and Forest Degradation
TBI	-	Tree Based Intercropping
WCCPC	-	Ward Climate Change Planning Committee

1. INTRODUCTION AND BACKGROUND

Climate change is one of the greatest long-term challenges facing the world. It is a critical environmental issue in the 21st century that threatens not only public health and food security, but also accelerates natural disasters such as floods, drought and erosion. The projections of future global and regional climate change indicate that continued emissions of greenhouse gases will cause further warming and changes to our climate.

The Climate Change Act 2016 requires both National and County Governments to develop action plans to guide the incorporation of climate change in the sectoral projects. In recognition of this, Kenya developed its National Climate Change Action Plan (NCCAP) 2018-2022 with the aim of strengthening her path towards sustainable, low carbon climate-resilient development pathway. In particular, the NCCAP 2018-2022 seeks to reduce risks related to disasters such as drought and floods, increase food and nutrition security, enhance resilience of the blue economy and water sector, increase forest cover to 10% of total land area, mainstream climate change adaptation into the key sectors, improve energy and resource use efficiency in the manufacturing sector, and encourage electricity supply based on renewable energy.

Migori County has six agro-ecological zones ranging from Upper Midlands (UM 1-4) to Lower Midlands (LM 1-5). UM 1-4 covers parts of Rongo, Kuria East, and Kuria West sub-counties; LM 1-5 covers parts of Rongo, Suna East, Suna West and Nyatike sub-counties. These zones determine the types of agricultural activities undertaken in each area. The county experiences an inland equatorial climate, modified by the effects of altitude, topographical relief, and the influence of Lake Victoria.

The County is experiencing recurrent droughts that contribute to severe crop and livestock losses, leading to famine, displacement, and resource-based armed conflicts. In addition, food insecurity, water scarcity and stress, ecosystem degradation, increased incidences of pests and diseases, and infrastructure destruction all lead to high cost of disaster management and response occasioned by increased intensity and frequency of floods. These impacts are most severe among poor populations. They are wiping out people's livelihoods, underscoring the need for the County to help its poorest population adapt by developing sustainable ways of making a living in the County.

According to the Migori County Climate Change Policy, 2020, The County is expected to conduct a Climate Risk and Vulnerability Assessment in the following sectors: Agriculture, Livestock and Fisheries, Water and Energy, Forestry, Human Health, Infrastructure,

Biodiversity, Tourism and Wildlife, Population, urbanization and Housing, Wetlands and other vulnerable ecosystems

In line with this, the County conducted a Participatory Climate Risk Assessment (PCRA) in all the 40 wards in May, 2023 to identify and understand climate risks and hazards that Migori County is exposed to. The Climate change directorate domesticated the PCRA tools, identified and trained a task team on the PCRA tools and engaged them to carry out the assessment as from 7th to 19th May, 2023. Some of the risks and hazards identified during the PCRA process include; increased incidences of floods, drought, pests and diseases. The outcome of the PCRA exercise culminated to the preparation of this CCAP.

The Migori County Climate Change Action Plan has been developed to guide the county in mitigation and adaptation of climate change impact. This action plan covers a period of five years (2023-2027). The development of the action plan has been participatory.

1.1. Purpose and Process of CCCAP

1.1.1. Purpose

Climate action is fundamental in alleviating poverty and boosting shared prosperity. The Migori County CCAP is a concerted effort that addresses climate and development challenges together. It represents a real paradigm shift for the County to advance development in a green, resilient and inclusive way. This CCAP also considers the vital importance of natural capital, biodiversity, and ecosystems services and identifies nature-based solutions with tremendous significance in mitigation and adaptation.

The National Climate Change Act 2016 requires the National and County Governments to develop Climate Change Action Plans. The Migori CCCAP 2023-2027 is a five year plan to steer County`s climate change action. The plan derives from Section 19 (2) of the National Climate Change Act 2016 which directs County Governments to mainstream the implementation of the National Climate Change Climate Action Plan into various development sectors. The development of the Migori CCAP was preceded by a PCRA process at the ward level.

As prioritized by the NCAAP 2018-2022, this CCAP is pegged on 7 key priority areas namely:

- Disaster risk Management
- Food and Nutrition Security
- Water and Blue Economy
- Forestry
- Wildlife and Tourism

- Health, Sanitation and Human Settlements
- Manufacturing
- Energy and Transport

The CCAP aims at enhancing the County Government's and local communities' capacity to mitigate and adapt to the impact of climate change by creating a resilient and thriving environment and economy using a participatory approach.

Specific Objectives of the Migori County Climate Change Action Plan include:

i. To enhance institutional capacity of the county in climate change adaptation and mitigation
ii. To reduce climate change risk to the local community and infrastructure
iii. To enhance capacity of the local community to food and nutrition security
iv. To increase the county's forest cover
v. To promote the adoption of green energy at the county
vi. To reduce the level of pollution at the county
vii. To Encourage participation of Private Sector, Civil Society and Vulnerable Groups
viii. To mainstream climate change in sectoral development

1.1.2. Process

The development Migori County Climate Change Action Plan (2023-2027) was coordinated by the climate change Directorate through the County TWG constituted during the PCRA process. The TWG comprised of experts from National Government Agencies (NEMA, KFS, KEFRI and KMD), County Government line department (Agriculture, Water and Energy, Health, Environment, Roads Transport and Public Works), Civil Society Organizations (DaCCA, USAID, Practical Action) and the Private Sector.

The County Climate Change Directorate led the technical analysis and organized extensive consultations (23rd to 29th May, 2023) to ensure that this CCAP reflected the inputs and priorities of the wide range of stakeholders.

The process involved four steps: Stakeholder mobilization; data collection through community-based engagement, participatory analysis of climate change vulnerability and adaptive capacity; and the subsequent development of community adaptation action plans. A key element of the process was the interactive, learning-based approach that was demonstrated by the feedback loop in the entire CCCAP process.

i. Stakeholder Mobilization

The County Technical Working Group initiated the step by identifying key stakeholders (i.e. individuals or groups drawn from government entities, private sectors and civil society organizations with a vested interest in climate change) in the county. This was followed by Stakeholder Mapping as per the PCRA Guidance Template. Then, the stakeholders were invited to consultative workshop on 25th May, 2023 at Sugarland Hotel, Awendo to deliberate on the preparation of the Migori CCAP.

ii. Data Collection

The process of data collection began at the PCRA stage where the county's 40 Ward Climate Change Planning Committees (WCCPCs) were initially engaged before the process culminated in table groups of different social and special interest groups representing men, women, youth and persons living with disabilities (PLWDs) drawn from the entire Wards. The engagement took the form of Focus Group Discussions (FGDs) using hard copy questionnaires and online Kobo toolkit to capture community responses.

iii. The PCRA Report

After a rigorous community engagement process where the different communities within Migori County were given the opportunity to access, plan, analyze and develop community climate actions and priorities, the Climate Change Directorate together with the PCRA TWG presented the findings at a stakeholder workshop on 23rd of May, 2023 at Sugarland Hotel, Awendo for further input and validation.

The final Participatory Climate Risk Assessment (PCRA) report was validated by the community members and other key stakeholders. The report was then submitted to the County Executive Committee (Cabinet) for approval and then later forwarded to the County Assembly for adoption.

1.2. Underlying Climate Resilience Context

1.2.1. Impacts of Climate Hazards in Migori County

Migori County is highly exposed to many natural hazards, the primary threats being frequent droughts, frequent floods and rising temperatures. An estimated 70% of these natural disasters are attributable to extreme climatic events with the repeating patterns of floods and droughts creating large socio-economic impacts and high economic costs. The impacts of these hazards are already becoming a severe burden to the county development agenda, the economy and its people. The following sectors are the most impacted:

i. Agriculture

These threats have compromised agricultural production, causing food insecurity and growing poverty, low per capita water availability due to declining water resources, and a host of socio-economic impacts, such as disease outbreaks and epidemics, among others. These climatic changes are extremely rapid, thus placing additional stress on the capacity of ecosystems to adapt and on the lifespan of infrastructure.

Agriculture was observed to be the most vulnerable sector, mainly due to drought, rising temperatures, flash floods, erosion and the emergence of numerous diseases and pests resulting in lower crop yields and nutritional quality. Climate change impacts are, therefore, making it harder for agricultural activities to meet human needs.

ii. Health

In health, a combination of changes in climate-related exposures (such as temperature, precipitation, lake-level rising) and non-climatic risks (such as insecurity, mining-caused

pollution and high poverty levels) as reported in the County's PCRA have amplified existing health risks and introduced new risks with a high degree of spatial variability.

iii. Water

The climate impacts on water resources is largest in the marginal rainfall areas of the county. The climate scenarios show that rainfall variability and increased evaporation due to higher temperatures will lead to decrease in the available water reservoirs, drying up of wetlands, rivers, springs, community dams, water pans, with subsequent effects on related aquatic life. These impacts have begun, and are expected, to pose huge challenges on water security, access to clean, safe, and adequate water in the County.

iv. Forestry

Frequent deforestation in the water catchment areas has been noticed to weaken the ability of the county's ecosystems to withstand climate change. Additionally, climate change is already influencing a number of natural disturbances that threaten forest health. These include insect outbreaks, invasive species, wildfires, coupled with charcoal burning, logging and population pressure. Migori County's forest cover of 0.8% is the second lowest in the country, a clear demonstration of the serious climate change impacts on forestry.

v. Energy

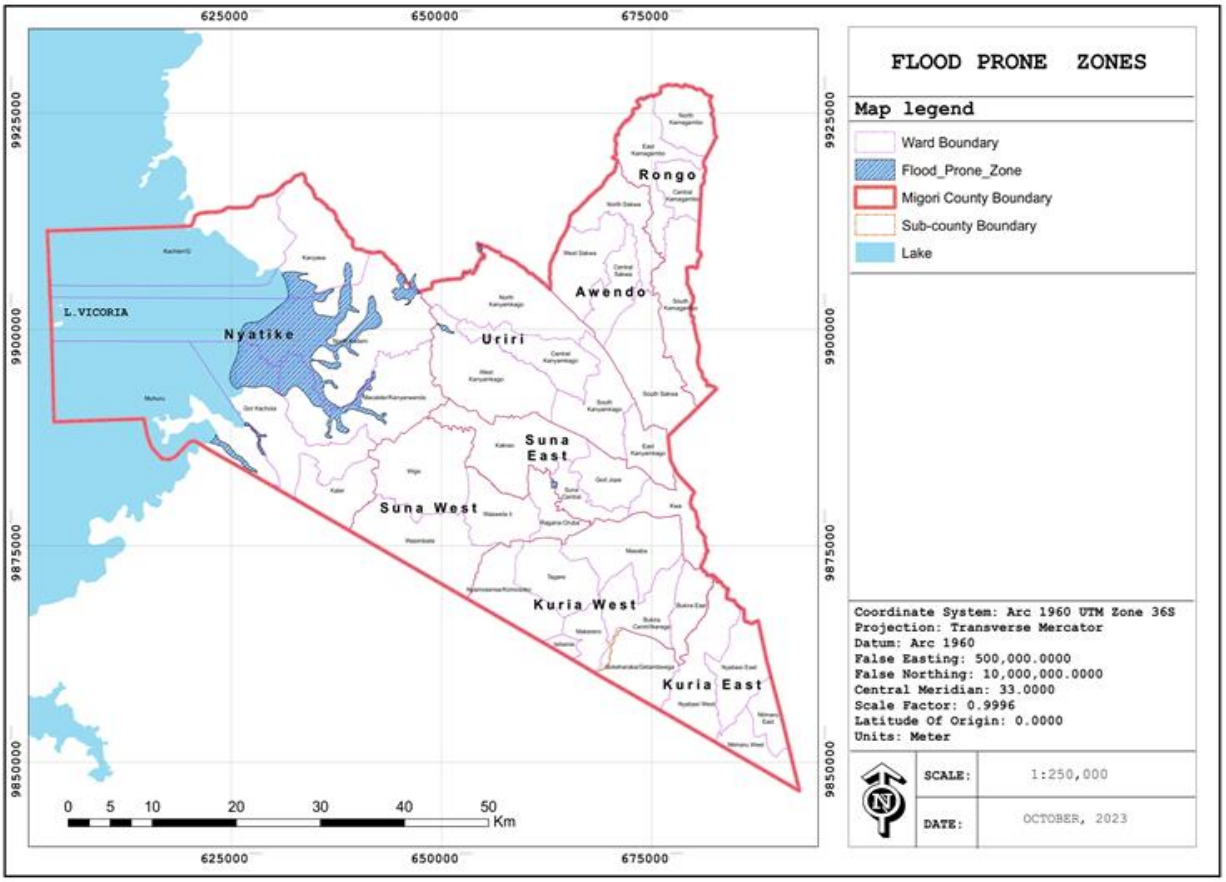
Migori County is majorly dependent on hydro-electric power for both commercial and domestic use. As a result of climate change impacts – such as higher temperatures, erratic rainfall patterns and droughts – water levels in various hydropower sites in the country have been greatly reduced, leading to a major decline in electricity generation capacity. In Migori, during rain storms, there is frequent falling of electric poles posing risks to both human and animals. The high dependence on wood fuel puts a threat on the county's energy needs. Bold interventions are necessary to curb further energy crises.

vi. Infrastructure and Human Settlement

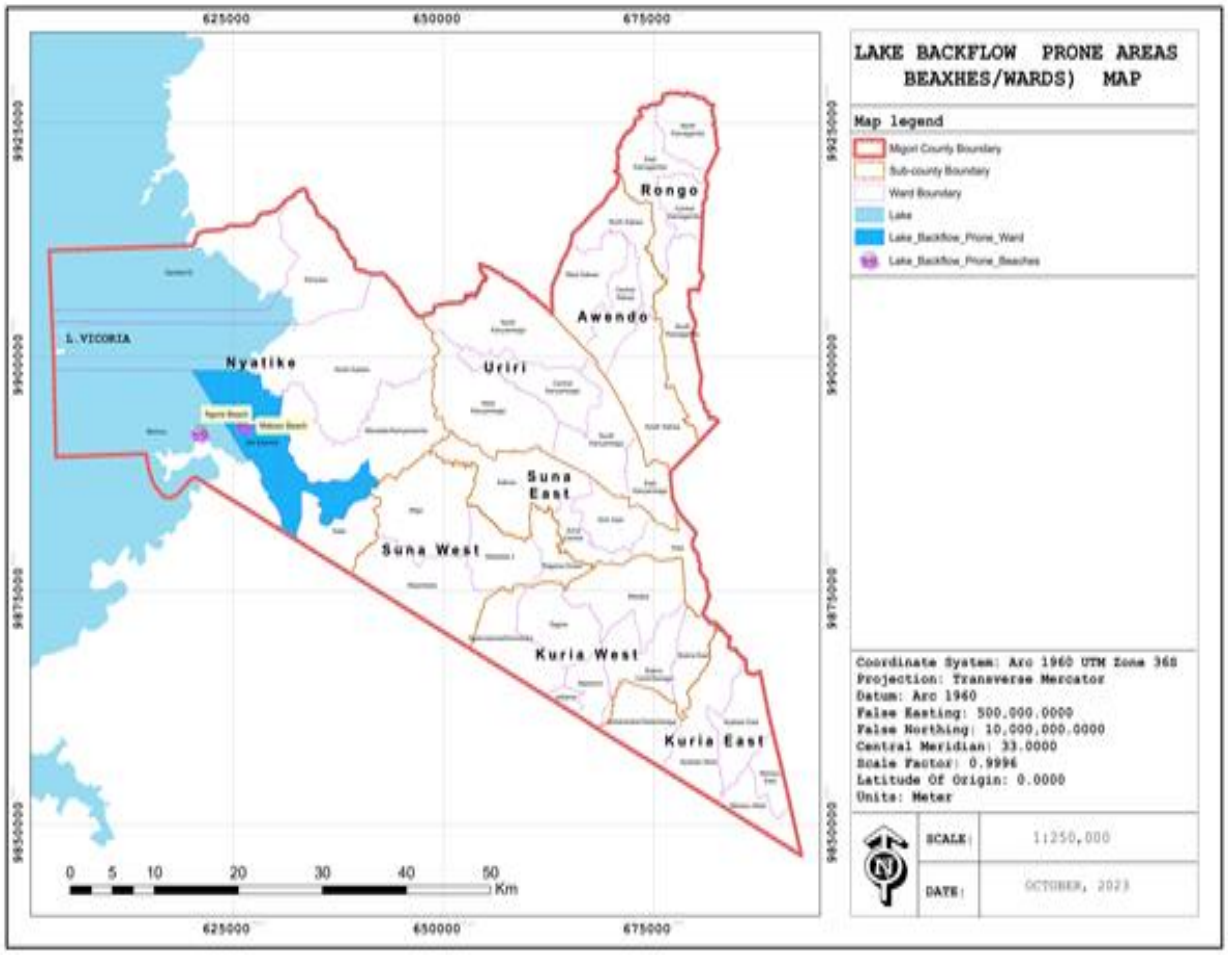
Floods in Migori County disrupt provision of infrastructure services by damaging road networks, energy facilities, buildings, and social facilities such as school, hospitals and market centres. Floods therefore increase outages of infrastructure services. It also causes season routine migration of communities living in flood-prone villages, especially in Kanyasa, North Kadem and Got-Kachola Wards.

.2.2. County Climate Change Hazard Map

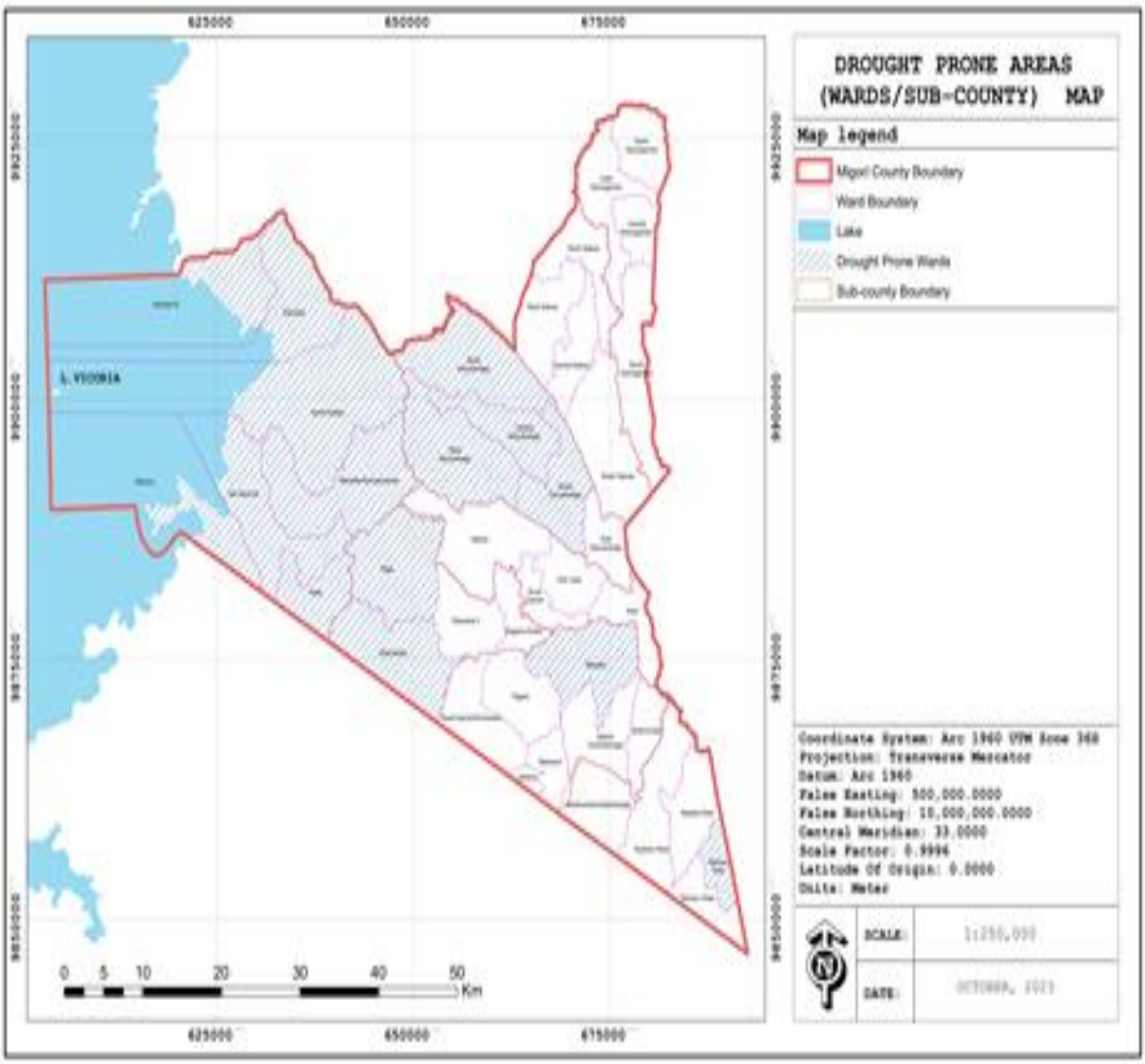
Flood prone areas



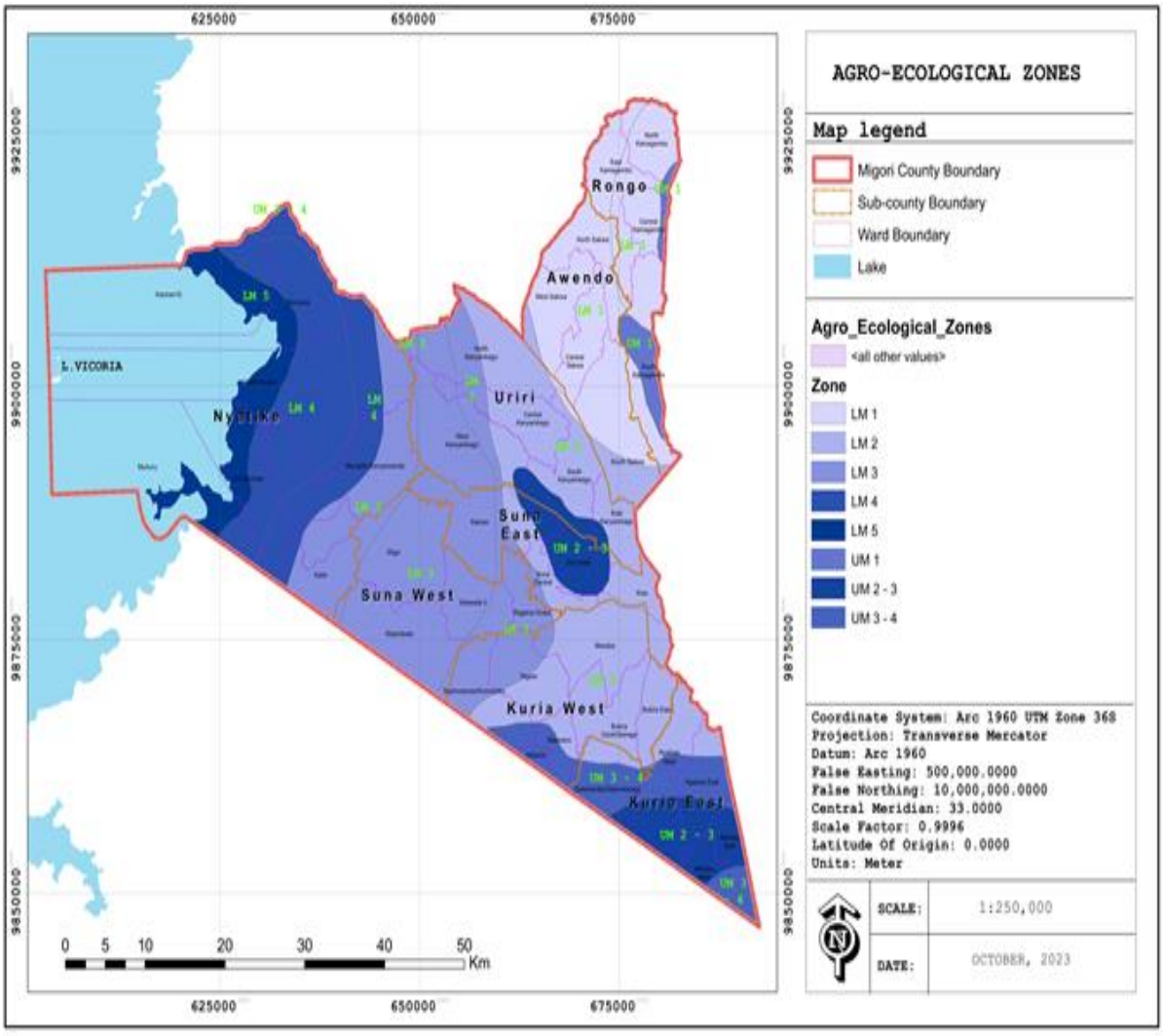
Lake Backflow prone areas



Drought Prone areas



Climate Sensitive Agro-ecological zones



1.2.3. Climate Exposure and Vulnerability of Key Groups and Livelihoods in the County

	VULNERABLE GROUP	CHARACTERISTICS	Location	SPECIFIC ECONOMIC ACTIVITIES ASSOCIATED WITH THE GROUP	RESOURCES THE GROUP RELIES ON OR VALUES	EQUALITY OF ACCESS TO RESOURCES	EQUAL SAY IN COMMUNITY/LOCAL DECISION MAKING
1	Women	-involved in land preparation - charged with responsibility of taking care of children - take care of household chores - undertake menial jobs attracting low incomes -walk for long distances in search of water - most affected by increased pressure on key resources - most subceptible to impacts of climate change due to their gender roles Find it hard to survive especially where the alteenatives are physically demanding income generating actitivities	Wiga Kanyasa - mushrooming urban centers across the wards -Gokeharaka -Ikerege -North Sakwa East Kamagambo South Kamagambo North Kanyamkago Central Kamagambo West Sakwa Tagare Masaba Isebania Muhuru Got Kachola Kachieng Kaler	-processing of fish -hawking -sand harvesting -weeding -fetching water -alcohol brewing -prostitution - searching for water - cooking - farming - need reliable access to transportation for urgent medical care	-forests - lake -rivers -farm lands - infrastructure services including road networks - markets -health facilities - schools	-lack access to credit facilities -considered subordinate to men - victims of gender inequality and discrimination - lack of rights to land ownership - are less educated than men hence discriminated against	-have no say in the community decision making because of cultural perceptions - considered secondary to men in decision making
2	Men	-settle across fields when farming is done -aged between 40-80 years	Kanyasa South Sakwa Central Kanyamkago Central Sakwa Got Kachola Kachieng Kaler	-fishing -mining - logging - farming - transportation	-hills -roads -lakes -centers -mines	Yes	Yes
3	Youths	-men and women below 35 years - unemployed - drug addicts - not involved in decision making - misused by politicians during election seasons	Wiga Ikerege North Kamagambo Nyamosense Komosoko East Kamagambo South Kamagambo	-farming -mining -bodaboda -trade Provision of security -transportation	-hills -roads -lakes -markets -mines - infrastructure	-males are allowed to inherit property -equal rights to education	Yes -discriminated against on grounds of age

	VULNERABLE GROUP	CHARACTERISTICS	Location	SPECIFIC ECONOMIC ACTIVITIES ASSOCIATED WITH THE GROUP	RESOURCES THE GROUP RELIES ON OR VALUES	EQUALITY OF ACCESS TO RESOURCES	EQUAL SAY IN COMMUNITY/LOCAL DECISION MAKING
			North Kanyamkago Central Kamagambo West Sakwa South Sakwa Central Kanyamkago Central Sakwa South Kanyamkago Muhuru Got Kachola Kachieng Kaler	- herding of cattle - sex workers - sand harvesting -small businesses -casual labourers - manufacturing and processing - post harvest activities			
4	PLWDS	-physically challenged -economically inactive -no source of income - without movement aid - no resources like farms - lack property -discriminated against - lack of access to education - epileptic	Macalder Kanyarwanda - North Kadem Nyabasi West Nyabasi East Ntimaru East Ntimaru West Ikerege Nyamosense Komosoko East Kamagambo Tagare Masaba South Kanyamkago	-not assigned any specific roles -cobblers -tailors - home guarding - beggars - post harvest activities -sale of farm produce	-farmlands -rivers -well-wishers aid -infrastructure services. -markets	None- they are considered illiterate and valueless Are stigmatized No- they are denied access Are equally denied an opportunity to access schooling and education -some are hidden by the caregivers from the community	None- their importance is not felt within the community
5	Widows	- Women without husbands or single mothers - Sole bread winners - Stigma	North Kadem Nyabasi East Ikerege	-selling vegetables -artisanal mining - washing clothes for income -farming -tailors - weeding Small businesses	-hills -roads -lakes -centers -mines - farmlands -markets -rivers	Are considered outsiders in matters of succession -lack ownership and entitlement in the community	Do not participate in decision making in the community -are considered valueless culturally hence are not given chance in making contribution in decision making
6	Elderly	-sixty years and above -depend on the youth an women for provision of essential services - low immunity to diseases	North Kadem Ntimaru West Ikerege West Kanyamkago	-no specific economic activities - begging	- farmlands -rivers and waterpans -infrastructure services like roads	-their property is subdivided to the children - incapacitated so not	- mostly regarded as mentally incapacitated - perceived to be wise in some issues hence involved in decision

	VULNERABLE GROUP	CHARACTERISTICS	Location	SPECIFIC ECONOMIC ACTIVITIES ASSOCIATED WITH THE GROUP	RESOURCES THE GROUP RELIES ON OR VALUES	EQUALITY OF ACCESS TO RESOURCES	EQUAL SAY IN COMMUNITY/LOCAL DECISION MAKING
		- prevalence to disease attacks	North Sakwa West Sakwa Tagare Masaba Isebania	- watchmen in institutions and schools -elderly women carry out babysitting		taken seriously	making.
7	Children	-orphans -children living with singleparents -hiv positive children -abandoned children -some of them head their families	Nyabasi East Gokeharaka North Kamagambo	-casual labourers -shamba boys -househelps - sexual workers	-hills -rich families -markets -well wishers -children born out of wedlocks - schools	No- the children are stigmatized especially where the mother is the head of the family	They are not engaged culturally
8	Child headed families	Leave school so as to provide for their siblings Do odd jobs Not involved in decision making	North Sakwa	Farming Small scale trading Mining Odd jobs such as mjengo	- Mining areas - Farms - Market - Construction sites	Have no control over resources due to their young age	-no equal say in decision making

1.3. Climate Change Actions in Migori County

1.3.1. Mainstreaming of NCCAP in County Actions

The Climate Change Act, 2016 requires the devolved units to align their particular County Integrated Development Plans (CIDPs), and County Sector Plans with the National Climate Change Action Plan. This involves intensive county planning, budgeting and implementation across multiple sectors. Undoubtedly, County governments are critical, functional co-financiers with an emergent, increasingly important role to become Implementing Entities of low carbon, climate resilient initiatives.

The County Government of Migori has taken every necessary step to incorporate the recommendation of the NCCAP into its CCCAP. In so doing, the County has down-scaled and adopted six measures that will enhance its institutional capacity to climate change while reducing related risks and enhancing resilience of the local community. Migori County proposes bold plans that resonate well with priority actions focusing on adaptation, in particular those dealing with disaster risk response and preparedness, water scarcity, food nutrition and security.

Through this Action Plan, the County Government of Migori has mainstreamed its adaptation into its County Integrated Development Plans (CIPDs) by establishing County Climate Change Funds (CCCFs). These innovative institutions provide the financial and technical assistance that county officials need to propose, prioritize and implement climate resilience actions. So far, the CCCF has accelerated both planning and implementation of mainstreamed adaptation actions.

1.3.2. Climate Change in the Migori CIDP

Migori County has embarked on mainstreaming climate change responses through the CIDP basing on experiences seen in the past and lessons learnt from counterpart counties in having legislation and capacity building as preconditions for mainstreaming. In its Third Generation CIDP, the county has included climate change issues in all key sectors. The County proposes to further incorporate sectorial drought-related contiguous shelf plans in its subsequent Annual Development Plans (ADPs).

SECTOR	ACTIONS PROPOSED IN CIDP
Environment	i. Adoption of modern solid waste management technologies ii. Promote public private partnership in solid waste management iii. Develop and implement sustainable solid waste management practices and legislations iv. Ensuring compliance to solid waste management standards v. Engagement of special interest groups in cleaning services vi. Conduct research on solid waste management vii. Promote sustainable development and management of natural resources viii. Mainstream climate change in all the sectors ix. Promote public - private partnerships Promote locally led climate change adaptation interventions. x. Promote use of clean energy xi. Capacity building xii. Mapping disaster prone areas xiii. Installation of early warning system xiv. Develop and implement disaster policy and contingency plan xv. Forestry development through the County Greening Programme xvi. Forests and natural resources conservation and protection, including riverine systems, wetlands and catchment areas
Water and Energy	i. Increase access to safe water and Sanitation ii. Strengthen water conservation, protection and governance - invest in conservation of water towers and wetlands iii. Increase access to reliable and affordable energy. iv. Strengthen community participation in exploitation of renewable energy opportunities and support use of energy saving jikos that reduce indoor pollution and firewood use
Agriculture	i. Enhance access to production inputs and reduce post-harvest losses ii. Strengthen pests and disease control. iii. Intensify extension service programme and leverage on technology and

	mechanization. iv. Promote traditional high value crops. v. Support urban and peri-urban agriculture. vi. Promotion of climate smart agriculture. vii. Mainstreaming youth attractive and affordable agriculture.
Livestock	i. Enhancing feed and fodder production for livestock development. ii. Disease control iii. Promotion of adoption of high yielding livestock breeds
Fisheries Development	i. Increase access to resilient fish fingerlings and fish feeds. ii. Adoption of climate resilient innovations and technologies iii. Strengthen community participation in fish management
Transport	Open and upgrade access roads through adopting modern standards that enhance resilience to climate change
Trade and Tourism	i. Establish community-based tourism climate change initiatives ii. Promote climate-smart inventions and innovations among entrepreneurs. iii. Develop and maintain trade infrastructure.
Education, Sports, Culture and Gender	i. Economic empowerment for women, youth and people living with disabilities. ii. Mainstream participation of youth, women and people with disabilities in government programmes. iii. Increase access to knowledge about indigenous culture
Finance and Economic Planning	i. Enhance public policy formulation, planning, coordination, implementation, monitoring and evaluation of public projects and programmes
Health	i. Improve access to quality primary health services ii. Foster Adolescents and Youth Friendly Services (AYFS) multisectoral approaches and capacity iii. Improve preventive and curative services in relation to climate change impacts. Distribution of treated mosquito nets Promote Roof water harvesting in health facilities
Lands/Physical	Preparation and implementation of physical and land use plans.

Planning	

1.3.3. Key Climate Actions/Strategies in Migori County

The County has divided its actions/strategies into adaptation and mitigation options.

Adaptation Actions

Below are the key priority actions identified per sector:

a) Agriculture

Interventions in this sector should include:

i. Building County Climate Information System (CIS) to enhance community systems for conveying climate information to rural populations. This will facilitate timely dissemination of projected and downscaled weather information to farmers to enhance their resilience to the impacts of climate change,
ii. Establish and promote the Orphan Crops Programme so that indigenous and more drought tolerant food crops like cassava, millet, sorghum sweet potatoes can be re-introduced into the farming systems,
iii. Promoting irrigated agriculture by developing irrigation schemes along river basins, construction of water basins and pans, but also reconfiguring irrigated production systems to use water more efficiently and to accommodate the use of marginal quality water,
iv. Addressing land degradation by building soil and stone bunds, creating grass strips and contour levelling as well as incorporating trees or hedgerows. These measures will increase rain-water infiltration, reduce run-off during floods, reduce soil erosion, and help trap sediments including dead plant matter,
v. Promoting Conservation Agriculture (CA), whose aim is to achieve sustainable and profitable agriculture and ultimately improve farmers' livelihoods through the application of the three CA principles: minimal soil disturbance, permanent soil cover and crop rotations,
vi. Diversifying rural economies, e.g. through value addition to agricultural products and financial support for sericulture and apiculture with the aim of reducing reliance on

climate-sensitive agricultural practices,

vii. Create functional linkages with development partners for technology enterprise initiatives,

viii. Re-invigorating agricultural research and development (R&D) to produce crop varieties that can withstand projected climate variability,

ix. Developing an innovative Insurance Scheme – low premium micro-insurance policy – which together with low-interest loans will insure farmers against crop failure due to droughts, pests or floods,

x. Enhancing agricultural extension services to train farmers on how to better cope with climate variability and change,

xi. Strengthening integrated and environmental friendly pest management systems to cope with increased threats from insects, pathogens, and weeds, and

xii. Developing proper food storage facilities to cater for surplus harvest while promoting traditional and modern food preservation methods.

b) Livestock

Interventions in this sector include:

i. Developing special livestock insurance schemes that will provide an opportunity to spread and transfer climate change risks. These include re-stock herds after decimation by starvation caused by droughts

ii. Regular vaccination campaigns and cross border disease surveillance to reduce infections by migrating animals

iii. Setting up measures to institutionalize Early Warning Systems (EWSs) on droughts, floods and disease outbreaks,

iv. Training communities on identification and establishment of emergency fodder banks from crop residues, growing seasonal/ perennial fodder trees and grasses, preservation of seasonal wetlands during droughts and moving livestock into these during dry spells, as well as identification of forage types that suits various agro-ecological zones,

v. Investing in programmes to harvest and store fodder for use during dry seasons. Fodder may also be sourced from other regions like the Kenya highlands which usually receive good amounts of rainfall,

vi. Inventorying indigenous knowledge that has conventionally been used by local communities to cope with erratic climate, e.g. on rainfall prediction and use of conventional medicine in treatment of animal diseases, as well as supporting the improvement and dissemination of such technologies.

vii. Provision of good quality water for both livestock and humans. Construction of dams is recommended to cater for farmers' water needs during the dry spells, and

viii. Awareness campaigns among local communities on the importance of balancing stocking rates with the available land resources as a way of ensuring sustainable livestock production

c) Water

Interventions that are needed in this sector include the following:

i. Investing in decentralized municipal water recycling facilities for both domestic and industrial use to reduce wastage,

ii. Enforcement and/or enactment of laws and regulations required for efficient water resource management,

iii. Increasing capture and retention of rainwater through the construction of waterways, strategic boreholes and other water harvesting structures to ensure availability of water during dry seasons,

iv. Developing and maintaining an appropriate stock of water infrastructure (dams, water pans, supply lines),

v. Building capacity for water quality monitoring including training personnel to protect watersheds and monitor water quality,

vi. Having a strategic fund to purchase water purification chemicals for disinfection of community wells and shallow boreholes during floods and drought episodes when water quality is most threatened,

vii. De-silting rivers and dams to improve carrying capacity, water storage and water quality,

viii. Protecting and conserving water catchment areas, river- banks, and water bodies from degradation and contamination e.g., by imposing a water levy to generate funds for investment in conservation of water catchment areas,

ix. Heightened awareness campaigns to underscore the importance of sustainable use of water

resources, e.g. through the promotion of water harvesting techniques such as harvesting water from roof catchment at household level,

x. Protecting flood plains through construction of dykes and river dredging, and

xi. Introducing financial instruments such as subsidies to promote technologies that use water efficiently.

d) Forestry

i. Intensified and sustained afforestation and reforestation programmes by the County Government, individuals, schools, private sector, multilateral organisations, development partners (The County Greening Program)

ii. Establishment of woodlots (farm-forestry) for fuel-wood and other household uses

iii. Rehabilitation of degraded sites

iv. Increased surveillance of forest resources

v. Promoting growth of drought tolerant and pest and disease-resistant species

vi. Promotion of bamboo forestry and value addition

vii. Encouraging agroforestry to enable poor rural households to meet their subsistence and energy needs,

viii. Promoting alternative livelihood systems such as beekeeping, silkworm rearing and Aloe Vera farming to take pressure off forest resources. The County Government, in conjunction with its development partners and the private sector, should create a lending scheme for youth and women from which they can borrow money to initiate these alternative income generating activities

ix. Promoting alternative energy sources, energy conservation initiatives, and efficient charcoal production and utilisation technologies to reduce biomass consumption,

x. Involving forest-dependent rural communities in forests management through a proper institutional framework that recognises and defines their role (CFAs). This will enable them benefit from REDD+ activities which require community involvement in forests management,

xi. Improving timber yields by planting mixtures of species, especially indigenous species, maintaining several age classes, reducing tree density, and pruning trees at strategic intervals

xii. Reducing the chances of pests and disease attacks by retaining a mixture of species and ages in mixed forests because mono-dominant stands are at most risk of disease and pest attacks, and

xiii. Reducing the frequency of fire outbreaks by maintaining lower tree densities to reduce fuel loads and competition, increasing investments in fire control services and personnel, and collecting as well as using dry biomass that accumulate on the ground

e) Health

The following actions are recommended in this sector:

i. Strengthening the public health systems which includes building hospitals and equipping them with medicine, equipment and well trained personnel,

ii. Improving access to clean water and sanitary facilities to limit outbreaks of water-borne diseases such as cholera, typhoid and diarrhoea, alongside strong public awareness programmes to promote better hygiene,

iii. Heightened surveillance of new outbreaks with subsequent rapid responses to control the epidemics. This should involve proper use of weather forecasts and pre-disposing environmental factors to identify areas of high risk in terms of disease and epidemics outbreaks,

iv. Scaling up of programmes such as the 'Indoor Residual Spraying' in response to the expected increases in incidences of malaria outbreaks,

v. Setting up vaccination and immunisation programmes against diseases whose occurrences will be exacerbated by climate change and climate variability,

vi. Creating 'green spaces' in urban centres (Urban Forestry) i.e. planting trees in urban centres to moderate temperatures and ensure fresh air for healthy living, and

vii. Choosing healthy paths to a low-carbon future (e.g. promoting the safe use of public transportation and active movement such as biking or walking as alternatives to using private vehicles) could reduce carbon dioxide emissions and improve public health. These can not only cut traffic injuries, but also air pollution and associated respiratory and cardiovascular diseases.

f) Social Infrastructure and Human Settlement

This sector will require implementation of the following climate change adaptation strategies:

i. Strengthening disaster preparedness by increasing the number of well equipped (equipment, medication and personnel) health facilities, constructing dams and dykes in flood prone areas, plus improving knowledge and skills in disaster preparedness and management in regions prone to such climatic disasters,
ii. Developing climate change awareness programmes involving all stakeholders,
iii. Proper planning of urban settlements which takes into consideration the expected high growth rate of urban population due to climate-induced migration from rural areas to urban centres. This will require urban planners and real-estate industry players to accordingly implement proper and adequate housing structures, waste disposal as well as piped water infrastructure,
iv. Establishing insurance schemes to make reparations in regions affected by climatic disasters,
v. Diversifying economic activities to improve resilience to rural communities' dependent on climate-sensitive sectors such as agriculture and livestock rearing, and
vi. Encouraging the formation of resident associations that can respond to emergencies, and involving them in key decision making

Mitigation Actions

In Migori County, the sectors associated with high emissions include forestry as a result of logging and charcoal burning; agriculture; energy and transport. The following sections describe some of the mitigation strategies the County needs and intends to undertake in the four sectors:

a) Forestry

Forests and on-farm trees provide a unique opportunity for Migori to participate in mitigation, as well as provide the county with valuable opportunities for carbon trading and finance. There is need to build on the Presidential directive on tree planting and initiate a locally ambitious programme to expand the county's forest cover from the current 0.8% to at least 5% over the next five years. The overall aim is to grow about 10 million trees every year through a programme involving:

i. the participation of 1,000 schools and post-secondary institutions, 120 women groups, 80 youth groups and 24 Community Forest Associations and private foresters. Each school is to be supplied with a 10,000 litre water tank to support water harvesting for the establishment and management of both tree nurseries and plantations, and

ii. large-scale landowners with at least 50 acres of land will be encouraged to construct dams for water harvesting and storage in order to support the establishment of irrigated private forests.

A detailed coverage of the planned County's Forest Restoration & Conservation Programme is annexed to this Action Plan.

b) Agriculture

Although emissions from the agricultural sector are quite low and are considered to be 'survival emissions', some mitigation actions in this sector are also adaptation measures and should be promoted as a matter of priority.

Mitigation measures to adopt in the agricultural sector include but are not limited to the following:

i. Applying agricultural technologies to increase food production while simultaneously limiting or reducing GHG emissions,

ii. Proper management of agricultural waste that includes using waste to produce biogas, which consequently also reduces the direct release of methane emissions into the atmosphere. Reducing methane emissions from uncontrolled anaerobic decomposition are potential CDM opportunities that Kenya is yet to tap into,

iii. Encouraging improved crop production practices, e.g. mulching instead of repeated tilling to control weeds. Methane is produced in termites as part of their normal digestive process and repeated tilling only enhances emissions from these creatures, which are the second largest natural source of methane emissions globally,

iv. Promotion of intercropping in plantations especially tree-based intercropping (TBI) as an agro-forestry system where a crop is established between planted tree rows. Agroforestry systems are known to store more carbon than conventional cropping systems through two mechanisms: TBI systems increase carbon storage in the biomass of planted trees and increase carbon stored in the soil, and

v. Promotion of organic farming, e.g. using crop residues and cow-dung as manure, which, - directly reduces GHG emissions as they are of non-fossil origin (i.e. are renewable and part of the natural cycles), and therefore - according to unpublished data may be better in fixing soil carbon compared to conventional methods.

c) Energy

In order to help achieve the goal of a low-carbon developed society, it is necessary that the County of Migori pursues and promotes an energy mix that greatly relies on carbon-neutral energy sources, especially renewables. This will not only help increase our energy security, but also assist in mitigating climate change, which forecasts indicate will cause more intense and frequent droughts throughout the country.

These droughts will affect all sectors that are rainfall-dependent including hydropower electricity generation, which is currently Kenya's main source of electricity. The County, thus, intends to accelerate the development of green energy including wind, solar and renewable biomass.

2. POLICY ENVIRONMENT

2.1. National Policy Context

2.1.1. National Perspective

Kenya's successive climate change impacts over the past 10 years have resulted to socio-economic losses estimated at 3 – 5% of the GDP annually despite having negligible global GHG emissions (<0.1% in 2020). This has an impedance to realization of Kenya's Vision 2030.

The objective of Kenya's updated NDC is to lower greenhouse gas (GHG) emissions by 30% by 2030, despite the fact that Kenya contributes a mere 0.1% to the total global emissions. Towards this end, the updated NDC specifies adaptation and mitigation actions and responses.

The updated NDC will also implement NCCAP sector component work plans for adaptation and mitigation; revise resource allocation and mobilization; improve multi-level and inter-sectoral coordination; and strengthen institutional capacities at national and sub-national levels.

2.1.2. National Legal and Policy Framework

Article 42 of the Constitution of Kenya 2010 guarantees the right to a clean and healthy environment and requires the environment to be protected for current and future generations. Article 69 places an obligation in respect of the environment and requires the state to ensure sustainable exploitation, utilization, management and conservation of the environment and natural resources. This provision also puts a duty on every person to cooperate with State organs and other persons to protect and conserve the environment and ensure ecologically sustainable development and use of natural resources.

The Climate Change Act 2016 mandates the National Climate Change Council to set targets for the regulation of GHG emissions (Section 6). Section 13 of the Act further requires the National Climate Change Action Plan to prescribe measures and mechanisms to review levels and trends of GHG emissions. Section 15 further imposes an obligation on all state departments and national government public entities to report on sectoral GHG emissions for the national inventory.

The Climate Change Act also provides for incentives to those who encourage and put in place measures for the elimination of climate change, including the reduction of GHG emissions and the use of renewable energy. The National Environmental Management Authority (NEMA) is empowered, pursuant to Section 17, to regulate, enforce and monitor compliance on levels of GHG emissions on behalf of the National Climate Change Council.

The NCCAP 2018–2022 provides detailed guidelines for GHG emissions. According to the NCCAP, actions in the six mitigation sectors set out in the UNFCCC – agriculture, energy, forestry, industry, transport and waste – are expected to lead to lower emissions than in the projected baseline and help to meet Kenya's mitigation NDC to abate GHG emissions by 30 per cent by 2030 relative to the business-as-usual scenario.

As part of the priority enabling actions, the NCCAP requires the National Treasury and Planning department, among other lead agencies, to identify policy and fiscal incentives (such as tax incentives, reduced energy tariffs, low-interest loans and public-private partnerships) that promote the uptake of climate-friendly technology by 30 December 2020. Although the 30 December 2020 deadline contemplated in the NCCAP has not been met, the National Treasury is continuing the process of developing a National Policy Framework on Green Fiscal Incentives.

An inter-ministerial taskforce with officers drawn from ministries, departments and agencies (MDAs), development partners, and specialised technical agencies and supported by consultants is expected to develop the policy.29 The National Treasury is responsible for developing climate finance strategy and regulations, and the National Climate Change Fund is also vested in the department. In its strategic plan 2018/19–2022/23, the National Treasury recognises climate finance action through sectoral policy development as one of its key result areas.30

In October 2021, the Central Bank of Kenya (CBK) issued a guidance on Climate-related Risk Management, which is meant to guide institutions licensed under the Banking Act, Cap 488 on climate-related financial risks. The guidance incorporates a governance approach that aims to integrate climate risk considerations in the management, business decisions and activities of the institutions. A risk-based approach under the guidance will also assist the institutions to effectively entrench climate-related financial risks in their risk management frameworks. Consequently, banks are expected to develop internal reporting structures and implementation plans and, ultimately, submit quarterly reports to CBK from the quarter ending 30 September 2022.

The NCCAP expects the public sector to play a role in the planning, implementation and monitoring of climate change interventions, with an emphasis on enhancing adaptive capacity and improving the ability to withstand climate shocks. The private sector is also expected to take measures towards reducing GHG emissions from business operations.

Section 91 of the Energy Act establishes a renewable energy Feed-in-Tariff (FIT) system with the

objectives of catalysing the generation of electricity through renewable energy sources and reducing GHG emissions by lessening reliance on non-renewable energy resources, among other objectives. The FIT policy was developed by the Ministry of Energy in 2008 as a guideline on the government's commitment to incentivise the generation and use of renewable energy through preferential tariffs.

2.2. County Enabling Legal and Policy Framework

Migori County Climate Change Policy, 2020

The Migori County Climate Change Policy provides a framework for addressing climate related challenges facing the County now and in future. The framework is anchored on a number of national policy frameworks including the National Climate Change Response Strategy (2010); National Climate Change Action Plan (2018-2022); the National Climate Change Act of 2016; the Session paper No.3 of 2016 on Climate Change Framework Policy 2018; Updated Nationally Determined Contribution (NDC); National Adaptation Plan (2015-2030); Green Economy Strategy and Implementation Plan (2016- 2030); National long-term Vision 2030 and its third Medium Term Plan as well as the Kenya Constitution 2010.

Migori County Climate Change Act, 2021

The purpose of this Act is to integrate and mainstream climate change actions, interventions and duties into county government functions including by— a) establishing a County Climate Change Steering Committee as the overarching county climate change coordination mechanism,
b) establishing a County Directorate of Climate Change in the department responsible for climate change to provide secretariat services to the County Climate Change Steering Committee,
c) establishing Ward Climate Change Committees, and d) providing for public participation, transparency and accountability in all climate change response, mitigation and adaptation activities in the county.

Migori County Climate Change Fund Act, 2021

The Object of the Migori County Climate Change Fund Act, 2021 is to establish the Migori County Climate Change Fund, its management, operation procedures and it’s winding up procedure, and promote Climate Change Adaptation and Mitigation activities.

Migori County Climate Change Fund Regulations, 2023

The Regulations are to guide the procedures, conduct of business of the Board and the different Committees created by the Migori County Climate Change Fund Act, 2021. It also operationalizes the remuneration and allowances of the Board and Committees as well as banking arrangements for the Fund and disbursement of funds for approved projects.

Migori County Sustainable Solid Waste Management Act, 2020

The objects of this Act are— (a) to protect the health, well-being of Migori residents and the environment by providing reasonable measures for— (i) minimizing the generation of waste; (ii) reducing, re-using, recycling and recovering waste; (iii) treating and safely disposing of waste as a last resort; (iv) preventing pollution and ecological degradation; (v) securing ecologically sustainable development while promoting justifiable economic and social development; (vi) promoting and ensuring the effective delivery of waste services; (vii) rehabilitate land where contamination presents, or may present, a significant risk of harm to health or the environment; and (viii)achieving integrated waste management reporting and planning; (b) to ensure that people are aware of the impact of waste on their health, well-being and the environment.

Migori County Sand Harvesting and Quarrying Act, 2020

The objects and purpose of this Act is to provide for— (a) registration of sand or quarry operators; (b) designation of sand harvesting or quarrying areas, harvesting hours and transportation methods; (c) provision for the institutional framework for management and regulation of sand harvesting or quarrying; (d) provision for the rehabilitation and protection of the environment from harmful effects of sand harvesting or quarrying; and (e) provision for benefit-sharing and ploughing back to the community part of the revenue collected from sand harvesting or quarrying.

Migori County Integrated Development Plan, 2023-2027

The Third Generation Migori County Integrated Development Plan (CIDP) was prepared to guide development over a five-year period. The Public Finance Management Act, 2012 provides that no public funds shall be appropriated outside a county's planning framework. The CIDP contains

information on development priorities that inform the County's annual budget process, particularly the preparation of County Annual Development Plans, the County Annual County Fiscal Strategy Paper, and the County Annual Budget Estimates. In its current CIDP, the county has included climate change issues in all key sectors. The County proposes to further incorporated sectorial drought-related contiguous shelf plans in its subsequent Annual Development Plans. The CIDP contains all departmental sectoral plans, the County's spatial plans as well as strategic priorities.

3. PRIORITY CLIMATE CHANGE ACTION PLANS

3.1. Strategic Climate Action Priorities in the PCRA

a) County Level

Key Priority Area: Forestry and Natural Resources			
Description of Specific Actions	**Implementing Institutions**	**Timeframe**	**Resource Required per yr.**
Afforestation and Reforestation targeting additional 100,000 Ha of land under forest cover: i. Rehabilitation and restoration of all degraded forests and riverine vegetation ii. Provision of 10 million seedlings to 500 schools throughout the county iii. Rehabilitation of degraded forest areas, reclaimed forests and farmlands, iv. Establishment of additional arboreta v. Other interventions	CGM, NGOs, CBOs, Private Sector	5 years	355 Million
Enhancing Conservation and Management of all types of forests: i. Preparation and maintenance of a comprehensive forest resources data base ii. Development and implementation of forest management plans iii. Recruitment of Forest Managers iv. Capacity building and strengthening of Community Forest Associations v. Fencing of County forests and major water towers vi. Other interventions	CGM, NGOs, CBOs, Private Sector	5 years	58 Million
Promoting Sustainable Management and Utilization of Forest Plantations:	CGM, NGOs, CBOs, Private	5 years	38 Million

i. Emergency reforestation of open areas through community programmes ii. Establishing County plantation monitoring unit iii. Enhancing silvicultural and selective based harvesting iv. Promotion of efficient wood conversion technologies v. Other interventions	Sector		
Engagement with an Expanded Portfolio of Stakeholders: i. Strengthening collaboration with schools, youth groups, CFAs ii. Strengthening partnership with KFS, KEFRI, KWS iii. Promote gazettement of county forests and rehabilitated hilltops iv. Extensive county tree planting campaigns and education v. Other interventions	CGM, KFS, KEFRI, NGOs, CBOs, Private Sector	5 years	40 Million
Mobilization of Volunteers to Support Forestry and Environmental Conservation Programmes: i. To plant and raise seedlings	CGM, KFS, KEFRI, NGOs, CBOs, Private Sector, CFAs	5 years	10 million
Pursuit of Innovative Funding Mechanisms for Forestry Development ii. Payment for environmental services iii. Preparation of tree planting proposals iv. Setting up a Forest Management and Conservation Fund (FMCF) v. Revenues from sale of plantation timber	CGM, KFS, NEMA, NGOs, CBOs, Private Sector, CFAs	5 years	5 Million

vi. Other measures			

Key Priority Area: Water			
Description of Specific Actions	**Implementing Institutions**	**Timeframe**	**Resource Required per yr.**
Enhance capacity of institutions and bodies responsible for water and sanitation on climate change impacts and strengthen community water resource development and availability of clean water: i. Construction and maintenance of water pans ii. Construction and maintenance of earth dams iii. Drilling of solar panel boreholes iv. Provision of water tanks for rain-water harvesting for institutions and community capacity building of efficient use of water and recycling	CGM, DPs, NGOs, CBOs, Private Sector	5 years	4 Billion
Promote awareness on climate change impacts and the water sector including promoting public awareness on water conservation (recycling, waste water management) and efficient water use: i. Strengthen water resource monitoring and assessment for early warning and planning ii. Promote technologies that enhance water resource efficiency iii. Establish and implement a County Water Master Plan	CGM, DPs, NGOs, CBOs, Private Sector	5 years	60 million

Key Priority Area: Agriculture and Livestock Development			
Description of Specific Actions	**Implementing Institutions**	**Timeframe**	**Resource Required**

			per yr.
Promotion of Conservation Agriculture, Climate-Smart Agricultural Practices, irrigated agriculture and diversification of rural economies: i. Promote indigenous knowledge on crops ii. Increase awareness on climate change impacts on the agriculture value chain iii. Coordinate and mainstream climate change adaptation into agricultural extension iv. Promote new food habits	CGM, DPs, NGOs, CBOs, Private Sector	5 years	3.6 Billion
Enhance the resilience of the livestock value chain, financing, awareness, capacity building, technology development: i. Developing special livestock insurance schemes ii. Regular vaccination campaigns and cross border disease surveillance iii. Regular vaccination campaigns and cross border disease surveillance iv. Identification and establishment of emergency fodder banks v. Inventorying indigenous knowledge and awareness campaigns on stock balancing (management and breeding), and strengthen land use management systems			

Key Priority Area: Fisheries			
Description of Specific Actions	**Implementing Institutions**	**Timeframe**	**Resource Required per yr.**

Livelihood diversification, (Economic Stimulus Programme), Cage fishing projects, Awareness, capacity building, financing, technology: i. Enhance capacity of the Department of Fisheries and Blue Economy on the impacts of climate change on fisheries, fishing communities and the private sector ii. Upscale sustainable aquaculture initiatives iii. Develop and implement a pilot project on climate resilient fish species and the related value chain iv. Promote the up-scaling of climate resilient strategies/ technologies in fisheries and climate resilient fish varieties v. Review of existing Acts and Policies on Fisheries and Blue Economy	CGM, DPs, NGOs, CBOs, Private Sector	5 years	1.1 Billion

Key Priority Area: Energy			
Description of Specific Actions	**Implementing Institutions**	**Timeframe**	**Resource Required per yr.**
Enhance implementation of an energy use mix plan that increases the resilience of the current and future energy systems to the impacts of future climate variability and change: i. Increase the solar, wind and other renewable energy systems network to provide power to off-grid areas ii. Promote energy efficiency programmes	CGM, DPs, NGOs, CBOs, Private Sector	5 years	0.5 Billion

iii. Continue the rehabilitation of water catchment areas in order to provide sustainable ecosystem services, including energy production			

Key Priority Area: Infrastructure and Settlement			
Description of Specific Actions	**Implementing Institutions**	**Timeframe**	**Resource Required per yr.**
Enhance climate proofing of infrastructure that underpin social and economic systems to curb/lessen increasing pressure to meet changing user needs (as exposures and vulnerabilities increase) in a changing climate: i. Conduct risk and vulnerability assessments of upcoming infrastructure (roads, railways, marine, aviation, buildings, ICT) ii. Conduct an assessment of whether existing and planned infrastructural assets are compatible with a low carbon climate resilient economy iii. Ensure that all designs and constructions on infrastructure are climate proofed iv. Increase awareness on impacts of climate change on population and housing v. Integrate adaptation into relevant building and urban planning policies and regulations	CGM, DPs, NGOs, CBOs, Private Sector	5 years	0.5 Billion

Key Priority Area: Health

Description of Specific Actions	**Implementing Institutions**	**Timeframe**	**Resource Required per yr.**
To implement preventive measures in reduction of disease spread through:	Dpt. Of health, NGO, CSO,	5 years	0.1 Million

i.	Improving surveillance system	Private Sector,
ii.	Mapping diseases hotspot areas	learning
iii.	Improving medical services	institutions,
iv.	Continuous Capacity building on climate related diseases	Climate Change
v.	Capacity building of health personnel	Directorate
vi.	Provision of water purifying agents	
vii.	Provision /subsidizing the cost of mosquito nets	

Key Priority Area: Education

Description of Specific Actions	**Implementing Institutions**	**Timeframe**	**Resource Required per yr.**
To increase awareness on climate change impacts, its mitigation and adaptation measures through:			
Development of a capacity building strategy Establishing and strengthening of environmental clubs in learning institutions Incorporating climate change in the ECDE curriculum Developing and distribution of educational materials in local languages Development and operationalization of a climate information and knowledge management system Conduct climate change awareness campaigns Set up demonstration centers for climate smart technologies.	Dpt. Of health, NGO, CSO, Private Sector, learning institutions, Climate Change Directorate	5 years	0.5 Billion

b) Ward-Based Priority actions

Ward	Hazard	Priority Action	Expected Results	Mitigation/ Adaptation
North Kadem Macalder/ Kanyarwanda Central Kanyamkago West Sakwa Wasimbete God Jope North Sakwa North Kanyamkago Central Kamagambo Central Sakwa East Kamagambo	Flood	• Establishment of an early warning system • Improve access to climate information services • Water harvesting and storage • Develop flood management plans • Improvement of drainage networks • Afforestation and reforestation programmes • Rehabilitation and protection of riparian areas • Constructions of dams and water pans • Land use restrictions • Enhance coordination of disaster risk management • Establish a disaster risk management fund • Constitute a functional disaster management committees • Initiate and run relevant social protection mechanisms and other safeguards • Conduct research on migration as an adaptation strategy • Construction of efficient rescues centers • Conduct periodic risk vulnerability assessment, impact monitoring and provide capacity building framework • Construction of soil erosion control structures such as dykes, grass strips and contour levelling and incorporating trees or hedge grows • Develop standards for climate proofing of transport infrastructure	• Improved community ability to cope with and infrastructure to stand floods • Improved coordination and delivery of disaster risk management	Adaptation and Mitigation

		• Operate climate related insurance for crops and animals • Promote research on modern methods of food preservation • Promote urban agriculture • Financial support, technology transport and capacity building to the agrarian community • Food and nutritional supplements e.g school feeding programs • Climate smart agriculture • Improved agricultural extension services • Promote safe mining methods • Capacity building of artisanal miners • Setting up a tracking systems for people engaged in mining • Provide protective gears to the artisanal miners • Promote sustainable sand harvesting • Advocate for synchronization of the school calender with climate related events • Strengthen conflict resolution mechanisms • Climate proof energy infrastructure •		
North Kadem Got Kachola Kaler Muhuru Kanyasa Wiga Isebania South	Drought	• Establishment of early warning system • Climate smart agriculture • Increasing access to climate information services • Promote urban agriculture • Develop water infrastructure for water harvesting and storage (earth dams, water pans, boreholes and untapped acquifers)	• Increased annual per capita water availability • Increased forest, tree and vegetation cover • Reduced deforestation and forest degradation • Reduced waterborne diseases • Improved crop productivity	

Kanyamkago North Kanyamkago South Kamagambo Kachieng East Kanyamkago Oruba Ragana Wasweta II Wasimbete Central Sakwa South Sakwa West Sakwa Central Kanyamkago West Kanyamkago Nyamosense/Komosoko Suna Central Nyabasi East Nyabasi West		• Capacity building of water resource management units such as WRUAs • Validating indigenous knowledge with a view to disseminating it for integration into conventional technologies • Reduce pre and post- harvest losses • Provide subsidized agricultural inputs • Initiate climate oriented crop and livestock insurance • Strengthening biotechnological research in crop and livestock varieties • Sustainable land management • Promote reclamation of degraded lands • Promote integrated soil nutrient management • Increase farm area under conservation agriculture • Promote agroforestry at farm level • Establish irrigation systems such as construction of dams for irrigation, abstraction of water from rivers and upscaling drip irrigation • Improved agricultural extension services • Animal and crop diseases surveillance • Promote research on modern methods of food preservation • Improve dairy management • Improve manure management • Promote biogas technologies in abattoirs • Develop toolkits on commercial lending to the water and sanitation sector. • Innovation in water tracking and the identification and reporting on leakages • Awareness program of efficient water use • Develop and implement water resource management plans	• Reduced risks to community and infrastructure resulting from drought • Efficient water use • Enhanced resilience of water sector	
Masaba Tagare Gokeharaka/Getambwega Bukira Central/Ikerege Makerero				

		• Formulate a policy for recycled water pricing and beneficiary sector (construction, watering flowerbeds and car wash.) • Aforest and reforest degraded and deforested areas, • Diversification of sources of livelihood • Initiate and run relevant social protection mechanisms and other safeguards • Management of ground waters • Capture of water run-offs on roads • Promote non rain-fed agricultural practices such as greenhouse farming • Implement regulations and laws on charcoal production • Promote briquette and renewable energy industry • Identify vulnerable fish species to be accorded conservation priorities • Assess the socio-economic impacts of drought on the livelihood of the fishing community • Undertake ecosystem based monitoring of fisheries under major current uses including fisheries closure, gear managed and open access management system • Promote aquaculture • Improve reporting standards and access to fisheries catch data to improve assessment of the impacts of climate change on fisheries • Strengthen conflict resolution mechanisms • Promote renewable energy development • Promote use of energy efficient appliances	• Incidences of malaria and other vector • borne diseases reduced • Recycling to divert collected wastes away from disposal sites promoted • Improvements in the control of malaria, waterborne diseases, respiratory diseases and infant mortality.	

		• Improve energy and resource use efficiency		
All 40 wards	Human Disease outbreaks	• Improved surveillance and monitoring of climate related diseases • Strengthen the public health systems including building and equipping hospitals with medicine, equipment and well trained personnel. • Capacity build health workers • Uptake and utilization of malaria treatment services • Scale up community level intervention on malaria and other climate related diseases control • Promote circular economy • Development of waste management plans and regulations • Improve access to clean water and sanitary facilities • Enact laws on urban planning and storm water management in urban areas • Scale up awareness creation programs in the community • Heighten surveillance of new outbreaks with subsequent rapid responses to control the epidemics • Setting up vaccination and immunization programs against disease whose occurrence will be exacerbated by climate change risks and vulnerabilities • Create green spaces in urban centers to moderate temperature and ensure fresh air for healthy living		Mitigation and Adaptation

		• Promote safe use of public transportation and active movement (biking and walking) to reduce carbon emission and improve public health • Using air friendly indoor sprays to control malaria • Support the use of GIS to map the spatial distribution of interacting risk factor and other critical data and communicate the results effectively to policy makers, stakeholders and the public.		
Central Kanyamkago Tagare North Kanyamkago East Kamagambo South Kamagambo North Kanyamkago Wiga North kadem Kanyasa East Kanyamkago South sakwa Oruba Ragana Wasweta II Wasimbete Ntimaru west	Increase in pests and diseases incidences in crops and animals	• Strengthening biotechnological research in crop and livestock varieties • Undertake countywide assessment to determine locational vulnerability to climate change elements • Strengthening research in vaccines against priority livestock diseases and inoculants for improving soil nitrogen and phosphorus in acid soils and enhancing soil biological resources • Increasing animal and crop disease surveillance • Proper management of pasture land • Controlled grazing and fodder bank • Adopting new animal husbandry techniques • Livestock and crop insurance	Recommendation from research and assessment on pests and diseases implemented Reduced vulnerabilities to climate related pests and diseases	Adaptation
All the 40 wards	Water scarcity	• Water harvesting and storage • Construction of dams boreholes and water pans	Improved access to clean water Reduced incidences of water-borne diseases	

		• Protection of springs and water catchment areas • Water treatment • Capture of surface runoff on roads • Management of ground waters • Lake basin management approach • Invest in local water management projects • Regularly updating risk plans and information • Climate proofing water infrastructure • Intensified research on hydrological cycle predictions • Assessment of watersheds and water resource vulnerability due to hydrological cycle changes. • Assessment of water quality which relates to source and receiving waters, storage, treatment, conveyance and demand. • Research on impacts of climate change on water, waste water treatment and storm water management • Assess the use of cost effective and friendly water purification methods •		

4. DELIVERY MECHANISMS

4.1. Enabling Factors

There a number of actions needed to enable effective delivery of climate adaptation and mitigation actions tabled in chapter 3 above. These actions furnish government and stakeholders with the knowledge, skills technologies and finance needed to deliver monitor and report on adaptation and adaptation measures.

The enablers are categorized under:

- Enabling policy and regulatory framework
- Mainstreaming in the CIDP
- Multi-stakeholder participation processes
- Finance (CCCF)
- Governance
- Climate information services and climate data access
- Resilience planning tools
- Measurement, reporting and verification
- Institution roles and responsibility

4.1.1. Enabling Policy and Regulatory Framework

The county government of Migori has developed the County Climate Change Policy, 2020, Climate Change Act, 2021 and Climate Change Fund Act, 2021. These are in line with the National Climate Change Act, 2016, which mandates individual counties to enact legal frameworks guiding their implementation of climate actions. These legal and policy frameworks will guide the development and utilization of County Climate Change Funds and enable climate finance to address county specific issues.

4.1.2. Mainstreaming in CIDP

The Migori County CIDP, 2022-2027 outlines priority areas in climate action for various sectors. For instance, priority has been given to climate smart agriculture, construction of climate resilient infrastructure, improved access to clean water, forest cover improvement, improved health systems and actions, establishment of a Climate Change Fund. Environmental Performance Index

conducted by NEMA in 2018, indicates that the performance of Migori County in regards to mainstreaming climate change action stands at 60%.

4.1.3. Multi stakeholder Participation Process

Pursuant to Section 23 of the Migori County Climate Change Act, 2021, every person, organization and entity must cooperate with the County Steering Committee and the Climate Change Directorate to promote and comply with the right to clean and healthy environment.

Through the enacted legal frameworks, the county commits to conduct public sensitization about climate change including providing regular and frequent updates on the status of climate change using channels such as ward climate change committees, the media, educators and other private and public actors involved in the dissemination of information to the public. In conducting public participation, the Climate Change Directorate shall ensure participation of special interest groups including women, youths, people living with disabilities, minority with an intergenerational responsive perspective.

Every person, organization, or entity that intends to undertake any development, project, or activity that may adversely affect the environment or climate change response, mitigation or adaptation project shall notify the directorate of the proposed development, conduct public sensitization and consultation and facilitate access to information about the development project and activity. The county is in an advanced stage of developing a county public participation framework that will support effective public participation.

4.1.4. Finance

Financial resources are key to the successful implementation of this action plan. Sustainable funding shall be mobilized from the County`s budget and development partners. Migori County has set aside 1.5% of its county budget for climate change interventions in the Financial Year 2023/2024. This will be complimented by contributions from development partners.

There are already appropriate measures laid down through the County climate change legal frameworks to ensure equity in the allocation of funds based on needs and according to vulnerability criteria. The PFM Act will be instrumental in ensuring transparency and accountability in the utilization of funds mobilized for Climate Change actions.

4.1.5. Governance

The Migori County Climate Change Act, 2021 and the Fund Act, 2021 establishes a number of climate change governance structures to coordinate implementation of climate actions in the County. The County Governor has designated a County Executive Committee Member responsible for climate change as required by the National Climate Change Act, 2016. Other governance structures established by the Act include:

i) The County Climate Change Steering Committee is an overarching County climate change coordination mechanism. The committee is composed of both state and non-state actors and is chaired by the Governor.

ii) The County Climate Change Planning Committee whose major role is to coordinate the implementation of the County Climate Change Action Plan and the Climate Change Finance Framework.

iii) Ward Climate Change Committees. These committees are established at the ward level to champion and coordinate climate change actions within the wards. It is composed of representatives from community groups.

iv) County Climate Change Directorate. This is a secretariat to the Steering committee and works with all stakeholders including the County Government departments, agencies and other public entities at the county level, the private sector, civil society organization and the general public to implement County climate Change Policy

v) Climate Change Fund Board. The Fund Board facilitate the implementation, monitoring and evaluation of the County Climate Finance Framework and the administration and management of the Fund.

4.1.6. Climate Information Services and Climate data Access

The application of weather and climate information and related services helps to improve the safety and wellbeing of people, reduce poverty, increase prosperity and protect the environment for future generation. The County is working together with the Meteorological department to strengthen infrastructure and services to reach and have the desired influence upon the community where the most severe climate variability and change are realized. As such, the county together with other stakeholders has developed a draft Climate Information Services Plan (CISP) that provides a

framework for providing climate services at the County level with the users need in mind.

The plan outlines the process for regular communication of daily, weekly, monthly and seasonal weather and climate information as well as extreme weather alerts and warnings which are accessible to the entire County population. This will support County level decision making, including strategy development, budgeting and planning across the sectors.

4.1.7. Resilience planning tools

Resilience planning is a process undertaken to identify potential hazards and threats and establish, mitigation and recovery plans. This is geared towards reducing their likely impacts and ensuring that key infrastructural systems continue operating of quickly begin providing services again.
In Resilience planning process, the County has assessed the risks and vulnerabilities and focused on addressing these risks and vulnerabilities by developing this action plan.

i. Assessing the risks

A participatory Climate risk tool was used to identify climate threats and hazards per ward. The tool identified locations, extent, pervious occurrences and probability of hazards faced by the community. The community resources vulnerable to the impacts of climate change were then mapped and their current and future coping mechanism proposed

ii. Climate Change Action Plan

To draw appropriate interventions to the identified risks, this climate change action plan has been prepared. It outlines proposed actions for increasing resilience and reducing long term climate impacts. It identifies and evaluates adaptation, mitigation and recovery strategies.

iii. Adaptation plan

The County will develop an adaptation plan to help the threatened community cope with the changing hazards while adjusting to the magnitude of impacts

iv. Recovery plan

Recovery plans address the future conditions in the near, mid or long term that will help the community return to equilibrium after an event. Before an event occurs, the County

will develop a recovery plan entailing decision making matrix, housing strategy and agreed upon plan to ensure essential community systems are restored quickly.

4.1.8. Measurement Reporting and Verification

The directorate is responsible for Measurement, reporting and verifying the implementation of this CCCAP. According to the County Government Act, 2012, Section 30(2) (j), the Governor should submit, to the County Assembly, an annual report on the implementation status of the County policies and plans. In addition, Section 19.5 of the National Climate Change Act, 2016, requires that the CEC member report on the progress of implementation of climate change actions to the County Assembly for review and debate.

The County commits to do the following:

i) MRV GHGs- Greenhouse gas emission by source and removal by sinks. The County need capacity building on measuring reporting and verification of GHGs.

ii) MRV of Mitigation Actions and their impacts – mitigation action, greenhouse gas reduction/abatement and non-greenhouse gas benefits

iii) M&E of adaptation actions- Adaptation actions, socioeconomic benefits and mitigation co-benefits

iv) MRV of support – support needs, support received and impacts of support.

4.1.9. Institutional roles and responsibilities

The roles and responsibility in relation to climate change actions for various stakeholders is as indicated in the table below

S/N	INSTITUTION	ROLE
1	Adolescent Health Impact Initiative	Community health - targeting adolescents
2	British American Tobacco Plc (BAT)	Tobacco sale/promotion; Tree planting
3	Care Kenya	Poverty alleviation; Strengthen resilience to climate change
4	Department of Agriculture	Crop, livestock, fisheries (blue economy) development
5	Department of Economic Planning	County fiscal planning - CIDP, ADP, Budget
6	Department of Lands	Physica Planning, land use, survey, housing, public plots
7	Department of Health	Medical and public health services - preventive and curative
8	Department of Water and Energy	Water services, affordable clean energy
9	Devolution and Climate Change (DaCCA)	Climate change adaptation interventions
10	GIZ	Sustainable rural development, Agriculture and food security
11	GreenLife	Seedlings nursery, Forestry development, Conservation
12	Kenya Forest Service (KFS)	Forestry development and protection
13	Kenya Forestry Research Institute (KEFRI)	Forestry research, development and value addition
14	Kenya Meteorological Department – Migori	Weather and climate information, Early warning
15	Kenya Peasants League	Agroecology and organic food production systems
16	Kenya Red Cross Society	Humanitarian services/emergencies - community resilience
17	Kenya Wildlife Service	Wildlife conservation and management
18	MICOWRUA	IWRM - tributaries, riparian, up/mid/downstream services
19	Migori - Masaba WRUAs	IWRM - tributaries, riparian, up/mid/downstream services
20	Migori County Artisanal Miners' Association	Artisanal mining development
21	Migori County Sand Harvesting Association	Sand Harvesting
22	Migori-Masaba WRUAs	IWRM - tributaries, riparian, up/mid/downstream services
23	Mirema Community Forest Association (CFA)	Forest conservation and development - value addition
24	MIWASCO	Healthy, quality water supply
25	National Council of Churches of Kenya (NCCK)	Conservation Agriculture, Emergency response, CSA
26	NEMA	EIA, Environmental Compliance and Enforcement

27	NYAWASCO	Healthy, quality water supply
28	One Vision Kenya	Rural resilience to climate change - advocacy, capacity
29	PELUM	Agroecology- sustainable/organic/regenerative agriculture
30	Practical Action	Clean energy, water and waste services
31	Ripple Effect	Sustainable agribusiness and enterprise development
32	Rongo University	Post-secondary education, research and knowledge dev
33	Social Justice Network	Social Justice champion
34	Sony Sugar Company	Sugarcane production, processing and development
35	Stockholm Environment Institute (SEI)	Research and policy for sustainable practice
36	Tree for Future	Agroforestry (Forest Garden Approach), Restoration
37	Western Kenya Sanitation Project (WKSP)	Sanitation and menstrual hygiene management
38	Western Kenya Water Project (WKWP)	Water security, effective water resources management
39	World Vision Kenya	Emergency response, disaster management, health and nutrition
40	Mines and Geology - Migori	Licensing, Inspection, Mineral Audit, Value Addition
41	Kenya National Highways Authority (KeNHA)	Development, Rehabilitation, Management of Highways (S,A,B)
42	Kenya Rural Roads Authority (KeRRA)	Develop, Manage and Maintain rural roads

4.2. Implementation and Coordination

Table… Implementation matrix

Strategic objective	Priority action	Expected outputs/ outcomes	Key performance indicator	Responsible institution	Targeted groups	Timeframe	Source of fund	Indicative budget (KES Million)					
								Total	23/24	24/25	25/26	26/27	27/28
Disaster (Drought and Flood) Risk Management													
Reduce risks to communities and infrastructure resulting from climate related disasters such as droughts	Increase the number of households benefiting from CCCFs	The climate resilience of vulnerable members of the society enhanced	***Adaptations*** **:** No. of beneficiaries of social protection mechanisms (Food and Cash transfers) Amount of funding allocated to climate change actions through CCCF in the county	County department of Environment, KMD, ministry of Labour and social protection, KRCS, county department of Special programmes, ministry of Interior and Coordination, Department of Gender and Youths, Department of Health, NDMA, WRA, NGOs, CBOs, Water services Trust Fund, Media, Ministry of Education, CSOs	PWDs, Minority, women, youth, children elderly	2023-2027	GOK. CGM and DPs	115	20	20	25	25	25
	Improve the ability of people to cope with drought	People able to cope with drought because of improved climate information services with No. of recipients of CIS increased by 50%	No. of recipient of CIS No. of AWS instituted Emergency funds disbursed				GOK. CGM and DPs	185	30	30	40	40	45
	Enhanced productivity in the fishery sector through implementation of Climate Smart	Improved resilience of the fisheries sector -20% increased aquaculture production by increasing no. of cages for fish farming -insurance	Adaptation: -No. of cages for fish farming -No. of fish ponds -No. of farmers using low carbon	County Department of Water and Energy, Environment, Health, Gender, Roads, KMD, NEMA,	Fisher communities and fish farmers	2023-2027	GOK/CGM/DPs	95	15	15	20	20	25

	Agriculture Actions	products for fisheries developed and piloted	recirculating aquaculture system -Fisheries insurance product developed	Media, WRA, CSOs, NGOs									
	Diversify livelihoods to adjust to a changing climate	Improved resilience of households through livelihoods diversification	Adaptation: -No. of household supported to diversify livelihoods	County Department of Water and Energy, Environment, Health, Gender, Roads, KMD, NEMA, Media, WRA, CSOs, NGOs	Fisher communities and fish farmers	2023/2027	GOK/CGM/DPs	25	5	5	5	5	5
	Improve the ability of people to cope with floods	Increased ability of people to cope with floods and damage to infrastructure reduced by: a. Establishment of EWS b. Improved capacity of WRUAs c. Establishment of dam safety control system	*Adaptation:* -No. of EWS, dam safety needs assessment -safety manual and codes of practice published -No. of WRUAs participating in training sessions	County Department of Water and Energy, Environment, Health, Gender, Roads, KMD, NEMA, Media, WRA, CSOs, NGOs,	Communities living in flood prone areas like Nyora, Kabuto, Aneko	2023-2027	GOK. CGM and DPs	170	30	30	35	35	40
	_Control flooding in human settlement	Improved health and safety in human settlement through the construction of flood ways	-No. of flood ways constructed in the urban centres	County Department of Water and Energy, Environment, Health, Gender, Roads, KMD,	Residents of flood prone areas	2023-2027	GOK/CGM/DPs	177	24	32	36	40	45

				NEMA, Media, WRA, CSOs, NGOs									
	-Promote green buildings	Buildings are able to withstand impacts of climate change through an improved policy and regulatory framework	No. of green building codes developed and approved	County Department of Water and Energy, Environment, Health, Gender, Roads, KMD, NEMA, Media, WRA, CSOs, NGOs	Landlords, tenants, industries, private sector investors	2023-2027	GOK/CGM/DPs	25	5	5	5	5	5
	Improve coordination and delivery of disaster management response	The coordination of disaster management is improved by: -Development and enactment of Disaster Risk Management legal framework -constitution and operationalization of disaster risk management committees	*Adaptation* County Disaster Management Committees established -County Disaster fund established -Amount of funding allocated through county disaster funds	County Department of Water and Energy, Environment, Health, Gender, Roads, KMD, NEMA, Media, WRA, CSOs, NGOs	Communities living in flood prone areas like Nyora, Kabuto and Aneko	2023-2027	GOK/CGM/DPs	58	10	10	10	13	15
Water and Blue economy													
Enhance resilience of water sector by ensuring access to and efficient use of water for agriculture, Fisheries, manufacturing, domestic, wildlife and other uses	Increase annual per capita water availability via development of water infrastructure	-Increased water availability through construction of dams, water harvesting and spring protection -Ground water surveys conducted -Sub-catchment management plans developed	*Adaptation:* -Per capita water availability -No. of dams constructed -No. of sub catchment management plans -No. of springs protected - No. of reports on ground water	County Department of Water and Energy, Environment, Health, Gender, Roads, KMD, NEMA, Media, WRA, CSOs, NGOs	Household consumer, industrial consumer, marginalised	2023-2027	GOK/CGM/DPs	1,230	500	200	200	180	150

			surveys										
	-climate proof water harvesting and water storage infrastructure and improved flood control	Water storage and flood control improved through the establishment of climate proof water storage infrastructure	No. of climate proofed water harvesting, flood control and water storage infrastructure	County Department of Water and Energy, Environment, Health, Gender, Roads, KMD, NEMA, Media, WRA, CSOs, NGOs	Farmers, household consumer, industrial consumer, irrigation schemes	2023-2027	GOK/CGM/DPs	20	4	4	4	4	4
	Promote water use efficiency (monitor, reduce, reuse recycle and modelling)	-Household water access enhanced through farm ponds, water pans, toolkits on commercial lending to the water sector	-No. of farm ponds -No of household with access to water pans and ponds -Toolkit on commercial lending to water sector	County Department of Water and Energy, Environment, Health, Gender, Roads, KMD, NEMA, Media, WRA, CSOs, NGOs	Household, corporate buildings/ businesses	2023-2027	GOK/CGM/DPs	53	10	10	9	12	12
	Improve access to quality water	-Increased percentage of people accessing good quality water; regular inspection of water; water treatment reduction of non- revenue water installation of water meters	-Percentage of people with access to good quality water	County Department of Water and Energy, Environment, Health, Gender, Roads, KMD, NEMA, Media, WRA, CSOs, NGOs	Household and industrial consumer, irrigation schemes, residents of dry areas	2023-2027	GOK/CGM/DPs	53	10	11	12	10	10

	Improve sanitation services	Reduction in incidences of disease outbreak	Sewerage system constructed and maintained	County Department Water and Energy, Environment, Lands,	Urban dwellers	2023-2027	GOK/CGM/DPs	1,526	20	1,500	2	2	2
	Improve climate resilience of lakeshore communities	-Increased production of capture fisheries	-No. of fishing vessels registered for fishing. -No. of solar lamps acquired -No. of cooling plants installed -No. of modern Fish landing sites developed. -No. of solar drying racks acquired.	County Department of Water and Energy, Agriculture and fisheries, Environment, Health, Gender, Roads, KMD, NEMA, Media, WRA, CSOs, NGOs	Fisher communities anf fish farmers, CBOs, NGOs	2023-2027	GOK/CGM/DPs	745	100	180	150	150	165
	Establish climate resilience aquaculture	Fish cages -Aquaculture establishments	No. of fish cages constructed -No. of land based aquaculture establishments developed -No. of mono-sex fish fingerlings distributed -No. of fish feeds distributed -No. of predator nets distributed -No. of fish pond liners	County department of Fisheries and Blue Economy, Environment, BMUs	Fishermen and Fish farmers	2023-2027	GOK. CGM and DPs	445	80	80	90	95	100

			distributed -No. of bird nets distributed -No. of water quality devices distributed										
	Capacity building		No. of fishermen trained/ capacity built -No. of fish farmers trained -No. of fisheries staff trained	County department of Fisheries and Blue Economy, Environment, BMUs	Fishermen and Fish farmers -Fisheries staff	2023-2027	GOK. CGM and DPs	38	7	7	7	8	9
			-Fish hatchery constructed	County department of Fisheries and Blue Economy	-Fishermen and fish farmers	2023-2027	GOK. CGM and DPs	120	100	5	5	5	5
			-Resource centre constructed and equipped	County department of Fisheries and Blue Economy	The community -learning institutions	2023-2027	GOK. CGM and DPs	37	1	20	10	3	3
	Policy review and implementation	-Existing Acts and Policies on Water and Blue Economy reviewed -Acts and Policies on Water and Blue Economy implemented	-No. of Policies and Acts reviewed -No. of Policies and Acts implemented	-County department of Water, Fisheries and Blue Economy -County department of Environment and Climate Change	-Beach Management Units (BMUs) -Fish farmer -General Community	2023-2027	GOK, CGM and DPs	23	7	5	4	4	3
Manufacturing													

Improve energy and resource efficiency in manufacturing sector	Increase energy efficiency	Energy efficiency increased in manufacturing processes leading to GHG emissions reductions through participation of companies in energy audits and improved standards	Mitigation: GHG emissions from energy sector -No. of companies participating in energy efficient initiatives - No. of energy efficient standards	County Department of Water and Energy, Environment, Health, Gender, Roads, KMD, NEMA, Media, WRA, CSOs, NGOs	Industries, manufacturing	2023-2027	GOK/CGM/DPs	44	8	8	8	10	10
	Improved water use and resource efficient	Water use and resource efficiency improved in manufacturing processes through participation of companies in water efficiency audits	**Adaptation:** -No. of companies participating in water efficiency inefficiencies	County Department of Water and Energy, Environment, Health, Gender, Roads, KMD, NEMA, Media, WRA, CSOs, NGOs	Industries, manufacturers	2023-2027	GOK/CGM/DPs	27	5	5	5	5	7
	Optimize manufacturing and production processes	GHG emission reduction through improved industrial processes	**Mitigation:** -GHG emission from industrial sector	County Department of Water and Energy, Environment, Health, Gender, Roads, KMD, NEMA, Media, WRA, CSOs, NGOs	Charcoal manufactures, briquette manufactures, cement manufactures	2023-2027	GOK/CGM/DPs	25	5	5	5	5	5
	Promote industrial symbiosis in industrial zones	Improved industrial practises through the scale up of industrial symbiosis	**Adaptation:** -No. of industrial parks adopting industrial symbiosis practises **Mitigation:**	County Department of Water and Energy, Environment, Health, Gender, Roads, KMD,	Manufactures, waste companies, transport companies	2023-2027	GOK/CGM/DPs	25	5	5	5	5	5

			-GHG emissions from waste, energy and transport sector	NEMA, Media, WRA, CSOs, NGOs									
Energy and transport													
Climate proof energy and transport infrastructure ; encourage renewable energy development; increase uptake of clean cooking solutions; and develop sustainable transport systems	Increase renewable energy for electricity generation	GHG emission reductions through the development of renewable energy for electricity generation, with an emphasis on hydro, solar, wind and biomass	***Mitigation:*** GHG emissions from the energy sector	County Department of Water and Energy, Environment , Health, Gender, Roads, KMD, NEMA, Media, WRA, CSOs, NGOs	Industr ies; House hold consu mer; Corpor ate Consu mers	2023-2027	GOK/C GM/D Ps	36	7	7	7	7	8
	Reduce fuel consumptio n and fuel overhead costs, including adoption of cycling and electric vehicles	Fuel consumption is reduced, resulting in GHG emission reductions including through the: a. Improving heavy-duty truck efficiency b. promote cycling	***Mitigation:*** GHG emissions from the transport sectors	ERC County Department of Water and Energy, Environment , Health, Gender, Roads, KMD, NEMA, Media, WRA, CSOs, NGOs	Logisti cs and freight compa nies; Motoris ts	2023-2027	GOK/C GM/D Ps	40	8	8	8	8	8
	Climate-proof transport infrastructur e	Transport infrastructure better able to withstand extreme weather events	***Adaptation :*** Number of kilometres of roads that are climate proofed	Kenya Urban Roads Authority (KURA); KePRA; KeNHA; County Department of Water and Energy,	Pedestr ians; Motoris ts; Farmer s	2023-2027	GOK/C GM/D Ps	500	100	100	100	100	100

				Environment, Health, Gender, Roads, KMD, NEMA, Media, WRA, CSOs, NGOs									
		Assessing the feasibility of constructing roads that systematically harvest water and mitigate floods undertaken	Feasibility study of road construction to harvest water and mitigate floods	County Department of Water and Energy, Environment, Health, Gender, Roads, KMD, NEMA, Media, WRA, CSOs, NGOs		2023-2027	GOK/CGM/DPs	10	2	2	2	2	2
Food and Nutrition Security													
Increase food and nutrition security through enhanced productivity and resilience of the agricultural systems in as low-carbon manner as possible	Improve crop productivity through the roll out of the Climate Smart Agriculture actions	Crop productivity and farmer resilience increased through: a. 20% increase in no. beneficiary farmers accessing climate-oriented insurance b. 40% increase in no. of farmers accessing appropriate agriculture input subsidies c. 50% increase in no. of institutions and households harvesting water for agricultural purposes d. 30%	***Adaptation*** **-** Number of farmers with crop insurance -Number of farmers accessing agriculture input subsidies -Number of institutions harvesting water - Percentage of pre-and post-harvest losses -capacity building -extension services	County Department of Water and Energy, Environment, Agriculture,and Health,private Gender,produc Roads, ers KMD, NEMA, Media, WRA, CSOs, NGOsKenya Forest Service (KFS); CBOs/ NGOs; DPs; Private sector investors; KEFRI; KFS Information Communication	Farmers and, pastoralists; Cooperatives,	2023-2027	GOK/CGM/DPs	75	15	15	15	15	15

		reduction in Pre- and post-harvest losses e. Adoption of Sustainable Land Management techniques for agricultural production, including: - Reclamation of 625 ha of degraded land - % reduction in GHG emissions -Increasing SLM Practices, including conservation tillage,	***Mitigation*** GHG emissions from LULUCF sector	Technology (ICT) providers									
	Improve crop productivity by increasing the acreage under irrigation	-Crop production maintained or increased -Increased area under irrigation -Capacity building -SLM	***Adaptation*** Acreage under irrigation	Private sector investors; CBOs / NGOs County Department of Water and Energy, Environment, Agriculture, Health, Gender, Roads, KMD, NEMA, Media, WRA, CSOs	Farmers, Community-based organizations	2023 -2027	GOK. CGM and DPs		100	120	125	130	140

	Increase productivity in the livestock sector through implementation of CSA actions	Improved resilience of livestock farmers through: a. Annual Water harvesting and storage increased c. Control livestock disease outbreaks d. 20% increase in farmers access livestock insurance, e. Efficiency improvements in the dairy sector	***Adaptation*** -Hectares of rangeland re-seeded -Water storage in dry areas -Number of farmers accessing livestock insurance ***Mitigation*** -GHG emissions from agriculture sector	KALRO; ICT; Private sector investors; KMFRI; KALRO CBOs / NGOs; County Department of Water and Energy, Environment, Agriculture, Health, Gender, Roads, KMD, NEMA, Media, WRA, CSOs	Pastoral communities; Small-scale and underprivileged farmers	2023 -2027	GOK. CGM and DPs						
Health													
To improve health service delivery and maintain a climate resilient health system	a.Train and engage more health workers including community health workers b. improve disease surveillance systems c. improve and equip both urban and rural health facilities d. Continuous capacity building on climate related diseases e. Provision of mosquito nets f. improve supply of water purification agents g. Upgrade of hospital facilities h. design and implement an affordable but efficient health insurance scheme i. Climate proof medical	a. More health workers trained and engaged b. improved disease surveillance c. Well-equipped health facilities d. capacity building workshops held with efficient modules e. mosquito nets provided f. improved supply of water purification agents g. Upgraded Hospital facilities h. Affordable and efficient health insurance scheme adopted h. medical infrastructure climate proofed -Medical research supported	**Mitigation** No. of climate proofed health infrastructure No. of medical research supported **Adaptation** No of people adopting health insurance schemes -No of mosquito nets beneficiaries -No. of improved health facilities. -improved disease surveillance	Dpt. Of health, Environment, Public works Development partners National Government KMD	Children Women Elderly PWD	2023-2027	GoK CGM DPs CSOs	800	400	100	100	100	1000

	infrastructure -Support medical research initiatives in relation to climate change												
Education													
To mainstream climate change learning with the existing learning systems	-Create and support environment and Climate change Clubs -Integrate climate change with ECD learning -Set up and sustain climate smart technologies demonstration sites -Conduct continuous climate change awareness campaigns. -Support climate change symposiums and exhibitions -Development and distribution of climate change knowledge hand books -Development of a Climate Information and knowledge management system - support climate related research initiatives	-Environmental and climate change clubs created and supported -ECD curriculum integrated with climate change content -Demonstration sites set up -Climate change symposiums and exhibitions supported -Climate change knowledge hand books developed and distributed -Climate information management systems developed - research supported	**<u>Mitigation</u>** ECD curriculum integrated with climate change content -no. of demonstration sites set up -No. of climate change symposiums and exhibitions supported -No. of climate change knowledge hand books developed and distributed -No. of climate information management systems developed No. of research initiatives supported **<u>Adaptation</u>** No. of Environmental and climate change clubs created and supported -ECD curriculum integrated with climate change content -no. of demonstration sites set up -No. of climate change symposiums and exhibitions supported -No. of climate change knowledge hand books developed and	County Dpt. Of Education, Environment, Agriculture, Water, GoK CSOs DPs	Men, Women Children Youths PWD Elderly	2023-2027	GoK CGM DPs NGOs CBOs	250	50	50	50	50	50

			distributed -No. of climate information management systems developed										
Trade													
	Increase value addition of on-farm and off-farm economic activities products to sustain livelihoods during drought	Improved value addition products in the market in all sectors	***Adaptation*** -No of value additions projects/ activities established	Department of Trade and Investment, Department of Environment , Social Services, Labour, Cooperatives , CSOs, NGOs									
Forestry													

Increase forest cover to 10% of total land area; rehabilitate degraded lands, including; increase resilience of the wildlife and tourism sector	Afforest and reforest degraded and deforested areas	-Increased area of land afforested or reforested -Improved resilience of ecosystems and reduce GHG emissions -Improved forest management -establish tree nurseries -establish arboreta -	***Adaptation*** -Hectares of land afforested or reforested -Number of TIPs signed ***Mitigation*** -GHG emissions from LULUCF sector	KFS; KEFRI; Community Forest Associations Youth Organizations; County Department of Lands; County Department of Water and Energy, Environment, Agriculture, Health, Gender, Roads, KMD, NEMA, Media, WRA, CSOs	forest owners; Marginalised communities, including farmers; Conservation NGOs	2023-2027	GOK. CGM and DPs	165	30	30	30	40	35
	Implement initiatives to reduce deforestation and forest degradation	-Deforestation and forest degradation reduced -Increased forest carbon stocks -capacity building	***Adaptation*** -Number of hectares of protected forest land ***Mitigation*** GHG emissions from LULUCF sector	KFS; KEFRI; CGs; Community Forest Associations Youth organizations; Academia	Youths; School; Tertiary Institutes; Private Conservancies; Conservation NGOs	2023-2027	GOK. CGM and DPs	75	15	15	15	15	15
	Restore degraded landscapes	-Forests restored on degraded landscapes to build climate resilience and reduce GHG emissions	***Adaptation*** -Number of hectares of restored degraded landscapes ***Mitigation***	KFS; KEFRI; Community Forest Associations Youth Organizations; State Department	Farmers and wetlands inhabitants	2023-2027	GOK. CGM and DPs						

			-GHG emissions from LULUCF sector	of Mines and Geology; County Department of Lands; County Department of Water and Energy, Environment, Agriculture, Health, Gender, Roads, KMD, NEMA, Media, WRA, CSOs									
Promote sustainable timber production on privately-owned land	More sustainable production of timber by increasing the area under private-sector commercial and industrial plantations	***Adaptation*** -Number of hectares of private-sector based plantations ***Mitigation*** -GHG emissions from LULUCF sector			Private land owners; Timber Manufacturing industry	2023-2027	GOK. CGM and DPs						
	Conservation of forest land	-Increase resilience of wildlife -Conserving of wildlife habitats -Develop forest resource database -Establish forest management plans-recruit forest managers -capacity building	***Adaptation*** -Percentage of terrestrial and water areas conserved -Number of hectares of wildlife conservation areas -Number of secured incidents of	KWS; Wildlife Conservations Society (WCS); Wildlife Conservations NGOs; County department of Water, Agriculture, Energy,	National and private reserves; Households; Farmers; and fisher communities experiencing human	2023-2027	GOK. CGM and DPs	195	30	40	40	40	45

		-Gazettement of county forest -Fencing county forests - Strengthen resource management units (CFAs and WRUAs) -Extension services -Resource mobilization -Forest management and conservation fund	human-wildlife conflicts	Health	-wildlife conflicts; Private conservancies								
	Reduce Incidence of malaria and other vector-borne disease	Reduction in the incidence of malaria and other vector-borne diseases that are expected to increase because of climate change through: a. Scaled-up community health interventions b. Improved uptake and utilisation of malaria treatment services	***Adaptation*** -Malaria incidence per 1,000 population	KFS; KEFRI; Community Forest Associations Youth Organizations; State Department of Mines and Geology; County Department of Lands; County Department of Water and Energy, Environment, Agriculture, Health, Gender, Roads, KMD, NEMA, Media, WRA, CSOs	Marginalised; communities; Underprivileged women and children	2023-2027	GOK. CGM and DPs						

	Promote recycling to divert collected waste away from disposal sites.	Solid waste management improved through the implementation of a circular economy solid waste management in the County b. Improved understanding of the feasibility of installing methane capacity and power generation at landfill sites -Capacity building	***Mitigation*** -Percentage of waste diverted from disposal sites towards recycling -Feasibility study complete for methane capture and power generation at landfill sites		Persons living near dumpsites; Manufacturers; Waste management companies; Private sector investors,			66	10	13	14	14	15
	-Environmental management and monitoring plan developed for landfill sites/ waste		No. of landfill/waste disposal sites audited for climate impacts	County Department of Water and Energy, Environment, Health, Gender, Roads, KMD, NEMA, Media, WRA, CSOs, NGO	County Department of Environment, Waste management companies	2023-2027	GOK/CGM/DPs	5	1	1	1	1	1
	Construct Climate proof solid waste management infrastructures		No. of waste management facilities constructed and climate proofed					480	200	30	30	200	20

Figure 1: Frankline Onyango, a Statistician, presenting PCRA Data Analysis Report to Stakeholders

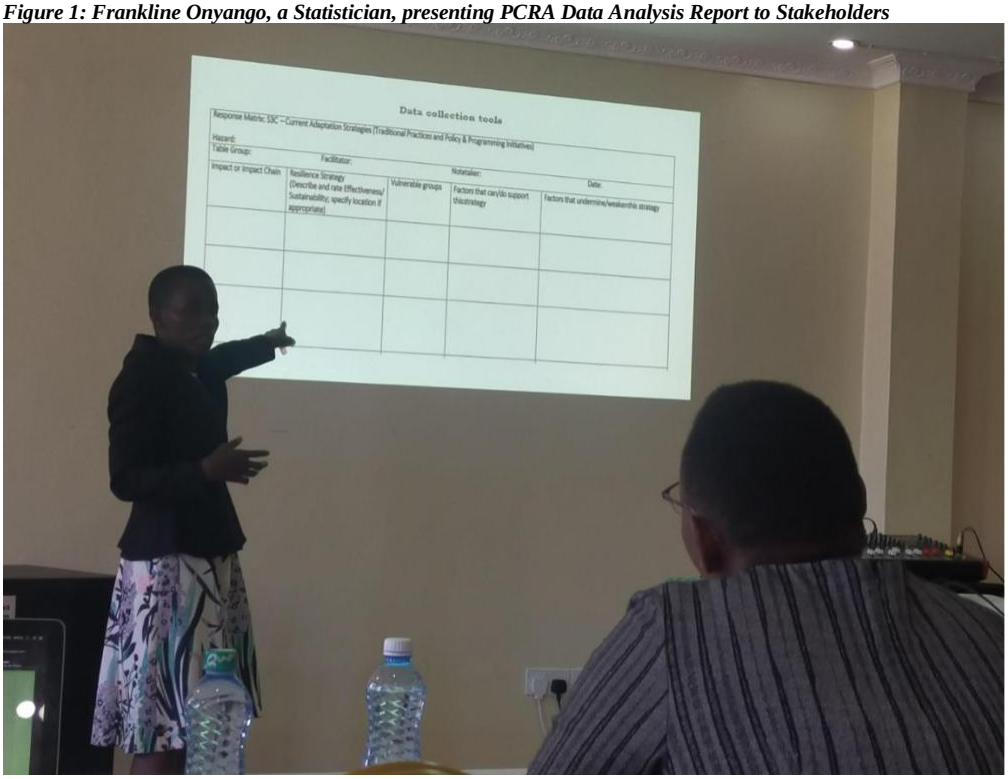


Figure 2: Eveline Onyango, Climate Change Officer, presenting the Data Collection Tool to Stakeholders